



THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g., PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author. The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author. When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

How do hospitals sustain delivery of health care in conditions of protracted armed conflict? A case study of the Hospital San Andrés ESE in Tumaco, Colombia

By:

Diego Mauricio Díaz Velásquez

Thesis submitted for the Degree of Doctor of Philosophy (Ph.D.)

School of Social and Political Science

Global Health Policy Unit

Social Policy

The University of Edinburgh

2022

DECLARATION OF ORIGINALITY

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

Diego Mauricio Díaz Velásquez

29/04/2022

Dedication

Dedicated to my beloved daughter, Allison Isabella Rei Díaz Paredes. You taught me that love transcends boundaries. I am thankful for motivating me to never give up on achieving life dreams despite the trials ahead.

ABSTRACT

BACKGROUND: Colombia, a middle-income country in Latin America, has experienced a protracted armed conflict for six decades, driven predominantly by the drug trade. The municipality of Tumaco, a port city located in the Southwest province of Nariño, has experienced the highest intensity of conflict in recent years. In Tumaco, the conflict has created significant challenges for the operation of key social services particularly its main hospital, Hospital San Andrés ESE, a government-owned but operationally autonomous facility. While the hospital experiences significant challenges owing to the conflict, it has continued to provide health services. At the global level, there is limited evidence on how hospitals continue to address population health needs in conflict-affected settings. Therefore, little is known about the challenges these facilities face, the strategies employed to face the challenges, or the support they receive or need. This thesis seeks to examine these neglected issues through a qualitative case study of the Hospital San Andrés ESE.

AIM AND OBJECTIVES: This research focuses on understanding how hospitals sustain delivery of health care to populations in conditions of protracted armed conflict through an in-depth analysis of one hospital system: the Hospital San Andes ESE in Tumaco, Colombia. To achieve this aim, the research investigates: (i) the challenges the hospital faces to continue its operations in the conflict-affected environment, (ii) how the hospital responds to such challenges to sustain health care delivery; (iii) determine from research participants what needs to improve with the hospital response to challenges, so the hospital can better address the population health needs.

METHODS: This project uses a qualitative case study approach drawing on data from 48 semi-structured interviews with hospital personnel and a range of policy actors around the hospital system which provide financial or in-kind support to the facility. Similarly, the study examines documents produced by key policy stakeholders and commentators (government authorities, the hospital, research centres, NGOs, humanitarian actors and local media). Collection and thematic analysis of the data were guided by the “everyday resilience” framework, which embeds the analysis of conflict-related challenges in the context of wider resource constraints.

RESULTS: The results were organised to respond to the research objectives directly, addressing (i) the challenges the hospital faces in the conflict setting, (ii) how the hospital responds to such challenges; (iii) determining what needs to improve with the hospital response to challenges. The results highlight the combination of conflict-related and routine challenges faced by the Hospital San Andrés ESE, such that the sudden shocks and disruptions to hospital activities generated by the conflict (e.g., due to death threats to personnel, disruption of supply chains, and damage to infrastructure) take place in an operational context burdened by financial constraints, infrastructure obsolescence, and managerial dysfunction. These conflict and routine challenges interact, creating a particularly difficult operating environment for the delivery of health services.

This study recognised the hospital employs 6 responses to address challenges: 1) Activation of emergency systems whereby the hospital joins forces with government security bodies to discuss challenges and find ways to address them. 2) Hospital managers plan and monitor threatened hospital functions and work internally or in negotiation with commercial parties to address challenges. 3) Activation of support networks where the hospital obtains or receives financial or in-kind support from private, non-government, and health system actors. 4) The hospital collaborates with voluntary groups who are citizens freely gathered to monitor hospital performance and seek solutions to problems. 5) The central government intervenes in hospital activities where the facility rescinds its autonomy to enhance administrative decision-making and allocation of resources, and 6) the hospital structures investment projects which involves the design and presentation of grants to government authorities to attain funding and manage operational problems. While these arrangements provide significant support for the hospital to sustain service delivery, further investment to strengthen these is needed.

CONCLUDING DISCUSSION. Hospitals operating in conflict settings face a combination of conflict and routine challenges that require tailored support arrangements to function adequately. Otherwise, desirable organisational forms – e.g., managerial, and financial autonomy – may not be meaningful or helpful in such circumstances, and additional central government oversight, as well as financial and in-kind support, may be required. To sustain services, hospitals also require skilful managers to recognise and mitigate

challenges along with the nurture and expansion of support networks with third parties within or outside the health system.

LAY SUMMARY

Armed conflicts are social phenomena associated with great human suffering and material loss. The available research studying health providers or simply referred to as facilities/organisations/institutions that render health services in conflict settings, informs that such contexts pose serious challenges for these entities. The challenges range from death threats to murder of staff, along with destruction of facilities, equipment, or supplies.

Still, the available research has not focused to investigate how hospitals continue to deliver health services when they operate in conflict environments and particularly of protracted nature, where conflict lasts for several years and is becoming more common globally. As a result, there is insufficient information about the activities these organisations use to manage the challenges. Relatedly, there is not much information about the support these facilities receive to address operational problems, and not much is known about the resources they use to face problems.

Given the limitations recognised in the literature, this study aimed to investigate how hospitals sustain or continue to deliver health care in situations of protracted armed conflict. This project chose to study a hospital called Hospital San Andrés ESE located in the municipality of Tumaco, Colombia – an area experiencing protracted conflict. Colombia is an upper-middle-income country in Latin America that has endured conflict in last the six decades and currently, this problem manifests more intensely in Tumaco. Hospital San Andrés ESE is Tumaco's main hospital, and it is a government-owned facility with operational autonomy. This latter part means the hospital has decision rights to manage its resources and it self-funds its activities.

This study employed a case study methodology to achieve the project's aim. Case study is a qualitative approach to conducting research which allows the use of interviews and documentary analysis to comprehend in more detail the issue studied. For this project, the researcher conducted 48 interviews with various stakeholders including hospital staff, government authorities, non-governmental organisations, and humanitarian actors knowledgeable of the conflict in Tumaco and the operation of Hospital San Andrés ESE. Concomitantly, this project examined documents produced by the actors just

mentioned to complement the information obtained from research participants about the topic studied.

To understand how a hospital, and particularly Hospital San Andrés ESE, continues to deliver health care in a protracted conflict setting, it was necessary to do the following three activities during the research. First, examine the challenges the hospital endured to operate in the conflict environment. Second, understand how the hospital responds or handles the challenges that threaten its service delivery. Third, determine with the help of research participants what could be improved with the different strategies the hospital employs to handle the challenges.

The study revealed the hospital faces a combination of routine and armed conflict challenges. The routine challenges are the product of the typical operation of the facility in a resource-scarce context including financial constraints, scarcity of personnel, supplies, or managerial dysfunction. The conflict challenges involve threats to personnel, facility destruction, or fear to work among staff. Both types of challenges can interact making a conflict setting a particularly difficult context for a hospital to operate.

This research discovered the hospital depends on six strategies or responses to manage the challenges. 1) The hospital activates emergency systems which involves its cooperation with government security bodies to identify critical conflict-related challenges and devise measures to address them. 2) The hospital managers monitor hospital functions to identify problems and plan measures to handle them. 3) the hospital receives support from central government authorities to strengthen oversight on resource allocation and managerial decision-making to recognise and handle problems. 4) The hospital activates support networks or relationships with non-profit, health system, and commercial actors to obtain help with resources to manage crises. 5) The hospital collaborates with local citizens who work voluntarily to monitor hospital performance to identify problems and mitigating measures. Finally, 6) the hospital writes and submits grants to the government to access extensive financial resources to alleviate operational problems. While all these measures significantly help the hospital to continue providing care in the conflict setting, there is a need for more financial and in-kind investment to strengthen them.

Overall, hospitals in conflict settings face routine and conflict challenges that require tailored support to continue their activities in such areas. Similarly, the facilities need skilful managers to identify and manage challenges and, they must strengthen their relationships with other actors/organisations within or outside the health system to obtain support to handle difficulties.

ACKNOWLEDGEMENTS

This project would not be possible without the support and encouragement of several individuals, institutions, and family members.

I would like to express my gratitude to the project supervisors Dr. Mark Hellowell and Dr. Emily Adrion. It has been a privilege to work alongside them. I want to thank their commitment to this research, along with their stimulating critique, guidance, and patience. I truly appreciate Dr. Adrion's in-depth revisions and tips on how to improve issues.

I want to thank the Colombian government and particularly the province of Nariño through its Science, Technology, and Innovation Fund and its administrator Fundación CEIBA. They were responsible for funding the entire PhD studies in Edinburgh. I am indebted to the people of Nariño, and I hope this research helps to advance its health services.

I would like to thank the support provided by my family members. My parents Arturo Fidel Diaz and Eufemia Velásquez encouraged throughout the PhD studies and helped me in any need. I thank the cheer provided by Rosario, Segundo, Daniela, Camilo, Lorena Díaz, Jesús Rosales, Zoraida Velásquez, Carlos Santander. You made me realise the work I do is important and inspiring. Special thanks to my cousin Diana Diaz who advised me during stressful moments. Diana, I am confident our beloved mother/aunt and grandma are looking out for us anywhere they are.

I want to thank the work, patience, and support of the Paredes Arturo Family. Doña Stella, Vicky, Nayibe, Sirley, Camila, Nicolás, and Vicente have been key figures during Allison's childhood. I especially thank Vidy Paredes for being a hard-working mother to Allison.

I thank all the people who participated in this research as informants, particularly from Hospital San Andrés ESE. They were generous and helpful to accomplish this study.

Finally, I would like to express my gratitude to friends and proofreaders who made this PhD a tolerant journey through deep or fun conversations. Those thanks go to Bryce Zedalis, Martha Castillo, Ashlee Christoffersen, Nancy Wessel, Mary Taylor, Doug Moscaret, Yadi Meza, John y Servio Villota, Luisa Villota, Jenifer Quintero, Javier Rosero, Edgar Burbano, Martha Liliana Ruano and family.

CONTENTS

| | |
|--|-------------|
| DECLARATION OF ORIGINALITY | I |
| DEDICATION | II |
| ABSTRACT | III |
| LAY SUMMARY | VI |
| ACKNOWLEDGEMENTS | IX |
| LIST OF TABLES | XIII |
| LIST OF FIGURES | XIV |
| LIST OF MODELS | XIV |
| ABBREVIATIONS AND ACRONYMS | XV |
| | |
| CHAPTER 1. INTRODUCTION | 1 |
| <hr/> | |
| 1.1. PROJECT DEFINITIONS AND RELEVANT ISSUES | 3 |
| 1.1.1. DEFINITION OF A HOSPITAL | 3 |
| 1.1.2. COLOMBIA'S HEALTH SYSTEM AND HOSPITAL SAN ANDRÉS ESE | 4 |
| 1.2. ARMED CONFLICT: DEFINITION, CLASSIFICATIONS, THE COLOMBIAN EXPERIENCE, AND CONSEQUENCES OF CONFLICT. | 14 |
| 1.2.1. DEFINITION OF ARMED CONFLICT | 14 |
| 1.2.2. COLOMBIA'S ARMED CONFLICT: A SYNOPSIS AND CLASSIFICATION | 17 |
| 1.2.3. TUMACO: AN INSIGHT OF COLOMBIAN'S 'NEW' WAR CYCLE | 19 |
| 1.2.4. THE CONSEQUENCES OF ARMED CONFLICTS | 22 |
| 1.3. THE PROJECT RATIONALE, AIM AND OBJECTIVES | 23 |
| 1.4. THE STRUCTURE OF THE THESIS | 31 |
| | |
| CHAPTER 2. LITERATURE REVIEW | 32 |
| <hr/> | |
| 2.1. METHODS | 32 |
| 2.2. RESULTS | 39 |
| 2.2.1. GENERAL FEATURES OF THE STUDIES | 39 |
| 2.3. SYNTHESISING THE FINDINGS | 42 |
| 2.3.1. THE CHALLENGES | 43 |
| 2.3.1.1. Financing | 43 |
| 2.3.1.2. Leadership and governance | 45 |
| 2.3.1.3. Medical products and technologies | 48 |
| 2.3.1.4. Health care workforce | 50 |
| 2.3.1.5. Service delivery | 55 |
| 2.3.1.6. Information systems | 63 |
| 2.3.2. ACTIVITIES HEALTH PROVIDERS EMPLOY TO FACE THE CHALLENGES | 64 |
| 2.4. DISCUSSION | 67 |
| 2.5. CONCLUSION | 71 |

CHAPTER 3. RESEARCH DESIGN AND METHODS **72**

| | |
|---|------------|
| 3.1. THE PROJECT'S PHILOSOPHICAL UNDERPINNINGS | 72 |
| 3.2. RESEARCH DESIGN | 74 |
| 3.2.1. CASE STUDY RESEARCH DESIGN | 74 |
| 3.2.2. SELECTING THE CASE TO STUDY/UNIT OF ANALYSIS | 76 |
| 3.3. DATA COLLECTION METHODS | 81 |
| 3.3.1. SEMI-STRUCTURED INTERVIEWS | 81 |
| 3.3.1.1. Conducting the semi-structure interviews | 82 |
| a. The population studied | 82 |
| b. The Sampling of participants | 84 |
| c. Access and recruitment of interviewees | 93 |
| d. Operationalisation of the interviews | 95 |
| e. Anonymity of participants | 98 |
| 3.3.2. DOCUMENTARY ANALYSIS | 99 |
| 3.3.2.1. The Document Collection | 100 |
| 3.4. ETHICS AND INFORMATION MANAGEMENT | 103 |
| 3.4.1. ETHICS | 103 |
| 3.4.2. INFORMATION MANAGEMENT | 104 |
| 3.5. THE THEORY TO GUIDE THE CASE STUDY: THE EVERYDAY RESILIENCE FRAMEWORK | 104 |
| 3.5.1. THEORETICAL BACKGROUND: THE CONCEPT OF RESILIENCE AND THE ORIGINS AND DETAILS OF ERF | 105 |
| 3.5.2. THE EVERYDAY RESILIENCE FRAMEWORK IN THE EMPIRICAL LITERATURE AND LIMITATIONS | 114 |
| 3.6. DATA ANALYSIS | 117 |
| 3.6.1. THE DATA ANALYSIS STRATEGY | 117 |
| 3.6.2. THE DATA ANALYSIS: METHODS AND TOOLS | 118 |
| 3.7. REFLEXIVITY AND BIAS MITIGATION | 122 |
| 3.8. CONCLUSION | 127 |

CHAPTER 4. RESULTS: THE CHALLENGES AFFECTING HOSPITAL SAN ANDRÉS ESE IN TUMACO, COLOMBIA **128**

| | |
|--|------------|
| 4.1. THE CHALLENGES | 129 |
| 4.1.1. THE ROUTINE CHALLENGES | 129 |
| 4.1.1.1. Finances | 129 |
| 4.1.1.2. Leadership and governance | 134 |
| 4.1.1.3. Medical products and technologies | 136 |
| 4.1.1.4. Healthcare workforce | 138 |
| 4.1.1.5. Service delivery | 140 |
| 4.1.1.6. Information systems | 149 |
| 4.1.2. THE ARMED CONFLICT CHALLENGES | 150 |
| 4.1.2.1. Finances | 150 |
| 4.1.2.2. Leadership and governance | 153 |
| 4.1.2.3. Medical products and technologies | 155 |

| | |
|-------------------------------|------------|
| 4.1.2.4. Healthcare workforce | 157 |
| 4.1.2.5. Service delivery | 163 |
| 4.1.2.6. Information systems | 168 |
| 4.2. CONCLUSION | 168 |

CHAPTER 5. RESULTS: THE HOSPITAL RESPONSE TO THE CHALLENGES **171**

| | |
|---|------------|
| 5.1. THE HOSPITAL RESPONSES TO THE CHALLENGES | 171 |
| 5.2. ANALYSING THE RESPONSES TO THE CHALLENGES | 173 |
| 5.2.1. RESPONDING TO THE HOSPITAL FINANCIAL CHALLENGES | 176 |
| 5.2.2. RESPONDING TO THE LEADERSHIP AND GOVERNANCE CHALLENGES | 191 |
| 5.2.3. RESPONDING TO THE MEDICAL PRODUCTS AND TECHNOLOGIES CHALLENGES | 199 |
| 5.2.4. RESPONDING TO THE HOSPITAL WORKFORCE CHALLENGES | 212 |
| 5.2.5. RESPONDING TO THE HEALTH SERVICE DELIVERY CHALLENGES | 226 |
| 5.2.6. RESPONDING TO THE INFORMATION SYSTEMS CHALLENGES | 244 |
| 5.3. CONCLUSION | 249 |

CHAPTER 6. RESULTS: OPPORTUNITIES FOR IMPROVING THE HOSPITAL RESPONSE TO THE CHALLENGES **250**

| | |
|---|------------|
| 6.1. THE OPPORTUNITIES FOR IMPROVEMENT | 250 |
| 6.1.1. IMPROVING THE EMERGENCY SYSTEMS | 250 |
| 6.1.2. IMPROVE THE SUSTAINABILITY OF THE HOSPITAL INTERVENTION PROCESS | 263 |
| 6.1.3. STRENGTHENING HOSPITAL FINANCES | 266 |
| 6.1.4. ENHANCING HOSPITAL SERVICE DELIVERY | 270 |
| 6.1.5. STRENGTHENING HOSPITAL STAFF | 275 |
| 6.1.6. IMPROVING HOSPITAL NETWORKING | 277 |
| 6.1.7. STRENGTHENING THE WORK OF VOLUNTARY AND HUMANITARIAN ORGANISATIONS | 279 |
| 6.1.8. STRENGTHENING HOSPITAL CAPABILITIES TO STRUCTURE INVESTMENT PROJECTS | 282 |
| 6.2. CONCLUSION | 285 |

CHAPTER 7. CONCLUDING DISCUSSION **286**

| | |
|--|------------|
| 7.1. THE RESEARCH FINDINGS | 286 |
| 7.2. CONTRIBUTIONS TO THE LITERATURE AND POLICY | 289 |
| 7.2.1. CONTRIBUTION TO THE LITERATURE | 289 |
| 7.2.2. CONTRIBUTIONS TO POLICY AND DECISIONMAKERS | 314 |
| 7.2.2.1. Lessons for Global Health Policy | 314 |
| 7.2.2.2. Recommendations to local policymakers | 328 |
| 7.3. STUDY LIMITATIONS | 330 |
| 7.4. RECOMMENDATIONS FOR FUTURE RESEARCH | 332 |

| | |
|---|-----|
| APPENDIX 1. HOSPITAL SAN ANDRES ESE MAIN AND COMPLEMENTARY SERVICES | 350 |
| APPENDIX 2. THE NODES INTEGRATING NARIÑO'S PROVIDER NETWORK | 351 |
| APPENDIX 3. TUMACO'S HEALTH SYSTEM | 352 |
| APPENDIX 4. DETAILS ABOUT THE LITERATURE REVIEWED | 354 |
| APPENDIX 5. CORRESPONDENCE WITH HOSPITAL SAN ANDRÉS ESE | 360 |
| APPENDIX 6. LETTER SENT TO SUPPORTING ACTORS FOR PARTICIPATION – GENERIC VERSION | 363 |
| APPENDIX 7. TOPIC GUIDES | 364 |
| APPENDIX 8. ETHICS COMMITTEE APPROVAL | 369 |
| APPENDIX 9. INFORMED CONSENT FORM | 370 |
| APPENDIX 10. BRAUN AND CLARKE (2006) SIX PHASES GUIDING THE PROJECT'S THEMATIC ANALYSIS (TA) | 374 |
| APPENDIX 11. GENERAL VERSION OF THE VISUAL MODEL USED TO UNDERSTAND THE HOSPITAL RESPONSE TO THE CHALLENGES | 375 |
| APPENDIX 12. FORMAT TO REPORT THE MEDICAL MISSION INFRACTIONS IN COLOMBIA ACCORDING TO RESOLUTION 4481 OF 2012 | 377 |
| APPENDIX 13. THE COGNITIVE, BEHAVIOURAL, AND CONTEXTUAL CAPACITIES UNDERPINNING THE HOSPITAL RESPONSE TO THE CHALLENGES | 378 |

LIST OF TABLES

| | |
|--|-----|
| TABLE 1.1. HEALTH FACILITIES IN TUMACO, COLOMBIA | 13 |
| TABLE 1.2 CLASSIFICATIONS OF ARMED CONFLICT: TYPE AND CATEGORY | 16 |
| TABLE 2.1 SEARCH TERMS AND SEARCH STRATEGIES TO FIND THE LITERATURE | 35 |
| TABLE 3.1 CRITERIA TO SELECT A PARTICIPANT AS OBSERVER..... | 85 |
| TABLE 3.2 THE OBSERVERS GROUP SAMPLE..... | 86 |
| TABLE 3.3 THE EXTERNAL SUPPORTING ACTORS GROUP | 88 |
| TABLE 3.4 HOSPITAL SAN ANDRÉS ESE STAFF DISTRIBUTED ACCORDING TO JOB NATURE..... | 90 |
| TABLE 3.5 SAMPLING CRITERIA TO SELECT HOSPITAL PARTICIPANTS | 91 |
| TABLE 3.6 SAMPLE OF INTERNAL SUPPORTING ACTORS | 92 |
| TABLE 3.7 TOTAL NUMBER OF INTERVIEWS CONDUCTED IN THE STUDY | 93 |
| TABLE 3.8 ANONYMITY SYSTEM FOR PARTICIPANTS..... | 99 |
| TABLE 3.9 DOCUMENTS SELECTED FOR ANALYSIS | 102 |
| TABLE 3.10 THE THEMES DEVELOPED DURING THE STUDY..... | 121 |
| TABLE 4.1 THE FOUR MAIN CAUSES FOR OUTPATIENT, EMERGENCY, AND INPATIENT CARE IN HOSPITAL SAN ANDRÉS ESE, TUMACO, COLOMBIA..... | 145 |
| TABLE 4.2 THE ROUTINE AND ARMED CONFLICT CHALLENGES AFFECTING HOSPITAL SAN ANDRÉS ESE..... | 170 |
| TABLE 5.1 THE HOSPITAL RESPONSES TO CHALLENGES..... | 172 |

LIST OF FIGURES

| | |
|--|-----|
| FIGURE 1.1 COLOMBIA'S HEALTH SYSTEM USING HOSPITAL SAN ANDRÉS ESE PERSPECTIVE | 11 |
| FIGURE 1.2 TIMELINE OF CHANGES IN HOSPITAL GOVERNANCE | 14 |
| FIGURE 1.3 TUMACO'S GEOGRAPHICAL LOCATION WITH RESPECT TO COLOMBIA AND NARIÑO..... | 20 |
| FIGURE 2.1 FLOW DIAGRAM FOR SELECTING THE LITERATURE | 38 |
| FIGURE 3.1 THE WHO BUILDING BLOCKS | 78 |
| FIGURE 5.1 HOSPITAL SYSTEM BUILDING BLOCKS BENEFITING FROM THE RESPONSE TO CHALLENGES | 173 |
| FIGURE 5.2 MEDICAL MISSION AND ICRC EMBLEMS AND USE | 205 |

LIST OF MODELS

| | |
|--|-----|
| MODEL 5.1 THE HOSPITAL RESPONSES TO THE FINANCIAL CHALLENGES | 177 |
| MODEL 5.2 THE HOSPITAL RESPONSE TO THE LEADERSHIP AND GOVERNANCE CHALLENGES | 191 |
| MODEL 5.3 THE HOSPITAL RESPONSES TO THE CHALLENGES WITH MEDICAL PRODUCTS AND TECHNOLOGIES | 200 |
| MODEL 5.4 THE HOSPITAL RESPONSES TO THE WORKFORCE CHALLENGES..... | 213 |
| MODEL 5.5 THE HOSPITAL RESPONSES TO SERVICE DELIVERY CHALLENGES..... | 227 |
| MODEL 5.6 THE HOSPITAL RESPONSES TO INFORMATION SYSTEM CHALLENGES | 245 |

ABBREVIATIONS AND ACRONYMS

| | |
|------------|--|
| ADRES: | <i>Administradora de los Recursos del Sistema General de Seguridad Social en Salud – Colombia’s Health System General Fund</i> |
| AUC: | <i>Autodefensas Unidas Colombia – United Self-defence forces of Colombia.</i> |
| BACRIM: | <i>Bandas Criminales – Criminal Groups</i> |
| CAQDAS: | <i>Assisted Qualitative Data Analysis Software</i> |
| CEO: | <i>Chief Executive Officer</i> |
| CGD: | <i>Centre for Global Development</i> |
| CRUE: | <i>Centro Regulador de Urgencias y Emergencias – Centre for regulating emergencies and disasters</i> |
| DIAN: | <i>Dirección de Impuestos y Aduanas Nacionales or the Colombian National Tax Agency</i> |
| DRC: | <i>Democratic Republic of Congo</i> |
| ECOPETROL: | <i>Empresa Colombiana de Petróleos</i> |
| ELN: | <i>Ejército de Liberación Nacional – National Liberation Army</i> |
| EPL: | <i>Ejército Popular de Liberación – Popular Liberation Army</i> |
| EPS: | <i>Empresas Promotoras de Servicios de Salud</i> |
| ERF: | <i>The Everyday Resilience Framework</i> |
| ESE: | <i>Empresas Sociales del Estado</i> |
| ESMAD: | <i>Escuadrones Móviles Antidisturbios – Mobile Anti-Disturbance Squadrons</i> |
| FARC: | <i>Fuerzas Armadas Revolucionarias de Colombia</i> |
| FONSAET: | <i>Fondo de Salvamento y Garantías del Sector Salud — General Rescue fund for the Colombian health system</i> |
| HIK: | <i>The Heidelberg Institute for International Conflict Research</i> |
| HRW: | <i>Human Rights Watch</i> |
| ICONTEC: | <i>Instituto Colombiano de Normas Técnicas – National Institute for Technical Guidelines</i> |
| ICRC: | <i>International Committee of the Red Cross</i> |

| | |
|--------------|--|
| IISS: | <i>International Institute for Strategic Studies</i> |
| ISS: | <i>Instituto de Seguros Sociales -Social Security Institute</i> |
| INVIMA: | <i>Instituto Nacional de Vigilancia de Medicamentos y Alimentos – National Institute for Medication Monitoring</i> |
| IPS: | <i>Instituciones Prestadoras de Servicios de Salud</i> |
| LMICs: | <i>Low- and Middle-Income Countries.</i> |
| M-19: | <i>Movimiento 19 de Abril – M-19 Movement</i> |
| MINHACIENDA: | <i>Ministerio de Hacienda or The Ministry of Finance</i> |
| MINSALUD: | <i>Ministerio de Salud or The Ministry of Health</i> |
| MSF: | <i>Médicins Sans Frontières – Doctors without borders</i> |
| P1: | <i>Interviewer/Researcher</i> |
| P2: | <i>Interviewee</i> |
| PAHO: | <i>Pan-American Health Organisation</i> |
| PPNA: | <i>Población Pobre No Afiliada – Poor uninsured individuals/patients</i> |
| SENA: | <i>Servicio Nacional de Aprendizaje – National system for technical training</i> |
| SISBEN: | <i>Sistema de Selección de Beneficiarios Para Programas Sociales</i> |
| SUPERSALUD: | <i>Superintendencia Nacional de Salud, National Superintendence for Health.</i> |
| TA: | <i>Thematical Analysis</i> |
| UHC: | <i>Universal Health Coverage</i> |
| UPS: | <i>Uninterruptible Power Supply Units</i> |
| WHO: | <i>World Health Organisation</i> |

CHAPTER 1.INTRODUCTION

Hospitals, according to the Centre for Global Development (CGD) (2015b), are the “backbone” of global health systems. Hospitals facilitate the training of the medical workforce, set the parameters of health systems performance, and have become the symbol to identify such systems (CGD, 2015b). Hospitals depend upon certain prerequisites in their operating environment to deliver quality and safe services to patients. These include an adequate availability of technological resources, human expertise, and political stability so patients and workers can interact safely (ICRC, 2011). However, The International Committee of the Red Cross (ICRC), in a landmark report called “*Health Care in Danger*” (2011) argued the conditions just mentioned are not consistently found throughout the world, with a particular concern in countries that struggle with armed conflict. Armed conflict, often product of unreconcilable differences among people within or across countries on economic, political, or cultural issues, can hamper the prerequisites health providing organisations, including hospitals, need to operate. For example, within conflict settings hospitals can face significant challenges such as the devastation of their physical infrastructure or technology. Similarly, armed conflict can hamper the hospital’s availability of key resources such as drugs needed to deliver care. More importantly, armed conflicts create significant instability and harm upon people who visit or work in hospitals.

The Heidelberg Institute for International Conflict Research (HIIC) (2021) states that 29 countries in the world endure armed conflict in the present day. Among those countries is Colombia, an upper-middle-income country located in Latin America. Colombia has struggled with this problem for almost six decades constituting a protracted phenomenon which its resolution is still unclear. In 2016, the Colombian government and its main rival the left-wing guerrilla group, the *Fuerzas Armadas Revolucionarias de Colombia* (FARC), signed a historic peace accord that created high expectations in Colombia and abroad to resolve historical problems (Schipani, 2016). The deal mandated that the FARC would surrender arms and demobilise. Nevertheless, the direct outcome of the accords contradicted expectations and increased the intensity of the conflict. Organised militias, particularly formerly demobilised FARC factions in disagreement with the peace accords, sought to control the geographical areas the FARC left behind after

its demobilisation. The territories that FARC controlled had thriving and profitable illicit economies which created a powerful incentive for illegal armies to unleash a bloody war between themselves, the government, and civilians to dominate such territories (Pares, 2018b). Tumaco, a municipality of Colombia and port city located in the south-western province of Nariño has been the most affected territory with this war resurgence (Pares, 2018b). Tumaco has become a key area for criminal organisations to regulate as it is strategically located in an zone that facilitates the production and commercialisation of narcotics (International Crisis Group, 2017; Pares, 2018b). Tumaco now faces a horrendous violence that constitutes a significant threat for key social organisations operating in the municipality including the main regional hospital, called Hospital San Andrés ESE.

There is a general recognition in the academic literature – both from Colombia and the world-- regarding the several challenges health service providers¹, particularly hospitals, face in armed conflict settings (ICRC, 2011; Safeguarding Healthcare in Conflict, 2019). However, the existent research, surprisingly, has not focused on studying how providers, and specifically hospitals, sustain delivery of health care in conditions of protracted armed conflict like Colombia's. This lack of research creates shortcomings with our understanding about the different activities, strategies, capacities or resources and constraints hospitals face while addressing the various challenges in armed conflict settings to deliver health care. Interestingly, the Colombian government recognised that Tumaco's main hospital – Hospital San Andrés ESE – has managed to provide care amid the conflict in the area (IDSN, 2019). Therefore, this hospital in Tumaco constitutes in a valuable opportunity to conduct research aimed at understanding how hospitals sustain health care delivery in a protracted conflict setting.

Before engaging in a more detailed discussion on the research topic, it is necessary to clarify certain terminology and introduce key issues relevant to this study. First, this introductory chapter gives a definition of hospitals, explains how the Colombian health system works and provides insights on Hospital San Andres ESE. Then, it defines

¹ Service providers refers to organisations/institutions/facilities that deliver health care. Such facilities include primary level facilities to highly complex hospitals.

what an armed conflict means and gives a brief synopsis of the Colombian conflict and its effects on Tumaco. Subsequently, the rationale for the project will be presented, along with its aim and objectives. Finally, this chapter concludes by providing the overall structure of the thesis.

1.1. PROJECT DEFINITIONS AND RELEVANT ISSUES

1.1.1. Definition of a Hospital

As this research focused its analysis on understanding how hospitals sustain health care delivery in protracted conflict settings it was necessary a firm definition of what a hospital is. This research uncovered that it does not exist a full consensus on how to define hospitals. Both global health actors and countries have produced different definitions for such entities. One of the long-standing definitions globally for a hospital comes from the World Health Organisation (WHO) which considers these facilities as *“establishments intended for the treatment of diseases and injuries arising in the community; it ensures that persons suffering from degenerative diseases and [the] incapacitated find shelter and receive attention and it may also provide maternity care”* (WHO, 1957, p.4).

In Colombia, the legal framework governing the health care system considers hospitals as organisations that deliver health services with the help of specialised personnel and offer inpatient and outpatient care (Congreso de Colombia, 1993; Prada-Ríos et al., 2017). In this country, hospitals are classified according to three levels ranging from facilities providing basic specialised procedures (e.g., circumcisions), others providing intermediate services (e.g. surgery or intensive care) to complex subspecialised care (e.g., chemotherapy, organ transplants) (Congreso de Colombia, 1993). Hospitals in the Colombian context belong to a group called *Instituciones Prestadoras de Servicios de Salud (IPS)*. This group integrates all organisations that deliver health services, including public, private, and non-profit organisations. Public hospitals are called *Empresas Sociales del Estado (ESE)*. The acronym ESE stands for “State-owned Social Enterprise” and often goes at the end of an organisation’s name. This means that public hospitals are government facilities but enjoy managerial and financial autonomy.

Given the varying definitions of hospitals, this project searched for a definition that could serve as a 'bridge' between what the international community and Colombian authorities understand hospitals to be. The CGD has provided a definition linking these understandings, and this project adopts this definition. The CGD refers to hospitals as:

“Facilities that [mainly] provide inpatient [health] services, have at least 10 beds, operate and have staffing for continuous supervision of patients and delivery of medical care 24 hours a day, 7 days a week. Hospitals encompass many different types of patient-oriented activities — from basic inpatient services to all types of specialised care. Hospitals focus on advanced diagnostic and restorative medical services and ideally have linkages to other providers that ensure continuity of care.” (CGD, 2015b, p.6).

1.1.2. Colombia’s Health System and Hospital San Andrés ESE

Once this study defined what a hospital for this project means, it is necessary to explain the Colombian health system and give details on Hospital San Andrés ESE as these elements are key in this research. Each element is further elaborated below.

The Colombian health system: Policy developments, functionality, and current challenges

The development of the current health system in Colombia began in the early nineties in the context of an overarching government reform agenda that included decentralisation, privatisation, and economic liberalisation (Rosetti, 2000; Rosetti & Bossert, 2000). In Colombia, this overarching policy reform received the name of “*La Apertura Económica*” or the *Economic Liberalisation Process* (López Pineda, 2010). The economic liberalisation process was a neoliberal policy introduced by the Liberal Government of César Gaviria intended to instil efficiency across all socio-economic sectors of the country including health care. This reform championed more participation of the private sector to promote competition for the production and commercialisation of goods and services (López Pineda, 2010).

Colombia’s economic liberalisation policy received significant support and guidance from the World Bank and the IMF – the powerful financial and development organisations integrating the “Washington Consensus” (de Carvalho & Frisina Doetter, 2022). The Washington Consensus corresponds to an informal agreement between the previously mentioned institutions based in Washington D.C around policy prescriptions to

modernise developing economies. The policy prescriptions were mainly underpinned around free market ideology. This meant the policies were intended to promote competitive markets and increased participation of the private sector in socio-economic sectors of developing countries (de Carvalho & Frisina Doetter, 2022). To promote the role of the private sector in the economy and increased competition, the Washington Consensus would directly or indirectly advise developing countries, including Colombia, policies related to economic liberalisation and privatisation (de Carvalho & Frisina Doetter, 2022). Due to the economic liberalisation process carried out in Colombia, Juan Londoño, a former Ministry of Health for Colombia and an influential Latin American economist, considered that Colombia's health system evolved into what he called "Managed Competition in the Tropics" (Giuffrida et al., 2009). Basically, this meant that Colombia emulated the U.S. health system which significantly relies on private sector actors operating in regulated competition to deliver health care (Giuffrida et al., 2009).

Another element that propelled the health care reform in Colombia was the introduction of new political constitution in 1990. The new constitution required the government to guarantee health care access for all citizens (República de Colombia, 1991, p.49). Unfortunately, in the early 1990s an "old" government-run health system guaranteed health coverage to just 31.4% of the population (Garcia et al., 2009). Those who had access to health services just included people from privileged sectors of society. Two factors explained the incapacity of Colombia's old health system to guarantee universal health coverage: i) the government's poor management, and ii) insufficient funding (Garcia et al., 2009; Rosetti, 2000; Salazar, 1991).

Regarding the problems mentioned above, the first occurred because the government managed the entire health system through an entity called *Instituto de Seguros Sociales (ISS)* or Institute for Social Security. The main difficulties with the management process was the significant lack of transparency and accountability on the institute's administrative practices leading to severe misallocation of resources (Garcia et al., 2009; Salazar, 1991). For instance, the ISS would provide large payments to private medical suppliers presumably to fulfil vested interests while hospitals struggled with funding (Rosetti, 2000). Regarding the second problem the old health system faced, it

involved its incapacity to raise revenue to guarantee health coverage. The system did not have a financial pooling mechanism to fund the demand for health care (Garcia et al., 2009). Besides, the undiversified Colombian economy (which depended on coffee trade) did not ensure sufficient tax revenue to expand health coverage (Garcia et al., 2009; Salazar, 1991).

The problems outlined above and the new constitutional mandate for universal health coverage, led Colombian authorities to introduce drastic reforms to the health sector to improve service quality and fulfil the new constitutional requirements. The Ministry of Health, under the leadership of Juan Londoño and the technical assistance of the World Bank, were largely responsible for the reform process (Giuffrida et al., 2009; Rosetti, 2000). The reform's main goal was to harness the support of the private sector through the promotion of competitive health markets to improve coverage, quality, and efficiency in the system. Reformers considered that employing the private sector resources could alleviate most of the shortcomings Colombia endured with health care.

The health care reform in Colombia started when authorities introduced Law 10 of 1990 which transferred responsibility of coordinating and monitoring the health system to the decentralised governments referred as 'provinces' and 'municipalities' (Congreso de Colombia, 1990; Molina & Spurgeon, 2007). Thereafter, the government approved Law 100 of 1993 establishing *El Sistema General de Seguridad Social en Salud* or the General System for Social Security and Health (Congreso de Colombia, 1993). The Law 100 separated the delivery, insurance, and governance functions of the health system (Giuffrida et al., 2009, p. 80) and allowed the participation of private agents to nurture competition (Congreso de Colombia, 1993, Art.8). The private actors could participate in the provision or insurance of health services. At the time of writing, Colombia's health system continues to follow Law 100's configuration parameters.

The upcoming paragraphs will explain how Law 100 organised Colombia's health system functions by using Hospital San Andrés ESE perspective. This project uses Hospital San Andrés ESE because it is a central part for this research to understand how

a hospital sustains health care delivery in a protracted conflict setting². Similarly, this helps to comprehend how the broader health system is structured around the hospital. This explanation will focus on the health system key functions (service delivery, health insurance/financing, and governance) and gives details on constituent actors.

Service delivery

In Colombia, all organisations that deliver health care including Hospital San Andrés ESE belong to the delivery function of the health system. Colombia's Law 100 categorised all health service delivery facilities as *Instituciones Prestadoras de Salud (IPS)*. The IPS can be private, public, and non-profit organisations. Public hospitals enjoy financial and managerial autonomy from the government. During the health care reform process, the World Bank advised Colombian authorities (and several other nations throughout Latin-American) to grant autonomy for public hospitals to enhance their resource allocation, self-governance, and service quality (Berkley et al., 1993; Congreso de Colombia, 1993, 2015).

When the government of Colombia granted autonomy for public hospitals during the health reform process, it accepted limitations that could affect their functionality. The main problem is that autonomy policy requires public hospitals to become financially self-sufficient (Giuffrida et al., 2009; Harding & Preker, 2003). This means, it is expected hospitals fund their operations by selling services in the marketplace and engage payors through fully operational reimbursement processes (Giuffrida et al., 2009). Thus, this policy exposes public providers to the risk of not fulfilling financial obligations when market revenue is insufficient, or reimbursement mechanisms are defective. This happens because the government no longer provides financial support to hospitals when their budget is inadequate to meet financial demands (Harding & Preker, 2003). Certainly, the financial risk just mentioned is an issue Colombian public hospitals currently struggle with. By 2022, this problem has become so severe that the government proposed a deep reform of the current health system as it is no longer suitable to meet constitutional mandates (Semana, 2022). Similarly, when this research began to collect primary data to

² More details about the hospital are provided later in this section along with Chapter 3 and Appendix 1.

study Hospital San Andrés ESE operations, it evidenced the facility endured significant financial constraints which mainly stemmed from the health care reform process. In Chapter 4, this thesis provides details about the financial constraints the organisation has experienced and the different repercussions this problem has had on hospital activities.

Health insurance/financing

The organisations referred as *Empresas Promotoras de Servicios de Salud (EPS)*³ constitute Colombia's insurance sector and themselves are the system's health insurers. Hospital San Andrés ESE obtains financial resources selling most of its services to the EPS. By 2018, the health insurance sector covered 94.66% of the population for health care services (Ministerio de Salud y Protección Social, 2020; OECD, 2015). The EPS can be public or private and the latter are further divided into for-profit and non-profit organisations. The health insurance system is separated in two regimes: the contributory and the subsidised regimes. Every EPS can administer one or both insurance regimes. The contributory regime provides health coverage to all individuals who are formally employed within the public or private sectors of the economy. The subsidised regime covers poor individuals with no formal employment and who are monitored by a government means-assessment survey called SISBEN⁴. Every citizen determines enrolment to the insurance system choosing the EPS of their preference. The EPS pay Hospital San Andrés ESE after establishing a health service contract to deliver services to their enrolees and usually agree on fee-for-service payments. The hospital can establish other contract modalities to obtain revenue including capitation payments⁵.

The insurance regimes are funded in various ways. The contributory regime receives funding from monthly contributions of both formal employers and employees. These contributions are compulsory by law. The subsidised regime receives financing

³ In English, the name for the insurers could be Organisations for health promotion and coverage.

⁴ SISBEN: Sistema de selección de beneficiarios para programas sociales or system for selecting beneficiaries of social programmes.

⁵ A Capitation payment is a modality where the EPS agrees with the hospital to pay a fixed or global amount of money to the hospital to treat all its patients. The amount of money does not change depending on the number of services provided or the patients attended.

from taxes national and local authorities levy on products and services. The main taxes funding the health system are the nationally administered Value Added Tax (VAT) and taxes on tobacco and alcohol administered by local governments. Initially, all the insurance system resources are pooled in an autonomous national fund called ADRES⁶. This fund then directs revenue to the EPS for their insurance service through an annual capitation payment. Therefore, Colombia subsidises the demand for health care (Congreso de Colombia, 2015).

On top of the insurance regimes, Hospital San Andrés ESE can contract the provision of health services with an additional insurance sector called “the special regime”. This insurance sector guarantees health coverage to the following public employees: the military, police, schoolteachers, and staff working for the state-owned oil company ECOPETROL. All the entities just mentioned fund the special insurance system.

Hospital San Andrés ESE receives payments once it sends invoices of services delivered to people enrolled in the EPS or the entities overseeing the special regime (e.g., police, military). The EPS oversees its payments to the hospital through invoice audits and an explicit exclusion list the government established telling the EPS what services they can pay for (OECD, 2015). The exclusion list relies on a government cost-effectiveness analysis of health care products and technologies (Ministerio de Salud y Protección Social, 2017).

Governance

Several actors at the national and provincial level govern and regulate the health system. At the national level, the main actors are the Ministry of Health (MINSALUD) and the National Superintendence for Health (SUPERSALUD). The role of these entities is to define health system policy guidelines, its goals, and monitor performance. At the local and provincial levels, the municipal and provincial health authorities are the key actors governing the system. The main functions of these latter entities are to monitor and control that providers and insurers comply with minimum operating standards and effectively

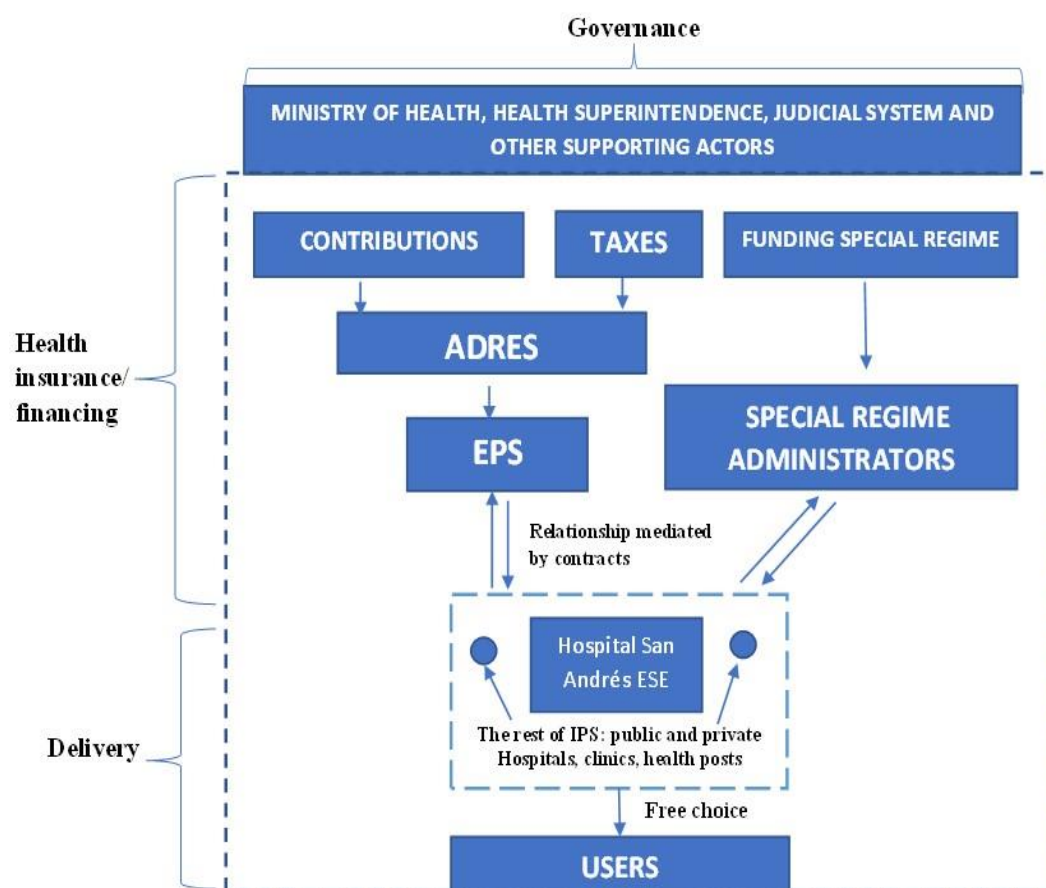
⁶ *Administradora de los Recursos del Sistema General de Seguridad Social en Salud.*

meet the local population health needs. The entities mentioned above receive support on their monitoring efforts from the following additional actors:

1. The National Institute for Medication Monitoring (INVIMA)
2. The National Tax Agency (DIAN)
3. The Ministry of Finance (MINHACIENDA)
4. The Judicial System
5. The National Institute of Technical Guidelines (ICONTEC)

INVIMA monitors quality standards on medical products and technologies and gives approval for use. DIAN monitors and collects the taxes for the insurance system. MINHACIENDA works in conjunction with the Ministry of Health to develop the annual budget for the health sector. The judicial system, with its main three agencies called the Comptroller (CONTRALORÍA), the Attorney General's Offices (FISCALIA) and the Inspector's Bureau (PROCURADURÍA) have the role to identify criminal activities on financial or administrative matters within the health system. Finally, the ICONTEC is an entity responsible to oversee the functionality of providers and insurers that have fulfilled accreditation standards. Figure 1.1 (next page) depicts Colombia's health system using Hospital San Andrés ESE perspective.

Figure 1.1 Colombia's health system using Hospital San Andrés ESE perspective



Source: Author's authorship adapted from Guerrero, et al (2011)

Note:

EPS: Health insurers referred as Empresas Promotoras de Salud,

IPS: Health care providers referred as Instituciones Prestadoras de Salud,

ADRES: Health care fund - Administradora de los Recursos del Sistema General de Seguridad Social en Salud

Double way arrows: Exchange between actors using the market system.

Outer dotted line: The governance function

Inner dotted line: The IPS market

The health system current challenges

Despite Colombia's significant accomplishments in health care coverage and providing an equal basket of health services between the contributory and subsidised insurance regimes (OECD, 2015, p.11), it still faces important challenges. The main issues revolve around inefficiencies with the EPS system and the operation of public health providers (including hospitals). Both issues are further discussed below.

Regarding the problems with the EPS, an OECD commission in Colombia informed that EPS have become "financial clearing houses" creating significant economic

pressures to the health system (OECD, 2015). Essentially, in the last 20 years the EPS have not been able to adequately reimburse providers for their services. By 2022, the Colombian Association of Hospitals and Clinics (ACHC) informed the EPS owed to public and private hospitals 13.8 billion COP (about USD \$2,910 million) (ACHC, 2022). Of such debt, 56% (around 7.7 billion COP) corresponded to overdue obligations or liabilities not paid within 60 days — the maximum time legally established for the EPS to pay all their obligations⁷. Furthermore, the EPS do not engage in effective contracting with providers and only are agreeing on fee-for-service-payments (OECD, 2015, p.11). Insurers also inadequately manage population clinical risks, do not monitor provider performance, nor incentivise population enrolment to health prevention programmes (OECD, 2015, p.14). Lastly, the media and government controlling agencies have reported cases of financial mismanagement within the EPS showing the government’s weaknesses to monitor these organisations (Bernal, & Gutiérrez, 2012; El País, 2015).

Concerning the problems with providers, studies in Colombia (Orozco, 2015) evidenced these actors, particularly public sector hospitals, face poor productivity. Hospitals have reported lack of sustained investments in capital and technological assets not allowing them to significantly improve service delivery. The main reason on why this problem has occurred, corresponds to their inability to obtain reliable payment streams from the EPS for the services provided (Orozco, 2015).

Hospital San Andrés ESE: Key insights

Complementing the information provided above, this subsection details Hospital San Andrés ESE explaining key characteristics and governance developments.

Hospital San Andrés ESE is a public hospital that provides health services to both children and adults and its formal constitution dates back since 1960 (Hospital San Andrés E.S.E., 2022a). The facility leads the service delivery function of the health system for Tumaco and operates alongside other public and private facilities that mostly deliver basic primary health services. Table 1.1 lists the providers operating in Tumaco.

⁷ Law 1122 of 2007 stipulates this timeframe for EPS to clear or pay all their debts with providers.

Table 1.1. Health facilities in Tumaco, Colombia

| FACILITIES | LEVELS OF CARE | OWNERSHIP NATURE |
|------------------------------------|-------------------|--------------------------------------|
| Hospital San Andrés E.S.E. | Secondary care | Public/Social State-owned enterprise |
| Centro Hospital Divino Niño E.S.E. | Primary care | Public/Social State-owned enterprise |
| Clínica Puente del Medio S.A.S. | Intermediate care | Private |
| IPS Los Ángeles S.A.S. | Primary care | Private |

Source: Provincial health authority of Nariño — Document for health system integration and planning (2014).

Hospital San Andrés ESE is the main and only hospital in Tumaco categorised as a secondary level facility. The hospital’s main services are four including i) Inpatient care, ii) Outpatient care, iii) Emergency care, and iv) Surgery. The complementary services of the facility correspond to medical diagnostics and ambulance referral⁸. Since 2019, the hospital has operated with 185 staff including 4 senior management positions (The Chief Executive Office - CEO, the financial and clinical managers along with the head for internal audit), 108 clinical professionals and 73 administrative personnel.

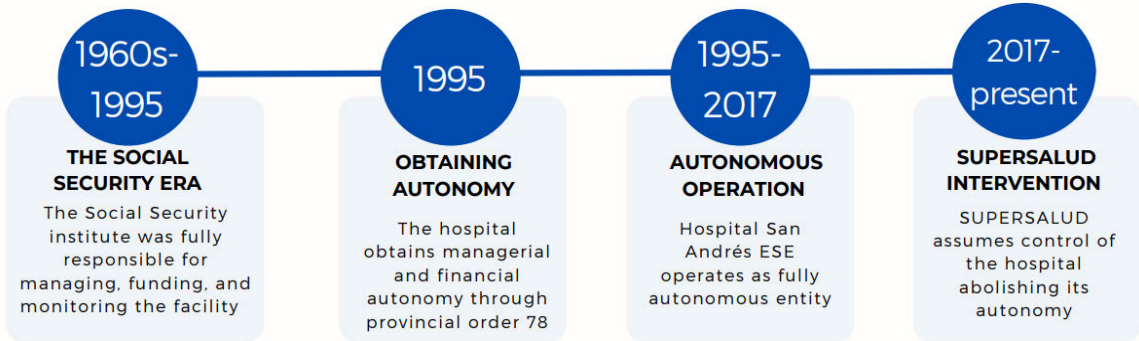
Nariño’s provincial health authority, which has property over the hospital and monitors its operations, assigned Hospital San Andrés ESE as the main referral centre for health facilities operating in Tumaco and other nine nearby municipalities. This requirement responds to a provincial mandate that divided the provider network in regional nodes to plan and manage the patients’ referral process. Hospital San Andrés ESE leads the western node (Appendix 2 outlines the providers’ regional nodes). The hospital receives patients from health facilities of the following municipalities: Barbacoas, Pizarro, Magüí, El Charco, Mosquera, Olaya Herrera, Francisco Pizarro, Roberto Payán and Santa Bárbara (Refer to Appendix 2) (IDSN, 2014). Hospital San Andrés ESE must refer patients to Nariño’s capital city Pasto when they require complementary services. For this process, the hospital can rely on the EPS and *Centro Regulador de Urgencias y Emergencias* (CRUE) or the Centre for regulating Emergency and Disasters — an office within the provincial health authority. These entities help coordinating patient’s referral to

⁸ Appendix 1 provides a detailed hospital service portfolio providing information about the specific services delivered in each main service.

Pasto from Tumaco (See Appendix 2 for further details). The hospital obtains financial resources by selling services to the EPS often through fee-for-service payments models. Appendix 3 gives insights about the different EPS operating in Tumaco and the overall configuration of the health system in the area.

Before Law 100 of 1993, the Social Security Institute was responsible to manage, fund and monitor Hospital San Andrés ESE. In 1995, the facility received managerial autonomy as part of the health care reform taking place in the country and the provincial health authority received ownership of the facility. The hospital operated with a high degree of autonomy until 2017 where the CEO and personnel were accountable to an internal board of directors. By 2017, the central government decided to directly intervene hospital operations through Supersalud due to poor performance product of high debt and managerial dysfunction. By the time of writing this project, Supersalud was still responsible for the hospital activities. The Supersalud intervention established a governance structure where it directly monitors hospital functions and provided to the CEO autonomy for resource allocation and hiring of personnel. Below is offered a timeline mentioning key events that impacted the hospital governance over time.

Figure 1.2 Timeline of changes in hospital governance



1.2. ARMED CONFLICT: DEFINITION, CLASSIFICATIONS, THE COLOMBIAN EXPERIENCE, AND CONSEQUENCES OF CONFLICT.

1.2.1. Definition of Armed Conflict

As this research focuses its study on hospitals operating in armed conflict settings, a firm definition of what constitutes an armed conflict is required. Similarly, to the concept of a hospital, the concept of armed conflict is a highly debated issue in academic circles

and a full consensus has yet not been possible. For instance, the Uppsala Conflict Data Program (2021) refers to conflict as a “contested incompatibility” between parties on an issue who recur to arms to address it. The ICRC (2009), meanwhile, considers armed conflicts exist when there is armed confrontation between the armed forces of states or non-state actors on a certain issue.

This research decided to use the International Institute for Strategic Studies (IISS) definition for armed conflict after a broad review of the literature defining this phenomenon. The institute considers armed conflict as **“a sustained contest [on a single or several issues] between two or more organised adversaries, making purposive the use of armed force. Crucially, it involves combat, rather than the one-sided application of lethal force. Armed conflicts must be fought between two or more adversaries, which may be state or non-state actors”** (IISS, 2018, p.15).

Three reasons guided the decision to employ the IISS definition of armed conflict in this research. First, the definition is generic and can be applied throughout different fields of social science, including Global Health. Second, it clearly states key characteristics of what armed conflicts are. An armed conflict results in people using weapons to violently enforce their point of view on an issue that is causing profound disagreements. People can disagree on several issues including geographical, political, cultural, environmental, economic, ethnical, religious among others. It is important to say that the definition also includes the government as one of the parties that can have an active role during conflict. Finally, the third reason to use this definition relates to the growing respect of IISS in the academic community. The IISS has been publishing on an annual basis a survey analysing armed conflicts trends and delivering recommendations on how to mitigate them (Bellal, 2017).

Besides, the existing global legal framework and academic literature on armed conflicts has worked on developing classifications of this type of phenomenon with regards to their type and nature. This research in Table 1.2 has summarised the most relevant classifications provided by key authors/parties in the field.

Table 1.2 Classifications of armed conflict: type and category

| Source | Conflict types | Definition |
|--|-------------------------------------|---|
| International Humanitarian Law (Geneva Conventions) (ICRC, 2008) | International armed conflict | All cases of declared war which may arise between two or more contracting parties, even if the state of war is not recognised by one of them. |
| | Non-International armed conflict | Armed conflict not of an international character occurring in the territory of one of the High Contracting Parties [...] and hostilities occur between government armed forces and non-governmental armed groups or between such groups. |
| Heidelberg Institute for International Conflict Research (2021) | Interstate | International conflicts involving at least two nation states |
| | Intrastate | Conflicts which involve state and non-state actors. |
| | Substate | Conflict activities are mainly carried out by non-state actors. |
| | Transtate | Conflicts that involve at least two sovereign states and non-state actors. |
| Uppsala Conflict Data Programme (2021) | Interstate | It is a conflict between one or more governments. |
| | Intrastate | A conflict between a government a non-government party, with no interference from another country. |
| | Intrastate with foreign involvement | A conflict between a government and non-government party where the government side, the opposing side, or both sides receive troop support from other governments that actively participate in the conflict. |
| Source | Conflict nature or category | Definition |
| Heidelberg Institute for International Conflict Research (2019) | Low intensity | Often are related to non-violent crises or disputes. Such situations include threats. |
| | Medium intensity | Correspond to violent crises which create less than 120 casualties during a year and were counted less than 6,000 displaced people. |
| | High intensity | Entail highly violent confrontations referred as limited or full-scale wars. They have the capacity to produce more of 120 casualties throughout a year and there are more than 6,000 displaced people. This type of wars recur to heavy artillery. |
| Paulus and Vashakmadze (2009), Santos (2019) | Asymmetrical conflict | This conflict involves multiple state and non-state actors with diverse type of military capabilities which could be highly formalised and structured (e.g., national army) to unstructured armed factions. |
| Ávila (2018), Miron (2016) | Irregular war | Relates to a modus operandi by some or all of the parties in conflict. Such modus operandi consists of surprise attacks, guerrilla tactics, and terrorism to reach a political objective. Often involve both state and non-state actors. |
| Policinski and Kuzmanovic (2020) | Protracted armed conflict | Entails a war prolonged during several years, even decades, and hostilities are not continuous. In these type of wars, hostilities are episodic, cyclical, and intensity varies over time. The conflict involves both state and non-state actors who use diverse tactics. |

Source: The author using multiple sources.

From the table above, it can be argued that conflict types mainly relate to whether conflicts occur internationally or are constricted to a specific national territory. Meanwhile, the conflict nature or category corresponds to the type of violence and intensity characterising the phenomenon, the actors involved, and the tactics used during war. The next

subsection will outline on how the Colombian conflict has developed and defines what type of conflict the country endures based on the categories listed in Table 1.2.

1.2.2. COLOMBIA'S ARMED CONFLICT: A SYNOPSIS AND CLASSIFICATION

The origins of the Colombian conflict lie in disagreements between the Liberal and Conservative parties that governed the country during the 20th century. The parties mainly disagreed on the extent to implement policies such as land reform, government decentralisation and the influence of the Catholic Church in government affairs (Melo, 2017). In time, the radical factions of the Liberal Party abandoned the political process and decided to bear arms as political change never materialised (LaRosa & Mejía, 2013). This decision allowed the consolidation of large guerrilla armies in the country. The main guerrilla groups created were the Revolutionary Armed Forces of Colombia (FARC), the National Liberation Army (ELN), the Popular Liberation Army (EPL) and the M-19 (19th of April) Movement.

The significant costs of financing and maintaining an armed rebellion allured many guerrilla groups, particularly FARC, to involve themselves in illicit economies to fund their activities, being drug trade particularly of cocaine as the most lucrative (Melo, 2017). Eventually, the drug trade made the FARC the largest guerrilla group in the world and would take central stage in the Colombian conflict. In time, the FARC and other guerrilla groups expanded into additional criminal activities such as extortion, kidnapping, threats, terrorists attacks and murder to establish their authority and obtain funding (Ávila, 2019). All social classes in Colombia would suffer from the atrocities of the guerrilla violence, from the civilian population, the country's political and economic elite, and increasingly an emerging plutocratic class represented by private drug lords.

Tired of government inaction to guarantee safety, private drug traffickers decided to create their own paramilitary armies for protection (LaRosa & Mejía, 2013). This led to the formation of the United Self-Defence Forces of Colombia (AUC). This organisation also received covert support from the country's elite sector comprised of wealthy businessmen, landowners and politicians (Ávila, 2019; Cepeda & Uribe, 2014). In the early 2000s, The AUC would cause a wave of destruction and human suffering larger to that of the guerrilla's as it fought for the control of illicit economies (Ávila, 2019).

Eventually, the AUC demobilised after brokering a peace deal with the government of President Álvaro Uribe.

In 2016, the Colombian government under the leadership of President Juan Manuel Santos unexpectedly signed a peace accord with FARC. This was a remarkable event as previous attempts of reaching peace with this group failed (Santos, 2019). The FARC and the government saw sensible to discuss a peace deal as they reached a military standstill where neither side had a clear victory in sight (Ávila, 2019). Similarly, several guerrilla groups aside from the FARC and ELN, such as the M-19, had demobilised through peace accords making it more difficult for them to justify violence as a mean for political change. The international community heralded Colombia's peace accords with the FARC as a historical step to achieve complete peace (Schipani, 2016). However, the initiative contradicted expectations and instead intensified Colombia's war. The peace accords had important opponents coming from within the political establishment and members of the FARC (Ávila, 2017; Santos, 2019). Some government employees and politicians considered the peace deal as the surrendering of the Colombian state to a terrorist organisation. Meanwhile, within the FARC also existed dissidence leadership who did not support the peace deal given the requirement to abandon drug trade. Besides, the opponents of the peace deal within the FARC distrusted the governmental capabilities to execute the economic projects the peace deal proposed to procure an income alternative to drug trafficking (Pares, 2018a).

Once president Santos finished his term in office, the political party opposing his peace efforts with FARC, *Centro Democrático*, won control of the government in 2018 (Valencia, 2019). This situation created a lack of willingness from the government to implement the peace accords with the FARC. The government did not prioritise funding to start the economic projects contained in the peace deal to help the rebels secure income once they demobilised (Pares, 2018a). The lack of implementation of the peace accords discouraged many guerrilla members from continuing with the accords. The fighters dissenting the peace accords either joined the ELN or formed independent armed groups with the objective to control the FARC's former territories. To make matters more difficult, formerly demobilised paramilitaries decided to get involved in military activities

again to obtain some of the land FARC controlled. All these actors eventually met in the formerly controlled FARC territories leading them to engage in a violent territorial war (Pares, 2018b).

For the international community, particularly the ICRC and the HIIK, Colombia faces a non-international armed conflict (El Espectador, 2019; HIIK, 2021). However, the Centro Democrático party argues the country faces a terrorist threat rather than a conflict. For the international community, the ruling Colombian authorities are actively working to deny the armed conflict to create a leeway for counterinsurgency measures to not be fully accountable to international humanitarian law (El Espectador, 2019).

There have been several attempts to define the conflict in Colombia. For instance, the HIIK defines it as a “limited war” (HIIK, 2021). This definition means the conflict has “high intensity” where violence towards the civil population is common, particularly in areas with illicit economies (HIIK, 2021). The conflict has also been called an “asymmetric conflict” given the large number of actors involved using different tactics to fulfil their interests (Santos, 2019). This project decided to use the classification referred as Protracted Armed conflict in Table 1.2. to classify Colombia’s war. This term encapsulates key issues that characterises Colombia’s conflict related to its prologued nature, the variability on conflict intensity over time, the episodic nature of conflict actions, and the involvement of a diverse groups of actors.

1.2.3. TUMACO: AN INSIGHT OF COLOMBIAN’S ‘NEW’ WAR CYCLE

During the time this thesis is being written, the Colombian municipality of Tumaco with around 257,052 inhabitants located in the south-western province of Nariño is now experiencing significant conflict after the signing of the peace accords with the FARC (Pares, 2018b). Three reasons are driving this phenomenon in the municipality: i) its geo-strategic position, ii) the FARC demobilisation and, iii) the municipality’s poverty. Concerning the first issue, Tumaco’s geographical position grants it a good climate which, in turn, translates into an ideal environment to produce narcotics, particularly cocaine. Relatedly, Tumaco is a port city with access to the Pacific Ocean facilitating international drug trade. Figure 1.3. shows Tumaco’s location (red arrow and circle).

Figure 1.3 Tumaco's geographical location with respect to Colombia and Nariño



Source: International Crisis Group (2021)

The second factor creating more violence is the demobilisation of FARC after signing the peace accords with the government. This process created a power vacuum in Tumaco and since then, government institutions have encountered difficulties in exerting an effective presence throughout the municipal territory (Ávila, 2017; Pares, 2018b). This power vacuum incentivised several armed groups to control the existing illegal drug border business in the area and expand its operations through violent means. The main groups fighting for control of the area include the FARC dissidents who opposed the peace accords, the ELN, and former paramilitary organisations referred to as BACRIM (a Spanish acronym for criminal groups). All these groups fight among each other, against the government and the civilian population (Pares, 2017, 2018b).

The third aspect leading to the rise of conflict in Tumaco is its structural poverty. The 27.52% of the municipality's population suffers unmet basic needs (DANE, 2018).

Such unmet needs include inadequate access to housing and utilities, food, personal and neighbourhood safety, income to pay bills and essential living goods (e.g., clothing). The unmet basic needs indicator for Tumaco significantly deteriorates in its rural area increasing to 38.75% of the population living there (DANE, 2018). These indicators are significantly higher when comparing them to Nariño as a whole (21.59%) or Colombia (14.13%) (DANE, 2018). The poverty in Tumaco has allowed armed groups to have significant recruitment for their illegal armies, as locals can see it as a job and income opportunity (Pares, 2018b). This and the other factors explained above have led Tumaco to become the epicentre of Colombia's new war cycle (Ávila, 2019).

In their process to control drug trafficking activities, armed groups have engaged in several crimes (Defensoría del Pueblo, 2018; Pares, 2018b). The latest national statistics shows Tumaco faces the highest homicide rates in the country with 77 people killed for every 100,000 inhabitants in 2020 (Policia Nacional de Colombia, 2020). The indicator is dramatic compared to Colombia as a whole, with a homicide rate of 24.3 per 100,000 in a country of 45 million people (Policia Nacional de Colombia, 2020). Other criminal activities the illegal groups engage with relate to attacks on strategic infrastructure (e.g., energy towers), threats, assaults, extortion towards regular people and lawful businesses, and even organised civil unrest often perpetrated along the road connecting Tumaco with the rest of Nariño and Colombia (Defensoría del Pueblo, 2018). Additionally, armed actors engage in illegal trade of oil and weapons as part of drug trafficking. Such actors get involved in these activities to fund their operations, obtain personal financial gains, or consolidate the groups' power and rules (International Crisis Group, 2017). These actions are likely to have negative reverberations within multiple components of Tumaco's society including its health system and particularly its main hospital, although there is insufficient research on this matter.

A key characteristic of the armed conflict in Tumaco is that it is not in a state of constant conflict. Rather, there are moments in which the municipality can be relatively calm and there is a sense of peace. However, the parties in the conflict can suddenly engage in violence that can be dramatic and unpredictable which often results in civilian casualties along with economic and property damage.

1.2.4. THE CONSEQUENCES OF ARMED CONFLICTS

Armed conflicts have horrendous consequences to society's physical infrastructure, governance mechanisms, and social capital. In relation to physical infrastructure, a society's roads, bridges, buildings, utilities and health facilities can be damaged or obliterated by the use of the weapons during the conflict (Geneva Declaration & Secretariat, 2008). Furthermore, conflicts can create uncertainty on the governance of territories because those responsible to enforce the rule of law flee or become victims of the lethal force (Newbrander, 2007). Lastly, the most notable outcome of armed conflict is the destruction of human capital as the inhabitants of affected areas become victims of armed confrontations. The human tragedy armed conflicts create leads to the irreversible loss of human talent, as those who die or are displaced hold ideas or skills that could benefit the society at large (Geneva Declaration & Secretariat, 2008).

The terrible consequences of armed conflict usually entail human rights violations. People's right to live, to be respected on beliefs and opinions, or the right to access basic utilities and services like education or health are usually limited during conflicts (United Nations, 2011). To mitigate the effects of conflicts on peoples' rights, the international community agreed to establish the International Humanitarian Law through the Geneva Conventions (ICRC, 2002). In this legal framework, health care systems were provided with neutral status within nation states, as they are considered to be an essential service for communities immersed in conflict (ICRC, 2002, 2016a). Health systems include primary care clinics, hospitals, along with their personnel, supplies, equipment, vehicles, and finances. International humanitarian law considers that all the elements just mentioned should be respected and off-limits during conflicts (ICRC, 2014b).

Despite the special status of health care under the Geneva Conventions, a revision of the global literature studying facilities/institutions/organisations that deliver health services in conflict settings provides a grim picture about what these facilities endure in such contexts. The literature mentions facilities' perceive destruction of infrastructure or are unable to connect with essential utilities (Fouad et al., 2017; Haar et al., 2018). Relatedly, staff of health facilities operating in conflict settings can be mentally or physically assaulted through threats, extortions, beating or murder (e.g. Donaldson et al.,

2012; Omar, 2020; Safeguarding healthcare in Conflict, 2018, 2019). Further, health providers, including hospitals, can face scarce financial resources or supplies in conflict settings given that local economies are usually destroyed (Qirbi & Ismail, 2017). Similarly, providers can face unstable governance due to high turnover of management staff (Karemere et al., 2015) or perceive inoperative information systems product of attacks on computer infrastructure (Betsi et al., 2006). Finally, providers' capabilities to deliver care can be affected as conflicts create extensive damage on facilities and transport systems that impede service provision or referral activities (Haar et al., 2018; Mowafi et al., 2016).

1.3. THE PROJECT RATIONALE, AIM AND OBJECTIVES

Regardless of the valuable information the existing scholarship — both from the world and in Colombia — provides in relation to the challenges health providers in armed conflict settings face, it exhibits shortcomings that more research is needed to address them. First, there is an important gap in the literature in understanding how health providers and, particularly hospitals, sustain delivery of health care in protracted armed conflicts like the one in Tumaco. This gap in the literature leads to the following limitations in our knowledge about the operation of hospitals in armed conflict settings:

- Insufficient knowledge on what types of activities/measures/strategies hospitals employ to face the challenges of the conflict area to deliver health care.
- Insufficient information about the key capacities a hospital relies on to setup the different strategies to face the challenges. Capacities mean the hospital ability to understand challenges and conceive solutions for them, engage in actions facilitating response to challenges, and access resources to address problems (Gilson et al., 2017).
- Poor clarity about the limitations hospitals encounter regarding the resources and activities used to face challenges.
- Insufficient information about what type of support hospitals obtain or need to manage the challenges and sustain delivery of care.
- What can be improved with the hospital activities or the support it receives to face challenges.

The necessary information described above is virtually non-existent in the global health academic literature and is needed for the following reason. Humanitarian or development agencies and governments that seek the continuous provision of health care in conflict settings, cannot provide effective support to providers, especially hospitals, rendering services in such contexts. This happens because they do not fully understand the activities, capacities along with the resources hospital use to manage challenges to continue service delivery. This research focuses on providing this missing information so humanitarian and development agencies as well as governments can gain insights about the issues just mentioned and the limitations they face. From there, these actors will be better informed about the activities and resources providers use to manage challenges to better support them and mitigate the limitations perceived with such elements. Similarly, with this information, agencies and governments can determine the resources they can help hospitals with, so the latter can mitigate conflict challenges more successfully and improve allocation of support resources.

Relatedly, the studies available about the operation of health providers and particularly hospitals in armed conflict environments have not attempted to do a holistic understanding of the challenges hospitals endure in a conflict area. This holistic understanding entails examining both the armed conflict and routine challenges affecting hospitals in such contexts with a clear distinction among them and recognise their interaction. The first type of challenges can relate to death threats on hospital personnel, destruction of facilities, or attacks on supplies. The routine challenges correspond to issues such as insufficient financial or material resources. These latter problems are common in health systems of Low- and Middle-income Countries (LMICs) and will exist regardless of armed conflict presence. It is important that humanitarian or development agencies know that these facilities not just face conflict-related difficulties but also routine issues so they can setup initiatives to help providers and hospitals to face both types of problems. It can be that the more routine issues compounding over time could pose more serious threats to a hospital ability to continue providing services in conflict areas. Hence, it is necessary for development agencies to bear in mind such issues if they want to support hospital operating in protracted conflicts more effectively.

To address the gaps in the literature, this research project chose to conduct empirical work on Hospital San Andrés ESE located in the municipality of Tumaco, Colombia. Four reasons made the hospital as an ideal place to conduct this research. First, The CGD has called for more studies on hospitals as they have been largely neglected within the global health research agenda (CGD, 2015b). This lack of research on hospitals was also evident when reviewing the literature about the operation of health providers in armed conflict settings as scant studies focus on them (See Chapter 2 for details). A reason that can explain this situation is that national governments and donors have decided to prioritise investments to primary care as it has been considered the most cost-effective way to strengthen health systems (CGD, 2015b). However, for many LMICs including those facing conflict like Colombia, hospitals are important because they usually are the gateway for underprivileged people to obtain medical services and enter the health system. Thus, hospitals in LMICs are an “essential component” to fulfil universal health coverage (UHC) (CGD, 2015a). UHC is an important issue that countries of world should meet to attain the Sustainable Development Goal 3 of “*ensur[ing] healthy lives and promote the well-being for all*” (UN, 2015). Hence, more research on hospitals can help LMICs, particularly those facing conflict, to achieve this important goal.

Second, the hospital is in an area facing protracted armed conflict during the study period which is Tumaco. The fact that Hospital San Andrés ESE still renders health services in Tumaco’s difficult environment becomes useful to understand how health providers and, particularly a hospital, continues to deliver care despite the different challenges of the armed conflict settings and attracts intellectual curiosity. Additionally, there is scarce literature examining the operation of health providers/facilities in protracted conflict settings despite such environments are becoming more common globally. The protracted conflict developing in Tumaco is being experienced in areas such as Afghanistan, Iraq, Israel-Palestine, or the Democratic Republic of Congo (DRC) (HIIK, 2021; ICRC, 2016b; Safeguarding Healthcare in Conflict, 2021) to name just few examples. So, this project enhances such literature giving insights on how this type of social phenomena, characterised by episodic hostilities with no clear resolution, affects health facilities and identify the strategies facilities employ to best mitigate their problems.

Third, Hospital San Andrés ESE is the main and only public hospital in Tumaco and the centre of reference for other 9 municipalities located in Nariño's pacific coast. The hospital is responsible for an estimated population of 428,870 inhabitants or about 23.9% of the provincial population (IDSN, 2019). Both the communities in Tumaco and those municipalities the hospital delivers services to face significant financial constraints. Therefore, the operation of this organisation is important as it is the most affordable facility for the population of this area to obtain medical services given its proximity (Refer to Chapter 1 and Appendixes 2 and 3 for further details on Tumaco's health system and Hospital San Andrés ESE operation in it).

And fourth, using a hospital to understand how a health provider sustains health care delivery in a conflict setting, can give important lessons for providers of less complex care (e.g., primary level clinics) on how to continue provision of services in such contexts. The hospital is a complex organisation which constantly interacts with its environment to obtain inputs and make decisions to deliver health services. Understanding how this complex facility renders services in a conflict environment, can inform facilities of less complex care about activities or resources that are helpful to overcome operational challenges and prevent their closure.

Consequently, the general aim of this research is to understand how a hospital sustains health care delivery to its population in conditions of protracted armed conflict. It will achieve this by undertaking a case study of a specific hospital called Hospital San Andrés ESE, operating in the conflict setting of Tumaco, Colombia. This project proposes the following objectives to achieve the general aim.

1. To examine the challenges Hospital San Andrés ESE faces while operating in the conflict setting of Tumaco, Colombia.
2. To study how Hospital San Andrés ESE responds to the challenges to sustain health care delivery.
3. To determine participant's views regarding what needs to improve with the hospital response to challenges.

Beyond the reasons mentioned above, this research is also important for the following reasons.

Despite the existence of studies that consider the operation of health systems in conflict settings, the overall literature on this area is relatively insufficient and little is known about the operation of hospitals in such contexts. Factors such as the insecurity of conflict settings that make it difficult for researchers to conduct fieldwork or participants becoming apprehensive to participate in studies, make the literature on this field scarce (Foghammar et al., 2016). Thus, a study focused to investigate the operation of a hospital in armed conflict settings oriented to understand the challenges it faces and how it addresses them to continue deliver care to its population, helps to enhance the availability of research about health systems in conflict settings.

Moreover, this research is important because hospitals, particularly in LMICs, usually are the only source of health care in rural areas and the only entities capable to deliver specialised services like trauma care (CGD, 2015b). Also, the rising prevalence of chronic non-communicable diseases among the population of developing countries have made hospitals the main centres to treat such illnesses. Some examples of chronic diseases hospitals guarantee treatment for range from diabetes, cardiovascular or cancer disease (CGD, 2015b). Pavignani and Colombo (2009) consider hospitals in armed conflict settings as essential entities because they are the only suitable of treating complex medical conditions like mutilations, gunshot wounds, or burns. Lastly, recent infection disease outbreaks, including the Ebola outbreak in Africa or the Covid-19 pandemic, the latter arising at the final stages of writing this thesis, made evident that strong hospitals are needed so health systems can guarantee emergency and specialised care during such crises.

This research is also valuable for policymakers in Colombia. In 2018, Colombian national authorities declared Hospital San Andrés ESE an institution facing an administrative crisis that has created important financial problems that could lead to its closure (Supersalud, 2017). The closure of the hospital undoubtedly could lead to significant social and economic hardship for Tumaco. Socially, poor patients will no longer have an affordable and nearby alternative to obtain specialised medical care. Economically, many people can lose their jobs as the hospital is among the main contributors of formal employment in Tumaco (Supersalud, 2017). Additionally, the

closure of Hospital San Andrés ESE will further hinder the legitimacy of the Colombian government among the local community. Popular opinion in Tumaco already characterises the government as incapable to guarantee essential constitutional rights for citizens, such as health care (Pares, 2018b). The hospital closure can reinforce this general view.

This research will provide important information to decisionmakers in Colombia about the technological and workforce limitations of Hospital San Andrés ESE while responding to the challenges of Tumaco. The local population hopes decision makers can act appropriately by deciding to enhance support to the hospital to meet the challenges of the area and give adequate services to the local population, particularly the victims of armed conflict. Furthermore, the project can give valuable insights to policymakers about potential problems that hospitals operating in other conflict areas of Colombia can face. As this research will later show, decision makers can give support to the hospital for different issues that range from training staff in better skills to cope with serious challenges such as death threats, to investment in the hospital's equipment and infrastructure to improve its resolatory capacity to treat critical illness. Finally, the project also provides insights to policymakers on the governance and managerial skills that ought to be in place in Hospital San Andrés ESE and within similar organisations operating in settings significantly affected by conflict.

Concerning the importance of this research for policy makers overseas and international organisations like non-profit organisations, development, or humanitarian agencies they are the following. First, as mentioned earlier this research studies a hospital operating in a conflict setting which is becoming more common throughout the world (HIIK, 2021; ICRC, 2016b; Safeguarding Healthcare in Conflict, 2021). Therefore, the information produced in this project serves the governments of several countries facing similar conflicts in two ways:

- i) To recognise the activities and limitations hospitals face to sustain health care delivery in such difficult settings.

- ii) To better guide their decisions on how to help these organisations face the conflict challenges with financial or in-kind resources so these facilities continue delivering health care.

Second, this study outlines the material and financial resources Hospital San Andrés ESE requires to better respond to challenges for development or humanitarian agencies, and NGOs (e.g., United States Agency for International Development — USAID, ICRC, Médicins San Frontières) can provide support for. Some examples of the support these organisations can give to the hospital range from specialised/technical assistance on international humanitarian law, expatriate medical personnel, training on war medicine, and maintenance of equipment for such facilities. In addition, reiterating something mentioned earlier in this chapter, this study provides valuable lessons for NGOs, development agencies and humanitarian actors on the type of problems health providers and particularly hospitals face in protracted armed conflict. They can also understand the potential limitations these organisations endure on key resources that allow these facilities sustain the delivery of health care in these difficult settings. Finally, the study allows these organisations to obtain insights on how to establish the best support arrangements for these facilities and help them to continue deliver care for populations living in conflict areas.

For Hospital San Andrés ESE this research is relevant as it can clearly identify the different armed conflict challenges it faces to deliver health services. This type of research has not been conducted for this institution before or to any other hospital in Colombia. It is expected that the results of this research will help the hospital to be aware about the problems the conflict creates to its activities. This awareness is important as it is common in Colombia for people and organisations to normalise the armed conflict and its violence (Padilla & Bermúdez, 2016). In Colombia people usually consider violent actions as typical activities in their daily lives. It is essential for the hospital to avoid normalising the armed conflict which can create a culture to disregard personal and organisational safety among staff (Policinski & Kuzmanovic, 2019). Similarly, the hospital will understand which activities are helping it to mediate the challenges in the environment and strengthen them. This study also helps the hospital to advocate for more material or financial resources to

national policymakers or international donors considered necessary to improve its operations in this difficult setting.

To address the project's aim and objectives, this study conducted a qualitative case study of Hospital San Andrés ESE in Tumaco, Colombia. This methodology is well suited to answer “*How*” research questions (Yin, 2013). This project focuses on understanding “*How*” health providers, specifically a hospital, can sustain the delivery of health care in a protracted armed conflict. Furthermore, to conduct the case study this project used The Everyday Resilience Framework (ERF) as the conceptual/theoretical model to guide the data collection, its analysis, and achieve the thesis aim and objectives.

The ERF is defined as the capacity of health systems organisations to “*maintain positive adjustment under challenging conditions such as that the [health] organisation emerges from those conditions strengthened and more resourceful*” (Gilson et al., 2017, p.1). An iterative process during data collection, the revision of the literature and supervision meetings identified ERF as potentially useful for this research. During data collection of this project, it was apparent that Hospital San Andrés ESE faces a similar type of challenges the framework informs health systems and organisations can face. Similarly, the study helped to evidence strengths and weaknesses with the framework's categories to classify responses to challenges. Consequently, this research provided the opportunity to not only employ this framework, but also to reflect on its utility critically in understanding how hospitals operate in conflict settings. More information about the methodology and the framework is provided in Chapter 3.

Finally, this study builds upon the literature in health system in conflict settings providing details on how to conduct empirical research in such contexts. As mentioned earlier, this type of research is rare as conflict environments are dangerous for academics to conduct fieldwork (Foghammar et al., 2016). This research will explain the different strategies the researcher used to safely collect primary data. The thesis' methods chapter gives more insights about the data collection process.

1.4. THE STRUCTURE OF THE THESIS

This thesis is structured in seven chapters. Following the Introduction, Chapter 2 corresponds to the literature review of this thesis. The chapter will give details of the literature review strategies, present the results, and discuss the findings. Chapter 3 outlines the methodology of the thesis, including the conceptual framework, the justification for case study research, the methods used for data collection as well as the limitations and ethical considerations of the project.

Chapter 4 will present the challenges Hospital San Andrés ESE faces to operate in an armed conflict environment, including both routine and armed conflict challenges, as identified through semi-structured interviews and documentary analysis. Chapter 5 will present Hospital San Andrés ESE's strategies or responses to the identified challenges. Such responses relate to a series of measures the hospital can pursue on its own or with the support of other actors in Tumaco, particularly belonging to the health system. Chapter 6 presents informants' reflections on the aspects that must be improved with Hospital San Andrés ESE response to challenges to continue service delivery. Finally, Chapter 7 provides a concluding discussion for the overall study and gives insights for future research.

CHAPTER 2.LITERATURE REVIEW

This chapter presents the literature review for the doctoral thesis. It has four sections: first, it describes the methods used to review the literature, second, it outlines the results of the literature searched. Third, the chapter provides a synthesis of the literature review findings, and the fourth section gives discussion of the literature reviewed. Each section is further developed below.

2.1. METHODS

Based on Petticrew and Roberts (2005) practical guide for conducting systematic reviews this study developed a systematic process to review the literature. This means trying to establish a well-organised, transparent, and reproducible approach on how to review the literature that would allow to answer a research question. This process is outlined below.

a) The literature review research question

The literature review focused on answering the following research question: ***What is known about the operation of health service providers in armed conflict settings?***

Health service providers also more commonly referred in this study as “health providers” or “providers” correspond to institutions/facilities/organisations providing health care regardless of levels in care. The term includes organisations belonging to the primary, secondary, or tertiary complexity of care. Such organisations can be administered either by the public or private sectors, including non-profit organisations.

b) Initial scoping

The first step was to identify literature reviews that have been completed on the research topic. The search process began using databases and search engines that were broad enough to identify such systematic reviews. The following databases were used for this purpose:

- Applied Social Sciences Index (ASSIA)
- The University of York CRD database

- Google Scholar

Search strategies (e.g., “health providers” OR “health systems” AND “armed conflict”) were used to identify systematic reviews on the topic of interest. No reviews were identified that were directly related to the question being examined. Still, some reviews (Bou-Karroum et al., 2020; Witter, 2012) provided important information on key terms, journals, websites, and research consortia to explore further. The lack of systematic literature reviews relating to the operation of health providers in active conflict settings suggests limited research around the topic, but also arguably makes this literature review a valuable contribution on the subject.

c) Comprehensive search of the literature

The next step was to conduct a thorough search of the existing literature. The following databases, covering the social science, policy, and medical literature, were used for the search process:

- Scopus
- PubMed
- Web of Science
- ProQuest

However, there was the possibility the databases mentioned above did not have all the relevant literature on the question of study as not all existing material on health systems and armed conflict might be contained in the databases, particularly of institutions that conduct independent research. Therefore, the grey literature was consulted to identify more relevant studies on the topic. The grey literature corresponds to materials and research produced outside traditional academic publishing. The literature found during the scoping stage, provided insights to explore the websites of the International Committee of the Red Cross (ICRC), the World Bank, the Rebuild Consortium, and the Safeguarding Health Care in Conflict to look for relevant grey literature⁹. Besides, due to previous knowledge from university studies the researcher

⁹ The following websites of these organisations were visited to obtain material for review.

ICRC: <https://www.icrc.org/en/resource-centre>

World Bank : [Open Knowledge Repository \(worldbank.org\)](https://openknowledge.worldbank.org/)

The Rebuild Consortium: <https://www.rebuildconsortium.com/resources/>

decided to include Colombia's central bank research repository referred as *Publicaciones del Banco de la República de Colombia* to look for relevant studies. This repository holds high-quality research in diverse areas including health care¹⁰.

In the academic databases, this research developed a search strategy/string using a variety of relevant key words on the topic of study to look for the literature. Such words were: "Health providers", "healthcare providers", "healthcare delivery", "health systems", etc. combined with "Armed conflict", "War", "Civil War", "Conflict-setting," "Conflict-affected settings", etc. Boolean operators such as OR/AND were used within the search strategies to include synonyms during the search process or to combine two concepts. Also, truncated terms such as "health facilit*" were used to include key terms that may have additional characters. In the databases for grey literature, a similar process was conducted but the search string was developed with fewer words but always containing the words, "health systems", "health providers", and "armed conflict".

The words/terms mentioned above were combined in a search strategy in each database to recognise what was written around the topic pertaining to the research question at a global level and with a special awareness of studies carried out in Colombia. Table 2.1. (Next page) provides detailed information on the terms and search strategies/strings used in the databases.

Safeguarding health care in conflict: <https://www.safeguardinghealth.org/resources>

¹⁰ Bank's repository website: (www.banrep.gov.co)

Table 2.1 Search terms and search strategies to find the literature

| Alternative terms including truncated — Literature review | | | | | | | | | | | | | |
|---|--|-----------------------------|-------------------------|-----------------|-------------------|--------------------|-------------------|------------------------|------------------------|---------------------------|-------------------|-----------------------|------------------------|
| Keyword | Term 1 | Term 2 | Term 3 | Term 4 | Term 5 | Term 6 | Term 7 | Term 8 | Term 9 | Term 10 | Term 11 | Term 12 | Term 13 |
| "health provider" | "health care provider" | "health provision" | "health care provision" | hospital | "public hospital" | "health facilit**" | "health delivery" | "health care delivery" | "health services" | "delivery of health care" | "health system**" | "healthcare system**" | "health care system**" |
| "armed conflict" | "conflict-affected state" | "conflict-affected setting" | "conflict zone" | "fragile state" | war | "civil war" | "war zone" | "war-affected country" | "war-affected setting" | "war-affected state" | | | |
| Databases | | Search strategy | | | | | | | | | | | |
| Scopus | (TITLE-ABS-KEY ("health provider**"OR"health care provider"OR "health provision" OR "health care provision" OR "hospital" OR "public hospital" OR "health facilit**" OR "health delivery" OR "health care delivery" OR "health services" OR "delivery of health care" OR "health system**" OR"health care system**" OR "healthcare system**") AND TITLE-ABS-KEY ("armed conflict**"OR"civil war" OR "war zone" OR "war-affected country" OR "war-affected setting" OR "war-affected state") AND NOT TITLE-ABS-KEY ("post-conflict")) AND DOCTYPE (ar) AND LANGUAGE (english) | | | | | | | | | | | | |
| PubMed | ((((((((((((((((("health provider"[Title/Abstract] OR "health care provider"[Title/Abstract]) OR "health care provision"[Title/Abstract]) OR "hospital"[Title/Abstract]) OR "public hospital"[Title/Abstract]) OR "health facilit**"[Title/Abstract]) OR "health delivery"[Title/Abstract]) OR "health care delivery"[Title/Abstract]) OR "health services"[Title/Abstract]) OR "delivery of health care"[Title/Abstract]) OR "health care system"[Title/Abstract]) OR "healthcare system" OR "health system**"[Title/Abstract]) AND "armed conflict"[Title/Abstract]) OR "conflict zone"[Title/Abstract]) OR "fragile state"[Title/Abstract]) OR "civil war"[Title/Abstract]) OR "war zone"[Title/Abstract]) OR "war-affected setting"[Title/Abstract]) NOT "american civil war"[Title/Abstract]) NOT "spanish civil war"[Title/Abstract] | | | | | | | | | | | | |
| Web of Science | ((TS=((("health provider" OR"health care provider" OR "health provision"OR "health care provision" OR hospital OR "public hospital" OR "health facilit**" OR "health delivery" OR "health care delivery" OR "health services" OR "delivery of health care" OR "health care system**" OR "healthcare system**" OR "health system**") AND ("armed conflict" OR "conflict-affected state" OR "conflict-affected setting" OR "conflict zone" OR "fragile state" OR "civil war" OR "war zone" OR "war-affected country" OR "war-affected setting" OR "war-affected state")))) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article) | | | | | | | | | | | | |
| Proquest | NOFT("health provider" OR "health care provider" OR "health provision" OR "health care provision" OR hospital OR "public hospital" OR "health facilities" OR "health facility" OR "health delivery" OR "health care delivery" OR "health services" OR "delivery of health care" OR "health care system" OR "health system" OR "health systems") AND NOFT("armed conflict" OR "conflict-affected state" OR "conflict-affected setting" OR "conflict zone" OR "fragile state" OR "civil war" OR "war zone" OR "war-affected country" OR "war-affected setting" OR "war-affected state") | | | | | | | | | | | | |

d) Inclusion and exclusion criteria

From the academic and grey literature, this thesis included articles and studies that contained empirical work and fully described their research methods. This included studies that used either quantitative, qualitative, or mixed methods. The academic articles and grey literature included were written in English or Spanish as the researcher understands both languages. The review only included studies analysing the operation of health providers in active conflict zones. The reason for including only active conflict settings relates to the focus of this study to examine the functionality of health care providers in an ongoing armed conflict of protracted nature. As explained in the thesis introductory chapter, despite health providers having a special status in armed conflict that protects them from war, unfortunately, such status is not always respected. Thus, it is necessary to know in more detail the effects of conflicts on these facilities.

The following exclusion criteria were established during the literature review: It excluded opinion articles, commentaries, editorials, conferences, seminars, meeting reports, guides, manuals, notes, or book reviews. Finally, the research did not establish a defined date/timeline for the search. During the literature search process (mainly conducted between January 2019 and June 2021), it was possible to see that most relevant literature has been produced in the last two decades, which informed the decision not to restrict the search according to study publication date.

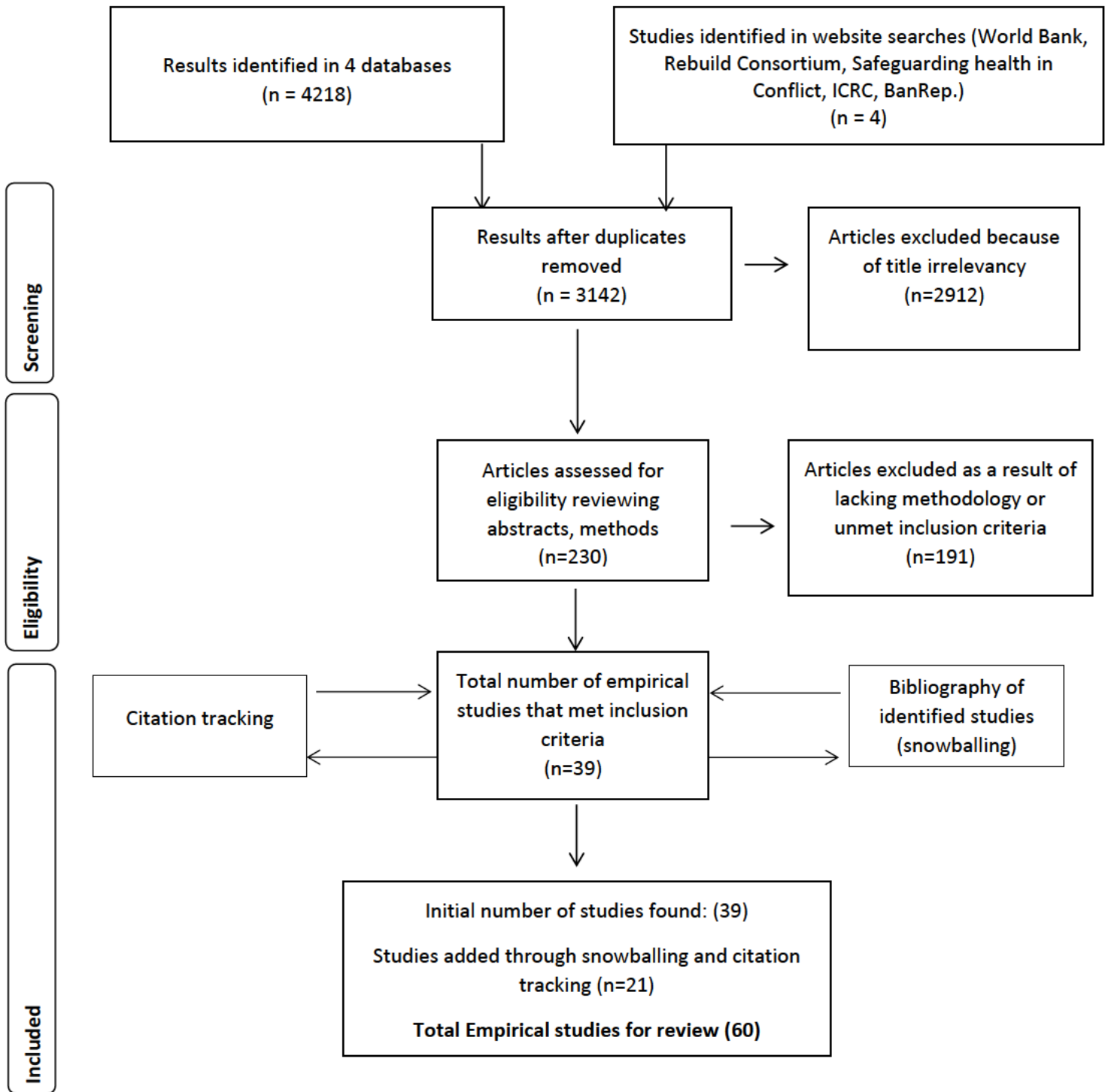
e) Filtering the search results

The search yielded a total of 4218 results of journal articles of various methodological types (quantitative, qualitative, mixed methods), and four studies from the grey literature leading to a total of 4,222 identified records. From each database, the results lists were extracted and integrated into a single Excel spreadsheet along with the titles of the grey literature to find duplicate results; 1080 duplicates were removed. The remaining results were screened by title to determine their topic relevance. This led to 230 studies that were relevant to the topic based on their titles. Further evaluation of abstracts and methods identified those that merited full review, including those that analysed health service providers and particularly hospitals in armed conflict settings, and

explained in detail the methodology used. Finally, 39 studies met the inclusion and exclusion criteria of articles for appraisal.

Of the 39 studies identified through the search process, a snowball sampling process was undertaken to obtain more literature on the topic. This sampling technique entails using the reference list of each article identified through the database search process to look for other relevant material. In addition, the “citation tracking” function in the databases helped to recognise other relevant studies cited in the 39 articles identified previously and met the inclusion criteria. After using both procedures, 21 additional empirical articles were included reaching a total of 60 studies for review. The results of the literature review will be elaborated in Section 2.2. Figure 2.1. presents the process for selecting the material for review.

Figure 2.1 Flow Diagram for Selecting the Literature



2.2. RESULTS

2.2.1. GENERAL FEATURES OF THE STUDIES

A search of the literature related to the operation of health providers in armed conflict areas led to 60 studies for review. It included 47 journal peer-reviewed articles and 13 studies from the grey literature. Appendix 4 provides a table outlining key characteristics (e.g., author, setting, aim, methodology) for each study. Before examining the literature review findings in more depth, it is worth presenting the general features of the studies included for review.

One of the most prominent features found in the literature researched is the significant volume focused on Syria. Out of the 60 studies included in this literature review, 16 involved this country specifically. Interestingly, there were 6 studies that directly or indirectly examine the interaction of health providers with the armed conflict in Colombia. Figure 2.1. provides a graphical understanding of the overall literature by context studied.

Figure 2.1. Number of studies according to region and conflict type

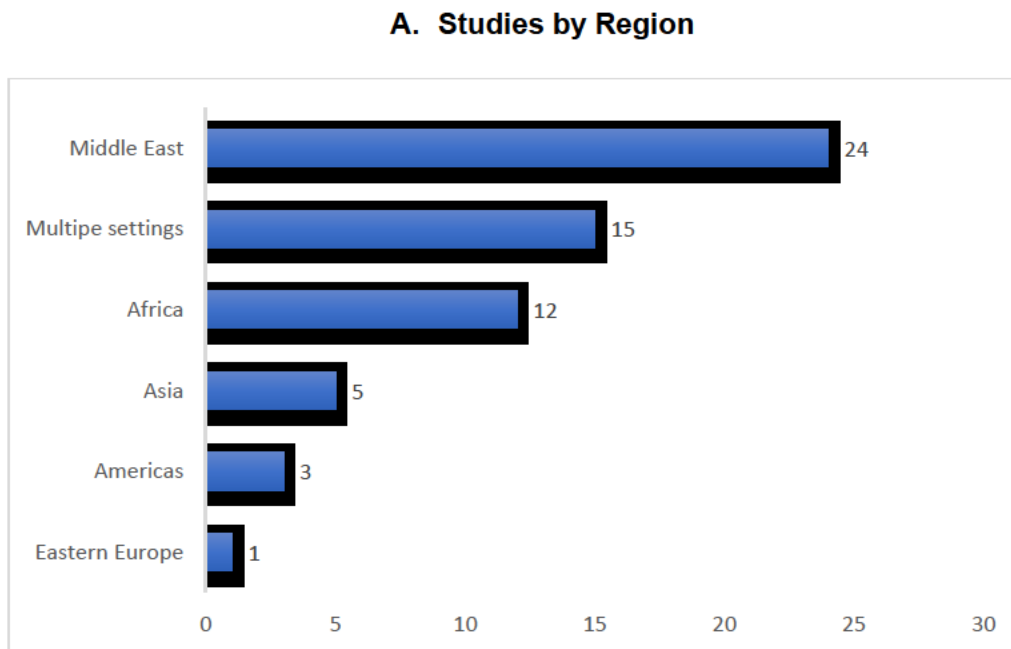
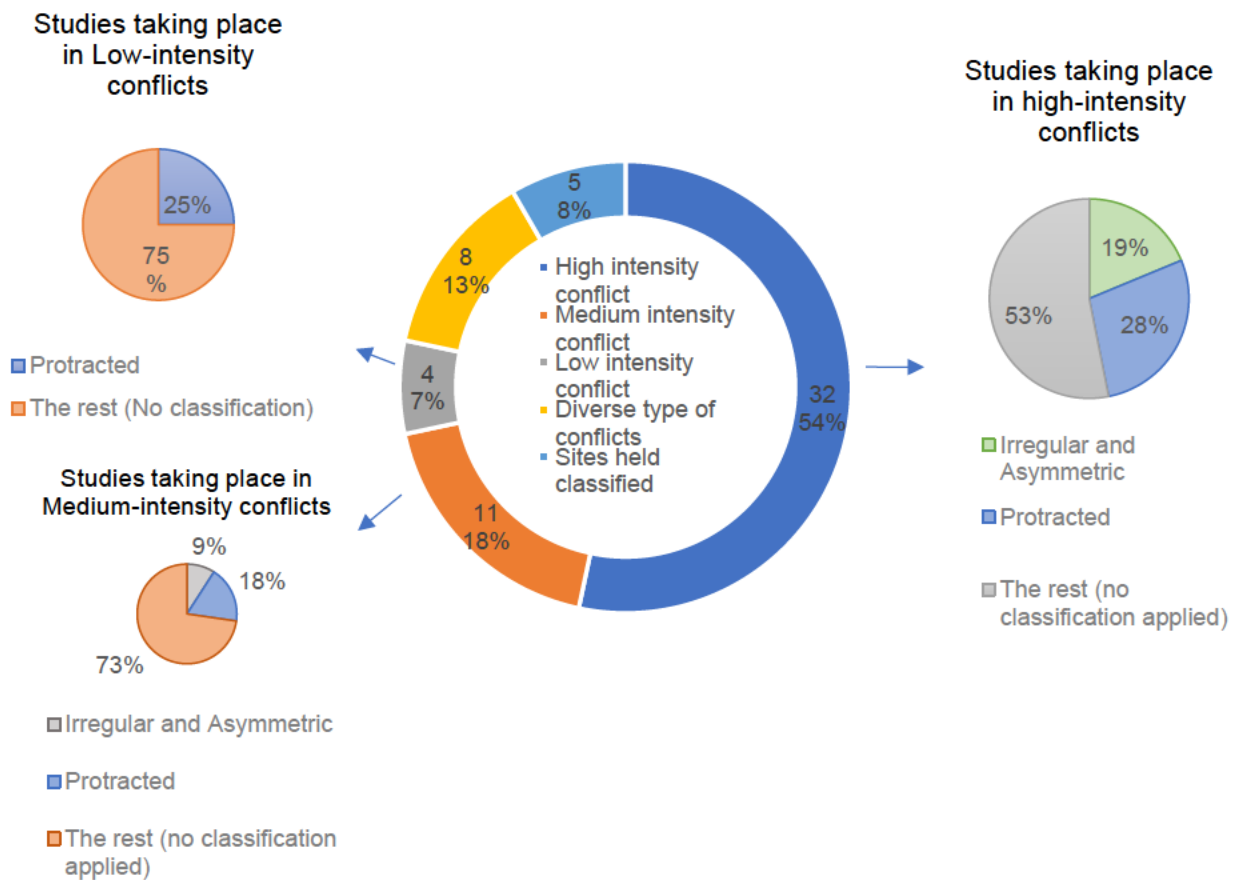


Figure 2.1 Continuation

B. Studies by conflict type



As it is possible to see in Figure 2.1 A, most of the research analysing health providers in conflict settings has been conducted in the Middle East and Africa. This might be the case because the most difficult conflicts are happening in such regions like the ones developing in Syria, Gaza, Yemen, Iraq, and Afghanistan. Haar and colleagues (2018), inform that Syria has received significant research attention in the recent years to enhance judicial accountability to warring factions, as their conflict has undermined the functionality of the health system in alarming ways.

Additionally, Figure 2.1 B shows the available studies have been mainly undertaken in high-intensity conflicts as understood by the HIIK (2021)¹¹. It can be observed from Figure 2.1 B, that the study of health providers in conflict settings has

¹¹ See Table 1.1 for the definition and further details.

received relatively less examination within the context of protracted conflicts than other types of conflict (The small pie charts in Figure 2.1, B). The available literature of providers in conflict settings and particularly that conducted in protracted conflicts has not sufficiently examined how facilities, especially hospitals, sustain delivery of health care. Hence, providing more focus to understand the ability of hospitals to sustain delivery of care in protracted conflicts becomes something valuable to expand this scarce literature. A project of this kind can give insights on how providers respond or act to the challenges of these settings characterised by episodic confrontations among warring parties.

Furthermore, protracted conflicts are becoming more typical around the world although research attention to these types of conflicts has been limited as seen in Figure 2.1, B. Thus, a project of this kind will provide valuable information to the countries that are experiencing these conflicts along with humanitarian actors and NGOs. This type of research will help these actors understand the activities hospitals assume to keep service delivery, the capacities and resources needed to undertake such activities, and the limitations regarding the resources and activities to mitigate challenges. Recognising the limitations, the resources, and activities of hospitals to sustain delivery of care in these contexts help governments, NGOs, or humanitarian agencies to assist these facilities to mitigate such limitations so they can continue to provide care in protracted conflict environments.

Relatedly, the few studies listed in Figure 2.1. A, conducted in the Americas all have taken place in Colombia. These studies mainly examine the role of the medical mission roundtable – a government body overseeing infractions to the medical mission – to determine how the conflict affects the health system, the analysis of hospital productivity, and the challenges primary care centres faced to provide child and maternal care. Still, the available research lacks emphasis on how hospitals operating in the most conflict-affected settings sustain delivery of care to the population.

Concerning the type of providers examined, 29 studies or 48.33% of the selected research include in their analysis several facilities/institutions/organisations across all levels of care not having a specific focus. Further, 10 studies concentrate their research on primary care centres or health posts. Among these latter studies, there is significant

attention to the delivery of maternal care (5 studies), HIV/AIDS services (2 studies), while others undertake a holistic analysis of service delivered by primary level facilities (3 studies). In this review, 21 articles or 35% of studies examine hospitals, yet the analyses tend to view specific components of such facilities. The subjects studied in detail range from maternal and obstetric care (5 studies), surgical theatres (4 studies), emergency services (3 studies), cancer care (1 study), or a specific variable of such facilities like their staff (6 studies). Finally, 2 studies analyse the broader operation of hospitals concerning their governance or financial management.

Of the available literature, just 5 studies purposefully investigate the challenges health providers and their workers face during armed conflict. Most of the challenges recognised in these 5 studies correspond to armed conflict issues affecting hospitals or their staff (e.g., death threats) but pay insufficient attention to routine challenges (e.g., financial scarcity). The rest of the literature (55 studies) often report different challenges health providers face in those settings, but do not purposefully study them. The literature recognises that providers face different types of challenges that range from serious conflict events to more routine/everyday situations. There is limited literature that deliberately analyses both the conflict and routine challenges providers face while operating in conflict settings.

To the best of the researcher's knowledge, there is an important gap in the literature which involves the lack of focus to understand how health providers, particularly hospitals, sustain delivery of health care to the populations they serve in conditions of protracted armed conflict. Subsequently, this project provides specifics on the literature review findings.

2.3. SYNTHESISING THE FINDINGS

The literature review findings regarding what is known about the operation of health care providers/institutions/organisations in armed conflict settings can be grouped into two sections. The first relates to the challenges health providers face in these settings. The second section focuses on different scattered reports the studies give about different actions health providers or their staff employ to face the challenges. Each section is expanded below.

2.3.1. THE CHALLENGES

When examining the literature about the operation of health providers in armed conflict settings they often inform about the different challenges these entities face on their key functions. This study used The World Health Organisation (WHO) “building blocks” themes (WHO, 2007, 2010) to organise the discussion about the challenges affecting health providers’ key functions within conflict settings. Such themes are as follows:

- 1) Financing
- 2) Leadership and governance
- 3) Healthcare workforce
- 4) Medical products and technologies
- 5) Health service delivery
- 6) Information systems

The rationale for using the WHO building blocks themes to structure the discussion about the challenges health providers face in conflict areas is as follows.

First, because the literature included in the review mentioned that conflict settings usually create challenges to providers’ key functions, it was necessary to look for themes that would give a common ground for such core functions across providers of any kind. Second, The WHO building blocks, even though are intended to study entire health systems (WHO, 2007, 2010), they can also depict the key functions health providers use to deliver care. Thus, the themes give a standardisation of providers’ key functions and help to organise the discussion about the challenges health providers face in conflict contexts. In the following sub-sections, the six WHO building block themes will be used to organise the results about the challenges providers face in conflict areas.

2.3.1.1. Financing

Financing in this study refers to the monetary resources providers rely on to deliver care. Money allows providers to pay for staff, purchase services (e.g., utilities), or supplies. Numerous studies from different conflict-affected contexts reveal that health providers operating in conflict areas face significant financial challenges (Ager et al.,

2015; Betsi et al., 2006; Hadary et al., 2009; Marie et al., 2017; Mowafi et al., 2016; Qirbi & Ismail, 2017; Tappis et al., 2020). The research of Betsi, et al (2006), Tappis et al (2020), and Marie et al (2017) studying providers operating in Cote d'Ivoire, Yemen, and the West Bank respectively, agree that providers face significant financial constraints making it difficult to meet essential operational costs such as personnel, supplies, or utilities. Most of these studies report how financial constraints affect specific services of providers but do not illustrate how this problem impacts the facilities as a whole. For example, Betsi et al along with Tappis and Colleagues encountered that specific hospital services such as maternal care or operating theatres lacked supplies and utilities due to financial constraints. Meanwhile, Marie et al (2017) mentioned that primary care facilities delivering mental health in the West Bank were unable to provide adequate pay for staff or lacked basic supplies such as syringes due to financial limitations. Notwithstanding these issues, the studies provide valuable understanding on the consequences of the financial constraints on health providers for delivering adequate services.

The literature is relatively vague when explaining the factors leading providers to financial constraints in conflict areas. Ahamadani et al (2014) along with Ager and colleagues (2015) argue that funding for providers in conflict settings is scarce because governments' change spending priorities. These studies recognise that governments enduring conflict are prone to invest more in national defence than in social services like the provision of health care. However, these analyses do not include government budgetary reports to understand the extent to which government expenditure shifts from health providers to defence and if such trend continues or diminishes over time. Additionally, the studies do not include analysis of documents such as providers' financial statements that could give a better understanding of how government financial streams to providers behaved before and after the conflict. Furthermore, Qirbi & Ismail (2017), studying the case of Yemen through the analysis of documents, illustrate that conflicts lead countries to experience economic collapse making it difficult to raise funds to aid providers' operation. There is less specificity on the level of funds the government raises and how the allocation of funding to providers varies.

Hadary et al (2009) studying a hospital in Israel mention other factors that can negatively affect providers' finances while operating in armed conflict. Such factors relate to reduced demand for health care as people try to avoid the conflict, or higher operating costs as they must deliver more complex services such as trauma care with specialised inputs and workforce. Hospital finances can also be affected due to facilities' operative limitations such as saturation of inpatient wards, hindering their ability to deliver more services and, therefore, raise revenue. These latter situations, of course, depend on whether providers rely on selling services to raise funds. This study, however, methodologically does not provide a comparative analysis about the services and reasons that lead to significant cost problems for providers during war. Also, it becomes difficult to extrapolate these findings toward conflict-affected nations that have the central government as the main entity responsible for funding providers' operations (Hadary et al., 2009).

In general, the studies report health providers in armed conflict environments can face significant financial constraints due to conflict (e.g., collapsed economy) and routine factors (e.g., service saturation constraining provision of services). Still the studies lack primary research exclusively focused to understand in more depth providers financial constraints, and no single study examines both the armed conflict and non-conflict challenges affecting providers' finances.

2.3.1.2. Leadership and governance

In this study, leadership and governance entails the availability and work of senior and junior management within providers, the overall managerial process, along with providers accountability and governance processes. Different studies report that health providers operating in armed conflict settings face several leadership and governance problems (Jola-Sanchez et al., 2016; Karemere et al., 2015; Labat & Sharma, 2016; Taha & Westlake, 2017). The problems can directly relate to armed conflict or routine issues and are the following: i) instability in managerial positions, ii) weak accountability systems, iii) multiplicity of actors, and iv) hierarchical managerial structures.

Concerning the first factor, Karemere et al (2015) and the ICRC (2013a), studying the operation of health providers in the DRC and the Middle East, argue that armed

conflict leads to instability in managerial positions. This problem relates to providers not having management continuity because managerial staff usually leave the area because of conflict risks. As a result, Karemere and colleagues encountered that junior managers and new staff usually become responsible for providers' key decision-making who usually improvise on working activities as a product of their insufficient skills and training. According to this study, this situation can hamper providers' reputation due to diminished service quality, and thus, negatively affecting their demand for services. The study, however, relied on a case study of a single facility, and therefore is of limited generalisability leaving it unclear if this issue occurs consistently with other providers in the conflict settings. Similarly, the research scope is limited to a quantitative study of demand for health services over time and did not include an analysis of patients' perception of providers' services through qualitative methods.

Furthermore, the governance of health providers in armed conflict settings is affected by weak accountability systems. Accountability systems include the efforts of government authorities or providers management to audit working activities of staff to enforce rules and procedures or sanction bad performance (WHO, 2007). However, in these contexts such systems are generally inoperative. Labat & Sharma (2016), interviewing front-line workers within surgery wards in the DRC, encounter that insufficient auditing has led to the development of highly unethical/corrupt practices like political patronage in several organisational processes. This conduct not only influences staff recruitment or their protection from poor performance but also decisions to improve salaries or the procurement of supplies. Relatedly, Jola-Sanchez, et al (2016) in Colombia, suggest that providers operating in conflict areas may face insufficient auditing practices from authorities leading to the development of corrupt practices like bribery of militias to continue service delivery. However, the latter finding concerns a hypothesis the study developed through reviewing media documents and has not been fully corroborated through other methods like interviews to determine whether this systematically occurs in different facilities. Also, the literature mentioned does not delve deeper in recognising *why* accountability systems in these contexts are relatively non-existent.

Similarly, the multiplicity of actors working in conflict areas can weaken the governance of providers in such settings. Providers in conflict settings often obtain help from multiple actors, particularly humanitarian organisations, which typically give significant assistance in conflict contexts. Qirbi and Ismail (2017), through the examination of documents, discovered several NGOs got involved to help local authorities manage existing health facilities; yet, they found that their work is usually uncoordinated, increasing confusion for providers' managerial duties. The study does not explain the exact nature of the "uncoordinated work". It could be inferred this issue mainly relates to several individuals becoming responsible for key positions within providers/institutions, thus confusing proper organisational responsibilities with multiple orders and creating overallocation of resources.

Finally, the governance of providers operating in armed conflict settings can be negatively affected by routine challenges like hierarchical managerial structures. Labat and Sharma (2016) in DRC and Taha and Westlake (2017) in the West Bank report that older male doctors often controlled managerial roles and are highly revered personnel. Those in charge of managerial roles for long periods of time can establish rigid managerial structures that can deter staff promotion, can be prone to political patronage, or engage in unreasonable punishments to staff. Regarding this latter issue, Taha and Westlake found that managers could reprimand workers for having a different political view or arriving late at work despite dealing with armed conflict situations such as checkpoints. Yet, the studies just mentioned tend to rely on interviews that gather the perceptions of front-line clinical staff (nurses, surgeons), but fall short in obtaining insights from hospital administrators. Thus, the literature lacks a deeper understanding of how these hierarchical managerial structures become prevalent to guide providers' activities and whether there might be benefits from such structures despite the problems the research has encountered.

In sum, the available studies provide some information on how providers' leadership and governance can be affected by armed conflict and routine issues. Yet, both issues are not scrutinised in more detail in a single study.

2.3.1.3. Medical products and technologies

In this research, medical products and technologies corresponds to providers' availability and integrity of supplies to deliver health services. Several studies report armed conflict can create severe scarcity of medical products of technologies or simply referred in this study as supplies (Afzal & Jafar, 2019; Ahamadani et al., 2014; Betsi et al., 2006; Cairo et al., 2018; Casey et al., 2009; Fouad et al., 2017; Haar et al., 2018; Kevlihan, 2013; Lembani et al., 2014; Marie et al., 2017; Michael, 1996; Mowafi et al., 2016; Mugo et al., 2018; Sahloul et al., 2016; Taira et al., 2010; Tappis et al., 2020; Trelles et al., 2015). The studies recognising these issues have taken place throughout different conflict settings ranging from high intensity wars like Syria to more irregular confrontations such as Sri Lanka. Mugo and colleagues (2018) in South Sudan, for example, evidenced that health providers delivering maternal care lacked basic supplies such as gloves or syringes to guarantee their services. Relatedly, Cairo, et al, (2018) and Casey et al (2009) in the DRC found that paediatric emergency services lacked nasogastric tubes, catheters, syringe pumps or eye protection materials to provide surgical care to new born children or basic obstetric care. In Iraq, Ameh et al (2011) recognised difficulties in providing blood transfusions in critical areas such as obstetric emergency care as a result of lack of blood testing reagents.

Several factors explain the scarcity of supplies providers face in armed conflict settings. For instance, the direct aggression and interruption of the supply chain by warring factions are two reasons that lead to scarcity of products. Azfal and Jafar (2019), Haar and colleagues (2018) and the Safeguarding Health Care In Conflict Coalition (2016a, 2018) mention scarcity of supplies for providers as a by-product of attacks or immobilisation of convoys responsible to stock facilities. Yet, the studies are limited as they do not inquire how often these events happen, what are the main objectives behind these measures, and which type of materials were the most affected during these disruptions. Meanwhile, Fouad et al (2017) mention that scarcity of supplies can also occur when militias deliberately divert vehicles transporting supplies for hospitals to the command centres of conflict actors. This latter insight, however, is more a circumstantial account that interviewees shared with researchers rather than a robust analysis of supply diversion to determine how often such situation occurs.

Providers' scarcity of supplies operating in armed conflicts can also be the product of inoperative road and aerial infrastructure. Mowafi et al (2016) along with Michael (1996) and Safeguarding Healthcare In Conflict & Human Rights Watch (HRW) (2015) mention that roads in conflict settings can become inoperative due to destruction, inadequate maintenance, and inaccessibility in certain hours or days as a result of checkpoints or blockades by conflict actors. For example, Afzal and Jafar (2019) and Tappis, et al (2020) in Yemen and Kevlinhan (2013) in South Sudan identified that the destruction or blockades of airports led to severe supply shortage for providers as they relied on air cargo to obtain about 90% of materials. Even though the studies consider these infrastructure issues relevant for providers in conflict areas to have adequate stock of supplies, the analysis often lacks detail regarding frequency of stockouts and the extent and number of road blockades. The studies considering air cargo to be fundamental for providers to obtain supplies (Qirbi & Ismail, 2017; Tappis et al., 2020), focused on Yemen in which such supply mechanism may be more important than in other conflict-affected nation.

Several studies identify that looting activities of conflict actors can affect providers' availability of supplies (Afzal & Jafar, 2019; Chi et al., 2015; Namakula & Witter, 2014; Safeguarding Healthcare in Conflict, 2016a, 2018, 2019, 2020, 2021; Safeguarding Healthcare in Conflict & HRW, 2015). Such looting of supplies can be directed towards the storage rooms of providers or to the transport systems carrying materials. The literature is limited in its understanding of the exact reasons that motivate actors to engage in looting. The studies that rely on interviews usually avoid integrating participants who are directly involved with the war to obtain more precise accounts on this issue. However, the studies' interviewees (usually front-line workers like nurses) presume these activities are carried out to undermine opponent's capacity to obtain health services.

Other studies have paid more attention to the routine issues affecting providers' availability of supplies within conflict areas (Betsi et al., 2006; Casey et al., 2009; Marie et al., 2017). Such factors are related to insufficient financial resources, inadequate information systems, and managerial issues. Ahamadani et al (2014) studying Iraq found that government underfunding of providers' operations hindered their capacity to acquire

materials. However, this latter study omits the perspective of government decision makers within the interview process to corroborate the situation and the reasons behind this decision. Relatedly, Casey and colleagues (2009) in the DRC consider that inadequacy of supplies in the midst of conflict may relate to poor information systems and managerial skills not allowing providers to have sufficient stock of materials. Finally, several of the studies previously cited in this section focus on specific services, such as obstetric, maternal, HIV/AIDS, surgery, and cancer care, rather than providing a holistic account of lack of supplies throughout the facilities.

2.3.1.4. Health care workforce

In this project, health care workforce corresponds to the availability and integrity of staff (both clinical and administrative) within providers to adequately deliver services. The literature of health providers operating in armed conflict settings mention that such facilities face important challenges with personnel. The main challenges documented in the studies are conflict-related corresponding to reduced personal safety and physical integrity, loss of freedom, humiliation, scarcity of staff, financial insecurity, or mental health complications. Other challenges providers face with staff involve difficulties to manage workers.

Several studies mention workers can face difficulties with their personal safety product of threats that occur through aggressive behaviour, and commuting problems (Donaldson et al., 2012; Fouad et al., 2017; ICRC, 2011, 2012, 2013a, 2014a; Labat & Sharma, 2016; Omar, 2020; Safeguarding Healthcare in Conflict, 2016a, 2019, 2020; Safeguarding Healthcare in Conflict & HRW, 2015; Sinha et al., 2013; Trelles et al., 2015; WHO, 2016). Research in Colombia, Iraq, DRC, Manipur, and Syria shows that death threats are not just directed at physicians, but at all health staff including nurses, medical students, and administrators (Ameh et al., 2011; Donaldson et al., 2012; Fouad et al., 2017; Labat & Sharma, 2016; Lafta & Falah, 2019; Sinha et al., 2013). The threats range from verbal intimidation, showing or pointing guns at health workers within facilities, and placing explosive devices in the offices or homes of workers.

The literature reports different reasons for threats to occur. They range from routine to conflict issues. The first involve patients or their visitors threatening staff for

medical mistakes or lack of supplies. The second correspond to conflict actors, their friends or relatives threatening staff for untimely care or adverse outcomes to the life or health of patients (Ameh et al., 2011; Donaldson et al., 2012; ICRC, 2011, 2012, 2013a; Lafta & Falah, 2019). Some studies hypothesised that armed conflict may incentivise violent attitudes from patients and relatives towards workers but this assumption has not been examined with further qualitative or quantitative approaches (Ameh et al., 2011; ICRC, 2012, 2014a; Labat & Sharma, 2016; Safeguarding Healthcare in Conflict & HRW, 2015).

The safety of workers employed for providers in conflict areas can also be jeopardised for carrying out routine activities like commuting to work. Several articles mention workers are exposed to commuting problems due to conflict issues related to checkpoints, curfews, explosions or firefights that can harm workers and impede their normal mobilisation (Ager et al., 2015; Ameh et al., 2011; Marie et al., 2017; Safeguarding Healthcare in Conflict, 2021; Tappis et al., 2020; Witter et al., 2017). The available research is unable to determine the frequency and severity of these previously mentioned events for staff. Still, the research shows that activities such as commuting, which could be relatively easy to do in the absence of conflict, become daunting tasks in conflict settings and create risks to personnel's safety.

Furthermore, the literature from South Sudan, Yemen, Syria informs that conflict's warring actors can affect the physical integrity of staff (Kevlihan, 2013; Safeguarding Healthcare in Conflict, 2021; Safeguarding Healthcare in Conflict & HRW, 2015; Tappis et al., 2020). They do so through physical violence (e.g., hitting, sexual assault), intimidation mainly to elicit information from personnel, and murder. Concerning the murder of staff, several studies with various methods (e.g., document analysis, surveys) agree that workers usually get killed because of attacks to facilities, refusal to provide care during threats, or ambushes while commuting to work (Donaldson et al., 2012; Fouad et al., 2017; Haar et al., 2018; ICRC, 2011, 2012; Qirbi & Ismail, 2017; Ramos Jaraba et al., 2020; Safeguarding Healthcare in Conflict, 2016b, 2018; Safeguarding Healthcare in Conflict & HRW, 2015; Witter et al., 2017). Syria, by the time of writing this thesis, is perhaps the country with most worrisome indicators of murdered staff. In that country, at

least 32% of hospitals' doctors have been killed product of the strategy to attack health facilities during the civil war (Omar, 2020). The studies, however, provide less refined information at the facility level about what professionals are killed the most during conflict, or how providers, at the organisational level, mitigate these risks for staff. Besides, the deaths might be under reported as the studies rely on secondary information that may have sub-registry problems.

Numerous studies studying providers in diverse conflict settings like South Sudan, Libya, Pakistan, Iraq, Uganda inform that staff can lose their freedom product of incarceration or abduction/kidnapping (Chi et al., 2015; ICRC, 2011; Kevlihan, 2013; Safeguarding Healthcare in Conflict, 2016a, 2016b, 2018, 2019, 2021; Safeguarding Healthcare in Conflict & HRW, 2015; Witter et al., 2017). Kevlihan (2013) recognised that in South Sudan, the government's suspicions on the motives of hospital staff can lead the military to apprehend workers. Similarly, studies in Burundi and Uganda show that health workers could be abducted either to provide treatment to wounded or sick militias or used as a war strategy like ransom (Chi et al., 2015; Witter et al., 2017). Unfortunately, the available studies did not approach the victims of such events for testimony to fully understand the problems endured during captivity. Despite this issue, it is clear conflict areas do not provide certainty on personnel regarding their freedom.

Regarding providers' staff experiencing ongoing feelings of humiliation and discrimination, studies in the West Bank and Africa show that such experiences can be the product of harsh scrutiny practices at checkpoints such as hitting or verbal mistreatment (ICRC, 2011; Marie et al., 2017; Taha & Westlake, 2017). The same studies reveal that hiring and promotion practices within health facilities can depend upon staff political affiliation — being the latter a routine challenge which constitutes discrimination. Different weaknesses were observed in the previously cited research. Methodologically, the studies just focused on interviewing medical professionals, such as nurses or doctors, and do not provide a comprehensive picture of the issues experienced by other professions in their workforce. Further, specific studies as the one of Taha and Westlake (2017) rely on life testimonies that may be impacted by cultural, religious, or political positions that can lead to a narrow interpretation of what occurs in the research field. Yet,

the research is valuable because it shows the different problems providers' workforce faces in conflict areas.

As a result of safety risks health providers endure in conflict contexts, they struggle with scarcity of staff as workers flee such areas to improve safety. The exodus of workers has been documented in studies undertaken in high intensity conflict contexts (e.g. Afghanistan, Syria, Iraq, Libya, Yemen) (Ager et al., 2015; Ahamadani et al., 2014; Betsi et al., 2006; Donaldson et al., 2012; Fouad et al., 2017; Haar et al., 2018; ICRC, 2011, 2012, 2013a, 2014a; Omar, 2020; Safeguarding Healthcare in Conflict, 2016a; Safeguarding Healthcare in Conflict & HRW, 2015; Tappis et al., 2020), and in less intense war zones (Yobe Nigeria, Burundi, Northern Uganda, Cote d'Ivoire, Colombia) (Ager et al., 2015; Betsi et al., 2006; Chi et al., 2015; Jola-Sanchez et al., 2016). Donaldson and colleagues (2012) along with Tappis et al (2020) undertaking studies in Iraq and Yemen respectively, evidenced that doctors in such countries are constantly looking for opportunities to work outside the conflict area. Such personnel are inclined to look for better security for themselves, their families, and have more economic stability. Ahamadani et al (2014) and Ameh et al (2011) identified that in Iraq at least 34,000 doctors fled the country mainly due to security concerns, creating difficulties in delivering specialised services. This finding is echoed in Mowafi et al (2016) studying Syria, who inform trauma centres endured scarcity of surgeons and anaesthesiologists — something critical given that trauma-related pathologies common in conflict contexts (Mowafi et al., 2016). Relatedly, Betsy and colleagues (2006) in Cote d'Ivoire mention that health facilities in certain provinces had access to only two physicians to deliver services. The literature citing scarcity of staff does not provide a detailed census on staff availability considering their training levels. Similarly, the literature does not make a comparison between the available staff and the recommended levels providers must have according to population. Nevertheless, it is accepted that providers face important difficulties to find workers in conflict areas.

The scarcity of staff that health providers bear in conflict areas usually leads to increasing the workload of remaining workers. Ager et al (2015) and Witter et al (2017) interviewing staff who remained working for providers during conflict, observed that staff

assumed extra work product of scarce personnel and usually had insufficient training. Fouad and colleagues (2017) call this issue “*the need for health workers to do everything*” (p.2520). Marie et al (2017) in the West Bank documented that nurses working for facilities of primary care can assume multiple responsibilities such as outpatient consultation, cleaning/disinfecting duties, or undertaking administrative paperwork. Yet, the studies that recognised this issue are limited in analysing working schedules to precisely understand the extra work staff assume owing to scarcity of personnel.

Additionally, staff working for providers operating in conflict settings suffer economic insecurity. Studies in Colombia, the West Bank, South Sudan and Yemen identified that workers faced poor economic conditions because providers could not pay salaries on time (Jola-Sanchez et al., 2016; Marie et al., 2017; Mugo et al., 2018; Tappis et al., 2020). The available studies are limited in exploring the reasons on why provider’s face difficulties to pay for workers’ services. Just one study of Quirbi & Ismail (2017), conducting a documental review on Yemen’s conflict, suggests workers did not receive payments as the government prioritised the funding of war over other social services. The study, however, does not conduct more detailed analysis to distinguish if other structural problems with the health system may explain the financial difficulties providers face to pay employees. Despite these limitations, the research helps to understand that workers operating in conflict settings not only have to concern themselves with their physical safety, but also with their financial stability.

The armed conflict can also impact the mental health of providers’ workforce. For example, studies conducted in Israel mention staff working for hospitals operating in war settings suffer from high levels of stress and fear (Abu-El-Noor et al., 2016; Ben-Ezra & Bibi, 2016; Koren et al., 2009). Regarding stress, the existing literature offers preliminary accounts rather than systematic reviews about the factors causing stress to workers (Afzal & Jafar, 2019; Ben-Ezra & Bibi, 2016; Dhar et al., 2012; Hadary et al., 2009; Marie et al., 2017). Such accounts, mainly obtained through interviews, mentioned that increased workload, insecure commuting, lack of supplies or gratitude from patients or co-workers explained stress in staff. Relatedly, Koren et al (2009) inform that workers recollection of patients in dire clinical conditions (e.g. dismemberment) can also create

stress in workers. Concerning workers' fear, the available research informs that workers develop this problem for being unable to preserve good physical integrity, afford living expenses or being unable to protect family members (Dhar et al., 2012; Karemere et al., 2015; Lafta & Falah, 2019, 2019; Mugo et al., 2018; Tappis et al., 2020; Witter et al., 2017). Still, the studies do not fully explore whether this condition could be observed in all workers, including clinical and administrative personnel.

Finally, several studies included in this review identified routine and conflict challenges affecting the management of providers' personnel. For example, Mangwi Ayiasi, et al (2019) inform that armed conflicts complicate the advertisement of working positions. Similarly, the conflict does not create interests on workers for vacancies as individuals leave the area, or prefer to work in non-profit organisations that settle nearby and pay more (Mangwi Ayiasi et al., 2019). The available literature reveals that routine issues such as nepotism and favouritism permeate providers' activities to select, promote or discipline staff (Labat & Sharma, 2016; Mangwi Ayiasi et al., 2019; Marie et al., 2017; Taha & Westlake, 2017). Taha & Westlake (2017) along with Labatt and Sharma (2016) mention that staff favoured by management usually lack effective punishment for poor performance or are favoured to attend training workshops. These issues create an additional problem regarding the demoralisation of staff working in other positions (Marie et al., 2017; Taha & Westlake, 2017). Yet, there are certain caveats with the studies cited. For example, they are limited to understand whether job advertisement is difficult across several conflict settings. Similarly, the studies informing the existence of high nepotism or favouritism levels in providers to hire staff, do not interview managers to have more details on why these practices are so prevalent. Despite these problems, they give a sensible understanding of the challenges providers face to administer personnel.

Overall, the available literature gives insights about the challenges providers struggle with their staff in conflict settings. The challenges range from conflict issues to routine difficulties. Both set of challenges however are not examined in a single study.

2.3.1.5. Service delivery

Concerning the WHO's (2007) service delivery building block theme, this study established its own understanding about it. Within the WHO vision of the service delivery

building block/theme, four characteristics integrate it. These are the following: General Service Availability (inspects the availability of physical facilities to provide the service), General Service Readiness (inspects the actual preparedness of equipment and infrastructure to deliver care), Service-Specific Availability, and Service-Specific Readiness (both issues are like the previously mentioned but oriented to specific services). Given the available information within the literature review does not provide significant information/details to address all the subcomponents referred above, this study reinterpreted the service delivery theme to be integrated by two key elements making a boarder view of what this theme is. Those two key aspects were the following. i) infrastructure, and ii) the capacity of health providers to delivery care. The first corresponds to health providers physical facilities (buildings), their access to basic utilities, (water, electricity, communications) along with hospital equipment. The second component focuses on the capacity of providers to deliver its main and complementary services with the resources available¹². The available literature shows that armed conflicts create significant challenges in both areas. More details are provided below.

Physical infrastructure

Several studies mention health providers operating in armed conflict settings face infrastructure damage (buildings) consequence of direct attacks through bombing, airstrikes, explosions, arson, and crossfires that result in their partial or complete destruction (Afzal & Jafar, 2019; Betsi et al., 2006; Chi et al., 2015; Elamein et al., 2017; Fardousi et al., 2019; Fouad et al., 2017; Haar et al., 2018; Hadary et al., 2009; ICRC, 2011, 2012, 2013a, 2014a; Kevlihan, 2013; Michael, 1996; Mowafi et al., 2016; Omar, 2020; Safeguarding Healthcare in Conflict, 2016a, 2016b, 2018, 2019, 2020, 2021; Safeguarding Healthcare in Conflict & HRW, 2015; Sinha et al., 2013; Tappis et al., 2020; WHO, 2016). For instance, in Syria at least 50% of the provider network faced infrastructure damage from bombs or airstrikes (Omar, 2020). Other studies mention that specific areas of the country, like north-west Aleppo, do not have any type of health providers because the civil war completely obliterated them (Elamein et al., 2017; Fouad

¹² The hospital main services are Emergency care, Inpatient care, Outpatient care, and Surgery. The complementary services: referral of patients and diagnostics.

et al., 2017). Relatedly, Chi et al (2015) in Uganda mentioned that militias damaged primary health centres through purposeful attacks as a way to exert their power over the government. Meanwhile, Briody et al (2018) show that health facilities in Yemen, Iraq, Chechnya, Kosovo and Bosnia would be targeted several times in a year. In certain countries like Kosovo, the entire provider network could face an average of 6.67 facilities attacked each month. The experiences just presented can help the Colombian state and health care actors, to recognise that conflicts when they scale up over time can lead to disastrous consequences for providers, becoming completely inoperative.

Still the studies presented above face important limitations. For instance, several projects relied their research on documents produced by humanitarian and media organisations who occasionally faced difficulties to corroborate information on attacks to health facilities (Briody et al., 2018; Haar et al., 2018; Sinha et al., 2013). This latter issue can lead the research to over or under report findings regarding the number and extent of providers' damage within a conflict setting. Similarly, the available research does not disaggregate the information of facilities facing conflict-related damage across tiers of care (i.e., primary, secondary, tertiary) to understand what type of facilities can be affected the most. The studies that rely on surveys to identify and inform about the damage of health providers in conflict areas (Elamein et al., 2017; Haar et al., 2018; Mowafi et al., 2016), relied on surveys that may underreport the damaged facilities because of problems to conduct the surveys. Such problems ranged from technological to safety issues during fieldwork. A group of studies that relied on qualitative methods to discuss how health providers face damage within conflict settings lack specificity about how the attacks to providers occur or in what condition providers' physical facilities remain after attacks (Betsi et al., 2006; Chi et al., 2015; Fardousi et al., 2019; Kevlihan, 2013; Tappis et al., 2020, 2020). Finally, certain studies that used photographic evidence to study attacks on facilities (Hadary et al., 2009), just examine a single facility experiencing war and most of the images collected focus on detailing the provider's façade than specifying internal damages. Regardless of the limitations just mentioned, it is possible to appreciate through the studies that armed conflicts create substantial infrastructure damage for providers.

The literature of health providers operating in conflict settings also mentions the facilities can face problems with continuous supply of basic utilities such as electricity or water (Afzal & Jafar, 2019; Casey et al., 2009; Fouad et al., 2017; ICRC, 2014a; Mowafi et al., 2016; Taira et al., 2010; Tappis et al., 2020; Trelles et al., 2015). The available studies refer to different conflict or non-conflict factors that explain irregularity in the access to utilities. Conflict factors relate to bombing, looting or destruction of the infrastructure connecting providers to utilities (Safeguarding Healthcare in Conflict, 2019; Tappis et al., 2020). Other factors involve health providers lacking financial resources to keep utility connectivity (Tappis et al., 2020).

Certain research projects mention different problems as a consequence of inoperative utilities (Afzal & Jafar, 2019; Tappis et al., 2020). Afzal & Jafar (2019) studying multiple conflict settings (e.g., Iraq, Syria, Yemen, DRC) evidenced that providers can endure problems preserving drug integrity owing to lack of power to keep cold chains running. Tappis et al (2020) in Yemen, observed that lack of water made it difficult for facilities to deliver services like dialysis or emergency obstetric care as such resource was essential for curing procedures or cleaning working areas. However, the studies do not deliver a systematic analysis of this finding in multiple health providers to see if this situation consistently occurs across conflict settings.

The literature is relatively grim when it refers to the technological capabilities of providers operating in armed conflict. Mowafi et al (2016) analysing trauma centres in Syria showed the war destroyed critical equipment to provide surgery care like x-ray, tomographic scanners, ventilators, or anaesthesia machines within 42% of analysed facilities. Relatedly, Mugo et al (2018) in South Sudan and Casey et al (2009) in the DRC observed that facilities providing maternal services lacked essential equipment such as autoclaves to sterilise instruments or undertake viral load tests to assess the presence of VIH/AIDS. Sahloul and colleges (2016) in Syria showed that cancer clinics had tremendous scarcity of equipment to screen for the disease (e.g., mammographs) and deliver treatment. Cairo et al (2018) and Casey (2009) conducting research in the DRC also discerned that health providers face scarcity of equipment like ventilators or incubators to deliver maternal care.

Even though the previous studies identify providers' problems with technologies they do not give a comprehensive picture of equipment scarcity and limit themselves to show problems for a specific service. Similarly, the studies offer limited explanations of why scarcity of equipment occurs. Just Cairo and colleagues (2018) suggest that the lack of equipment may be product of insufficient governance and poor monitoring from governments or donors on providers' work. The studies do not give enough information on whether the scarcity of equipment may be related to insufficient financial resources or the lack of prioritisation by providers to replace it. Finally, few studies have an explicit focus on understanding providers' difficulties with technologies in armed conflict and usually these problems are presented as secondary research findings.

Capacity to deliver care

This study considers capacity to deliver care as the capability of health providers to render its main and complementary services for patients within the conflict context. On this issue the literature is divided in two perspectives: Studies informing the conflict has negative consequences on providers service delivery and others reporting positive effects on this matter. The available literature reporting the negative consequences of armed conflict on providers lay out problems in five areas: i) the working capabilities of facilities, ii) service availability and complementarity, iii) demand for care, iv) referral or transport services, and v) decisions to deliver care. Each will be expanded below.

Regarding the first issue, studies in Yemen, Libya and Syria estimate that 17% to 75% of the provider network became non-operational after conflict attacks on providers' infrastructure (Qirbi & Ismail, 2017; Safeguarding Healthcare in Conflict, 2016a, 2018; Tappis et al., 2020). From the literature it is assumed that non-operational providers are facilities unable to deliver care because attacks destroy their infrastructure to house patients. Research projects in Iraq and the DRC, evidenced that 73.7% of providers delivering maternal care could not guarantee it in a comprehensive manner because of insufficient supplies, personnel skills, utilities, and equipment (Ameh et al., 2011; Casey et al., 2009); yet the research does not inquire why these factors are lacking. The available research also informs that insufficient implementation of quality and patient safety standards can hamper providers capabilities to deliver care (Ahamadani et al.,

2014; Ameh et al., 2011; Casey et al., 2009; Labat & Sharma, 2016). Casey et al (2009) inform that providers in the DRC faced issues to deliver safe maternal services as facilities had poor or non-existent sanitary protocols. Labat and Sharma (2016) studying surgery wards in the DRC encountered that corrupt practices, such as political patronage for hiring personnel, created a lack of discipline to mandate staff to execute their work through proper processes and standards.

Concerning availability and complementarity of providers' services, the available literature recognises that conflict leads providers to deliver their services at restricted times or close altogether. Ameh et al (2018) and Casey (2009) studying providers in Iraq and The DRC respectively, mention that emergency obstetric services in hospitals functioned at irregular times as patients and workers endured significant insecurity to visit clinics/facilities. Relatedly, Ager and colleagues (2015) in Yobe, Nigeria, report that primary care centres shut down completely during war periods to protect facilities' assets or personnel but the study delivers less details about how effective the measures were to safeguard such elements. Mowafi and colleagues (2016) conducting research in Syria showed providers face difficulties to coordinate the complementarity of providers' services. For instance, providers that deliver trauma care can face a dysfunctional service because attacks can render other essential supporting services inoperative such as inpatient wards or laboratory units (Mowafi et al., 2016).

Regarding health providers' demand for care within conflict settings there are studies that mention that it can increase or decrease as consequence of this phenomenon. Studies in Colombia, Yemen, and Yobe Nigeria, found that conflict exposed providers to significant demand for care given the large number of victims/patients conflicts create (Ager et al., 2015; Jola-Sanchez et al., 2016; Tappis et al., 2020). Meanwhile, Makhoul-Obermeyer et al (2020) studying a hospital in Lebanon informed that demand for services could diminish as patients restrain from visiting facilities to mitigate conflict risks. Still, the previously mentioned studies have certain methodological issues to make either statement definitive. The research of Makhoul-Obermeyer and colleagues did not conduct longitudinal analysis to assess whether the trend of dwindling demand for services continues over time. Whereas the research of Ager, et al, Tappis et

al, and Jola-Sanchez et al, do not sufficiently examine through quantitative methods whether the increase in demand for services occurs regularly in such contexts.

The available literature recognises that health providers operating in armed conflict settings face another important challenge with the demand for care: the delivery of routine services (Afzal & Jafar, 2019; Hadary et al., 2009; Lagrou et al., 2018; Trelles et al., 2015). For example, Trelles et al (2015) in Syria inform that providers are exposed to significant demand of obstetric surgery together with traffic-related traumas, on top of conflict-related patients. Despite the available studies do not examine hospital admissions closer to identify what other routine services providers deliver in conflict areas, they inform these facilities must continue to meet the population's regular needs along with conflict-related care.

Furthermore, health providers in armed conflict contexts can face problems with the operation of referral systems. Such problems range from stoppage, highjack, destruction, and reduced mobility of vehicles/ambulances. Stoppages can be product of checkpoints or ambushes (ICRC, 2013a, 2014a; Safeguarding Healthcare in Conflict, 2016a, 2018; WHO, 2016). Checkpoints usually involve government-controlled posts along the roads to prevent the mobilisation rebel warring factions. Ambushes encompass spontaneous and usually violent manifestations on the roads grouping conflict actors and civilians that block road transit. Studies in Yemen, The West Bank and Colombia reveal that checkpoints and ambushes can hinder health providers capacity to deliver timely care to patients, and in extreme situations can lead patients to death during transit (Ager et al., 2015; Hadary et al., 2009; ICRC, 2013a, 2014a; Ramos Jaraba et al., 2020; Rytter et al., 2006; Tappis et al., 2020). Unfortunately, studies do not include information on how health providers overcome these problems when they occur.

Concerning the theft or highjack and destruction of referral vehicles, the first issue often involves militia taking over providers' vehicles to transport fellow sick and wounded combatants or extort authorities and health facilities (Safeguarding Healthcare in Conflict, 2019, 2020). The destruction of referral systems mainly entails attacks on health providers' vehicles (e.g. ambulances) through looting, explosive devices, or fire arms (ICRC, 2013a, 2014a; Safeguarding Healthcare in Conflict, 2016a, 2018, 2021;

Safeguarding Healthcare in Conflict & HRW, 2015). The research of Dhar et al (2012), in addition to Haar and colleagues (2018) in Kashmir and Syria respectively, show that providers referral systems can become conflict targets despite using emblems considered to give protection like flashing lights or the star of life symbol. The available studies do not explore the reasons why militia attack providers' transport systems when using the protective emblems or in what contexts the emblems can be useful.

Armed conflicts also hinder providers' referral systems product of road destruction which reduces vehicle mobility (ICRC, 2011; Mowafi et al., 2016). Mowafi et al mention that infrastructure problems have led health providers to use more "informal" and dangerous transportation routes for transferring patients referred as "smuggling routes" (Mowafi et al., 2016, p.817). Still, there is a lack of specificity about how those routes can be dangerous for transportation. It may be inferred that such transit routes are dangerous because they could create mechanical damages to vehicles or be exposed to more attacks.

A final issue regarding the negative consequences armed conflicts have on providers' service delivery relates on making them incur on questionable decisions while delivering care. Studies conducted in Burundi and the DRC (Cairo et al., 2018; Chi et al., 2015) report that primary care providers refused to deliver maternal, reproductive and surgical services to certain ethnicities. Meanwhile, in Libya, Syria or Yemen, when facilities faced overcrowdings doctors began to prioritise to whom health care should be provided (Afzal & Jafar, 2019). Still, the studies' methods, often interviews, lack the scope to question respondents as to why this problem occurred to better understand the reasons providers denied services to certain individuals.

Contrary to the literature discussed above, there is research mentioning that armed conflict can foster providers' operations. For instance, Jola-Sanchez et al (2016) informed that in Colombia the conflict may improve productivity and efficiency of primary care providers' after conducting a Data Envelopment Analysis (DEA) of production data. The authors after conducting some semi-structured interviews (6 in total) suggest such improvements may be explained by workers engaging in multi-tasking, the speeding up of treatments, and informal training with co-workers on advance clinical areas.

Meanwhile, Rushton & Devkota (2020) in Nepal suggest an armed conflict can enhance providers' services because it diminished doctors' work absenteeism as guerrilla fighters would threaten them if they were not committed to their work. Yet, in both studies there is not a defined sampling frame of interviewees to understand whether a saturation point has been reached for communicating these findings.

2.3.1.6. Information systems

Information systems in this project corresponds to the processes providers established to collect and analyse data on services delivered or activities performed. Several articles mention that both routine and conflict challenges affect providers' information systems (Betsi et al., 2006; Casey et al., 2009; Lagrou et al., 2018; Mowafi et al., 2016; Qirbi & Ismail, 2017; Sahloul et al., 2016; Trelles et al., 2015). Mowafi et al (2016), Sahloul (2016) and Casey et al (2009) studying the Syrian and Congo contexts inform that insufficient investments from health facilities and the government on information systems led providers to scarcely gather patients' information regarding demographics, clinical discharge, treatment, and causes of death. Qibir & Ismail (2017) in Yemen, inform that information systems in providers of conflict areas suffer reliability issues in which patient information could be duplicated, excluded, or overlapped with that of other patients. Trelles et al (2015) in Syria informed that only facilities administered by humanitarian actors developed basic information systems. The information systems of such facilities helped with the gathering of basic patient data like age or gender but did not facilitated administrative activities like the management of medical stocks. Still, the studies cited are not methodologically designed to comprehend the adequacy of providers' information systems in an integral manner. They do not examine whether information systems are effective to collect and administer providers' data, nor recognise the problems facilities or authorities encounter to adequately investment on this issue.

Concerning the armed conflict challenges affecting providers information systems, Betsy et al (2006) in Cote d'Ivoire found that warring factions can vandalise providers' information system through the destruction or looting of documents, computers, or data storage devices. This study does not specify whether these activities are deliberate to

render providers' information systems inoperative, or the activities are a by-product of rebel attacks on providers infrastructure.

Hence, both routine and armed conflict challenges create significant difficulties for providers to have functional information systems. This can affect their ability to make better health assessments and deliver quality care.

2.3.2. ACTIVITIES HEALTH PROVIDERS EMPLOY TO FACE THE CHALLENGES

On top of the challenges, scattered throughout the literature there is information on measures providers adopt to face them, yet most of the research does not take this issue as their main research aim/objective. To the best of the researcher's knowledge, there is insufficient research focused on understanding how health providers, particularly hospitals, sustain delivery of health care in protracted armed conflicts. The paragraphs below will discuss what the literature reports health providers do to face challenges.

Some studies especially undertaken in Syria identify within their discussion section that health facilities would disperse their services throughout multiple locations to deal with conflict attacks to continue deliver care (Fouad et al., 2017; Mowafi et al., 2016; Trelles et al., 2015). Such areas could be farms, garages, schools or even caves. The studies are less precise in explaining how such decentralisation was possible, what key elements allow this separation of services, and whether health facilities delivered services in relatively normalcy in such conditions.

The literature also mentions that health providers, particularly of primary care, rely on the redeployment of staff across services or on individuals with less skills to mitigate personnel scarcity (Jola-Sanchez et al., 2016; Mangwi Ayiasi et al., 2019; Taira et al., 2010). For Instance, Mangwi Ayiasi et al (2019) inform that in Northern Uganda primary care facilities re-deployed professional nurses in other working areas such as midwifery product of insufficient staff. Taira et al (2010) mentioned that in Sri Lanka providers assigned general practitioners for specialised surgery despite not having sufficient training on such area. Still, the literature does not have details about how the redeployment of staff across services occurs; also, it is unknown whether facilities have established a system to select the most apt person for the new roles.

Similarly, certain studies inform that health providers can rely on the patients' financial resources when facing scarcity of supplies due to conflict or routine problems (Ameh et al., 2011; Tappis et al., 2020). For example, Tappis et al (2020) evidenced that primary care facilities specialised on maternal care required patients to pay out-the-pocket for services delivered to mitigate financial shortage. In Iraq, Ameh and colleagues (2011) found that providers of emergency obstetric care told patients to purchase their medicines as they did not have such elements. Nevertheless, the studies do not investigate whether providers rely on patients' out-of-pocket payments in the long-term considering this could be a prohibitive economic burden for people living in conflict settings.

The literature, likewise, mentions health providers in conflict environments can obtain help from voluntary and humanitarian organisations to cope with operating challenges (Afzal & Jafar, 2019; Chi et al., 2015; Fouad et al., 2017; Khan et al., 2016; Lagrou et al., 2018; Lee, 2008; Mangwi Ayiasi et al., 2019; Michael, 1996; Omar, 2020; Ramos Jaraba et al., 2020; Rushton & Devkota, 2020; Taira et al., 2010; Trelles et al., 2015). For example, studies in Syria and Northern Uganda mentioned primary care facilities received help from the Civil Defence or the Catholic Diocese with personnel to fill vacant nursing positions because of personnel scarcity (Fouad et al., 2017; Mangwi Ayiasi et al., 2019; Omar, 2020). The available literature also informs that organisations such as the ICRC or Médecins Sans Frontières (MSF) can give significant help with expatriate medical personnel or supplies when providers lack such inputs. Similarly, humanitarian actors can help providers cope with challenges through training their staff in diverse areas like war medicine or international humanitarian law to enhance service delivery or increase staff awareness about the respect they deserve (Michael, 1996; Rushton & Devkota, 2020; Taira et al., 2010; Trelles et al., 2015). However, the literature is limited in discussing how providers develop the process to obtain help. Michael (1996) vaguely mentions providers would engage in dialogue with donor agencies to facilitate this kind of aid. Still, the information within the existing research is insufficient regarding how the dialogues occur or what resources are necessary to engage in dialogue.

The literature identifies that providers, mainly primary clinics, have communicated conflict actors the neutral status of health care within international humanitarian law to face conflict challenges (Lee, 2008; Rushton & Devkota, 2020). For example, in Yemen and the Philippines providers informed the community and militias about their neutrality through written documents or billboards on the need to respect health care. The studies, however, are limited in examining how effective this campaign is in helping providers deliver services over time or if there is effective interiorisation among the community or conflict actors to respect the medical mission.

Besides, the literature gives some examples on how health providers' personnel recur on different activities to face the challenges in a conflict context to continue their work. For example, Namakula and Witter (2014) and Witter et al (2017), conducting research in Uganda, Sierra Leone and Cambodia informed staff would depend on activities such as using different hair styles, carry guns or socialise with community members to mitigate conflict risks. Similarly, staff would use candles when health facilities lacked electricity to do their work or engage in artisan economic activities to procure income when they did not receive salaries. Yet, the studies significantly rely on semi-structure interviews and life-stories where male participants were insufficiently included to have a broader gender perspective on activities staff used to face the challenges. Similarly, generalisability of findings becomes limited as stories can be too personal or unique.

Finally, studies undertaken in field hospitals and centres for primary care in Syria, Nigeria and Cote d'Ivoire, give insights of providers relying on innovative measures to address challenges (Ager et al., 2015; Fardousi et al., 2019; Lembani et al., 2014). For example, the staff of field hospitals would use rubble bags to fortify electrical infrastructure from conflict attacks, relax quality standards to meet health care demand, or obtain supplies with the help of smugglers. Relatedly, providers would borrow from other facilities supplies when they faced scarcity of drugs or received the help of government agencies with information on safety risks to protect workers. Additionally, providers would increase drug stocks to mitigate shortages or reach out community and political leaders to improve the referral systems or service funding. Still, not much information is given on

how the support is obtained and which resources were fundamental for providers to establish the strategies just mentioned.

In sum, the available literature gives some accounts about what individual primary health providers and their workers do to manage the challenges of conflict settings. Yet, the accounts are superficial not analysing in-depth such measures. Similarly, there is insufficient research available aiming to understand how hospitals sustain delivery of care in protracted armed conflict environments.

2.4. DISCUSSION

After conducting a literature review to comprehend what is known about the operation of health care providers/institutions/organisations in armed conflict settings, it is possible to say the following:

The relevant literature on this topic recognises health providers face multiple challenges while operating in conflict settings. Similarly, it gives insights about some measures providers employ to face the challenges. Yet, there is insufficient research around the world and in Colombia that focuses its understanding how health providers, particularly hospitals, sustain delivery of health care in conflict settings specially of protracted nature.

Concerning the literature's insights about the challenges providers face in conflict contexts, this study used the WHO building blocks themes to organise such discussion. The themes outline key functions providers rely on to operate and are the following: Finances, Leadership and Governance, Medical Products and Technologies, Health Care Workforce, Service delivery and Information systems. The existing literature reports on several challenges the armed conflict creates on the elements just mentioned. It is worth mentioning that some studies also inform routine issues can also affect the previously outlined elements like insufficient funding or unskilled personnel (Ameh et al., 2011; Betsi et al., 2006; Labat & Sharma, 2016; Tappis et al., 2020). However, both issues have not been fully integrated in a single research project, so the available research lacks on a standalone basis a holistic understanding of all the challenges providers endure in conflict environments. This latter situation does not allow governments, development, or

humanitarian agencies to fully understand the problems beyond conflict that providers face and design more effective support programmes for these facilities.

The available literature gives the following insights about the challenges providers face while operating in a conflict context. Conflicts negatively affects providers finances as governments change spending priorities from social services to war, or impedes them the selling of more services to clients product of safety concerns (Ahamadani et al., 2014; Hadary et al., 2009; Qirbi & Ismail, 2017). Similarly, conflict environments negatively affect providers' leadership and governance as they can cause high turnover in managerial roles due to insecurity. In turn, providers assign unskilled staff in such positions who improvise at their work which hinders providers' reputation over time. Similarly, providers' face diverse workforce problems in conflict settings that range from death threats, incarceration, mistreatment, stress, fear and even death – this latter often a collateral effect of attacks on facilities (Safeguarding Healthcare in Conflict & HRW, 2015). The problems just mentioned have led providers to face substantial scarcity of personnel as workers flee conflict areas to improve safety. Providers operating in conflict areas also experience scarcity of medical products and technologies as warring parties destroy or loot supplies (Safeguarding Healthcare in Conflict & HRW, 2015). Likewise, conflict areas pose great challenges on providers' service delivery as warfare can impair infrastructure or referral systems. Finally, providers operating in conflict areas endure weak information systems product of looting or shelling technological infrastructure (Betsi et al., 2006).

Besides, the literature mentions that providers operating in conflict settings can face routine challenges on top the war-related issues just mentioned. For example, some studies reviewed recognised that facilities can experience scarcity of supplies or technologies due to insufficient funding (Betsi et al., 2006; Casey et al., 2009; Marie et al., 2017). Relatedly, providers can face overcrowding considering that facilities may be inadequate in their size (Afzal & Jafar, 2019; Hadary et al., 2009). Also, some articles indicate that providers operating in conflict settings may face rigid and hierarchical managerial structures and weak accountability systems that can lead to political patronage in the hiring of personnel (e.g. Labat & Sharma, 2016; Taha & Westlake,

2017). This latter issue can hinder work promotion, staff motivation, and allocation of resources.

Given how serious the challenges just mentioned can be for providers operating in conflict settings, it is surprising there is little research on how facilities, and particularly hospitals, sustain delivery of care in midst of armed conflict, specially of protracted nature which are becoming more common globally (HIIK, 2021; ICRC, 2016b; Safeguarding Healthcare in Conflict, 2021). The literature reviewed provides some accounts on specific activities providers employ to face the challenges. Such accounts show diverse strategies like decentralising services across multiple facilities, relying on individuals without enough skills to deliver care, engaging in multi-tasking due to scarcity of personnel, or establishing informal training among colleagues during work. The studies also mention providers' can receive the help of voluntary and humanitarian organisations with resources like medicines or labour and enhance their protection through communicating the neutral status of health care within international humanitarian law. Further, there is some research informing that providers' personnel have used innovative activities to face the different problems of conflict contexts to deliver care such as workers changing hair styles to increase protection, use candles when facilities lacked electricity, borrow supplies from other facilities, or obtain help from political leaders to look for funding (Fardousi et al., 2019; Namakula & Witter, 2014; Witter et al., 2017). However, the literature lacks depth by not explaining specifically how these strategies develop, how providers harness support from third parties to face the challenges, and what are the key capacities and resources used for the deployment of responses to challenges.

Considering the existing literature has not focused to analyse how health providers, and particularly hospitals, sustain delivery of health care in conflict settings, limits the understanding of the following issues with more depth. First, there is lack of comprehensive knowledge about the challenges providers face in conflict areas. The latter issue involves recognising both the routine (everyday) and conflict challenges that can threaten providers operations so supporting actors can design tailored projects/programmes to address all these issues. Second, there is little information about how hospitals respond to the challenges providing details about the support and

resources used or needed when doing this activity. And third, recognise what can be improved with the hospital response to challenges. Consequently, this research project focused on studying Hospital San Andrés ESE operating in Tumaco, Colombia — an area experiencing protracted conflict— has been designed to address these gaps.

This study focuses on hospitals because they are important agents for addressing community health needs. The CGD, as mentioned in the introduction of this study, recognises hospitals as the “backbone” of health systems (CGD, 2015b). Hospitals facilitate the training of doctors, set performance benchmarks for the health system, and have become the symbol to identify health systems. Similarly, the CGD informs that hospitals in several developing countries can be the only place to obtain health care, particularly in rural areas. Their importance in conflict areas is also significant as they can treat complex illnesses (e.g. firearm wounds) (Pavignani & Colombo, 2009). Relatedly, recent global health crises mainly associated to the Covid-19 pandemic made it clear the need for strong hospitals to mitigate them. Thus, understanding how hospitals sustain delivery of health care in conflict settings becomes imperative to ensure better care for patients and stronger health systems, particularly for populations living in conflict.

Consequently, this project established the following aim for the research: *To understand how hospitals sustain delivery of health care to its population in conditions of protracted armed conflict.* This will be achieved through a case study of one specific hospital, Hospital San Andrés ESE, operating in the armed conflict setting of Tumaco, Colombia. As part of the research, this study proposed the following specific objectives to guide the study and achieve its overall aim i) *To examine the challenges the hospital faced in conflict areas.* Such examination will be holistic, that is considering both the routine and armed conflict challenges. This can help government authorities and development agencies understand all their problems to setup adequate support programmes to prevent their closure. ii) *To study how the hospital responds to the challenges to sustain health care delivery.* This helps to comprehend the activities, capacities, resources, and support the hospital depends on to manage operating problems. And iii) *To determine the research participants’ views regarding what needs to improve with the hospital response to challenges.*

2.5. CONCLUSION

This chapter focused on reviewing the available literature to comprehend what is known about the operation of health care providers in armed conflict settings. The literature provides significant details on diverse challenges health facilities face in such settings which could be classified as routine and conflict-related problems. The first relate to lack of supplies, financial constraints, or unpaid workers. The second correspond to serious infractions to the medical mission like destruction of facilities, death threats, kidnapping or murder of personnel. The available literature also gives information about certain activities providers or workers do to cope with routine or armed conflict stressors, yet the research does not have the purpose to study in detail such measures. The activities the literature has identified as valuable for providers to face the challenges range from redeployment of personnel across vacancies or lending of supplies during scarcities.

A key feature of the literature reviewed for the purpose of this study corresponds to almost complete absence of studies throughout the world, and particularly in Colombia, focused on understanding how hospitals sustain delivery of health care in a protracted conflict. This issue provides both disadvantages and advantages for this research. The disadvantages mainly relate to the difficulties to test prior knowledge developed on this area by new research. The advantages mainly correspond to the valuable opportunity this study has to offer a meaningful contribution to the literature on this area to guide future research. The insights developed in this study can enhance the understanding of hospital operations in conflict contexts and how to better support their activities. The subsequent chapters of this thesis outline the methods and the results of this research in trying to understand how a hospital sustains delivery of health care in a protracted conflict setting.

CHAPTER 3. RESEARCH DESIGN AND METHODS

This chapter outlines the methodological and theoretical/conceptual framework of this research. First, it discusses the philosophical underpinnings of the project. Then, it proceeds with the research design and data collection methods. This project used a holistic single-case study research design relying on semi-structured interviews and document analysis to gather information. The chapter also presents the operationalisation of the research methods providing a detailed discussion of the sampling frame of participants and documents. Subsequently, the chapter delivers a description of the Everyday Resilience Framework, outlining the reason to use it for this research and a discussion of the current empirical literature applying this framework. The final sections of this document examine the methods used to analyse the information, the project's ethical implications, the management of data along with reflexivity and bias mitigation.

3.1. THE PROJECT'S PHILOSOPHICAL UNDERPINNINGS

The project's aim is to understand how a hospital sustains delivery of health care to its population in conditions of protracted armed conflict, specifically studying Hospital San Andrés ESE. A study of this kind entails an in-depth analysis of:

- i) The challenges Hospital San Andrés ESE faces.
- ii) The hospital response to the challenges.
- iii) The capacities, activities, and resources the hospital relies for the response to challenges.
- iv) The limitations or constraints the hospital faces when responding to challenges.
- v) The elements that should improve to enhance response to challenges.

To understand the issues presented above in sufficient depth, it is necessary to speak directly with people who work for the hospital operating in the conflict-affected setting to exhaustively understand the topic of study (Silverman, 2013). Thus, qualitative methods (e.g., case study, interviews, focus groups) became the "most appropriate" path to conduct the research.

Research paradigm

After acknowledging that qualitative methods were the best approach to conduct the study, it was necessary to establish the study's philosophical underpinnings. Qualitative research at its core is an interpretative approach to social inquiry (Ritchie et al., 2013, pp.2–13). Its emphasis is to analyse individual interpretations from research stakeholders directly involved with the problem of study. Yet, there are numerous philosophical variants of the qualitative approach to research (Ritchie et al., 2013). One of those approaches is Critical Realism (Blaikie, 2007; Ritchie et al., 2013). Critical Realism considers that reality is something complex¹³ and exists independently from observers. In this approach, knowledge about reality depends upon the interpretation research stakeholders, including the researcher, make about such reality (Blaikie, 2007; Ritchie et al., 2013). In this study, the researcher organised the project within this Critical Realism philosophical paradigm.

The researcher rejected other philosophical positions to underpin the project such as Idealism, Positivism, or Post-Positivism. They were considered extremes in their interpretation of what reality is or entails. On the one hand, Idealism emphasizes that there is no external reality independent from individuals' beliefs and perceptions (Ritchie et al., 2013). Meanwhile, Positivism and Post-Positivism consider that reality it is not dependant on the individual insights, but rather exists out there "waiting to be known" (Blaikie & Priest, 2017, pp. 58–59; Ritchie et al., 2013, p.10). Critical Realism provides a middle ground to the project as this research paradigm considers that a reality outside exists but people's interpretations about reality also matter to understand it.

This research project used Critical Realism as a philosophical underpinning because it allows elucidating the activities/processes or mechanisms that *cause* regularities or phenomena observed in our daily lives (Blaikie, 2007). With the help of participant accounts and observation, this project during the fieldwork stage identified several events that helped the hospital to address challenges. For instance, participants

¹³ The layers of reality are: The empirical, the actual, and real. The empirical relates to what it is mainly perceived by the senses or perceived in real-life. The actual it is something that exists regardless of if it is observed or not. The real considers the existence of underlying processes or mechanisms that cause regularities in social behaviour (Blaikie, 2007, p.15).

mentioned the hospital used its emergency systems, particularly its equipment to guarantee backup of utilities when armed groups destroyed the infrastructure of essential services like electricity or water. The event just mentioned is the empirical or real-life manifestation of a process/action that participants considered helped the hospital address challenges and continue to deliver care during conflict. This research, however, was also interested to understand the process, activities or mechanisms involved for this event to occur along with the stakeholders and resources that make the execution of such process possible. Here is when Critical Realism becomes relevant as it helps to uncover the processes taking place that explain the event occurring in the empirical/real-world realm. Usually, the processes, activities or mechanisms causing the observable events are not explicitly established or written, so the role of research is to illustrate them using participants' accounts or understandings about the activities undertaken that make the events possible. Ultimately, this study developed a series of visual models to illustrate participant accounts of the measures the hospital has relied on to continue deliver care amid challenges. These models depict the underpinning processes, relevant stakeholders (i.e., the hospital and/or supporting actors) capacities and resources that make the process to face challenges and sustain health care delivery possible (Chapter 5 gives details).

3.2. RESEARCH DESIGN

3.2.1. CASE STUDY RESEARCH DESIGN

The researcher considered case study as the most appropriate research design for undertaking this project because it is helpful for answering “How” or “Why” research questions (Yin, 2013, p.10). As discussed in the introduction of the thesis, this research focuses to answer a “How” type question stated as follows: To understand *how* a hospital sustains delivery of health care to its population in conditions of protracted armed conflict. According to Yin, a “how” research question is an explanatory type of question (Yin, 2013). Such type of question focuses on understanding and explaining how something works or occurs and why it happens. To achieve this understanding, it is necessary to inquire about the “operational links” that explain a particular social phenomenon (Yin, 2013). Case study research can focus to inquire the “operational links” or the different processes behind the social issue of interest to understand how somethings works (Yin,

2013). This later part is, in essence, the nature of this research. This research is interested to understand the different types of activities or processes along with the capacities allowing the hospital to face operating challenges and continue service delivery.

Furthermore, recent and growing literature on case study research design (Easton, 2010; Wynn & Williams, 2012) suggests that this type of study can be used alongside Critical Realism – which constitutes the philosophical paradigm underpinning this study. Easton (2010) mentions that case study research design is helpful for elucidating deep generating processes or the causal relationship of activities as it relies on intensive data collection methods such as in-depth interviews. Besides, Wynn and Williams (2012) consider that case study research design is a “well-suited” method to conduct critical realist research because it permits to understand the contextual elements necessary for the activation of mechanisms or the series of processes that explain the social phenomena of interest.

Still, before deciding to conduct case study research, the researcher considered other types of qualitative research designs. The alternative methodological designs included Ethnography and Grounded Theory¹⁴. These research approaches also help to understand social processes or comprehend “how” something works or “why” something occurs (Creswell et al., 2007; Tomaszewski et al., 2020). Still, further reflection during the research helped to recognise such research designs as impractical to conduct the study. Ethnography required prolonged observation time periods within fieldwork (Bryman, 2012; Creswell et al., 2007) that proved risky for the researcher given the conflict setting. Meanwhile, Grounded Theory created the risk to collect unnecessary data given its unstructured nature which could affect the project completion within the time period of PhD studies. Meanwhile, case study research permitted to conduct the study using methods like interviews that could be done remotely to guarantee safety and use structured instruments to gather sufficient data.

¹⁴ Ethnography is a research design focused on telling rigorous stories about the different interactions of people subscribed to a research phenomenon considering the context. It aims to provide ‘thick’ descriptions of events that explain the issue studied (Fetterman, 2010). Grounded theory is a research approach focused in the generation of theories to explain a social phenomenon “grounded” on data that has been systematically obtained from the fieldwork (Noble & Mitchell, 2016).

3.2.2. SELECTING THE CASE TO STUDY/UNIT OF ANALYSIS

This study considered Hospital San Andrés ESE as the unit of analysis, but it looks at the organisation from a systems perspective. Looking at the hospital as a system means this study understands a hospital is a collection of key functions that work together to accomplish a given task (i.e., the provision of health care). The hospital system is complex because understanding one of the elements does not guarantee the understanding of the whole (Braithwaite et al., 2017; Healy & Mckee, 2002; The Health Foundation, 2010). Further, a hospital system is self-organising, which means its integrating functions are capable to organise themselves according to contextual changes. The hospital system, likewise, can adapt and evolve over time to successfully deliver health services (Savigny et al., 2009). Additionally, a hospital system is open relying on the context/environment to obtain operational resources (Barasa, Molyneux, et al., 2017; Braithwaite et al., 2017) and such environment can affect its performance.

This study relies once more in the WHO building blocks themes to define the core functions integrating the hospital system (Savigny et al., 2009; WHO, 2010). Despite the building blocks themes describe key health systems functions, they also prove suitable to name key functions of hospital systems. Such themes, which were introduced and defined earlier in this research (See Chapter 2, section 2.3.1) are the following:

- ***Financing***
- ***Leadership and governance***
- ***Health care workforce***
- ***Medical products and technologies***
- ***Service delivery***
- ***Information systems***

For this study, the functions presented above correspond to key the components hospital systems rely on to operate. Moreover, the operation of hospital systems entails a significant interaction of internal and external actors with the system core functions (Healy & Mckee, 2002). The internal actors mainly correspond to hospital personnel in charge of key roles to deliver care. The external actors are agents that exists outside the hospital that could belong to the entire health system (e.g., regulators, providers) or other

social sectors (i.e., humanitarian organisations) and support the hospital with financial or in-kind resources (Barasa, Molyneux, et al., 2017; Healy & Mckee, 2002).

This study used a systems perspective to analyse how Hospital San Andrés ESE sustains health care delivery in a conflict setting because during the project's fieldwork it was possible to evidence the following.

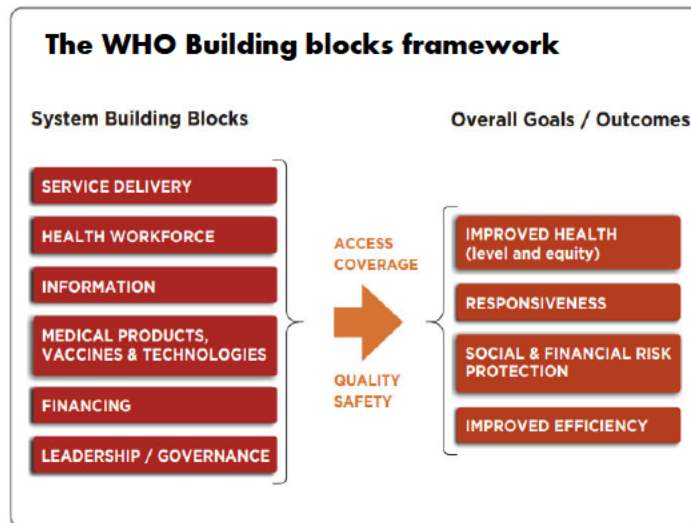
1) The facility received important help from contextual actors to continue the delivery of health care. The actors that supported the hospital involved private or non-governmental organisations, government bodies, individuals, and several institutions belonging to the broader health system. So, it was impossible for the study to draw conclusions on the research problem by just relying on hospital information alone. The project required the gathering of information from the supporting actors to fully understand the topic.

2) The hospital can establish its own measures to deal with challenges or look for support from third parties to deal with problems. Thus, looking at Hospital San Andrés ESE from a system perspective allowed the research to study the hospital's own activities to address challenges.

Therefore, viewing Hospital San Andrés ESE as a system permits to examine the two elements just mentioned that allow the facility to deliver care in the conflict setting.

This study used the WHO building blocks framework to illustrate the hospital system core functions. The WHO building blocks framework has been conveniently summarised in a single figure divided in left and right panels. See Figure 3.1 for details (next page).

Figure 3.1 The WHO building blocks



Source: WHO (2010)

When looking at the categories of left-hand side of the WHO building blocks figure, they correspond to the hospital system functions earlier outlined in this section. Essentially, this study used the left-hand side categories of WHO building blocks framework as a heuristic to illustrate the hospital system core functions and as a tool that facilitated the organisation of research ideas and primary data on hospital operations. The researcher considered the left-hand categories in Figure 3.1 that adequately emulated the main functions integrating a hospital system and gave focus to the study of such functions in a more precise manner. Besides, other studies have done the same as proposed in this study which entails using the left-hand side components to describe and analyse a system's core functions and their continuous change product of contextual challenges (Fridell et al., 2019; Hanefeld et al., 2018).

This study did not engage with the elements listed on the right-hand side of the building blocks model as they would have created problems for the project to meet its aim. This study tries to understand how a hospital sustains health care delivery in a conflict setting. This involves understanding what a hospital does to endure the operating challenges of the context to keep its core functions going. Including the elements listed on the right-hand side of the building blocks framework, would lead the study to assess issues not so relevant to answer the research questions like examining for how long challenges are contained and unpack how service quality is being affect by response

measures. Doing the analyses just mentioned create problems for the study as they are not helpful to achieve its aim. The elements just mentioned could be examined in new research where this project could serve as a basis to analyse such elements.

Regarding what the case study for this project is, it can be said the unit of analysis simultaneously corresponds to the case study. So, in this project the Hospital San Andrés ESE system is also the case of study. According to Yin, in situations where the unit of analysis is concomitantly the case study this type of research resembles a “holistic single case study” (Yin, 2013, p.55). The term “holistic” entails the need to establish a global approach to understand the social phenomenon or case for study. This means the study not just requires the gathering and the analysis of information about a subset or units that integrate the case, but rather, it is necessary to include information from the context (coming from people or organisations) to better understand the research problem. Meanwhile, the term “single” means this project uses one case for analysis only. So, the project focuses to analyse the Hospital San Andrés ESE system and not additional hospital systems that could operate in similar contexts as Tumaco either in Colombia or around the world.

The application of a holistic single case study research did not come without evidencing shortcomings with this research design. The main issue constantly raised with holistic case study research entails the difficulty to generalise research findings to populations or contexts (Flyvbjerg, 2013; Yin, 2013). Furthermore, the literature mentions holistic single case studies may not lead the researcher to examine the phenomenon with operational detail but rather produce excessive abstract analysis supported with limited data (Yin, 2013). Finally, it has been argued that single case studies have a bias toward verification, or the tendency to confirm the researcher preconceived ideas (Flyvbjerg, 2013). Despite these limitations, this study decided to conduct a holistic single case study approach to examine the research phenomenon. There were methodological, contextual, hospital, and practical reasons behind this decision which are provided below.

- **Methodological reasons.** Despite the limitations of holistic case study research about the generalisation of research findings this criterion still can be met at the level of “analytical generalisation” (Yin, 2013, p.41). The latter term relates to “*corroborating*,

modifying, rejecting, advancing or generating new theoretical concepts” after completing the research (Yin, 2013, p.41). This study uses the Everyday Resilience framework (ERF) (See Section 3.5 for further details) to guide the case study to elucidate if the framework has strong predictive power about the actions a hospital undertakes to keep health care delivery in a conflict setting or instead, it needs revision. Similarly, as part of analytical generalisation this project proposes new concepts about how hospitals sustain delivery of health care in a protracted conflict so future research can examine them.

Likewise, case study research allows to engage in triangulation of findings to mitigate some of its problems related to abstract analysis and verification bias. Triangulation means assess whether information obtained in the field converges to specific findings (Yin, 2013). It can be argued the researcher tried to do as much as possible the triangulation process to support a research finding/claim and to depict as best as possible reality.

- **Contextual factors.** The context of Tumaco, Colombia which relates to the area where Hospital San Andrés ESE operates has the following features that makes it special to conduct this research. First, it faces a protracted conflict enabling the study on how a hospital sustains delivery of health care in such difficult setting. The context will effectively provide rich information on the issue of study to comprehend it in a more integral manner. Second, few studies that analyse the operation of health providers in conflict settings take place in protracted conflict areas like Tumaco. Therefore, there is an opportunity for this study to expand the literature and existing knowledge on how this type of conflict affects hospital operations.
- **Hospital Reasons.** This research project chose Hospital San Andrés ESE to do the research which is a facility of 185 employees at the time of doing this research and a key referral centre of secondary care for Nariño’s pacific coast. The hospital main services are emergency, inpatient, outpatient care and surgery. The facility also operates ancillary diagnostic services like medical imagining and laboratories (See Chapter 1 for hospital details).

This study chose to conduct its study using Hospital San Andrés ESE because of the importance of the hospital for the province of Nariño. The hospital is important

because of three factors. 1) the hospital attends a relatively large target population (around 428,870 inhabitants) as it serves Tumaco and other nine nearby territories (IDSN, 2019). 2) The hospital is the only facility that delivers complex medical care in Nariño's pacific coast so if it fails people won't have access to specialised medical services –something critical particularly for armed conflict victims, and 3) the hospital is the most accessible and affordable option the target population has to address health needs as most people endure significant poverty(DANE, 2018).

- **Practical reasons.** The researcher economical and time constraints only allowed to conduct the research in Hospital San Andrés ESE operating in Tumaco, Colombia. These factors created difficulties to include other territories either in the world or in Colombia to do, for example, a comparative analysis of providers operating in other similar contexts. This latter endeavour required more travel and proved unfeasible to do within the time limit the university established for PhD studies.

3.3. DATA COLLECTION METHODS

Due to the little empirical research on how hospitals sustain delivery of health care in protracted armed conflicts, information on this subject was scarce. Hence, it was necessary to collect primary data to examine the issue in depth. This project chose the following data collection methods that a holistic single case study has available to gather information.

1. Semi-structured interviews
2. Documentary analysis.

Each data collection method will be explained further in the subsequent subsections.

3.3.1. SEMI-STRUCTURED INTERVIEWS

This research project used semi-structure interviews as the main method to collect primary data. The method allowed the researcher to establish guided conversations with people to obtain their interpretation or perception on the research topic (Adams, 2015; Bryman, 2012). This study chose to use this method for the following reasons.

First, the method helps fulfilling the project's aim and objectives as a previous analysis of them became clear that achieving them required talking to people familiar with the issue of research to comprehend it in-depth (Bryman, 2012; Yin, 2013). Second, the method helped to previously design questions that could guide the conversation to avoid the collection of unnecessary data, or employ new questions when the conversation uncovers new and important issues to discuss (Bryman, 2012). Third, semi-structure interviews helped to obtain honest accounts on the issue being studied as they are usually undertaken on a personal and private basis (Adams, 2015). This type of environment could have been more difficult to obtain with other interviews-based methods like focused groups. Fourth, the method fitted well with the project's philosophical underpinning related to Critical Realism. In Critical Realism it is fundamental to obtain people's interpretation on an issue being studied to fully comprehend it (Ritchie et al., 2013; Smith & Elger, 2012). Semi-structured interviews are an excellent data collection method to gather people's interpretations on the social phenomenon along with other details about the context where the issue of study takes place (Smith & Elger, 2012). And fifth, this research chose to conduct semi-structure interviews as they proved to be logistically simpler to conduct than other alternative methods such as group interviews as the latter required the coordination of timetables and physical spaces to gather relevant participants (Morgan, 1996; Smithson, 2000).

3.3.1.1. Conducting the semi-structure interviews

a. The population studied

In this project, the following three groups of people corresponded to the project's population.

Group 1. The "Observers" Group. During the supervision meetings for this research, it was considered important to have a group of participants that could have an "outsider" status to the phenomenon of study to obtain a global view of the problem examined. In this study, it was determined that the observers would be such group and its participants had to meet the following conditions to receive the outsider status: i) they were knowledgeable of Tumaco's context, its health system, and Hospital San Andrés ESE, ii) they were not directly involved with Hospital San Andrés ESE as workers or

advisors, iii) the participant(s) should must not be working directly for entities supporting the hospital to respond to the challenges, and iv) the individual(s) should not be providing direct support to the hospital.

Most of the participants that represent the observers group worked for academic, political, or government circles at the local or national levels of Colombia who gave relevant information on the research topic. The observers became the first group of people this research conducted semi-structured interviews because they provided valuable information to gain a general view of the issue studied and proved useful for pilot interviewing (More details on selecting participants will be provided later in this section).

As a result of this project viewing the hospital as a system, these additional groups were evidenced as important within the population studied.

Group 2. The “Internal Supporting actors” group. This group is integrated by the Hospital San Andrés ESE personnel from both the clinical and administrative areas and a representative of the hospital’s patient’s advocacy group. This study approached this group for interviews second after the observers.

Group 3. The “External Supporting actors” group. This group was possible to identify after the study conducted the first interviews with the observers and hospital staff. During such moment the researcher recognised the hospital established a support process with contextual actors to face operating challenges and sustain health care delivery. Given this realisation, it became essential to include these supporting actors as a key constituent group of the study population. The external supporters provided important information to the research regarding their views, perception, and/or experience of the support process established with the hospital.

Once this research established the population of study, it began the process of sampling informants that could participate in the semi-structured interviews and provide valuable information on the research topic. The approach to sampling participants in this project is provided next.

b. The Sampling of participants

This research project used snowball sampling to select participants that would represent the “Observers” and “External Supporting Actors” to conduct the semi-structure interviews (Bryman, 2012; Ritchie et al., 2013). Snowball sampling entails two stages where the researcher initially selects certain participants to be “information rich” about the topic of study, and then, asks such people of other individuals that can provide relevant information to the topic examined (Ritchie et al., 2013, p.129). It is important to say that for the group referred as “Observers” the researcher did not have sufficient knowledge to select key individuals to begin the first stage of the sampling process. Therefore, this study followed the recommendation provided by Ritchie et al (2013) about the need to establish a “selection criteria” to select participants not easily identifiable at the outset of the sampling process. Table 3.1. provides such selection criteria.

Table 3.1 Criteria to select a participant as observer

| No | CRITERION | DESCRIPTION |
|----|--|---|
| 1 | Risk | Once the risk assessment of the participants location is completed, the case(s) is selected on whether the data collection process guarantees physical and/or psychological integrity to both the researcher and the participant. |
| 2 | The role of participants | To be a knowledgeable observer a person must meet the following criteria: -The person had sufficient knowledge of Tumaco and Hospital San Andrés ESE. -The person does not have any direct relationship with the hospital or the health system in Tumaco as an employee. |
| 3 | Theoretical relevance of the case/organisation (Ritchie et al, p.115; Curtis et al 2000, Miles and Huberman, 1994) | The cases (participants) are relevant to the researcher on conceptual/theoretical issues the project developed or used from the existing literature to achieve the aim and objectives of the study. |
| 4 | Access to participants (Ritchie et al, 125-126, 128) | The researcher knows gatekeepers or potential contacts who can provide access to participants. |
| 5 | The cases are information-rich to explain the phenomena (Curtis et al 2000, Ritchie et al, p.115, Blatter and Haverland, 2012) | This issue relates to how likely the phenomenon of study is possible to trace in the organisation or people being studied. It subscribes to the richness of details, accounts, first-hand knowledge either from people's work or being able to presence events regarding the topic studied. Put it simple, the participants provide comprehensive understanding of the problem studied. |
| 6 | The generalisation of research findings (Curtis et al 2000) | The aim in qualitative research is to generalise on "theoretical propositions not to populations" (Silverman, 2013). The sample of participants should provide information to generate statements to inform theoretically similar studies in the future. |
| 7 | Diversity of stakeholders (Ritchie, p.116,135) - Variety of participants - reduction of bias | The cases integrating the sample need to represent the interpretation of most stakeholders related to the issue studied. |
| 8 | Abides to ethical protocol (Curtis et al 2000) | The researcher can obtain consent from participants to be part of the study. The consent can be written (signature as first option) or oral (as backup option). The researcher or participants do not incur in ethically questionable practices to obtain or provide information (e.g. coercion). There is no conflict of interest between the researcher and participants. |
| 9 | Feasibility: time and resources, competencies (Curtis et al 2000, Ritchie, p.115) | It corresponds to availability of time, financial resources or materials to access participants and their information. It corresponds to the researcher "communicational skills" especially in professional-related topics when working with informants. |

Source: Researcher authorship based on Curtis et al (2000), Miles and Huberman (1994) Blatter and Haverland (2012), Silverman (2013), and Ritchie et al (2014)

Using the criteria outlined in Table 3.1. the sampling of the “Observer” was as follows.

Sampling the observers. The selection of informants representing the “observers” through snowball sampling happened this way. First, the researcher’s professional and personal connections and the criteria outlined in Table 3.1. helped to identify initial interviewees to start the snowball sampling. These initial participants had relevant knowledge about the operation of Hospital San Andrés ESE, the health system, the ongoing armed conflict in Tumaco, and were not directly involved with the hospital or the supporting actors. Then, the researcher decided to ask these individuals about other

people that could fit the observer profile. This latter step helped to fulfil the second stage of the snowball sampling process to find the participants that represented the “Observers” group. Table 3.2. provides information of the sample constituting the “Observers” group obtained through the process just described.

Table 3.2 The Observers group sample

| | Observer | Total number of interviewees |
|---|--|-------------------------------------|
| 1 | Former director of the provincial health authority of Nariño office for health insurance and quality assurance of health facilities. | 6 |
| 2 | Former contractor for the provincial government of Nariño as strategic manager and liaison of Nariño's pacific coast. This person managed on behalf of the governor projects intended to improve the pacific coast and became aware of the regional needs. | |
| 3 | External auditor of clinical and administrative processes for a health insurance company operating in Tumaco, Colombia. | |
| 4 | Representative of the Ministry of Defence stationed in Tumaco, Colombia as an intelligence and recognisance operative. | |
| 5 | Member of the a research group subscribed to Universidad de Nariño studying the local health system. | |
| 6 | Professional doctor working independently in Tumaco, Colombia. | |

Sampling the external supporting actors. The study used the following process to conduct snowball sampling and identify the interviewees to represent the “external supporting actors”.

- i) The researcher asked the representatives of a) the observers, and b) internal supporting actors (i.e., hospital staff, the patients’ advocacy group representative) about people they deemed as important external supporters to the hospitals and merited an interview.
- ii) After identifying and interviewing a person representing an External Supporting actor, the researcher would ask him/her about other key people/organisations to include in the interviews and can provide more information about the external support process.
- iii) Review the interviews with the observers, the internal, and external supporting actors, to identify people or organisations interviewees considered important during the conversations and get the contact details of such actors from participants.

The activities just discussed helped to conduct the two-stages of snowball sampling and led to a relative complete list of informants who represented the “External Supporting Actors” group. Table 3.3. (Next page) consolidates the group’s informants.

Table 3.3 The External Supporting Actors Group

| | ENTITY | Participant interviewed | Location | Number of interviews |
|---|---|---|----------------|----------------------|
| Health system stakeholders | | | | |
| 1 | Superintendencia Nacional de Salud (Health superintendence) | Representative of the audit and intervention process to the hospital | Bogotá, D.C. | 9 |
| 2 | Instituto Departamental de Salud de Nariño (Nariño's local health authority) | CRUE and Medical mission roundtable representative | Pasto, Nariño | |
| | | Audit director to compulsory service provision standards | | |
| | | Auditor to hospital finances and Former CEO of Hospital San Andrés ESE | | |
| | | Treasurer for the provincial health authority and Former CFO for Hospital San Andrés ESE | | |
| | | Representative for the planning office and the structuring of investment projects | | |
| 3 | Emssanar EPS (health insurer subsidized regime) | Financial representative | Pasto, Nariño | |
| 4 | Asmet Salud EPS (health insurer subsidize regime) | Financial representative | Pasto, Nariño | |
| 5 | Volunteer oversight organisation of Tumaco's health system | Group representative | Tumaco, Nariño | |
| Non-profit and humanitarian organisations | | | | |
| 7 | Médicins Sans Frontiers | Representative for Colombia Pacific coast | Pasto, Nariño | 6 |
| 8 | Médicins de Mund | Chief field operative | Pasto, Nariño | |
| 9 | International Committee of the Red Cross (ICRC) | Fieldwork operative | Pasto, Nariño | |
| 10 | Fundación Hospital San Pedro | Blood bank representative | Pasto, Nariño | |
| 11 | Secretariado diocesano de pastoral social (Catholic diocese) | Programme director | Pasto, Nariño | |
| 12 | Pan-American health organisation (PAHO) | Coordinator support activities for the hospital | Tumaco, Nariño | |
| Private/Commercial organisations and individuals | | | | |
| 13 | Proovedor de insumos Generales Hospitales (Hospital Supplier) | Sales representative for Nariño pacific coast | Pasto, Nariño | 3 |
| 14 | Servicio de Restaurante hospitalario (Food service company) | Company representative | Pasto, Nariño | |
| 15 | Former advisor to Mercy corps operations at Nariño's pacific coast | Former field operative to help victims of landmines | Bogotá, D.C. | |
| Government collaborators | | | | |
| 16 | Gobernación del departamento de Nariño (Government of Nariño) | Former chief of staff secretary and former representative for peace and security councils | Pasto, Nariño | 5 |
| 17 | Alcaldía de Tumaco (Tumaco city council) | Municipal emergency committee representative | Tumaco, Nariño | |
| 18 | Empresa de energía eléctrica de Nariño CEDENAR SA ESP | Electrical/power supply company | Pasto, Nariño | |
| 19 | Policia Nacional de Colombia - (National police, Tumaco command office) | Representative for the municipal police station/post | Tumaco, Nariño | |
| 20 | Ejercito Nacional de Colombia - Tarea de operación conjunta Hercules (Military Joint task force Hercules) | Joint task force commander | Tumaco, Nariño | |
| Total of supporting actors interviewed | | | | 23 |

This research interviewed all the participants listed in Table 3.3 and they represent the most important parties that provide support to the hospital. The study did its best to establish a complete sample of all the external actors giving support to Hospital San Andrés ESE, but it was difficult to contact representatives of certain organisations. The non-included organisations involve the company providing water services for Tumaco called AGUAS DE TUMACO SA ESP together with the HOSPITAL DIVINO NIÑO ESE. This latter organisation is the main facility delivering primary health in the municipality.

Even though the project would have been more complete on its data collection if it had included participants from the missing actors, this research considered that study participants provided valuable information about them. Therefore, no further interviews were needed. The available participants provided all these information regarding the missing actors: the type of support they provided, the resources they relied on to give support, and the limitations of their support process.

Finally, the process of asking people about potential interviewees ceased when the researcher reached a “saturation point” regarding the information obtained from interviewees (Bryman, 2012; Ritchie et al., 2013). This later part meant that new interviewees did not provide new or relevant information to the research.

Sampling the Internal Supporting Actors. This project deemed important to do the following activities to obtain this sample:

- 1) Identify the number of employees working at Hospital San Andrés ESE and the different positions available to select interviewees that could represent this group of people.
- 2) Select from the hospital’s patients’ advocacy group a representative for interviews to his/her perspective on the issue studied.

Each activity will be expanded below.

For the first activity, this research used a list of hospital employees published on a yearly basis called “Plan de Cargos” (Hospital San Andrés ESE, 2019b) which provides information about the number of personnel and their working positions/roles to select informants. Ritchie et al (2013) consider that lists produced by organisations or

professional associations are a good option to determine a sampling frame of potential interviewees for a study. This study used the Plan de Cargos list produced in 2019, the year when fieldwork for this study began. Table 3.4. delivers a summary of the hospital's employees' list according to three overarching job categories.

Table 3.4 Hospital San Andrés ESE Staff distributed according to job nature

| DEPARTMENTS | EMPLOYEES |
|--|------------------|
| Senior Management | 4 |
| Clinical staff (including physicians and clinical process leaders) | 108 |
| Logistics and administrative personnel (Include process leaders along with cleaning staff) | 73 |
| TOTAL HOSPITAL STAFF | 185 |

Source: Hospital San Andrés E.S.E (2019) published list of working places

By 2019, 185 people worked for the hospital in several positions ranging from senior management, specialised physicians, along with cleaning and maintenance staff. To select from this people the interviewees that would represent hospital personnel, this project constructed a sampling criterion to choose the most suitable candidates to interview. Table 3.5. below presents the sample criteria.

Table 3.5 Sampling criteria to select hospital participants

| Rank | Criterion | Description |
|------|--|---|
| 1 | Theoretical relevance of the case/organisation (Ritchie et al, p.115; Curtis et al 2000, Miles and Huberman, 1994) | The cases (participants) are relevant to the researcher on conceptual/theoretical basis according to the available literature. They help to achieve the aim and objectives of the study. |
| 2 | Access to participants (Ritchie et al, 125-126, 128) | The researcher knows gatekeepers or potential contacts who can provide access to meet key people within organisations. |
| 3 | The cases are information-rich to explain the phenomena (Curtis et al 2000, Ritchie et al, p.115, Blatter and Haverland, 2012) | Corresponds on how likely the phenomenon of study is possible to trace in the organisations or people being studied. It subscribes to the richness of details, accounts, first-hand knowledge either from people's work or being able to presence events regarding the topic studied. Put it simple, the participants provide comprehensive understanding of the problem studied. |
| 4 | Diversity of stakeholders (Ritchie, p.116,135) - Variety of participants - reduction of bias | The sample cases represent most relevant stakeholders on the issue studied. The purpose is to make the sample diverse and gather the most comprehensive picture regarding interpretations or perceptions on the research problem. |
| 5 | The generalisation of research findings (Curtis et al 2000) | The aim in qualitative research is to generalise on "theoretical propositions not to populations" (Silverman, 2013). Thus, the sample of participants should provide significant information that its analysis can generate statements that can inform theoretically to similar future studies. |
| 6 | Abides to ethical protocol (Curtis et al 2000) | The researcher can obtain consent from participants to be part of the study. The consent can be written (signature as first option) or oral (as backup option). The researcher or participants do not incur in ethically questionable practices to obtain or provide information (e.g. coercion). There is no conflict of interest between researcher and the participants. |

Source: Researcher authorship based on Curtis et al (2000), Miles and Huberman (1994) Blatter and Haverland (2012), Silverman (2013), and Ritchie et al (2013)

The criteria established in Table 3.5. to select the sample of hospital employees to be participants for this study had been organised according to priority. Consequently, the criterion known as 'theoretical relevance of each case/organisation' ranked as the most

important criterion in this project and so on. This priority depended upon the researcher's own judgement bearing in mind the topic being studied.

Concerning the selection of the patients' advocacy group representative, the researcher obtained the information of the integrating members (4 in total) and applied the sampling criteria of Table 3.5. This helped to choose as interviewee the leader/president of the group as the person had significant knowledge about the topic examined.

Table 3.6. below gives information regarding the sample of the "Internal Supporting Actors" group using the sampling criteria outlined in Table 3.5. The same table provides information about the number of interviews gathered from hospital staff.

Table 3.6 Sample of internal supporting actors

| SAMPLE OF HOSPITAL STAFF FOR INTERVIEWS | NUMBER OF INTERVIEWS |
|--|-----------------------------|
| Group 1: Senior Management CEO Chief Financial Officer Chief Clinical Officer | 3 |
| Group 2: Clinical Staff Emergency services head Outpatient services head Inpatient services head Surgical services Head Diagnostic services head Physicians' representative Auxiliary and/or nursing representative | 7 |
| Group 3: Administrative and Logistics Staff Finances (procurement manager) Human resources manager Professional for occupational risk and safety Maintenance and logistics representative Archive and information systems manager Customer service Administrative representative Trade union Representative | 8 |
| Group 4. Patient's advocacy group (representative) Representative patients' advocacy group | 1 |
| Total of number of interviews | 19 |

This research ultimately conducted 19 interviews with the “Internal Supporting Actors” group. These interviewees were considered the most suitable candidates for the semi-structure interview as they met the selection criteria previously established. Even though, the sample just outlined tried to be as inclusive as possible in selecting hospital participants gathering representatives of different working categories, the sample faced a limitation on this regard. For example, it did not include a representative from cleaning staff. During fieldwork for this research, it was difficult to get in contact with the leader of such personnel particularly due to poor telecommunication services.

Taking together all informant groups, this study interviewed 48 participants. Table 3.7. give more details about the total number of interviewees for the study.

Table 3.7 Total number of interviews conducted in the study

| Entities | Participants interviewed |
|-----------------------------------|---------------------------------|
| Observers | 6 |
| Internal Supporting actors | 19 |
| External Supporting actors | 23 |
| TOTAL NUMBER OF INTERVIEWS | 48 |

c. Access and recruitment of interviewees

Access

In this project, the access to interviewees entailed diverse activities/processes across the participant groups. Further details on the access to the participants follow below.

Access to Observers. The access to observers depended on the contact details the researcher obtained from established contacts or when participants provided contact details of key people. Then, the researcher would contact these people and discuss whether they could be interested to participate in the research.

Internal Supporting Actors. This research began fostering access to Hospital San Andrés ESE personnel and the patients’ advocacy group for interviews since the researcher was working on the research proposal at the University of Edinburgh. Fortunately for the researcher, at the time of writing the research proposal the person

appointed for the CEO position was familiar or known to him due to previous working activities (please refer to section 3.7 regarding reflexivity for more information). This previous relationship facilitated the full support from the hospital to the research and obtain access to hospital personnel to conduct the interviews.

Simultaneously, the researcher sent a letter to the CEO of Hospital San Andrés ESE requesting access to its personnel and a representative of the patients' advocacy group to conduct the semi-structure interviews (See Appendix 5 for details). In the document, the researcher explained the purpose of the study and possible expectations. Thereafter, the hospital provided a formal acceptance, granting to the researcher permission to access the people and conduct the semi-structure interviews (See Appendix 5).

External Supporting actors. The access to participants representing the external supporting actors varied. On the one hand, it was necessary to write letters of understanding to higher authority levels within organisations requesting permission to access interviewees. All the organisations that requested letters to access participants granted their permission (Refer to Appendix 6). On the other hand, access to certain interviews representing external supporting actors just entailed the researcher getting in telephone contact with the participant after receiving the contact details from another source and explaining to such person the research and the way they were identified as a potential participant. Usually, these later types of participants held positions of significant authority within the organisations that supported the hospital.

Recruitment

The recruitment process of interviewees was as follows. Concerning the observers, recruitment happened mainly through engaging informal channels to initiate contact, explain the study and recruit based on their interest. Recruitment of hospital personnel entailed the researcher formally meeting with the CEO and the clinical officer to outline the importance to interview people assuming key positions, already identified as important for the research with the sampling criteria. Finally, recruitment of supporting actors worked the same way as it did with the observers. The researcher would contact

such actors after the participants provided contact details, explained the research to them, and asked for their participation.

d. Operationalisation of the interviews

The semi-structured interviews were administered the following way. First, the researcher designed “topic guides” to obtain relevant information for the project, guide the interview process, and provide consistency to the data collection across interviewees (Bryman, 2012; Ritchie et al., 2013; Silverman, 2013).

This research developed three topic guides each oriented to every group that constituted the population studied. The topic guides in general had two sections i) questions about the challenges the hospital faced and ii) questions about the hospital response and support it received to address the challenges. The second section included questions on the issues to improve the response to challenges. The sections had two types of questions: i) questions asked to all participants, and ii) specific questions about an issue or topic the interviewee may have more knowledge about. See Appendix 7 for topic guide details in their generic form.

The topic guide questions became the starting point of the interviews. During the interviews with participants, other unscripted questions arose that the researcher made to advance or obtain details on issues considered important to the study. Once the topic guides were established, the researcher began the data collection process or undertaking the interviews. The interview process took place in two stages: i) the initial interviews, and ii) follow-up interviews. The development of each stage is explained below.

The first stage: the initial interviews.

The first stage of the interview process entailed interviewing all subjects representing the main groups that integrate the study population. The researcher travelled to Colombia in 2019 to conduct the first stage of interviews but established the condition of not traveling to Tumaco due to safety reasons. To interview participants living in Tumaco, particularly staff working for Hospital San Andrés ESE, the researcher decided to undertake this process remotely using the telephone or internet-based technologies

like WhatsApp or Skype. This first stage of the interview process took place between February to October of 2019.

Earlier this chapter mentioned the research began the interview process interviewing the group of observers. Three reasons justified beginning the interview process with this group. First, the researcher had already identified individuals who fitted well with the observer characteristics due to previous professional connections and family recommendations. Second, the observers were deemed a suitable group for pilot interviewing. This group allowed the researcher to refine the topic guides and the interview process. These pilot interviews were included in the data analysis as they provided a significant amount of relevant data. Third, interviewing such people allowed the researcher to obtain a global view of the research topic.

Then, the researcher used an interspersed approach to interview the participants representing the groups referred as internal and external supporting actors. The researcher began by interviewing the internal supporters (i.e., hospital staff), and then, contact an external supporting actor recognised as important by hospital staff or the observers. The rationale to conduct the interviews with the internal and external supporters in such way was in trying to obtain a holistic appreciation on the perceptions both hospital staff and supporting actors had on the challenges the hospital face and how it sustained health care delivery in such environment. Similarly, this approach allowed the researcher to complement information across participants, particularly on the support processes the hospital established to understand how they worked.

The researcher used two approaches to interview the participants representing the internal and external supporting actors. The first approach entailed conducting remote interviews with participants living in Tumaco and Bogotá using the WhatsApp voice call service. The research literature has established different criticisms to remote interviews relying on voice communication only. For instance, the literature mentions this type of interview does not allow the researcher to probe participants with visual or physical cues to gather more data since no type of visual or physical contact exists (Johnson et al., 2019). Furthermore, difficulties with telecommunication services and technologies often affect these interviews creating problems with interviewee engagement or to fully obtain

details of issues discussed (Johnson et al., 2019). Despite, these limitations, this study chose to conduct the interviews through audio services because it granted safety to the researcher from Tumaco's conflict. Additionally, audio calls were less demanding than video calls on the poor and unreliable communication technologies in Tumaco. Also, this way of interviewing permitted more uninhibited conversations than video calls. Finally, audio calls provided comfort to participants when they wanted to engage in conversations but did not want to be visually recognised. The second approach to interview participants entailed in-person interviews with representatives of the supporting actors who mainly resided in the city of Pasto as the researcher lived in this area during the study fieldwork.

At the conclusion of each interview, the researcher asked participants for suggestions on relevant issues, like if they knew other people that would be valuable to interview and could provide more details on the issue studied. Second, if they knew about legal or formal documents that could enhance the information the interviewee provided or may be relevant to the topic examined.

The second stage

The second stage of the interview process mainly entailed organising follow-up interviews with participants the researcher considered as individuals that provided the most insights on the topic of study or were eager to engage further with interviewees. The initial interviews helped to recognise such participants. The follow up interviews mainly entailed the researcher talking again to participants to clarify information obtained from the initial conversation, reflect with the participants on the information gathered to envision new insights, or expand information on issues/topics mentioned during the interviews but not elaborated in detail (Polkinghorne, 2005). Follow-up interviews are commonplace in qualitative interviews, including semi-structure interviews, to obtain "rich" data about description on the activities or experiences around a phenomenon of study (Polkinghorne, 2005). Follow-up interviews practically refine the overall semi-structure interview process, so the participants accounts provide the sufficient "depth and breadth" on the issues being researched (Polkinghorne, 2005, p.142). The researcher conducted the follow up interviews in two rounds. One round took place between February to July of 2020. The second round occurred in July 2021. Particularly, this latter round of follow-up

interviews was useful to determine what issues could be enhanced with the support external actors give to the hospital.

The researcher conducted all the follow-up interviews remotely using the telephone or the *WhatsApp* application and its voice call service. Two reasons underpinned the decision to conduct the follow-up interviews remotely. First, in January 2020 the researcher travelled to Edinburgh to work on the PhD thesis, so it was difficult to travel again to Colombia to conduct in person interviews due to expenses. Second, by the time the researcher decided to conduct the follow-up interviews, the Covid-19 pandemic inhibited global travel, so remote interviews proved the best approach to ameliorate the risk of contagion from the virus.

The researcher recorded all the interviews obtained in the study using an Android smartphone with an application called "*Audio Recorder*" downloaded from the Google Play store. During the interviews the researcher took basic notes on key ideas or issues that arose during the conversations and needed further inquiry. All the interviews were transcribed in full, usually within 48 hours after the interview had taken place. Once the transcription of the interviews was completed, the researcher translated the material into English to facilitate its analysis.

e. Anonymity of participants

This research developed an identification system to anonymise the participants when quoting their ideas or thoughts to support claims. This system mainly revolved on establishing a code name for participants identifying them as an observer, external or internal supporting actors. Table 3.8. delivers a list identifying the study participants using the identification system developed in this study.

Table 3.8 Anonymity system for participants

| PARTICIPANTS | CODE NAME |
|---|--|
| OBSERVERS (6 in Total) | Observer_FrHSem_Ac_1 (FrHSSem= Former health system employee, Ac= academic) |
| | Obs_Govemp_2 (Government employee) |
| | Obs_Defen_3 (Defence= Ministry of Defense Employee) |
| | Obs_Resear_4 (Resear= Researcher) |
| | Obs_Hinsem_5 (Insemp= Health Insurance employee) |
| | Obs_Doc_6 (Doc= Medical Doctor working in Tumaco) |
| INTERNAL SUPPORTING ACTORS (19 in Total) | Hospital Senior managers |
| | IntS_Hospital Senior Management representative 1... until 3 |
| | Process leaders and hospital patients' representative |
| | IntS_Hospital process leader 1...2...3...until 14 |
| | Clinical representatives |
| IntS_Hospital clinical representative 1... until 2 | |
| EXTERNAL SUPPORTING ACTORS (23 in Total) | Health system stakeholders (HSS) - National, Provincial, Insurer, Volunteer |
| | ExtS_HSS_Nat_1 |
| | ExtS_HSS_Prov_1... until 5 |
| | ExtS_HSS_Ins_1...until 2 |
| | ExtS_HSS_Vol_1 |
| | Non-profit and humanitarian organisations |
| | ExtS_Nonpr/hum_1 ... until 6 |
| | Private/commercial organisations and individuals |
| | ExtS_Pr/com/ind_1.... until 3 |
| | Government collaborators |
| ExtS_Gov_1... until 5 | |

3.3.2. DOCUMENTARY ANALYSIS

This study chose documentary analysis as a complementary data collection method to the semi-structured interviews. The method focuses on the researcher reviewing documents and interpret their meaning in relation to the issue studied (Bowen, 2009). Certainly, this method is not free of drawbacks. The available literature informs documents may not be fully objective when reporting information as they could be created for specific audiences or may have inaccurate data that can lead the researcher to errors or biases (Bowen, 2009; Yin, 2013). Despite these limitations, this research deemed necessary to conduct documentary analysis for the following reasons.

First, documents were considered valuable because they are good to verify or expand evidence on information provided from research participants during the semi-structured interviews (Yin, 2013). In other words, they help to validate or “triangulate” the information interviewees provided on an issue (Yin, 2013). Second, documents were considered a source of data which the researcher had the opportunity to revisit as many times as possible when the access to the document was permanent (Yin, 2013). Thirdly, this research considered important the analysis of documents because they can provide valuable historical information (Mills et al., 2010). For this research, historical information was important because it allowed to comprehend the evolution of Hospital San Andrés ESE operations through time. Similarly, the nature of Tumaco’s protracted conflict which creates varying levels of conflict intensity over time, makes it necessary to rely on documents reporting strong violent events that occurred in the past to see the implications of the conflict on hospital operations and how the hospital faced such events. Finally, documents provided insights on the evolution of the context, particularly to appreciate the development of violence or resources available for the hospital to address challenges and deliver care.

3.3.2.1. The Document Collection

The study relied on a purposive approach to select documents (Bryman, 2012; Ritchie et al., 2013) establishing the following inclusion criteria for document selection:

1. The documents were “information-rich” to explain the topic examined (Curtis et al 2000, Ritchie et al, 2013). This relates to the extent it is possible to trace the phenomenon under study in the documentation. It subscribes to the richness of details, accounts, first-hand knowledge about hospital operations and its response to the challenges to sustain health care delivery. This latter part also includes richness of information about the support provided to the hospital from other organisations.
2. Diversity (Ritchie, 2013). The documents could come from numerous sources providing information about the hospital, relevant support actors, and the context of Tumaco, Colombia.

3. Access (Curtis et al., 2000). The possibility for the researcher to obtain organisational consent to access the documents, or if their availability was free.

The documents came from the following organisational hierarchy:

- i) National and local government documents.
- ii) Research centres and academia.
- iii) Articles from newspapers and magazines.
- iv) External Supporting partners: Regional, National, or International
- v) Hospital documents.

Additionally, the project used snowballing to complement the purposive approach for document collection. Snowballing refers to selecting relevant papers/documents cited within a study/report/law reviewed during the research project (Biddix, 2018; Greenhalgh & Peacock, 2005). Table 3.9. provides a list of the documents included in this research for analysis from each hierarchical level previously mentioned.

Table 3.9 Documents selected for analysis

| HIERARCHY | TYPE OF DOCUMENT | DOCUMENTS FOR ANALYSIS | ENTITY RELATED TO THE DOCUMENT | TIMEFRAME |
|-------------------------------------|--|---|--|-----------|
| NATIONAL LEVEL GOVERNMENT DOCUMENTS | LEGAL | Law 100 of 1993 | Congress of Colombia | 1993 |
| | | Law 1122 of 2007 | Congress of Colombia | 2007 |
| | | Law 1438 of 2011 | Congress of Colombia | 2011 |
| | | Law 1448 of 2011 | Congress of Colombia | 2011 |
| | | Law 1523 of 2012 | Congress of Colombia | 2012 |
| | | Law 1751 of 2015 | Congress of Colombia | 2015 |
| | | Decree 1876 of 1994 | President of Colombia | 1994 |
| | | Decree 2423 of 1996 updated in 2022 | President of Colombia | 1996 |
| | | Resolution 2003 of 2014 | The Ministry of Health | 2014 |
| | | Resolution 1220 of 2010 | The Ministry of Health | 2010 |
| | | Resolution 4481 of 2012 | The Ministry of Health | 2012 |
| | Resolution 515 of 2017 | Health superintendence | 2017 | |
| | | Informe defensorial sobre la política de atención a víctimas de actos de terrorismo - Report about government assistance to conflict victims. | Defensoría del Pueblo | 2019 |
| | MULTIMEDIA (websites) DANE - Informe necesidades básicas insatisfechas Colombia (Report on unsatisfied basic needs) | Department of National Statistics | 2018 | |
| LOCAL LEVEL GOVERNMENT DOCUMENTS | LEGAL | Plan de desarrollo Alcaldía de Tumaco - Tumaco nuestra pazión (Tumaco's development plan) | Municipality of Tumaco | 2018 |
| | REPORTS (Digital or physically available) | Análisis de la situación en salud con el modelo de los determinantes sociales - Tumaco's health care situation/assessment | Municipality of Tumaco | 2018 |
| | | Modelo de Atención en salud y estudio de la Situación de la Prestación Pública de Servicios de Salud en el departamento de Nariño Red de Prestación de Servicios de Salud. | Nariño Provincial Health Authority | 2014 |
| | | Propuesta de diseño y conformación del programa territorial de reorganización, rediseño y modernización de redes de Empresas Sociales del Estado del Departamento de Nariño - Document for the modernisation of Nariño's provider network | Nariño Provincial Health Authority | 2019 |
| | MULTIMEDIA (websites) | Pagina de comunicaciones salud Gobernacion de Nariño - Definidos 6000 millones de pesos para el pago de salarios Hospital San Andrés ESE -Government bulleting on the payment of hospital workers. | Nariño state government website | 2018 |
| | | Consejo de Seguridad se adoptan nuevas medidas para avanzar en defensa de los líderes sociales y atención humanitaria - Communication bulletin | Province of Nariño, Communication Bulletin | 2018 |

Table 3.9. Continuation

| HIERARCHY | TYPE OF DOCUMENT | DOCUMENTS FOR ANALYSIS | ENTITY RELATED TO THE DOCUMENT | TIMEFRAME |
|--|--|--|--|------------|
| RESEARCH ORGANISATIONS AND ACADEMIA | REPORTS (Digital or physically available) | The conflict barometer | The Heide berg Institute for Conflict Research | 2021 |
| | | Tumaco una historia de recomposición de los actores en el territorio | Fundación Paz y Reconciliación | 2017 |
| | | Cómo va la paz pacífico | Fundación Paz y Reconciliación | 2018 |
| | | Lo que ocurre en Tumaco puede ocurrir en 10 municipios | Fundación Paz y Reconciliación | 2018 |
| | MULTIMEDIA (websites) | Format Agreement of Mutual Understanding | Medicines Sans Fronteires | 2019 |
| | | Contrato de apoyo en recursos de sangre/Support agreement for blood products | Fundación Hospital San Pedro | 2019 |
| ARTICLES FROM NEWSPAPERS AND MAGAZINES | MULTIMEDIA (website documents) | En Colombia sí hay un conflicto armado no internacional | El Espectador | 2019 |
| | | Por cada 1.000 habitantes en Colombia, hay alrededor de 1,5 médicos generales. | La República | 2020 |
| | | Así fue como quebraron a Saludcoop | El País | 2015 |
| | | En las entrañas de la violencia que azota Tumaco | El País | 2011 |
| | | Procuraduría suspende al alcalde de Tumaco | Semana | 2018 |
| | | Millonarios Gastos y Lujos Con Recursos de la Salud | El Tiempo | 2013 |
| | | Hay cinco mafiosos detrás del paro cocalero en Tumaco | El País | 2017 |
| | | La cultura es resistencia en Tumaco | El Espectador | 2014 |
| HOSPITAL | MANAGERIAL DOCUMENTS AND REPORTS (Digital or physically available) | Informes de Gestión - Hospital San Andrés ESE annual working report. | Hospital San Andrés de Tumaco ESE | 2019, 2020 |
| | | Financial statements | | 2018-2020 |
| | | Hospital plan for the response of emergencies and disasters | | 2014-2018 |
| | | Plan de Cargos | | 2019 |
| | | Main pathologies | | 2014-2018 |
| | MULTIMEDIA (website documents) | Hospital San Andres de Tumaco official website: Service portafolio | | 2021 |

3.4. ETHICS AND INFORMATION MANAGEMENT

3.4.1. ETHICS

This research followed the University of Edinburgh’s ethical standards for conducting a PhD study. Those standards included obtaining approval to conduct the study from the University and other relevant bodies, gaining informed consent from participants and respecting participants’ preferences when collecting interview data.

The main concern of the research gravitated on the safety of the researcher and participants during fieldwork as it had to be undertaken in a conflict-affected setting. For this reason, the study received a careful ethical review and ultimately received a Level 2 approval in December 2018 (See Appendix 8). To ensure safety and anonymity of participants the researcher engaged in remote interviewing (voice calls) and advised

participants to communicate from a private and safe location. Similarly, as mentioned earlier the project formally requested for permission to the hospital and different organisations that support it to conduct the research. Such permissions were granted using the letters presented in appendixes 5 and 6.

This study provided a written consent form to each participant before undertaking the interviews which also included basic information about the research project (See Appendix 9). The participants were asked to read the consent carefully and to sign it if they accepted to be part of the research process. They were also provided with the opportunity to discuss any reservations they had or to abstain from consent if they did not feel comfortable with participation. The researcher assured all participants they would be anonymised when using their remarks in the project. Finally, the researcher respected participants' time by asking each their time availability or allowing them to disengage from the interview when they encountered unexpected circumstances.

3.4.2. INFORMATION MANAGEMENT

The management and handling of the interviews and documental information was as follows.

- i. Once the interviews were recorded, they were downloaded to a Windows 10 personal computer (PC) for transcription and translation to make the data manageable. The computer was password protected in the log in session to ensure security for the data. Similarly, the computer when not in use was kept in a secure/locked office area.
- ii. The researcher used Nvivo 11, a qualitative software assistant tool, to store the documents for analysis and provide organisation.

3.5. THE THEORY TO GUIDE THE CASE STUDY: THE EVERYDAY RESILIENCE FRAMEWORK

This project used the Everyday Resilience Framework (ERF) as a tool to guide the data collection and analysis. ERF aims to understand "*the maintenance of positive adjustment under challenging conditions such that the [health systems and] organisation[s] emerge from those conditions strengthened and more resourceful*" (Gilson et al., 2017, p.1).

The introductory chapter for this thesis explained that an iterative process between data collection, literature review and supervision discussions aided to select this

framework to guide the research as data aligned with the framework's categories. Yet, other factors strengthen the decision to select the framework. Before delving in the reasons on why this study chose ERF to guide the analysis, it is necessary to explain, how the concept of resilience has been introduced in health system research, the origins of ERF and its details, and discuss the existence of competing frameworks to ERF and their contribution. Once the information just outlined is provided, it is possible to elaborate on the reasons why ERF has been chosen as the framework to assist this research.

3.5.1. THEORETICAL BACKGROUND: THE ORIGINS OF ERF, RESILIENCE FRAMEWORKS AND DEFINITIONS AND DETAILS OF ERF

The origins of ERF: Delving into resilience frameworks and definitions. The origins of ERF within the global health literature originated in the health systems resilience research. The health systems research adopted the concept of “resilience” from the natural science to understand the ability of systems to face challenges. Resilience in the natural science (particularly engineering) entails the capacity of physical systems (e.g., bridge) to return at their original state and continue functioning after experiencing a significant disruption (e.g., earthquake) (Barasa et al., 2018). The topic of health system resilience began to receive more examination during the aftermath of the Ebola epidemic in Africa between 2014-2016 (Kruk et al., 2015). At that time, the scientific community evidenced how difficult it became for the health systems of African nations to effectively respond and manage the Ebola crisis and, simultaneously, continue to deliver regular services oriented to meet people's common needs.

Kruk et al (2015), being perhaps the earliest adopters of the resilience term in global health, defined health system resilience as *“the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises; maintain core functions when a crisis hits; and [be] informed by lessons learned during the crisis”* (Kruk et al., 2015, p.1910). The crises could range from economic downturns, epidemiologic crises, environmental disasters, political instability, or armed conflict.

In time, other researchers started to propose resilience frameworks to give more concrete classifications of health system resilience and elucidating its integrating parts. Kruk et al (2015) again, deliver the first of such frameworks. The authors provide the

earlier mentioned definition about resilience and elaborate key factors or “prerequisites” characterising resilient health systems. Kruk and colleagues suggest resilient health systems are based on 5 components which include “*Awareness*”, “*diversity*”, “*self-regulation*”, “*integration*” and “*adaptability*” (Kruk et al., 2015). Each component is explained below.

Awareness entails health systems having easy access to information about its human and physical resources along with contextual and disease developments. Such information helps the health system to notice strengths and weakness with assets and plan measures to contain problems. ***Diversity*** corresponds to the health system ability to address a great variety of challenges. Such response is possible when health systems can assess all people’s health needs to effectively address them. Such health problems involve contagious diseases or contextual circumstances (i.e., disasters, conflict). ***Self-regulation*** stands for the ability of the system to contain threats in isolation and avoid their propagation to the entire system to threaten its operation. ***Integration*** entails the ability of the system to bring together diverse actors who can give ideas on how to respond to a problem and plan for a response. Integration helps the system to establish agreements (formal or informal) with different actors to mobilise resources during crises. Lastly, ***adaptability*** corresponds to the capacity of the health system to improve or change system functions during adverse conditions. This latter factor aims to create performance improvements for health systems in the short-term and become fully capable to meet new health needs and shocks in the future (Kruk et al., 2015).

Later, Blanchet et al (2017) propose a different conceptual framework of resilience to enhance the discussion on this issue. Blanchet and colleagues undertake a scoping review of the resilience definition to elaborate their framework. The scoping review included work in health systems and other areas such as ecology and urban studies. Still, the authors go further in informing that their framework not only presents a conceptualisation of resilience and its integrating parts but gives policymakers and practitioners insights on how to govern health system resilience. The authors see governance of health system resilience as the capacity to manage the actors, networks

and institutions integrating or influencing the health system to achieve resilience (Blanchet et al., 2017).

Blanchet et al inform that health system resilience is “*the capacity [of health systems] to absorb, adapt and transform when exposed to a shock [e.g., pandemic] and retain control over its structure and functions*” (Blanchet et al., 2017, p. 432). So, in their view of resilience, the issue has three overall capacities. Absorptive capacity corresponds to the ability of the health system to withstand shocks and continue to deliver the same levels of care. Adaptive capacity entails the ability of the system to provide the same or more health services with fewer resources through changes in how to do things. Transformative capacity involves the ability of the system to transform its functions to meet the constantly changing demands (Blanchet et al., 2017). Blanchet et al further argue that the capacities just mentioned are underpinned by other set of capacities. Such underpinning capacities include: **i)** the combination and integration of knowledge, **ii)** the capacity to anticipate and cope with uncertainties or unplanned events, **iii)** interdependence **iv)** and legitimacy (Blanchet et al., 2017). Each is developed below.

The first underpinning capacity Blanchet et al propose, corresponds to the ability of health systems to establish a surveillance mechanism for gathering information on threats that could hamper system operations. This system must monitor both the health system and other areas such as the economic or political sectors. The authors see crucial the work of “**social brokers**” (Blanchet et al., 2017, p. 433) or individuals who establish bridges across sectors to obtain relevant information within the health system and other environments to evidence problems. The second underpinning capacity involves the ability of the health system to structure networks or links between actors to transfer information on problems for decision making and start a response. The third underlying capacity relates to the necessity of health systems to understand they are embedded in other complex systems/structures (i.e., economic, political, ecological, social, technological) and such systems can affect their functionality or help it overcome problems. In this regard, Blanchet et al believe “*social brokers*” play another important role here which corresponds to obtain help from external actors during crisis. Lastly, the fourth underpinning capacity corresponds to the ability of the health system to develop

“socially and contextually accepted institutions and norms” (Blanchet et al., 2017, p. 433). This means enhancing trust among the community on health system functions to improve its ability to absorb, adapt or transform during crises. For Blanchet and colleagues, the community trust can be enhanced by engaging them in the management and the policy formulation process of the health system (Blanchet et al., 2017).

ERF: The details. The two frameworks previously outlined perceive health system resilience mainly as the capacity of the systems to withstand drastic events during service provision. Yet, Gilson et al (2017) with Barasa and colleagues (2017) began to recognise that health system resilience not only relates to their ability to cope with sudden shocks but also with “chronic stressors” (Barasa et al., 2017). Chronic stressors correspond to challenges ingrained in the operation of health systems, especially of developing countries, and occur in a day-to-day basis (Barasa et al., 2017). Some of those stressors could be staff absenteeism, changes in organisational or health system policies, delays on medicines and supplies, or financial constraints (Barasa et al., 2017). This latter view of health system resilience has been referred to “The Everyday Resilience Framework” (ERF) being this the most recent iteration of frameworks available on health system resilience (Barasa, Cloete, et al., 2017; Gilson et al., 2017).

According to the proponents of ERF, health organisations and systems respond to challenges through different strategies. The framework has categorised the strategies into three types: absorptive, adaptive, and transformative. These terms are closely related to those proposed by Blanchet and colleagues discussed earlier in this document. According to the ERF proponents, an absorptive strategy *“seeks to neutralise low intensity or transient challenges returning the system to its state with minimal or no effect in its functionality”*. (Gilson et al., 2017, p.3) The adaptive strategy consists in the health systems and/or organisations ability to *“make limited adjustments [...] when challenges are of higher intensity”*. The transformative strategy is *“the transformation of the system into an entirely new state [...] when shocks are greater and persist”* (Gilson et al., 2017, p.3). According to the framework, the strategies emerge from health organisations and systems and coexist; thus, not being mutually exclusive. The strategies health systems or organisations use to face challenges can lead to: positive adjustment which means

they do not create detriments on the services health systems and organisations deliver, or, to unsustainable practices leading to poor care (also known as “maladaptive emergence”) (Barasa, Cloete, et al., 2017; Resyst, 2016).

For Barasa, Cloete, et al (2017), the strategies health systems establish for resilience are underpinned by “*organisational capacities*”. Such capacities correspond to “cognitive”, “behavioural”, and “contextual” capabilities across health system actors and the context where they operate (Barasa, Cloete, et al., 2017, p.92) . “*Cognitive capacity*” consists of the “awareness” of health system actors on the challenges their operation face. This means actors “make-sense” or understand what is happening and respond appropriately to the problem. “*Behavioural capacity*” relates to “agency” or the ability of health system actors to respond with adequate action or strategies to face the challenges. “*Contextual capacity*” are the resources actors within health systems and organisations draw from the environment to face stressors (Barasa, Cloete, et al., 2017, p.92).

Barasa, Cloete et al (2017) argue that health systems and organisations rely on “*Hard*” and “*Soft*” resources to successfully respond to challenges (Barasa, Cloete, et al., 2017, pp.92–93). The *hardware* corresponds to the availability of physical resources such as supplies, infrastructure, personnel, and finances to address challenges. The *software* is comprised of tangible and intangible elements. Tangible software is associated with personnel skills, knowledge, organisational systems, and processes. Intangible software is about relationships, power, values, and informal norms (Barasa, Cloete, et al., 2017, pp.92–93). The available literature on ERF recognises that in health systems and organisations the software is, perhaps, more important at nurturing resilience than the hardware (Barasa, Cloete, et al., 2017; Gilson et al., 2017). Although tangible resources such as medicines, infrastructure, or finances are important to face operating challenges, these, by themselves, are not enough for health system actors and organisations to keep operating and overcome challenges. The health system software is essential to manage stressors, thus, becoming a significant driver for a response to them (Barasa, Cloete, et al., 2017, p.93).

All the frameworks just discussed, including ERF, mention that Complex Adaptive Systems thinking (CAS) is their main theoretical approach underpinning the resilience

model (Barasa, Cloete, et al., 2017). Basically, the frameworks consider health systems as CAS. CAS systems are adaptive, and continually learning entities to face different contextual or organisational circumstances (Barasa, Molyneux, et al., 2017). These types of systems are bounded in complexity which means understanding each of the system integrating units does not guarantee a full understanding of the whole. This is because their operation is embedded in other systems often larger than health systems themselves and which are also complex (e.g., social, political, economic, ecological) (Braithwaite et al., 2017).

Key literature analysing the nature of CAS (Adam & de Savigny, 2012; Braithwaite et al., 2017; Faerron-Guzmán, 2022; The Health Foundation, 2010) have identified these core components of such systems. First, several **agents** integrate the system. The agents entail a large variety of people organised as individuals or groups and it is usually perceived that they work randomly. Second, the interaction of agents leads to **emergence** of patterns that evidence agents' interaction. Third, agents develop **connections or networks** within or outside the system to coordinate tasks and achieve goals. Four, CAS are **dynamic** or constantly change to adapt toward environmental circumstances and ensure best fit and survival. Even the smallest of changes can lead to wider system change. This adaption is possible as the system establishes feedback loops regarding on how well its activities cope with challenges. Five, governance is **non-hierarchical** where rules emerge from the top or bottom agents within the system. Both informal and formal rules govern the system delineating people's behaviour and interaction. Finally, these systems are **open** making it difficult to define boundaries with the context.

The theoretical grounding of health system resilience frameworks on CAS, makes them all consider resilience as a property that emerges from health systems (Barasa, Cloete, et al., 2017; Blanchet et al., 2017; Kruk et al., 2015). This means resilience is the product of health systems and its actors working together to establish the resilience capacities. Or, in the case of ERF, is the result of health systems or organisations deploying different strategies to endure challenges.

When providing a general analysis of the three existing frameworks, particularly about the differences and similarities between them, it could be said the following.

First, the three frameworks define health system resilience differently, but share some ideas. For instance, the three frameworks see resilience as the ability of health systems to endure challenges. Two definitions (that of Kruk et al and Blanchet and colleagues) mainly see it as the ability of the health system to endure great shocks. Meanwhile, ERF does not emphasise its definition the ability of health systems to just withstand acute shocks but also considers their capacity to deal with more routine disturbances or stressors affecting their operations. Similarly, Kruk and colleagues share with ERF the idea that resilience also entails a learning process of health systems from past lessons to be more effective or resourceful to contain problems.

While most of the frameworks concur that Absorptive, Adaptive, and Transformative concepts are associated with resilient health systems, these elements are viewed differently. For instance, Blanchet et al (2017) envision the three concepts as capacities, whereas ERF see them as strategies. Kruk and colleagues (2015) despite not referring to the three concepts verbatim say that Adaptability is part of a resilient health system.

The differences mentioned above are relevant when thinking how each framework visualises health system resilience. If one considers these three elements as capacities, as Blanchet et al do, it focuses to understand the capability of health systems to reach each element to achieve resilience. Blanchet et al argue that health systems can obtain these core capacities by relying on key underpinning dimensions previously discussed in this section. Meanwhile, when considering the concepts as strategies is more about understanding the actions health systems do or avoiding doing to develop something — in this case become resilient to shocks. Finally, Kruk et al (2015) when considering adaptability as a feature of a resilient health system, it sees it as an attribute, or property of a resilient health system. The property can be innate to the system or established through time.

The frameworks also have different views on how to achieve the absorptive, adaptive, and strategic elements. Blanchet et al propose four underpinning capacities to achieve these key features. Such underpinning capacities entail: i) the establishment of a surveillance system to obtain information on threats, ii) the ability to establish networks to improve the flow of information to make decisions, iii) the awareness of health systems

to operate alongside other systems to obtain support, and iv) enhance the trust of the community about the ability of the health system to respond to crises. Meanwhile, the proponents of the ERF consider that cognitive, behavioural, and strategic capacities are the key elements that facilitate the deployment of resilience strategies.

Further, the capacities ERF proposes as underpinning features for health system and organisations to employ the absorptive, adaptive, and transformative strategies resemble certain elements discussed in the other frameworks. For instance, in ERF the cognitive capacity considers important the ability of health system actors to be aware or make sense of the problems to deploy appropriate resilient strategies. This definition closely relates to what Kruk along with Blanchet and colleagues say about Awareness of the health system to constantly monitor threats.

Besides, the behavioural capacity in ERF closely relates to certain features the other two competing frameworks propose about health system resilience. In ERF, the behavioural capacity corresponds to the ability of health system actors to undertake strategic action to initiate activities or response to challenges. This definition comes close to the self-regulation and integration features Kruk et al propose about characteristics of resilient health systems. Also, the definition matches what Blanchet and colleagues refer to the ability of health systems to establish networks to improve decision-making and recognise its operation is embedded in other systems that can give support during crises.

The alternative frameworks to ERF also present features that closely match the contextual capacity ERF proposes as necessary to deploy resilience strategies. The contextual capacity relates to the hard and soft resources available to health systems to face problems. For instance, Kruk et al mention that self-regulation is a characteristic of a resilient health system, which is a feature highly rooted on the availability of hard resources like personnel or facilities to contain and effectively deal with a shock. Meanwhile, Blanchet and colleagues mention capacities such as networks, community trust, and social brokers as essential for resilience and which ERF can categorise as soft or hard resources.

Finally, a key commonality of the frameworks corresponds in underpinning the conceptualisation of resilience within Complex Adaptive Systems thinking/theory (Barasa,

Cloete, et al., 2017; Blanchet et al., 2017; Kruk et al., 2015). This theoretical approach helps the frameworks understand resilience as a factor that originates from health systems once actors have taken (or not) different decisions when providing care in challenging circumstances. Further, the framework leads researchers, policymakers, and practitioners not to just scrutinise the activities or actions health system actors do to develop resilience but provide attention to the interrelationships of the system parts. Such relationship is also fundamental to help illuminate how the parts of the system work together and if there is great disparity (The Health Foundation, 2010). Even, complexity thinking provides ERF an edge in considering that provision of services with suboptimal standards can be a way health systems manage challenging conditions. This later situation has been eloquently categorised within ERF as maladaptive emergence of health systems to endure stressors (Barasa, Cloete, et al., 2017). This later issue in simpler words entails health systems could provide suboptimal services to resist a challenge but this practice does not make the system resilient per se.

Reasons to choose ERF for this research. Among the frameworks just discussed of health system resilience, this research chose ERF as the most useful to guide the research. The framework provides the following advantages:

- i. ERF considers that health systems and organisations are exposed not only to acute shocks but routine challenges product of their daily operations. Thus, resilience in health systems derives on their ability to withstand both problems. When this research began to undertake fieldwork perceived that this is a better perspective about the challenges real health organisations like a hospital experience. During fieldwork for this study, study participants not only reported on the problems encountered with the armed conflict but also continuously complained on operating issues like material, staff, or financial constraints.
- ii. ERF views capacities as elements that facilitate health system response to challenges. During the fieldwork process, it was evident that participants provided significant information about different elements, resources or inputs needed for a hospital response to challenges. These elements, at the end, aligned well within the capacities categories of ERF. It is important to inform that other frameworks (as

Blanchet et al) also propose capacities as key elements to attain resilience. Yet, such alternate frameworks defined the capacities with complex language and their meaning, in the end, was possible to encapsulate in the simpler cognitive, behavioural, and contextual categories proposed in ERF.

- iii. ERF has not been tested within a conflict setting. Most of the empirical testing of ERF has mainly occurred in African countries often characterised as resource constrained environments and free of conflict. This study in Tumaco, Colombia provided the opportunity to test the explanatory power of the framework in conflict-affected and resource restricted environments – contexts which are becoming more common throughout the world (Chapter 1 provided details). Testing the framework in conflict-affected context is relevant, as it is possible to see its ability to explain how health systems or integrating organisations like hospitals, can be resilient even in conflict environments.
- iv. Finally, the framework uses CAS allowing to capture the complexities where health systems and their integrating organisations operate in. Within global health research it has been established a critique that the field tends to view research problems in a linear and health-oriented lens not providing sufficient attention to the political, economic, and power dynamics shaping the problems (Faerron-Guzmán, 2022). These later variables are usually fundamental to understand a research issue in global health and must be considered. ERF allows this study to consider those extra variables because they recognise health systems operations are embedded in such larger social systems previously mentioned.

3.5.2. THE EVERYDAY RESILIENCE FRAMEWORK IN THE EMPIRICAL LITERATURE AND LIMITATIONS

The empirical literature applying ERF is limited. This might be explained by the relatively recent introduction of the framework in academic debates. At the time of doing this research, three studies have used the framework for the analysis of health systems and organizations. The first study is from Gilson and colleagues (2017) who studied health systems at the district level in Kenya and South Africa. This study essentially formed the foundation for Barasa, Cloete et al (2017) to further develop ERF. Later,

Kagwanja and colleagues (2020) along with Gilson et al (2020) tested the framework analysing reforms to the primary care system in Kenya and South Africa respectively.

The studies mentioned face limitations. First, the methods they use, referred within the studies as “learning site” (Gilson et al., 2017; Kagwanja et al., 2020), may face difficulties related to risk of bias. The methods rely on establishing a close working relationship between researchers and health managers. This type of work can create power asymmetries between the researchers and participants similar to participatory action research (Kindon et al., 2010). So, participants could concede expert status to researchers during the study, potentially abiding to their views on the challenges health system and its organisations face and responses used for mitigation. Second, hospitals are not studied in-depth. The studies do not consider whether such organisations face different types of challenges as compared to primary care facilities and if their responses to such challenges draw on other resources. Finally, the available projects have not been conducted in armed conflict settings. An armed conflict can classify as a significant shock that affects the functionality of individual health organisations or the national health system at large.

Notwithstanding the studies’ limitations, they provide an important contribution in recognising that health systems and their organisations in LMICs face substantial challenges to deliver care and establish diverse strategies to mitigate them. The studies recognised that health systems and organisations endure challenges related to centralisation or decentralisation of core functions product of government reforms, resource constraints, and instability of front-level personnel (Gilson et al., 2017, 2020; Kagwanja et al., 2020). The first created confusion among facility managers about the government departments they were accountable to. Similarly, facilities experienced resource scarcity to examine or treat patients. The main driver of this issue was insufficient government funding. Finally, instability of front-line staff was usually the result of unmotivated people at work due to low salaries, lack of promotion, massive workload, or inadequate resources (Gilson et al., 2017, 2020; Kagwanja et al., 2020) .

According to the studies’ authors, the health systems and their organisations established different absorptive, adaptive, and transformative strategies to cope with the

challenges just mentioned (Gilson et al., 2017, 2020; Kagwanja et al., 2020). The strategies were established either by the organisations themselves or with the support of multiple health system stakeholders. For example, the primary care centres arranged absorptive strategies like borrowing drugs between facilities when they faced shortages on supplies to treat patients. Relatedly, they allocated unqualified staff to mitigate personnel scarcity. To cope with government centralisation or decentralisation, managers of health facilities established work groups with local government employees as an adaptive strategy to coordinate tasks and decisions. Lastly, facility managers and local governments implemented transformative health sector strategies like overhauling staff promotion processes and training to improve personnel motivation at work.

The strategies explained above relied on cognitive, behavioural, and contextual capacities to be possible (Gilson et al., 2017, 2020; Kagwanja et al., 2020). For instance, the borrowing of supplies across facilities, entailed a cognitive capacity of facility managers to be aware that drugs are scarce and the facility must deliver care despite this problem (Kagwanja et al., 2020). This led hospital managers to activate their behavioural capacity of borrowing drugs across facilities. Meanwhile, the managers' access to well-resourced networks (i.e., other facilities having drugs) was the contextual capacity that made the strategy possible (Kagwanja et al., 2020). Similarly, the strategy of overhauling the staff promotion process also relied on cognitive, behavioural, and contextual capacities (Gilson et al., 2020). The cognitive capacity was the appreciation of health system leaders that workers were unmotivated at work hindering service delivery. The behavioural capacity entailed the creation of a committee to analyse how to speedup salary promotion and improve training for workers. The contextual capacity mainly depended on governmental availability of financial resources to improve staff salaries or train them.

Most of the strategies mentioned above, often draw on soft resources rather than hard resources to respond to the challenges. So, even though hard resources matter to deliver good care (i.e., more money and better buildings can help at coping with challenges), soft resources like networks are important and, perhaps, more relevant to operate in challenging settings. For instance, networks can help health organisations to

mobilise both tangible or intangible resources, like more drugs, or staff training (Gilson et al., 2017, 2020; Kagwanja et al., 2020). This research will examine how relevant the factors just mentioned are for a hospital operating in armed conflict settings to respond to the challenges.

Lastly, the application of the ERF by this project to understand how Hospital San Andrés ESE sustains delivery of care in the conflict setting of Tumaco addresses key limitations within the ERF empirical literature. Such limitations correspond to lack of in-depth analysis of hospital operations and insufficient application of the framework in a conflict context.

Subsequent chapters will discuss the utility of this framework in categorising the challenges Hospital San Andrés ESE endured in Tumaco along with the capacities that facilitated the response to challenges. Yet, during research it became apparent limitations with the strategy categories to classify responses to challenges. The discussion chapter will deliberate on those issues and gives some recommendations on how to enhance the framework's explanatory power.

3.6. DATA ANALYSIS

This section delivers details about how this research analysed the data collected during fieldwork. It presents first the strategy the researcher used to analyse the data, then the methods and techniques employed to aid the data analysis process.

3.6.1. THE DATA ANALYSIS STRATEGY

The researcher's strategy to analyse the primary data consisted in combining two approaches proposed by Yin (2013) to examine data which are 1) relying on theoretical propositions and, 2) working with the data from the ground up.¹⁵ The first approach analyses the data using previous theoretical propositions to assess their explanatory power. This study used ERF as theoretical framework to guide data collection and test its relevance. Likewise, it uses the WHO building blocks as a key element to organise the information collected in the field. The second approach entails "playing with [the

¹⁵ Yin (2013) argues that in case study research there are four general strategies researchers often used to analyse the data. 1) Relying on theoretical prepositions, 2) Working your data from the ground up, 3) Developing a case description, 4) Examining plausible rival explanations.

qualitative] data” (Yin, 2013, p.136) to examine if the information has patterns that could explain the phenomenon examined. This approach was mainly applied for defining the hospital responses to challenges. The reason to do this was because the strategy categories of the ERF framework (i.e., absorptive, adaptative, transformative) had shortcomings to describe the hospital system responses to challenges. The study had to establish its own description of such responses to better comprehend their nature. In Chapter 7, the thesis provides a detailed discussion about the problems the ERF strategy categories had to describe the hospital response to challenges.

Further, this research combined the two approaches just mentioned because the lack of a theoretical framework from the outset of the research. The research took first an inductive, iterative approach to the identification of a theoretical framework, with reviews of the literature, consideration of the themes emerging from the early stages of fieldwork, and discussions with the supervision team. Once the research defined the theoretical framework, it began the process to test its explanatory power using the already collected data and the one that remained to be obtained from fieldwork.

Using the approaches mentioned earlier proved useful as it was possible to obtain key insights regarding ERF and the phenomenon studied. Such insights help at corroborating some of the framework categories or evidencing limitations with the framework. Similarly, the research strategy helped to better appreciate the hospital actions to face challenges and its interaction with supporting actors to sustain delivery of care in a conflict setting.

3.6.2. THE DATA ANALYSIS: METHODS AND TOOLS

This project employed thematic analysis (TA) as the main method to scrutinise the data obtained with the semi-structured interviews and the documents. TA entails *“identifying, analysing, organising, describing, and reporting themes found within a dataset”* (Braun & Clarke, 2006, p.6). Further, TA helps to comprehend the research participants’ perspective on an issue of study through “highlighting similarities and differences” or patterns in their interpretations regarding the topic under investigation (Nowell et al., 2017). Nowell et al (2007) argue that TA is useful to “summarise” large datasets. This summarisation is possible because reducing the information in relevant

themes produces clean, clear, and simple reports of the gathered data. Further, when thematic analysis is done rigorously it leads to reliable and insightful research findings (Nowell et al., 2017).

Still, TA is a data analysis method that is not exempt of limitations. The literature recognises that this data analysis method often can lead the researcher to present just a well organised “collection” of similar data but with insufficient analysis of what the data means in relation to the phenomenon studied (Javadi & Zarea, 2016). Similarly, another limitation often relates to its flexibility regarding the approach of building or constructing themes in comparison to similar qualitative methods for data analysis such as Discourse Analysis. This latter method relies on more structured analytical approaches like examining sentence structure or word counting (Nowell et al., 2017).

Despite the limitations mentioned above, this research decided to use TA for the following reasons. First, the method was accessible and intuitive for the researcher to use and helped to constantly interact with data and reflect on its meaning (Braun & Clarke, 2006). Second, the method fits with the Critical Realist philosophical paradigm which underpins this research. Interestingly, the flexibility that characterises TA allows it to align with Critical Realism because the themes developed are supported with information provided by people about their experiences of events or participants’ diverse meanings of reality (Hayfield, 2015). The people reports of events or their understanding of them can provide details on how the social context influences participants’ perceptions of reality (Braun & Clarke, 2006). Equally, this research by using ERF mitigates some of TA limitations related to lack of structure as this framework helped to establish initial themes to test during research. Finally, recent literature on TA has provided steps for conducting the method rigorously and ameliorate problems like insufficient analysis when developing themes or establish their meaning (Braun & Clarke, 2006; Nowell et al., 2017).

Roughly this study undertook the TA process in the following way. First, the project conducted a data preparation stage. At this stage all the semi-structured interviews were transcribed, translated, and important sections of documents or literature reviewed were selected. Once the data preparation was completed, the researcher designed topics of interest to classify the information and then categorise or code such topics into relevant

themes (Bryman, 2012). A theme encapsulates the different interpretations of research participants about events, situations, ideas, or other different social manifestations related to the issue studied. The different themes this research created through TA depended upon the information participants and documents provided in conjunction with the topic's relevant literature and the theoretical framework (Nowell et al., 2017).

To conduct TA this research relied on two elements. First, it used a modified version of Braun's and Clarke (2006) 'six-phases' to conduct a rigorous thematic analysis. Appendix 10 outlines such phases specific for this study. The second element that helped with the thematic analysis process entailed the use of a Computer Assisted Qualitative Data Analysis Software (CAQDAS) to assist the data analysis. This research used the software Nvivo 11 for data analysis. This software was useful to develop phase one through five of TA. Nvivo helped at organising and handling the relatively large data obtained from fieldwork. More specifically, it aided the researcher to avoid printing material with primary information and to manually label the information during the coding and theme generation process. Likewise, Nvivo facilitated exploring primary information in a relatively quick manner through queries of words or phrases. Finally, the software facilitated the storage of fieldwork data using electronic files instead of establishing a physical repository of the gathered information.

Still, the use of Nvivo for this research did not happen without shortcomings. The main problem the research literature has evidenced about the use of software like Nvivo to analyse qualitative data relates to creating for researchers the temptation to over rely on word counting features to establish the most common words as key research themes (Welsh, 2002). This leads to the problem of the researcher not interpreting and analysing the available data thoroughly. To mitigate this issue, the researcher was constantly aware that such queries just gave guidance of what could be the most relevant issues within the data, yet it was not sufficient to create themes. Theme creation entailed the six-stage process mentioned earlier which is highly iterative and requires the vetting or collating codes and triangulating data. Despite the limitation just mentioned, Nvivo resulted in an excellent tool that allowed the researcher to establish relationships across data, write thoughts that arise while reviewing the information, and helped to more easily recognise

the information associated with the codes. Table 3.10. (Next page) presents the themes that emerged during data analysis.

Table 3.10 The themes developed during the study.

| 1 | 2 | 3 |
|--|--|---|
| Sub-themes 2 | Sub-themes 1 | Mayor Themes |
| Usual or routine Financial challenges | Routine Challenges | The challenges |
| Usual Workforce or Personnel challenges | | |
| Usual Information System Challenges | | |
| Usual Leadership and governance challenges | | |
| Usual Challenges with medical products and technologies | | |
| Usual Health service delivery challenges | | |
| Financial challenges related to war | Armed conflict challenges | |
| Workforce or Personnel challenges related to war | | |
| Information system Challenges related to war | | |
| Leadership and governance challenges related to war | | |
| Challenges with medical products and technologies related to war | | |
| Service delivery challenges related to war | | |
| Support Activities of networks | Activation of support networks to address challenges | The hospital response to the challenges to continue the delivery of health care |
| Capacities that facilitate activating networks | | |
| Limitations with the support networks | | |
| Activities of emergency systems | Activation of the hospital and provincial emergency systems | |
| Capacities emergency systems rely on | | |
| Limitations of emergency systems | | |
| Activities of voluntary organisations | | |
| Capacities that allow the work with voluntary organisations | Collaboration with voluntary groups to address challenges | |
| Limitations with the work of voluntary organisations | | |
| Activities of the hospital intervention process | | |
| Capacities the intervention process relies on to be | The intervention of central government agencies in hospital operations | |
| Limitations of the intervention process | | |
| Activities of managers toward challenges | | |
| Capacities allowing managers to establish activities | Managerial activities to address challenges | |
| Limitations of the activities of managers to challenges | | |
| Activities concerning the structuring of investment projects | | |
| Capacities making possible the structuring of projects | Structure investment projects to strengthen service delivery | |
| Limitations with the process of structuring investment projects | | |
| Improve infrastructure and equipment maintenance | | Issues to improve |
| Establish an Intensive care unit | Enhance hospital service delivery | |
| Setup the mental health service | | |
| Establish a satellite emergency service | | |
| Enhance working tables | Improving hospital networking | |
| Improve hospital trust to manage resources | | |
| Special oversight for hospitals in conflict areas | | |
| Continuity of intervention | Improving the intervention sustainability | |
| The intervention still must address key issues | | |
| Formalising processes | | |
| Enhance the resources emergency systems rely on to face challenges | Improving the emergency systems | |
| Increase knowledge on medical mission | | |
| Increased availability of skilled managers | Strengthening hospital staff | |
| Prioritise the structure of an investment project | | |
| Establish a budget for project design | Strengthening capabilities for structuring investment projects | |
| Improve EPS payments process from insurers | | |
| Enhance insurance monitoring | | |
| Enhance hospital contracting model | Strengthening hospital finances | |
| Transparent management of financial resources | | |
| Enhance expertise levels among volunteers | | |
| Improve availability of resources for voluntary | Strengthening the work of voluntary and humanitarian organisations | |
| Expand scope of support of voluntary organisation | | |

Columns 1 and 2 of Table 3.10. summarise sub-themes that correspond to key issues that emerged from the data. The last column of the table called “major themes” represents the convergence of subthemes and relate to the project’s research questions. These major themes are also reflected in the organisation of the results chapters for this research.

Finally, this study used a modified version of logic models using the information produced from TA to illustrate the key findings and promote understanding of the complex interrelationships between emergent themes and subthemes (See Appendix 11 for more model information). This approach was developed mainly for Chapter 5 which discusses the different responses the hospital uses to mitigate challenges to continue its operation. Additionally, these logic models granted the opportunity to develop an understanding of the sequence of events or the potential cause-effect relationships between the capacities and activities allowing a hospital to respond to a challenge that help it continue to deliver health services.

3.7. REFLEXIVITY AND BIAS MITIGATION

Reflexivity has been broadly defined as the researcher examination of his/her role in the research and how his/her intersubjective elements affected the research process (Dowling, 2006; Finlay & Brendan Gough, 2003). The following paragraphs will provide such reflective process.

Regarding why the researcher decided to conduct a PhD in Global Health Policy, factors like previous studies and working experience influenced the decision. The researcher undergraduate studies in Economics at Universidad de Nariño made him attracted to the idea of understanding why Colombia’s health system faced substantial financial constraints and if it operated as intended in conflict locations. This curiosity was a key motivator to pursue job opportunities in Colombia’s health sector to appreciate in more detail the intricacies of the system.

The researcher, likewise, had the privilege to work for hospitals operating within the province of Nariño. This working experience helped him to gain insights about the health system problems and the insufficient research done to tackle them. Thus, to

alleviate Colombia's research deficit in the health sector, the investigator deemed valuable to pursue graduate studies to acquire the skills to conduct rigorous studies and propose solutions to problems. Initially, the researcher pursued a masters' degree in Public Policy at the University of Nottingham. This degree led him to do a detailed analysis of the implementation of Law 100 or the health care reform policy and its national implications. These studies helped the investigator to obtain a preliminary understanding on how the health system worked but still were insufficient to gain comprehensive awareness of key problems (i.e., funding and operation of the health system in conflict locations). Thus, the researcher decided to do a PhD to examine in more detail the issues that attracted him the most. He deemed the PhD as a powerful vehicle to propose new ideas on how to improve Colombia's health system given the various inefficiencies observed over time.

Apart of the insufficient research available about Colombia's health system and its operation in Tumaco, other personal factors underpinned the decision to choose this municipality to do the study. First, the researcher's nationality is Colombian and Tumaco was close to his primary residence corresponding to the city of Pasto – Nariño's capital. For the researcher, it made sense to study the topic of interest in Tumaco as this conflict-affected setting was highly accessible. The closeness to fieldwork did not require an extensive preliminary analysis to access the research site. Second, the researcher decided to do the study in Tumaco and particularly in Hospital San Andrés ESE because his previous working experience. As mentioned earlier, before engaging in PhD studies the researcher worked for hospitals operating in the province of Nariño. Such working experience permitted him to establish valuable contacts that became useful in this study for obtaining interviews or documents. Some of those contacts, for instance, included the person which Supersalud assigned as the first comptroller to lead the intervention process of the Hospital San Andrés ESE¹⁶. The comptroller helped the researcher to gain access to interviews from hospital personnel. Third, the researcher chose Tumaco to conduct the

¹⁶ During the development of this study (a period that includes the writing of the research proposal and the actual research 2016-2022) two people have assumed the comptroller or intervening agent position for Supersalud. The first person worked since March 2017 to January 2019. The second appointee has worked since February 2019 and by the time of writing this thesis has not considered resigning.

study because the access he had to his father's extensive network of contacts. At the time of conducting data collection for this study, the researcher's relative was the CEO of the Pasto's Chamber of Commerce. The position the researcher's relative held allow him to establish a large network of contacts throughout Nariño, including Tumaco, which ultimately this research project benefited from. Such connections were valuable for this research as some individuals became participants or referred other people for interviews. Finally, the researcher's decision to focus the doctoral studies on hospitals corresponded to its familiarity with these organisations from work experience. He also considered these facilities provided a good 'lens' to examine the overall health system.

Considering the elements discussed above, it can be argued the researcher training and professional background proved indispensable for doing this research. The researcher previous training provided guidance about the key problems affecting Colombia's health system and led him to explore relevant literature on the area. Meanwhile, the professional working experience became fundamental to facilitate the project's data collection process to fully grasp how a hospital is still capable to deliver services in a conflict setting. However, despite the benefits of the researcher background to undertake this study, it also can create bias problems. Such type of drawbacks will be explored below.

Given the researcher's previous training and working experience, he largely came with a managerial point of view when gathering and interpreting the data related to understanding how a hospital sustains health care delivery in a conflict setting. The investigator made efforts to be inclusive of other disciplinary perspectives and to reflect throughout on how a managerial lens might have shaped the nature, design and interpretation of the work presented in this thesis. However, despite this, the researcher's background and training likely unintentionally influenced certain elements of the study. As one example, it may have influenced the process of sampling participants. The investigator may have included more people familiar with the topics he knew more about, such as financial and managerial activities, and fewer individuals from another background (e.g., clinicians, health technicians). In addition, in the interviews, it may have led the researcher to probe certain areas over others. Thus, the researcher's background

and this more managerial lens has likely created blind spots in the view of hospital operations in conflict settings. A more clinical view, for example, may have yielded different results or additional findings beyond what was reported here. Therefore, the results arguably represent one perspective on how a hospital sustains health care delivery in a conflict setting, and future research engaging more with clinical staff and/or other non-managerial actors would be of great value to the field.

Given the risk of bias just outlined, the investigator made the following to mitigate the risks as much as possible. First, the researcher during its interview process included staff from clinical and operating tasks to obtain some insights from people with other backgrounds to complement the information gathered. Similarly, the researcher conducted a process of distancing himself of certain categories participants would agree on to describe certain challenges affecting the hospital or its workforce (i.e., managers' perceived staff disrespectful behaviour). Such distance is undertaken within the document by saying explicitly that hospital managers are the ones to perceive a problem in a certain way, but the researcher does not subscribe to such point of view.

Besides, the researcher's contacts from previous working experience and family connections may also had influenced the research. Some of the researchers' contacts that came from previous working experience or family members participated as interviewees in the study and were included within the Observers group. Despite how valuable the contacts were to obtain the data; the researcher was also conscious that it could impact the sample of people used to draw information for the study. To ameliorate the risk of creating an unrepresentative participant sample, the researcher considered important that contacts who participated as interviewees met the selection criterion the study established to select participants.

Similarly, the researcher's background may have influenced the design of data collection instruments creating questions that explored with research participants managerial and administrative issues in more depth. However, the researcher was mindful to learn more details on clinical topics to explore with relevant interviewees through unscripted questions that developed during the interview process. This was

intended to improve participants rapport on clinical issues/areas and give balance to information obtained and reported in this study.

To further mitigate the effects of the researcher's decision to conduct the study from a managerial perspective so findings not only speak on the hospital financial and administrative managerial issues he always kept in mind the hospital was a system. This helped him to get relevant insights from research participants on other areas of the hospital to sustain health care delivery beyond hospital management. Such areas relate to networking, the active participation of social leaders to monitor hospital processes, or the use of other interrelated systems to procure safety on personnel. All these issues will be further discussed in the results chapters and the discussion section of this thesis.

Additionally, the researcher's outsider status to the topic of analysis and his limited knowledge on clinical topics may have caused asymmetries when engaging interviewees. On the one hand, the outsider status created a two-way scenario with interviewee rapport. The researcher considered most participants felt comfortable to talk to someone outside their circle because they felt valued as someone else demonstrated interest about their activities and the issues faced. Yet, a limited number of interviewees seemed less comfortable providing details about their work to someone from outside, despite the researcher being associated to a respected research institution as the University of Edinburgh (or perhaps *because of* that association). On the other hand, the researcher's limitations of lacking in-depth knowledge about clinical topics might have created power asymmetries with certain interviewees as it became difficult to challenge or probe the information provided by certain participants leading the hospital's clinical processes.

To mitigate even further the sources of bias outlined above, and particularly to prevent the researcher's preconceived ideas from interfere with the research process, the researcher undertook the following activities throughout the research.

- Constantly "reflect" (Bryman, 2012) about the relevance of the information gathered to recognise whether the information presented in this project clearly illustrates what is actually happening regarding hospital response to challenges and its continuous provision of health care.

- Triangulate the information obtained from different sources to identify if the information converges toward findings. The triangulation process aimed to provide robustness to the overall research process (Yin, 2013, pp.120–123).

To conclude, the researcher considers the PhD studies to have resulted in a significant journey which helped him to better understand and assimilate information about the topic of interest. The researcher's continuous engagement with supervisors and colleagues allowed him to develop more critical reflection when analysing information. This element was widely applied in this project, particularly to ensure that its findings provide a useful understanding of the topic analysed.

3.8. CONCLUSION

This chapter provided details about the study methodology and theoretical framework. The chapter outlined the different decisions the researcher made, and the tools used to conduct the study and explained why certain decisions were made during the research. The following chapters present the research findings as a product of the methods and theory detailed in this chapter.

CHAPTER 4. RESULTS: THE CHALLENGES AFFECTING HOSPITAL SAN ANDRÉS ESE IN TUMACO, COLOMBIA

This chapter addresses the first objective of this project, focused on examining the challenges Hospital San Andrés ESE faces while operating in the armed conflict setting of Tumaco, Colombia. During fieldwork for this project, the descriptions that interviewees provided of the challenges the hospital faced aligned with the categories proposed by ERF. According to this framework, health systems and organisations tolerate two types of challenges: routine problems and sudden shocks (Barasa, Cloete, et al., 2017). Barasa, Cloete et al, inform that routine challenges for health organisations and systems, particularly in Low-and Middle-Income countries (LMICs), entail issues such as lack of funding or insufficient staff. Meanwhile, sudden shocks can be any type of natural or man-made disasters. This chapter outlines how Hospital San Andrés ESE faces routine issues such as limitations with supplies or capital and armed conflict problems categorised as sudden shocks due to Tumaco's protracted conflict. This chapter also seeks to fill a gap in the existing literature which lacks a clear delineation between the routine and armed conflict challenges health service providers, and particularly hospitals, face in such settings. This helps policymakers and development actors to establish comprehensive support programmes to help these facilities tackle both challenges to continue providing care.

The chapter has three sections. The first section examines the routine challenges the hospital faces, which include financial, staff, or supply constraints. These challenges also help to contextualise the broad set of challenges affecting the hospital as it withstands the conflict-related issues. In other words, the armed conflict challenges the hospital struggles with are embedded in the broader routine challenges which, in certain cases, can interact and create greater complexity to the hospital operation in the area. The second section recognises the armed conflict challenges affecting the hospital can range from insecurity of staff to the destruction of hospital assets. It is important to mention that the chapter outlines challenges within a timeframe that goes between 2017 to 2021. Particularly, certain conflict related challenges (mainly related to the destruction of hospital facilities or utility infrastructure) were historical in nature. During fieldwork, both interviewees and documents referred to such challenges in the near past to give details

on how the conflict affects hospital activities, given that the past events were more intense in nature. Most of the routine challenges are associated to the 2019-2021 timeline or when the study conducted fieldwork. These challenges however have also become historical by the time the thesis is being written. Chapter 5 and 6 illuminate on how the hospital responded to these historical events at the time they took place. Finally, the chapter concludes recognising that both routine and armed conflict challenges will likely lead the hospital in Tumaco to establish different measures to sustain health care delivery.

4.1. THE CHALLENGES

Hospital San Andrés ESE faces both routine and armed conflict challenges. To discuss the challenges affecting the hospital and create consistency within the thesis, the WHO building blocks themes employed in the literature review will be used to structure this chapter. These themes continue to be useful as they allude to key components making possible the operation of hospitals. Such themes are Finances, Leadership and Governance, Health care Workforce, Medical Products and Technologies, Service Delivery, and Information Systems. The following paragraphs will discuss the routine and armed conflict challenges affecting each component. The information provided below derives from the interviews and key documents analysed during this research.

4.1.1. THE ROUTINE CHALLENGES

4.1.1.1. Finances

One of the main difficulties Hospital San Andrés ESE has endured with its daily operations corresponds to financial constraints limiting its availability of inputs and delivery of care. The following participant remarks provide some insights on this issue:

“Although, it is true we provide a service of medium complexity to Tumaco’s population and 9 surrounding municipalities, we struggle to have financial capacity. We do not have enough liquidity [...] we work with a billing system based on selling services. We receive some resources through this process but sometimes it is not enough to cover for patients’ medications, medical-surgical supplies and consumable materials” (InstS_Hospital_process_leader_2)

Two important factors contribute to the budgetary problems the hospital endures. The first is an external factor related to delayed payments from the insurance sector. The

second factor involves hospital internal weaknesses regarding its implementation of financial procedures and its governance and accountability structures. Perceptions of both problems will be provided next.

Delayed payments from the insurance sector

By December 2021, Colombia's insurance sector owed to Hospital San Andrés ESE \$23,291,863,294 COP or about \$ 6,222,779 USD (Hospital San Andrés ESE, 2021). This liability to a large extent represents debt that has taken more than 360 days for the hospital to collect. Different factors explain the insurance sector's debt to the hospital. First, all insurance companies have faced significant financial stressors related to outdated payment systems, population growth, change in health priorities, along with meeting patients' legal petitions. Second, hospitals face a legal disadvantage in relation to health insurers during payment activities. Third, authorities acknowledged different cases of mismanagement in insurance companies leading them to difficulties in payment. And fourth, a significant number of insurers going out of business has left behind important liabilities.

Regarding the first problem, particularly between 2009-2012, the government could not update the subsidised health benefits package along with the capitation payments provided to health insurers to fund the demand of subsidised health services (Suárez-Rozo et al., 2017; Vera, 2012). Consequently, health insurers did not recognise numerous procedures hospitals provided to patients due to insufficient capital. Relatedly, insurers have argued that its financial resources have been strained product of population growth, the change in health priorities where chronic diseases have become more prevalent, and the increase on price of technologies to treat illnesses (ACEMI, 2018). The insurance companies or referred as EPS have further argued that people's request to obtain medical treatments outside the basic health package through legal mechanisms like writs (Tutela) become government liabilities often paid retrospectively and not in full (OECD, 2015).

The second problem behind health insurers' debt with the hospital corresponds to regulatory provisions benefiting such organisations instead of hospitals. The Law governing insurance payment to hospitals, known as Law 1122 of 2007, obliges insurers to pay 50% of a hospital invoice within 30 days after submission. The outstanding debt

must be paid in no longer than 60 days (Congreso de Colombia, 2007). However, the remaining invoice is usually not fully paid and takes longer time than legally established. Eventually, the unsettled debt can reduce in time as health insurers can make comments/annotations on the billing submitted for review. Hospitals can amend the billing presented to the EPS within 20 days after review. Still, if the hospital exceeds this deadline insurers will be denied reimbursements altogether. Participants explained their perceptions of this issue and its negative effects on hospital operations as follows:

“We operate with monthly billing which is presented to every EPS. They are obliged to pay 50% as soon as possible. The rest of the billing becomes pending for medical review and that amount should be paid in the following month. But unfortunately, that does not happen, and the hospital usually refers a specialised team to charge that money. This is when we see limitations in hospital operations given the lack of payment of resources” (IntS_Hospital_senior_management_representative_2)

“But it can happen that sometimes the EPS says, ‘they (the hospital) are taking too many days to solve this’ then the EPS won’t pay its dues because a law privileges them on timing, and those become hospital losses...” (IntS_Hospital_process_leader_3)

Third, national regulators have acknowledged mismanagement of insurance organisations creating significant financial problems reverberating to hospitals. There have been largely publicised corruption cases in the national media in relation to insurance companies. Examples of such mismanagement range from channelling insurance funds for constructing condominiums or golf resorts (El Tiempo, 2013; Suárez-Rozo et al., 2017). Authorities have opened investigations to prosecute the people responsible of these inappropriate activities but results have not been produced in a timely and effective manner (Suárez-Rozo et al., 2017).

Fourth, the financial and managerial difficulties the health insurers have endured led many organisations to bankruptcy. When such entities were liquidated a considerable majority did not have the resources or assets to pay hospital liabilities during closure (ACHC, 2017). So, hospitals, including the San Andrés ESE, were left with a significant portfolio collection which its fulfilment became uncertain. Only in 2019, the government began to think of a solution on how to assume the insurance sector’s unfulfilled financial

obligations through a programme called ‘*Acuerdo de Punto Final*¹⁷’ (Presidencia de Colombia, 2019). At the time this thesis is being written, the details of this measure are still being discussed. Participants provided the following views concerning the difficulties EPS faced with their internal mismanagement and unpaid obligations after closure:

“I do not know if you realise there have been several EPS that have been liquidated. One of them, for example, Caprecom. It was a government EPS and was basically eaten up by politicians which led to its closure. They left many accounts to pay toward hospitals, here they left around three thousand million pesos of debt not providing any solution” (IntS_Hospital_senior_management_representative_3)

Due to the problems just mentioned, hospitals, including Hospital San Andrés ESE, have categorised the health insurers as “good” and “bad” payors. For instance, hospital interviewees mentioned that insurance companies like EMSANNAR EPS SAS and MALLAMAS EPS are highly committed organisations on fulfilling payments. EMSANNAR, additionally, manages most of Tumaco’s enrolled population to the health system. Participants considered the rest of the organisations working in the area as insurers have a reputation of bad payors. Some accounts are the following:

“Emssanar is the largest client managing around 60% of our patients... [and] usually pays on a normal basis ... Mallamas too, is large and good [payor], but we have serious difficulties with CONFAMILIAR, the family compensation fund. The rest of EPS are all the same” (IntS_Hospital_senior_manager_representative_1)

The situation just presented has led the hospital to deny services for people enrolled with bad paying insurers, creating, therefore, inequities in the provision of health services.

Hospital internal problems: Inattention to procedures and corruption

Employees and third-party actors that support the operation of Hospital San Andrés ESE in Tumaco interviewed in this research argued that internal issues related to inattention of financial procedures and inadequate governance are other key factors explaining its financial shortcomings.

Concerning the hospital inadequate adherence to financial processes and their effect on hospital finances, hospital workers and knowledgeable observers of the health

¹⁷ In English, the most suitable translation would be agreement of insurance debt termination.

system in Tumaco provided the following insights on such difficulties. For instance, participants mentioned the hospital sees difficulties on costs analysis to guide managerial decisions, disorder in accounting practices, and an insufficient culture of supporting invoices while charging for services. The following passages elaborate on these aspects:

“Estimating cost-benefit on purchases and costs, in general, it is something that has not been fully taken care of in the hospital [...] cost analysis has not been fully implemented but it is important to do so and it is essential [...] it could allow management to better negotiate prices for the provision of services, however, it has not been done yet...” (IntS_Hospital_process_leader_2)

“The hospital faces, uh... an accounting disorder that prevents income collections and to quickly update the price of services when charging the EPS for payments. This situation generates illiquidity and financial resources come untimely because they are not [adequately] charged. Then, the hospital struggles with poor accounting processes” (IntS_Hospital_senior_management_representative_N3).

“The billing is the pillar of a hospital institution to meet its financial obligations. Yet, the problem relates to working culture. You can bill, but there is no good culture to support it. (ExtS_HSS_Prov_1)

Concerning the issue of corruption, mainly corresponds to matters that have weakened the hospital's leadership and governance component, so it is an issue that will be addressed in more detail in that subsection. Still, this problem has caused important financial woes to the hospital. Broadly speaking, the issue of corruption, mainly manifested through managers fulfilling private interests with hospital resources and promoting political patronage, has increased hospital expenses and weakened the role of the board of directors to control managerial activities.

As a result of the internal and external challenges affecting hospital finances, the organisation has experienced significant debt. By 2021, the hospital owed \$16,660,552,569COP or \$4,451,123USD. Such debt is related to hospital operations in the previous 8 years. Participants in this study viewed that this situation has denied the hospital access to the banking system to improve or expand its services. These remarks exemplify this:

“The hospital does not have all its financial statements organised, so no bank provides services, not immediately. The raw material for a credit study is the

financial statements, so, imagine?! [...] the hospital, does not have all financial statements updated and organised to access those services” (ExtS_HSS_Prov_3)

Yet, it is worth mentioning that Colombian health system authorities at the national level, particularly the national health superintendence (Supersalud), were aware of the problems and have undertaken activities to correct them. Some details are provided below.

4.1.1.2. Leadership and governance

During the time of the study’s fieldwork and writing, the national health superintendence (Supersalud) had assumed managerial control of the hospital through the direct intervention of the facility. When fieldwork for the project started (May 2019), the process was in the early months of its second year. Through this measure, Supersalud directly appoints an auditor in chief who fulfils the role of hospital CEO. This person is also known as intervening agent or comptroller and has rights to conform his working team to manage the hospital. The CEO at the time the interview process took place was the second person the superintendence appointed to lead the intervention process. The intervention intends to improve hospital performance in its overall operation but basically seeks to mitigate the leadership and governance problems the facility had endured.

Regarding to the leadership and governance routine challenges, the project’s primary data helped to evidence they mainly related to corruption issues. For example, participants mentioned that hospital managers who came before the Supersalud’s comptroller, ‘looted’ hospital resources with the complicity of political leaders and the inaction of the judicial system. The lines below illustrate this situation:

“But here the 4 managers who arrived at the hospital before the intervention came to plunder the San Andrés Hospital, came to loot it. Guilty who? The politicians controlling government institutions in the last 4 administrations... they were the ones who appointed their managers to payback favours. I don't know whether the managers also provide money [to them] during the elections. So, these were some of the big mistakes made in the hospital and provincial attorney and comptroller offices know about this but do nothing” (ExtS_HSS_Vol_1)

Participants also felt the hospital board of directors faced weaknesses to exercise control/accountability on hospital managers behaviour:

“[national authorities] removed the members of the board of directors, because they saw that there was no control within the organisation.”
(IntS_Hospital_process_leader_4)

In Colombia, public hospitals, according to the laws governing the health system, are autonomous self-sufficient organisations (Congreso de Colombia, 2011a; Presidencia de la República, 1994). The bylaws constituting the Hospital San Andrés ESE also describe this organisation as an autonomous entity (Gobernación de Nariño, 1995). Yet, politicians and the political process in Tumaco can exert significant influence on hospital operations leading to corruption practices. Such influence could mainly relate to politicians' capacity to become involved in the selection of the hospital senior management, particularly, the Chief Executive Officer (CEO).

An important factor explaining the political influence over the elections of the hospital manager relates to the composition of the board of directors. Within the board, the provincial governor has a seat on the table. This creates an important space through which the political process gains influence on hospital administration. According to interviewees in this study, such political influence has caused diverse problems in relation to corruption and administrative malpractices. First, the hospital manager can engage in political patronage that has led to excessive financial expenditures product of hiring unqualified staff. Second, participants described that the personnel hired tended to fulfil personal interests rather than improving organisational performance. The following comments illustrate this:

“In many cases, including the San Andrés Hospital, there are more staff in administrative roles than in clinical processes. We [provincial health authority] always suggest the 30-70 proportion while hiring personnel. That is, 70% of clinical employees and 30% in administrative duties [...] but the political parties gain strength in these institutions and sometimes this proportion could be reversed. They [the politicians] would say, ‘please hire me this guy’, and in many cases people are just high school graduates! But the person obtains recommendation from politicians because they helped in their campaigns. (ExtS_HSS_Prov_1)”

“Unfortunately, in these types of entities, personal interests could go above the institutional or the communities' interests. So, the last thing a person, perhaps the leader, has done in this hospital is to exercise his/her functions according to the law. So, you get the problem that the financial statements are not true. They don't reveal the truth of the hospital budget and its financial execution. They don't reveal

exactly how the resources are used making difficult to solve situations like the organisation's financial problems.”
(IntS_Hospital_senior_management_representative_1)

On top of the corruption practices, interviewees viewed that another issue affecting the leadership and governance component of Hospital San Andrés ESE has been the CEO instability. The five years prior to 2019, the hospital had eight general managers or CEOs. Most of them were removed from the job due to corruption scandals or quit because of the insecurity of the area (See section 4.1.2.2. for more conflict-related details). Such high turnover in hospital CEOs was seen as creating discontinuity in the hospital to comply with service delivery procedures and uncertainty in its operations.

This section helped to elucidate the hospital has endured significant challenges on its leadership and governance. Similarly, challenges in this area can explain other problems the hospital faced in other components showing how challenges can interact. In this case, it was possible to see that corruption challenges created financial problems.

4.1.1.3. Medical products and technologies

Participants for this research explained the hospital financial constraints has led the facility to perceive difficulties with the availability of medical products or technologies, or simply referred in this study as “supplies”. Commonly, supplies such as medication or blood, could be scarce because of the hospital unfulfilled financial obligations with suppliers. This makes evident how challenges across hospital components interact: the challenges of financial scarcity results in lack of supplies. The following quote provides a better understanding of this situation.

“If we had financial stability, I would think there would not difficulties in getting supplies such drugs or blood because there is a significant quantity of suppliers. The question is payments. How can we pay? Sometimes we do not have the money to buy from the supplier and tell him within 30 days we will pay [...] the hospital maintains a difficult financial situation. There are few providers who dare to send supplies to us. They have a lot of distrust. [...] the entity has a very large debt with suppliers which dates back several years in the past. I am talking about 2013, 2014, 2015 ... the hospital has significant overdue invoices from all those years” (IntS_Hospital_process_leader_6).

The previous quote also indicates that the hospital's financial challenges have led to another issue which relates to the reduced number of suppliers the hospital has access to. Vendors are reluctant to supply the hospital with products due to its history of unfulfilled financial obligations. Participants explain that, as a result, only few vendors have decided to continue with the commercial relationship with the hospital:

“I have the experience that many providers do not want to do business with the hospital due to its economic uncertainty, that is mainly what I can perceive. That is the perception. Given this situation, we do not have many suppliers to choose from” (IntS_Hospital_process leader_10)

Furthermore, the scarcity of hospital supplies can become greater due to suppliers' location, the damage of materials, and payments arrangements. Concerning the first issue, the most important suppliers of hospital inputs such as surgical or osteosynthesis material and medicines are settled in Pasto – 276km away from Tumaco. This situation can further accentuate scarcity in supplies because the delivery process could be slowed due to road maintenance and landslides (besides conflict-related activities like armed strikes; discussed in section 4.1.2.3.). In other cases, the hospital can face scarcity of supplies due to damage of products during the transportation processes. In such events, the hospital can replace its products, but the process is usually slow leading to absence of supplies. Finally, medical products could be scarce when vendors request cash payments on the materials the hospital orders. For the hospital paying in cash is impossible as it does not have sufficient liquidity. Interviewees gave details on some of these issues:

“Then, from Pasto to here is a 6-hour journey and it can take longer due to the current infrastructure maintenance, often this creates difficulties to obtain supplies on a timely manner” (IntS_Hospital_process_leader 2)

“[A bad shipment] it is returned, correct. We speak with procurement to return the products and they will tell the supplier to change it. The supplier can make a debit note to the invoice, or in the case the product is already fully invoiced they simply must replace it by another, although the returns usually take a long time” (IntS_Hospital_process_leader 10)

4.1.1.4. Healthcare workforce

The hospital is constantly facing routine challenges with personnel. Such challenges relate to scarcity, high turnover, and inadequate working attitudes. In relation to personnel scarcity, one participant gave the following remarks on this issue:

“Usually, the conditions of Tumaco do not appeal health professionals to work there or won't charge the same as they would in Pasto [...] why? The insecurity reasons I imagine... but also the geographical conditions of Tumaco. Because in Tumaco there is no continuous drinking water or electricity, right? ... that is, the conditions for a professional to go to Tumaco are very different than say Pasto in terms of safety, comfort, basic services” (Obs_Resear_4)

From the previous quote, it is possible to recognise the hospital faces difficulties to attract staff because the context of Tumaco does not appeal for professionals to work and live in the area. The difficulties the municipality endures to provide basic utilities can reduce the sense of comfort a professional would like to enjoy while working. To compensate for this problem, health professionals can charge significantly higher fees.

Other factors explaining personnel scarcity can relate to hospital delays in paying staff salaries, the hospital low wages, and inadequate contracting arrangements for workers. Research participants viewed that all these those problems have arisen product of the hospital financial constraints. The following remarks give details:

“Personnel can become scarce when they know the hospital does not pay on time and this can happen to anyone, administrative staff, specialist doctors, general practitioners, even the rural doctors (interns) are not paid on time. Then, people are reluctant to work for the hospital, and rightly so...” (ExtS_HSS_Prov_1)

“So [...] there is scarcity in personnel due to budgetary issues... from the budgeting perspective is not possible to provide better salaries and also this has not been several employees in the administrative areas do not meet the working profiles [...] [additionally,] the hiring of personnel, has been through temporary contracts also referred as ‘junk’ contracts where staff is hired for two or three months. On top of this, staff must pay a series of taxes that after doing calculations do not attract professionals to work” (IntS_Hospital_process_leader_4)

In the preceding remarks, it is also possible to see that the hospital financial difficulties and its contracting arrangements have led the hospital to contract people who do not fully meet the required profile for undertaking their working duties.

Concerning personnel turnover, the financial difficulties the hospital has faced to provide timely payments explains this phenomenon. Participants' comments on this issue were the following:

“When you are not paid for one or two months, the situation becomes difficult and normally, they [personnel] tell you the difficulties they endure... they must wait long times [to get paid], particularly contractors. So, for this reason staff rotates a lot [...] there is high personnel turnover because of the payment situation”
(IntS_Hospital_clinical_representative_2)

On top of the previous problems, hospital managers perceived that personnel could display disrespectful behaviour. From the information obtained from interviewees, this issue could be described as the lack of respect for patients' or hospital's property stemming from workers' insufficient sense of belonging. These remarks exemplify the issues:

“Someone even said [to me] that at some point people perceived insecurity inside the hospital. Why? Because they say well, if we go there, we must take care of our things with us, they [personnel] can steal them. Even when the hospital received new equipment...the next week the hospital was already without such things”
(Obs_Resear_4)

“The sense of belonging is something complicated here. It is complicated because the culture of taking care of things... uh equipment... has not been established. Then, issues of preventive, corrective, predictive maintenance is something that does not take part within the cultural aspects of the hospital.”
(IntS_Hospital_senior_manager_representative_1)

In general, hospital day-to-day problems with personnel importantly relate to low salaries, payment delays, or contracting arrangements. All these situations have arisen largely because of the hospital's budget constraints. On top of these issues, contextual factors complicate the situation more. Health workers find Tumaco difficult to live in because of limited amenities. Finally, the scarcity of professionals and staff behaviour can create distrust of patients about the hospital's capabilities to deliver adequate services.

4.1.1.5. Service delivery

According to participants, the hospital faces various challenges concerning its infrastructure and capacity to deliver care. More details on each issue are provided as follows.

Hospital Infrastructure

Regarding infrastructure, the hospital faces routine challenges related to its struggle with humidity, difficulties to execute the maintenance process, problems to access communication services, and utility problems. Each of these challenges is discussed below.

Concerning the struggle with humidity, Tumaco has a tropical wet climate proper of the rain forest. The average daily temperature is about 26.9 °C and precipitation occurs all year long (Ortiz & Garcés, 2012). As a coastal area, salinity is another element surrounding the environment. The combination of salinity and humidity can cause extensive deterioration to the hospital infrastructure and equipment attributable to corrosion. The humid environment can overwhelm hospital ceilings increasing leaks throughout different hospital areas and services. Also, the hospital air vents and air interchange systems along with equipment for patient care like beds or vital sign monitors have been significantly damaged due to climate inclemency. Some accounts of these problems are provided next:

“We see that the humidity, the rains, the leaks created in ceilings and surrounding services due to, let's say, storms if they are not corrected in time, they easily deteriorate the infrastructure.” (ExtS_HSS_Prov_2)

“We must replace vital signs monitors...infusion pumps that have been deteriorated, and unfortunately, we have not been able to replace any of these. That would be some things to do in terms of biomedical equipment. As for anything else related to furniture, beds, nightstands, dining tables they have importantly deteriorated over time due to corrosion” (IntS_Hospital_process_leader_6)

“There is an external central air conditioning/retake system, but given that in Tumaco, the area is very rainy, and the sun hits strong corrosion has begun to deteriorate most of the equipment relatively quickly.” (IntS_Hospital_process_leader_1)

The deterioration of hospital properties due to corrosion is complicated further by hospital inability to guarantee timely maintenance for assets. This problem occurs mainly because insufficient financial resources and a slow approval process for procuring resources. Every year, the hospital has planned a budget to carry out the necessary daily activities to attend the hospital's assets, but there can be significant shortcomings to funding it. So, in documentary and procedural terms, the budget is planned but it is harder to materialise given the financial constraints the hospital is exposed to. The following remarks depict this issue:

“Throughout the year we had scheduled preventive maintenance but almost never happens. Then, there is preventive maintenance on paper. So, maintenance, whether undertaken on your own or with help of others, it must correspond to 5% of the hospital's budget. The problem is liquidity because on paper you have the 5% but when you need the resources, they are nowhere” (IntS_Hospital_process_leader_7)

The previous situation also shows how challenges interact. The hospital's financial shortcomings are not allowing the hospital to fulfil its maintenance activities and, consequently, the infrastructure deteriorates over time. Further, hospital maintenance has been importantly hampered due to a difficult procuring process to purchase the tools needed to conduct activities. The following quote gives understandings on this issue:

“The acquisition of the inputs as such takes time and it is cumbersome [...] it is difficult because it is a strict process, right? Here, in the public sector, there is a procurement process that is strict and requires significant time to undertake [...] often lasting around fifteen days or a month. (IntS_Hospital_process_leaders_1)

Thus, the climate on top of limited resources and cumbersome procurement processes are factors straining hospital operations on a routine basis.

Furthermore, participants mentioned the hospital perceived routine problems with the access to communication technologies including phone and internet services. In the actual site where the hospital operates there are no telecommunication companies providing wired phone and internet. Therefore, the hospital has established a complex radio transmission system to access these critical services.

Before moving to its current location, Hospital San Andrés ESE operated in an area close to Tumaco's city centre 23 km away from its current site¹⁸. The hospital accesses to communication services through its former headquarters and retransmits the services to its current site for use. The hospital retransmits the communication services by placing radio antennas between the old and new headquarters creating a "communication bridge". This idea, despite its ingenuity, can face important limitations. The retransmission of the communication services can be interrupted due to bad weather particularly heavy rain. As a result, the internet or voice communication can become erratic or slow during bad weather. A participant elaborates on these problems in this manner:

*"P1: have there been failures or problems in that bridge [communication] process?
P2: from time to time, but because of heavy rain, as well as some lightning. When this happens, communications tend to become fuzzy or slow, then, it's time to change the antennas but not rest [of equipment]" (IntS_Hospital_process_leader_1)*

A further problem relates to the inoperability of commercial telecommunication in the area. There is a lack of a robust telecommunication infrastructure nearby the hospital to provide fully operational mobile phone and internet services. Inside the hospital and its nearby area mobile and internet signal cannot maintain normal or constant operation. These communication issues can create problems in accessing patient information online or in coordinating referral processes. Internet access and telephone communication for the hospital is critical particularly for identifying patient information and their rights in accordance with their insurance plans or for placing calls during emergencies. Chapter 5 will eventually mention how these communication issues also hamper hospital effectiveness to respond to armed conflict challenges. The following are testimonies regarding the routine problems the hospital endure with communication services and subsequent difficulties:

"Well, right here inside the hospital communications could be difficult [...] at least when uploading authorisations or looking into patients' information, right? that

¹⁸ Concerning the hospital location, it is necessary first to mention that Tumaco has two areas one rural and the other urban. The hospital of analysis operated in Tumaco's urban area until 2012. Tumaco's urban sector developed in an archipelago or island now facing a high risk of Tsunami. Hence, government authorities decided to relocate the hospital inland 23 km away from the city's urban centre to prevent its operational failure during Tsunamis. It is estimated that Tumaco's urban expansion will continue until the current hospital location. However, such expansion will be materialised many years into the future. Thus, the hospital currently operates in a site with low population density resembling a rural area.

sometimes also generates delays on patient care because the internet has dropped. You know that everything now revolves around the internet ...” (IntS_Hospital_process_leader_3)

“P2: We do not provide the best opportunity of care for patients because of the geographical location, and the technological part in terms of mobile communication. In certain cases, it becomes difficult to obtain signal. P1: already P2: We sometimes had to receive patients without knowing they had been sent [here] due to communication problems” (IntS_Hospital_process_leader_7)”

Hence, Hospital San Andrés ESE faces important communication issues that can affect the reception of patients into the hospital or obtain adequate information to make decisions for the provision of care.

Another routine stressor the hospital experiences corresponds to frequent problems with electricity and water supply. Two independent public companies supply those services. CEDENAR SA ESP and AGUAS DE TUMACO SA ESP which deliver electricity and water respectively. Regarding electricity, a hospital informant offered the following account of the daily difficulties the hospital faces with this service:

“There are days when the energy goes 4 times in a single day. There are days that suddenly electricity never went away. Yesterday, electricity did not go away, for example. Yet later the energy may go away. The electrical circuit fails a lot, and it is also an external problem because I imagine it must be overloaded but I don’t know what the problems are.” (IntS_Hospital_process_leader_1)

An interview this study conducted with a representative of the electric company, explained the hospital received electricity from an electrical wire supplying rural areas. Such wire/line today faces high energy consumption of fast-growing rural settlements (e.g. Llorente, la Guayacana) and outgrown vegetation. Both factors affect the electricity causing energy overloads or short-circuits. Further, the hospital does not have access to the energy supply of Tumaco’s urban area to mitigate shortages when the rural line faces problems. Some comments about these issues are the following:

“The San Andrés hospital depends on the same line coming from the Tangaral and Llorente substations destined to provide power to rural areas. I see a problem for the hospital with this because such lines are unstable to provide electrical backup. They are affected by high energy consumption product of population growth, significant vegetation which affects the [integrity of] lines, and the armed conflict that destroys our infrastructure providing electricity” (ExtS_GovProv_2)

Concerning water, aqueduct, and sewage in Tumaco all these systems are underdeveloped. Despite the significant water reservoirs surrounding the municipality the company in charge of their management has been unable to properly administer them. Thus, water supply in Tumaco is intermittent and its hospital can face recurring rations that can last entire days or weeks. Such events may happen due to difficulties in the current technology available for pumping water throughout the municipality and the hospital. The following accounts of participants provide more details on these issues:

“The water supply not only affects the hospital but is a problem affecting the entire municipality of Tumaco. Then, there are times we face shortages during the day, or the water will only come once a week, and this issue affects the entire municipality...” (IntS_Hospital_process_leader_6)

These issues with electricity and water can lead to other problems. For instance, the erratic energy supply creates electricity spikes that damage the current medical equipment. In other circumstances, variable energy supply can create problems with the hospitals' computer software producing reprocesses of activities. The lack of water can affect the cleanliness of facilities, particularly the most demanded services such as restrooms. Some insights on these issues are provided below:

“Usually, our information system drops or goes away for five, six times given the lack of energy supply...this creates a problem where you have to constantly update the patient information” (IntS_Hospital_clinical_representative_2)

“There is no water all the time. So, [there are times that] you enter the restrooms and they are very dirty” (Obs_HIncontr_5)

Then, while utility problems have been mostly solved in large urban centres of Colombia, including Pasto, in Tumaco they are still present. The utility problems can make it difficult for the hospital to provide continuous care for patients.

Capacity to deliver care

Several challenges have affected Hospital San Andrés ESE capacity to deliver care. Such challenges include the provision of routine medical services, the hospital location, the hospital ambulances, the referral process, the need to comply with working procedures, along with constant meetings, reporting, and legal risks. Each will be discussed next.

The hospital's main challenge on a routine basis entails delivering care to patients that are suffering common local-related conditions such as fevers, abdominal pain, or maternity ails. Table 4.1. shows the four most common diseases the hospital must attend across its main services.

Table 4.1 The four main causes for outpatient, emergency, and inpatient care in Hospital San Andrés ESE, Tumaco, Colombia.

| | DIAGNOSIS | CASES 2019 |
|------------------------|--|------------|
| OUTPATIENT CARE | R509 - FEVER, UNSPECIFIED | 2063 |
| | R104 - OTHER AND UNSPECIFIED ABDOMINAL PAIN | 1223 |
| | R101 - LOCALISED ABDOMINAL PAIN UPPER | 1203 |
| | R688 - OTHER SPECIFIED GENERAL SIGNS AND SYMPTOMS | 691 |
| EMERGENCY CARE | R509 - FEVER, UNSPECIFIED | 817 |
| | R104 - OTHER AND UNSPECIFIED ABDOMINAL PAIN | 427 |
| | O470 - FALSE LABOR BEFORE 37 COMPLETE WEEKS OF GESTATION | 222 |
| | O200 - THREAT OF ABORTION | 194 |
| INPATIENT CARE | O809 - SPONTANEOUS SINGLE LABOR, UNSPECIFIED | 240 |
| | O829 - CESAREAN DELIVERY, UNSPECIFIED | 182 |
| | O470 - FALSE LABOR BEFORE 37 COMPLETE WEEKS OF GESTATION | 142 |
| | R104 - OTHER AND UNSPECIFIED ABDOMINAL PAIN | 140 |

Source: Provincial health authority from the CUBOS database of the Ministry of Health and Social protection MSPS (2019)

The causes for consultation of hospital services usually correspond to symptoms of tropical diseases common in Tumaco such as malaria or dengue. Abdominal pain is a usual symptom of parasitism which is highly prevalent in the area given the deficiencies in water and sewage systems (Alcaldía de Tumaco, 2018).

On top of the treatment of common tropical diseases, hospital activities can also face challenges such as a sudden demand for care due to traffic accidents. Such events usually correspond to a sudden mass influx of critically ill patients and can easily strain hospital personnel, particularly those working for emergency care. Participants gave the following testimonies on such health-related emergencies:

“There have been significant cases related to traffic accidents. Malaria is something we never lack cases of along with dengue and all the pathologies typical of our territory” (IntS_Hospital_process_leader_7)

The hospital location is another routine challenge affecting the hospital capabilities to deliver care. This issue creates significant transportation costs for workers and patients. The latter are the most affected particularly when they live in Tumaco's rural areas or nearby municipalities. Such people must pay for boat transportation across marshlands to reach the city centre by sea. Then, they look for car transport to arrive to the hospital. These expenses lead people to refrain from obtaining hospital services. Participants mentioned the following regarding the problems just mentioned.

“Yes, staff to some extent always face transport difficulties because of how far the hospital is. The other issue is that in relation to the salary that one earns, transport is expensive because it is 3,000 pesos each way of coming and going out of the hospital. (IntS_Hospital_process_leader_8)”

“P2: The hospital is 23 kilometres away from the urban centre...P1: Um ...P2: and there is a serious communication problem for the rural population to reach the hospital due to the lack of roads. Public transportation [from the urban centre] is worth 3,000 pesos per trip or 6,000 if a person needs a round trip [...] and 70% of the population is poor despite drug trafficking. So, the hospital is difficult to access and that is a great challenge” (ExtS_HSS_Prov_3)

The hospital location has also created financial constraints for the hospital. The dissuading factor the location has on users to obtain services and the low population density around the hospital's neighbouring environment are factors limiting its capacity to generate revenue. A participant provided the following accounts on this matter:

“An inconvenience I see is the distance of the hospital to its people. Many patients living in the urban centre prefer to go somewhere close to the urban centre like a private doctor when they face an emergency [...] Then, the ideal would have been for the hospital to be in the urban area and there would be much more billing, much more revenue” (IntS_Hospital_process_leader_12)

Additionally, the constant usage of hospital ambulances in conjunction with insufficient financial resources has created issues for their full operation on a day-to-day basis. This service proves to be fundamental considering the distance of the hospital toward Tumaco's urban centre — the main area where patients reside. Accounts of this issue are provided as follows:

“We have 4 ambulances in the city of Pasto pending corrective maintenance due to lack of financial resources. Yet, as soon as we have these ambulances back, we can improve service promptness to our patients. With the ambulances

operating, it will improve the hospital's economic strength, because, right now, a million, or a million and two hundred thousand pesos that are worth taking a patient to Pasto are gained by a private car transporter charging it to the health insurer and we are not charging anything" (IntS_Hospital_process_leader_7).

As seen in the previous quotation, the interviewee further explains other difficulties the hospital faces product of insufficient availability of the ambulance service. The ambulance malfunction does not allow the hospital to charge for patient transport services during referral activities. The hospital is not perceiving this revenue which could be beneficial for the hospital to improve its liquidity to address problems.

Furthermore, hospital ambulances can face problems during mobilisation mainly related to weather conditions. Heavy rain can cause delays in the ambulance service that can affect the referral of patients, particularly those in the most critical state. So, the ambulances that could be considered as the main mechanisms for the hospital to engage in contact with potential users on daily basis or generate more revenue, they are not sufficiently available for the hospital. Climate problems or maintenance requirements can also hamper their effective operation.

Relatedly, the hospital routine operation creates another set of challenges regarding compliance with regulations and procedures to provide care, constant meetings, writing reports, and legal risks. Interestingly, several of these challenges entail activities often focused to fulfil users' expectations.

Concerning the hospital's adherence to working procedures, errors in working activities hampers compliance. These errors could relate to the inadequate provision of medicines to a patient, undertaking a different medical procedure than anticipated, or inadequate file archiving creating risks for the hospital to misplace information. The errors that occur when executing medical processes are also known as adverse events. The following remarks give insights on these issues:

"If we go into the detail, in the hospital you can find data that do not match treatment schedules. For example, there was a case of an expecting mother which became a vertical infection case for syphilis [...]. This was so avoidable with the proper clinical management of the patient, but it didn't occur..." (Obs_Hincontr_5)

“The lack of care in the hospital [for documents] is significant... hospital officials would even say to the patients: 'go and bring your medical records from the archive' when... instead the hospital should handle such documentation and make sure all files the patient handles are returned to the institution and not misused, but this doesn't happen” (Obs_Hincontr_5)

Additionally, the hospital day-to-day operation leads personnel to attend meetings. Such meetings can be programmed or arise given the daily circumstances. The meetings in many cases can consume significant time for staff creating problems to meet patients demands. The following comments show the difficulties meetings create:

“I would think that the meetings could be shorter because sometimes we arrive at 8 AM and leave at 2pm from the meeting. And to me [consumer service], this is bad as patients always need me. I sometimes feel that I waste time and hinders our capacity to attend patients' needs” (IntS_Hospital_process_leader_3)

Further, hospital personnel must engage in constant reporting to respond to local and national authorities or internal senior management demands. The reports gather diverse variables that senior managers and authorities analyse to control hospital operations. Some comments on reporting are the following:

“P2: There are 32 indicators called Fénix which the health superintendence has established to intervened organisations for review ... which 16, 18 are financed or administrative based and the rest clinical. The report is [done] monthly. P1: monthly? P2: yes, sir P1: is it too much work? P2: Yes, it is very exhausting, but it is necessary...” (ExtS_HSS_Prov_3)

Finally, the Hospital San Andrés ESE has endured significant problems concerning lawsuits. Many have come from suppliers, workers, and patients. These actors sue the hospital because unfulfilled financial obligations or to obtain compensation for medical malpractices. By the time Supersalud intervened the hospital, the lawsuits led the hospital to the brink of closure as the judicial system had embargoed its revenue and assets to satisfy financial commitments. Interviewees mentioned the following on this issue.

*“[exists] lawsuits related to labour and patient's rights which authorities have decided to embargo assets to pay for debts. This is overwhelming to the point the hospital may be unable to deliver services”
(IntS_Hospital_senior_management_representative_3)*

Hence, the hospital compliance with protocols/procedures, the meetings, reporting, and legal risks constitute routine stressors Hospital San Andrés ESE faces to provide care to patients.

4.1.1.6. Information systems

Finally, concerning information systems, the main problems the hospital has faced on this issue corresponds to difficulties in organising a physical archive, issues to manage and pay the license fee for the information system, and instability in its operation consequence of a poor electrical service. The first problem concerns a historical lack of interest from senior management to adequately archive all the information the hospital has produced. Some remarks give details:

*“Unfortunately, one problem is that the [physical] documentation is very disorganised, [...] there are several medical records not well archived... or even some had been exposed to the weather deteriorating in the process and in such conditions exist several documents
(IntS_Hospital_senior_management_representative_1)*

The second problem mainly relates to hospital not paying on a routine basis the license fee to keep the software updated. Thus, all the clinical and financial information is being processed by obsolete software that does not meet current clinical and financial standards. Similarly, staff on a historical basis has inadequately uploaded information to the hospital software creating misinformation and lack of data traceability. This, in part, also explains the financial disorganisation in the hospital and shows how challenges interact: inadequacies to use the information systems can explain to some extent financial issues. Participants gave the following comments about the improper use of the software:

*“What we have observed bad management of the information system... the software. A software reports what you upload to it. So, if you upload garbage, garbage will come out... Staff have not adequately used the software... or uploaded the right information... basically, it has not been well managed all this time, so the software does not give real information particularly financial data”
(IntS_Hospital_process_leader_2)*

The other problems relate to the instability of the software to operate continuously due to the electrical problems the hospital faces. Previously on this section, this document

mentioned that discontinuous electricity led to problems on the equipment housing the information system like regular shutdowns that could produce deletion of patient data.

4.1.2. THE ARMED CONFLICT CHALLENGES

On top of the routine challenges, Hospital San Andrés ESE endures stressors related to the armed conflict of the area. These challenges are unpredictable and can significantly disturb the hospital's normal operations. The unpredictable nature of the challenges relates to the irregular behaviour of protracted armed conflicts. At moments, life in Tumaco can develop with relative sense of normalcy. Yet, there are circumstances in which the conflict can drastically change the municipality's safety conditions affecting the community and its organisations.

The different challenges the hospital endures to armed conflict will be explained according for each of the basic components used in the previous section. Those components correspond to finances, leadership and governance, healthcare workforce, medical products and technologies, service delivery and information systems. It is important to note that at moments the conflict and routine challenges can interact creating more stress to hospital activities. More details about the challenges are provided below.

4.1.2.1. Finances

The armed conflict in Tumaco affects Hospital San Andrés ESE finances in two ways: i) it increases hospital expenses product of delivering health care to armed conflict patients which funding is unclear, and ii) the hospital faces higher costs on supplies.

Concerning the first problem, the armed conflict has led the hospital to deliver services to conflict-affected victims, many who require extensive and complex treatment that leads to important financial expenditures. Participants commented on this:

“P2: Tumaco is a chaotic area. I personally witnessed in October of 2017, the Tandil massacre, in which the public forces unfortunately had clashes with eradicators, the civilian population and some militia and around 13 or 14 people were killed and many wounded ...

P1: Did the hospital have to care for these people?

P2: Yes, it provided the initial life support services and surgery... also it performed complex services involving significant [financial] resources for the hospital” (ExtS_HSS_Prov_3)”

Unfortunately for the hospital, those greater expenses for providing services to conflict victims often lack adequate funding. Two factors explain such difficulty. The first issue relates to the problems the entity faces to effectively bill the services provided to conflict-affected victims toward those responsible for payment. The second issue involves identity fraud among conflict-affected patients leading to billing inconsistencies and denial of reimbursements.

Regarding the first factor, conflict-related patients who often are members of armed groups or farmers working in the immediacy of conflict operations, usually lack health insurance. So, the hospital invoices such services to the provincial health authority. The Provincial authority contracts with all hospitals, including the San Andrés ESE, an annual fixed budget to care for people categorised as poor and uninsured patients (PPNA¹⁹ in Spanish). Through these funds, the hospital can finance conflict-related services when it has an effective billing process. Yet, the routine problems the hospital endures in relation to billing, particularly its lack of adequate invoicing, can make difficult the claiming of such resources. The situation just mentioned clearly shows how routine and armed conflict challenges can interact: the victims of armed conflict create financial challenges to the hospital due to the routine problems the organisation faces with invoicing. Participants provided insights on this:

“P1: to what extent do you receive payments from the provincial health authority regarding individuals affected by the conflict not enrolled in the health system? P2: with them the issue of payments, in certain cases we exclude them altogether P1: excluded...why? P2: due to certain administrative disorder that exists here in the accounting part, particularly billing. Those claims are not made in the reports send to the authority or the EPS. So, those resources could not be fully claimed” (IntS_Hospital_senior_management_representative_3)

In case the provincial health authority denies all service reimbursement of conflict victims the hospital can present the invoices to the health system general fund ADRES. Theoretically, the fund has an account to finance conflict and terrorist-related health

¹⁹ PPNA: Población Pobre No Afiliada or Poor and uninsured individuals/patients.

services for citizens who do not have proper insurance. However, the hospital must do significant paperwork for claiming these resources from the account. So far, the experience the hospital has had to obtain payment on conflict-related services from ADRES has been unsuccessful. A former hospital employee who worked for the provincial health authority during the interview process mentioned the following:

“It exists a budget line within the ADRES that could be used for terrorist or conflict events, but it has been impossible for the hospital to obtain resources from there. This relates to billing issues particularly supporting documents. The hospital presented the invoices several times, but reimbursement was impossible” (ExtS_HSS_Prov_3)

Concerning the second factor that affects the hospital's ability to collect revenue, relates to identity fraud patients incur to receive care which is difficult to immediately detect. Armed conflict victims to avoid the recognition of authorities or enemies while obtaining hospital services could identify with information of immediate relatives or friends. This situation creates significant problems for the hospital billing process. Such complications begin when the hospital admits and obtains authorisation to provide services for a person whose identity was different to his/hers. The health authority or an insurance company can later reject the hospital invoice of a conflict-affected patient due to misinformation. The hospital then faces a reprocess to change all the billing information and risks that the money could not be obtained if those amendments are not done during the strict deadlines. Participants mention these types of difficulties as follows:

“P2: Due to the conflict, they (patients) don't want to give information, right? Then in the admissions filter we look at the patient's paperwork for entrance. [...] and such scenario usually lends itself to identity fraud [...] Sometimes, they even borrow someone else's ID card and impersonate other people. We have had crazy cases which damage the entire billing process. P1: is the whole process damaged? ...P2: Yes, the whole process is damaged because if a person who comes with someone else's document, the admission is made using those incorrect details and everything continues until insurers of the provincial health authority reject our invoices.” (IntS_Hospital_service_leader_3)

The armed conflict also affects hospital finances through increasing the costs of supplies. To a large extent, hospital management is capable to buy products at regular prices established in the market. Yet, transportation costs of supplies toward Tumaco can

be significant given the armed conflict risks and the distance. Suppliers can charge additional transportation fees to include insurance policies to prevent the loss of products or assets product of the conflict. Such transportation-related costs can increase the value of supplies the hospital needs to operate. Participants provided details:

“The companies the ... laboratories, they increase the prices on the products due to transport of elements. Usually, they send the products insured, they don’t want to assume loses during the transportation because of the armed conflict ... and because shipping elements here is expensive too”
(IntS_Hospital_process_leader_2)

So, the armed conflict held in Tumaco, Colombia, significantly affects Hospital San Andrés ESE finances. Costs incurred in the provision of services to conflict-affected patients can become difficult to recover due to billing issues or patient misinformation. The conflict also increases hospital operative costs as supplies are expensive product of transport fees.

4.1.2.2. Leadership and governance

The armed conflict also has created significant problems for hospital management and governance. Basically, the environment creates significant security risks for managers’ lives. Hospital managers face risks such as death threats or extortion. The armed militia can threaten managers due to many reasons: to obtain financial or medical supplies or provide medical care to wounded militia in areas outside the hospital. The interviewees provided some details:

“Later last year the clinical manager was threatened. I talk about this because I accompanied her to receive the call. At that time, they were requesting us to deliver services where they were [armed militia]. For example, they said we need help from the hospital with doctors, nurses and supplies otherwise you face consequences...”
(IntS_Hospital_process_leader_11)

“P2: Sometimes they [militias] threaten managers for medicines ...P1: Medicines? P2: Yes, drugs ... to treat any wound a result of infighting. Look, legally one cannot go to the inventory and provide these groups with drugs easily, the only option is that revels are treated in the hospital...P1: Sure ...P2: However, they threatened to get such elements. (ExtS_HSS_Prov_1)

Furthermore, management personnel can be exposed to security risks when they oppose political actors who intend to influence the day-to-day managerial decisions of

health facilities. In Tumaco, authorities documented an experience in which the manager of the main primary health care organisation²⁰ received threats from armed actors to leave the position and the municipality. Authorities concluded that such threats happened when the person refused to surrender control of the organisation to the recently elected mayor as the manager still had time to finish the term. The previous situation has not happened directly to managers of Hospital San Andrés ESE yet, but the hospital operates in an environment in which its management can face these difficulties. This situation just mentioned, led to the preventive suspension of the mayor and a media scandal. *Semana*, an influential news outlet in Colombia, informs about the case as follows:

“On Monday morning (April, 30th, 2018), the Attorney General's Office announced the suspension of Julio Cesar Rivera Cortés, mayor of Tumaco, for three months. It is done for alleged irregularities to remove the manager of the Divino Niño ESE [...] The manager filed complaints with different control agencies to claim her rights stating “So threats began. I had to leave the municipality as they wanted to kill me, but the threats did not stop. They came to my parents' house in Cali and they told my mom that I already knew what would happen to me if I kept insisting [for my job]” (Semana, 2018)

Product of the insecurity to managers, Hospital San André ESE faces a problem of not many people interested in assuming such roles. Some comments are the following:

“P1: Already ... and the conflict has affected the hospital? P2: oh yes mainly on the risk and fears felt by the staff both clinical and administrative. In many cases, they have been threatened or attacked and this does not motivate them to work.” (Obs_Govemp_2)

Also, given the lack of personnel interested to fill hospital managerial vacancies due to insecurity, health organisations in Tumaco, including the hospital, have assigned working roles to temporary workers with insufficient management expertise. Such employees face difficulties for adequately administering resources or instilling organisational stability leading to ineffectiveness in management activities. A participant gave the following remarks on this regard:

“[Regarding the challenges] these facilities endure which could relate to the side effects of being in a city at the heart of the (Colombian) conflict ... it relates to the management problem ... there is no continuity of staff [...] it is difficult to find

²⁰ The facility is called *Centro Hospital Divino Niño ESE*.

adequate, stable human resources. There is little management experience among people to manage the inputs or resources [...] they should manage the resources better because the central government I know it does pass them resources, but sometimes they don't match the needs, so management is ineffective.” (ExtS_Nonpr/Hum_2)

Besides, in Tumaco hospital managers' effectiveness could be further hampered because they fear to make decisions such as firing personnel as any type of transgression can occur to them. The following comments shed light on this:

“P2: In January (2019) we had a special situation which the National Civil Service Commission sent us the list of eligible people that should continue to work as public servants within the hospital...P1: already ...P2: and during such process, many people had to be dismissed and this I thought it was a delicate process considering the conflict we live in. Fortunately, people understood the situation but to be frank, I thought something would happen given the area ... the conflict in Tumaco makes you worried on what could happen... Well, I must admit that people did not like it when they got fired, but it had to be done” (IntS_Hospital_process_leader_4)

Overall, the conflict creates limitations on managerial activities and decisions that can hamper any initiatives intended to consolidate organisational progress.

4.1.2.3. Medical products and technologies

The conflict has affected the hospital's normal attainment of medical products and technologies or simply referred in this study as supplies. Militia-driven strikes known as “*Paros Cocaleros*” are the most common conflict-related challenges affecting the flow of supplies to the hospital. The strikes are militia-led initiatives that mobilise the local people, usually against their will, to block the main road connecting Tumaco with the rest of Nariño and Colombia to oppose government efforts to eradicate coca crops (Pares, 2018b). This is a great problem for the hospital as most of the facility vendors operate in the city of Pasto — 276km away from Tumaco. The *Paros Cocaleros* can strand hospital supplies on the road for several days as they can turn into violent civil unrests confronting different actors like the local population, militias, and public forces (El Pais, 2017; Pares, 2018b). Participants mentioned the following:

“The road strikes have caused difficulties to obtain elements as vehicles cannot move forward. So, elements could get stuck on their way. We have the inconvenience that there are times that we are facing significant shortage of

medicines... antibiotics and all the other medication that is of high rotation” (IntS_Hospital_senior_management_representative_2)

“There are times when the roads could be closed due to strikes, and suppliers cannot send replacement parts for equipment and our services become affected. [...] Recently, there was a strike, right? and we needed some spare parts for the autoclave, and they could not be on time. Then, we stopped the autoclave operation all those days.” (IntS_Hospital_process_leader_1)

Another problem that can affect the shipment and handling of supplies occurs when militia raid the vehicles carrying the hospital products to deliver care. The repercussion of these types of problems on hospital access to supplies is evidenced in the following testimony:

“We do not have a fast supply because it is subject to security and distance conditions. The transporters that bring [supplies] to us... particularly medicines, have to comply with certain protocols and they also have to assume a degree of risk in the process of transporting the medicines and supplies to the hospital [...] there have been situations in which the carriers have been stopped and raided (stolen) by illegal groups” (IntS_Hospital_process_leader_2)

The conflict-related strikes and militia raids not only affect the hospital to obtain medicines or spare parts for maintenance purposes but also the availability of other key elements. Those elements can range from food for preparing inpatient meals or fuel destined for the operation of power plants supplying electricity to the hospital during a power outage.

Informants from the provincial health authority mentioned that at certain moments the hospital's supplies, particularly the hospital's medicine, have been the object of theft. There is significant demand for tropical disease medicines and antivenom serums among subversive groups. The reason is that armed actors are exposed to different health risks such as malaria or poisonous animal bites product of operating within Tumaco's vast rainforest. The following are some remarks regarding this issue:

“By far, there has been evidence that medicines have been stolen due to the armed conflict, some drugs, especially medicines for tropical diseases, such as malaria, or leishmaniasis... Some antivenom serums, those serums are quite expensive and could be stolen by delinquency or militias for their use” (ExtS_HSS_Prov_2)

The road blockages due to strikes, the raids to supplies' transportation systems, and the theft of certain medication can create important scarcity in vital elements for the hospital to deliver services or carry out maintenance activities.

4.1.2.4. Healthcare workforce

Most of the challenges the armed conflict has created to Hospital San Andrés ESE have usually affected its personnel. The armed conflict creates direct and indirect challenges to staff. The first type of challenges entails assaults or aggressions through death threats, kidnapping, hitting/beating, and, in extreme cases murder. The second type of challenges are related to difficulties for hospital workers to commute between home and work, on top of fear and mental stress for working in the area. Due to these problems, another great challenge has arisen, and has gradually evolved into a chronic problem, and corresponds to the scarcity of personnel to work for the hospital in Tumaco. These problems are presented as follows.

Direct Challenges

One direct challenge corresponds to death threats. Death threats often occur when militia undertake extortion activities towards hospital personnel or family members. Extortions mainly gravitate on economic requests of illegal armed actors, presumably to fund war-related efforts or personal expenses. Other scenarios in which this type of activity occurs is when the relatives or fellow combatants of hospitalised militias threaten personnel if the health outcomes of the patient are not favourable. Given these situations, personnel tend to quit the organisation. Participants offered these remarks on this issue:

“Here, around 90% of the medical specialists have been threatened through extortions asking for money. The managers have been victims of extortion, specialists threatened. There was a moment staff had to leave immediately from Tumaco because the threats of illegal groups” (IntS_Hospital_process_leader_7)

The hospital physician's representative elaborates further saying the following:

“Those types of patients [conflict actors] do not come alone. Usually, behind them will come the cousin, the brother, their parents, or friends, and often they arrive with a threatening attitude...this can affect your work. Given that such people come in large groups, they feel embolden and threaten staff with their safety” (IntS_Hospital_clinical_Representative_1)

The death threats not only can be targeted to health workers but also to their family members to the extent of killing them to fulfil extortions. More insights on this issue are provided next:

“We had a co-worker whose wife was killed and logically [they] threatened his entire family for money [...] Also, we had another partner whose husband was threatened, she was a nursing assistant. Her husband was schoolteacher, and it was up to her to ask for protection, and they left” (IntS_Hospital_trade_union_representative)

Death threats, particularly to clinical personnel, also occur when militia ask for the provision of health services or supplies to care for wounded or sick comrades. The militias even have attempted to ask hospital personnel to treat their people in Tumaco’s jungle or provide them with medication. Participants expressed such situations in this way:

“What usually happens is that these subversive groups get in touch with either the hospital director or its doctors and require them to provide medical attention to them...these usually happens when their personnel get wounded or sick after combats, so they look for help. And if the director or medical staff do not want to do it, it is something bad for them. They begin to receive the group pressures (e.g., threats, death). I imagine that in certain cases the directors or the doctors may see a way to work with them [militias] to avoid trouble...” (Obs_Defen_3)

Another participant, who for this interview process represented the provincial health authority but previously worked in an interim management position at Hospital San Andrés ESE, confirms threats from armed actors toward hospital personnel to obtain medication. The participant acknowledges that armed actors would ask for the best medicine available.

“For everybody it is known that health institutions in Tumaco, talking about the San Andrés Hospital in particular, hmm ... the armed groups threaten for medication, and they do not request generic medicines ... They ask for branded medication as the different areas of the municipality can affect their health” (ExtS_HSS_Prov_1)

Personnel for Hospital San Andrés ESE also mentioned that armed actors have been capable of infiltrating the hospital facilities to obtain information of staff to produce threats. Such infiltration happens when the same hospital personnel might be involved in doing businesses with illegal groups. The infiltrators usually provide to militias information about the people who earned the higher salaries within the hospital, producing a list of

targets for their threatening operations. Some comments regarding this issue are the following:

“The organisation is a single community where we all know each other, and we were able to identify that here inside the hospital some workers were giving information about staff. They were telling militias who were in each hospital position, trying to look for ‘the person who earned more’ and directly affect such people through an extortion or threat.” (IntS_Hospital_process_leader_7)

Yet, the armed actors could also do intelligence to the hospital just by entering the organisation informing that they intend to visit a patient or make a simple medical appointment. Through this way, the militia is capable to determine who works in the organisation or identify if valuable targets have entered the hospital to receive services. Still, hospital personnel recognise that it is difficult to immediately recognise such people because they often operate dressed up as civilians to avoid recognition. Participant remarks on this issue are provided next:

“P2: groups outside the law even have come into the hospital to do intelligence about our work or seek people, but it is difficult to identify them quickly. They usually come in regular clothing... P1: have they entered? ...P2: yes, they have been able to enter just by looking for any of our services” (IntS_Hospital_process_leader_8)

However, death threats are not the only problem the armed conflict creates for workers of Tumaco’s main hospital. Personnel has also faced kidnapping as consequence of extorsions and physical aggression. Regarding kidnapping, participants provide the following accounts.

“P2: We have all been extorted in Tumaco, Diego. P1: All people without exception? P2: Indeed! We all were extorted at some point and in some cases the extortions were too strong that even they could kidnap you for a while or throw you grenades at your office or home. These activities have aimed to whoever works at formal activities including hospital personnel” (Obs_Govemp_2)

Concerning physical aggressions to personnel, mainly correspond to the lack of tolerance of relatives or friends of militia members receiving hospital treatment and face undesirable health outcomes. Hospital personnel and other actors supporting the organisation elaborate on this problem as follows:

“The relatives of a patients and his friends involved in conflict can come to beat the doctors. One time the (doctors) were taken out [from the hospital] beaten, and we do not know what else they could have intended to do ...” (ExtS_Nonpr/Hum_1)

“People, usually militia, would claim that doctors do not work, that they are not good enough, that the nurse is useless... and sometimes they have attacked them to the point of hitting, kicking, smacking hospital personnel...” (ExtS_HSS_Prov_1)

Hospital workers in Tumaco are not fully exempt from extreme physical aggression like murder. In Tumaco, there have been experiences in which doctors and health promoters have become killing targets. Most of the health personnel killed in the municipality have worked for the primary care centre, yet staff working for the hospital of analysis are also exposed to this risk. The health workers that more likely become targets for killing are those actively involved in advocating for community rights and welfare or in activities armed actors forbid the community to do. The interviewees explain the cases of those health workers killed in the municipality as follows:

“P2: I do not know if you heard about the recent death of a leader called Doña Maritza, who was from Choco but had a lot of time living in Tumaco. P1: No, sorry...P2: Well, she was recently killed ... they killed her because she was the first woman advocating for housing rights, they tortured her [...] she worked as a health promoter” (Obs_Hincontr_5)

“Unfortunately, there was a recent case of killed doctor in Llorente (Tumaco’s hamlet) not from the hospital, but it happened. According to the information we had and the research we did the doctor was warned to stop working in the area...because to some extent he was involved with a militia partner” (ExtS_HSS_Vol_1)

So, the direct transgressions either through targeted death threats or physical assault are something health personnel must endure while working for the hospital in Tumaco. Also, there is a latent risk that such actions could evolve into tragic situations such as personnel’s death. Lastly, the main problem these actions create is that staff often decide to leave the hospital and municipality for safety.

Indirect challenges

Due to the armed conflict, hospital workers in Tumaco encounter indirect problems. Such issues concern their ability to commute for work, the fear felt for working in the hospital, and mental stress. Regarding the first issue, as explained earlier, Hospital San

Andrés ESE is located relatively far from Tumaco's urban centre, so people must travel the main road to reach the hospital. There are certain moments that illegal actors can make a presence on the road or start terrorist activities creating safety concerns for workers. Some participants explain this situation as follows:

“There are security concerns especially in the evening hours when we move to Tumaco's urban centre because the area is unsafe. We work in a rural area, so it does not allow us to have much safety, right? There could be inconveniences on the road, and we must avoid late-night returns to Tumaco's urban centre. There are concerns and fear [among staff] that something can happen like a confrontation between the public force and some dissent groups or a terrorist attack” (IntS_Hospital_process_leader_12)

Other problems health personnel face while working for the hospital in Tumaco concern fear and mental stress. Hospital workers fear working at the organisation given that in certain occasions conflict actors have trespassed hospital facilities to kill enemies inside. Participants' accounts on this issue are the following:

“One is not exempt from any risk even inside the hospital ... for example, people may come to finish the patient off when they are involved in a group outside the law.... This creates fear and risk for working here” (IntS_Hospital_service_leader_3)

Regarding mental stress issues, it occurs when personnel treat severely wounded patients or when they face death threats or other type of intimidation. Such issues create mental destabilisation and anxiety. The interviewees talked about such concerns as follows:

“P2: We had a chief nurse who quitted after providing services to a conflict-affected patient who came mutilated. P1: She could not stand? [...] P2: Of course! the emotional burden of this type of cases is great and create severe impact on certain personnel so she didn't feel well to continue providing services.” (IntS_Hospital_service_leader_7)

“In Tumaco hospital personnel live with anxiety to anything even to receive an extortion... even, today, for example, a professional told me this morning that “in Tumaco, militias not only ask for an extortion, but they tell people they want to kidnap the person too” So, it is difficult” (ExtS_HSS_Ins_1)

Both the direct and indirect challenges personnel tolerate for working at Hospital San Andrés ESE in Tumaco, have caused an important problem related to scarcity of personnel which is becoming a chronic issue. Personnel does not show a significant

desire to work in Hospital San Andrés ESE given the security risks involved. Such scarcity of personnel to work for the organisation is further elaborated below.

Personnel Scarcity

In the quotations previously referenced for explaining the conflict-related challenges personnel suffer, it is possible to identify that people would prefer to leave the hospital than continue working in the organisation because of the risks workers or family members face. It is often seen that the best alternative to be safe is to get out of the municipality as fast as possible. This creates important scarcity in the availability of human resources for Hospital San Andrés ESE. Participants elaborated on this issue this way:

“P1: Has it been difficult to find qualified personnel? P2: it has been very difficult. Here in the hospital exists the need for specific personnel [...] but the violence makes the person hesitant to take the job offer [in Tumaco]. For this reason, the people usually do not come to work” (IntS_Hospital_process_leaders_4)

The problem with personnel scarcity is particularly accentuated with medical specialists, who often consider Tumaco a very dangerous working place. Some specialists could go to provide services in the hospital but usually charge high fees. Not only medical positions are difficult to fill in the hospital due to insecurity reasons, but also administrative roles. The following quotes give more clarity regarding people's adversity to work in Hospital San Andrés ESE from both clinical and administrative personnel.

“An important issue the hospital has and which I happen to know more has been the difficulty the entity faces to attract specialists to deliver services. Safety concerns affects a lot, so a specialist doctor does not see very attractive going to work there, the few that go charge high fees.” (ExtS_HSS_Ins_2)

“P1: And how difficult has been to attract administrative personnel? P2: it is also difficult to find such personnel. For example, we need a medical auditor who is a person that performs both clinical but mainly administrative functions, but it has been impossible to find someone. The armed conflict affects the appeal for this position... it has been necessary to look for people from other parts of Colombia to obtain services” (IntS_Hospital_process_leader_4)

Besides, bearing in mind the hospital already faced problems with the scarcity of personnel due to routine challenges product of late payment to workers, low wages, and the rural context, the armed conflict exacerbates this issue further. This situation

illustrates how the routine and the armed conflict challenges can interact creating significant difficulties for the hospital to operate.

So, Tumaco's hospital workers are constantly challenged on their safety. They face life threats or physical aggression. Because of the armed conflict, hospital workers see significant limitations to travel for work, particularly, to provide services during late-night hours. Similarly, the dangers of working in the area have led staff, specifically medical specialists, to charge high fees to provide services or leave the area. As a result, Hospital San Andrés ESE is facing scarcity of personnel as people leave Tumaco due to safety concerns. Such scarcity in hospital personnel may be accentuated by other problems previously discussed such as Tumaco's underdeveloped context or the low wages the hospital gives. All the issues just mentioned on hospital personnel, and particularly related to locating and retaining staff, can considerably affect hospital operations.

4.1.2.5. Service delivery

The health service delivery component is integrated by infrastructure and hospital capacity to deliver health care. Below it is provided a discussion of the different challenges the conflict has caused to each factor.

Infrastructure

The conflict permeating Tumaco has created traumatic events on Hospital San Andrés ESE infrastructure which also includes its equipment. Similarly, to the challenges the conflict creates on health workers, the armed conflict has created direct and indirect problems to hospital facilities. The direct transgressions correspond to purposeful destruction of hospital infrastructure and technology. Indirect transgressions occur when conflict actors have perpetrated violent actions to more general infrastructure arrangements in Tumaco, such as energy or water systems. Most of these actions do not occur on a frequent basis but can significantly alter hospital operations.

Concerning the direct transgressions of medical facilities, the most frequent example interviewees gave concerns the destruction of the hospital's Intermediate Care Unit (ICU). At the time of writing this thesis, the ICU remained with difficulties to give comprehensive care to critical patients coming from armed conflict or routine situations

like traffic accidents as consequence of its destruction. Some participants gave the following details about the conflict events that affected the service:

“Unfortunately, there was a medical process where the specific pathology of the person led him to an imminent death. Nothing else could be done to save the person and the reaction by his family and acquaintances was not the best. Family members proceeded to shoot at the hospital ... armed people entered threatening and beating doctors, nurses, destroying the medical equipment and the area as a whole. In such occasion the hospital closed this service due to the armed conflict, creating issues to provide care for critical patients” (IntS_Hospital_senior_management_representative_2)

“Unfortunately, a critical patient involved in the conflict... died and then the relatives close to the patient and friends came and destroyed the ICU. They broke equipment, damaged doors, threw everything away, threatened doctors, nurses, a lot of workers left. They [staff] ran away from this situation.” (IntS_Hospital_process_leader_11)

Relatedly, the armed conflict creates indirect challenges on hospital infrastructure particularly related to limiting its access to electricity and water. These problems are consequences of subversive attacks on the electric system and the oil pipeline crisscrossing the municipality leading to water pollution (El Espectador, 2014). These actions add more strain to the already existing difficulties in the provision of such services to the hospital on a routine basis, a situation that shows how both the routine and armed conflict challenges interact making difficult the operation of the facility in the area. The following are testimonies on the attacks the armed conflict has created to electrical supply systems affecting the operation of the hospital of analysis:

“Due to the conflict, there are situations where the infrastructure can be affected ... for instance ... electrical, or energy problems occur due to bombing electrical towers which can cause traumas or alterations regarding our work [...] we cannot continue to guarantee the cold chain of drugs, for example, so the storage of medicines is under risk” (IntS_Hospital_process_leader_10)

Meanwhile, participants provided the following accounts regarding the pollution of hospital water sources due to attacks perpetrated on the oil pipeline as this resource is later used in illicit economies (drug processing):

“The oil pipeline can be blown up contaminating the water, right? and the Aguas de Tumaco company releases short communication memos saying that at this time the water is not provided while it is being cleaned, so no pumping is done. This situation

not only affects the hospital but the community as a whole” (IntS_Hospital_process_leader_1)

Through the passages just cited, it is possible to perceive the conflict-related attacks on electrical and water infrastructure create additional problems for the hospital. For instance, such actions can importantly affect the medicine’s cold chain. Participants have also pointed out that power outage has significantly affected the normal functioning of hospital equipment and organisational communications, particularly the internet. The following remarks illustrate this:

“There was a time that almost every week an electrical tower was laid down and the hospital ran out of energy, creating issues with electrical voltage affecting our diagnostic equipment” (IntS_Hospital_proces_leader_6)

“There is a fibre optic cable that comes from Cali to here (Pasto) and then to Tumaco. The cable handles the communications and the internet for the region and needs power supply. So, when the electricity fails, either because of natural situations or conflict, the hospital and the community suffer communication issues as the cable shuts down...” (ExtS_Pr/Com_1)

Furthermore, hospital communication services, mainly the internet, can be affected through violent anti-government movements the armed groups incite through mobilising local people. Such violent armed protests, at times, can damage the region’s communication infrastructure. The Participants provided the following comments on these episodes:

“There was a cocaleros strike by Llorente (Tumaco’s hamlet) where many people were armed and made disturbances. One day they burned the internet wiring in the area. The company could not do anything until the armed strike was not solved, why? Because it was too risky” (IntS_Hospital_process_leader_1)

Armed actors can further hamper hospital communications through trespassing and robbing hospital equipment particularly radio. Some comments were provided around this issue.

“Militia have caused different irregularities in the hospital before, especially in the emergency department, the communication equipment was stolen, for example. The radiotelephones and the communication equipment for emergencies are frequently the object of delinquency by these groups.” (ExtS_HSS_Prov_2)

So, the armed conflict undeniably generates stressful situations for hospitals’ infrastructure and equipment. Particularly, hospital assets have been destroyed and

connectivity to essential services such as water, electricity, communications, can be severally impaired.

Capacity to deliver care

The armed conflict creates other important challenges on the hospital capabilities to deliver care. First, the hospital could see limitations for attending conflict-related pathologies product of insufficient knowledge of war medicine. Second, the conflict can lead to significant variations in the demand for hospital services. Lastly, the armed conflict has affected the integrity and transit of its ambulances leading to difficulties in the referral process. These problems are further explained below.

Regarding the first problem, the armed conflict creates a significant skillset strain for hospital workers to treat both civilians and militias affected by explosives or firearms. Most of the wounds these actors suffer usually require the intervention of health personnel knowledgeable of war medicine. However, clinical staff at Hospital San Andrés ESE has limited knowledge of these practices and usually remit themselves to only treat observable physical affectations on patients (e.g., wounds). There are circumstances in which hospital doctors avoid checking the victims' soft or internal tissues something that could be prevented if hospital personnel had more skills in war-related injuries. Comments on this matter are provided next:

"[In certain cases], an exhaustive assessment on the victim is not made. Such exhaustive assessment involves checking everything at the level of internal injuries and an overall precise assessment. Given that sometimes no skin is hanging from the person, it seems that physicians do not pay attention and only refer to what they see [...] the care is insufficient for victims because the scarce human resources often are not trained in war medicine as such ... (ExtS_Nonpr/Hum_1)

Similarly, the armed conflict can affect the hospital capabilities to deliver care through abrupt changes in the demand for services. For instance, the hospital can face a significant reduction in services when armed actors have secluded areas of Tumaco through invisible barriers. Such barriers erect around zones where armed groups manage illicit economies and the crossover of such limits by people lead to their imminent death. These barriers typically create problems for citizens to freely visit the hospital during emergencies as they impede mobilisation. The use of hospital services can be further

reduced when users decide to reschedule their medical appointments booked several days in advance because of safety concerns. These issues also have consequences on the hospital's timelines for care. Interviewee accounts on these problems are the following:

“When a person needs to move to the hospital [s/he] must go through different conflict zones [in Tumaco]. They must go through what has been referred as invisible barriers. Given the social issues engulfing these areas sometimes people better prefer staying at home and not visit the hospital” (ExtS_HSS_Ins_1)

“Because of the fear of an event happening during the journey in the way to the hospital, people do not come, right? Then, the conflict can affect hospital timetables for delivering care. During those moments, the availability-accessibility of care ends up being affected for outpatient and emergencies services” (IntS_Hospital_senior_management_representative_2).

Contrary, in certain moments the armed conflict increases health care demand when it generates several casualties saturating hospital services. Participants gave details on these issues:

“P2: due to the context we could say that difficult situations arise. Since we are a second-level hospital we have to treat mass wounded. I explain myself. When there is an explosion... especially when there is some confrontation around the areas where coca is being eradicated or produced ...P1: yes ...P2: So we have had sad experiences of dealing with injured police officers, civilians, or militias, and usually come in important quantities and in conditions which we are not fully prepared to handle...we don't have sufficient infrastructure to receive those cases ...” (IntS_Hospital_process_leader_7).

Lastly, informants from Hospital San Andrés ESE also mentioned the conflict affects hospital activities through the immobilisation or attacks on hospital ambulances. This situation is not frequent, but it has taken place before. Participants inform on this issue as follows:

“The hospital's ambulance is a... service that is quite vulnerable and could easily be the object of theft, attacks or stopped by armed groups during strikes when it is referring or counter referring patients to other facilities.” (ExtS_HSS_Prov_2)

In general, the conflict has had significant consequences on hospital capabilities to deliver care. For instance, the organisation no longer has a fully operating intermediate

care unit which is crucial for a hospital given its level of complexity. Similarly, the war has tested the skills of medical personnel to treat illness and hampered its referral process.

4.1.2.6. Information systems

Lastly, the armed conflict has created problems for the hospital information system but mainly in an indirect manner. The attacks the armed conflict has perpetrated on the electrical infrastructure providing power to the hospital is how the conflict mainly affects its information system. First, the attacks on electrical infrastructure create power outages that usually lead to the deletion of important data within the hospital information system. Second, the main computers housing the information system can burn during power outages creating difficulties for the hospital to record its activities electronically for several days. Participant gave details:

“Power outage due to conflict can affect our equipment particularly the servers housing our information system. Every time has been necessary to change in such computers the power source because it burns. In other cases, the hard drives can burn...in that case the computer dies... (IntS_Hospital_process_leader_1)

Bearing in mind that the hospital lacks good management of physical information, all the data the hospital produces during the days without access to the software is likely to be lost. Such information includes patients’ records, insurers’ bills, or invoices to pay. This shows how challenges interact with one another.

4.2. CONCLUSION

This chapter focused on examining the challenges Hospital San Andrés ESE endures for operating in the protracted conflict area of Tumaco, Colombia. This study found useful ERF for categorising the hospital challenges. Such framework informs that health systems and organisations face challenges classified in routine stressors and sudden shocks. Fieldwork for this study recognised that these challenges categories align with the challenges the hospital of analysis faced. The hospital’s routine challenges are ingrained with the operation of the hospital within the wider health system and context. The sudden shocks correspond to the armed conflict challenges the facility faces as they occurred unexpectedly product of Tumaco’s conflict. All these challenges undoubtedly create an intricate environment for the hospital to operate in.

This study realisation that hospitals in conflict areas face routine and conflict challenges should help decision-makers appreciate that not only the conflict affects these facilities, but more typical issues can hamper their activities. Thus, policymakers interested to help hospitals in conflict areas must design support projects/programmes that allow these facilities tackle the conflict and routine challenges. Table 4.2. gives a summary of both the routine and conflict challenges Hospital San Andrés ESE faces in Tumaco, Colombia. The next chapter of the thesis explores how the hospital responds to such challenges to continue delivering health services.

Table 4.2 The routine and armed conflict challenges affecting Hospital San Andrés ESE

| | Routine or everyday challenges | Armed conflict challenges |
|--|--|--|
| Finances | <p>Financial constrains due to:</p> <p>External problems: Delayed payments from insurers system product of: outdated payment mechanisms, population growth and changing health priorities (new medical technologies at higher prices and changing of the epidemiological profile) retrospective payments (writs), bankruptcy and corruption. Hospital legal disadvantages during payments.</p> <p>Hospital internal problems: Inattention to procedures and corruption</p> <p>Inadequate adherence to financial processes</p> | <p>Collection of revenue to conflict-affected victims</p> <p>Increased prices on supplies due to shipping costs</p> <p>Identity fraud hindering revenue collection</p> |
| Leadership and governance | <p>The problem of corruption</p> <p>Instability</p> | <p>Security risks risk to managers</p> <p>Managerial ineffectiveness</p> |
| Health care workforce | <p>Scarcity (due to rurality, low wages, contract arrangements and untimely payments)</p> <p>Inadequate working attitudes (respect for belongings and hospital assets)</p> <p>Turnover</p> <p>Communiting costs (Distance)</p> | <p>Death threats due to extortion or intolerance</p> <p>Physical aggression</p> <p>Risk of murder</p> <p>Commute problems</p> <p>Fear to work</p> <p>Mental stress</p> <p>Chronic stressor - Scarcity of personnel</p> |
| Medical products and technologies | <p>Scarcity of supplies (unfulfilled financial obligations, limited availability of suppliers, and road infrastructure problems)</p> <p>Scarce vendors</p> <p>Product damage</p> | <p>Scarcity product of armed strikes</p> <p>Scarcity due to Militia raids</p> <p>Scarcity due to Theft</p> |
| Service delivery: Infrastructure and Capabilities to deliver care | <p>Infrastructure</p> <p>Humidity/location</p> <p>Maintenance process</p> <p>Equipment obsolescence</p> <p>Communications problems</p> <p>Ration of utilities</p> <p>Capability to deliver care</p> <p>Hospital Location/Distance</p> <p>Difficulties with referral (bad weather, communication problems, vehicle obsolescence)</p> <p>Provision of regular routine services/Traffic accidents</p> <p>Compliance with regulations and procedures</p> <p>Constant meetings</p> <p>Report writing</p> <p>Legal risk/lawsuits</p> | <p>Infrastructure</p> <p>Destruction of hospital facilities</p> <p>Attacks on water, electricity and communication systems</p> <p>Theft of communication systems</p> <p>Capability to deliver care</p> <p>Attention to conflict-related pathologies /Insufficient knowledge of war medicine</p> <p>Variability in the demand for health care: due to invisible barriers, sudden violent outburst, and several casualties</p> <p>Immobilisation and attacks to transportation systems</p> |
| Information systems | <p>Outdated software</p> <p>Inadquate use of system (information upload)</p> <p>Power outage</p> <p>Disorganised documentation</p> | <p>Hardware problems due to conflict-related attacks to electrical infrastructure</p> |

CHAPTER 5.RESULTS: THE HOSPITAL RESPONSE TO THE CHALLENGES

Chapter 4 examined the armed conflict and routine challenges Hospital San Andrés ESE faced and categorised according to the relevant building block(s) themes. This chapter will build upon this by studying how the hospital responds to the challenges. The fulfilment of this objective is key to achieve the thesis' overall aim of understanding how Hospital San Andrés ESE sustains health care delivery in the protracted conflict setting of Tumaco, Colombia. This chapter has three sections. The first introduces what this study identified as the key responses the hospital established to face the challenges. Thereafter, it is undertaken an in-depth analysis of the responses. Finally, it is provided a conclusion to the chapter.

5.1. THE HOSPITAL RESPONSES TO THE CHALLENGES

This study used a systems perspective to look at the hospital to identify the hospital responses to the challenges. This means this study considered the hospital as a system which is open and actively interacts with its environment to obtain resources and support to operate and face shortcomings (Healy & Mckee, 2002). Through using a systems perspective of the hospital, this study identified that Hospital San Andrés ESE uses six strategies or “responses” to face the routine and armed conflict challenges to sustain health care delivery in Tumaco, Colombia. Some of those responses have been arranged by the hospital either on its own or with the support of third parties. The actors that support the hospital to establish the responses to challenges can belong to the health system at the national and local levels, or other sectors such as the provincial government, humanitarian organisations, NGOs, volunteers, etc (See Table 3.3 for details of external supporting actors).

The hospital responses to challenges were identified after doing the following process:

- a) Review the fieldwork material and find the key activities hospital personnel or actors supporting Hospital San Andrés ESE do to address the challenges. The fieldwork material includes the semi-structured interviews and the documents gathered for this project providing valuable information about the hospital response to challenges²¹.

²¹ This study used the following specific fieldwork material to do the analysis: The 48 interviews gathered between hospital participants and supporting actors. It also included the following specific policy documents

- b) Group similar activities into clusters. This process led to six clusters of activities.
- c) Code each cluster with a theme/name that depicted the common activity. This in turn portrayed the name of the response the hospital relies on to address the challenges.

Table 5.1. presents the hospital responses to the challenges with their respective definition.

Table 5.1 The hospital responses to challenges

| No | Response | Definition |
|----|--|--|
| 1 | The activation of the hospital and provincial emergency systems. | It entails several formal and informal procedures along with capacities and resources the hospital and supporting actors use to face sudden events affecting hospital operations. These events are difficult to foretell, create risks to the hospital or its personnel, and require immediate action to contain them. |
| 2 | Activation of support networks to address challenges | This response involves the hospital contacting third party actors like organisations or individuals that can provide support to the hospital to address challenges. |
| 3 | Managerial activities to address challenges | The different activities hospital managers do to mitigate challenges. |
| 4 | Collaboration with voluntary groups to address challenges | Entails the active collaboration of social leaders and volunteers with the hospital to monitor or improve its performance |
| 5 | The intervention of central government agencies in hospital operations | It corresponds to the direct intervention of the national superintendence of health (Supersalud) in hospital management to improve its activities and mitigate challenges. |
| 6 | Structuring investment projects to strengthen service delivery | It involves the hospital capability to design investment proposals to obtain government funding to cope with challenges |

It is important to mention the responses identified are transversal initiatives that help manage challenges across multiple hospital system components. For example, the response “Collaboration with Voluntary Groups to Address Challenges” helps to address problems with hospital finances, leadership and governance, healthcare workforce, and service delivery. Figure 5.1 (next page) shows the hospital components benefiting from each hospital response to challenges through check marks.

included in this study for review: Law 1438 of 2011, Law 1448 of 2011, Law 1122 of 2007, Resolution 4481 of 2012, Resolution 2003 of 2014, Resolution 515 of 2017, Resolution 1220 of 2010. Similarly, this process included the hospital emergency response plan and communication minutes from Nariño’s provincial government.

Figure 5.1 Hospital system building blocks benefiting from the response to challenges

| | | HOSPITAL SYSTEM BUILDING BLOCKS/COMPONENTS | | | | | | |
|---|---|--|---------------------------|----------------------|-----------------------------------|---|---------------------|---|
| | | Finances | Leadership and governance | Healthcare workforce | Medical products and technologies | Service delivery: infrastructure and capabilities to deliver care | Information systems | |
| R E S P O N S E S | 1 | The activation of the hospital and provincial emergency systems | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 2 | Activation of support networks to address challenges | ✓ | | ✓ | ✓ | ✓ | |
| | 3 | Managerial activities to address challenges | ✓ | | ✓ | ✓ | ✓ | |
| | 4 | Collaboration with voluntary groups to address challenges | ✓ | ✓ | ✓ | | ✓ | |
| | 5 | The intervention of central government agencies in hospital operations | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 6 | Structuring investment projects to strengthen service delivery | | | | | ✓ | |

Except to the response No. 3 referred to as “Managerial Activities to Address Challenges” Hospital San Andrés ESE receives support from third party actors to arrange the responses to challenges.

5.2. ANALYSING THE RESPONSES TO THE CHALLENGES

Three factors guided the analysis of the hospital responses to challenges:

1. Understand how the responses work to address the challenges in each hospital system building block or component.
2. Recognise the key limitations of the responses to address challenges.
3. Determine the extent to which the hospital responses to challenges resemble the absorptive, adaptive, and transformative strategies of the ERF.

This section approached the factors mentioned above as follows.

Initially, using the project’s primary data this study developed a visual model for each hospital system component/building block to facilitate the understanding of how the responses addressed the challenges. Subsections 5.2.1 to 5.2.6 (e.g., see Model 5.1 p.159) present the visual model explaining the hospital responses to the challenges for each hospital system component/building block. Appendix 11 provides a general version of the model or “map” to further facilitate its navigation.

The models developed for subsections 5.2.1 to 5.2.6 will be explained using the narrative structure provided below. Please, use Model 5.1. as a guide to follow the narrative structure.

Narrative structure

- **Rows 1, 2a, and 2b.** The introduction of each building block theme and the challenges faced. Chapter 4 recognised the hospital system faced routine and armed conflict challenges.
- **Row 6.** Introduce the relevant responses that help to address the challenges for each hospital system building block. Then, each response is explained individually from the bottom-up. The response receiving the number 1 in Row 6 is the first to be explained/discussed. Then, the explanation process moves to response 2 and so on.
- **Row 5.** Describe the capacities each response relies on to address the challenge (i.e., begin moving upward in the model or chart through each individual response). Such capacities entail cognitive, behavioural, and contextual features that must be available within or outside the hospital for the response to work. This topic will be elaborated in more detail shortly.
- **Row 4.** Explain the mechanisms or activities each response uses to address the challenges.
- **Rows 3 and 2c.** Discuss what the mechanisms or activities of the response achieve within or outside the hospital to address the challenge.
- **Response limitations.** Once the previous elements of the model are discussed, it is possible to introduce a small section talking about the response limitations to address the challenges. This section helps addressing point 2 of the main factors guiding the analysis of the responses to challenges.

Within the visual model, Row 5 referred as “the relevant capacities for the response to work” is special as it entailed an analysis of the project’s primary data using ERF (Barasa, Cloete, et al., 2017; Resyst, 2016). As mentioned earlier in this thesis, ERF provides a basis to study the hospital challenges and the responses to face them. According to the framework, a health system or organisation response to challenges

depends on “cognitive”, “behavioural”, and “contextual” capacities (Barasa, Cloete, et al., 2017; Resyst, 2016). The cognitive capacity entails the ability of individuals within the health system or organisations to detect or be aware of the challenge. The behavioural capacity corresponds to strategic measures undertaken by actors in the health system or organisations to facilitate the response activities to challenges. Finally, contextual capacities are the hard and soft resources health system actors and organisations use to face the challenges (Barasa, Cloete, et al., 2017; Gilson et al., 2017). Hard resources can be infrastructure or personnel whereas the soft resources could entail the trust among hospital staff or health system leaders.

To identify the capacities just mentioned the researcher undertook these steps:

- a) Examined each of the six hospital responses to the challenges through the following question: What cognitive, behavioural, and contextual capacities facilitate the execution of the response activities to challenges? Section 5.1. explained the hospital responses are integrated by key activities research participants and documents informed as key for the hospital to face challenges. Executing the activities depends on the capacities just mentioned. This study focused on uncovering those capacities by examining in detail the primary data.
- b) Prepared a list of possible cognitive, behavioural, and contextual capacities to answer the question in step A. The capacities uncovered ranged from telecommunication systems, hospital management negotiation skills, equipment to mitigate electricity outage, etc²².

The analytical process outlined before was done throughout the fieldwork material that provided information of the different activities integrating the hospital responses to challenges. After doing this work, the capacities were introduced in the visual models.

Finally, the third factor guiding the analysis of the hospital responses to challenges focused on examining to what extent the hospital responses to challenges resembled ERF strategies (i.e., absorptive, adaptive, transformative). However, this issue will not be address in this chapter in full in this chapter. Instead, it will be discussed in the thesis

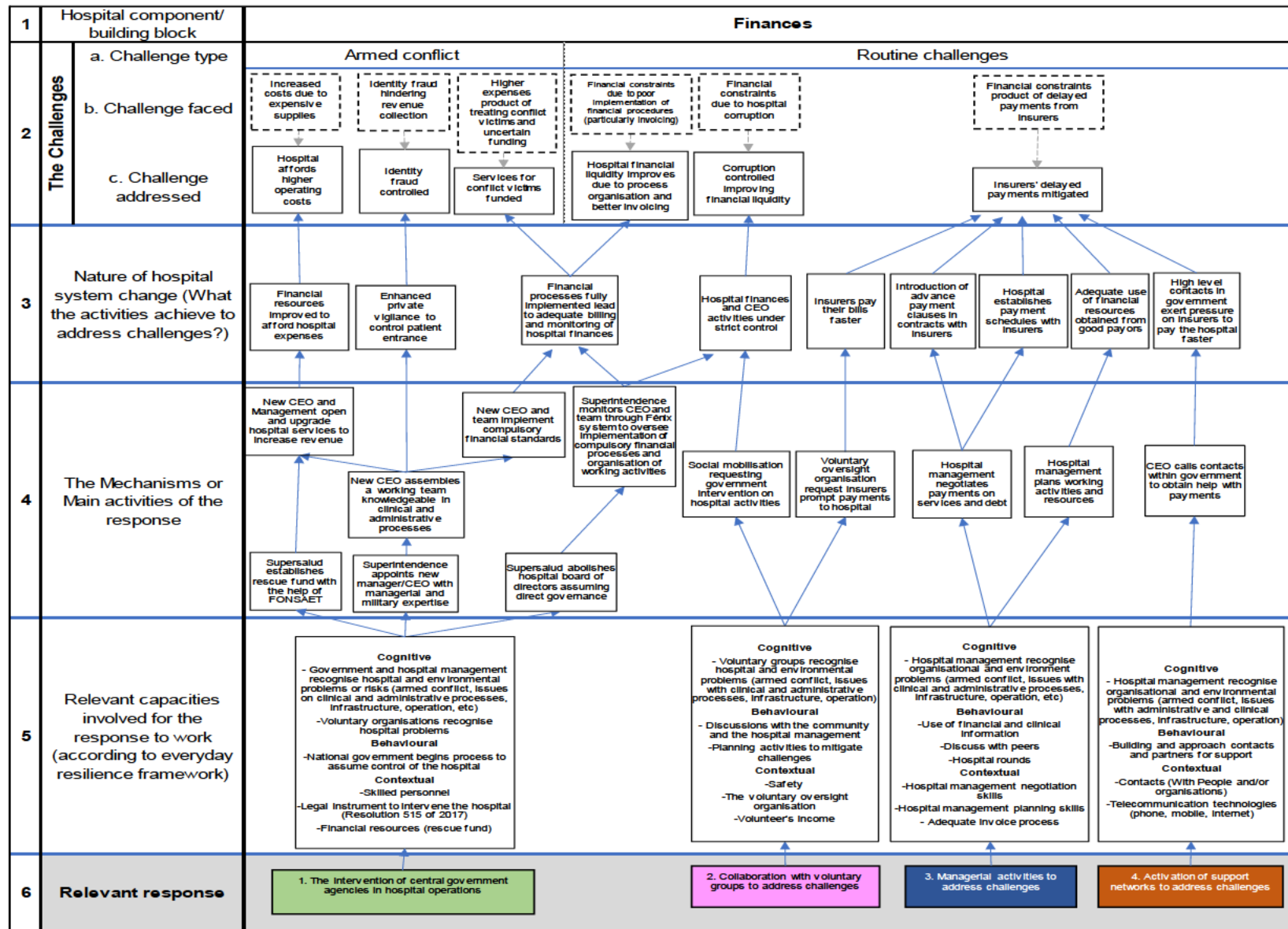
²² The discussion of the models will provide more details on these capacities.

concluding discussion, specifically section 7.2.1. This study decided to reflect on this issue in the discussion chapter because it evidenced limitations with ERF's strategy categories. Section 7.2.1 reflects on such limitations in detail and proposes ways on how to improve ERF strategy categories. This study's proposal to enhance ERF strategy categories becomes a key contribution of this research to improve the framework's explanatory power. The following subsections elucidate how the responses to address challenges work.

5.2.1. RESPONDING TO THE HOSPITAL FINANCIAL CHALLENGES

Model 5.1 (next page) presents the financial challenges and the responses to address them. The following paragraphs explain how the responses work to face the challenges.

Model 5.1 The hospital responses to the financial challenges



The challenges faced. Chapter 4 mentioned the hospital faced financial challenges product of the armed conflict and routine issues. The armed conflict challenges mainly related to i) higher expenditures for treating conflict victims with uncertain funding given the hospital invoicing problems (this shows conflict and routine challenges interact), ii) higher operating costs product of expensive supplies as vendors purchase overpriced insurance policies to ship products, and iii) identify fraud hindering hospital revenue collection.

Meanwhile, the routine challenges affecting Hospital San Andrés ESE finances correspond to internal and external issues to the organisation. The internal problems entail hospital corruption mainly explained by misused of organisational resources and the failure to implement financial procedures, particularly invoicing. The external factors involve insurers' late payments affecting the hospital cash flow. Health insurers pay late because of two reasons: i) the laws do not require insurers to pay on a timely manner for all hospital services, and ii) financial constraints. The later problem is mainly explained by a high demand for expensive treatments and technologies, difficulties for the government to provide updated payments to insurers, corruption within insurers, and bankruptcy of insurers preventing the hospital to obtain reimbursement of services delivered.

Key responses. The hospital uses 4 of the 6 responses identified in this study to face the financial challenges to sustain health care delivery (See Model 5.1, Row 6). The responses are:

1. The intervention of central government agencies in hospital operations.
2. Collaboration with volunteer groups to address challenges.
3. Managerial activities to address challenges.
4. Activation of support networks to address challenges.

Up next, it is explained how each response addresses the challenges using Model 5.1 and reading it from a bottom-up perspective.

1) The intervention of central government agencies in hospital operations

This response entails the Colombian central government agencies, particularly the National Superintendence of Health (Supersalud), supporting the hospital to face the challenges through assuming direct control of its management. The initiative, therefore, corresponds to a reduction in hospital autonomy.

The capacities behind the response. This response relies on cognitive, behavioural, and contextual capacities to work (See Row 5, Model 5.1). The cognitive capacity involves the awareness of government agencies and voluntary organisations that monitor Tumaco's health system of the financial and clinical challenges Hospital San Andrés ESE faced to deliver care. Participants provided insights:

“Supersalud evidenced through [service] indicators and from community complaints the hospital was delivering a potentially dangerous service to patients, right? [...] the hospital [also] presented poor financial management that risked its sustainability, so we decided to intervene” (ExtS_HSS_Nat_1)

Regarding the behavioural capacity, it mainly entails Supersalud producing a legal instrument or resolution called *515 of 2017* to intervene the hospital operations to solve challenges (Supersalud, 2017). Producing the resolution allows Supersalud to assume complete control of the hospital management and governance from the provincial authority of Nariño and undertake different activities to improve its performance.

Additionally, the response to improve hospital performance and manage the challenges it relies on the contextual capacity of availability of skilled personnel within hospital management. Supersalud assigned a new hospital CEO to setup a new working team with the duty to improve hospital activities and face challenges. So, it is critical hospital staff have sufficient skills to fulfil this duty.

Finally, the response provides to the hospital financial resources from a rescue fund Called FONSAET²³ to manage financial problems. More details are provided later.

The response mechanisms or activities to address challenges. Row 4 in Model 5.1 shows the response relies on different activities to address challenges. The

²³ FONSAET: Fondo de Salvamento y Garantías del Sector Salud — *General Rescue fund for the Colombian health system*

initial three are crucial because they not only address financial challenges but also issues in other hospital components like hospital personnel or leadership and governance. For now, the focus is to know how the activities address financial challenges.

The first crucial activity of the response relates to the abolition of the hospital board of directors. The following participant remarks give details:

“The Superintendence abolishes the board of directors during the intervention process, why we do this? Because a third party, in this case us, comes directly to administer the hospital. So, there is no point of having this structure there... and it was possible to see that this governing body was largely symbolic, not having an effective control on hospital management [...] (ExtS_HSS_Nat_1)

From the quote it is possible to see Supersalud abolished the board as it saw that provided little value to improve hospital activities during its intervention and it had largely failed to control hospital operations.

Once the superintendence abolished the hospital board, it began the second crucial activity of the response or the appointment of a new CEO. The new CEO, who also receives the name of comptroller, is appointed by Supersalud through a public contest. Participants provided insights.

“[Then,] the superintendence assigns the comptroller or CEO through a meritocratic contest. That process is public throughout the country and even you can enter to our website to look for positions available. We establish a criterion to select someone for the job. Basically, the person must have experience in hospital administration and have education in such areas. We evaluate the resumes we obtained against our criteria and conduct interviews with the candidates” (ExtS_HSS_Nat_1)

During data collection and writing of this research project, the person appointed to this position in Hospital San Andrés ESE had significant experience on hospital management and was a former captain of the Colombian Navy. Study participants perceived the CEO military background has also been helpful to mitigate armed conflict challenges. Such benefits will be discussed in the section explaining how the hospital deals with the leadership and governance challenges.

Finally, the establishment of a rescue fund is the third crucial activity of the response to manage challenges. Participants gave details on this.

“P1: [during the intervention] do you give money to the hospital so it can improve its management? P2: Yes, that is through FONSAET. It is a rescue fund that is destined for intervened hospitals. So, basically the Supersalud establishes a small fund from FONSAET resources, and the idea is that those leading the intervention (CEO) can begin paying the hospital outstanding debt.” (ExtS_HSS_Nat_1)

The fund is oriented to help the new CEO pay the hospital’s unfulfilled obligations due to its financial problems. The intention is that this process can increase suppliers’ trust on the hospital so the CEO can begin obtaining materials or equipment to improve hospital services. Initially, the hospital received in 2019 \$6,000 billion COP (about \$1.6 million USD) from FONSAET as rescue resources to pay its obligations.

Once the three main activities have taken place, they led to others that help the hospital address financial challenges (See Model 5.1, Row 4). One of those follow up activities was the CEO assembling a new working team to overhaul hospital operations. The Interviewees gave details:

“Despite the limitations of personnel in the area I believe we been able to establish a working team with favourable conditions for the hospital and the near future, so we can work and organise the hospital processes. We meet on a weekly basis to see how the hospital improves its services and the activities we carryout...” (IntS_Hospital_senior_management_representative_1).

Once the new CEO and his management team were established, they began to upgrade or open new services to improve hospital revenue to help it afford operating costs. The following remarks give details:

“P2: We received five ambulances that were not providing any service as they needed repairs. So, the first task was to repair them with the rescue money from FONSAET. Once the ambulances were repaired, it allowed us to obtain more revenue of about \$220 million pesos each month (About USD \$55,000). So, a simple measure like this helps generating income to afford our operations and provides a timely service to citizens. P1: I see. P2: Also, we enabled the radiology service. We did not have a radiology service before, and we get paid for this. P1: I understand P2: We are also offering more surgeries, more specialised surgeries, this allows us to increase revenue” (IntS_Hospital_senior_management_representative_1)”

Similarly, the new CEO and his team decided to contract unarmed private security personnel to enhance organisational safety and check for people entering the hospital.

Participants expected the measure to ameliorate identity fraud – a problem affecting hospital revenue collection. Participants gave details.

“Given the hospital [conflict] context, we decided to contract private security for ourselves. It is deployed in the emergency department and in the main door. This is to prevent suspicious people to come in and impersonate others to obtain services” (IntS_Hospital_process_leader_1)

Furthermore, the new managerial team under the leadership of the new CEO has begun to organise the hospital’s financial documentation and to dully implement financial processes, particularly invoicing, to attain more income. Participants gave comments:

“The CEO established an accounting team [within its personnel] to put in place an accounting system. All the accounting activities have now become updated according to the new accounting norms...nowadays the hospital has improved accounting operations. It now has better organised finances. Financial staff already audits accounts and have improved hospital billing, the latter being an important problem as it did not allowed the hospital to get revenue” (Obs_FrHSemp_Ac_1)

Finally, on top of the CEO establishing the managerial team to improve hospital performance, Supersalud establishes a monitoring process (See Model 5.1, Row 4) called *Fénix* (Hospital San Andrés ESE, 2019a). This process is focused on assessing if the new managerial structure is improving the hospital activities and addressing the challenges. Participants provided details on this monitoring process.

“P2: Supersalud establishes a monitoring process on hospital operations called Fénix. P1: what does it consists of? P2: it mainly entails monitoring if the hospital or the CEO is fulfilling a series of benchmarks on financial and clinical indicators. Also, we pay visits to the hospital to visualise if the requirements we made to the CEO to improve hospital performance are being fulfilled. Through these activities we basically monitor what the CEO does in the hospital” (ExtS_HSS_Nat_1)

The monitoring process is an activity primarily conducted by Supersalud with a group of auditors working in Colombia’s capital Bogotá and travel to Tumaco quarterly.

What the mechanisms achieve to address the challenges. Model 5.1 and most of the quotations previously presented have illustrated some of the results the activities achieve to face the challenges. For instance, the upgrade and opening of hospital services help the hospital to improve revenue and afford its expensive supplies product of the conflict. Similarly, the activities Supersalud spearheaded in the hospital has led it to improve its financial process and its monitoring. In turn, the latter result has allowed

the hospital to adequately invoice and obtain the resources to support the services for both armed conflict and regular patients, being the former an important driver of hospital expenses.

Finally, participants mentioned the monitoring efforts of Supersalud on CEO activities have importantly controlled the phenomenon of corruption within the hospital that depleted its financial resources. These remarks give insights:

“The intervention in the hospital is the consequence of the bad administration that generates bureaucracy, corruption, significant financial deficit. All this translates to inadequate service for patients. Yet, I would argue the intervention has importantly controlled these issues as there is more surveillance now (Obs_Govemp_2)”

The response limitations. The main limitation of the response concerns to its primary focus on just improving hospital management. The initiative does not pay attention to address problems in the insurance sector which is a key element negatively affecting hospital finances. Hence, the response actions may be insufficient to improve most of the hospital financial woes. Participants provided comments.

“The concept of the EPSs or health insurers to pay for hospital services is a total failure. I already lost count of how many EPSs have settled and closed in this country the last decade [...] and currently many are going through liquidation process. So, that is a problem because the EPSs never pay on time to hospitals or clinics. So, they (the EPS) have important debts of more than 360 days, right? And in turn this becomes into a big problem for us to achieve financial balance and the government doesn't do much to change this with the measure (intervention)”
(IntS_Hospital _process_leader_7)

Another problem that affects the response relates to personnel. Given that in Tumaco there are insufficient skilled personnel for hospital management or processes, the new CEO has relied on personnel from other parts of Colombia which charge higher salaries to work for a conflict area. As a result, hospital expenditures increase to compensate skilled labour. Lastly, the intervention is a temporary measure, it will only last until the hospital improves its services and finances. Specifically, the Supersalud intervention on the hospital recedes when the hospital fulfils 100% of compulsory operating standards,²⁴ pays 100% of overdue liabilities for over 120 days, and achieves financial surplus at least in three consecutive years (Supersalud, 2017).

²⁴ Governed by Resolution 2003 of 2014 (Ministerio de Salud y Protección Social, 2014)

2) Collaboration with voluntary groups to address challenges

Model 5.1 shows the hospital uses the collaboration with voluntary groups response to address financial challenges on top of response discussed earlier. The response mainly entails the hospital obtaining support from voluntary organisations monitoring hospital operations.

The capacities behind the response. The following cognitive, behavioural, and contextual capacities help the response to address financial challenges (See Model 5.1, Row 5). First, it is necessary to introduce the contextual capacity referred as the “voluntary oversight organisation” as may be the most relevant among all. The voluntary oversight organisation is a group of citizens in Tumaco who work as volunteers to oversee the health system including Hospital San Andrés ESE. A representative of the group described it as follows:

“Our role as a group is to monitor and control the [financial] resources the nation sends to the hospitals or EPS in Tumaco and Nariño’s pacific coast... we also monitor if these organisations are providing good services. Each member joins freely the group motivated to improve health services” (ExtS_HSS_Vol_1)

The cognitive capacity of the response entails the ability of the volunteer oversight organisation to recognise the armed conflict or routine challenges the hospital endures. It does so by holding discussions with hospital managers or the community about its services. Participants gave details:

“We usually pay visits to the different communities in Tumaco and the nearby municipalities to talk about the health services obtained from facilities (including the hospital) [...] also we visit the hospital. We do this to gain a perspective on the problems, to see what is going [in these organisations] and recognise how we can help” (ExtS_HSS_Vol_1)

The discussions with the community and hospital management also serve to activate the behavioural capacity that entails planning measures to help the hospital cope with the challenges.

Other contextual capacities the response relies on to operate relate to the volunteer’s personal income as they use their resources to do their monitoring activities. Similarly, the security in Tumaco also affects the organisation’s ability to carry on with their work. For instance, in certain times volunteers can face death threats, particularly

when they detect anomalies within the functionality of health organisations. The section outlining the response limitations will explore in more detail the issues just mentioned.

The response mechanisms or activities. Row 4 in Model 5.1 shows the voluntary organisation performs different activities to help the hospital face the financial challenges. One activity involves the voluntary oversight organisation arranging social rallies requiring the government to control the hospital corruption problems that looted its finances. Participants provided details:

“Since 2014 we began to find different anomalies in Hospital San Andrés, so we started to organise the community with our leadership to stop the flagrant corruption stealing the [financial] resources [...] then they [Supersalud] came to intervene the hospital [...] also, we collected 4,000 signatures from the community to make a formal petition to authorities in Bogotá to intervene the hospital to save it” (ExtS_HSS_Vol_1)

The information just provided is interesting as it reveals something important: There can be significant interaction across hospital responses to challenges. For instance, the response called collaboration with voluntary organisations made possible the response referred as intervention of central government agencies in hospital operations. Hence, responses could be product of others and co-exist to mitigate challenges.

Similarly, the voluntary oversight organisation helps the hospital cope with delayed payments from insurers through establishing meetings with health system actors requesting the prompt payment of bills to the hospital. Participants gave insights:

“We hold meetings with different authorities and insurers... just recently we talked with the new minister of health, the health superintendent and EPS managers. We establish dialogues to agree on how we can solve the issues of hospital debt, right? through establishing concrete commitments [to fulfil]” (ExtS_HSS_Vol_1)

What the mechanisms achieve to address the challenges. The peaceful social mobilisation and oversight help mitigating the hospital’s financial constraints product of corruption. Enough social mobilisation motivated Supersalud to intervene Hospital San Andrés ESE and control hospital mismanagement. Participants mentioned the following about these accomplishments:

“I could say the sacrifice and struggle the oversight and the community has done through peaceful rallies influenced the superintendence to intervene the hospital. Nowadays, the hospital is recovering as there is more control. We hope this process helps the hospital to advance its provision of services” (ExtS_HSS_Vol_1)

Moreover, the issue of hospital financial constraints due to insurers’ untimely payments is mitigated when the volunteer oversight organisation intercedes on behalf of the hospital to obtain payments from insurers as they likely pay their obligations faster.

The response limitations. The main limitations of the response to help the hospital face financial challenges mainly revolve around the scarce economic resources’ volunteers have for doing their activities and concerns of their personal safety. Regarding the first problem, volunteers generally face substantial economic hardship at the personal level creating important problems for the oversight organisation to visit the hospital more often. To complicate things further, the provincial authority does not fulfil the legal mandate of providing financial support to the organisation to fund basic costs particularly the renewal of its legal status on an annual basis. Participants mentioned the following:

“P2: we do not receive any financial resources for doing this activity everything is at our own expense ...P1: I see P2: This makes it difficult to work more actively as we do not have sufficient resources. Also, I must say that provincial authorities keep violating Law 1438, which its article 136 states the mayor’s or governor offices should give a [financial] incentive to the oversight groups to keep its efforts going” (ExtS_HSS_Vol_1)

Furthermore, the armed conflict in Tumaco can significantly affect the activities of the voluntary organisation. There have been cases where the volunteers have been killed for doing their work. Participants gave insights:

“What we have mainly gained is free enemies for doing our work because when one finds anomalies in these institutions... They [the accused] immediately begin persecutions, threats ... and two years ago they killed one of our comrades in the village of Lorente for complaints we made with a health post...this makes it difficult to get more people interested in our work” (ExtS_HSS_Vol_1)”

As manifested in the quote above, presumably corrupt administrators within the health organisations collude with criminals or armed groups to kill volunteers when they observe irregularities in health facilities. This situation creates a difficult environment for the organisation to attract new people and preserve its work in the future.

3) Managerial activities to address challenges

Model 5.1 shows Hospital San Andrés ESE relies on the managerial activities response to face financial challenges. The response mainly relates to what the CEO/Comptroller decides to do with the help of his working team to address challenges. Thus, the response is primarily based on the managements' agency to deal with hospital challenges. This response mostly helps to address the routine challenge of insurers' delayed payments.

The capacities behind the response. The response to the challenges relies on the following cognitive, behavioural, and contextual capacities to work (See Row 5, Model 5.1). Concerning the cognitive capacity, hospital senior management is the one that must be aware of the different challenges the organisation would face on its finances due to environmental or organisational problems. To acknowledge the hospital challenges senior management relies on information of hospital activities. Participants gave details.

“Normally, the management begins by reviewing the daily agenda. Then, I do rounds around the hospital services to verify what is going on. Um... to identify if there is any special situation that must be corrected. Thereafter, I discuss financial or clinical matters with the respective process leaders or review key reports to see what to do next...”
(IntS_Hospital_senior_management_representative_1)

The previous quote also provides insights on the behavioural capacities underpinning the response. Such capacities mainly correspond to hospital managers actively checking what occurs in the organisation through hospital rounds, reviewing documents or interacting with staff to think on measures to deal with issues.

Finally, the contextual capacities entail hospital senior management planning and negotiation skills which help to address the financial challenges product of untimely payments. During the explanation of the response mechanisms, the importance of these capacities will be evident.

The response mechanisms or activities. Row 4 in Model 5.1 shows the response relies on the following activities led by hospital management to address the challenge of untimely payments: 1) Engage in negotiations with insurers on service or debt payments, 2) plan working activities. In relation to the first activity, the hospital senior

management has negotiated with issuers contracts with advanced payment clauses to obtain liquidity faster and establish payment plans on debt (also known as a debt conciliation process). The following remarks explain the negotiation processes:

“The hospital has begun to tell (negotiate) the EPS, look, pay me in advance! I setup the services you need, and I provide you services. The hospital seizes early resources to buy equipment and supplies and pay the people that helped setup and run the service.” (Obs_FrHSemp_Ac_N1)

“The conciliation [process] consists of verifying that the hospital [financial] balances coincide with our own (EPS). And later, we negotiate how to pay for the difference or debt. We usually agree to pay through instalments. Such payment negotiation depends on [senior] manager approval from each side. (ExtS_HSS_Ins_2)”

Further, to deal with insurers’ delayed payments hospital management has established a planning process to guide the spending of resources obtained from good payors. This measure helps the hospital operate under the financial constraints’ product of insurers’ untimely payments. The following comments give details.

“Payments on debt [from insurers] is a slow process. Until it becomes a reality, we must operate with the billing produced and approved by the good payors...thereby, every year we establish a working plan to guide decisions. There we establish what is the most important thing to do during the year. For example, this year we considered as a top priority to have sufficient inventory in the warehouse, so we destined most the money there” (IntS_Hospital_process_leader_2)

What the activities achieve to address the challenges. Row 3 in Model 5.1 and the previous quotes show what the activities achieve so the hospital faces the financial constraints of untimely payments. First, the advanced payment clauses negotiated with insurers help the hospital obtain prompt liquidity to fund its operations. Second, the negotiation of payment plans allows the organisation to recover debt and fund its activities. Finally, the planning of hospital resources mitigates wasteful spending creating a more adequate use of available financial resources.

The response limitations. Despite the response benefits to address challenges the following limitations hamper its capacity to address them. First, advanced payments from insurers to fund the services is effective only when the hospital has an organised billing process both in digital and physical form. This chapter mentioned Supersalud is doing important activities to help the hospital solve its invoicing problems. Yet, if such

activities do not continue the hospital can face illiquidity with advance payments. These remarks give insights.

“If the organisation receives resources in advance and does not adequately invoice services, later it faces difficulties to legalise payments. This eventually delays resources to the ESE because the EPS will not continue paying [for services]” (ExtS_HSS_Ins_2)”

An additional limitation is that within the hospital, professional managerial skills, or practices, such as negotiation abilities and planning have been historically absent. Only with the Supersalud intervention on hospital operations these issues have been remedied momentarily. Yet, the presence of Supersalud in the hospital is not indefinite. So, the hospital could face the problem of lacking managers with adequate skills to face the challenges in the future.

4) Activation of Support Networks to address challenges

Model 5.1 shows the hospital relies on the activation of support networks response to address the financial challenges particularly related to insurers' untimely payments. The response is mainly based on the hospital senior management, primarily the CEO, seeking the support of contacts within or outside the health system to mitigate delayed payments of insurers.

The capacities behind the response. The cognitive, behavioural, and contextual capacity of the response (See Row 5, Model 5.1) are as follows. The cognitive capacity entails hospital management being aware of the hospital financial circumstances, this means managers understand the hospital debt and the payments owed to the organisation. The behavioural capacity mainly entails the hospital manager building relationships within the health system or other sectors to approach them for support to face the challenges. Finally, the contextual capacity corresponds to the hospital management contacts within different organisations of the health system or other sectors like government authorities. The contacts are the ones that will provide valuable support to the manager to mitigate the problems. Additionally, a key contextual capacity of the response is access to reliable communication systems such as telephone, mobile or internet so Hospital San Andrés ESE management can reach the contacts.

The response mechanisms or activities. Row 4 in Model 5.1 shows the most relevant activity or mechanism of the response is the hospital manager communicating with his/her contacts within the government or health system organisations either through phone, mobile platforms (WhatsApp) or email to help him secure payments from insurers in a faster manner. The following remarks give details.

“The [hospital] comptroller fortunately as being representative of Supersalud has direct contact with the national superintendent and with the Ministry. He constantly builds relationships there. So, to make the EPS pay, he calls such people and see if they can give a hand in making (EPS) pay what they owe to the hospital” (IntS_Hospital_senior_management_representative_3)

What the activities achieve to mitigate the challenges. The active communication of hospital management with contacts within the central government can influence insurers to pay their liabilities faster. Insurers are likely to respond to the requests of the managerial contacts who have significant authority or high positions in the health system or government. Thus, through the process of hospital management reaching out valuable contacts it is possible to mitigate the challenge of insurers’ untimely payments (See Model 5.1).

The response limitations. The response could face limitations particularly when the hospital management lacks contacts within the health system organisations or government entities. This could be the state of Hospital San Andrés ESE once the Supersalud finishes its intervention. Another problem entails the hospital’s problems with communication technology. These problems, sufficiently discussed in chapter 4, can hinder the managers’ capacity to reach contacts who can help the facility face the challenges.

The challenges faced. Chapter 4 revealed that armed conflict and routine challenges have affected Hospital San Andrés ESE leadership and governance. The armed conflict has caused two issues in the hospital: managerial ineffectiveness and lack of security for managers. The first problem involves the hospital relying on unskilled workers due to lack of interest of potential professionals to work in the area due to conflict risks. The second problem concerns the exposure of managers to situations like death threats or murder.

Concerning the routine challenges affecting the hospital leadership and governance, they correspond to: i) instability in hospital senior management, and ii) corruption. The first refers to the significant rotation of hospital leadership as managers do not continue their work because of security issues or administrative scandals. The second issue concerns to what Chapter 4 referred as the pervasive corruption practices of hospital senior management looting hospital's resources.

Key responses. Hospital San Andrés ESE has relied on the following responses to address the challenges to sustain health care delivery (See Row 6, Model 5.2):

1. Activation of the hospital and provincial emergency systems.
2. The intervention of central government agencies in hospital operations.
3. Collaboration with voluntary groups to address challenges.

Subsequently it is discussed how each response address the challenges.

1) The activation of the hospital and provincial emergency systems

Model 5.2 shows Hospital San Andrés ESE relies on activation of emergency systems to address armed conflict challenges affecting the leadership and governance. The response involves the hospital and provincial authorities relying on capacities along with formal and informal procedures to face sudden events affecting hospital operations and usually require immediate action.

The capacities behind the response. The response relies on the following cognitive, behavioural, and contextual capacities to address challenges (See Model 5.2, Row 5). The cognitive capacity corresponds to hospital staff recognising the risks

affecting their work due to armed conflict. The behavioural capacity involves hospital management using a route contained in *Resolution 4481 of 2012* to inform authorities about the risks they face due to conflict. Participants gave details.

“There is an established route within the law (resolution 4481 of 2012) which states that any person of the health sector receiving any threats or danger s/he must communicate it to authorities using the designated format²⁵. S/he must initially inform this to whoever has the highest position within the organisation or if s/he can directly do it with the provincial health authority if s/he notices is not receiving help” (ExtS_Nonpr/Hum_1)

It exists other key contextual capacities the response uses to function: First, it corresponds to the centre for regulating emergencies and disasters known in Spanish as CRUE²⁶, second, the Medical Mission Roundtable, and third the hospital telecommunications systems. Regarding CRUE, it is an office established within the provincial health authority of Nariño to meet the requirements of the Ministry of Health Resolutions *1220 of 2010 and 4481 of 2012* mandating provincial governments to setup a unit to monitor natural or conflict related disasters (Ministerio de Salud y Protección Social, 2010, 2012). This office also receives reports of conflict events affecting the medical staff. CRUE, likewise, serves as a communication bridge for the hospital to connect with other actors to obtain support to face different challenges²⁷. The Medical Mission Roundtable is an institutional body in Colombia that monitors the effects of armed conflict on the health care system. The body gathers representatives from the provincial health authority, the police, the judicial system, and humanitarian organisations, particularly the ICRC. The roundtable operates in a decentralised manner throughout the country’s provinces and received formal status with *Resolution 4481 of 2012*. Lastly, the hospital communications system is a contextual capacity that helps hospital management to report authorities, particularly to CRUE, the security risks they face.

It is worth mentioning that the capacities described above are just some of the total capacities the response can utilise to address challenges. This document will make

²⁵ Appendix 9 provides details on the format.

²⁶ CRUE: Centro Regulator de Urgencias y Emergencias.

²⁷ Later this chapter will illustrate how CRUE gets involved to help the hospital mitigate other problems.

evident the evolution of the response capacities as it explains how it helps managing challenges in other hospital components.

The response mechanisms or activities. Row 4 in Model 5.2 shows the response chain of activities to address the challenges of security risks to hospital personnel including managers. Such activities use all the capacities discussed before. One participant provided these valuable insights:

“Well, any worker facing danger must report it to us online (CRUE) through the form established in the route guidelines. Then, we receive the report and gather the medical mission round table to analyse the issue. Once the case is analysed, we establish contact with other government bodies like the general attorney office, the police, etc, to help the person with bodyguards or any other type of safety. These would be the first measures in this regard, and in some cases, it has been necessary to call the military and proceed with the evacuation of personnel when the threats are serious” (ExtS_HSS_Prov_4).

What the activities achieve to address the challenges. Row 3 in Model 5.2 and the quote presented above illustrate what the response achieves to address the challenge. After the health worker (i.e., manager) reports the safety risks, the roundtable analyses his/her situation and will request assistance from authorities to provide personalised protection or evacuate the person from Tumaco.

The response limitations. The response faces two issues to effectively address challenges. First, the hospital poor telecommunications systems. This issue has been recurrently mentioned in this chapter and will continue to do be as it is fundamental to obtain support to address challenges. The hospital poor telecommunications can make it difficult for hospital managers to send through email or other electronic means the format authorities request to inform about the conflict risks they face (See Appendix 12 for format details). Second, the medical mission roundtable lacks the capabilities to act more swiftly during sudden and dangerous events affecting hospital managers and all staff, increasing the probability of death. Participants reported the following on this issue.

“The response [to reports] has been somehow immediate but not as quickly as desired. Until the roundtable meets to analyse the case the person remains exposed to life threatening dangers [...] I believe that the work of the roundtable should be strengthen, it should have better capacities for immediate reaction, that is when the infractions occur it can meet instantly to better help [health] facilities or personnel [facing conflict]” (ExtS_HSS_Prov_4).

2) The intervention of central government agencies in hospital operations

Model 5.2 shows Hospital San Andrés ESE uses again the intervention of central government agencies response to address challenges but this time affecting its leadership and governance.

The capacities behind the response. To address the challenges on leadership and governance the response relies on the same capacities it used to address the financial challenges (See Model 5.2, Row 5). Those are the following. Cognitive capacity: Government authorities and voluntary groups recognise problems in hospital operations. Behavioural capacity: The decision of central government authorities, particularly Supersalud, to control hospital management. The contextual capacities entail the availability of skilled staff so Supersalud can assign competent personnel to supervise hospital activities, and Supersalud resolution allowing it to take over hospital activities.

The response mechanisms or activities. Section 5.2.1. mentioned this response relies on three crucial activities to mitigate the challenges. From those three activities, the following two help to address the leadership and governance challenges: i) the abolition of the hospital Board of Directors with Supersalud assuming direct hospital governance ii) the appointment of new manager/CEO with managerial and military expertise. These response activities help the hospital address the challenges related to instability in senior management, corruption, managerial ineffectiveness, and security risks for managers (See Model 5.2).

The Supersalud by assuming the direct governance of Hospital San Andrés ESE along with having direct control of its management significantly reduces the instability in such component. *Resolution 515 of 2017*, which allowed Supersalud to assume hospital operations, created the mandate that this agency should continue to guarantee the oversight and management of the hospital until it significantly improves its performance. Participants provided these details.

“The hospital management has become more stable since the intervention began. Before it was difficult to get a person that would finish the job... several people came as managers but couldn’t finish the job and this deeply affected the hospital continuity with processes” (IntS_Hospital_process_leader_11)

Similarly, the Supersalud intervention in hospital processes helps to deal with the problem of managerial corruption through the *Fénix* monitoring process as explained in section 5.2.1. This monitoring processes reviews managerial activities to reduce malpractices.

The activity related to Supersalud appointing a new manager/CEO helps to mitigate the problem of managerial ineffectiveness within the hospital. This issue corresponds to difficulties of the facility to manage resources because the conflict hinders recruitment of skilled administrators. Fortunately for the hospital, by the time of writing this thesis, Supersalud appointed as CEO a person with significant hospital management expertise which combined with his military experience has introduced order and discipline on staff to adhere to working processes. Participants gave details:

“The comptroller experience, particularly from the navy, has been significant. That know-how is being transferred into the management of the hospital. So, he has begun to create order in the organisation...he is implementing discipline on hospital staff leading people to be more attentive to working procedures... so that combination of this military and health care expertise has been valuable”
(ExtS_HSS_Nat_1)

Furthermore, the introduction of a new manager/CEO with military background has helped hospital senior manager, particularly the CEO, to face the challenges of security risks in Tumaco. Such knowledge has helped the manager to understand risk situations and undertake activities to mitigate the environmental dangers. The following remarks give details.

“What is the risk of working in the hospital? The most frequent is to be threatened or intimidated to supervise someone else’s work [...] fortunately, I was trained to deal with this kind of problem... you know... to handle pressure or avoid danger. For instance, I come to the hospital in a private transport which I share with colleagues not using any badges to reduce attention...um... I refrain to visit unfamiliar places. We do these kinds of things to keep safe”
(IntS_Hospital_senior_management_representative_1)

What the activities achieve to address the challenges. Row 3 in Model 5.2 and the quotes presented before show what the activities achieve to address challenges. For instance, the Supersalud intervention in the hospital has reduced the problems of managerial instability and corruption because it established a clear mandate of becoming responsible of hospital management until the organisation improves its performance and

it established a monitoring process on activities. Similarly, the appointment of the new CEO has begun to address the problem of managerial ineffectiveness in the hospital as his expertise is instilling discipline in staff to implement working processes. Finally, the new CEO military knowledge has helped such member of the hospital management to mitigate the safety risks as he knows how to conduct himself in the area.

The response limitations. The key limitation of the response is that the Supersalud intervention in the hospital is not indefinite. Once Supersalud improves hospital operations this entity hands over the hospital to provincial government authorities to oversee it. Thus, there is the possibility that hospital management could become unstable again and not have sufficient experience to deal with the dangerous context of Tumaco.

3) Collaboration with voluntary groups to address challenges

Model 5.2 shows that Hospital San Andrés ESE uses again the collaboration with voluntary groups response but this time to address leadership and governance challenges. This response helps to mitigate the risks the armed conflict causes to hospital management and the problem of corruption affecting its governance. The next paragraphs give details about how the response works.

The capacities behind the response. The cognitive, behavioural, and contextual capacities shown in Model 5.2 were explained in section 5.2.1. The cognitive capacity mainly entailed volunteer organisations recognising the challenges the hospital or its personnel endure to operate in the area. The behavioural capacity corresponded to the voluntary organisations engaging in discussions with hospital managers or the community to identify hospital challenges. And, finally, the ensuing contextual capacities were fundamental to address challenges: i) the volunteer oversight organisation, ii) the volunteers' income to conduct monitoring activities, and iii) the security in the area for volunteers to work.

Still, the response evolves, and, in this opportunity, it includes two extra capacities to address the leadership and governance challenges. Such extra capacities are i) the behavioural capacity of the voluntary oversight organisation to approach armed militia

and, ii) the contextual capacity related to the trust armed actors have on the voluntary oversight organisation.

The response mechanisms or activities. Row 4 in Model 5.2 presents the activities the voluntary oversight organisation undertakes to address the hospital leadership and governance challenges relying on the capacities just mentioned. Such activities are 1) Talk with the armed groups so they respect the medical mission, 2) Social mobilisation or rallies to request the government intervention on hospital activities. These activities help coping the challenges related to the security risks affecting managers, along with the hospital corruption and managerial instability. These remarks give details on the first activity.

“Fortunately, the legitimacy of the oversight in the community is growing and respected this, perhaps, has allowed us to meet armed actors. We have talked with commanders explaining them the role of the medical mission... that health personnel should be respected all the time and even it is beneficial for them because they can receive medical care when they need it” (ExtS_HSS_Vol_1)”

Regarding the activity of social mobilisation, Section 5.2.1. explained in-depth how it helps to deal with the hospital financial constraints due to corruption. However, this activity simultaneously becomes crucial to face the broader problem of managerial corruption affecting the leadership and governance of Hospital San Andrés ESE. Section 5.2.1. explained how the activity worked.

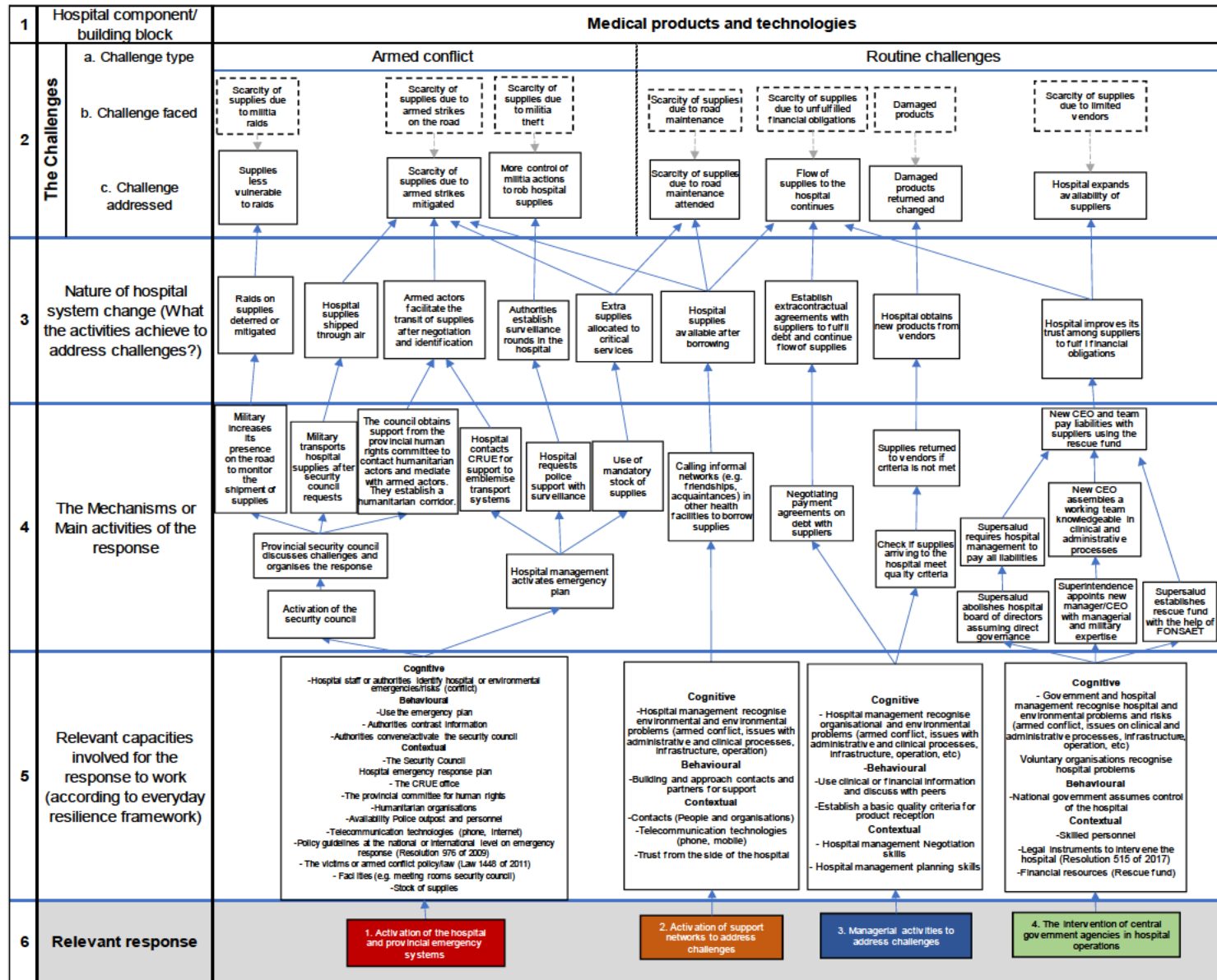
What the activities achieve to address challenges. Row 3 in Model 5.2 along with the quotes just discussed show what the activities achieve to face the challenges. For instance, once the voluntary organisation talks with armed militia about the importance of health services, they begin to respect medical personnel, including managers, as they recognise the importance of health workers. Further, through the peaceful rallies, the voluntary oversight organisation obtains the help of Supersalud to curb the managerial corruption and instability affecting the hospital.

The response limitations. The main limitations of the response correspond to volunteers limited financial resources for doing their work and safety concerns to conduct activities. These key limitations were elaborated in detail previously.

5.2.3. RESPONDING TO THE MEDICAL PRODUCTS AND TECHNOLOGIES CHALLENGES

Model 5.3 (Next page) presents the responses to the challenges Hospital San Andrés ESE endures with its medical products and technologies.

Model 5.3 The hospital responses to the challenges with medical products and technologies



The challenges faced. Model 5.3 presents the armed conflict and routine challenges the Hospital San Andrés ESE faces with its medical products and technologies, also referred in this study as supplies. The armed conflict challenges, as discussed in Chapter 4, entail scarcity of supplies product of militia raids on shipments, armed strikes on the road impeding delivery of supplies, and theft from the hospital.

On the other hand, diverse routine challenges explained the scarcity of hospital supplies such as i) infrastructure maintenance blocking supply transit, ii) hospital debts with suppliers, iii) damaged products during shipment, and iv) limited vendors.

Key responses. Row 6 in Model 5.3 presents the following as key hospital responses to challenges to sustain health care delivery:

1. Activation of hospital and provincial emergency systems.
2. Activation of support networks to address challenges.
3. Managerial activities to address challenges.
4. The intervention of central government agencies in hospital operations.

The paragraphs below explain how each response addresses the challenges.

1) The activation of hospital and provincial emergency systems

Hospital San Andrés ESE relies, again, on this response particularly to address the armed conflict challenges creating scarcity of supplies.

The capacities behind the response. Row 5 in Model 5.3 shows the response relies on cognitive, behavioural, and contextual capacities to work. First, it will be explained the response contextual capacities as certain elements are crucial to understand how the response works.

Among the contextual capacities, the Provincial Security Council and the Hospital Emergency Response Plan are key elements because they not only address challenges with supplies but also issues with other hospital system functions/building blocks. The Provincial Security Council is a government body in Nariño configured to fulfil mandates contained in Article 189 of Colombia's constitution and *Law 1448 of 2011*, requiring provincial governments to organise security councils for the analysis and response of

armed conflict events affecting the territories (Congreso de Colombia, 2011b; República de Colombia, 1991). Participants described the council as follows.

“The security council is a committee oriented to protect human rights and key elements of communities like roads, schools, health facilities during conflict [...] the members of the council are the governor, the municipality’s mayor, the provincial chief of staff, the military commanders, the prosecutor and police offices, the ombudsman’s office, the office for migrations. Also, we can invite other entities like humanitarian organisations to discuss solutions to events” (ExtS_GovProv_1)

Hospital San Andrés ESE can receive or obtain support from the security council when the hospital or provincial authorities recognise armed conflict activities are having significant impact on its functionality. The hospital and Security Council coordinate support efforts by contacting the CRUE office in Pasto. The support activities of the council will be explained shortly.

Regarding the hospital emergency plan, a participant provided the following details on it:

“The hospital emergency plan is a document outlining procedures and resources to guide our activities during special situations and require immediate action. Usually, we establish a chain of command, and all hospital staff receive roles to deal with the situation...the plan also facilitates contact with other parties to obtain support” (IntS_Hospital_process_leader_4)

The emergency response plan of Hospital San Andrés ESE (2017), likewise, contemplates the following items for adequate hospital functionality during crises.

- A stock of critical supplies and investments in technologies for water and electrical backup facilitating autonomous operation for 72 hours.
- A directory of contacts, called Plan for Mutual Support, to facilitate the communication with relevant authorities and health system actors to attain help during crises.

Other contextual capacities of the response to face the challenges correspond to the following:

1. The Colombian Safe Hospital Policy implemented through Resolution 976 of 2009 (Ministerio de Protección Social, 2009). Through this policy the central government mandated that hospitals with the help of provincial governments to design and finance emergency response plans allowing hospitals an autonomous operation during crises. This policy fulfils an international directive from the Pan-American Health Organisation

(PAHO) also named “Safe Hospitals” that required all governments of the Americas to construct hospitals resilient to natural or man-made disasters.

2. Colombia’s constitution and Law 1448 of 2011 requiring the establishment of the security council.

3. The physical area where the Security Council convenes to discuss the armed conflict challenges and manage the response. Such area could be the governor’s office or a space within the CRUE offices called the “Situation Room”.

4. Nariño’s human rights committee which is fundamental to harness the support of humanitarian actors operating in Nariño so they can neutrally engage armed actors to impede harm to the medical mission.

4. The availability of humanitarian organisations either in Tumaco or Nariño, particularly the ICRC or Médicins Sans Frontières (MSF). These actors play an important role to support the Security Council when it starts measures to help the citizenry of Tumaco and the hospital during conflict.

5. The availability of police officers in the hospital vicinity.

6. Communication infrastructure to allow the hospital obtain support.

Concerning the cognitive capacity of the response, it entails the ability of hospital management or the Security Council to recognise the conflict challenges that can affect the hospital.

Finally, the response behavioural capacities involve two strategic measures: i) hospital personnel using the emergency response plan to address challenges, ii) provincial authorities evaluating information on conflict events to deem necessary the meeting of the Security Council. Participants gave details:

“In cases of emergency events like natural disaster or conflict the CEO can rely on the emergency plan. In such case, he can activate the plan and coordinates with process leaders on how they will manage the event and decide which actor to contact for support to face the emergency” (IntS_Hospital_process_leader_5)

“So, when conflict actions occur that affect the road (armed strikes), the people, the infrastructure or products going there, the first thing we do (provincial government) is to contrast the information with official entities, either the military, the police, social leaders, etc. Once such information is corroborated, the security

council can be activated to discuss such emergencies and establish measures to address the issue” (ExtS_GovProv_1)

The response mechanisms or activities. Row 4 in Model 5.3 shows the activation of the Hospital Emergency Plan, and the Security Council are the initial response mechanisms to face challenges with supplies. The quotes recently presented above gave insights about these activities.

Model 5.3 shows the initial mechanisms lead to other activities to face the challenges. For example, the hospital through the emergency plan, and its directory of supporting actors, can request support from the police to deter transgressions to the facility like theft of supplies. Participants gave details:

“The hospital manager through the [emergency] plan has requested police protection particularly to do surveillance on hospital property and staff. The police usually appear at the hospital organised in two groups: one, enters the facilities while the other remains vigilant outside the hospital, observing that nothing occurs in the vicinity while the review is being carried out” (IntS_Hospital_clinical_representative_2)

Similarly, the hospital’s stock of critical supplies mandated by the emergency response plan is a key factor that helps it to mitigate scarcity of supplies due to conflict or routine challenges like armed strikes on the road or infrastructure maintenance. A participant gave details.

“we are required to stock for supplies to ameliorate significant scarcity, right? the managers have focused on [stocking] medication, medical-surgical supplies and materials for consumption to continue our operation [during crises]” (IntS_Hospital_process_leader_2)

Alternatively, the hospital can receive the support of the Provincial Security Council to mitigate the scarcity of supplies product of conflict events like armed groups raiding vehicles transporting hospital products or armed strikes on the road impeding mobilisation of supplies. The council first, discusses and analyses the conflict events occurring in the area, then, it directs measures to deal with conflict problems. The council can request the military to increase its presence on the road to deter the raid of supply shipments. Also, the council can request help from the provincial human rights’ committee to contact humanitarian actors to mediate with militia and establish a humanitarian corridor to

facilitate the transit of vehicles carrying supplies. Participants and documents gave details.

“The security council with the help of the military and other law enforcement authorities have agreed to enhance presence on the road to provide tranquillity of tourists and transporters (of supplies) traveling the Pasto-Tumaco Road” (Gobernación de Nariño, 2018)

“When there is such type of events like roadblocks either originating from social protests or armed actors, what regularly happens is that they call us (council) to establish dialogue [with such actors] to agree on the mobility of supplies, patients, or ambulances to Tumaco through establishing a humanitarian corridor” (ExtS_Nonpr/Hum_1)

Simultaneously, the hospital, through its emergency plan, can contact CRUE to support the security council efforts to mitigate shortage of supplies attributable to conflict events (See Model 5.3, Row 4). The CRUE can work together with humanitarian actors to emblemise the vehicles carrying supplies with the Colombian Medical Mission emblem. This activity aims that conflict actors identify the supplies going to the hospital to prevent their immobilisation once they reached an agreement with humanitarian actors. Figure 5.2 below gives details of this process.

Figure 5.2 Medical Mission and ICRC emblems and use



Sources: Resolution 4481 of 2012, The ICRC – Colombia (2016c), Supersalud, (2020), El Espectador (2021)

Model 5.3, similarly, shows the Security Council can request the help of the military to carry supplies to the hospital when it faces scarcity of products during conflict events. This support is requested when the dialogues between humanitarian organisations and

militia fail to facilitate the transit of supplies to the hospital and such products have not been delivered for extended periods of time. Participants gave details.

“When armed actors have taken over the road for significant time, the military can initiate an operation called support to the civil authority making available its resources such as helicopters or airplanes to bring supplies to the hospital if necessary” (ExtS_NatGov_1)

What the activities achieve to address the challenges. Row 3 in Model 5.3 and several of the quotes presented earlier show the response activities focus to improve the hospital’s availability of supplies during challenges. For example, the hospital contacting the police to monitor the facilities, or the security council requesting to humanitarian actors and the military for support, dissuade conflict parties to steal supplies from the hospital and allow products to reach the facility during road obstructions. All these actions maintain hospital’s availability of supplies.

The response limitations. Unfortunately, authorities in Nariño have not formalised or written a playbook to standardise all the activities the security council assumes to manage the armed conflict events. This issue could result in problems for incoming governments as they might not be fully aware what to do during conflict crises. Thus, most of the time these actors improvise or rely on previous knowledge gained in other areas related to emergency response. Participants mentioned the following:

“Well... Nariño has developed its own interpretation on how to handle the armed conflict emergencies. The law tells the governor that the provincial security council should handle all that (conflict events) but most of the activities that derive from it are sui generis. They haven’t been written anywhere. So incoming governments often improvise in such situations or rely on the experience gained through drills on how to respond to natural disasters or riots...” (ExtS_HSS_Prov_4)

Furthermore, it can be argued that the lack of process formalisation can lead to lack of clarity on the roles the security council members must assume over time and confusion on the proper personal contacts to reach out council members to discuss conflict issues or supporting actors.

Another limitation affecting the Security Council is the poor communication technology it uses to monitor the conflict events and communicate with Hospital San Andrés ESE, the mayor of Tumaco, or the supporting actors that help to face the challenges. Participants gave insights:

“To respond to any crises, the CRUE and its situation room must be fully equipped with state-of-the-art communication, office, and audio-visual equipment, to reach support actors. Unfortunately, we have issues in this regard [...] our computers and radio equipment are old and when we [the council] contact officials in Tumaco, old monitors to have visual communication and usually face stutters. (Supp_HSS_Prov_4)”

Similarly, the security council’s reliance on the willingness of armed actors to dialogue with humanitarian organisations to facilitate the mobilisation of supplies is another response limitation. If such actors refuse to collaborate it is impossible to achieve this goal. Interviewees said the following:

“Challenges can be resolved as long as these armed groups want to establish dialogue and to talk about specific issues (e.g., passage of supplies, ambulances) because as we are a neutral organisation, we cannot tell them that war must be avoided” (ExtS_Nonpr/Hum_1)

Three additional issues limit the security council’s ability to help Hospital San Andrés ESE. First, it lacks autonomy to increase the military presence on the road to deter militia to raid the vehicles transporting supplies. The council depends on approval of national authorities from the military and central government to obtain such support. Second, the Security Council response to the conflict events affecting Hospital San Andrés ESE can be slow. The main problem is that the council meets in Pasto — 276 Km away from Tumaco. Hence, the aid the council provides to Tumaco and its hospital takes several hours to arrive, particularly from humanitarian actors facilitating the transit of supplies. Third, Hospital San Andrés ESE does not have a proper helipad for military helicopters to land when they transport supplies. Helicopters often land on an unstable nearby area to the hospital making the landing process difficult.

Lastly, the support Hospital San Andrés ESE obtains from the police with surveillance to avoid theft on supplies faces limitations as it can become discontinuous over time, particularly the weekends. Participants gave insights.

“Earlier this year, for about two months the police provided security during weekends, but this control hasn’t continued, and it is insufficient because the conflict occurs every day [during the year]” (IntS_Hospital_Clinical_Representative_1)

The irregularity in police surveillance may create an opportunity for armed rebels to steal hospital supplies. Thus, this is something that must be addressed.

2) Activation of support networks to address challenges

The hospital relies again on the activation of support networks to address armed conflict or routine challenges with hospital supplies.

The capacities behind the response. Several of the capacities shown in Model 5.3 as necessary for the response to function were discussed in Section 5.2.1. Such section mentioned the response cognitive capacity involves the hospital management awareness of organisational or environmental challenges. On this occasion, the challenges correspond to scarcity in hospital supplies product of armed conflict or routine challenges. The behavioural capacity of the response corresponds to managers building networks with other regional health facilities for support. The contextual capacities of the response refer to the availability of contacts in said health facilities, an adequate communication system which hospital administrators can use to call their contacts, and the trust the hospital has built with supporting actors.

The response mechanisms or activities. Row 4 in Model 5.3 shows the main response activity involves hospital managers calling their networks in nearby health organisations to borrow scarce supplies. The following participant remarks give details about the activity and the capacities mentioned above:

“P2: The nearby health facilities help us through borrowed supplies. When we have something missing or when the road is blocked due to strikes, [...] P1: how does the support work? P2: it is basically mediated by friendship with health staff in the other facilities and we simply call them when we need supplies” (IntS_Hospital_senior_management_representative_2)

What the mechanisms achieve to address the challenges. The quote above illustrates what the response mechanism achieves to address challenges. Basically, the hospital copes with scarcity of supplies by borrowing supplies from nearby health facilities through management contacts (See in Row 3, Model 5.3).

The response limitations. The poor telecommunications system in the hospital is again a key response limitation because hospital managers can experience difficulties to

contact friendships in other health organisations to obtain supplies. Similarly, exists some distrust from supporting actors to lend supplies to the hospital given that managers that preceded the Supersalud intervention did not returned borrowed items. Participants gave details.

“P2: previously they lent to the institution antifungal serum so we can help a patient P1: Who are they? P2: The NAVY’s health post... but I know sometimes the hospital did not return what it borrowed...P1: and they stopped doing it since? P2: Exactly, they stopped borrowing...what a shame!” (IntS_Hospital_Clinical_Representative_1)”

3) Managerial activities to address challenges

Model 5.3 shows Hospital San Andrés ESE relies again on the Managerial Activities to Address Challenges response to face the scarcity in supplies mainly attributable to routine challenges.

The capacities behind the response. Row 5 in Model 5.3 reveals that several capacities the response uses to address the challenges are the same employed to address financial challenges. Please refer to section 5.2.1 or the footnote for details of the capacities²⁸. Still, the response capacities evolve adding an extra behavioural capacity to address challenges. The capacity corresponds to the establishment of a quality criterion for the reception of products to deliver care. These remarks give insights:

“P1: And when the medicines that arrive are damaged or in bad shape, what do you do in such cases? P2: Well, such cases one reports the supplier our disagreement with the products as we have conditions to receive products in good state...they must be safe for use” (IntS_Hospital_process_leader_10)

The response mechanisms or activities. The response relies in several activities to address challenges related to product damage and their scarcity product of financial constraints. Row 4 in Model 5.3 shows two activities that deal with product damage. One is reviewing that purchased products meet the hospital reception criterion, this activity

²⁸ The capacities of the response and discussed in section 5.2.1 are as follows:

- Cognitive capacity. Hospital management being aware of the challenges originating from the daily hospital operations or the armed conflict.
- Behavioural capacity. Entails hospital management using clinical or financial information, engage in discussion with peers, or undertake hospital rounds to recognise challenges and plan solutions.
- Contextual capacities. Correspond to hospital management negotiation and planning skills.

was shown in the quote above, and second, returning the item when the product does not meet the criteria. Interviewees provided these details on latter measure:

“If the products do not meet standards, we return them... the procurement office will contact the supplier to change the products and they simply change the item for a new one. Usually, they assume the shipment costs”
(IntS_Hospital_process_leader_10)

Similarly, Model 5.3 within the mechanism section shows that hospital management negotiation activities with vendors to reach agreements on how to pay for debt is a key measure to keep the flow of supplies during financial constraints. Participants gave insights.

“We have negotiated [with vendors] payment agreements on debt ... these are based on paying something we owe, and a credit quota is released...through this way providers dispatch the different supplies or drugs the hospital needs to operate” (IntS_Hospital_senior_management_representative_2)”

What the activities achieve to address challenges. Most the quotes presented earlier show what the activities do to address challenges with supplies (Further details in Model 5.3, Row 3). The hospital, through reviewing the quality of the products and returning them to suppliers, obtains new products that meet safety standards to provide services. The negotiations the CEO engages with suppliers facilitates extracontractual agreements on debt to continue the flow of products to the hospital.

The response limitations. Two limitations affect the response to address the challenges: one corresponds to the significant delay when vendors replace the hospital's returned products, as suppliers are usually far from Tumaco. This issue can have negative consequences on the hospital timeliness of care as it lacks immediate access of supplies to deliver services. The other problem is that the management know-how to negotiate payment agreements with vendors could be lost when the new CEO and his team leave the organisation. As mentioned earlier in this chapter, the current hospital management team had been assigned to the job on a temporary basis.

4) The intervention of central government agencies in hospital operations

Model 5.3 illustrates the Supersalud intervention in hospital operations response helps to face the problem of scarcity of supplies product of routine challenges, like difficulties to meet financial obligations and insufficient access to vendors.

The capacities behind the response. The cognitive, behavioural, and contextual capacities the response uses to face the challenges and outlined in Row 5 of Model 5.3 were discussed in section 5.2.1. Please refer to such section or the footnote for specifics²⁹.

The response mechanisms or activities. Row 4 of Model 5.3 shows the response uses four activities fully explained in section 5.2.1 to address the challenges with hospital supplies³⁰. On top of such activities, the response relies on two extra measures to deal with scarcity of supplies due to unfulfilled debts and limited vendors: i) Supersalud introducing a mandate to pay all hospital liabilities, and ii) management team begins to pay debt. The interviews provided details:

“Supersalud established us the mandate to clean up all hospital liabilities using the FONSAET rescue resources. It is our responsibility as management to pay creditors with these resources and we have been doing so”
(IntS_Hospital_senior_management_representative_1)

The measure above has allowed the hospital to pay its liabilities with suppliers, settling debt that impeded access to supplies or expand its pool of potential vendors. Interviewees provided insights.

“I think we have been winning the trust of suppliers and they continue helping us with products [...] We have been settling our debts with them with rescue fund resources. We are doing everything we can to pay the debts. We have managed to execute most of rescue resources, and I could argue it has bolster our credibility as it has spread word of mouth among suppliers. I think we are on the right track on paying the debt”
(IntS_Hospital_senior_manager_representative_1)

What the activities accomplish to address the challenges. The response activities have allowed the hospital to mitigate the scarcity of supplies as they help the hospital to pay its liabilities and improving its reputation among suppliers to fulfil financial obligations. Hence, existing suppliers continue to provide products to the hospital while

²⁹Cognitive capacity. Corresponds to the ability of central government agencies, particularly Supersalud, and volunteer organisations to recognise the clinical and administrative challenges the hospital endures. Behavioural capacities. Involved Supersalud assuming direct control of the hospital through producing a resolution. The contextual capacities corresponded to three elements i) the availability of skilled personnel in hospital management, ii) the legal instrument to intervene the hospital, and iii) financial resources provided to hospital management through the FONSAET rescue fund.

³⁰ The activities are as follows: i) Supersalud appointing a new CEO expert in hospital management, ii) Supersalud assuming direct governance of the hospital through abolishing the board of directors, iii) the Supersalud establishing the rescue fund to help the hospital pay liabilities and, iv) the new CEO assembling a qualified team to run the organisation.

overall supplier options expand based on improved financial reliability (See Model 5.3, Rows 2 and 3).

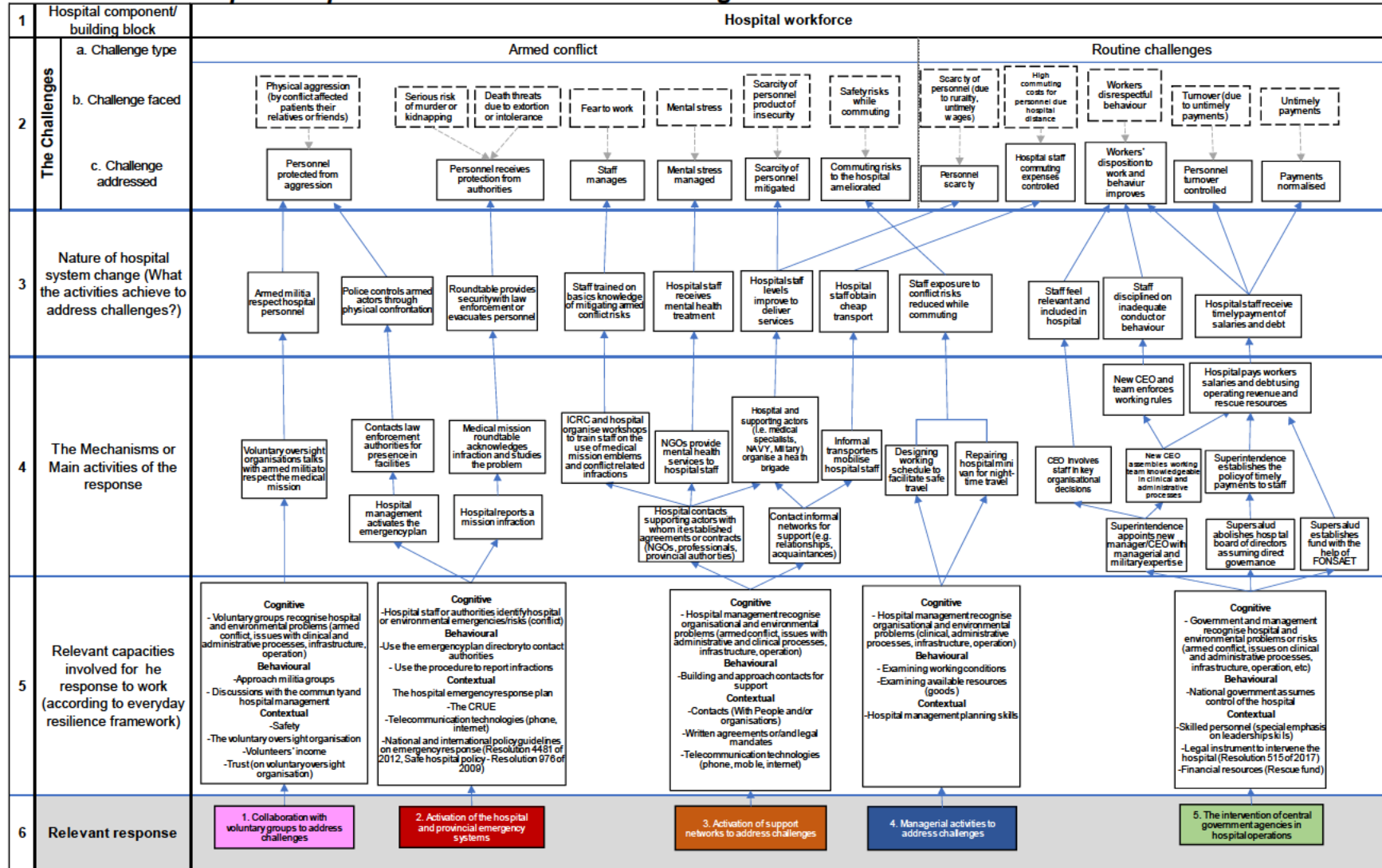
The response limitations. Even though the response has improved the flow of hospital supplies, it faces the limitation of a slow process to pay suppliers' liabilities. Participants mentioned the following:

“P1: Why is it so slow to pay liabilities? P2: The documentation has been messy. It requires review and classification to understand the amounts owed and it is essential to do these otherwise authorities won't help us pay. The problem is we do not have enough expert people in the area, so it takes a long time (IntS_Hospital_process_leader_13)”

5.2.4. RESPONDING TO THE HOSPITAL WORKFORCE CHALLENGES

Model 5.4 (next page) presents the challenges affecting the hospital workforce and the respective responses.

Model 5.4 The hospital responses to the workforce challenges



The challenges faced. Model 5.4 presents the challenges identified in Chapter 4 regarding the hospital workforce. Such challenges can be associated to armed conflict or routine issues. Concerning the armed conflict challenges, they range from direct physical aggression to workers, death threats, kidnapping, or risk of murder. Other conflict-related challenges involve fear of work due to conflict events around the hospital vicinity, or mental stress for witnessing conflict-related pathologies. Finally, the armed conflict has created scarcity of personnel for the hospital and difficulties for workers to commute given the security risks.

The routine challenges affecting hospital personnel correspond to scarcity of staff owing to Tumaco's geographical isolation, high commuting costs for workers, high turnover, untimely payments for personnel, and what hospital managers' perceived as employees' disrespectful behaviour.

Key responses. The hospital uses the following responses to manage challenges and sustain health care delivery.

- 1) Collaboration with voluntary groups to address challenges.
- 2) Activation of the hospital and provincial emergency systems.
- 3) Activation of support networks to address challenges.
- 4) Managerial activities to address challenges.
- 5) The intervention of central government agencies in hospital operations.

The following paragraphs explain how each response address the challenges.

1) Collaboration with voluntary groups to address challenges.

Model 5.4 shows the hospital relies again on collaboration with voluntary groups particularly to respond to the armed conflict challenges affecting hospital personnel.

Given that the response capacities and activities shown in Model 5.4 received extensive explanation in section 5.2.2. the following paragraphs will just briefly reiterate such discussion.³¹

³¹ Section 5.2.2 focused on understanding the hospital responses to the leadership and governance challenges.

The capacities behind the response. This chapter mentioned earlier the following as being the key capacities of the response: First, the contextual capacity referred as the voluntary oversight organisation which is essential to address the challenges. Second, the cognitive capacity of the voluntary oversight organisation recognising the challenges the hospital and its personnel face due to armed conflict. Third, the behavioural capacity related to the voluntary oversight organisation engaging in discussions or conversations with hospital staff and the community to understand the challenges and, then, approach armed militias to express concerns. Finally, the response relies on these additional contextual capacities: a) the trust the voluntary organisation has achieved with the community, including armed actors, allowing it to neutrality dialogue with militia to respect medical staff, b) the safety for volunteers to conduct their work, and c) the volunteers' economic resources to do their activities.

The response mechanisms or activities. Row 4 in Model 5.4 shows the main activity of the response to avoid physical aggression of staff corresponds to talking with armed actors to respect hospital personnel. This activity is the same the oversight organisation used to mitigate the security risks of hospital managers³².

What the activities achieve to address the challenges. Once the voluntary oversight organisation raises awareness among armed actors about the importance of hospital personnel, they respect staff achieving protection on potential physical harm (See Model 5.4, Row 3).

The response limitations. The main problems affecting the response to address the challenges relate to the scarce financial resources the members of the voluntary group face to conduct activities and the security risks they encounter to work. Section 5.2.1. detailly discussed these issues.

³² Section 5.2.2. explains this activity in-depth. It mainly entailed the voluntary organisation talking with armed actors to respect the medical mission and creating awareness on them that respecting the mission is also beneficial to them.

2) Activation of the hospital and provincial emergency systems

Model 5.4 shows this response mainly helps to address armed conflict challenges affecting the hospital staff like physical aggression, serious risks of murder, kidnapping and deaths threats.

The capacities behind the response. Several of the response capacities shown in Model 5.4 received explanation earlier in this document, particularly in Sections 5.2.2 and 5.2.3 (See footnote for a recap)³³. Thus, the explanation continues with the response activities to address challenges.

The response mechanisms or activities. Model 5.4 shows the hospital relies on two key activities to face the challenges: i) the activation of the hospital emergency plan, and ii) reporting the medical mission infraction.

The first activity involves hospital personnel using the emergency plan, particularly its directory, to request the presence of authorities to confront conflict actors, their relatives and friends who physically assault or threaten hospital staff within the facility. In such cases, authorities send a special police squadron called ESMAD³⁴ to confront the transgressors. Participants gave details:

“In Tumaco there had been situations where militia beat and mistreated hospital doctors or attacked facilities [...] on that occasion the ICRC was unable to do anything. In this case, the hospital used its emergency protocols and contacted authorities... so it requested the immediate presence of the police — their ESMAD squad. They proceeded to protect the medical personnel by force and evacuate them in military tanks...” (ExtS_Nonpr/Hum_1)

The second activity is a procedure explained earlier in this chapter, specifically in section 5.2.2, which informed about the need of the hospital to report to local authorities the safety risks hospital managers faced. This same procedure is also helpful to mitigate

³³ Sections 5.2.2 and 5.2.3 mentioned the following regarding the response capacities: the cognitive capacity of the response concerns the capability of hospital staff or authorities to recognise the conflict challenges. The behavioural capacity entails hospital staff using the hospital emergency plan and the process to report armed conflict events affecting personnel safety to the medical mission roundtable. Finally, the contextual capacities include the availability of good communication systems, the provincial office for regulating emergencies and disasters (CRUE), the hospital emergency plan and the national policies that required the hospital to establish an emergency response plan (Resolution 976 of 2009), and the route to report conflict-related events that affect the safety of hospital staff.

³⁴ ESMAD: *Escuadrones Mviles Antidisturbios – Mobile Ant-Disturbance Squadrons*

conflict risks to the rest of hospital personnel like murder or kidnapping. The procedure begins with the hospital worker informing about his/her security status to the hospital management. Then, the hospital would report this case to provincial authorities, particularly CRUE, which would gather the Medical Mission Roundtable. The roundtable, then, analyses the case and provides protection to the person.

What the activities achieve to address the challenges. Row 3 in Model 5.4 shows the activities discussed attain the following results: authorities confront armed actors to protect hospital personnel and the medical mission roundtable assigns law enforcement as bodyguards to protect personnel or evacuates staff facing imminent danger. Both measures, ultimately, lead to the protection of hospital personnel to conflict risks.

The response limitations. The response faces important shortcomings. First, the hospital loses its neutrality when it uses its emergency plan to contact authorities to confront armed militia. It could be possible that armed actors can make the hospital a military objective when authorities retaliate against their activities.

An additional issue corresponds to the Medical Mission Roundtable distrusting the hospital reports about the risks facing its personnel. The problem is that several workers have lied about facing a life-threatening situation particularly medical students assigned in Tumaco to do their rural practice. This issue has disincentivised the roundtable to provide a timelier response to the challenges. The following remarks give details.

“There have been problems of false reports of staff, particularly workers doing their rural practice for medical school. They do so to win economic or time prerogatives related to ending the rural year prematurely. So, the roundtable can help [staff] but these situations diminished the interest to act faster or pay closer attention to the situation” (ExtS_HSS_Prov_4)

Lastly, another problem relates to the distance of the closest police outpost to effectively respond the hospital calls for support against armed actors. It takes 10 minutes for the police to arrive in the hospital after it places a call for support.

3) Activation of support networks to address challenges

Once more, the hospital relies on the activation of support networks to address challenges and particularly those related to armed conflict affecting the workforce. Such challenges mainly involve the fear of work, mental stress, and scarcity of personnel due to insecurity.

The capacities behind the response. Most of the capacities presented in Model 5.4 as necessary for the response to address challenges were sufficiently discussed when it helped to address the hospital's financial challenges³⁵. Still, the response evolves adding 2 capacities to manage challenges related to i) written agreements, and ii) legal mandates. These elements are important as different supporting actors to the hospital, particularly NGOs, facilitate support to the hospital only when there is an explicit written agreement for doing so, or there is a legal mandate requiring such entities to give the support. The interviewees provided insights:

“Usually, we tell the hospital about our work and the vision to help the community... Then, they let us know the shortcomings they face to provide services or help us attain the vision. Then we establish a written agreement for support to the hospital, so it delivers better care and becomes an ally for our work” (ExtS_Nonpr/Hum_5)

The response mechanisms or activities. Row 4 in Model 5.4 shows the initial mechanisms of the response mainly entail the hospital calling support partners to handle the challenges it faces. The contact of support actors leads to other activities to manage challenges. The following participant remarks illuminate how the hospital or supporting actors like the ICRC can engage in contact to setup training courses for hospital staff to face the dangers of Tumaco which emphasise on the need to actively use the medical mission emblems.

“The provincial health authority has endorsed us (ICRC) to provide training for health personnel and providers on resolution 4481 of 2012 that governs the Medical Mission. We either contact the hospital to support them with training or they contact us. Our work emphasises informing staff of the possible conflict

³⁵ Section 5.2.1 which focused on explaining how the hospital addresses the financial challenges mentioned the activation of support networks response relied on the following cognitive, behavioural, and contextual capacities. The cognitive capacity entails the ability of hospital senior management to recognise organisational or environmental events that create challenges to the hospital. The behavioural capacity corresponds to build and approach contacts to obtain support. Finally, the contextual capacities involve the availability of contacts and functionality of communication systems to connect with contacts.

infractions or risks and the importance for using the medical mission emblem to attain recognition and protection within the conflict.” (ExtS_Nonpr/Hum_1)

Model 5.4, equally, illustrates the hospital efforts to contact support actors allows it to establish other activities like providing mental health for hospital staff and health brigades. The first activity helps to address the mental stress staff faces while working in Tumaco. The brigades alleviate the problem of staff scarcity. A health brigade entails Hospital San Andrés ESE gathering the support of several doctors to deliver health services for a significant number of patients in a defined time. Usually, the health services delivered in a brigade focus on a specific hospital service or medical speciality (e.g., gastroscopy, cardiac surgery, consultations on general care or urology, etc). The hospital gathers the doctors with the help of relationships established with other health facilities, government institutions, or hiring personnel for that specific occasion. The doctors that support a brigade usually come from different parts of Colombia. Participants give details on both initiatives.

“P1: Perhaps, did you provide psychological support to hospital staff considering how difficult the context is? ... P2: of course! If they contacted us or visited our services, of course we did! And they received attention” (ExtS_Nonpr/Hum_2)

“So, the brigades are services achieved either by hiring personnel or contacting partners or friendships in key organisations. The entities that support us the most in this area are the Military Forces and the Navy. They help us with their medical staff [...] or we hire professionals for a specific time to provide a service [...] for example services like cardiology, urology, dermatology, those services we can't permanently run due to lack of staff (IntS_Hospital_senior_management_representative_2)”

Finally, it is possible to see in Model 5.4, Row 4, the hospital staff networks help them obtain cheap transport toward to the hospital. Chapter 4 mentioned commuting expenses have become a significant issue for workers due to the hospital's remote location. Participants said the following about the support:

“P2: Fortunately, there are some options we call “pirate cars” that transport us here because we don't have public (mass) transport. P1: what are they? P2: they are just regular cars or motorcycles but not formally registered P1: and how you obtain this transport? P2: you go to the main road and pick it up or we call them (the drivers) when we need transport as they have become friends over time” (IntS_Hospital_process_leader_5)”

What the activities achieve to address the challenges. The training of hospital staff on what to do within Tumaco's conflict zone improves staff knowledge on how to mitigate the risks of the area and manage their fear to work. Participants provided some comments:

“Such talks (workshops) have been valuable for us to know what we must do during risks... at least we understand that using the medical mission emblem can protect us during encounters of such groups...” (IntS_Hospital_process_leader_12)

Additionally, all the quotes discussed earlier elucidate the results of the response activities to address the challenges and presented in Model 5.4, Row 3. For instance, the provision of mental health services is a way on how the hospital staff can lessen the conflict-related stress. Relatedly, the health brigades help the hospital mitigate the scarcity of personnel to meet the demand for services. Finally, the connection between hospital staff and informal transporters enables an affordable commuting service.

The response limitations. Interviewees manifested that issues such as high turnover in hospital staff and inadequate use of the Medical Mission emblems are key difficulties for the hospital to fully adopt the knowledge gained from the courses on how to manage a conflict-affected context. Participants gave these insights:

“Especially creating appropriation (in the hospital) of the Medical Mission guidelines and how to behave in conflict is difficult ... Administratively hospitals face significant turnover, so they lose the knowledge we provide them with our courses. [...] in other cases, they [staff] use the emblems as an intimidation tool telling people, “Hey, don't you realise who am I?” this is frustrating for us” (ExtS_Nonpr/Hum_1)

Concerning the problem just mentioned, it is expected the Supersalud intervention in hospital operations can manage staff turnover while present, so the valuable know-how hospital staff gains from the courses to cope with conflict is not lost.

Furthermore, the health brigades the hospital establishes to face the scarcity of staff can face important shortcomings. Bad weather can impede the execution of brigades as it prevents the landing of professionals who come from other parts of Colombia by plane. These situations can lead to discomfort on patients who were programmed to receive services and must return home on foot due to limited economic resources.

Similarly, the brigades can increase staff workload, especially to the customers' service office, as it is necessary to plan the brigade logistics. Such logistics entail organising the transportation, accommodation, and food of the supporting doctors, identifying the patients that will benefit from the initiative and organising the spaces within the hospital to gather the patients and professionals.

Finally, certain informal transport vehicles the hospital staff uses to commute to the hospital can be dangerous. Participants gave these comments:

“Even though the motorcycle taxi is the most affordable transport it can be very unsafe to use [...] when you ride it, you take your own risks. Often, you really don't know with who you are riding with... also they do not provide much safety - if you crash nobody will help you” (Obs_Hincontr_5)

4) Managerial activities to address challenges

Model 5.4 shows the hospital relies on this response again to address workforce challenges. The response helps to meet the armed conflict challenges of security risks personnel face while commuting to work.

The capacities behind the response. Model 5.4, Row 5, shows the response relies on the ability of hospital management to detect or be aware of challenges – An ability hospital management used earlier to manage the challenges with finances and supplies (Sections 5.2.1 and 5.2.3). Thereafter, the behavioural and contextual capacities of the response vary. The response behavioural capacities correspond to hospital management examining: i) working conditions to facilitate work, and ii) the availability within the hospital of resources that could be allocated to personnel to aid or improve their work. The contextual capacities correspond to skills in hospital senior management to plan working activities and resources to facilitate staff's work.

The response mechanisms or activities. Row 4 in Model 5.4 presents the sequence of activities of the response to address armed conflict or routine challenges. To face the challenge of commuting risks due to conflict, the hospital has engaged in the activities called a) Designing a working schedule facilitating safe travel, and b) Repairing a hospital minivan for night-time travel. Participants gave details about these efforts:

“The hospital senior management decided to introduce a continuous working schedule from 7AM to 4PM so people can return home safely and find transport³⁶. This was done as it is difficult to move from the hospital to the city centre, particularly at night. Armed groups usually engage in confrontation at that time and staff concerns about this issue” (IntS_Hospital_process_leader_12)

“a good thing the hospital manager has done was to repair the hospital minivan [...] This has allowed the facility to move its personnel between the hospital and the city centre even at night. This is great given the hospital location and the risks of area” (ExtS_HSS_Nat_1)

The first activity improves the commuting process of hospital administrative personnel whereas the minivan facilitates the travel of hospital personnel working at night. The minivan pickups up personnel in a specific location in Tumaco’s city centre at 6 PM to drive people to the hospital.

What the activities achieve to address the challenges. The previously quoted testimonies illustrate the achievements shown in Model 5.4, Row 3. The hospital, through establishing a working schedule and repairing its minivan, reduces workers’ exposure to conflict risks while commuting to the hospital.

The response limitations. The main problem of the response to address challenges mainly involves discretionary use of the hospital’s minivan by doctors. Certain workers consider this issue as unfair because staff different to doctors do not receive such privilege. Participants provided details:

“When specialists are urgently needed, the hospital gives them the van at any time at night they want [...] In our case (middle managers) that doesn’t happen. If you are at home and they (hospital) require you at night for any reason, we don’t have that option despite working for the same place” (IntS_Hospital_process_leader_3)

5) The intervention of central government agencies in hospital operations

Model 5.4 shows the Supersalud intervention helps to address several routine challenges within the hospital workforce. These entail disrespectful behaviour managers perceived on staff, high turnover, and untimely wage payments to staff. The paragraphs below explain how the challenges are addressed.

³⁶ Here it is evidenced hospital management planning working activities.

The capacities behind the response. The cognitive, behavioural, and contextual capacities shown in Model 5.4 as key elements of the response to face the workforce challenges were discussed when the hospital addressed financial along with leadership and governance challenges (See the footnote for a reiteration)³⁷. This document mentioned earlier the need of skilled personnel as a key capacity for this response to manage challenges. Now, it is necessary to indicate that such skilled workforce should have inclusive leadership abilities to address the workforce challenges. Specifically, the hospital CEO should possess such skills. The upcoming paragraphs will show the importance of the abilities just mentioned.

The response mechanisms or activities. Model 5.4 in Row 4 shows that all the crucial activities of the response³⁸ intervene to address the workforce challenges. These activities lead to additional ones to mitigate problems. The additional activities are:

- i. Hospital CEO involves staff in key organisational decisions.
- ii. New CEO and management team enforces working rules.
- iii. Supersalud establishes the policy of timely wage payments to staff.
- iv. The CEO assembles a working team knowledgeable in clinical and financial processes.
- v. Hospital pays workers' salaries and debt through operating revenue and rescue resources.

The first two extra activities³⁹ focus in changing the managers' perceived disrespectful behaviour on personnel product of lack of belonging leading to misuse the hospital and patients' property. Participants provided these remarks about the activities and, likewise, evidenced the inclusive leadership capacity.

³⁷ Sections 5.2.1 and 5.2.2 provided the following details about the response capacities. Cognitive capacity: the ability of government authorities and hospital management to understand the challenges. Behavioural capacity: the Supersalud decision to assume control of the hospital. Contextual capacities: the availability of skilled staff so Supersalud can hire them to manage the hospital, the legal instrument facilitating Supersalud taking over the management, and financial resources within the rescue fund to pay liabilities.

³⁸ The crucial activities of the response, as introduced in Section 5.2.1, are as follows a) appointment of new manager with clinical and military expertise, b) Supersalud abolishes board of directors assuming direct governance, and c) Supersalud establishing the rescue fund with FONSAET resources.

³⁹ The second activity derives from the activity known as CEO assembling the new managerial team and discussed in-depth in Section 5.2.1.

“To commit people at work we have worked in allowing personnel to actively participate in important organisational activities like planning the budget, so they get to know the hospital situation, gain more conscience of it and improve work commitment” (IntS_Hospital_senior_management_representative_1)”

“Whoever does not comply with the hospital's formal norms or mandates, like missing work, improperly using hospital materials, or affecting a patient, is entitled to sanctions ranging from a reprimand to comply with the working contract or his/her dismissal. All decisions are informed through memoranda and follow established regulations” (IntS_Hospital_process_leader_4)

Complementary, the Supersalud requirement to pay workers on time and the work of the new management to achieve this mandate are other key activities undertaken for a timelier payment of staff salaries. Some insights about these measures are as follows.

“P1: Has it been possible to pay personnel on a timely basis? P2: Yes, the Supersalud intervention imposed the obligation to [the CEO] to punctually pay the personnel payroll and its liabilities. Through the Fénix system we [the team] are monitored on how we fulfil this goal. P2: and how you managed to pay to workers? Basically, with the earnings gathered for selling services and through the rescue fund that allows us to pay such debt” (IntS_Hospital_process_leader_4)

What the activities achieve to address challenges. The activities just discussed achieve three things to address the workforce challenges (See Model 5.4, Row 3). First, the CEO allowing staff to participate in hospital decisions is oriented to reduce their lack of sense of belonging at work and the perception of disrespectful behaviour. The following participant remarks suggest this measure may be working.

“The new CEO considers what you think, and I like it. We solve most of the issues as a team and listen to the ideas you have, this motivates [our work] (IntS_Hospital_process_leader_3)”

Second, the CEO actions to implement working regulations intends to discipline workers their behaviours create problems for the hospital and the patients' belongings. These measures are also intended to mitigate the managers' perceived challenge of disrespectful behaviour of staff.

Third, the work of the new management team to comply with Supersalud regulations to pay workers has resulted in timely payments of staff salaries and existing debt. Punctual payment to hospital staff should mitigate two problems i) high personnel

turnover as Chapter 4 in Section 4.1.1.4 showed this was a key factor driving this problem, and ii) the workers disrespectful haviour as timely payments can increase their sense of belonging and disposition to work. A participant gave details:

“All the workers to whom the hospital owed them salaries were finally paid back entirely. Then, the people began to believe in the hospital. They felt confidence that the hospital is a viable institution and became motivated to work.”
(Obs_FrHSem_Ac_1)

The response limitations. Despite all the efforts Supersalud has undertaken to address workforce challenges several issues persist. This research recognised (during the data collection period) that the hospital owed about two months of salaries to staff hired as independent contractors, despite the efforts of Supersalud to pay obligations. Interviewees provided these insights:

“In fact, until this day, individuals hired as independent contractors see difficulties with payments. The hospital still owes them two or three months...this makes it difficult to work here and normally they tell you the difficulties they face [to afford expenses]” (IntS_Hospital_Clinical_Representative_2)

Similarly, the hospital owes to its unionised personnel a series of financial benefits that derive from a collective bargaining agreement signed in previous years. Participants provided comments.

“The hospital intervention postponed the payment of our financial benefits product of collective bargaining agreements [...] We aspire such benefits could be paid soon but we also understand the hospital’s difficult situation. So, we decided not to charge the benefits until the hospital improves [financially]”
(IntS_Hospital_process_leader_11)

Another important limitation of the response relates to a divide between workers, specifically among those that support the Supersalud intervention, and those who do not. This issue has slowed the superintendence intervention to attain rapid change of hospital processes or workers’ behaviour. The workers that oppose the intervention usually compete against most of the activities intended to improve hospital conditions and staff. The following are some insights from interviewees:

“Among hospital workers, it is possible to differentiate groups for and against the superintendence intervention. Those who are committed to the initiative are trying to make the sceptics support the intervention, make them realise how important

the hospital and their work is for the population of Tumaco, but this has not been easy, and change requires time” (IntS_Hospital_process_leader_12)

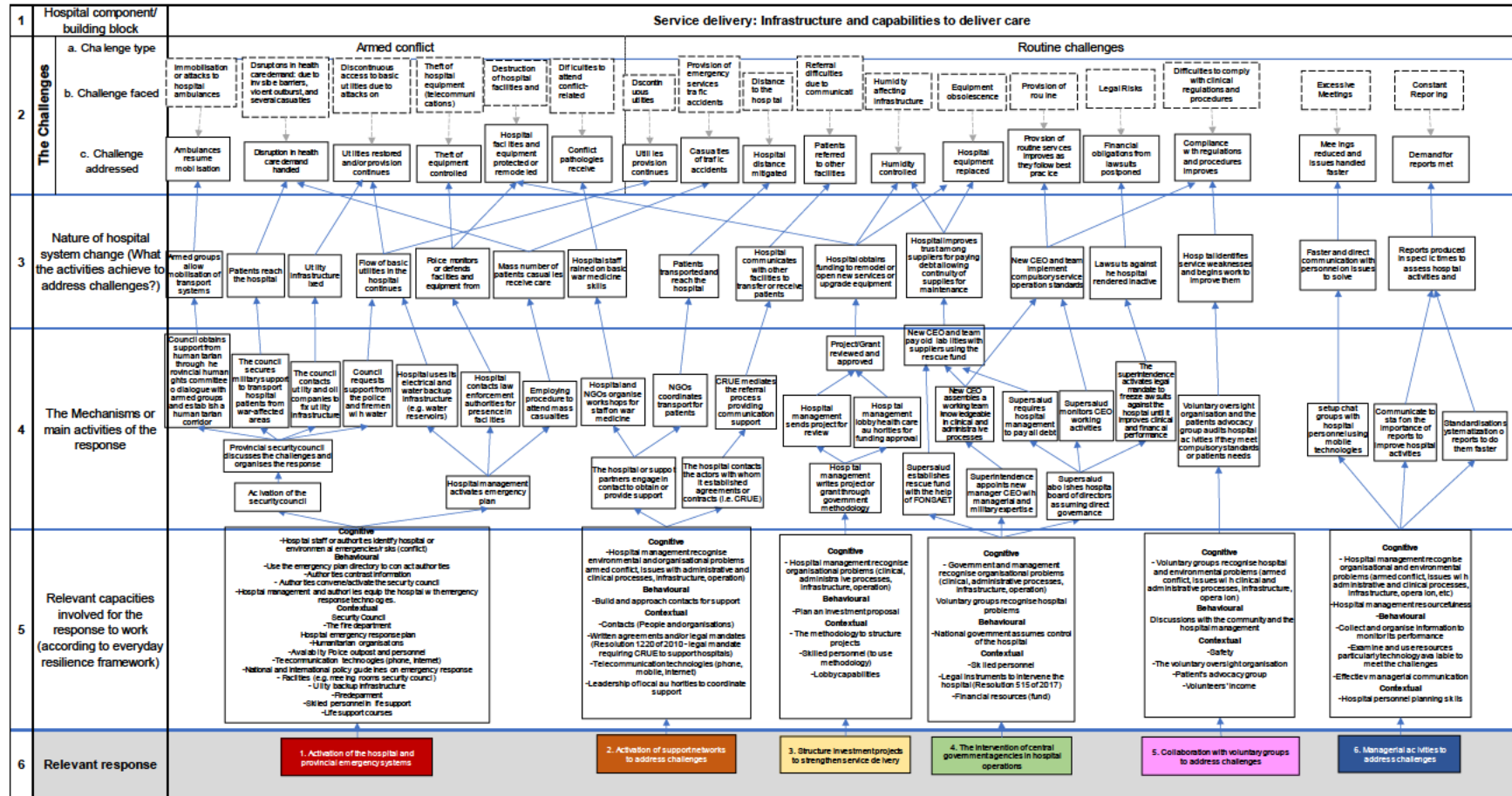
Finally, the new hospital CEO does not have sufficient power to hire or fire payroll staff or union members who are uncommitted to their work. The process to terminate payroll contracts in Colombia is difficult as it is necessary to find a “just cause” event for dismissal which is something that involves significant time and effort.

5.2.5. RESPONDING TO THE HEALTH SERVICE DELIVERY CHALLENGES

For this study, service delivery entails two areas: hospital infrastructure and its capacity to deliver care. The later can be defined as the hospital’s ability to render its main and complementary services⁴⁰ using its resources and processes to meet the community health needs. Model 5.5 presents the challenges and responses.

⁴⁰ Main services: Emergency care, Inpatient care, Outpatient care, Surgery. Complementary services: referral of patients and diagnostics.

Model 5.5 The hospital responses to service delivery challenges



The challenges faced. The core elements of health service delivery perceive both armed conflict and routine challenges. The conflict challenges affecting hospital infrastructure relate to purposeful destruction of facilities and equipment, the theft of communication systems by militia, and attacks to critical infrastructure surrounding the hospital leading to irregular provision of utility services. The routine challenges impacting infrastructure correspond to facility damage due to humid conditions, equipment obsolescence, and discontinuity with the provision of essential utilities.

The hospital's capacity to provide health care also faces conflict and routine challenges. The hospital faces disruptions in the healthcare demand product of large volume of conflict victims, invisible barriers⁴¹, and violence disincentivising patients to visit the hospital. The armed conflict also immobilises hospital ambulances and adds difficulties to treat conflict pathologies product of insufficient skills in clinical staff. The routine challenges affecting hospital capacity to deliver care concern the sudden demand for emergency services as a result of traffic accidents in the area. Similarly, the facility's endures poor accessibility given its remote location, poor communication systems that disrupt patient referral processes, difficulty to comply with compulsory operating standards, the provision of routine services to meet the community's regular health needs, constant meetings and reporting, and lawsuits product of clinical malpractices and unmet financial obligations that threaten hospital closure.

Key responses. Model 5.5 shows the hospital relies on these responses to address the challenges of service delivery and sustain its operation in the conflict setting.

1. The activation of the hospital and provincial emergency systems.
2. Activation of support networks to address challenges.
3. The structure of investment projects to strengthen service delivery.
4. The intervention of central government agencies in hospital operations.
5. Collaboration with voluntary groups to address challenges.
6. Managerial activities to address challenges.

⁴¹ Chapter 4 (p.165) defined the invisible barriers as frontiers that erect across areas of Tumaco which citizens do not dare to cross as they can be killed.

The following paragraphs will explain how the responses work to face the challenges.

1) The activation of the hospital and provincial emergency system

This response helps to address both armed conflict and routine challenges affecting health service delivery.

The capacities of the response. Section 5.2.3 provided a detailed explanation of the cognitive, behavioural, and contextual capacities shown in Model 5.5 as key to address challenges⁴². This time, however, the response evolves and adds three capacities. The first corresponds to the behavioural capacity of hospital management and authorities in equipping the facility with technologies to help it cope with water or electricity rationing. The remaining two are contextual capacities involving the availability of skilled hospital staff in life-support techniques, the available of a fire department in the municipality that helps the hospital during water rations, and training courses on life-support in Tumaco so hospital workers can update their knowledge on this area. Later, this section will show the importance of these capacities to respond to the challenges.

The response mechanisms or activities. Model 5.5 shows the response initial activities entail hospital management activating the hospital emergency plan and the Security Council which the latter subsequently meets and discusses the challenges and organises the response. Earlier segments of this chapter provided a significant explanation to such activities (Section 5.2.3); thus, this section focuses on explaining the activities that derive from those initial measures.

Concerning the activities stemming from the activation of the hospital emergency plan (See Model 5.5, Row 4), the first corresponds to the hospital using its water and electricity backup infrastructure. The hospital relies on this measure when it lacks access

⁴² Section 5.2.3 mentioned the following about the capacities: The cognitive capacity entailed the ability of hospital managers and authorities to detect challenges. The behavioural capacities corresponded to the actors using the hospital emergency plan or gather the Security Council. The contextual capacities were the following: the availability of the emergency response plan in the hospital, the Provincial Security Council and the laws requiring the configuration of this body to face conflict events, the availability of humanitarian organisations that support the hospital or authorities during conflict events, the availability of national or international policy guidelines for emergency response, good telecommunication technologies, and the CRUE offices helping the hospital and authorities to establish contact and the meeting of the Security Council.

to utilities product of the armed conflict or routine challenges. The following remarks give details.

“P1: I imagine when the conflict actors blast electricity towers or any other activity hindering the electricity, it will affect the hospital, right? P2: Concerning that, in Colombia there is a directive from the Ministry of Health called ‘Safe Hospital’. P1: Is it a policy? P2: Yes. ‘Safe Hospital’ means these organisations must be self-sufficient. Hospitals have an emergency response plan and must have water reservoirs and motor pumps, power plants, etc. and have sufficient stock in supplies, so the hospital can face these types of problems and continues operating for two or three days during the week. So, in this hospital, a lot of things were thought of to make it autonomous during those events.” (Obs_FrHsem_Ac_1)

Subsections 5.2.3 and 5.2.4. explained the hospital could contact the police through its emergency response plan to mitigate armed conflict challenges affecting its personnel or supplies. The police would do monitoring rounds or engage in physical confrontation with armed actors to cope with challenges. Now, these two activities also help to mitigate service delivery challenges such as attacks or theft of hospital property. Row 4 in Model 5.5 illustrates these efforts.

Similarly, Model 5.5, shows the activation of the hospital emergency plan allows personnel to face disruptions in the demand for health care, particularly related to sudden increase for services product of the conflict or routine events (i.e., traffic accidents) through activating a procedure to serve mass casualties. Participants give the following details on this procedure.

“During situations of massive number patients, we use our emergency plan to attend such patients. There (in the document) we established expansion areas for the services that will be used [...] and if we require the support of other personnel, the plan outlines the need for all staff to be trained in life support. Further, the doctors on duty in the hospitalisation service must go to the emergency service to support the area until the situation is controlled” (IntS_Hospital_process_leader_6)

Concerning the activities that derive from the Security Council, it is possible to see in Model 5.5, Row 4 that this government body obtains help from different actors to mitigate hospital challenges. For instance, to mitigate the immobilisation of ambulances on the road the security council obtains help from humanitarian actors through the provincial human rights committee. Earlier in this chapter, Section 5.2.3 presented

participant remarks explaining how humanitarian actors helped authorities and Hospital San Andrés ESE establish humanitarian corridors through negotiations with militia to mobilise supplies. This same process also enables the transit of ambulances.

Model 5.5, Row 4 informs the Security Council can seek the support of the military to help Hospital San Andrés ESE mitigate disruptions in health care demand due to armed conflict events. When the demand for healthcare plummets due to conflict events (e.g., firefights, invisible barriers) the military can prevent this from happening by allowing patients to reach the hospital using its aerial and fluvial transport. Participants provided details:

“We (the military) use air and river resources that allow us to reach remote ‘hot’ (conflict) zones to mobilise patients who require hospital care but who have been unable to obtain services” (ExtS_GovNat_1)

Row 4 in Model 5.5 shows the Security Council can request utility companies in Nariño or Tumaco and the state oil company ECOPETROL the repair of utility infrastructure affected by the conflict⁴³. This activity occurs concomitantly when the hospital relies on its backup systems for the continuity of essential utilities. The interviewees gave the following insights.

“During conflict activities they call us [the council] for help. Then, crews are sent to attend the situation that is being presented with the electrical grid and we fix it, bearing in mind our safety” (ExtS_GovProv_2)

On top of the support activities mentioned above helping the hospital cope with utility interruptions due to conflict, the council can request support of Tumaco’s police or the fire department for extra water supplies until the damaged utility infrastructure is fixed. These institutions have tanker trucks to transport water to the hospital. Participants gave details.

“We the police, through our automotive equipment, can meet the water needs of both the hospital and the neighbourhoods of Tumaco. We have tanker trucks cars we can use to provide with water health and education facilities in the area when they (council, hospital) request it” (ExtS_GovNat_2)”

⁴³ It is worth emphasizing that water rations usually occur after attacks on the oil pipeline crisscrossing Tumaco and polluting water sources; hence, the need of the national petroleum company to repair such infrastructure to restore water supply to the hospital.

What the activities achieve to address the challenges. Row 3 of Model 5.5 and several of the quotes presented earlier show what the activities achieve to address challenges. For instance, all the activities deriving from the hospital emergency plan facilitates continuity on water and electricity for the hospital when such services are rationed. Similarly, the contact of law enforcement authorities can deter militia to steal or attack hospital facilities and equipment. Besides, hospital management, through the emergency plan can attend a mass number of critical patients and meet the high demand of services attributable to armed conflict or traffic accidents.

The activities directed by the Security Council are also important for the hospital to face challenges. The council can request support from the police and utility companies to help the facility with the access to essential utilities when the conflict renders them inoperative. Similarly, the dialogue humanitarian actors have with armed groups facilitates the normal operation of hospital ambulances on the road. Finally, the military can become a good ally to the hospital when it transports patients who live in areas secluded by war to obtain hospital services.

The response limitations. One limitation concerns the poor state of the hospital's water and electricity backup infrastructure. By the time of data collection, the hospital's main electric plant was damaged, which has led to its reliance on a less powerful machine unable to supply electricity to the entire facility. Similarly, the power plant does not provide immediate power restoration as it lacks a system to automatically re-establish electricity to the hospital (Hospital San Andrés ESE, 2017).

During fieldwork for this study, participants mentioned the hospital was not able to do sufficient maintenance to its water reservoirs (9 in total), something that can hinder the quality of the water stored. Similarly, the hospital's process to irrigate the water from its reservoirs lacks strength as the pumps that facilitate this process (12 in total) are not fully operational. Relatedly, the municipality's water supply cycle, which is often discontinuous, impedes the hospital to keep its water reservoirs full to mitigate rationing. Therefore, the

hospital faces important weaknesses with its water reserves that hampers its autonomous operation during disruptions of this service.

Other limitations concern to the activities and resources of the Security Council to respond to the challenges. For instance, the Security Council efforts to repair the utility infrastructure during conflict events can be slow and take several days, as armed actors usually place landmines around damaged infrastructure. Equally, the support the Security Council coordinates through the police and fire department during water rations faces difficulties, mainly related to the size of tanker trucks. The vehicles are small and cannot resupply the hospital in a single trip, leading to longer waiting times for the hospital to meet water demands.

An additional limitation concerns the lack of immediate availability of military air transport to help patients living in areas of Tumaco highly affected by conflict. The Security Council along with the local military must begin a slow authorisation process with the Ministry of Defence and the national military to obtain helicopter transport, creating problems with the timeliness of the support provided. Participants gave details:

“P2: The military in Nariño does not have flight hours. It does not have a helicopter readily available, neither has a plane ready for use...P1: Oh, really! I thought it did! P2: No, so, to attend an emergency and make a reaction or response to help such people in areas of Tumaco heavily affected by conflict it is necessary to ask for permission in Bogotá. They must authorise the nearest helicopter or plane, to be able to react. This is a huge weakness for us [authorities]” (ExtS_GovProv_1)”

Another response limitation entails insufficient availability of life-support courses in Tumaco for hospital staff. This does not allow workers to constantly update their knowledge in clinical processes vital to provide services amid high influx of critical patients' product of conflict or routine challenges such as traffic accidents.

Finally, other issues already discussed such as the absence of a formal playbook formalising the Security Council activities and the inadequate communication technologies this body uses to face the challenges affect the response capacity to meet these issues.

2) Activation of support networks to address challenges

Model 5.5 presents the activation of support networks as another hospital response to address both armed conflict and routine challenges affecting service delivery.

The capacities behind the response. The section that focused on explaining how the hospital address the workforce challenges discussed almost all the cognitive, behavioural, and contextual capacities presented in Model 5.5 (See section 5.2.4 or the footnote for details)⁴⁴. Yet, in this occasion the response evolves and integrates an extra contextual capacity related to leadership of local authorities, particularly the governor, to coordinate support efforts for the hospital. The importance of this capacity will be evidenced during the explanation of the response mechanisms.

The response mechanisms or activities. Model 5.5 presents the different activities of the response toward the challenges. Initially, the hospital or supporting actors contact each other as the first step to obtain or provide support to face the challenges. Then, both parties organise more focused activities to mitigate the issues.

In Model 5.5, Row 4 it is possible to see after the hospital engages in contact with supporting partners, particularly the ICRC, it organises workshops to improve the knowledge of clinical staff on how to treat conflict-related wounds, or also referred as war medicine. The leadership of authorities, specifically the governor, is also important for these courses to happen. Participants gave the following details on the sequence of events:

“What we have done through time and has been something beneficiary for providers is to instruct them on how to handle wounds from gunshots and explosive devices... everything that relates to war medicine [...] We strengthen their capacity on this area when they (the hospital) or when the governor contacts us for this type

⁴⁴ Summarising, the capacities are as follows: The cognitive capacity. The ability of hospital management or supporting actors to recognise the different challenges affecting hospital operations. The behavioural capacities correspond to the building and approach contacts for support. Finally, three contextual capacities are key for the response to work: hospital management having contacts within different private, public, or non-profit organisations, the existence of agreements or legal mandates that facilitate the provision of support to the hospital and, the availability of good telecommunication technologies to reach contacts and coordinate activities with supporting actors.

of support, or we propose the courses if we deem necessary” (ExtS_Nonpr/Hum_1)”

Similarly, the hospital can organise free transportation services for patients who face significant economic hardship or conflict-related injuries with the help of its supporting contacts. The ICRC and the Catholic Diocese usually provide this service to help hospital patients overcome the barrier of travel to its remote location. Participants gave these details:

“Many accidents from landmines and explosive devices occur in remote places of Tumaco, so people must bear significant expenses to obtain medical care. This situation is particularly critical in Tumaco as the hospital is isolated... then we tell them (the hospital, patients) that we can assume the patients’ expenses to reach the hospital. We pay for the car or even the boat if the person lives in difficult to access areas” (ExtS_Nonpr/Hum_3)

Finally, the hospital can contact CRUE, the office regulating emergencies and disasters in Nariño, for support to coordinate the referral of patients to other health facilities when it faces communication problems. *Resolution 1220 of 2010* mandates CRUE to provide this assistance whenever hospitals need it. Participants gave details:

“P1: And regarding communication ...does the hospital receive support? P2: oh well, we could speak in relation to CRUE...P1: could you give details? ...P2: CRUE coordinates the patients’ referral process in Nariño and the hospital has a direct relationship by radio ...P1: So, this office manages the referrals? P2: It does not refer but helps to coordinate the process. So, if the hospital (in Tumaco) must send patients to Pasto and it can’t connect with providers, it can contact the CRUE [for support]. CRUE serves as a bridge to connect with other providers and facilitate the referral” (ExtS_HSS_Prov_1)

What the activities achieve to address the challenges. The participation of support actors to train clinical staff with enhanced knowledge on war medicine improves hospital expertise to treat conflict-related pathologies. Meanwhile, the hospital accessibility problems are ameliorated with the transport services support partners provide to patients. Lastly, the hospital contacting CRUE facilitates its communication with other providers to refer patients (See Model 5.5, Row 3).

The response limitations. Despite the different benefits of the response to address both armed conflict and routine challenges affecting the hospital service delivery,

it faces key limitations. First, the war medicine workshops for hospital personnel, unfortunately, do not occur frequently. These courses significantly rely on the motivation of local authorities to incentivise the ICRC to deliver such training. Participants gave details:

“P2: When he [Antonio Navarro] was governor, the hospital engaged in more contact with the ICRC to help the hospital with war medicine courses. Yet today it seems that authorities are less interested. The courses on these issues are not as regular as one would desire [...] P1: Would it be important to be more regular? P2: I think it is necessary because we are still exposed to the conflict.” (Obs_GovEmp_2)”

An additional limitation of the response is that the transport services non-profit and humanitarian actors provide to the hospital patients are not of the mass transit type and are discontinuous. This service is very specific and mainly provided to people classified in extreme poverty within the government means assessment database SISBEN or face life-threatening assaults (e.g., landmine wounds). The rest of Tumaco’s population who are poor but not facing this problem at extreme levels, lack with a safe and affordable transport option to reach the hospital.

Lastly, during fieldwork it was possible to recognise the radio equipment the hospital uses to contact CRUE to coordinate the referral process is obsolete creating difficulties to establish calls. Also, when the hospital calls CRUE for support, its services are significantly reduced during weekends.

3) Structuring investment projects to strengthen service delivery

The response involves the hospital capabilities to structure investment projects to obtain government funding to face armed conflict and routine challenges affecting its equipment or infrastructure. For example, the hospital can design an investment project to fully remodel its intermediate care unit that armed actors destroyed during a conflict crisis. Similarly, the hospital through a project can replace all its aged equipment as a result of routine operation.

The capacities behind the response. Model 5.5 in Row 5 outlines the capacities of the response to address challenges. The cognitive capacity corresponds to hospital management awareness of the armed conflict and routine challenges affecting the hospital equipment and infrastructure. The behavioural capacity involves hospital management planning the necessary investments to overcome the challenges. Finally, the response relies on two contextual capacities: i) The availability of skilled personnel within the hospital to use a government methodology called *Metodología General Ajustada* (MGA) to structure the investment projects for government funding, and ii) hospital senior management lobbying capabilities with government authorities to champion the project's benefits and secure funding. Participants gave the following remarks on the capacities just outlined:

“A hospital can seek government funding to address problems through structuring investment projects or grants. Any hospital including the San Andres Hospital must be aware of the issues it wants to address through a project. Then, the hospital (staff) begins the process of structuring the project using a methodology called MGA designed by the National planning department” (ExtS_HSS_Prov_5)

The response mechanisms or activities. The previous quote gives insights about the first response activity corresponding to the need of the hospital to structure the investment project using the MGA methodology. Once the hospital structures the project, two extra activities begin: i) authorities review the project and, ii) the hospital management lobbies authorities for project approval. Participants provided insights.

“The grant or project is presented physically and online to the provincial health authority planning office accompanied with its supporting documentation. So, we review it to see if we can make more observations and we issue a concept stating if the initiative is viable. The provincial authority can directly fund the project if it does not exceed \$908 million pesos (about \$233,659 USD) ... but if it exceeds the amount, then the project goes to the Ministry of Health for further review and must obtain a second approval from the Ministry for funding” (ExtS_HSS_Prov_5).

Participants gave the following details concerning the lobby activities:

“To get project funding... the hospital must manoeuvre the project's approval procedure and identify the people that intervene in the process to 'sell' the project to such individuals. If the hospital knows the procedure well, the institutions and the people who intervene, then, it is easier to get funding...” (ExtS_HSS_Prov_5)

What the activities achieve to address the challenges. Row 3 in Model 5.5 and the quotes above illustrate what the activities achieve to address challenges. Basically, they allow the hospital to secure funding for its projects to mitigate issues on its equipment or infrastructure due to routine or armed conflict challenges. With the funding the hospital can, for instance, remodel the facilities destroyed by armed actors or replace obsolete equipment.

The response limitations. Despite the benefits of the response to address challenges, the hospital has not been successful to frequently secure funding for projects. By the time of writing this thesis, the hospital has only presented one project for funding in the last four years, and it has not been capable to present initiatives to restore services the armed actors destroyed.⁴⁵ Four issues explain this problem.

First, the hospital has not prioritised securing funding for projects/grants by hiring skilled personnel knowledgeable of the MGA methodology to submit requests. Second, the armed conflict disincentivises skilled professionals from working and providing support on this area. Participants gave remarks on this:

“It exists a strong limitation to plan and properly structure investment grants in the hospital. This is because they do not make it a priority to hire human talent with enough knowledge on the field [...] (Also), the conditions of insecurity do not motivate good professionals, perhaps from Pasto, to go there and provide their services....” (ExtS_HSS_Prov_5)

Third, the hospital faces significant budgetary constraints to fund the preliminary studies required to structure investment projects. Each investment project needs the hospital to hire professionals to conduct architectural and engineering studies to determine the nature of the project and assess its value. These studies are usually expensive and difficult for the hospital to afford. And fourth, given the insufficient number of projects the hospital has presented for funding it has not developed strong lobbying capabilities to obtain project funding.

⁴⁵ Refer to Chapter 4 Section 4.1.2.5. for details.

4) The intervention of central government agencies in hospital operations

The hospital depends on this response to address the routine challenges of equipment obsolescence, humidity affecting hospital infrastructure, meet the routine health care needs of the community, the legal risks the hospital faces that threaten its continuous operations, and difficulties to comply with regulations and procedures.

The capacities behind the response. Model 5.5 outlines a series of capacities the response relies on to operate and explained in detailed in sections 5.2.1. to 5.2.4. Please refer to those sections or the footnote for details⁴⁶.

The response mechanisms or activities. Model 5.5 shows several of the activities discussed in Section 5.2.3 also play an important role to address service delivery challenges⁴⁷. Most of these activities are measures the hospital has undertaken to pay liabilities with suppliers. Section 5.2.3 mentioned such activities helped the hospital to improve trust among suppliers to fulfil its financial obligations and ensure the flow of supplies. Now, the same activities help the hospital to keep the flow of materials to conduct maintenance on hospital equipment and infrastructure. The following remarks give details:

*“The FONSAET, along with the activities the team has done to pay suppliers, has helped to get what we need including medical supplies and materials to fix common problems we face. These include damaged pipes or toilets, humid walls, or broken equipment like monitors or the air conditioning”
(IntS_Hospital_process_leader_2)*

The Fénix monitoring process of Supersalud, established soon after the abolition of the hospital board of directors (discussed in-depth in section 5.2.1), has led the new CEO with his team to implement the government’s compulsory standards for the delivery

⁴⁶ The capacities are as follows. Cognitive capacity: government authorities and voluntary groups identify the different challenges the hospital faces to operate.

Behavioural capacity: government authorities assuming direct control of hospital operations.

The contextual capacities: i) the availability of personnel knowledgeable in hospital management to improve hospital performance, ii) the legal instruments that facilitate the hospital intervention, iii) financial resources within the rescue fund allowing the hospital to fulfil financial obligations.

⁴⁷ Section 5.2.3. mentioned the following as key response activities: 1) Supersalud abolishes the board of directors assuming direct governance, 2) Superintendence appoints new CEO with managerial and military expertise, 3) Supersalud establishes rescue fund with the help of FONSAET, 4) Supersalud requires CEO and new working team to pay all hospital liabilities, 5) CEO assembles new team.

of hospital services. This has enhanced the hospital's capacity to deliver regular services as it guarantees better practices product of improved compliance with compulsory operating requirements. Interviewees gave details:

“With our monitoring they (hospital management) began to adhere to mandatory service delivery standards. Now, the hospital has established a patient safety policy allowing better provision of care and the management processes are fulfilling the requirements for administering public hospitals. All of this represents significant progress from the standard compliance point of view (ExtS_HSS_Nat_1)

On top of the activities just mentioned, Supersalud, through its intervention process, can freeze all lawsuits that create significant financial commitments to the hospital and threaten its operation. The following remarks give details.

“The Superintendence undertakes a series of measures to prevent hospital closure. One relates to the suspension of any lawsuit against the hospital product of malpractice or labour rights leading to asset embargoes. This measure guarantees the hospital's cash flow does not get affected by these legal obligations and it can deliver services.” (IntS_Hospital_senior_management_representative_N3)

What the activities achieve to address challenges. Row 3 in Model 5.5 and the quotes cited illustrate what the activities achieve to address the hospital challenges with service delivery and continue its services. The hospital management working to fulfil the Supersalud mandate to pay suppliers' debt helps to improve its credibility among such actors, thereby facilitating the flow of products to repair equipment and infrastructure. The Supersalud activities to monitor hospital management help the hospital to better comply with compulsory service provision standards and provide routine services with improved clinical and managerial practices. Lastly, the intervention freezing legal actions against the hospital helps prevent its closure.

The response limitations. The Supersalud intervention is a transitory process until the hospital improves its financial position. After the intervention local authorities will regain control of the hospital, becoming uncertain whether they can commit to make the hospital continue fulfil its debt, its legal obligations, and compliance with standards.

5) Collaboration with voluntary groups to address challenges

This response helps the hospital address challenges related to its compliance with regulations and procedures during its operations.

The capacities behind the response. Model 5.5 shows all the capacities the response used to face the hospital financial challenges are valid to address health service delivery challenges⁴⁸. This occasion, however, the response includes an extra contextual capacity related to the hospital's patients' advocacy group. A participant described the group and its purpose this way:

“Our work ... in the hospital, which is voluntary, seeks that patients receive the best treatment needed to recover. Also, we find ways how hospital staff can pay more attention to patients, that the food is adequate, and patients are treated well...” (IntS_Hospital_Process_Leader_14).

The patients' advocacy group works in tandem with the voluntary oversight organisation to help the hospital address service delivery challenges. The next paragraphs will give insights.

The response mechanisms or activities. The voluntary oversight organisation, along with the hospital's patients' advocacy group, audit the hospital services and processes to recognise service weakness and patients' complaints. Participants gave the following comments on their work:

“Well, we visit the clinical services to see if the hospital is taking good care of patients. If the nurses are fulfilling their duty as doctors request it. We see how the delivery of medicines to the patients is, the supplies... if workers have the necessary implements to work... We look to the hospital bedsheets to see if they are in good shape. We confirm if the toilets are operating and clean, and then we get to the administrative processes... particularly procurement and finances. We ask about labour lawsuits and how the debt conciliation processes with the insurance companies are” (ExtS_HSS_Vol_1)”

“In my work, what I usually do is to visit all hospital floors and talk with patients. The first thing I ask them is, how the treatment has been? Do the doctors treat you

⁴⁸ Section 5.2.1. explained the response capacities are the following. The cognitive capacity corresponds to volunteer organisations recognising the challenges the hospital or its personnel faced to operate in the area. The behavioural capacity corresponded to the voluntary organisations engaging in discussions with hospital managers or the community to identify hospital challenges. And finally, these contextual capacities were fundamental to address challenges: i) the volunteer oversight organisation, ii) the volunteers' income to conduct monitoring activities, and iii) the security in the area for volunteers to work.

well? How the medications have been? how is the food? [...] We also look if medications are available (IntS_Hospital_Process_Leader_14)”

What the mechanisms achieve to address the challenges. The activities help the hospital management identify key issues affecting its provision of services, establish measures to correct them, and in time, it is expected that service delivery aligns with compulsory operating standards. The following remarks give insights:

“We arrive to see what the issues with the service are and we discuss such issues with the managers and say, look this isn't working the way it should, these are the complaints, or this is what we see... then we ask them, what you propose to improve this? And they outline different measures they commit to do [...] Nowadays, the hospital with its CEO has been improving its services and complies with basic requirements...this is the case because we verify whether commitments on improvements are being fulfilled and which remain” (ExtS_HSS_Vol_1)

The response limitations. The same limitations the response had to manage challenges with hospital finances, leadership and governance, and hospital workforce apply to address service delivery challenges. Briefly, such limitations entailed the volunteers' financial constraints to do their support activities and the lack of safety for such people to do their work.

6) Managerial activities to address challenges

Finally, Hospital San Andrés ESE has relied on hospital managerial activities to deal with the routine challenges of constant meetings and excessive reporting.

Capacities behind the response. Some of the capacities shown in Row 5 of Model 5.5, particularly the cognitive capacity, were already discussed in earlier sections (For example, visit Sections 5.2.3 or 5.2.4 for details) as they are crucial for the hospital to address other problems. Still, the response in this occasion evolves and includes additional cognitive, behavioural, and contextual capacities to address challenges. Regarding the extra cognitive capacities, they entail the ability of hospital staff, mainly managers, to use technological tools like smartphones along with managerial resourcefulness, which means the capacity of hospital managers to find ways to overcome difficulties in a quick manner. The “new” behavioural capacities correspond to

effective communication from hospital management to workers, so the latter interiorise the value of repetitive activities to improve hospital performance, in addition to the ability of managers to gather and organise information to monitor hospital activities. Finally, an extra contextual capacity to include here relates to hospital managers planning skills, which was discussed before (Section 5.2.3) and reintroduced here as they play a role to standardise and synthesise hospital information and tasks.

The response mechanisms or activities. Row 4 in Model 5.5 provides information of the different activities the response relies on to face the challenges using the capacities outlined above. First, hospital staff, particularly managers, have begun to use their mobile phones to communicate with personnel through chat groups using telephone applications like WhatsApp. This activity has helped to reduce the number of physical meetings, allows to address issues of concern faster, and frees time for personnel to better attend patient demands. Meanwhile, Supersalud's appointed CEO and his team have worked to interiorise in staff the importance of reports to improve hospital performance and standardise their production to make this activity tolerable for workers over time. Participants provided the following remarks on both measures.

"We have setup WhatsApp groups for [hospital] services where we remind of concerns and talk about them faster. Through this way we also keep informed on tasks, we provide feedback on issues, or even we give temporary solutions [to circumstances] allowing us to have more time to attend patients" (IntS_Hospital_process_leader_7)

"P2: We undertake internal reports on a weekly and monthly basis on common indicators... and we share the information within the hospital to see how we can improve processes. P1: And are those reports time consuming? P2: Not really, because the hospital has established a standardised methodology for their development, and we tried to let people understand their value to improve performance (IntS_Hospital_process_leader_7)

What the activities achieve to address the challenges. The use of chat groups through communication technologies allows hospital staff to rely less on meetings that require physical presence to discuss issues of concern and communicate them faster for a prompt resolution. Meanwhile, the interiorisation and standardisation of reports allows the hospital to meet the demand for such documents when required (See Row 3, Model 5.5).

The response limitations. Despite the response benefits to address the challenges, it can create difficulties particularly on staff's working time. This research encountered that the instant message technologies and certain reporting created extra work, and, in some cases, it was necessary to address many hospital issues from home. Participants provided details:

"We usually worked until 4 o'clock and from that time all workers begin to leave. However, those that came as part of the intervention process, we have to use phone messages to request information to workers in extra working hours... simply there is a lot of work as the hospital and control agencies request information constantly (IntS_Hospital_process_leader_12)"

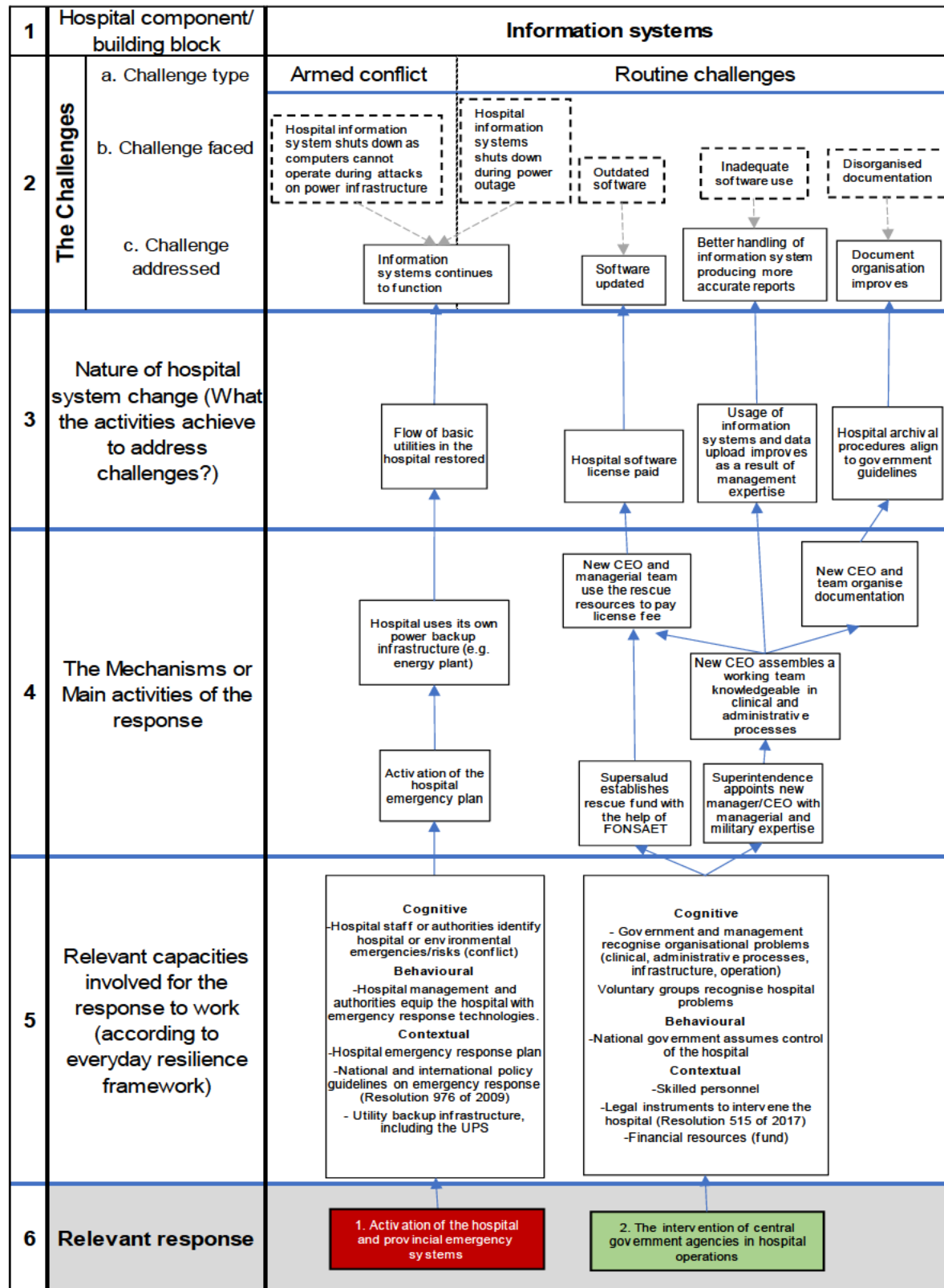
Another problem corresponds to the poor telecommunications in Tumaco which at times does not help hospital personnel to contact co-workers through chats groups.

Overall, the hospital managerial activities and skills have been key elements for the facility to mitigate challenges. The main shortcoming with the response is that relies on hospital managers who may not work for the hospital in the long run as they will mainly serve for the time Supersalud intervention on the hospital lasts.

5.2.6. RESPONDING TO THE INFORMATION SYSTEMS CHALLENGES

Model 5.6 (next page) presents the challenges the hospital faces with information systems and the different responses.

Model 5.6 The hospital responses to information system challenges



The challenges faced. Model 5.6 shows both the armed conflict and routine challenges affecting hospital information system. The armed conflict challenges entail the shutdown of hospital information system product of power outages caused by conflict events that destroy electrical infrastructure.

The routine challenges the hospital faces with its information system entailed outdated software to handle the hospital's information needs, inadequate upload of information by hospital staff leading to misinformation and lack of data traceability, disorganisation with the hospital's physical documentation, and system shutdown due to short-circuits or overloads with the electrical grid.

Key responses. The hospital uses the following responses to address the challenges to sustain service delivery.

- 1) Activation of the hospital and provincial emergency systems.
- 2) The intervention of central government agencies in hospital operations.

Subsequently, it is explained how each response helps to address challenges.

1) Activation of the hospital and provincial emergency systems

Again, this response plays a key role for the hospital to address challenges.

The capacities behind the response. Previous sections discussing how the response addresses challenges in medical supplies and service delivery explain the cognitive, behavioural, and contextual capacities shown in Model 5.6⁴⁹. Still, the response evolves and includes a contextual capacity related to availability of uninterruptible power supply units (UPS) to provide continuous electricity to computers.

The response mechanisms or activities. Section 5.2.5. mentioned the hospital emergency plan — particularly its electric plant — allows the facility to handle electrical

⁴⁹ Briefly reiterating the capacities, the cognitive capacity involves the ability of hospital management to identify hospital or environmental risks. The behavioural capacity are the measures authorities and hospital management do to equip the hospital with emergency response systems like electric plants. The contextual capacities correspond to the existence of policies requiring the hospital to design an emergency response plan, the document containing the hospital emergency plan, and the equipment facilitating access to utilities during rations. The equipment includes the hospital electric plant, and extra elements called uninterruptible power supply units (UPS).

outages product of conflict or routine events like attacks on electrical towers or short-circuits. Now, the same equipment allows the hospital to keep its information system operating when power rations occur. On top of the electric plant, the hospital has 10 UPS to guarantee power to computer systems during outage. Participants manifested the following on these systems:

“As soon as the electricity goes away, we turn to our electric plant to make our computers get back on running again [...] meanwhile, special computers, like the server handling the X-ray information and its operating system, continue to receive continuous electricity for some time through the UPS.”
(IntS_Hospital_process_leader_1)

What the activities achieve to address the challenges. The participant remarks illustrated above show what the activity achieves to address the challenges as portrayed in Model 5.6. Basically, the hospital’s electrical backup infrastructure restores the electricity flow, thereby allowing the information systems continuous operation during outages.

The response limitations. The main limitation of the response concerns to the lack of immediate electricity supply to the devices that house the hospital information system. This causes sudden deletion of information or even renders the computers managing the information system inoperative. Similarly, only a handful of computer servers housing the hospital information system have UPS support. Such devices can also break down during power outage not being sufficient reliable for electricity backup. Participants gave details:

“The UPS, as any other electric equipment, can burn during outage so they are not a complete guarantee they can provide electricity backup for the servers, thus our servers can fully shutdown or burn” (IntS_Hospital_process_leader_1)

2) Intervention of central government agencies in hospital operations

Lastly, Model 5.6 shows the Supersalud intervention response helps once more to manage challenges, particularly routine issues affecting the hospital information system.

The capacities behind the response. Model 5.6 shows the response relies on the same capacities discussed in section 5.2.1. when the initiative helped addressing financial challenges⁵⁰.

The response mechanisms or activities. The previously discussed activities the Supersalud undertook to help the hospital operations such as appointing a new CEO and establishing a rescue fund,⁵¹ led to other key activities to face the information system challenges. These activities were: paying the information system license fee to upgrade the software, undertaking better handling of hospital information, and the new hospital team organising the physical documentation. The participants gave details:

“When the controller [and his team] arrived at the hospital, his administration had to make the hospital operate with current accounting norms. Thus, he updated the software to begin the process of organising the financial [and clinical] information” (Obs_FrHSem_Ac_1)

“We assembled a group of assistants that could help us organise the hospital documentation to fulfil archival guidelines. Unfortunately, the hospital has endured a significant deficit on this regard” (IntS_Hospital_process_leader_4)

“Our work has consisted of improving the handling of data within the hospital information system... particularly financial data. We are updating the service prices and making all debt information as accurate as it can be (IntS_Hospital_process_leader_2)

What the activities achieve to address challenges. The quotes above and Model 5.6, Row 3 show what the response activities achieve to address challenges. The activities help the hospital to update the information system, enhance system handling and data upload, and organise the hospital’s physical documentation.

The response limitations. As mentioned elsewhere in this chapter, the main issue concerns to the transitory nature of Supersalud intervention in hospital activities.

⁵⁰ Summarising the capacities, they are as follows. The cognitive capacity entails the ability of central government agencies, particularly Supersalud, and volunteer organisations to recognise the hospital faced clinical and administrative challenges. The behavioural capacity involved the national government assuming direct control of the hospital through producing a legal document or resolution. The contextual capacities corresponded to three elements i) the availability of skilled personnel in hospital management that Supersalud could hire to manage the hospital, ii) the legal instrument to intervene the hospital, and iii) financial resources facilitated to hospital management through the rescue fund.

⁵¹ Section 5.2.1 provided a detailed explanation of these activities.

Once Supersalud finishes its duty to manage the hospital, there is a risk the progress made with its management of the information system may not continue.

5.3. CONCLUSION

This chapter focused to study how the hospital responds to the challenges faced in a protracted conflict setting to sustain health care delivery. The following are the main lessons from such analysis.

The hospital relies on significant support of third parties to address the armed conflict and routine challenges. Those supporting actors can be part of the health system or other social sectors such as non-profit organisations or volunteers.

The hospital response to challenges entails a diverse range of activities between the hospital and supporting actors that rely on availability of large number of capacities to be possible. The capacities range from soft to hard resources. For example, some soft resources include the ability of hospital managers to be aware of the challenges, the accessibility to contacts in other organisations to establish support networks, or the trust supporting actors have with the hospital. Hard resources range from communication systems or the hospital's utility backup infrastructure. Finally, the study revealed the hospital's responses to challenges face shortcomings that need to be addressed.

The next chapter will explain what needs to improve to enhance the hospital's response to challenges. Meanwhile, the concluding discussion of the thesis will give details on the different limitations this research encountered when categorising the hospital responses into the ERF strategy categories and reflect on ways on how to improve it.

CHAPTER 6.RESULTS: OPPORTUNITIES FOR IMPROVING THE HOSPITAL RESPONSE TO THE CHALLENGES

Chapters 4 and 5 provided significant details about the challenges Hospital San Andrés ESE faced to sustain health care delivery in the conflict setting of Tumaco, Colombia, and the responses it established to such challenges. This chapter focuses on determining the key areas that research participants considered Hospital San Andrés ESE, authorities in Nariño, and national policymakers in Colombia should focus on to improve the hospital response to the challenges. This chapter helps achieving the third objective of the thesis of determining what participants consider needs to improve for a better hospital response to challenges. The chapter is divided in two sections. The first section delivers the key issues/themes participants considered the hospital and authorities should focus on to enhance the hospital response to the challenges. The following are the key areas for improvement:

- Improving emergency systems.
- Improving the sustainability of the hospital intervention process.
- Strengthening hospital finances.
- Enhancing hospital service delivery.
- Strengthening Hospital Staff.
- Improving hospital networking.
- Strengthening the work of voluntary and humanitarian organisations.
- Strengthening hospital capabilities to structure investment projects.

Most of the issues just mentioned for improvement help to overcome several of the limitations chapter five identified with the hospital responses to the challenges. The second section concludes the chapter.

6.1. THE OPPORTUNITIES FOR IMPROVEMENT

6.1.1. IMPROVING THE EMERGENCY SYSTEMS

Chapter 5 revealed the emergency systems at the hospital and the provincial levels are crucial elements for Hospital San Andrés ESE to respond to armed conflict and routine challenges. The emergency systems, as informed in Chapter 5, are integrated by two

elements: the activities or processes authorities use to face the challenges and a series of capacities and resources that facilitate the response process. There are several elements of these components that authorities at provincial and local level should improve to enhance the emergency systems capabilities to address challenges. Such elements are referred below.

Issues to improve with the emergency systems activities.

Some of the activities described in Chapter 5 undertaken by the provincial government of Nariño to help Hospital San Andrés ESE during conflict challenges are based on dispositions established in Law 1448 of 2011, intended to assist and compensate victims of Colombia's armed conflict (Congreso de Colombia, 2011b). Through this law, the government has created "action routes" to help individual citizens during conflict challenges (e.g., death threats) and assigned local and national Security Councils the role to lead the response to such crises. Yet, there are key limitations with this framework. First, it has not incentivised authorities in Nariño to document the activities or the action route established to help social organisations like hospitals cope with conflict challenges. Second, the action routes are not included within Colombia's risk management and emergency response system despite conflict events being considered emergencies requiring immediate action. More details on these problems are provided next.

Chapter 5 mentioned that a key limitation of the emergency system was the lack of formality of the actions authorities rely on to address conflict challenges. This problem what mainly creates is that lack of uniformity of authorities' activities to respond to conflict stressors over time. Participants for this research mentioned this issue mainly relates to the absence of a national mandate within the victims' law or the national system for risk management for decentralised governments to document the measures used to manage conflict events. These remarks give details.

"Unfortunately, if you see the Colombian risk management system does not require the analysis of conflict issues. It's mainly focused on natural disasters⁵² [...] and the victims law focuses to assist citizens at the individual level only...In a country

⁵² The law Governing the National System for risk management is the 1523 of 2012 (Congreso de Colombia, 2012).

where the conflict is eminent, local governments, the mayors, or governors, do not manage conflict risks and don't document their response because the legal framework of emergency response does not require it⁵³. So, the response to such events is mainly based on authority's perception on how to best handle the crises" (ExtS_GovProv_1)

Informants for this research opined local authorities should formalise the activities within a document to facilitate the knowledge on how to endure such crises for all actors involved. These remarks give insights:

"In my opinion, as someone who has worked closely on the issue of emergency response at the provincial level, I would think it is necessary to put into a document all those activities we undertake to help the community and organisations in Tumaco to face the [conflict] crises. These activities should be written and included within the emergency response system just like all the activities we do to attend natural or public health crises. Unfortunately, this has not been done yet even though the province has established a modus operandi on how to face conflict events. With the document, new administrations as well as the hospital can understand what to do during those moments" (ExtS_HSS_Prov_4)

To formalise the government emergency response activities an interviewee considered that politicians had to play a more decisive role in transforming such system. The interviewee suggested that politicians representing Nariño and other conflict-affected territories, should legally reconfigure Colombia's system for risk management and emergency response to help facilities like hospitals manage conflict problems. For the participant, the country's emergency system should handle any type of crises including those of armed conflict. These remarks give insights:

"Lawmakers should, perhaps, think to establish a hybrid or overall system that manages and responds to all crises. We already have a situation like this, but it is not formal. For instance, authorities currently use resources destined to face natural-related disasters like the fire department to assist the community and individuals during conflict crises. So, making a system that can face all types of crises will require [government authorities] to establish procedures on how to handle each event. This can provide clarity for the management of these crises and bolster the institutional response to these events that frequently affect our territory. Of course, this system must also bear in mind international humanitarian law when developing measures to handle conflict crises" (Obs_Govemp_2)

⁵³ The Colombian Ombudsman Office also discovered the Country's Risk Management System has a legal gap that does not incentivise authorities to establish procedures to encounter large conflict events affecting communities (Defensoría del Pueblo, 2020).

According to the participant, the reconfiguration of the risk management and emergency response system to attend all types of crises is a good idea because authorities already use resources destined to attend natural disasters during conflict crises (e.g., use the fire department to help the hospital during conflict-related water rations). Additionally, the reconfiguration of the country's emergency response system will clarify the activities to be undertaken in all crises as it will lead to the design of documents that inform actors on how to face specific emergency events. Finally, the participant considered crucial that this new emergency response system should be mindful of international humanitarian law to adequately meet conflict crises.

Through the formalisation of activities to endure conflict crises, the Colombian government would follow the steps of other conflict settings like the West Bank to establish best practice guidelines for handling these crises (UNDAC, 2014). Similarly, the government shows to the international community its willingness to recognise that in Colombia exists an armed conflict and it is committed to handle its crises in the best way possible, particularly when they affect key social organisations like hospitals.

Still, participants who consider important the development of documents to guide the emergency response to conflict crises, also manifested it is crucial that provincial and municipal authorities must assign financial resources to develop the activities. Interviewees stated the documents formalising emergency response activities become impractical without proper funding. These remarks give details:

“It is important that both the municipality and the province destine a specific budget for the risk management and response for these type of events. This is the way how you put into motion all the activities authorities plan to assume during these crises, otherwise is useless doing all that work” (ExtS_GovProv_1)

Lastly, participants for this study considered that as soon as the provincial government activities are formalised, the government must provide significant information to the community about them and specifically Hospital San Andrés ESE. This can help improve clarity on what authorities do to mitigate the effects of conflict events to the hospital and staff can positively contribute to the development of such activities. The following remarks give details:

“Even at this moment when the government still has not developed the documents to formalise the activities to help hospitals during conflict events, they do not inform what they do in such situation. Usually, people do not know what occurs because government authorities do not share any information about their work. So, if they formalise the activities, they should actively share such information. This type of knowledge must be socialised to know what they (authorities) do and how we can help” (IntS_Hospital_process_leader_5)

All in all, participants considered important that authorities should document their activities when they help Hospital San Andrés ESE respond to conflict challenges. Yet, the documentation of activities must be undertaken within the context of reconfiguring the country’s system for risk management and emergency response along with active government funding and communication of the activities.

Enhancing the emergency system capacities

On top of formalising response activities, participants for this study mentioned that government authorities and the hospital should assume important investments to strengthen the emergency systems capacities for a better response to challenges. This subsection will outline what participants think authorities and the hospital can do to improve the capacities.

The authorities’ measures

Participants for this study considered that government authorities can do several activities to enhance the capacities of the emergency systems allowing Hospital San Andrés ESE face challenges. Some measures to improve the emergency system can be undertaken by the province of Nariño or the municipality of Tumaco on their own, others require the collaborative work across government levels. More details about the provincial, municipal, and cross collaborative work to improve the emergency system capacities are below.

Provincial measures. Participants for this study mentioned that Nariño’s provincial authorities can, on their own, conduct the following key activities to strengthen the emergency response capacities to aid Hospital San Andrés ESE during conflict crises: 1) Improve the technological capabilities of the Security Council, 2) Strengthen the CRUE office capabilities, and 3) Expand the availability of helicopter transport.

The first measure corresponds to authorities enhancing the telecommunication systems across the province, particularly Tumaco and in the room/area where the security council meets. This study evidenced telephone and internet communication is vital for the Security Council as it helps to assess from Pasto how conflict events in Tumaco affect the community and Hospital San Andrés ESE. Similarly, communication systems such as telephone and internet allow the council to contact different government and non-governmental actors to obtain support and coordinate actions to help the hospital during conflict events. Thus, participants considered fundamental that communication systems, particularly in Tumaco, must be modernised to enhance the response to challenges as they are usually unreliable making the communication process difficult. The following participant remarks give details.

“P1: what actually can be done to improve the security council meeting process? P2: Considering how isolated Tumaco and its surrounding areas are, I think it is important and necessary to improve communication systems in the province and specifically in Tumaco. This can enhance the timeliness for the security council to receive information and handle those crises, as currently such systems are in poor state” (ExtS_GovProv_4)

Relatedly, participants for this study considered that it would be important that the communication infrastructure within the areas the council meets should be enhanced. Such enhancements can importantly aid the council response to conflict events. Participants gave insights:

“P1: When the Security Council met, the meeting rooms are equipped with high communication elements, or no? P2: No, not at all. P1: Must this improve? P2: Certainly, it must improve. Those rooms need an important communications upgrade so we can communicate faster with the people there (in Tumaco) and contact right away the help needed during those events...but also it is necessary to upgrade the communication infrastructure in Tumaco itself so the contact can be possible” (ExtS_HSS_Prov_4)

Hence, provincial authorities investing in communication technologies both at the provincial level, including the municipality of Tumaco, and within the rooms where the Security Council meets, can importantly strengthen the council’s capacity to receive information to attend conflict emergencies.

A second key activity provincial authorities should do to enhance the emergency system capacities to face conflict challenges corresponds to upgrading the CRUE office.

Chapter 5 mentioned the CRUE, which is an operative office located in Pasto, has been crucial allowing Hospital San Andrés ESE cope with challenges. This office, for instance, has helped the hospital contact the Security Council when conflict events affect the transit of supplies or obtains security for hospital staff enduring death threats. Similarly, this office helps the hospital to connect with other health facilities to refer patients when telecommunications services fail. Participants mentioned provincial authorities could do the following to improve CRUE and strengthen its activities.

“P1: And to better respond to crises, what do you think could be improved immediately regarding emergency response to Hospital San Andrés ESE?”

P2: Well, there are several things that can be improved. For example, the CRUE only has three doctors and four people undertaking radio communication for the entire province. Given the amount of work staff must handle, they can only attend emergency calls. It is difficult for the CRUE to do fieldwork activities more actively as our personnel is not enough.

P1: and fieldwork is to go to the crises sites and inspect them I imagine...

P2: Exactly, reaching the site of the event, looking at the conditions on how the situation is. In case of patients’ referrals, inspect if patients are rightly medicated or the hospital ambulances have the adequate tools, or how an armed strike affects the road...well several things...

P1: and within the CRUE office what can be enhanced?”

P2: the CRUE communication equipment such as radio and video must be upgraded to receive and analyse information faster and get in contact with the people in Tumaco. But I consider that we need an office there [Tumaco] to better coordinate our support for health organisations when they need it. This office should have access to a helipad and speed boats to facilitate the referral of patients or supplies when needed. (ExtS_HSS_Prov_4)

The same participant also mentioned the following must be improved with this office.

“The [CRUE’s] situation room, where authorities meet to assess crises, should be upgraded with modern audio-visual communication technologies. Look, there is a project proposal from the municipality of Pasto which recommends that the provincial CRUE office should be established in an independent area and estimates an investment of around 2 billion pesos (Approximately USD\$700 thousand). This can enhance the situation room allowing us satellite communication in isolated areas and monitor Nariño’s territory in real time. Additionally, the project proposal includes other perks which is the design of a vault to store supplies or international aid to support organisations or the community during crises. These later elements are also important as currently we do not have

a proper space to store supplies. So, I believe a project like this, if made real, it will certainly help us a lot. (ExtS_HSS_Prov_4)

From the quote presented above, it is possible to evidence that authorities have already thought on how to improve the CRUE operations. Hence, the project just mentioned should be considered as something provincial authorities could do to overcome many of the limitations the office has. Similarly, this project can significantly benefit the Security Council meeting process as it contemplates the modernisation of its situation room which is an area the council uses to analyse conflict crises and the response.

Lastly, the participant previously cited also stated that provincial authorities should enhance the contracting of CRUE's personnel. Now, the office relies on independent contractors whose working morale has been negatively affected, as they cannot access to benefits such as career advancement provided to full-time government employees. These remarks give insights:

“The contracting of staff for CRUE has been as independent contractors and this should not be the case. Staff does not receive any type of benefits or compensations and is affecting work morale. Unfortunately, such staff throughout their professional life have been hired just as contractors not having the chance to grow professionally or pursue a civil service career” (ExtS_HSS_Prov_4)

So, there are important activities that decentralised governments must do to improve the CRUE office capabilities to help Hospital San Andrés ESE attend conflict challenges.

The third issue provincial authorities should work on to enhance the emergency systems capacities corresponds to enhance availability in helicopter transport. Chapter 5 revealed helicopter transport has been key for Hospital San Andrés ESE to overcome armed conflict challenges that impede the safe mobilisation of patients and supplies. However, provincial authorities had to go through a complex process with the Ministry of Defence and the military to obtain this transport leading to untimely response to challenges. Considering how important helicopter transport is for Hospital San Andrés ESE, participants for this study mentioned the following about what could be done to improve availability of this service.

“P1: Regarding helicopter transport, what do you think could be done to improve access to this service? P2: Right now, the [central] government assigns aerial transport for Nariño from any free aircraft the military has available across the country, but this process is slow. What the provincial government should do is lobby the central government and obtain exclusive helicopter transport for Nariño to reach the areas affected by conflict the most” (ExtS_GovProv_4)

The exclusive access to helicopter transport for Nariño can help with timeliness to manage conflict challenges affecting Hospital San Andrés ESE.

Municipal measures. Participants for this study considered the municipality of Tumaco should assume the following activities to improve the emergency system capacities that help Hospital San Andrés ESE mitigate challenges: 1) Improve the availability of tanker trucks, 2) Relocate the municipal police station and recruit more personnel, and 3) Improve the municipal radio communication infrastructure.

Participants for this study provided the following comments regarding the first measure:

“Authorities (provincial Security Council) have relied on the municipal fire department [tanker trucks] to obtain water when conflict activities have affected the provision of this resource to health facilities including the hospital. However, those systems are obsolete and too small for the municipality demands. Three or four years ago when we had the great oil spill to water sources, we had to request tanker trucks from Pasto and even from Buenaventura and Ecuador to meet the municipality’s and hospital demands. The problem was the timeliness to get such help. It takes several days. So, it is crucial the municipality can invest in new and larger tanker trucks to supply with fresh water the population and health facilities bearing in mind the conflict risks and our potential needs (Obs_GovEmp_2)”

Hence, municipal investments on new water transport systems can allow local authorities to have more autonomy to address the water needs during armed conflict crises. Similarly, this measure will improve the timeliness in the provision of water to Tumaco’s population and to the hospital during water rations.

Concerning the second measure or the relocation of the police station and the hiring of new staff to assist the hospital during challenges, participants mentioned the following as key actions municipal authorities can do to achieve this.

“The hospital receives police security from the main municipal police station located in the city centre or within the insular area of Tumaco, whereas the hospital is about 22 km away in the continental area. So, the best thing that could be done is to relocate the police station to the continental area of Tumaco, to have good

access to both the city centre and the hospital. This can improve the availability of police services in the zone and their response time during calls for help.” (Obs_GovEmp_2)

“One problem that one encounters is that the security rounds the police undertakes to the hospital are relatively weak. They appear when they want and usually go fast. The police mentions that they cannot do continuous surveillance rounds given the lack of personnel. Then, something municipal authorities could do is request [to national authorities] more personnel so the monitoring to the hospital occurs permanently” (ExtS_GovMun_1).

The measures just mentioned can help alleviate the shortcomings this research evidenced in Chapter 5 regarding the police help toward the hospital during conflict crises. Such limitations relate to the police slow response time to hospital calls during conflict events and the lack of continuous surveillance to disincentivise crime.

Finally, participants for this study considered authorities should fix a radio communication system which currently is obsolete on top of the municipal telephone and mobile communications. Participants mentioned the radio system represents a good alternative for the hospital and other entities to connect each other during crises and coordinate responses to such events. These remarks give details:

“Tumaco’s city council and particularly the committee for risks management had a VHF radio communication system that included the hospital in the communication loop giving to it the equipment to gain contact. This system, however, is not working anymore due to lack of maintenance. I think authorities must restore this system as it can be a useful alternative for communicating with other entities during crises. Currently, we are heavily reliant on the internet and mobile communication to connect with organisations. Yet as you may know these communication systems are not reliable in Tumaco, so the hospital and other entities usually do not receive full information about crises or becomes difficult to coordinate [response] activities. So, the radio system can help us mitigate these issues” (ExtS_GovMun_1)

Intergovernmental collaboration. Participants for this study evidenced there are key activities that will significantly improve the emergency response capacities to address challenges but are only possible through collaboration across government authorities. Such collaboration often involves financial aid from high government levels (national and provincial government) to lower government bodies (municipality). The projects that could benefit from this collaborative process are the following: 1) Provide electrical independence to Hospital San Andrés ESE, 2) Establish an independent aqueduct for Hospital San Andrés ESE, and 3) Improve the telecommunication services to the hospital.

Regarding the first project, it is an initiative entailing two measures to guarantee an effective electrical backup to the hospital and avoid significant rations of this service. The first activity allows the hospital to obtain electrical connection from Tumaco's city centre. This effort can improve the timeliness of provisioning electrical backup to the hospital when the main power lines become overloaded or are affected by conflict events. Interviewees mentioned the following on this measure:

“To address in a significant way the electrical problems of the hospital, authorities should secure funding to establish a disconnecter in the middle of the electrical wire extended to the hospital and connect it with a power line coming from the city centre circuit. This can reduce the electrical instability to the hospital especially when the conflict affects electrical infrastructure (ExtS_GovProv_2)”

The second project activity corresponds to establishing a power generating station for the hospital. This can importantly mitigate electricity rations as this service will be solely produced for the facility. Participants stated the following regarding this measure and the help needed from authorities to fund it:

“A project which is absolutely necessary relates to creating a power generating station for the hospital. This is an initiative that requires the national and provincial government support to be possible. Recently, through a new national government programme called Zonas Futuro (Future Zones) the municipality proposed this project for national or provincial funding. This system is essential as we know the hospital cannot face electricity rations as it now does. The power generating station is urgent because the [hospital's] operating rooms and other similar services cannot stop working when the electricity is gone.” (Obs_GovEmp_2)

Concerning the hospital's independent aqueduct system, participants gave the following details.

“P2: given the continuous problems the water company/operator faces to provide this services particularly during conflict-related rations, it is necessary that we can setup our own water sources. That is, with a small plant we can bring from a nearby creek fresh water and treat it, so we have continuous water supply.

P1: So, it is like establishing an aqueduct for the hospital more or less ...

P2: Exactly, that is it. Because the water demands here are significant and we face continuous problems meeting those demands. So, it would be very helpful that authorities could give us a hand in setting up this system. (IntS_Hospital_process_leader_1)

The independent aqueduct project, described in detail above, certainly requires the help of higher authorities particularly at the provincial and the Ministry of Health levels to be possible as it is likely the hospital by itself won't have the resources to make it real. This initiative might be the most relevant measure to guarantee the hospital operative autonomy particularly during water rations.

Finally, participants considered fundamental that government authorities both at the provincial and municipal levels must do collaborative work to lobby telecommunication companies to improve the phone, internet and mobile services delivered to the hospital. Currently, Hospital San Andrés ESE faces poor quality of these services and hinders its capacity to respond to challenges particularly of armed conflict to provide innovative services such as telemedicine. These remarks give insights.

“Well, we have significant issues with the communication services here at the hospital and this is something that does not depend on us, but on telecommunication operators. [...] Recently, we have been considering opening a telemedicine service, but our internet is not powerful enough for the hospital needs. The service operators around this area do not conduct activities to improve the services as they do not see any commercial benefit. This issue also affects us when we are in the middle of a [conflict] emergency as it becomes difficult to contact someone for help. Thus, I think government authorities should talk to operators so they can provide a better service and guarantee tax benefits if needed. Or, instead, they could help us obtain affordable access to alternative telecommunication systems like satellite internet, so we have the services constantly” (IntS_Hospital_process_leader_7)

The activities just presented are initiatives participants considered relevant to bolster the emergency response systems which Hospital San Andrés ESE uses to manage the armed conflict and routine challenges. Still, intergovernmental collaboration is essential for these ideas to become reality.

Hospital initiatives to enhance the emergency system.

Participants considered that Hospital San Andrés ESE through its own resources or requesting financial assistance must assume the activities listed below to strengthen its own organisational emergency systems. Chapter 5 showed that such system was fundamental to address armed conflict challenges.

1. Conduct maintenance to water reservoirs.

2. Conduct maintenance to the electric backup system.

Chapter 5 mentioned the hospital relied on its water reservoirs to handle the ration of this service because of the poor service or conflict activities affecting water supply. Yet, the hospital water storage systems had shortcomings, particularly with maintenance. The hospital has not been able to clean its water reservoirs and repair all the pumps (12 in total) used to distribute the water throughout the facility on a constant basis. This has hampered the hospital capacity to preserve the quality of the water for human consumption and its delivery. By the time of writing this thesis, participants mentioned the following on how these issues could be addressed:

“From the hospital side it is important we can improve the maintenance for our water storage tanks and the pumps. Just recently we managed to clean and disinfect some of the tanks after several years, and 8 pumps have become operational to some extent. Yet, this year is going to be difficult. So, it is necessary the hospital could assign [financial] resources to conduct these tasks on a yearly basis. And even consider a budget to replace most of the tanks” (IntS_Hospital_process_leader_1)

Hence, it is vital the hospital destines financial resources specifically to clean or replace its water reserves and continuously repair the pumps used to irrigate the water as these facilitate continuous access to this service. This is essential for the hospital because it helps to clean the facilities, patients, and conduct clinical processes.

Regarding the hospital electrical backup systems, Chapter 5 illustrated how the hospital relied on power plants and uninterruptible power stations (UPS) during electricity rations product of routine or armed conflict challenges. The main problems with these systems mainly correspond to the lack of maintenance the main power plant had that led the hospital to rely on a less powerful machine. Similarly, the UPS often broke down because of overvoltage occurring during electricity rations and restoral. By the time of writing this chapter, the hospital had undertaken certain repairs to these backup systems, yet participants consider such repairs must continue. These remarks give details.

P2: The important thing to do is that maintenance to electrical backup systems can be done on a constant basis [...] Recently we did some work to repair the hospital’s main electric plant. The hospital should continue its maintenance of this machine and we are trying to setup the automatic energy transfer system...

P1: Is the system which the hospital receives instant electricity from the power plants?

P2: Yes, it is. This system will connect the backup power plant also, so when the main plant has issues the backup unit continues to provide power to the hospital.

P1: and the UPS?

P2: Recently we did maintenance of those. The hospital should continue this trend of repairing the backup electrical equipment and should buy a new UPS machine to better protect computer equipment at the administrative area housing the information system. (IntS_Hospital_process_leader_1)

So, the most crucial activities the hospital can do to strengthen the emergency systems for an effective response to challenges, mainly corresponds to continuous maintenance of systems that provide electrical and water backup.

6.1.2. IMPROVE THE SUSTAINABILITY OF THE HOSPITAL INTERVENTION PROCESS

Chapter 5 mentioned Supersalud intervention process in Hospital San Andrés ESE, despite being an initiative that reduces hospital autonomy, it has been valuable for the facility to respond to conflict and routine challenges. The initiative has introduced order to hospital processes, improved its revenue, increased motivation of staff, and enabled senior management to handle the conflict-related problems given the military expertise of the person leading the process.

However, the main difficulty concerning the intervention relates to its continuity in time. Supersalud will step aside from operating Hospital San Andrés ESE until it restores financial balance to the hospital and meets all operating requirements. Participants for this study mentioned that hospital workers and users doubt on whether the benefits of the intervention could be sustained in time once Supersalud relinquishes control of the facility to provincial authorities. The following comments give insights:

“Well, the same hospital users and its workers are talking to us [Supersalud] saying ‘please do not return back the governance of the hospital to the provincial government’ because the progress we have made has shown that services can be delivered with decent quality. But knowing that we will return the hospital to the provincial authority this has led certain people, particularly hospital staff, to feel uncertain on what is going to happen with the hospital next. Workers already consider that when Supersalud hands over the hospital to the provincial authority

the organisation will become the treasure of any politician, and all those problems of bureaucracy, contracts and corruption will arise again” (ExtS_HSS_Nat_1)

Even the hospital staff who opposed the intervention process have been reconsidering their opinion on this activity as they have witnessed benefits of this programme particularly the timely salary payments. Some remarks are as follows.

“Well, the trade union, which has been sceptical on the intervention process, nowadays, you ask me who does not want the intervention to end, they are one of them! They have become more approving of the intervention measures as they have seen improvements in salary payments” (ExtS_HSS_Nat_1)

Additionally, Chapter 5 revealed the support Supersalud gave to the hospital with financial and technical resources has been largely positive for the facility to improve its performance. These resources have allowed the hospital to comply with compulsory service standards leading to safer care, and to fully meet financial commitments.

Given the positive results of the Supersalud intervention process on hospital operations, now the key question that arises concerns on how all the progress this measure has achieved could be sustained. For some interviewees, Supersalud should continue to do this activity indefinitely. They suggest this measure must be established as a system to govern hospitals in socially convoluted areas of Colombia like Tumaco to keep good hospital performance. These comments elucidate this.

“I believe the intervention processes on hospitals should become a permanent system of oversight for facilities operating in areas like Tumaco, so these institutions keep good work. With the experience of Hospital San Andrés ESE and other facilities operating in similar contexts, it has been observed these hospitals need more help to oversee activities given the institutional weakness of the regions they serve” (IntS_Hospital_senior_management_representative_3)

Nevertheless, participants who represented Supersalud for this study mentioned they cannot do this activity indefinitely product of resource constraints and the importance of hospital autonomy in creating resource management awareness. These remarks give details.

“The intervention measures are not an open-ended measure as it would be difficult to manage all these organisations given the different activities and scarce personnel the Supersalud has. Basically, we guarantee stability to the hospital and return its governance back to local authorities [...] so the hospital can ‘fly own its

own' so to speak. This is important because makes them conscious of resources used to provide care" (ExtS_HSS_Nat_1)

The same participant mentioned that perhaps, a good way to keep the positive performance of the hospital after Supersalud returns control of its operations is to legally require local governments to continue Supersalud's managerial practices. These remarks give details.

"We have established parameters of transparency in managing the hospital and the local government should be obliged through legal mechanisms to continue with these good practices. This, I believe, can help with the continuity of our work" (ExtS_HSS_Nat_1)

By the time of writing this thesis, Supersalud is considering whether to continue or not its intervention of Hospital San Andrés ESE as the organisation has achieved key breakthroughs regarding financial stability and the meeting of quality standards. Yet, some participants consider that this decision might be premature, as still there is a lot of work to be done particularly with the reduction of hospital debt. Participants gave details.

"Even though we have undertaken important work to improve the provision of services, there are issues not fully addressed. One relates to hospital liabilities. It is still a high debt despite our measures to reduce it as much as possible. The hospital still owes 16 billion pesos (about \$4.4 million USD) to third parties. Right now, this high liability is one of the hospital's key weaknesses. The other issue relates to accounts receivable which have not been collected. A significant amount of money is owed [from insurers] to the hospital and we are working to collect as much of it as we can. So, there is a lot of work left" (IntS_Hospital_process_leader_2)

Regardless of what is the final decision from Supersalud on continuing or not the intervention process, a participant mentioned the following about what ought to be the administration of Hospital San Andrés ESE whether during the intervention or when the governance of the organisation is handed over to provincial authorities.

"The hospital needs a technical and not a political administration. The hospital fell into an intervention due to bad management driven by political interests. The hospital was managed to fulfil different interests, often of political actors, unrelated to its core purpose or the provision of good care. So, this cannot happen again. The administration must be transparent as currently is and this must continue when the intervention finishes" (IntS_Hospital_process_leader_2)

So, study participants consider the hospital can manage challenges and sustain delivery of services if management embraces transparency for doing its work. Still, from the participants' accounts it is also relevant to say that Colombian authorities should consider an alternative way to govern hospitals operating in conflict-affected areas. It is arguable that more direct management from central government authorities enables hospitals to meet operating challenges and deliver good care. This is especially demonstratable in areas like Tumaco where oversight and accountability systems for these organisations are relatively weak.

6.1.3. STRENGTHENING HOSPITAL FINANCES

The previous chapters of this thesis have shown the hospital endures substantial financial constraints creating multiple problems in hospital operations. The financial constraints have led the facility unable to meet obligations with suppliers or employees and guarantee adequate maintenance. Chapter 5 showed the hospital has used different measures to respond to the financial constraints. Some of those measures entail the hospital intervention process which organises financial processes and injects liquidity to the hospital to meet financial obligations, the improvement of debt collection activities, and engage in contact with government actors to accelerate insurers' payments.

Despite the different activities undertaken by the hospital to ameliorate its financial problems, still the problem is too large and has not received a comprehensive solution. Some participants mentioned that to improve hospital finances in a more decisive manner the government must completely change or reform the insurance system. These remarks give insights.

*“The EPS owe a lot of money to hospitals including the San Andrés [...] they set different obstacles to pay providers for the services delivered. Always in the meetings I have participated at the national level [with health authorities] I have said that the government must end the EPSs. They were a huge mistake!”
(ExtS_HSS_Vol_1)”*

Complementing the comments above, other participants manifested the insurance system does not guarantee sustainability for hospitals particularly operating in conflict-affected areas like Tumaco which are highly rural.

“P2: Perhaps, there was a misunderstanding when the EPSs were created to pay for hospital services. This works relatively well in urban areas but, unfortunately, in rural sectors like Tumaco I think it was a mistake...P1: really, why? ...P2: I think it is difficult for the EPS to have a large population of enrolees in Tumaco so the hospital can be self-sustainable by selling services to such entities” (ExtS_HSS_Prov_4).

Still, other participants consider the complete change of the insurance system is, perhaps, a too radical approach to tackle the financial constraints Colombian hospitals and, particularly, Hospital San Andrés ESE face. These comments enlighten this situation.

“Changing the entire [insurance] system at the moment may lead to more financial woes in the short term for hospitals and they could lose valuable knowledge and expertise gained over the years with the system we currently have” (Obs_FrHSem_Ac_1)

The participants also are aware that reforming the current system is a solution that may not come to fruition any time soon as it may require significant political will. Hence, to significantly improve Hospital San Andrés ESE finances in the short term some participants considered the following measures could be undertaken within the context of Colombia’s current insurance model.

1. Improve the monitoring of payments by health insurers to the hospital.
2. Guarantee the EPS pay to the hospital the preferential tariffs the government established to reimburse providers operating in conflict-affected areas.
3. The hospital must innovate its contracting models with insurers.
4. Improve the work oversight agencies do to monitor health insurers.
5. Continue Supersalud’s policy of transparent management within the hospital.

Concerning the first measure, certain participants consider the need of a more active role of government authorities to monitor insurers payments to the hospital. These remarks provide information.

“Unfortunately, authorities have not established a well-defined system to monitor the different payments of the EPS to the hospital. Today, one reports the payments to the Supersalud itemising what insurers pay or not to the hospital. But, thereafter, government institutions do not delve deeper in understanding why insurers do not pay or why they take so long. So, there is need to establish a well-defined system

to monitor payments as it can improve our liquidity” (IntS_Hospital_senior_management_representative_1)

The previous participant also commented that insurers should prioritise the payment of hospitals operating in conflict areas because they must have sufficient financial and in-kind resources to cope with the complexity of such settings. The participant said the following.

“I believe the government should establish some sort of preferential treatment when EPS pay for hospitals providing services in areas like Tumaco embroiled in conflict. This can help us to be more effective at meeting the [health] demands of these territories.” (IntS_Hospital_senior_management_representative_1)

Thus, improving the government’s role to monitor insurers’ payments to hospitals and prioritise payments for hospitals serving conflict zones can be a step to mitigate financial constraints and have enough resources to meet the challenges.

Regarding the second measure, a participant mentioned Hospital San Andrés ESE can significantly improve its finances if insurers are required to pay the preferential prices the government established for reimbursing hospital services in conflict areas. Unfortunately, the province of Nariño is still not included in such preferential treatment for the payment of hospital services despite the significant conflict affecting the province. These remarks give details.

“The government in previous decrees⁵⁴ established preferential tariffs for hospitals operating in conflict setting. This, mandate unfortunately, does not cover Tumaco as it can help us to importantly increase revenue as certain procedures receive between 15 to 25% increase in price” (IntS_Hospital_process_leader_4)

Hence, hospital revenue can be importantly enhanced in the short term if authorities require insurers to pay the hospital the tariffs for operating in conflict areas.

Concerning the third measure, participants for this study considered the hospital can improve its liquidity by developing with insurers innovative contracts for service delivery. For example, the hospital can engage in prospective contracting with insurers.⁵⁵

⁵⁴ Decree 2423 of 1996 (Presidencia de Colombia, 1996).

⁵⁵ Prospective contracting involves the hospital selling its services through treatment packages. This type of contracting model requires the hospital to assume some financial risks as it is impossible to completely foresee all the medical procedures that a patient might need during a medical intervention. This type of

Interviewees considered this can help the hospital deliver more services and increase revenue. These remarks deliver insights.

“The contracting model with Tumaco’s hospital is by event. They never wanted to incur in contracts where they can assume some risk to deliver care. For example, it has been impossible to contract services based on prospective models. They have kept doing retrospective models of billing or invoicing. This has not incentivised us to hire more services with the hospital and it is something that can improve its income” (ExtS_HSS_Ins_1).”

Consequently, the hospital should explore new ways to contract with insurers as the organisation could hire more hospital services and enhance revenue. The financial and clinical organisation Supersalud has undertaken in the hospital can help it establish innovative contracts with insurers as this process can help it control financial risks coming from such arrangements.

Regarding the fourth measure, participants consider fundamental that government oversight on health insurers should improve to enhance hospital liquidity. The following remarks give insights.

“What we need is that government oversight agencies, particularly at the decentralised levels, can effectively control these entities (insurers) because hospitals depend on their payments. [...] Unfortunately, these entities do not pay because all control agencies are completely corrupt. Politicians control them to ransack the health system resources and when one denounces anomalies regulators turn the blind eye [...] there is not a simple solution to solve this problem but improving the honesty of workers serving in these entities can alleviate to some extent the issue.” (ExtS_HSS_Vol_1)

From the quote above it possible to recognise that reforming government oversight agencies can significantly help the hospital attain the necessary resources to operate. Yet, the participant also acknowledges that the problem is complex, but a first step towards addressing the issue would be that workers improve work honesty.

Lastly, it is important that the level of honesty Supersalud has established within the hospital to manage its financial resources must continue. This chapter previously

contracting is feasible if the hospital has clear information on costs of services delivered and a high certainty on the number of procedures needed to undertake an overall clinical intervention.

showed that participants consider this to be the most effective method for the hospital to meaningfully enhance its finances.

6.1.4. ENHANCING HOSPITAL SERVICE DELIVERY

During the data collection process, there was a relative consensus among interviewees that the hospital should assume the following initiatives to effectively sustain health care delivery and meet the community's health needs particularly those of conflict victims.

1. Restore the intermediate health care unit.
2. Setup the new emergency service at the urban centre.
3. Setup a mental health service.
4. Improve infrastructure maintenance.
5. Improve the war medicine training for hospital personnel.

Regarding the first issue, this study previously mentioned that conflict actors in Tumaco destroyed the intermediate health care unit (ICU), not allowing the hospital to effectively care for critical patients affected by the war or common critical illnesses. Participants commented on this problem and the need for its resolution as follows:

“It is indispensable to have that intermediate care unit ready because it allows us to minimise to some degree the deaths of critical patients due to conflict or product of the long displacement from here to the closest critical care centre in Pasto. That trip usually takes around 6 hours and sometimes even more, creating problems for patients” (IntS_Hospital_process_leader_11)

By the time this thesis is being written, the hospital's social media websites like Facebook and Youtube mentioned Supersalud has helped the hospital to gradually restore the ICU, particularly to manage patients affected by the Covid-19 pandemic. The current vision Supersalud has with the service is to transform it into an Intensive Care Unit. An Intensive Care Unit within Colombia's legal framework for delivering hospital services is a more complex service to an intermediate care unit (Ministerio de Salud y Protección Social, 2014). An Intensive Care Unit entails the production and delivery of oxygen to patients on a constant basis housing devices to continuously monitor patients. This service will certainly be beneficial for patients facing critical health conditions like

wounds or dismemberment product of routine situations like traffic accidents or the armed conflict.

Some of the Supersalud activities to upgrade Hospital San Andrés ESE intermediate care unit to an Intensive Care Unit have involved the procurement of beds, ventilators, and setting up an oxygen production plant with a pipe system to distribute the medicine throughout the hospital. Despite the work undertaken, the hospital has had difficulties to finish the Intensive Care Unit product of financial constraints and insufficient skilled personnel to oversee the service. Participants mentioned the following.

“Well, what is required now is to finish the construction of the Intensive Care Unit. We have managed to put in operation some beds that meet ICU complexity but the area where they operate does not meet government standards. It has been difficult to setup as the project relies on our financial resources [...] The other issue we have struggled with is the lack of personnel for this service. We need a full time intensivist here and more internists as we only rely on one person who is doubling on working time, and it is not fair” (IntS_Hospital_process_leader_7).

Hence, participants felt that making fully operational the hospital’s Intensive Care Unit helps the facility to meaningfully improve its capabilities to continue delivering care and meet Tumaco’s health needs. The hospital with the help from Supersalud has done an important initial work to setup this service yet its construction has been slow. Interviewees considered that the construction process could be accelerated if the service could be formalised into a project proposal to request central government funding. The following remarks give details.

“Not just the ICU, but the whole hospital requires help with its infrastructure. Just recently in a Supersalud audit, it mentioned the hospital has significantly improved compliance with service delivery standards, but it still lags to submit projects to improve facilities. So, we must do this” (IntS_Hospital_process_leader_7)

Yet, Chapter 5 of this thesis mentioned the hospital faces weaknesses to structure/design investment projects to obtain funding from government authorities to cope with challenges. Given how important the structuring of investment projects can be for the hospital to improve its response to challenges and sustain service delivery, section 6.1.8. of this Chapter will discuss the key issues the hospital must address to develop its capabilities on this area.

Participants, particularly senior management personnel, also mentioned the hospital should focus to setup a satellite emergency service in Tumaco's urban centre in its old headquarters. This initiative can help the hospital address the challenge of its difficult accessibility and strengthen its abilities to respond more rapidly to critical health care needs deriving from the conflict or common diseases. These remarks give details.

"We have thought on a project, which could be worth approximately four billion pesos (About \$USD 1 million) and entails remodelling the hospital's former headquarters in the urban centre. This project could deliver emergency services or first aid and give initial consultations to people more rapidly. Also, patients won't come all the way up here to the hospital to facilitate the process for those who can't come. With this initiative, we can also capture critical patients either by gunshots or acute illness to give them more specialised services at the main site helping us generate more revenue" (IntS_Hospital_senior_management_representative_3)

The quote presented earlier also shows the project can create opportunities for the hospital to generate more income. Still, an important obstacle for the hospital to kickstart this project corresponds to the availability of financial resources to remodel the infrastructure and guarantee its operations. Participants gave insights:

"To setup the satellite [emergency] service, it is necessary that the hospital becomes financially stable as we have to fund the remodelling and its operation. And we still face issues on this regard" (IntS_Hospital_process_leader_7)

Given the financial limitations of the hospital to start this project, participants, once more, consider the hospital must formalise this initiative through a grant/project towards central government authorities to secure funding and make it real. These remarks give details.

"In the short-term the hospital must think to design a project to obtain the funding to structure the emergency service in the urban area, as undeniably it will provide more accessibility of its services to patients..." (IntS_Hospital_process_leader_12)

So, the emergency satellite service is a good project that enhances hospital capacity to address service delivery challenges and continue operation in the conflict area, but to make this initiative real the hospital must formalise it through an investment project.

To further improve hospital service delivery, participants for this research mentioned the need for the hospital to strengthen its capacity for delivering mental health

services. Chapter 5 mentioned MSF supported the hospital to deliver mental health services. However, this organisation ceased to provide this support since 2019, creating gaps with the continuous provision of this service. With the Supersalud intervention the hospital has taken steps to ameliorate this problem like hiring a full-time psychologist to deliver the service. Still, participants for this study considered the hospital must setup a specialised mental health unit given the high demand for mental services and the complex pathologies arriving at the hospital product of the armed conflict. These comments give details.

“What the hospital needs to do is present a project to create a mental health unit for Tumaco. Why should a mental health unit be created? Well, in the coastal area we have a high demand for this type of services as people cope with armed conflict atrocities and there is strong abuse of psychoactive substances. Currently, I would estimate around 95% of patients having mental health issues are referred to Pasto because we lack a space to deliver a dignified service with access to diverse staff knowledgeable of this topic. The hospital inability to fully meet patients’ needs on this area also creates financial woes for patients as they must assume transportation costs” (IntS_Hospital_senior_management_representative_2)

With the mental health unit, the hospital can further expand its role in ameliorating the armed conflict side-effects on population’s health as well as improve accessibility and affordability of this service to a population who is generally poor. Still, from the quote just cited it is also evident that participants see that formalising the idea into a project is the best path for the hospital to obtain the necessary resources to setup this service.

Besides, participants for this study mentioned the hospital must improve the maintenance of its physical infrastructure to cope with the daily challenges of the routine provision of services that causes deterioration on facilities along with weather inclemency. The following are some insights:

“At the moment I think it is necessary that the hospital should propose a project to enhance hospital infrastructure. Currently, the hospital has diverse infrastructure issues due to wear and tear, as we receive lots of people on daily basis and the climate affects us. So, there are broken faucets or toilets, humid walls and ceilings, the air-conditioning for the whole facility needs repair, and some painting is needed. Many of these issues have occurred due to difficulties to allocate enough [financial] resources on preventive maintenance” (IntS_Hospital_process_leader_1)

Therefore, the hospital needs an important intervention on infrastructure maintenance so it can preserve the integrity of the facility over time and deliver its routine health services normally. From the participant account, it is possible to notice, again, that the formalisation of these ideas into projects is crucial to look for funding. Thus, given that structuring investment projects is a key element for enhancing the hospital service delivery, the organisation must overcome its limitations regarding this area. Section 6.1.8. delivers ideas on how the hospital can address such shortcomings.

Finally, participants for this study considered the frequency of war medicine training for Hospital San Andrés ESE staff must improve so their skills are updated allowing the facility to attend the serious medical conditions deriving from the conflict. A participant commented on this.

“I believe hospital [staff] does not receive enough training on war medicine. I would dare to say the personnel do not have up-to-date knowledge on this area to provide the best care during these types of emergencies that occur regularly in Tumaco” (Obs_GovEmp_2)

The previous participant considered that the frequency of these courses can improve if there is a more active leadership from local authorities in organising them. These comments give details.

“[I think] provincial authorities should have a more decisive role in leading a process to organise these events so they can be delivered to all health facilities in the pacific coast in a more constant basis, including the hospital” (Obs_GovEmp_2)

Yet, even if authorities become more actively engaged to improve the frequency of the course, the scarce resources among actors that support the hospital and authorities on this area, like ICRC, may create difficulties for this initiative to be recurrent in time. Participants mentioned that the ICRC does not have sufficient instructors to teach this course on a regular basis. Some remarks give details

“One of the difficulties the ICRC has to deliver this type of courses is the scarcity of people trained on this area. Our human resources are limited, so it is difficult to cope with the different demands coming from hospitals or authorities on this issue (war medicine)” (ExtS_Nonpr/Hum_1)

Instead, the participant cited above considers that to improve the availability of the war medicine particularly to train new hospital personnel, the national government should make this course compulsory to attain the medical degree in Colombia. The participant comments were the following.

“Ideally, to have this course in a more regular basis authorities should require medical schools in the country to create courses focused on understanding the role of the medical mission in conflict contexts and war medicine. These subjects should be taught at university and must be compulsory. Even though the courses we conduct with health facilities are important, they are unable to generate learning commitment from participants in comparison when these types of courses become a requirement to obtain your medical degree” (ExtS_Nonpr/Hum_1)

Hence, the work of government authorities in requiring medical schools to train students on war medicine, is perhaps, the best way to improve the skills of Hospital San Andrés ESE staff to meet contextual needs. Those skills in personnel will allow the facility a better handling of the serious medical conditions the armed conflict creates to the population.

6.1.5. STRENGTHENING HOSPITAL STAFF

There are two issues that should be addressed in relation to Hospital San Andrés ESE staffing so it can improve its response to challenges and sustain health delivery. These issues are as follows.

1. Enhance the availability of hospital managers for the conflict area.
2. Reinforce training on the medical mission for all hospital staff.

Concerning the first issue, Chapter 5 showed Supersalud decision to appoint a CEOs trained in both managerial and military expertise led the hospital to improve its adherence to best-practice guidelines for service provision and ameliorate the dangers of conflict. Yet, few individuals in Tumaco or Colombia meet the same expertise levels who could replace this person in the future. This creates uncertainty on whether the good progress the hospital has achieved under the leadership of this person can be sustained in the future.

Participants for this research considered authorities both at the provincial and national levels of Colombia should expand training opportunities in hospital management for conflict areas, and particularly in Tumaco, to reduce the scarcity of such staff.

Interviewees point out this training should be oriented for people who have worked in diverse positions within health facilities operating in the conflict setting as they know the health system and usually seek managerial expertise. Besides, the interviewees mentioned this education programme must be affordable given the economic problems facing residents in conflict areas and particularly Tumaco. These comments give details.

“It would be important, that perhaps a university or SENA⁵⁶, could have more presence in the conflict areas. Perhaps, they can design a strategy to enhance skills of people who want to be hospital managers and know the [health] system like nurses or accountants. There is significant scarcity of [such] personnel there. But also, you know that Tumaco’s population is quite limited in purchasing power, right? So not everyone will be able to study. Then, it is necessary this education should receive subsidies so people can access it” (ExtS_HSS_Nat_1)

Furthermore, participants mentioned that training initiatives to expand the availability of managers for Tumaco and other conflict areas, should prepare the people interested on this topic not only in managerial issues but also on skills to ameliorate the conflict risks. These remarks give details.

“Authorities should prepare citizens and public servants, particularly hospital managers, to conduct their work amid the conflict. This implies that you, as manager of a hospital, should have the capacity to negotiate or meet an armed actor. You must have sufficient training on how to speak to armed actors and tell them your purpose and your intentions with your work. You must be able to speak to such people to let them understand the problems they create with their actions to the provision of services. Also, you must be able to know when to engage in such conversations and when to avoid any interaction with such actors and procure your safety. In short, there are a series of techniques that one must develop, to work in the middle of the conflict and this should be provided [to incoming managers]” (Obs_GovEmp_2)

So, it is important that government authorities advance training efforts to guarantee the availability of personnel with the proper knowledge to administer hospitals in conflict settings. Such personnel should be trained in core hospital management elements, along with skills on how to cope with armed conflict.

Participants for this study also considered necessary to strengthen hospital staff knowledge on the medical mission guidelines and how to use the symbols the mission relies on for protection (Chapter 5, section 5.2.3 gave details on the symbols.).

⁵⁶ SENA: Servicio Nacional de Aprendizaje it is a national system for technical training.

Interviewees considered new hospital staff should receive compulsory training on this matter during undergraduate studies. Section 6.1.4 already provided some participants remarks mentioning the importance to make compulsory the courses related to the medical mission guidelines and war medicine to increase hospital staff commitment on these areas. Another participant complements those previous remarks as follows.

“P1: Regarding the medical mission guidelines, what can supporting actors for the hospital do on this matter and how you think this knowledge can last over time?”

P2: I think it should be compulsory for all health staff. It is compulsory for the Red Cross now, but not for health professionals and related personnel. So, at schools it should be mandatory. Also, the learning of this topic should be compulsory for the Army and the police. Through this way the knowledge about this topic never leaves as all personnel have received this training previously.

P1: So, do you see fit to make this issue mandatory during taught processes?”

P2: I would believe that it should be mandatory. It must be within the curriculum of the universities. And not only of careers related to medicine or health sciences, but to most professional programmes. I think, this will improve knowledge on the duties and rights health personnel has amid conflict and how to use the symbols that provide protection.” (ExtS_HSS_Prov_4)

Hence, participants consider that mandatory training during university studies on the medical mission guidelines to potential hospital staff is, perhaps, the best way the hospital won't lose this knowledge over time. Similarly, this can improve staff awareness on how to best use the symbols providing protection during conflict crises reducing their mishandling among hospital workers – being this latter issue an important hospital shortcoming to address challenges.

6.1.6. IMPROVING HOSPITAL NETWORKING

Chapter 5 revealed networks were fundamental for the hospital to respond to various conflict and routine challenges to sustain health care delivery. Such networks were both formal and informal. The first correspond to relationships the hospital established with other entities through contracts or agreements, the second entailed friendships. For example, during the hospital's scarcity of supplies the friends of hospital staff in other health facilities facilitated the borrowing of products needed to operate. Similarly, the hospital through agreements or contracts obtained the support of

humanitarian actors or government authorities to deliver services through health brigades or to conduct the referral process.

Participants manifested that to improve hospital networks in terms of obtaining more collaboration from other actors or sustain the collaborative work through time, it is necessary to keep and strengthen a hospital-led initiative called “Work meetings”. The Work meeting initiative is a process the hospital CEO or comptroller who leads the intervention process has developed to seek support of government, private and non-profit organisations to cope with operating challenges. The work meetings, for example, strengthened the collaboration of the hospital with other local health facilities during scarcity of supplies and even the hospital obtained help with initial funding to start the Intensive Care Unit. Hence, participants consider this initiative must continue as it is crucial for the hospital to develop support relationships to meet the challenges and sustain health care delivery. These remarks give insights.

“It is vital the hospital keeps processes that allow community participation to develop support relationships and the work meeting are key for doing this. Through the work meeting you can inform the community about the hospital situation, its importance to the community and how the actors can help it. There we can tell the community how different industries benefit of the hospital like the tourist sector, and the need to establish support relations as the hospital is the only facility that provides complex care in the area, so it can't cease operations”
(IntS_Hospital_senior_management_representative_1)

Likewise, the participants consider the hospital can expand and strengthen its support relationships through including in the work meetings more actors from both the provincial and national level. These remarks give insights.

“We have begun to establish work meetings with a further array of actors at provincial and national level. This process is still in early development and must continue. Through these meetings we have received valuable support [from the government] to replace some hospital equipment and improve our debt collection with insurers where they establish specific commitments on how to pay”
(IntS_Hospital_senior_management_representative_1)

Finally, an important factor the hospital must work on to keep attracting support from third party actors is to build good organisational reputation or trust among supporting parties. Such trust is achieved through providing good services and showing that the resources

supporting actors give are effectively destined to improve hospital services. These remarks give details.

“To keep the support relationships or networks it is essential to generate trust among supporting actors. You do this by providing the best services with the available resources including those obtained from support. This is how it is possible to generate trust and it is the way how it can be maintained. When the services are focused on the patient and his/her well-being is always pursued, it creates trust and confidence on the organisation, it allows that all type of support could arrive, and everything then flows. (IntS_Hospital_senior_management_representative_1)”

Overall, for the hospital to expand or strengthen its support networks and harness resources to overcome challenges, it must enhance its work meetings initiative. Similarly, it must focus on improving its trust through providing the best services to patients.

6.1.7. STRENGTHENING THE WORK OF VOLUNTARY AND HUMANITARIAN ORGANISATIONS

Chapter 5 showed voluntary organisations such as Tumaco’s oversight organisation for the health system and the patients’ advocacy group significantly helped the hospital to navigate challenges. For example, these entities requested insurers to pay their debts to the hospital or oversaw the facility’s capabilities to fulfil compulsory service provision standards. Meanwhile, humanitarian organisations helped the hospital by neutrally mediating with armed actors to enhance the availability of supplies during conflict crises or trained staff on how to manage conflict risks.

The participants for this study mentioned the following areas could be enhanced around these organisations so their capacity to help the hospital address challenges and sustain service delivery can improve.

1. Improve the availability of resources for voluntary organisation to undertake their work.
2. Enhance expertise levels among members of the voluntary oversight organisation.
3. Expand the scope of humanitarian organisations to provide support.

Concerning the first issue, Chapter 5 mentioned the voluntary oversight organisations and the patients’ advocacy group lack financial resources to conduct their activities. The main reason for this is that individuals working for these organisations usually face important

financial constraints for doing their work despite their high commitment to protect Tumaco's health system and especially Hospital San Andrés ESE. As a result, participants representing these organisations provided the following ideas on how this situation can improve.

“Unfortunately, there are rules that are not fulfilled. The law [1438 article 136] mentions that decentralised governments should provide the necessary tools for voluntary oversight organisations to do their work and that includes funding [...] In the last years I have been involved with the organisation, the few activities we have done (hospital visits or audits) happened with the few resources we had at hand. Yet, it is necessary more resources to do it constantly. So, if government entities just fulfil what the law requires them, this can significantly help us” (ExtS_HSS_Vol_1)

Complementing the comments above, a participant representing the patients' advocacy group mentioned the following regarding how to improve availability of resources to do their work.

“P2: We really need help with transportation costs. Every day I must look for resources, not only for the transportation to reach the hospital but for food. So, help with transportation costs would be good for us. I talked with the hospital CEO to see if he could help me with this issue, but I haven't received a response yet.

P1: You didn't receive any help?

P2 No, unfortunately not.

P1: What did you request?

P2: Transport with the hospital van so they can pick and drop us near we live. Many of us don't live at the urban centre to wait for such transport when it rides staff to work” (ExtS_HSS_Vol_2)

Hence, government activities focused in fulfilling the legal requirements of providing funding to the oversight organisations, and the hospital delivering transportation for volunteers can ameliorate the resource constraints these entities face to work.

Concerning the second issue, participants manifested the voluntary oversight organisation should enhance its expertise for conducting surveillance to Tumaco's health facilities, and specifically Hospital San Andrés ESE. These remarks give details.

“In Colombia, the oversight organisations should be strengthened as unfortunately they are weak. People with more expertise and critical thought can become interested to serve in these entities if authorities fulfil the duty of providing them

with resources legally established in the law. They certainly can help fix everything regarding the health system and particularly the San Andrés Hospital. They can become more effective to oversee the flow of hospital resources and monitor its activities to impede its decline.
(IntS_Hospital_senior_management_representative_1)

From the comments above, it is also manifested that enhancing expertise levels within the oversight organisation requires authorities' fulfilment of the legal mandate to provide it with financial and in-kind resources that can aid its work.

Similarly, study participants considered humanitarian actors should expand their scope for providing support to the hospital as currently it is narrow. These actors have usually decided to provide help with the provision of mental health services to hospital patients or instruct staff on war medicine or the medical mission guidelines. Yet, the hospital faces shortcomings on other areas which humanitarian actors can provide important help for. These remarks offer details.

“P1: How do you think the work of humanitarian organisations could improve? P2: I think they should expand their supporting role in other hospital areas. They can help us with infrastructure or equipment maintenance as the hospital faces difficulties to fully address these problems on a regular basis. Another area they can provide support is with personnel. We thank Médecins San Frontières for the help they have provided with mental health workers, but I see they can provide additional help. I think they can help us with staff to overcome scarcity of personnel in other areas like cardiology, internal medicine, or nursing. Also, they could help with training staff on humanising health services, as we face weaknesses on this topic. So, there are many ways how they can get involved and we would really appreciate such help” (IntS_Hospital_senior_management_representative_2)

Hence, humanitarian organisations currently helping Hospital San Andrés ESE or interested in doing so, should holistically assess the hospital needs as they can provide important financial or in-kind resources in neglected areas (e.g., support with staff to overcome scarcity due to insecurity). This process can also avoid over allocation of aid resources on specific issues and spread them more around the hospital to strengthen it. In turn, this will enhance responses to operating challenges in a more comprehensive manner to sustain health care delivery.

6.1.8. STRENGTHENING HOSPITAL CAPABILITIES TO STRUCTURE INVESTMENT PROJECTS

Finally, participants for this study considered that Hospital San Andrés ESE must address its problem about the lack of expertise for structuring investment projects. Chapter 5 in Section 5.2.5. mentioned Hospital San Andrés ESE lacked the technical expertise and resources for writing grants or projects to mobilise government resources to manage conflict or routine challenges and sustain health care delivery. Participants considered that the hospital, health system stakeholders, and government authorities should work on these issues to meaningfully improve the hospital's capabilities on this area:

1. Prioritise the structure of investment projects within Hospital San Andrés ESE.
2. Establish a budget for structuring investment projects.
3. Streamline the processes to submit and review projects to obtain funding.
4. Establish an online platform to train people responsible for structuring projects.

The following paragraphs explain each issue in detail.

Regarding the first issue, participants mentioned the Hospital San Andrés ESE must prioritise the structuring of investment projects within the organisation if it wants to significantly improve its capabilities on this matter in the short term. This means hiring a professional knowledgeable on hospital planning and structuring investment projects and setup an office which the person focuses on such activities. These remarks give insights.

“P2: The main problem is that all the administrative personnel in the hospital is consumed responding the day-to-day administrative and financial operations, so it is difficult to have the time to propose or write projects. This issue has not received significant priority. So, what the hospital must do is to hire someone responsible for such activity despite its financial limitations.

P1: Then, it is necessary to hire someone knowledgeable on this area?

*P2: Indeed, hire a person and setup with his/her help the hospital planning office so there is someone focused exclusively on structuring projects to positively impact the hospital service delivery”
(IntS_Hospital_senior_management_representative_3)*

Concerning the second factor to improve Hospital San Andrés ESE capabilities to structure investment projects, participants for this research considered that the planning

office should be assigned with a budget that can successfully fulfil its duties on structuring investment projects. Usually, the structuring of projects requires preliminary technical studies (e.g., architectural designs, electric or pipe designs, engineering designs) that are expensive, so a budget for this office will help fund such needs. These remarks give details.

“P1: And usually those projects require money to be properly designed, don’t they? and what has the hospital done in that regard?”

P2: Unfortunately, with this matter (project structuring) like other issues within the hospital is that you propose something, you realise that everything is with money! This little devil, as one says here, you find it anywhere you turn around. The hospital needs money to structure projects and determine their feasibility. So, the office focused on projects should have a budget to handle all that [...] the important part is that there should be certainty with hospital’s influx of financial resources to fund the office personnel and budget. (IntS_Hospital_senior_management_representative_3)

From the comments above it is possible to identify that the hospital’s financial resources play a key role to strengthen its capabilities to structure investment projects. They fund the professional and the office that would be assigned for this task. Hence, the hospital must assume the responsibility to fully organise its finances, a process which the Supersalud intervention process began to do, this can guarantee the necessary funding to structure investment projects. With the sufficient funding, it is expected that the hospitals capabilities on structuring projects can strengthen over time.

Participants for this study, likewise, mentioned government authorities should streamline the process hospitals must undertake to present projects for funding. Chapter 5 informed this process is complicated requiring the hospital to present its projects through different government offices for revision and approval and lobby such authorities for funding. Participants consider this should change using an internet platform, so a person can exactly know the project revision stage and improve transparency of the process. These remarks give details.

“I believe the hospital, when presenting a project, should not be in the situation of praising someone for revision or funding. Rather, everything must be online, in a platform where you objectively send the project proposal, its supporting documents and to establish some sort of tracking system telling you what they (authorities) reviewed, what is missing, or what is not clear with the project, and to establish a deadline for funding” (IntS_Hospital_senior_management_representative_3)

Lastly, participants considered government authorities should establish an online course on the methodology the government has required hospitals to use to structure investment projects. By the time of writing this thesis, the Colombian government requested the hospital to structure grants through a methodology called Metodología General Ajustada (MGA). The MGA methodology uses the USAID logical framework approach as a basis for structuring investment proposal/project and it is operated through a software. Participants consider an online course on the methodology can help the people responsible to structure projects within hospitals, including Hospital San Andrés ESE, to strengthen their skills on this area. These remarks shed some light.

“[for successful project design] it is necessary to familiarise the person responsible for the planning office in how to use the methodology to structure the projects. Now, all those virtual and online tools make it easier for the government to setup a simple seminar that could help such professionals in all health facilities, to know the methodology or reinforce the knowledge on this matter to those who already know it.” (IntS_Hospital_senior_management_representative_3)

Thus, participants have identified several actions on how Hospital San Andrés ESE can improve its capabilities to structure investment projects as it is a key element for the hospital to overcome important limitations.

This chapter showed the several areas participants considered there is need for improvement to enhance hospital operations in the conflict setting. Still, some participants considered the measures earlier outlined, despite important, may be insufficient to significantly ameliorate the risks the hospital is exposed to in a conflict setting. Such participants considered that authorities should invest in a bold social program in the area to alleviate the root causes of conflict to significantly reduce its negative effects on hospital activities. These comments give insights.

“Believe me, the people who dynamite electrical towers or the oil pipeline don’t do it for pleasure. It is not that they woke up one day bored and said let’s blow up the pipeline! Rather, this is a way how the dissident population of society complain to the state about the great income inequality [...] So, the province can develop any type of protocols for the community and the hospital to endure the effects of conflict. Yet, I think it is necessary authorities should implement a bold social program to solve basic needs such as education, infrastructure, or housing in the area. This policy perhaps may be the best initiative the government can do to help the hospital mitigate conflict crises” (Supp_GovProv_1)

6.2. CONCLUSION

This chapter provided insights on key areas participants for this study considered important that Hospital San Andrés ESE, local authorities, and supporting partners could work on to improve the hospital response to the challenges and sustain service delivery.

The next chapter of the thesis corresponds to the concluding discussion. The chapter will talk about how this research relates to the existing literature about the operation of providers in conflict settings. Also, it will explain what areas of this research are generalisable or provide important lessons to policymakers and hospital managers of other conflict affected contexts in the world. Lastly, it will discuss the usefulness of ERF for guiding this research, what can be improved with it, and give recommendations to decision makers in Colombia to mitigate the effects of the conflict to the health system.

CHAPTER 7. CONCLUDING DISCUSSION

This chapter will present a description of the research results in relation to the study aim and objectives. Then, it proceeds to reflect on the significance or contribution of the findings to the academic literature on health systems and conflict, to policy, and the policy context. The relevance of the study results will be discussed in relation to the existing literature on the topic of study and the conceptual framework used to guide the analysis.

7.1. THE RESEARCH FINDINGS

This study aimed to understand how health providers, particularly a hospital, sustain health care delivery to its population in conditions of protracted armed conflict. To understand this problem, this study analysed the operation of Hospital San Andrés ESE in the conflict setting of Tumaco, Colombia. This research is important as there are insufficient studies about health systems and hospitals in conflict areas (Kruk et al., 2010; Newbrander, 2007; Woodward et al., 2016). Similarly, more research on hospitals is needed as they are important to guarantee Universal Health Coverage (UHC) in conflict settings (CGD, 2015b).

To achieve the aim, the study had to examine the challenges the hospital faced to deliver care in the conflict area. Then, it had to understand the hospital response to the challenges to continue providing services, and, finally, it determined what needs to improve about the response so services continue to be delivered. Thus, the study proposed the following specific objectives.

1. To examine the challenges Hospital San Andrés ESE faces while operating in the armed conflict setting of Tumaco, Colombia.
2. To study how Hospital San Andrés ESE responds to the challenges to sustain health care delivery.
3. To determine participants' views regarding what needs to improve with the hospital response to the challenges.

The project used the Everyday Resilience Framework (ERF) to guide data collection and analysis. This study provided a valuable opportunity to test the framework explanatory power in a conflict setting.

A direct answer to the study's research question is as follows. A hospital operating in a protracted conflict setting sustains health care delivery for its population through establishing various responses to the challenges endured in the area. Some of the hospital's responses to challenges depend on the hospital own resources, while others rely on the support of third-party actors available in the context. The hospital can establish support relationships with other actors as it is an open system that leverages its external environment to obtain resources and deliver care.

This study recognised a hospital operating in a protracted armed conflict setting to face routine and armed conflict challenges. The challenges were classified in this way as they aligned with the challenge categories of ERF. The framework mentions that health systems and organisations face routine challenges and sudden shocks. The routine challenges are problems health systems and organisations in LMICs countries often endure in those settings like limited funding or managerial problems. The armed conflict challenges relate to serious situations like death threats or murder of personnel, destruction of facilities or supplies. These latter challenges reflect what the everyday resilience literature mentions as sudden shocks.

The study's recognition that a hospital operating in a protracted armed conflict faces both the routine and armed conflict challenges shows that its operation can be threatened not just by conflict events but also to routine issues encountered in developing countries. Thus, this insight should help policymakers to design programmes that could support health care providers operating in conflict settings more comprehensively, so they mitigate the routine and armed conflict challenges endured as both can jeopardise facility operation in a conflict area.

The project identified the hospital relies on a series of responses to both the routine and armed conflict challenges to continue deliver care in a conflict setting. Such responses were the following.

1. The intervention of central government agencies in hospital operations.
2. Activation of hospital and provincial emergencies systems to face challenges.
3. Activation of support networks to address challenges.
4. Collaboration with voluntary groups to address challenges.
5. Structuring investment projects to strengthen service delivery.
6. Managerial activities to address challenges.

Hospital San Andrés ESE deploys the responses 1 through 5 with significant support from third party actors. The response 6 mainly depends on the hospital's own capabilities and resources. The actors that have supported the hospital to face challenges can belong to the broader health system, humanitarian or non-profit organisations, local authorities, commercial entities, or individuals. Unlike the challenges, the hospital responses were not easily categorised using ERF typology of strategies to face challenges referred as absorptive, adaptive, and transformative. This discussion chapter in section 7.2.1. will provide a detailed analysis of the limitations the framework has to categorise the responses and possible ways to enhance it.

Similarly, this project observed that different capacities and activities the latter also referred as “mechanisms” underpin hospital responses to challenges. Regarding the capacities, ERF helped to elucidate them from the projects' primary data. The framework informs that response to challenges by health systems or organisations depends on cognitive, behavioural, and contextual capacities. The cognitive capacities involve the ability of health systems and organisation to recognise challenges (e.g., hospital staff or local authorities identify and understand conflict or routine problems). Behavioural capacities include strategic measures hospital staff or authorities assume to effectively respond to challenges (e.g., hospital staff building relationships with other parties to obtain support). And contextual capacities correspond to resources the hospital relies on to deploy responses to challenges (e.g., telecommunication systems, trust, utility backup infrastructure). Regarding the mechanisms underpinning hospital response to challenges, they correspond to activities allowing the hospital cope with problems. Such activities ranged from the hospital engaging in negotiation with health insurers to manage financial

insolvency, or provincial authorities activating the Security Council to help the hospital face conflict events, among other activities.

Lastly, research participants informed hospital responses to challenges can improve in key areas as they face limitations in helping the facility sustain health care delivery in the conflict setting. The elements participants considered that could be enhanced range from providing more formality to the activities local authorities do to help the hospital manage conflict emergencies, more central government involvement in hospital management to enhance working activities or enhance hospital infrastructure and equipment to meet the community's health needs.

A more detailed discussion of the project contribution the academic literature and policy and the limitations of the framework used to guide data collection and analysis are provided next.

7.2. CONTRIBUTIONS TO THE LITERATURE AND POLICY

7.2.1. CONTRIBUTION TO THE LITERATURE

This study makes the following contributions to the literature: i) Classifying the challenges affecting a hospital operating in a protracted conflict and examine their interaction, ii) providing in-depth understanding of how a hospital sustains delivery of health care in a protracted armed conflict, iii) consideration of the utility of ERF to analyse hospital operations in a conflict setting. Each contribution will be discussed in more detail below.

i. Classification of the challenges

An important contribution of this research to the literature entails classifying the challenges a hospital operating in a protracted conflict faces into routine and armed conflict problems. The study used ERF challenge categories to classify the problems (Barasa, Cloete, et al., 2017). The routine challenges correspond to issues hospitals encounter during their daily activities such as limited funding, insufficient supplies, or poor management. The second challenges were referred simply as armed conflict and, in their nature, aligned with the challenges ERF refers as “sudden shocks” (Barasa, Cloete, et al., 2017). These latter challenges in the context of Hospital San Andrés ESE occurred

unexpectedly and created significant disruptions to the functionality of hospital. This classification is important as it helps government authorities, development agencies, and other parties that intend to help hospitals in conflict areas to recognise that not just the conflict can threaten their operation but also more routine issues regarding their daily service delivery.

This study encountered several routine and armed conflict challenges affected Hospital San Andrés ESE finances. The routine challenges involved insufficient funding product of delayed and inadequate insurance payments, and corruption. Meanwhile, the conflict increased hospital expenditures and costs product of delivering complex medical care to conflict victims which reimbursement was uncertain, and the use of expensive supplies. The hospital uses expensive supplies as vendors must purchase costly insurance policies to ship the products to the conflict zone.

Interestingly, previous research reviewed in this study have obtained similar findings to the ones mentioned above. For instance, studies conducted in Nigeria, Iraq, and Yemen informed health providers face scarce financial resources as governments defund health service providers to prioritise war investments (Ager et al., 2015; Ahamadani et al., 2014; Qirbi & Ismail, 2017). Likewise, research from Colombia and DRC evidenced political patronage permeated the procurement and personnel promotion processes of providers operating in conflict areas (Jola-Sanchez et al., 2016; Labat & Sharma, 2016). Meanwhile, this study observed political patronage can lead providers to financial difficulties product of hiring unnecessary personnel. To finish, a study from Hadary and colleagues (2009) in Israel agree with this research that hospitals in armed conflict face higher costs as they must deliver complex care. Still, the existing literature provides less information about the effects of conflict on hospital's supplies costs. This research, therefore, sheds some light on this matter informing hospitals may rely on more expensive supplies because of the insurance policies used to mitigate conflict risks.

Both routine and armed conflict challenges affected Hospital San Andrés ESE leadership and governance. The routine challenges mainly revolved around two issues: i) corruption, and ii) instability of senior management. The first challenge manifested through political patronage where board members agreed with the CEO to undertake

activities to fulfil self-interest. This problem just mentioned weakened internal accountability on hospital managerial activities leading it to financial insolvency. The second challenge involved significant rotation in hospital senior management as people resigned due to corruption scandals creating disorganisation in hospital activities. The conflict challenges relate to death threats and/or extortion of managers, and managerial ineffectiveness which encompasses the reliance on managerial staff with insufficient skills to use and allocate hospital resources.

Previous research about the operation of health providers in conflict contexts report similar findings as the ones mentioned. Mangwi et al (2019), Marie et al (2017) and Taha & Westlake (2017) conducting research in the West Bank and the DRC observed that political patronage are ordinary practices within providers to hire workers or give them incentives. The studies, likewise, recognised political patronage weakened providers' internal accountability as board members or managers would not take disciplinary action against staff with poor working performance. Moreover, studies from Colombia, Manipur, Iraq and DRC inform that managers faced threats constantly and occurred through aggressive ways like showing guns or placing explosives at managers' workplace (Ameh et al., 2011; Jola-Sanchez et al., 2016; Labat & Sharma, 2016; Sinha et al., 2013). In the meantime, participants for this study mentioned that threats to hospital managers would typically occur by phone requesting medical treatment, supplies, or financial resources. Lastly, a study conducted in DRC (Karemere et al., 2015) found that the armed conflict created managerial ineffectiveness as unskilled personnel become responsible of key roles leading to negative repercussions on hospitals' reputation.

This study showed Hospital San Andrés ESE faced routine and armed conflict challenges with its medical products or technologies also referred as supplies. The most pressing issue the challenges create relates to scarcity of products. The routine challenges creating this problem involve hospital financial insolvency, hospital's slow process to replace damaged items and maintenance activities on road infrastructure. Meanwhile the conflict problems leading the hospital to scarcity of supplies entailed militia raiding cargo systems or stealing products from the hospital, and militia-driven protests known as "armed strikes" that use the local community to take over the road.

Some of the findings of the existing literature agree with those of this study to explain the scarcity of supplies hospitals operating in conflict settings endure. For instance, Ahmadani et al (2014) observed insufficient funding created scarcity of supplies for providers operating in Iraq. Studies from Africa and the Middle East mention providers endured scarcity of supplies as armed factions looted hospitals and trucks containing supplies (Chi et al., 2015; Namakula & Witter, 2014). Equally, research conducted in Eastern Europe and Syria evidenced that providers can face supply shortage when conflicts destroy transport infrastructure (Michael, 1996; Mowafi et al., 2016). Regarding the latter issue, this study did not find hospital supplies became scarce because of the destruction of transport infrastructure. However, the conflict can affect such infrastructure through armed strikes impeding mobilisation of vehicles containing hospital supplies and creating shortages of such elements. In general, providers in conflict areas, and Hospital San Andrés ESE in particular, struggle to have constant supplies to provide care.

This study encountered numerous routine and armed conflict challenges affected Hospital San Andrés ESE workforce. The routine challenges ranged from high turnover, the disrespectful behaviours managers perceived on staff and scarcity of personnel. The armed conflict creates direct and indirect challenges on hospital workforce. The direct challenges corresponded to aggressions using death threats, physical harm, and in extreme cases murder. The indirect challenges involve staff facing difficulties to commute towards work product of safety risks, along with fear and mental stress. All the conflict problems just mentioned accentuate the problem of personnel scarcity.

Concerning the routine challenges affecting the workforce related to high turnover and management perception of staff displaying disrespectful behaviour, this study discovered the first issue has occurred due to the hospital's inability to pay salaries on time. This finding corroborates what Jola-Sanchez et al (2016) encountered in Colombia where primary care hospitals faced high personnel rotation product of late payments as people looked for other jobs to afford expenses. Concerning management perception of staff disrespectful behaviour, mainly corresponds of workers lack of respect for the hospital and patients' property product of low sense of belonging. Previous research conducted at the DRC and the West Bank has evidenced relatable problems with staff's

working conducts (Labat & Sharma, 2016; Marie et al., 2017; Taha & Westlake, 2017). In such conflict-affected settings, the health providers' workforce ignored working procedures or helped colleagues not examining individuals with poor working performance.

Concerning the armed conflict challenges documented in this study to affect the hospital workforce, they align with those found in previous research from Syria, Iraq, Manipur, DRC, the West Bank, and Colombia (Ameh et al., 2011; Donaldson et al., 2012; Fouad et al., 2017; Labat & Sharma, 2016; Lafta & Falah, 2019; Makhlouf-Obermeyer et al., 2020; Sinha et al., 2013). The studies cited identified that threats to hospital personnel are commonplace. Similarly, these studies mention workers are exposed to physical or verbal assaults from patients or relatives of conflict actors. The studies also mention that staff endure commuting problems due to military checkpoints, and experienced fear and stress product of conflict dangers.

To finish the topic of the challenges affecting the workforce it is necessary to address the issue of scarcity of staff. The available literature mentions providers in conflict areas face scarce personnel primarily because of safety risks (Ager et al., 2015; Ahamadani et al., 2014; Betsi et al., 2006; Fouad et al., 2017; Haar et al., 2018; Jola-Sanchez et al., 2016; Omar, 2020). Certainly, this study encountered that Hospital San Andrés ESE could not find workers as the insecurity of the area does not motivate professionals to work for the facility. Still, this study expands this literature mentioning that contextual insecurity alone it is not the main factor explaining this problem. Other factors like Tumaco's rurality, discontinuous utilities, and the hospital's untimely salary payments prevented the facility to find workers. These latter issues show how routine and armed conflict challenges interact leading to significant scarcity of workers and establishing an intricate environment for a hospital to operate.

This research encountered that routine and armed conflict challenges affect Hospital San Andrés ESE service delivery. Service delivery contemplates two areas: the hospital infrastructure and its capabilities to deliver care. Concerning the routine challenges affecting hospital infrastructure, this study evidenced they revolve around discontinuous utilities, insufficient maintenance to equipment or physical areas and

deterioration product of climate inclemency. The armed conflict has affected Hospital San Andrés ESE infrastructure through destruction of facilities, medical equipment, and its physical connections with utilities.

The findings just presented are relatable to those obtained by previous research about the operation of providers in conflict areas. For example, Ameh et al (2011) in Iraq mentions health providers faced irregular utilities to deliver care. Equally, Tappis, et al (2019) in Yemen recognised financial scarcity in providers impeded their normal access to utilities or infrastructure maintenance. Similarly, research in Africa, the Middle East, and Eastern Europe evidenced providers facing destruction of facilities and equipment due to conflict (Chi et al., 2015; Haar et al., 2018; Michael, 1996). Further, Mowafi et al (2016) or Afzfa and Jafar (2019) state that providers in the Middle East (particularly Afghanistan, Iraq) lacked utilities because the conflict destroyed the infrastructure delivering such services.

The following routine and armed conflict challenges affected Hospital San Andrés ESE capabilities to deliver care. The hospital's regular service delivery become a routine challenge as it must address the population's regular health needs constantly. The main typical diseases the hospital delivers care for involve obstetric procedures, abdominal pains, or colds. Other challenges include the hospital location creating accessibility problems for patients, the inadequate referral process product of poor communication and transport systems, and constant meetings that hamper attention to patients. The armed conflict has, likewise, affected the hospital's capabilities to deliver care as it hindered its capacity to provide complex services as facilities have been destroyed like the intermediate care unit. Similarly, the hospital experiences a dysfunctional referral system as armed strikes obstruct ambulance transit. The hospital has also faced significant fluctuation in the demand for care as service provision increases or decreases product of the high volume of conflict victims or people avoid visiting the hospital because of safety concerns.

Studies undertaken in Syria, Iraq, and Kashmir have evidenced similar challenges as the ones just described (Ameh et al., 2011; Dhar et al., 2012; Hadary et al., 2009; Mowafi et al., 2016; Omar, 2020). The studies recognised providers could not deliver

surgery or maternal services as they perceived destruction or looting. The studies mentioned checkpoints or riots along transport roads impeded ambulance mobilisation. Whereas projects conducted in Colombia, Lebanon, Nigeria or Yemen (Ager et al., 2015; Jola-Sanchez et al., 2016; Makhoul-Obermeyer et al., 2020; Tappis et al., 2020) corroborate the issue that conflict diminishes demand for care as people become apprehensive to visit health facilities.

Hospital's San Andrés ESE information systems also faced routine and conflict challenges. This study through its fieldwork process discovered the main routine issues affecting this component entailed document disorganisation and shortcomings to update and preserve information. While the armed conflict affected the quality of hospital record keeping due to electrical supply issues product of attacks to power infrastructure.

The problems just mentioned have also been evidenced in previous research of health providers in conflict settings. For instance, Betsi and colleagues (2006) in Cote d'Ivoire found that conflicts lead to problems on providers information system as they can cause data deletion consequence of the destruction and looting of information equipment. Relatedly, Casey et al (2009b) and Qirbi & Ismail (2017) revealed that providers operating in Congo and Yemen faced disorganised patient documentation. These studies, however, do not explore the reasons why the disorganisation of documents occurs. This project enhances the literature informing that the lack of software updates or inadequate data handling can explain document disorder. Similarly, this study showed the hospital's informational disorder explained to some extent its financial woes as it could not know exactly its obligations. This situation shows how challenges interact with one another.

To deliver a more holistic view about the challenges affecting Hospital San Andrés ESE this study can say the following.

Remarkably, Hospital San Andrés ESE experiences similar challenges to those documented by other research studying providers that operate in very different conflicts settings than Tumaco. For instance, research studying health providers in high-intensity conflicts like Syria, Iraq, or Afghanistan informs providers endure challenges such as scarcity or death of personnel, insufficient supplies, along with looting and destruction of

facilities. This research recognised Hospital San Andrés ESE experienced similar challenges.

The use of lethal force may explain why Hospital San Andrés ESE experiences similar challenges to those of health providers operating in more intense conflict settings. The use of lethal force is the key factor to any armed conflict regardless of intensity (HIIK, 2021; Melander, 2016). This factor inevitably leads to human deaths and property damage including that of health providers. Then, the use of lethal force may be the main reason why some issues are similar regardless conflict differences.

Relatedly, despite the similarities of the challenges Hospital San Andrés ESE experiences with providers from other conflict areas this study may assume the challenges are different in their breadth and depth. So, Tumaco's hospital can experience the problems of murdered staff, but this event occurs occasionally. Whereas, providers operating in areas like Syria or Gaza could face this same issue but likely it will be more recurrent in such contexts as the use of lethal use is more frequent (Fouad et al., 2017; HIIK, 2021; Omar, 2020; Safeguarding Healthcare in Conflict, 2020). Still, further research is necessary to fully determine if higher conflict intensity translates into providers, and particularly hospitals, facing more damage or killed personnel.

The other important element to bear in mind regarding the conflict challenges affecting Hospital San Andrés ESE relates to their unpredictability. These challenges resemble what ERF refers to sudden shocks due to the cyclical nature of protracted armed conflicts. For now, it could be assumed providers operating in environments with higher conflict intensity may experience these challenges more recurrently (HIIK, 2021). Still, more research is needed to determine if higher intensity in conflict creates challenges on a more recurrent basis, identify if conflict intensity leads hospitals and authorities to plan for these issues more constantly, and determine if sudden or more recurrent conflict challenges create more disruption to hospital operations.

Consequently, Hospital San Andrés ESE experiences similar problems to facilities operating in more difficult conflict environments. The differences might relate to the extent the hospital faces these challenges with respect to those facilities in other contexts.

ii. The hospital ability to sustain health care delivery

A central goal of this research was to understand how a hospital sustains health care delivery in a protracted armed conflict. Understanding this issue becomes the key contribution of this project to the academic and empirical literature about the operation of health providers, particularly hospitals, in conflict settings. Chapter 5, which examined the hospital response to the challenges provides the basis to achieving this aim. Studying how a hospital in a conflict setting responds to challenges allows to evidence the activities and resources the facility uses to mitigate them and continue service delivery. The key findings regarding the hospital response to challenges are discussed next.

The hospital response to challenges

This project viewed the hospital as a system to identify its response to challenges. This means the study viewed the hospital as construct integrated by key functions/components that actively interact with the environment to obtain support from third parties to face challenges. Similarly, viewing the hospital from a system perspective helped to consider the facility as an active agent of support. This latter issue means the hospital not only receives support but also seeks support from third parties to face challenges. Thus, the concept of **support** becomes relevant for understanding how a hospital sustains health care delivery in armed conflicts. Similarly, using the systems perspective to look at the hospital helps to see the facility as capable to establish activities or draw on available resources to face challenges on its own.

This research evidenced Hospital San Andrés ESE with the help of third-party actors or on its own developed the following responses to challenges:

1. Activation of the hospital and provincial emergency systems.
2. Activation of support networks to address challenges.
3. Managerial activities to address challenges.
4. Collaboration with voluntary groups to address challenges.
5. The intervention of central government agencies in hospital operations.
6. Structuring investment projects to strengthen service delivery.

Regarding the first response, it corresponds to the hospital or provincial authorities using several formal and informal processes and capacities from the hospital or context to face emergencies. Emergencies are situations that threaten the safety of communities or the operation of key social organisations like hospitals. Such events could be earthquakes, floods, or armed conflicts. This response has helped the hospital to plan for extra stocks and setup utility backup infrastructure to face ration of utilities or supplies during conflict events. Relatedly, the hospital through the response has setup humanitarian corridors to mobilise supplies stranded on the road product of armed strikes. This hospital response to challenges has also allowed the facility to protect its infrastructure or personnel through contacting local authorities for protection (i.e., Police). Previous research of Ager et al (2015) or Lembani et al (2014) informed primary care clinics have undertaken similar activities to face challenges. For example, the studies mentioned facilities liaised with authorities to protect their staff or stocked extra supplies to endure scarcity of such resources. Yet, these studies treat these measures as standalone responses and not embedded in a larger response category such as the activation of emergency systems as seen in this study.

The hospital response to challenges just discussed also endures shortcomings. First, some processes underpinning the response lack formalisation not allowing authorities to establish a standard procedure on how to face similar challenges over time. Second, the emergency systems can be difficult to activate as some hospital and contextual resources are scarce or obsolete. For example, the hospital has not conducted sufficient maintenance to its utility backup infrastructure to prevent rationing of utilities. Third, authorities respond slowly to hospital calls for help product of insufficient personnel. Despite the issues just mentioned the response has prevented the hospital operative demise.

Hospital San Andrés ESE second response to challenges entails the contacting of third-party actors from diverse economic or social sectors for support. For example, participants described that connections with neighbouring health facilities helped the hospital cope with supply scarcity. Support networks with non-profit and humanitarian organisations (ICRC or MSF) or religious groups (Catholic Diocese) have likewise helped

the hospital to face other array of challenges like scarcity or insecurity of personnel or delayed payments from insurers. Similar responses have been reported in studies by Lembani et al (2014) or Trelles et al (2015), yet this study builds on the prior literature by not just documenting this response but illustrating in depth how these responses depend on relationship building and active communication with support parties to be possible.

The response previously discussed also faces shortcomings. First, the hospital's managerial instability has prevented it to establish and nurture a wider range of supporting actors. Second, the hospital and Tumaco face poor communication technologies that inhibits timely support as this technology is crucial to contact supporting parties. And thirdly, the hospital cannot access to larger resource spectrum from supporting parties as its financial and managerial problems have affected its reputation to adequately use resources or return them when necessary. Still, central government authorities through the intervention process have focused to change the hospital reputational problem to help it obtain more third-party support.

The hospital's third response to challenges relates to the activities hospital management or its staff undertake to face problems without relying on support from third parties. For example, a hospital CEO activity like negotiating with health insurers payment plans on debt is a way how the hospital on its own (i.e., relying on its staff) faces routine challenges. Similarly, the senior management at the hospital (particularly human resources department) establishing special hours to begin and finish the working day are key hospital-related initiatives that help ameliorate conflict risks on personnel. Nevertheless, this response to challenges also faces shortcomings. First, it relies on significant abilities from hospital staff, particularly managers, like planning or negotiation skills which are not regularly encountered in Hospital San Andrés ESE. This response has worked relatively well since the central government intervened the hospital as it brought skilled staff to handle hospital activities. But doubts remain on the measure's effectiveness over time once staff leading the intervention process leaves the organisation.

Hospital San Andrés ESE's fourth response to challenges corresponds to its active collaboration with social leaders, and volunteers to monitor and improve hospital

performance. This response has helped to address several difficulties. For instance, social leaders and volunteers lobbied health insurers on the hospital's behalf requesting faster payments on debt. Equally, volunteers have engaged in dialogue with armed groups to request respect for hospital staff and facilities. Interestingly, some of these activities are relatable to those observed by Ager et al (2015) in Nigeria who report that primary level clinics reached out to community leaders and volunteers to obtain government funding. Yet, this study explains how a health facility obtains the support from these organisations and the activities such actors assume to mitigate hospital challenges.

The response just explained faces a series of difficulties that hinder the hospital's capacity to address challenges. First, volunteers can endure insecurity while doing their activities and significant financial constraints that prevent them to monitor the hospital continuously. Second, volunteers lack of a working space to produce and organise the documents obtained during their hospital audits or review the commitments of hospital management to improve service delivery.

The hospital's fifth response to challenges entails the Colombian health superintendence (Supersalud) assuming direct control of hospital management. The response, consequently, involves reduction of hospital autonomy. This measure has been comprehensive on its scope of action re-organising diverse hospital areas to face challenges. For example, the intervention established a fund with fresh financial resources to help the hospital pay unfulfilled obligations. Similarly, the intervention focused to organise hospital processes to alleviate financial constraints and avoid shortcomings like insufficient supplies or high personnel turnover. Similarly, to ameliorate conflict challenges such as death threats to managerial staff the response assigned as hospital manager a former military with risk management skills of conflict zones. These are some examples of the many problems the intervention helps to address.

This study evidenced the intervention created a 'before and after' situation for hospital activities as this initiative improved them significantly since its start. Despite the response benefits, its main problem relates to sustainability. The intervention will end when Supersalud considers the hospital has improved its financial and clinical processes, returning its governance to local authorities. Participants for this study doubted local

authorities will continue the positive results of the intervention and, rather, will make the facility succumb to corruption and poor performance over time.

The hospital's sixth response to challenges entails the facility's capabilities to construct or design investment projects to obtain financial resources and execute them to cope with operational problems. Through this measure, the hospital can modernise a service attacked by conflict actors or upgrade equipment rendered obsolete over time. The hospital requires personnel sufficiently skilled in this area to employ this response to challenges. This later issue is a key hospital weakness given the scarcity of staff knowledgeable on the topic. Similarly, the process to obtain funding for projects is very complex. Hospital managerial staff must have significant lobbying skills to obtain funding. Unfortunately, hospital staff historically has lacked strong lobbying skills to make this measure more effective.

Overall, the hospital responses to challenges just outlined despite having shortcomings they have been crucial for the hospital to continue deliver health care in the difficult environment of Tumaco, Colombia.

iii. The application of the Everyday Resilience Framework: Strengths, limitations, and improvements.

An important contribution of this study to the literature entails the use of ERF to analyse hospital operations in a conflict area. Considering the framework is rather new within the global health literature, this research provided the opportunity to reflect on its explanatory power. To the best of the researcher knowledge, this framework has not been used to empirically analyse the ability of health systems or hospitals to manage challenges in conflict contexts. Below it is outlined the frameworks' strengths and limitations and ways on how to improve it.

Strengths

The framework's adequacy to describe the challenges health systems in conflict settings face. This research project recognised ERF has been a good tool to understand the challenges health systems and organisations face in developing contexts struggling with armed conflict than other frameworks related to health system resilience.

Prior literature theorising the concept of resilience conceived it as the capacity of health systems and organisations to overcome significant challenges or stress (Blanchet et al., 2017; Kruk et al., 2015). Yet, ERF recognises that on top of sudden challenges health systems and organisations must cope with routine problems. These later challenges are usually ingrained within the operations of hospital systems and can significantly strain their activities (Barasa, Cloete, et al., 2017).

This research evidenced Hospital San Andrés ESE not only faced conflict challenges but also routine problems of great complexity while operating in Tumaco. ERF helped to categorise the challenges the hospital faced into routine issues and sudden shocks. In case of Hospital San Andrés ESE, the routine challenges corresponded to financial constraints, lack of staff or supplies. The sudden shocks involved conflict challenges affecting the hospital like death threats to personnel or destruction of facilities. So, the framework assisted the understanding of the challenges health systems and organisations endured in a protracted conflict area and provided a good classification of their nature.

The framework helped at elucidating the capacities hospital systems rely on to face problems. Another strength of ERF involves helping to elucidate the capacities health systems and organisations use to deploy responses to challenges and sustain service delivery. Previous literature on health system resilience, informs that these systems deploy strategies or responses to challenges but omit analysing the factors that facilitate the deployment of such strategies/responses (Blanchet et al., 2017; Kruk et al., 2015). ERF introduces the concepts of cognitive, behavioural, and contextual capacities as key elements health systems and organisations use to establish responses to challenges (Barasa, Cloete, et al., 2017; Gilson et al., 2017).

This study evidenced that significant fieldwork material speaks to ERF categories called as “capacities” which are elements that facilitate hospital response to challenges. For instance, in the case of the activation of hospital and local emergency systems, this study classified primary data available in the following way to envision the ERF capacities.

- Cognitive capacity. All fieldwork material that mentioned hospital staff or authorities are aware of death threats on personnel and finding ways how to mitigate them.

- Behavioural capacity. Primary data informing that hospital staff use the hospital emergency plan to contact authorities to protect the facility or workers.
- Contextual capacity. Information related to hospital staff or authorities using tangible and intangible resources to deploy the response to challenges. Some examples involve the use of utility backup infrastructure to endure discontinuity of utilities due to conflict, or, relying on laws to activate protection routes for hospital personnel.

Appendix 13 summarises the cognitive, behavioural, and contextual capacities uncovered in Chapter 5 allowing Hospital San Andrés ESE to adopt different responses to challenges for continuing providing health services.

Thus, ERF provides the benefit to understand with more detail key issues facilitating health systems and organisations the establishment of responses to challenges. This type of information is important for decision makers as they can focus to strengthen or improve such elements to help hospitals sustain delivery of care in conflict areas.

Limitations

Difficulties to use the strategy categories. ERF uses the Absorptive, Adaptive and Transformative strategy categories to typify the responses health systems and organisations assume toward challenges. The framework provided such categories by building upon previous literature of health system resilience and development studies (Béné et al., 2012; Blanchet et al., 2017). ERF informs the challenges determine the type of response or strategy used. So, health facilities would rely on absorptive strategies to face transient and low impact challenges. Adaptive or transformative strategies would be used to face strong or severe challenges and entail limited adjustments or complete change in health systems operations to sustain service delivery (Barasa, Cloete, et al., 2017; Resyst, 2016).

However, during fieldwork this study observed the ERF's strategy categories are limited to portray the nature of the Hospital San Andrés ESE response to problems. This research encountered a general problem affecting all categories along with issues affecting each category. Both problems will be discussed in detail below.

The general problem: Lack of a tool for classifying challenges. When looking at all the strategy categories, they provide the following information:

- ✓ Absorptive strategies help health systems and organisations deal with transient or low-intensity challenges.
- ✓ Adaptive strategies are employed to face challenges of higher intensity.
- ✓ Transformative strategies contain greater or persistent shocks.

So, every strategy category a health system or organisation uses to deal with adversity relates to a certain type of challenge. The main problem, however, is that ERF does not provide a tool to classify the challenges. Thus, when looking at the armed conflict and routine challenges Hospital San Andrés ESE faces, it is difficult to fully state which challenge has a transient low intensity nature; or which challenge meets the characteristics of being higher intensity or persistent.

For example, let's consider the challenge Hospital San Andrés ESE faces with limited access to utilities due to armed conflict. The conflict through its use of lethal force can destroy on a regular basis key infrastructure that provides utilities to the hospital and this problem can last for several days or weeks. Considering the challenge just mentioned could last days or weeks, they may be defined as transient. But because it is a conflict challenge (which affects people's safety and rights) is a serious problem and becomes difficult to simultaneously classify it as having low intensity. Hence, this type of challenge does not fit within any the strategy definition presented earlier in this section.

Regarding higher intensity or persistent challenges, ERF does not provide specific characteristics on what is the nature of such challenges. The way how this study understood when a challenge is more difficult was mainly through cues from interviewees or making sense of challenges when transcribing, translating, and reflecting on interview and document information. So, for example, through this way it was possible to understand Hospital San Andrés ESE's scarcity of personnel due to conflict and Tumaco's isolation was a high intensity challenge for the hospital. Basically, the interviewees provided cues that this issue happens regularly and has important ramifications to the hospital operations mainly related to timely provision of care. Furthermore, through this way it was possible to determine that corruption in Hospital San

Andrés ESE was an endemic and persistent problem not leading it to deliver adequate services. Yet, ERF did not provide a tool to assess if each of those challenges met the categories of higher intensity or persistent to fully state their nature.

Hence, the framework does not provide specific tools to adequately classify a challenge. This, in turn, creates another problem which is the difficulty to classify the hospital responses to challenges into the absorptive, adaptive, and transformative categories. Basically, everything just discussed leads to a circular problem: the inability to fully know the nature of challenges, leads to difficulties to classify the hospital responses to challenges according to ERF strategy categories.

Problems with the individual categories. Besides the general problem affecting all strategy categories, each one has its own limitations. The section below explains the problems encountered.

Problems with the absorptive strategy category. When trying to match Hospital San Andrés ESE six responses to challenges with ERF's absorptive category, the following issues arose:

- The strategy definition does not consider the strategy or response itself to be transient. When looking at how Hospital San Andrés ESE responded to challenges, it was possible to see it relies on transient application of certain responses (e.g., activation of hospital and provincial emergency systems) to cope with challenges that can be temporary (e.g., death threats) or prolonged in time (e.g., armed strikes immobilising supplies for several weeks). Still, the category does not consider the response itself to have a transient nature. It just mentions that it deals with transient challenges which are basically equated to having low intensity. This later part, however, is problematic. As discussed earlier, there could be transient conflict-related challenges which can be hard to consider them as having low intensity due to its devastating effects on human rights and overall safety (e.g., attacks to hospital infrastructure).
- Only parts of the strategy definition matched the nature of the hospital's responses toward challenges. For instance, the hospital response referred as the Activation of the Hospital and Provincial Emergency Systems, or Activation

of Support Networks, aligned with parts of the strategy definition. These measures matched what ERF mentions with regards to absorptive strategies as they do not create extensive change in Hospital San Andrés ESE's functionality to cope with problems.

Problems with the adaptive strategy category. The following are the key problems.

- This research evidenced that certain measures the hospital uses to face challenges do not necessarily lead to limited adjustments in the hospital system functionality as ERF considers these type of strategies do. Rather, certain activities have been learned over time (e.g., managerial activities such as establishing a payment plan with insurers to settle their debt). However, the adaptive strategy definition does not mention that learned actions are key strategy elements.
- Some elements of the strategy definition match certain characteristics of the hospital responses to challenges. For instance, a measure like the activation of support networks to setup brigades to treat patients is a response that creates limited adjustments on the functionality of the hospital in a defined time. Although, doubts remain on whether such response helps at coping with "high intensity" challenges as the strategy definition suggests.

Problems with the transformative category.

Interestingly, it is the only strategy definition which its characteristics align well with features of certain responses Hospital San Andrés ESE developed to face challenges. For instance, the intervention of central government agencies in hospital operations is a strategy that seeks to transform hospital management to a new state — an organised facility with fully implemented administrative processes and controlled corruption. This transformative strategy intends to deal with the persistent problem of weak governance.

However, the main problem with the strategy category is being the only within the framework that has best fit or alignment with certain hospital responses to challenges. This means that out of three strategy categories ERF proposes health system and organisation employ to face problems just one fits with the actual responses the hospital

has used to mitigate operational problems. This success rate of the ERF strategy categories makes it weak to fully explain the measures health systems or organisations use to face challenges, sustain delivery of health care, and ultimately be resilient in conflict settings.

Given the limitations previously encountered with ERF, this study provides some recommendations to improve ERF explanatory power. This study considers these recommendations will help ERF to better describe how health systems and organisations respond to challenges and continue delivering care particularly in conflict settings.

Improving ERF

After a reflective process on ERF within the context of the wider literature of health system resilience and Complex Adaptive Systems, this study proposes the following recommendations to overcome some limitations and enhance its explanatory power.

1) Improving the definition of resilience

A starting point to enhance ERF would be to improve its definition of resilience. ERF states resilience to be *“the maintenance of positive adjustment under challenging conditions such that the [health systems and] organisation[s] emerge from those conditions strengthened and more resourceful”* (Gilson et al., 2017, p.1).

A closer examination to the definition shows that it may not be applicable to explain resilience for a wider health system. The problem is that the definition mentions that resilience is the ability of a health organisation to adjust under challenging conditions but omits saying the definition also applies to the wider health system.

Hence, ERFs definition of resilience must improve manifesting such definition also describes the meaning of resilience for the entire health system. This suggested improvement is necessary as previous research has used ERF to analyse the resilience of entire health systems (Gilson et al., 2017, 2020; Kagwanja et al., 2020). Thus, the definition should add the words this study has included in brackets within the definition’s paragraphs to enhance its application for both health organisations and entire systems.

2) Treat resilience properties and strategies as separate

A great problem evidenced in ERF, and in other frameworks (e.g., Blanchet's et al (2017)) corresponds to treat equally strategies and properties of resilience. This means, for example, that a hospital strategy or response to a challenge which could classify into the transformative category, it is immediately interpreted as the capacity of the system to transform to a challenge. This must change.

The problem outlined above is, perhaps, the main reason why the six responses of Hospital San Andrés ESE to challenges could not be classified into the adaptive, absorptive, and transformative strategy categories provided in ERF. Thus, to solve this issue, ERF could offer firm definitions on what resilience properties and strategies are. Such definitions could be the following.

Properties. Relates to characteristics or attributes, a health system, or organisation displays when it is resilient to challenging conditions. The key properties of a resilient health system or organisation is to be absorptive, adaptive, and transformative. All these properties co-exist. Neither is more than the other and health systems or organisations manifests them when it navigates challenges. These properties are what allow health systems and organisations to show positive adjustment under challenging conditions.

This research considered valuable Blanchet's et al (2017) view on Absorptive, Adaptive, and Transformative capabilities which ERF can use to define such properties. According to Blanchet and colleagues, each element has the following definitions. Absorptive property corresponds to the ability of health systems or organisations to withstand shocks (sudden and/or routine) and continue to deliver care. Adaptive property corresponds to the ability of health systems to modify or adjust certain functions to manage challenges to continue service delivery. The transformative property corresponds to the capacity of health systems and organisations to revamp their core functions when needed to effectively address challenges (routine or sudden).

Strategies. Correspond to the responses health systems and organisations deploy to face challenges and allow health systems to achieve the resilience properties. So, a health system can deploy different strategies or responses toward challenges which eventually leads to the health system and organisations to attain absorptive, adaptive, and transformative properties.

It is important for ERF to say that resilience strategies and properties are two different elements but are significantly interrelated. The strategies health system and organisations employ to challenges are the ones that will allow the system to achieve the absorptive, adaptive, and transformative properties.

3) Health systems achieve resilience properties through a process.

Within ERF conceptual framework there is need to mention that when health systems or organisations deploy strategies to challenges to achieve resilience properties it engages in a chain of activities or process that helps dealing with the problems.

Chapter 5 of this research profusely explained the different activities Hospital San Andrés ESE has pursued to face challenges. Such activities were also fundamental to activate capacities available within the hospital or the context for an adequate response to a problem. These activities, at the end, are the key elements health systems and organisations rely on to achieve the resilience properties.

4) Disassociate the nature of strategies with challenges.

ERF should disassociate the nature of resilience strategies with the challenges endured. For example, ERF mentions that an absorptive strategy relates to measures that with deal transient, low-intensity challenges. This, however, is problematic because this study explained that Hospital San Andrés ESE could use measures to contain transient stressors, but they may not have a low intensity nature.

Thus, this study considers that strategies are actions health systems and organisations use to be resilient. These activities are used individually or together and allow such systems to achieve absorptive, adaptive, and transformative properties.

5) ERF should define generic strategies for attaining resilience.

Because this research recommends that ERF should consider the Absorptive, Adaptive, and Transformative categories as properties instead of strategies of resilient health systems it should propose generic strategies that help attaining resilience. These generic strategies are what ERF predicts health systems and organisations will often do to become resilient especially in conflict-affected contexts. This research considers ERF can include the following generic strategies in its conceptual framework to improve its explanatory power.

- ✓ *Interdependent work with other social systems*
- ✓ *Network activation and lobby*
- ✓ *Exercise complex management*
- ✓ *Setup dynamic governance*
- ✓ *Community engagement with system operations*

Interdependent work with other social systems. This strategy entails the active work health systems and organisations do with the other social systems to obtain support towards challenges. This study borrows the term of interdependence that Blanchet and colleagues (2017) propose in their resilience framework to name the resilience strategy. For Blanchet et al, interdependence involves the ability of health systems of being aware that their activities are embedded in other social systems (political, social, economic) and understand those other systems affect system performance. However, health systems should not only be aware that outer systems can affect their performance but must actively work with them to address challenges. Such active work of health system with other social systems allows them to obtain support to face stressors.

The “**social brokers**” proposed by Blanchet and colleagues (2017) in their resilience framework play a crucial role for the interdependent work to be possible. Social brokers usually involve individuals or social groups interested to help the health system by establishing bridges across health care organisations and other sectors to facilitate information, resources, or joint work. In this study, it was possible to see how the voluntary oversight organisation or the medical mission round table fulfilled the role of social brokers allowing the hospital to engage in collaborative work with law enforcement authorities or Supersalud to cope with problems. Basically, the social brokers materialise what Kruk et al (2015) called the “**integration**” function of resilient health systems. Integration involves the ability of health systems to incorporate a diverse array of actors to bring innovative ideas and resources to solve problems.

Network activation and lobby. This strategy involves hospitals contacting established relationships or social brokers for financial or in-kind resources or making the case to third parties about the importance of their help in solving problems.

This strategy basically understands that people within the health system or organisations, contact colleagues, friends, or any public, private or non-profit organisation to obtain support during a problem. Such support could be financial or in-kind. Similarly, the strategy suggests that health system or organisations engage third parties who have key resources and make the case on why their support is important for their operation.

Again, social brokers play a key role in this strategy. These individuals can help health systems or organisations to establish support relationships with public or private organisations not explored before. Similarly, they can connect health systems and organisations with third actors who have crucial resources that facilitate health systems their resilience toward shocks.

Exercise complex management. This strategy entails what Barasa and colleagues (2018) refer to the ability of leaders within health systems and organisations to continuously facilitate and guide the actions of system stakeholders toward challenges.

It also includes inclusive leadership (or integration of workers in key system decisions) and the ability of leaders to learn from past experiences.

This research evidenced several hospital responses to challenges show the exercise of complex management in action. Examples of hospital responses that incorporate complex management entail managers negotiating with issuers for prompt payment or planning and coordinating the work of staff to facilitate commuting activities. Other examples include the structuring of investment projects for hospital renewal or being inclusive with hospital staff when making crucial decisions.

Establishment of dynamic governance. This strategy means that health system and organisations continuously develop and assess formal or informal rules to successfully guide behaviour of actors to address system challenges.

This strategy has been proposed after reflecting on key concepts that define Complex Adaptive Systems (CAS). Key literature on CAS (Blanchet et al., 2017; Braithwaite et al., 2017; The Health Foundation, 2010) considers that governance, or the formal and informal rules that regulate the behaviour of agents in the system, are elements that evolve continuously. This is because the contextual circumstances and relationships across system actors' constantly change. So, for the system to survive, it is necessary that the governing rules evolve so the behaviour of agents is correctly guided to help the system face its problems.

This study showed that changing governance structures in Hospital San Andrés ESE has been fundamental to sustain health care delivery in a conflict setting. Within this research, the hospital response referred as the intervention of central government agencies in hospital operations entailed a change in governance. In essence, this initiative changed the main operating rules of the hospital transforming it from a highly autonomous organisation to one with more central government oversight. This change in governance it is intended to better monitor hospital functions and eliminate damaging informal norms like patronage.

Community engagement. It is the ability of health systems and organisations to harness support from the citizenry to monitor their operations, seek third-party assistance, or propose policies toward authorities for enhancing hospital response to challenges.

This strategy aligns to what Blanchet et al (2017) mention as the need of health systems to build legitimacy among the citizenry to become resilient to stressors. For the authors, legitimacy corresponds to the trust community members have on the ability of health system and organisations to deliver adequate services. Such trust develops when people are engaged with the health system decision-making process and the establishment of rules.

This study showed citizen engagement has been crucial for Hospital San Andrés ESE to face problems. Such engagement has been possible through the active work of the voluntary oversight organisation with the hospital. Tumaco's citizenry through the oversight organisation helped the facility to improve its performance by continuous monitoring of its actions, mediating with armed actors for staff safety, or requesting to government authorities the intervention of the hospital to improve oversight.

6) Consider Time as a key resilience variable.

ERF could benefit if it includes the concept of time to understand health systems resilience. This is something that no resilience framework, including ERF, has considered yet. Health systems to display the absorptive, adaptive, and transformative properties will often require time. These properties usually are not materialised immediately or right after the hospital deploys different strategies to stressors. Instead, this study considers that only with the passage of time health systems and organisations are capable to display the resilience properties. This is because only the passage of time allows the feedback loops of health systems to give sufficient information about the adequacy of its activities to cope with the environmental changes. Enough passage of time provides sufficient information on whether resilience strategies work or there is need to change them.

7) Keep the cognitive, behavioural, and contextual capacities.

Finally, given that this research evidenced how relevant the cognitive, behavioural, and contextual capacities were for Hospital San Andrés ESE to configure the responses to challenges, this study argues the capacities categories should be maintained as they are in ERF. The ERF capacities are key pillars for health systems and organisations to establish responses or strategies to challenges.

7.2.2. CONTRIBUTIONS TO POLICY AND DECISIONMAKERS

The findings of this study have important implications for global health policy. In the following sections, the key lessons for policy and decision makers will be outlined about operation of hospitals in a conflict setting. Similarly, it will be identified key measures national and local policy makers in Colombia could do to assist the operation of Hospital San Andrés ESE, and potentially help other hospitals operating in similar contexts.

7.2.2.1. Lessons for Global Health Policy

Following a detailed analysis of the challenges, the capacities and the mechanisms underpinning the hospital responses to the challenges to sustain health care delivery in the conflict setting, the following seven lessons emerged for global health policy.

1. Routine challenges can threaten hospital operations in conflict settings

This study encountered that hospitals operating in protracted armed conflict settings not only face conflict-related challenges but also routine issues that can threaten their capacity to sustain health care delivery. In the case of Hospital San Andrés ESE, the most difficult routine problems it faced revolved around high debt product of unpaid services and poor internal accountability. Similarly, it endured disorganisation of working processes and poor maintenance. Some of these challenges were so grave, particularly the financial ones, that led the hospital to the brink of bankruptcy and the need of central government authorities to assume direct control of its activities.

The insight presented above about the challenges hospitals in conflict settings endure provides information to actors interested to help hospitals in conflict settings like

government authorities, humanitarian, or development agencies to devise support programmes to assist these organisations holistically. This latter issue means that supporting actors should design programmes not only focused on mitigating conflict challenges like the training of hospital staff on how to use emblems to reduce conflict risks, but similarly, to help such organisations cope with routine problems. Such support could involve the enhancement of hospital managerial skills for a better use of financial resources or give to the facility skilled personnel or supplies during scarcity of such elements.

The type of help explained above can significantly increase the probability of a hospital to sustain its service delivery in the conflict setting. This type of support addresses both the visible problems the armed conflict creates and those more typical or routine issues which often are unrecognised but can seriously affect the normal functionality of hospitals.

2. Hospital managerial staff and local authorities are key figures facilitating hospital response to challenges

This study evidenced hospital managerial staff and authorities are key figures facilitating a hospital to delivery services in a conflict setting. These actors are behind the cognitive and behavioural capacities along with the processes/mechanisms of the hospital response to challenges.

Hospital staff and local authorities are central figures of the cognitive capacity because they are the ones responsible to identify challenges and must comprehend their effects to hospital activities. Hence, managers and authorities must have strong analytical capabilities to identify issues that can affect hospital operations. Such capabilities mainly entail receiving and processing information of hospital activities and its surrounding environment to determine potential threats to the hospital and plan containment measures.

Relatedly, authorities and hospital staff, but specially the latter, are at the centre of the behavioural capacities underpinning the hospital responses to challenges. These actors are the ones that “start” key strategic measures that later set into motion the

mechanisms or activities the hospital uses to respond to stressors and continue service delivery. For example, a strategic measure hospital management and authorities undertake to help the hospital respond to conflict events entails contacting the Security Council members to convene such body to analyse challenges and develop solutions.

Similarly, Hospital staff and authorities are the key actors behind the mechanisms or activities underpinning the hospital response to challenges. For instance, hospital staff are key figures behind the mechanism corresponding to negotiation between the hospital and vendors to obtain supplies during financial constraints. Hospital staff and authorities also contact humanitarian parties to mediate with militia when supplies are being blocked on the road due to conflict events. Given the importance hospital staff and authorities have for the operation of mechanisms, they must be skilful on key areas so the mechanisms can function. Further details on such skills are provided below.

After a close examination of the capacities underpinning hospital responses to challenges, authorities and particularly hospital managers should be skilful in negotiation, leadership, planning, lobbying and, to some extent, military affairs. This research revealed the negotiation skills of Hospital San Andrés ESE managerial staff helped the facility sustain health care delivery in the conflict environment as it improved payments on services delivered and access to supplies.

Relatedly, the leadership of hospital senior management and authorities reflected on their actions to include workers in hospital decisions and request to humanitarian actors' war medicine courses helped to mitigate routine and conflict challenges. Such challenges entailed managers' perception of staff engaging in disrespectful behaviour or insufficient skills to treat conflict victims. Besides, hospital management planning skills like resource allocation and establishment of working timetables helped dealing with challenges like scarcity of supplies due to financial problems or difficulties to commute because of conflict risks. Similarly, managers lobbying capabilities allowed the hospital to fund projects that could enhance its capacity to deliver complex care. This study also showed that hospital managers with previous military expertise can be helpful to ameliorate the dangers of an armed conflict setting. Additionally, such skills proved useful to establish order in hospital managerial activities.

The available literature about the operation of providers in conflict areas does not mention any of the skills presented above as important to facilitate their operation in such environments. Yet, studies about everyday resilience of health systems in non-conflict environments recognised some of these skills as significant to manage challenges to continue service delivery (Gilson et al., 2017). Such literature considered that managerial leadership is crucial to engage people at work or agree on how to use budgets when resources are scarce (Gilson et al., 2017). So, the findings of this study corroborate managerial skills are relevant for health organisations to overcome challenges not only for those operating in normal environments but also for those working in conflict areas.

Consequently, policy makers must assess which skills are learnable and setup training programmes for authorities and hospital administrators currently working for hospitals operating in conflict contexts or those that intend in doing so. Such training programmes can help these actors to be better prepared to help hospitals tolerate challenges of conflict settings and continue service delivery.

3. Emergency systems are crucial for a continuous hospital operation in a conflict setting.

This study considers emergency systems crucial for hospitals to operate in conflict settings after reflecting on the hospital response called “Activation of emergency systems to face challenges”. The reasons why such systems are important are provided next.

Underpinning policies. The emergency systems have been important for Hospital San Andrés ESE to face conflict problems as some of its elements rely on policies that have helped the facility developed important capabilities to face such issues. Chapter 5 showed that a key policy creating such response capabilities to conflict challenges entails the Safe Hospital Policy. Colombia implemented the Safe Hospital policy as mandate from the WHO and the PAHO to make hospitals resilient to natural disasters/emergencies (PAHO, 2007; WHO, 2009). This policy requires hospitals with the help of government authorities to prepare protocols and investments to allow hospitals withstand natural disasters. Still, the experience with Hospital San Andrés ESE shows that such policy requirements have been critical for the facility to manage conflict problems.

For example, the hospital emergency response plan, a Safe Hospital Policy requirement for the hospital to attend natural disasters, has helped the facility cope diverse conflict issues. This plan has allowed the hospital to serve several conflict victims using procedures to provide services for massive number of casualties from Tsunamis or floods. Similarly, the different technologies the plan requires the hospital to investment on like backup electrical and water infrastructure, have become fundamental to tolerate rationing of utilities due to conflict attacks on utility infrastructure.

Given the importance of the emergency system policies and guidelines to develop in the hospital capabilities to respond to challenges, this project considers an important step national and global decision makers should make is to modernise the Safe Hospital Policy. This policy should be updated requiring government authorities and hospitals to bear in mind armed conflicts as sources of challenges that can threaten hospital activities. This is important because various nations particularly in the PAHO region such as Colombia or Mexico, are currently struggling with armed conflicts and the phenomenon is becoming more common throughout the world (HIIK, 2021). This update can be an important step to improve hospitals' response to conflict problems and help them continue service delivery in such areas.

Establishment of Guidelines. Another element making important the emergency systems for Hospital San Andrés ESE to cope with challenges relates to the formal and informal guidelines it established. Such guidelines have outlined the following as central activities to manage challenges. 1) The hospital activating the emergency plan, 2) The activation of the security council, and 3) the activation of “action routes” to help hospital personnel cope with conflict threats.

Regarding the first activity, it is a hospital-led initiative to face conflict events. Product of the Safe Hospital policy this activity has been formally established or written to allow the hospital face contingencies. Hospital senior management becomes responsible for activating the emergency plan through recognising or being aware of the challenges that can affect hospital activities. The initiation of this activity sets into motion other measures and resources for the hospital to face stressors. For instance, the plan leads the hospital to prepare for extra stocks of supplies and use them in case of need.

Relatedly, the hospital through activating the emergency plan can attend several conflict casualties and look for ways within the hospital in how to accommodate them. All in all, the activation of the hospital emergency plan is a measure allowing the facility to attend conflict events mainly on its own.

This research recognised the activation of the Security Council as another activity Hospital San Andrés ESE used to face conflict events. Despite this activity being an unwritten process/protocol, it has been helpful for the hospital to connect with government authorities to work on measures to handle challenges. This research finding is relevant to global health policy as it highlights that governmental help and leadership is essential when hospitals see their operations significantly threaten by conflict challenges. Likewise, the security council has helped the facility to look for collaboration of actors belonging to several social or economic sectors to ameliorate the effects of conflict on hospital functionality. For example, the Security Council facilitated to the hospital contact with humanitarian actors to mediate with armed militia for the transit of stranded supplies or obtained the collaboration of the military to refer critical patients.

Concerning the third key activity the hospital and authorities use to overcome conflict challenges, it relates to the hospital or government authorities using protocols established in laws or resolutions to ameliorate conflict risks on hospital staff. From the literature reviewed, this study could argue the Colombian government could be a pioneer for establishing these types of protocols or routes to help hospital personnel as they are barely mentioned in studies from other contexts. Meanwhile, the studies that refer to such measures have been primarily conducted in Colombia (ICRC, 2013b). Still, the research from Colombia that mentioned such activities do not provide details about how the protocols function. This research, however, went further in identifying how such processes work, what was the hospital's role in the process and what other parties were involved.

In general, this study with highlighting the key activities of the emergency system guidelines makes a key contribution to global health policy helping conflict affected settings to study these activities and emulate them if they deem them relevant to help hospitals sustain health delivery. Likewise, if other conflict countries have similar

emergency response activities, this project helps to inform decision makers on how the experience of Hospital San Andrés ESE can enhance their processes to help hospitals address conflict problems and facilitate their service delivery.

4. Hospital autonomy: A policy that weakens hospital functionality in conflict settings.

This study recognised that Hospital San Andrés ESE measure to face challenges called the intervention of central government agencies in hospital operations importantly helped it to continue service delivery in the conflict context. A key mechanism this initiative relied on to function relates to the temporary abolition of the hospital's board of directors. Basically, this mechanism implies the termination of hospital autonomy and led the government to assume direct administrative control over the organisation.

This study observed the main mechanism explained earlier has provided the hospital with significant financial and human resources to face challenges which would had been impossible for the facility to obtain on its own. Such resources have led the hospital to establish order in clinical and administrative processes, pay workers and providers in a timely manner, ameliorate conflict risks to staff by appointing an executive director with prior military skills, and has allowed the hospital to comply with mandatory health provision standards.

The positive results obtained by the hospital intervention process leads this study to question the value of the hospital autonomy policy implemented by Colombia to govern hospitals particularly those operating in conflict areas. Chapter 1 mentioned that Colombia, as several developing countries in the mid-1990s, implemented the hospital autonomy policy to improve the quality and efficiency of their services (Berkley et al., 1993; Congreso de Colombia, 1993; Presidencia de la República, 1994). However, the findings of this study, specifically those related to the response of Hospital San Andrés ESE to challenges, suggest the policy may not be helpful for facilities operating in conflict areas. This study raises critical questions around the capacity of hospital autonomy policy to guarantee an adequate operation of a hospital in a conflict setting and are relevant within and beyond Tumaco and Colombian contexts. The following factors evidenced by this research may explain why hospital autonomy may be inappropriate for hospitals

operating in conflict areas: weak accountability, underdeveloped markets, and poor payment mechanisms. Each factor is explained below.

Weak accountability. Hospital autonomy changes the accountability on hospital management, from a hierarchical command and control style to one based on government regulation and internal monitoring (Harding & Preker, 2003). This accountability system includes the government establishing a regulatory framework stating the different hospital standards for adequate service provision, and hospital managers become responsible to fulfil them and monitor continuous compliance. Furthermore, the government assumes the role to monitor hospital performance through its central and decentralised agencies affiliated with the health and judicial systems (Harding & Preker, 2003). The policy also creates internal accountability in hospitals through establishing a board of directors who become responsible to control managerial activities and the hiring of managers using performance-based contracts (Harding & Preker, 2003).

Unfortunately, this research evidenced that hospitals like Hospital San Andrés ESE which have undergone autonomy reforms and operate in armed conflict settings face weak accountability mechanisms to monitor activities creating difficulties to deliver good services. Chapter 4 showed that research participants considered the judicial system did not perform control on hospital operations and resources. Instead, interviewees considered the people working for the regulatory bodies were complicit with hospital managers regarding the malversation of hospital financial resources.

Moreover, this research found the hospital board of directors did not function properly to control hospital management. Study participants reported that the board of directors had been captured by local politicians and the political process. The politicians used this accountability body to exert power on managers to do activities that would benefit their personal or political interests. As a result, the hospital saw an explosion of unnecessary staff contracting. This latter problem is product of political patronage and led the organisation to financial insolvency.

This study considers the armed conflict may be an important factor that weakens accountability systems that autonomous hospitals like Hospital San Andrés ESE relies on

to provide services successfully. This study through its interview process acknowledged the conflict renders law enforcement agencies inoperative. The main reason is that armed actors can infiltrate various government agencies that monitor hospitals, particularly at the local level. Thus, the officials who in regulatory bodies fear to denounce wrongdoing as co-workers, hospital staff, or politicians, can be colluding with armed actors creating safety risks.

Given the weak accountability environment surrounding Hospital San Andrés ESE, the national government through the intervention process stepped in to monitor hospital activities and established a relatively new hierarchical accountability structure. During the intervention process, Supersalud, a national government agency/bureau, has become responsible to directly oversee hospital managerial activities, resource allocation and funding. Throughout the intervention the hospital manager receives rights to allocate hospital resources, but the superintendence significantly controls his/her decisions and actions.

Product of the central authorities needing to establish a more direct oversight on Hospital San Andrés ESE, this research considers that hospital autonomy may not be appropriate to improve the performance of public hospitals operating in conflict environments. The conflict can weaken the institutional framework responsible for the accountability of these facilities. A conflict setting is far from resembling the ideal context that hospital autonomy policy needs to deliver good results. The theoretical literature informs that such policy requires an environment of strong government institutions responsible for accountability to help hospitals deliver good services and meet their social objectives (Harding & Preker, 2003). Yet, this is not the case in armed conflict contexts like in Tumaco, Colombia, where the hospital faces an almost non-existent accountability environment leading the facility to poor performance.

Underdeveloped markets. Theoretically, hospital autonomy works best when hospitals face strong competition from other providers for resources and the delivery of services (Harding & Preker, 2003). Strong competition on resources to deliver services allows the facility to access skilled workers as they must be well prepared to be selected from the marketplace. Similarly, a hospital facing a competitive environment on the

delivery of services enhances accountability as clients penalise providers when they deliver bad services. Furthermore, strong competition among hospitals can lead these organisations to benchmark services with competitors or adjust service prices to reflect market quality (Harding & Preker, 2003). This latter measure is possible if hospitals are exposed to a funding mechanism in which they must sell services to the government or insurers to finance operations.

Unfortunately, Hospital San Andrés ESE operates in a market which is significantly underdeveloped in comparison to the ideal conditions, product of Tumaco's conflict and other contextual factors. For example, the conflict, along with contextual factors like Tumaco's greatly dispersed population can disincentivise individuals or entities to investment in hospitals to increase competition. The armed conflict deters people and organisations to invest in a hospital as they become concerned for their safety (El País, 2011). Meanwhile, Tumaco's dispersed population does not create a strong demand for health services. These two situations have led the hospital to become the monopoly in providing health services in the area and thereby, not improve its performance. The community cannot penalise poor hospital services as it is the only option for affordable and timely medical care.

Moreover, some results outlined in Chapter 4 indicate contextual and conflict factors of Tumaco do not allow Hospital San Andrés ESE to face a competitive market of inputs particularly of human talent. Chapter 4 mentioned the conflict has affected workers' decisions to provide their services for Tumaco given the insecurity of the area. Additionally, contextual factors of Tumaco like its rurality have led many health professionals to avoid working for the region as they face reduced comfort and well-being. Moreover, the few providers operating in Tumaco do not create strong competition for workers. Consequently, the lack of competition of the hospital's input markets, particularly personnel, has led the facility to hire unexperienced or nonqualified workers for administrative and clinical roles explaining to a large extent hospital disorganisation.

Today the hospital to obtain quality resources, particularly skilled workers and improve services delivery relies on the help of central government instead of using the market system as an autonomous hospital would do. This again shows why autonomy for

hospitals operating in conflict areas might not be an adequate measure to improve performance.

Poor payment arrangements. The theory on hospital autonomy informs that such facilities obtain the best results on efficiency and service delivery if they are exposed to a payment system where they sell their services to a purchaser and obtain sales revenue on a recurrent basis (Harding & Preker, 2003). However, Hospital San Andrés ESE is exposed to inadequate payment arrangement that explains in a significant way its bad performance. Two factors which were discussed in detail in Chapter 4 explain why the payment system is inadequate. First, the discontinuous payment of insurers to the hospital and, second, government regulation that has led hospitals to not receive full payments from insurers within a short timeframe.

The issues just mentioned make the operation of an autonomous hospital in a conflict setting unviable. Basically, the hospital is exposed to significant financial constraints. It becomes difficult to deliver care, particularly conflict pathologies that usually are resource intense and, therefore, expensive for the hospital to deliver. As a result, the hospital has incurred in a huge debt to obtain operating resources which over time has become impossible to assume on its own.

Meanwhile, the intervention process became a key facilitator of financial resources for Hospital San Andrés ESE to fulfil its functions and mitigate the poor performance of payments arrangements. This government initiative directly injected to the hospital with capital allowing the facility to settle debts, purchase materials, or pay for utilities to deliver services on a normal/routine basis. This experience shows that hospital autonomy might not be a good policy for a hospital operating in conflict settings to obtain operating resources. This research evidenced the role played by national regulatory bodies (Supersalud) through providing Hospital San Andrés ESE with financial resources directly has created more normality to hospital activities than making the organisation sell services to insurers.

Considering all the problems autonomy has caused to the hospital in Tumaco and how direct government intervention allowed the organisation to mitigate such issues, this research considers the policy might not be effective for hospitals operating in conflict

contexts. The Hospital would operate in an environment where the institutional arrangements such as accountability, markets, and payments are not effective leading to poor performance.

5. *Networks are crucial to sustain health care delivery.*

The networks or contacts Hospital San Andrés ESE has established have been relevant to respond to challenges and sustain service delivery in a conflict setting. Chapter 5 of this thesis showed that the contacts or networks hospital staff have with government bodies, other providers, or with humanitarian and non-profit organisations have helped the hospital to access support and resources valuable to face conflict challenges. For instance, through networks the hospital has obtained support with courses to strengthen staff knowledge on their rights to work in a conflict area or understand which symbols/emblems provide protection. Similarly, the contacts hospital staff has among non-profit organisations have permitted support with transport of patients facing problems to access the facility. Equally, the hospital contacting other health facilities to borrow supplies has been able to mitigate challenges around scarcity.

Thus, networking is a key capacity for a hospital operating in a conflict setting. This is reflected in the wider literature on ERF, which views networks as valuable resource enablers that significantly help health systems and organisations manage challenges (Gilson et al., 2017; Kagwanja et al., 2020). Therefore, policymakers must focus attention on ways how hospital staff, particularly managers, can enhance their network capabilities to establish support relationships that help hospitals in conflict areas deal with problems. Chapter 6 mentioned a good way to enhance hospital staff network capabilities through improving the “work meetings” initiative. The initiative entails meetings that hospital managerial staff engage with several contextual stakeholders to discuss problems affecting the facility, obtain support to those problems and facilitate the exchange of contact details to develop support relationships. This chapter will refer to the work meetings in more detail later.

Furthermore, it is critical that policy makers guarantee the good functionality of communication services as they enhance hospital networks. This study showed the hospital communication systems helped the facility contact support networks to obtain

financial or in-kind resources. Hence, authorities must pay attention that such systems function well. This issue will be elaborated in more detail soon.

6. *The importance of trust*

Chapter 5 outlined how important trust has been for Hospital San Andrés ESE to respond to conflict challenges and sustain service delivery. The trust of third-party actors supporting the hospital like government authorities or non-profit organisations about its capacity to deliver care or the use it gave to resources provided for support, facilitated access to supplies during scarcity of such elements. Similarly, the trust the voluntary and humanitarian actors have achieved with armed actors have allowed them to mediate with conflict actors to prevent attacks on hospital facilities or staff. Lastly, the trust suppliers have on the hospital availability to fulfil financial obligations helps it to obtain products more regularly to deliver basic services.

Previous literature assessing ERF in a non-conflict environment has also found that trust facilitated a primary health care system response to challenges (Gilson et al., 2017). This study corroborates such finding and elucidates that such factor is also critical for a hospital operating in an armed conflict setting. Consequently, policy debates on how to prepare hospitals to operate in conflict contexts should focus on how to enhance the trust such facilities have with third actors that provide support. Some ideas that could enhance hospitals' trust with supporting parties could be the following.

-Leading hospitals to fulfil financial obligations. This measure helps hospitals achieve trust with suppliers, workers, and patients. Suppliers will keep providing products as they obtain reimbursement on products sold. Workers will feel motivated and continue their work at the hospital as the organisation helps them afford living expenses. Patients will evidence the hospital has supplies and workers to deliver services creating confidence on them to receive health care.

-Enhancing accountability. It is important to establish spaces where supporting actors, particularly volunteers and humanitarian organisations, can request information to the hospitals about the use of resources they provide to help it sustain health care delivery.

-Leading hospitals to meet compulsory service delivery standards. This factor helps the facility to gain recognition among the community and government authorities as a facility that delivers good and safe services on a continuous basis.

-Enhance security to the medical mission. Develop more proactive roles in government authorities and humanitarian actors to train conflict actors about the respect of the medical mission. Similarly, these actors should guarantee continuous comprehensive training to hospital staff on issues related to humanitarian law and protecting emblems. This can enhance the trust of staff to serve hospitals in conflict areas as safety risks could be ameliorated.

7. Communication systems are vital elements for adequate response to challenges.

Lastly, this research makes relevant within global health policy the importance of communication systems for a hospital to sustain health services in a conflict setting. Communication systems correspond to services like telephone or internet that allow hospitals to get in contact with third parties. Even though this policy lesson might be simple or obvious, it is necessary to make emphasis on it because this research encountered such systems as a critical component for the hospital to obtain support with financial or in-kind resources. Communication systems also allow hospitals to inform authorities and other key actors (e.g., non-profit organisations) about conflict events that could have negative repercussions on hospital functionality. Relatedly, Communication systems help mitigate shortage of supplies through facilitating the contact with other health facilities or authorities along with making easier the referral activities especially of conflict-affected patients in serious state.

Thus, the policy debate oriented to help health systems operation and especially the one related to hospitals in conflict contexts, should bear in mind the need of government authorities to investment in robust communication technologies. Such technologies should be proof against weather, conflict, or other disasters. This measure can help hospitals engage in contact with support actors at any moment when required and continue rendering services.

7.2.2.2. Recommendations to local policymakers

Based on participants' insights provided in Chapter 6, this section considers decision makers in Colombia should pay attention to these five elements to greatly enhance hospital service delivery in the conflict area.

Develop an emergency response system that helps to deal with different crisis — including armed conflict — and invest on its key resources. Authorities should establish a unified emergency response system allowing the hospital and themselves face any crises including conflict events. This is important because in Chapter 6 this study recognised that research participants informed the hospital importantly relied upon resources the government destined to respond to natural disasters to deal with conflict challenges (e.g., calling the help of the fire department when the hospital faced water rationing during conflict-events). This process can help with the formalisation of several activities authorities and the hospital use to face conflict challenges which lack documentation. Similarly, the unification of emergency systems helps the government to include in such system procedures already formalised due to legal requirements (e.g., the route helping hospital staff endure death threats as a requirement of Colombia's victims' law).

Additionally, for the emergency system to effectively work authorities and the hospital should consider undertaking the investments outlined in Chapter 6 to make the system stronger. Such investments involve improving the maintenance of the hospital water or electrical reserves to mitigate ration of utilities or increase police personnel nearby the hospital for a faster reaction to conflict crises. So far, all these latter investments have not been considered a top priority within the Nariño's government agenda as its budget is usually oriented to fund resource-intense sectors such as education or health insurance. This research project, perhaps, can be the starting point allowing authorities to consider these latter investments as key priorities.

Enhance the hospital resolatory capacity to meet the community's and conflict health needs. In Chapter 6, research participants considered the most important issue the hospital must address entails enhancing its capacity to meet the population's health needs for critical and emergency services. Consequently, the hospital and

authorities should focus efforts to fully developed the Intensive Health Care Unit and the opening of the emergency service at Tumaco's city centre. Doing these activities significantly boosts the hospital resolatory capacity, particularly to meet the health needs of conflict victims. Moreover, the opening of the emergency service at Tumaco's city centre allows the hospital to attend a higher demand for care and improves hospital accessibility to poor citizens.

Strengthen hospital management skills and the establishment of networks with other supporting actors. This research evidenced that hospital management should have different skills and access to networks to help a hospital face challenges in a conflict setting and continue service delivery. The skills managers need to operate these organisations ranged from negotiation, leadership, planning, lobbying, and safeguarding in conflict areas. Meanwhile, hospital networks allow access to resources that prove helpful during challenges.

Consequently, policy makers should include in the academic programmes training hospital administrators the learning of the skills just mentioned to facilitate the work in conflict areas. The training programme should also include crises management or emergency response and international humanitarian law.

Meanwhile, to enhance hospital networks, policy makers should strengthen the measure called 'Work meetings' which Hospital San Andrés ESE uses to create or solidify support relationships. Chapter 6 explained the work meetings consists of discussions the hospital establishes with actors from different socio-economic sectors of Tumaco to explain them the issues affecting the hospital and look for support to face them. These events also facilitate the sharing of contact details to establish support networks. Thus, policy makers should help the hospital, and its managers, to establish the working meetings more frequently and connect with more national level stakeholders to increase strategic support relationships.

Establish a special governance structure for hospitals operating in areas enduring most conflict. In Chapter 6, this project showed that several interviewees considered important the government should think on alternatives about how to govern hospitals operating in conflict areas. This study considers that these participants

recommendations are important and decisionmakers should embrace them. The main reasons why policymakers should establish a new governance for public hospitals are as follows. First, this study observed the current policy governing hospitals in Colombia, called hospital autonomy, may weaken their operation in conflict settings. This study illustrated that public hospitals in conflict settings could be exposed to a weak institutional environment unable to effectively monitor autonomous hospitals to provide good services. Second, the direct intervention of Supersalud in Hospital San Andrés ESE activities has shown that more central government action in hospitals operating in conflict contexts can be helpful in providing managerial order and sustain their health care delivery.

Therefore, decisionmakers in Colombia should consider a new way to govern hospitals operating in areas enduring most conflict. Such new government oversight on hospitals could be informed by the features of the central government intervention process on Hospital San Andrés ESE. This means the central government, through its agencies, can be directly responsible to monitor hospital staff or activities and directly hire the hospital manager through a competitive process. Similarly, research findings suggest that in this new governance structure the appointed managers should still receive autonomy for allocation of resources within the hospital and hiring personnel to have more flexibility when navigating challenges. Finally, the government should produce a law to make as top priority the payment of hospitals operating in conflict areas to mitigate financial shortcomings.

7.3. STUDY LIMITATIONS

This research has important limitations. First, despite the researcher's efforts to interview the most relevant individuals who had significant knowledge about the research problem, it was difficult to include key actors such as the provincial governor or the provincial health authority director. Similarly, it was difficult for this research to interview representatives from key supporting organisations to the hospital during challenges like the manager of the main primary care facility operating in Tumaco or the water company director. All these actors would have provided important information to complement the understanding of the hospital response to challenges, the activities these organisations undertake to help the hospital, and limitations faced while doing so.

Second, the interview process also faced some problems. As mentioned in the methods chapter, the study significantly relied on telecommunication technologies to contact interviewees which sometimes proved unreliable creating distraction during conversations to fully developed ideas or led to not capturing certain details from conversations. Furthermore, the researcher felt that in certain in-person interviews, he was not able to fully probe the answers provided by some interviewees. Particularly three people provided more of a monologue on the issues being discussed rather than developing a fluid dialog or conversations on such topics.

Third, despite all the care the researcher put into translating the interviews obtained during fieldwork so they accurately reflect testimonials on the research topic, it is possible certain errors and biases could had been introduced. Such errors or biases can relate to a preference to use certain words or language when writing in English. A second check of the translation process would have alleviated this problem, but this research did not have sufficient financial resources to obtain this type of service.

A fourth limitation of this study corresponds to not assessing whether Hospital San Andrés ESE response to challenges can contain such problems over time to keep its service delivery. This study identified that hospital responses helped it navigate challenges at the time they occurred. Yet, it is not clear if such responses are successful to mitigate the challenges in a longer time frame. This type of evaluative research was out of scope of this study, but it could be conducted in the future to determine success or failure of hospital responses to mitigate challenges for continuous operation in a conflict context.

Relatedly, another limitation of the research could be why it consistently used the building blocks themes to analyse the hospital challenges and response. The researcher found this approach advantageous because it helped to precisely identify the challenges facing the hospital system core functions/components and to explain how the facility addresses each problem. Similarly, given the scarce resources government authorities and supporters have available, the research considered it is good they know the problems each of the hospital components have so they can focus their support. Additionally, the

approach provided a clearer understanding of how or when challenges and responses interact/intersect.

Finally, the Covid-19 pandemic is not explicitly addressed as a key challenge that affected the operations of Hospital San Andrés ESE, despite the study being written during the pandemic. The main reason why this study avoided to pay greater attention on the pandemic was because fieldwork began before such event started so most of the information obtained never related to this problem. Including this new issue into the research entailed interviewing all research participants again which was not an easy process to undertake due to limitations with communication technologies and participants' time. Additionally, given that Covid-19 had significant ramifications for the operation of health facilities both in the world and in Colombia, including Hospital San Andrés ESE, this project had to use significant time to examine them in detail which this project, unfortunately, was severely restricted by.

7.4. RECOMMENDATIONS FOR FUTURE RESEARCH

There are different avenues future research can explore to enhance the understanding about the operation of health systems and particularly hospitals in conflict settings. One path would be to assess if the hospital responses found in this context to both routine and armed conflict challenges could be maintained for other conflict contexts or new type of responses arise. Further research can also focus to assess whether the response of a hospital to challenges are effectively containing the challenges and allowing a continuous health care delivery over time. This type of research can provide information on whether hospitals should maintain or change its responses to challenges to enhance resource allocation and facilitate their operation in conflict areas.

Additionally, there is need of more research to specifically explore the role of emergency systems for the operation of hospitals in conflict areas. This research uncovered that these types of systems are important for hospitals to withstand challenges and continue service delivery in conflict areas. Yet, more research is needed to focus on assessing to what extent emergency systems at provincial and hospital levels in a conflict context evaluate the risks the conflict can create to facilities. Also, more research work should be done to determine if there is articulation across the governmental and hospital

level emergency response systems, how the articulation works and what are the limitations.

Finally, other paths for future research should focus on the importance of trust, networks, and the work of volunteers around hospitals and health systems in conflict areas or assessing the value of hospital autonomy in such contexts. This research shed light that trust, and networks are key capacities for a hospital to address challenges. But issues on how trust can be developed and particularly maintained or nurtured are elements that received insufficient attention in this study. Similarly, how networks can function in a conflict setting and ways how to establish them faster or enhance them should be something that needs more research focus. Likewise, it is critical to get to know in more detail the work of volunteer groups or associations that monitor the functionality of health systems and organisations in conflict settings. Research on this area can focus on the contextual factors that facilitate or impede the establishment of these voluntary groups monitoring the health systems, determine to what extent they influence policy and decisions of health system and organisations in conflict, and what type of preparation or training they receive to monitor the health system and withstand the armed conflict problems. To finish, future research projects can conduct studies with larger samples to assess the effectiveness of hospital autonomy in conflict settings. This study provided insights that providing autonomy to public hospitals might not be a good decision to operate such facilities in conflict settings. The hospitals will be exposed to a weak institutional environment to monitor their activities. A study with a wider sample can provide more insights on these and other issues or, perhaps, information that could inform this policy might have advantages for hospital operating in conflict contexts.

References

- Abu-El-Noor, N. I., Aljeesh, Y. I., Radwan, A. S., Abu-El-Noor, M. K., Qddura, I. A.-I., Khadoura, K. J., & Alnawajha, S. K. (2016). Post-Traumatic Stress Disorder Among Health Care Providers Following the Israeli Attacks Against Gaza Strip in 2014: A Call for Immediate Policy Actions. *Archives of Psychiatric Nursing, 30*(2), 185–191. <https://doi.org/10.1016/j.apnu.2015.08.010>
- ACEMI. (2018). *Gestión de Desperdicios e ineficiencias en el sistema de salud Colombiano*. https://www.acemi.org.co/images/publicaciones/documentos_de_interes/documentos-interes/gestion_desperdicios_v7.pdf
- ACHC. (2017). *Informe de Cartera a Diciembre de 2017*. <http://achc.org.co/wp-content/uploads/2018/08/ULTIMO-INFORME-CARTERA-A-DICIEMBRE-DE-2017-con-y-sin-deterioros-6-07-20....pdf>
- ACHC. (2022). *Deudas a hospitales y clínicas en ascenso – ACHC Asociación Colombiana de Hospitales y Clínicas*. <https://achc.org.co/boletines-y-comunicados-achc/deudas-a-hospitales-y-clinicas-en-ascenso/>
- Adam, T., & de Savigny, D. (2012). Systems thinking for strengthening health systems in LMICs: Need for a paradigm shift. *Health Policy and Planning, 27*(suppl_4), iv1–iv3. <https://doi.org/10.1093/heapol/czs084>
- Adams, W. (2015). *Conducting Semi-Structured Interviews*. <https://doi.org/10.1002/9781119171386.ch19>
- Afzal, M. H., & Jafar, A. J. N. (2019). A scoping review of the wider and long-term impacts of attacks on healthcare in conflict zones. *Medicine, Conflict, and Survival, 35*(1), 43–64. <https://doi.org/10.1080/13623699.2019.1589687>
- Ager, A. K., Lembani, M., Mohammed, A., Mohammed Ashir, G., Abdulwahab, A., de Pinho, H., Delobelle, P., & Zarowsky, C. (2015). Health service resilience in Yobe state, Nigeria in the context of the Boko Haram insurgency: A systems dynamics analysis using group model building. *Conflict and Health, 9*(1), 30. <https://doi.org/10.1186/s13031-015-0056-3>
- Ahamadani, F. A. B., Louis, H., Ugwi, P., Hines, R., Pomerleau, M., Ahn, R., Burke, T. F., & Nelson, B. D. (2014). Perinatal health care in a conflict-affected setting: Evaluation of health-care services and newborn outcomes at a regional medical centre in Iraq. *Eastern Mediterranean Health Journal, 20*(12), 789–795. <https://doi.org/10.26719/2014.20.12.789>
- Alcaldía de Tumaco. (2016). *Plan de Desarrollo Alcaldía de Tumaco—Tumaco nuestra Pazón. 008*, 301.
- Alcaldía de Tumaco, S. de S. (2018). *Análisis de la situación de Salud con el modelo de los determinantes sociales—ASIS*. <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/ED/PSP/asis-distrital-tumaco-2018.pdf>
- Ameh, C. A., Bishop, S., Kongnyuy, E., Grady, K., & Van den Broek, N. (2011). Challenges to the Provision of Emergency Obstetric Care in Iraq. *Maternal and Child Health Journal, 15*(1), 4–11. <https://doi.org/10.1007/s10995-009-0545-3>

- Ávila, A. (2017). *La tragedia de Tumaco, por Ariel Ávila*.
<https://webcache.googleusercontent.com/search?q=cache:mMocMn0P7G4J:https://www.semana.com/opinion/articulo/ariel-avila-la-tragedia-de-tumaco/513763+&cd=1&hl=en&ct=clnk&gl=uk>
- Ávila, A. (2019). *Detrás de la guerra en Colombia*. Planeta Colombia.
- Barasa, E., Cloete, K., & Gilson, L. (2017). From bouncing back to nurturing emergence: Reframing the concept of resilience in health systems strengthening. *Health Policy and Planning, 32*(suppl_3), iii91–iii94.
<https://doi.org/10.1093/heapol/czx118>
- Barasa, E., Mbau, R., & Gilson, L. (2018). What Is Resilience and How Can It Be Nurtured? A Systematic Review of Empirical Literature on Organizational Resilience. *International Journal of Health Policy and Management, 7*(6), 491–503.
- Barasa, E., Molyneux, S., English, M., & Cleary, S. (2017). Hospitals as complex adaptive systems: A case study of factors influencing priority setting practices at the hospital level in Kenya. *Social Science & Medicine, 174*, 104–112.
<https://doi.org/10.1016/j.socscimed.2016.12.026>
- Bellal, A. (2017). *Health and the Law of Armed Conflict* (SSRN Scholarly Paper ID 3079434). Social Science Research Network.
<https://papers.ssrn.com/abstract=3079434>
- Béné, C., Wood, R. G., Newsham, A., & Davies, M. (2012). Resilience: New Utopia or New Tyranny? Reflection about the Potentials and Limits of the Concept of Resilience in Relation to Vulnerability Reduction Programmes. *IDS Working Papers, 2012*(405), 1–61. <https://doi.org/10.1111/j.2040-0209.2012.00405.x>
- Ben-Ezra, M., & Bibi, H. (2016). The Association Between Psychological Distress and Decision Regret During Armed Conflict Among Hospital Personnel. *Psychiatric Quarterly, 87*(3), 515–519. <https://doi.org/10.1007/s11126-015-9406-y>
- Berkley, S., Bobadilla, J.-L., Hecht, R., Hill, K., Jamison, D. T., Murray, C. J. L., Musgrove, P., Saxenian, H., & Tan, J.-P. (1993). *World development report 1993: Investing in health* (No. 12183; pp. 1–348). The World Bank.
<http://documents.worldbank.org/curated/en/468831468340807129/World-development-report-1993-investing-in-health>
- Bernal, O., & Gutiérrez, C. (2012). *La Salud en Colombia: Logros, Retos y Recomendaciones*. Uniandes. http://www.boletinesp-univalle.info/files/esss/la_salud_en_colombia_Uniandes.pdf
- Betsi, N. A., Koudou, B. G., Cissé, G., Tschannen, A. B., Pignol, A. M., Ouattara, Y., Madougou, Z., Tanner, M., & Utzinger, J. (2006). Effect of an armed conflict on human resources and health systems in Côte d'Ivoire: Prevention of and care for people with HIV/AIDS. *AIDS Care, 18*(4), 356–365.
<https://doi.org/10.1080/09540120500200856>
- Biddix, J. P. (2018). *Research Methods and Applications for Student Affairs*. John Wiley & Sons.
- Blaikie, N. (2007). *Approaches to Social Enquiry: Advancing Knowledge* (2nd edition). Polity.
- Blaikie, N., & Priest, J. (2017). *Social Research: Paradigms in Action*. Polity Press.
<http://ebookcentral.proquest.com/lib/ed/detail.action?docID=4783896>

- Blanchet, K., Nam, S. L., Ramalingam, B., & Pozo-Martin, F. (2017). Governance and Capacity to Manage Resilience of Health Systems: Towards a New Conceptual Framework. *International Journal of Health Policy and Management*, 6(8), 431–435. <https://doi.org/10.15171/ijhpm.2017.36>
- Blatter, J., & Haverland, M. (2012). *Designing Case Studies: Explanatory Approaches in Small-N Research*. Springer.
- Bou-Karroum, L., El-Harakeh, A., Kassamany, I., Ismail, H., Arnaout, N. E., Charide, R., Madi, F., Jamali, S., Martineau, T., El-Jardali, F., & Akl, E. A. (2020). Health care workers in conflict and post-conflict settings: Systematic mapping of the evidence. *PLOS ONE*, 15(5), e0233757. <https://doi.org/10.1371/journal.pone.0233757>
- Bowen, G. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, 9, 27–40. <https://doi.org/10.3316/QRJ0902027>
- Braithwaite, J., Churrua, K., Ellis, L., Long, J., Clay-Williams, R., Damen, N., Herkes, J., Pomare, C., & Ludlow, K. (2017). *Complexity science in healthcare – Aspirations, approaches, applications and accomplishments: A White Paper* ((Commonwealth of) Australia) [Web_content]. Macquarie University. <https://www.mq.edu.au/research/research-centres-groups-and-facilities/healthy-people/centres/australian-institute-of-health-innovation/news-and-events/news/news/complexity-science-in-healthcare-aspirations,-approaches,-applications-and-accomplishments-a-white-paper>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Briody, C., Rubenstein, L., Roberts, L., Penney, E., Keenan, W., & Horbar, J. (2018). Review of attacks on health care facilities in six conflicts of the past three decades. *Conflict and Health*, 12(1), 19. <https://doi.org/10.1186/s13031-018-0152-2>
- Bryman, A. (2012). *Social Research Methods* (4 edition). OUP Oxford.
- Cairo, S. B., Kalisya, L. M., Bigabwa, R., & Rothstein, D. H. (2018). Characterizing pediatric surgical capacity in the Eastern Democratic Republic of Congo: Results of a pilot study. *Pediatric Surgery International*, 34(3), 343–351. <https://doi.org/10.1007/s00383-017-4215-z>
- Cámara de Comercio de Tumaco. (2019). *Listado de Organizaciones No Gubernamentales Operando en Tumaco, Colombia*.
- Casey, S. E., Mitchell, K. T., Amisi, I. M., Haliza, M. M., Aveledi, B., Kalenga, P., & Austin, J. (2009). Use of facility assessment data to improve reproductive health service delivery in the Democratic Republic of the Congo. *Conflict and Health*, 3, 12. <https://doi.org/10.1186/1752-1505-3-12>
- Cepeda, I., & Uribe, A. (2014). *Por las sendas de El Uberrimo*. B.
- CGD. (2015a). *Better Hospitals, Better Health Systems, Better Health. A Proposal for a Global Hospital Collaborative for Emerging Economies*. <https://www.cgdev.org/sites/default/files/CGD-BHBH-r3.pdf>
- CGD. (2015b). *Better hospitals, better health systems: The urgency of a hospital agenda*. https://www.cgdev.org/sites/default/files/CGD-Policy-Paper-53-Lewis-Better-Hospitals-Better-Health-Systems_1.pdf

- Chi, P. C., Bulage, P., Urdal, H., & Sundby, J. (2015). Perceptions of the effects of armed conflict on maternal and reproductive health services and outcomes in Burundi and Northern Uganda: A qualitative study. *BMC International Health and Human Rights*, 15(1), 7. <https://doi.org/10.1186/s12914-015-0045-z>
- Congreso de Colombia. (1990). *Ley 10 de 1990*.
<https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=3421>
- Congreso de Colombia. (1993). *Ley 100 de 1993*.
<https://barranquilla.eregulations.org/media/LEY%20100%20DE%201993.pdf>
- Congreso de Colombia. (2007). *Ley 1122 de 2007*.
<https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/DIJ/ley-1122-de-2007.pdf>
- Congreso de Colombia. (2011a). *Ley 1438 de 2011*.
https://www.minsalud.gov.co/Normatividad_Nuevo/LEY%201438%20DE%202011.pdf
- Congreso de Colombia. (2011b). *Ley 1448 de Víctimas y Restitución de Tierras*.
http://www.centrodehistoriahistorica.gov.co/descargas/ley_victimas/ley_victimas_completa_web.pdf
- Congreso de Colombia. (2012). *Ley 1523 de 2012 Nivel Nacional*.
<https://www.alcaldiabogota.gov.co/sisjur/normas/Norma1.jsp?i=47141>
- Congreso de Colombia. (2015). *Ley 1751 de 2015*.
- Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative Research Designs: Selection and Implementation. *The Counseling Psychologist*, 35(2), 236–264. <https://doi.org/10.1177/0011000006287390>
- Curtis, S., Gesler, W., Smith, G., & Washburn, S. (2000). Approaches to sampling and case selection in qualitative research: Examples in the geography of health. *Social Science & Medicine*, 50(7), 1001–1014. [https://doi.org/10.1016/S0277-9536\(99\)00350-0](https://doi.org/10.1016/S0277-9536(99)00350-0)
- DANE. (2018). *Necesidades Básicas Insatisfechas (NBI) Censo Nacional de Población y Vivienda (CNPV) 2018—Nación, Departamentos y Municipios*.
- de Carvalho, G., & Frisina Doetter, L. (2022). The Washington Consensus and the Push for Neoliberal Social Policies in Latin America: The Impact of International Organisations on Colombian Healthcare Reform. In F. Nullmeier, D. González de Reufels, & H. Obinger (Eds.), *International Impacts on Social Policy: Short Histories in Global Perspective* (pp. 211–224). Springer International Publishing. https://doi.org/10.1007/978-3-030-86645-7_17
- Defensoría del Pueblo. (2018). *Informe Especial: Economías Ilegales, Actores Armados y Nuevos Escenarios De Riesgo En El Posacuerdo*.
<https://www.defensoria.gov.co/public/pdf/economiasilegales.pdf>
- Defensoría del Pueblo. (2020). *Informe defensorial sobre la política de atención a víctimas de actos de terrorismo*.
https://www.defensoria.gov.co/attachment/3377/Informe-terrorismo-21-08-2020.pdf?g_show_in_browser=1
- Dhar, S. A., Dar, T. A., Wani, S. A., Hussain, S., Dar, R. A., Wani, Z. A., Aazad, S., Yaqoob, S., Mansoor, I., Ali, M. F., Ahmed, M., Mumtaz, I., & Azhar, I. (2012). In the Line of Duty: A Study of Ambulance Drivers During the 2010 Conflict in

- Kashmir. *Prehospital and Disaster Medicine*, 27(4), 381–384.
<https://doi.org/10.1017/S1049023X12000933>
- Donaldson, R. I., Shanovich, P., Shetty, P., Clark, E., Aziz, S., Morton, M., Hasoon, T., & Evans, G. (2012). A Survey of National Physicians Working in an Active Conflict Zone: The Challenges of Emergency Medical Care in Iraq. *Prehospital and Disaster Medicine*, 27(2), 153–161.
<https://doi.org/10.1017/S1049023X12000519>
- Dowling, M. (2006). Approaches to reflexivity in qualitative research. *Nurse Researcher*, 13(3), 7–22.
- Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, 39(1), 118–128. <https://doi.org/10.1016/j.indmarman.2008.06.004>
- El Espectador. (2014). *La cultura es resistencia en Tumaco* [Text]. ELESPECTADOR.COM. <https://www.elespectador.com/noticias/nacional/cultura-resistencia-tumaco-articulo-496507>
- El Espectador. (2019). “*En Colombia sí hay un conflicto armado no internacional*”: CICR [Text]. ELESPECTADOR.COM.
<https://www.elespectador.com/colombia2020/pais/en-colombia-si-hay-un-conflicto-armado-no-internacional-cicr-articulo-857629/>
- El Espectador. (2021). *Caravanas humanitarias con insumos médicos se desplazan por el país*. <https://www.elespectador.com/salud/caravanas-humanitarias-con-insumos-medicos-se-desplazan-por-el-pais/>
- El País. (2011). *En las entrañas de la violencia que azota a Tumaco*. [elpais.com.co. https://www.elpais.com.co/judicial/el-pais-en-las-entranas-de-la-violencia-que-azota-a-tumaco.html](https://www.elpais.com.co/judicial/el-pais-en-las-entranas-de-la-violencia-que-azota-a-tumaco.html)
- El País. (2015). *Así fue como quebraron a Saludcoop*. <http://www.elpais.com.co/economia/asi-fue-como-quebraron-a-saludcoop.html>
- El País. (2017). *Hay cinco mafiosos detrás del paro cocalero en Tumaco*. <https://www.elpais.com.co/judicial/hay-cinco-mafiosos-detras-del-paro-cocalero-en-tumaco.html>
- El Tiempo. (2013, November 16). *Millonarios gastos y lujos con recursos de la salud*. El Tiempo. <https://www.eltiempo.com/archivo/documento/CMS-13198642>
- Elamein, M., Bower, H., Valderrama, C., Zedan, D., Rihawi, H., Almilaji, K., Abdelhafeez, M., Tabbal, N., Almhawish, N., Maes, S., & AbouZeid, A. (2017). Attacks against health care in Syria, 2015–16: Results from a real-time reporting tool. *The Lancet*, 390(10109), 2278–2286. [https://doi.org/10.1016/S0140-6736\(17\)31328-4](https://doi.org/10.1016/S0140-6736(17)31328-4)
- Faerron-Guzmán, C. (2022). Complexity in Global Health— Bridging Theory and Practice. *Annals of Global Health*, 88(1), Article 1.
<https://doi.org/10.5334/aogh.3758>
- Fardousi, N., Douedari, Y., & Howard, N. (2019). Healthcare under siege: A qualitative study of health-worker responses to targeting and besiegement in Syria. *BMJ Open*, 9(9), e029651. <https://doi.org/10.1136/bmjopen-2019-029651>
- Fetterman, D. M. (2010). *Ethnography: Step-by-Step*. SAGE.
- Finlay, L. & Brendan Gough. (2003). *Reflexivity* (1st ed.). John Wiley & Sons, Ltd.
<https://doi.org/10.1002/9780470776094>

- Flyvbjerg, B. (2013). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12. <https://doi.org/10.1177/1077800405284363>
- Foghammar, L., Jang, S., Kyzy, G. A., Weiss, N., Sullivan, K. A., Gibson-Fall, F., & Irwin, R. (2016). Challenges in researching violence affecting health service delivery in complex security environments. *Social Science & Medicine*, 162, 219–226. <https://doi.org/10.1016/j.socscimed.2016.03.039>
- Fouad, F. M., Sparrow, A., Tarakji, A., Alameddine, M., El-Jardali, F., Coutts, A. P., Arnaout, N. E., Karroum, L. B., Jawad, M., Roborgh, S., Abbara, A., Alhalabi, F., AlMasri, I., & Jabbour, S. (2017). Health workers and the weaponisation of health care in Syria: A preliminary inquiry for The Lancet–American University of Beirut Commission on Syria. *The Lancet*, 390(10111), 2516–2526. [https://doi.org/10.1016/S0140-6736\(17\)30741-9](https://doi.org/10.1016/S0140-6736(17)30741-9)
- Fridell, M., Edwin, S., von Schreeb, J., & Saulnier, D. D. (2019). Health System Resilience: What Are We Talking About? A Scoping Review Mapping Characteristics and Keywords. *International Journal of Health Policy and Management*, 9(1), 6–16. <https://doi.org/10.15171/ijhpm.2019.71>
- García, F., Roza, S., Uribe, M. J., & María, M. S. (2009). *Un Diagnóstico General Del Sector Salud En Colombia: Evolución, Contexto Y Principales Retos de un Sistema En Transformación*. https://www.med-informatica.net/FMC_CMCB/VeeduriaCiudadana/CIDMEDvcacelapss/SaludReto sRegulacion_MauricioSantamaria_cap1_final.pdf
- Geneva Declaration & Secretariat. (2008). *Global burden of armed violence*. Geneva Declaration Secretariat.
- Gilson, L., Barasa, E., Nxumalo, N., Cleary, S., Goudge, J., Molyneux, S., Tsofa, B., & Lehmann, U. (2017). Everyday resilience in district health systems: Emerging insights from the front lines in Kenya and South Africa. *BMJ Global Health*, 2(2). <https://doi.org/10.1136/bmjgh-2016-000224>
- Gilson, L., Ellokori, S., Lehmann, U., & Brady, L. (2020). Organizational change and everyday health system resilience: Lessons from Cape Town, South Africa. *Social Science & Medicine*, 266, 113407. <https://doi.org/10.1016/j.socscimed.2020.113407>
- Giuffrida, A., Flórez, C. E., Giedion, Ú., Cueto, E., López, J. G., Glassman, A., Castaño, R. A., Pinto, D. M., Pardo, R., Tono, T. M., Savedoff, W. D., Alfonso, E. A., Stone, L. F., López, Á., Díaz, B. Y., Escobar, M. L., Arango, C. H., Ruiz Gómez, F., & Acosta, O. L. (2009). *From Few to Many: Ten Years of Health Insurance Expansion in Colombia*. <http://publications.iadb.org/handle/11319/426>
- Gobernación de Nariño. (1995). *Ordenanza 077—Por la cual se crea el Hospital San Andrés de Tumaco*.
- Gobernación de Nariño. (2018). *En Consejo De Seguridad Se Adoptan Nuevas Medidas Para Avanzar En Defensa De Los Líderes Sociales Y La Atención Humanitaria En Subregión Del Telembí*. <http://www.2016-2019.narino.gov.co/inicio/index.php/sala-de-prensa/noticias/1645-en-consejo-de-seguridad-se-adoptan-nuevas-medidas-para-avanzar-en-defensa-de-los-lideres-sociales-y-la-atencion-humanitaria-en-subregion-del-telembi>
- Greenhalgh, T., & Peacock, R. (2005). Effectiveness and efficiency of search methods in systematic reviews of complex evidence: Audit of primary sources. *BMJ* :

- British Medical Journal*, 331(7524), 1064–1065.
<https://doi.org/10.1136/bmj.38636.593461.68>
- Guerrero, R., Gallego, A. I., Becerril-Montekio, V., & Vásquez, J. (2011). Sistema de salud de Colombia. *Salud Pública de México*, 53, s144–s155.
- Haar, R. J., Risko, C. B., Singh, S., Rayes, D., Albaik, A., Alnajar, M., Kewara, M., Clouse, E., Baker, E., & Rubenstein, L. S. (2018). Determining the scope of attacks on health in four governorates of Syria in 2016: Results of a field surveillance program. *PLOS Medicine*, 15(4), e1002559.
<https://doi.org/10.1371/journal.pmed.1002559>
- Hadary, A., Schecter, W., Embon, O. M., & Einav, S. (2009). Impact of Military Conflict on a Civilian Receiving Hospital in a War Zone: *Annals of Surgery*, 249(3), 502–509. <https://doi.org/10.1097/SLA.0b013e318199f232>
- Hanefeld, J., Mayhew, S., Legido-Quigley, H., Martineau, F., Karanikolos, M., Blanchet, K., Liverani, M., Yei Mokuwa, E., McKay, G., & Balabanova, D. (2018). Towards an understanding of resilience: Responding to health systems shocks. *Health Policy and Planning*, 33(3), 355–367. <https://doi.org/10.1093/heapol/czx183>
- Harding, A., & Preker, A. S. (2003). *Innovations in Health Service Delivery: The Corporatization of Public Hospitals*. World Bank Publications.
- Hayfield, V. C., Virginia Braun, Nikki. (2015). Thematic Analysis. In *Qualitative Psychology: A Practical Guide to Research Methods*. SAGE.
- Healy, J., & Mckee, M. (2002). *Hospitals in Changing Europe*.
http://www.euro.who.int/__data/assets/pdf_file/0004/98401/E74486.pdf
- HIK. (2021). *Conflict Barometer 2021*. <https://hiik.de/conflict-barometer/current-version/?lang=en>
- Hospital San Andrés ESE. (2017). *Plan Hospitalario de Emergencias—Hospital San Andrés ESE*.
- Hospital San Andrés ESE. (2019a). *Informe de Seguimiento y Monitoreo Medidas Especiales Superintendencia Nacional de Salud*.
- Hospital San Andrés ESE. (2019b). *Plan de Cargos Hospital San Andrés ESE*.
- Hospital San Andrés ESE. (2021). *REPORTE DE ESTADOS FINANCIEROS 2020-2021*.
- Hospital San Andrés E.S.E. (2022a). *Reseña histórica*. Hospital San Andres Tumaco - Reseña Historica. <https://hospitalsanandresese.gov.co/index.php/transparencia-y-acceso-a-la-informacion-old/estructura-organica-y-talento-humano/resena-historica>
- Hospital San Andrés E.S.E. (2022b). *Servicios*. Hospital | San Andres Tumaco. <https://hospitalsanandresese.gov.co/index.php/nuestro-hospital/servicios>
- ICRC. (2002). *Introduction to the law of armed conflict—Basic Knowledge*. 29.
- ICRC. (2008). *How is the term “Armed Conflict” defined in International Humanitarian Law?* <https://www.icrc.org/en/doc/assets/files/other/opinion-paper-armed-conflict.pdf>
- ICRC. (2009). *Exploring Humanitarian Law—Education Modules for Young People*. <https://www.icrc.org/en/doc/what-we-do/building-respect-ihl/education-outreach/ehl/ehl-other-language-versions/ehl-english-glossary.pdf>

- ICRC. (2011). *Health care in danger: A sixteen-country study - ICRC*.
<https://www.icrc.org/en/doc/resources/documents/report/hcid-report-2011-08-10.htm>
- ICRC. (2012). *Health care in danger report*.
- ICRC. (2013a). *Health care in danger report*.
- ICRC. (2013b). In conversation with the members of the National Permanent Roundtable for the Respect of the Medical Mission in Colombia. *International Review of the Red Cross*, 95(889), 73–82.
<https://doi.org/10.1017/S1816383114000071>
- ICRC. (2014a). *Health care in danger report*.
- ICRC. (2014b). *Respecting and protecting health care in armed conflicts and in situations not covered by international humanitarian law—Factsheet* [Legal factsheet]. International Committee of the Red Cross.
<https://www.icrc.org/en/document/respecting-and-protecting-health-care-armed-conflicts-and-situations-not-covered>
- ICRC. (2016a). *Commentary on the First Geneva Convention: Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field*. Cambridge University Press. <https://doi.org/10.1017/9781316755709>
- ICRC. (2016b). Protracted conflict and humanitarian action. *HUMANITARIAN ACTION*, 44.
- ICRC. (2016c, July 16). *Colombia: Caravana humanitaria lleva suministros de emergencia a instituciones de salud en Boyacá* (América/Colombia) [Comunicado de prensa]. Comité Internacional de la Cruz Roja.
<https://www.icrc.org/es/document/colombia-caravana-humanitaria-lleva-suministros-de-emergencia-instituciones-de-salud-en>
- IDSN. (2014). *Modelo De Atención En Salud Y Estudio De La Situación De La Prestación Publica De Servicios De Salud En El Departamento De Nariño Red De Prestación De Servicios De Salud*. <http://www.idsn.gov.co/index.php/oficina-asesora-de-planeacion/red-de-servicios>
- IDSN. (2019). *Propuesta de diseño y conformación del programa territorial de reorganización, rediseño y modernización de redes de Empresas Sociales del Estado del Departamento de Nariño*. 72.
- IISS. (2018). The Essence of Armed Conflict. *Armed Conflict Survey*, 4(1), 15–21.
<https://doi.org/10.1080/23740973.2018.1482048>
- Instituto de Ciencia Política Hernán Echavarría Olózaga. (2018). *Una apuesta por la competitividad de Tumaco: Construcción territorial, inclusión productiva y bienestar social*. <http://www.icpcolombia.org/dev/wp-content/uploads/2018/06/18.06.08-DIGITAL-TUMACO.pdf>
- International Crisis Group. (2017). *Colombia's Armed Groups Battle for the Spoils of Peace*. Crisis Group. <https://www.crisisgroup.org/latin-america-caribbean/andes/colombia/63-colombias-armed-groups-battle-spoils-peace>
- International Crisis Group. (2021). *Colombian Guerrillas on the Venezuelan Border*. Crisis Group. <https://www.crisisgroup.org/latin-america-caribbean/andes/video-colombian-guerrillas-venezuelan-border>
- Javadi, M., & Zarea, K. (2016). Understanding Thematic Analysis and its Pitfall. *Journal of Client Care*, 1. <https://doi.org/10.15412/J.JCC.02010107>

- Johnson, D. R., Scheitle, C. P., & Ecklund, E. H. (2019). Beyond the In-Person Interview? How Interview Quality Varies Across In-person, Telephone, and Skype Interviews. *Social Science Computer Review*, 0894439319893612. <https://doi.org/10.1177/0894439319893612>
- Jola-Sanchez, A. F., Pedraza-Martinez, A. J., Bretthauer, K. M., & Britto, R. A. (2016). Effect of armed conflicts on humanitarian operations: Total factor productivity and efficiency of rural hospitals. *Journal of Operations Management*, 45, 73–85. <https://doi.org/10.1016/j.jom.2016.06.002>
- Kagwanja, N., Waithaka, D., Nzinga, J., Tsofa, B., Boga, M., Leli, H., Mataza, C., Gilson, L., Molyneux, S., & Barasa, E. (2020). Shocks, stress and everyday health system resilience: Experiences from the Kenyan coast. *Health Policy and Planning*, 35(5), 522–535. <https://doi.org/10.1093/heapol/czaa002>
- Karemere, H., Ribesse, N., Marchal, B., & Macq, J. (2015). Analyzing Katana referral hospital as a complex adaptive system: Agents, interactions and adaptation to a changing environment. *Conflict and Health*, 9(1), 17. <https://doi.org/10.1186/s13031-015-0046-5>
- Kevlihan, R. (2013). Providing health services during a civil war: The experience of a garrison town in South Sudan. *Disasters*, 37(4), 579–603. <https://doi.org/10.1111/disa.12027>
- Khan, M. A., Xiaoying, J., & Kanwal, N. (2016). Armed Conflict in the Federally Administered Tribal Areas of Pakistan and the Role of NGOs in Restoring Health Services. *Social Work in Public Health*, 31(4), 215–230. <https://doi.org/10.1080/19371918.2015.1099495>
- Kindon, S., Pain, R., & Kesby, M. (2010). *Participatory Action Research Approaches and Methods: Connecting People, Participation and Place*.
- Koren, D., Caspi, Y., Leiba, R., Bloch, D., Vexler, B., & Klein, E. (2009). Acute stress reactions among medical and non-medical personnel in a general hospital under missile attacks. *Depression and Anxiety*, 26(2), 123–128. <https://doi.org/10.1002/da.20509>
- Kruk, M. E., Freedman, L. P., Anglin, G. A., & Waldman, R. J. (2010). Rebuilding health systems to improve health and promote statebuilding in post-conflict countries: A theoretical framework and research agenda. *Social Science & Medicine*, 70(1), 89–97. <https://doi.org/10.1016/j.socscimed.2009.09.042>
- Kruk, M. E., Myers, M., Varpilah, S. T., & Dahn, B. T. (2015). What is a resilient health system? Lessons from Ebola. *The Lancet*, 385(9980), 1910–1912. [https://doi.org/10.1016/S0140-6736\(15\)60755-3](https://doi.org/10.1016/S0140-6736(15)60755-3)
- La República. (2020). *Por cada 1.000 habitantes en Colombia, hay alrededor de 1,5 médicos generales*. <https://www.larepublica.co/economia/por-cada-1000-habitantes-en-colombia-hay-aproximadamente-15-medicos-generales-2982596>
- Labat, F., & Sharma, A. (2016). Qualitative study exploring surgical team members' perception of patient safety in conflict-ridden Eastern Democratic Republic of Congo. *BMJ Open*, 6(4), e009379. <https://doi.org/10.1136/bmjopen-2015-009379>
- Lafta, R. K., & Falah, N. (2019). Violence against health-care workers in a conflict affected city. *Medicine, Conflict and Survival*, 35(1), 65–79. <https://doi.org/10.1080/13623699.2018.1540095>

- Lagrou, D., Zachariah, R., Bissell, K., Van Overloop, C., Nasim, M., Wagma, H. N., Kakar, S., Caluwaerts, S., De Plecker, E., Fricke, R., & Van den Bergh, R. (2018). Provision of emergency obstetric care at secondary level in a conflict setting in a rural area of Afghanistan – is the hospital fulfilling its role? *Conflict and Health*, 12. <https://doi.org/10.1186/s13031-018-0137-1>
- LaRosa, M. J., & Mejía, G. R. (2013). *Colombia: A Concise Contemporary History*. Rowman & Littlefield.
- Lee, R. B. (2008). Delivering Maternal Health Care Services in an Internal Conflict Setting in Maguindanao, Philippines. *Reproductive Health Matters*, 16(31), 65–74. [https://doi.org/10.1016/S0968-8080\(08\)31346-9](https://doi.org/10.1016/S0968-8080(08)31346-9)
- Lembani, M., Pinho, H. de, Delobelle, P., Zarowsky, C., & Ager, A. (2014). *A Case Study of Technical Assistance to HIV Services in Cote d'Ivoire in the Context of Civil Unrest Following the Disputed Presidential Election of 2010*.
- López Pineda, L. F. (2010). *Transformación productiva de la industria en Colombia y sus regiones después de la apertura económica*. <https://repositorio.unal.edu.co/handle/unal/31977>
- Makhlouf-Obermeyer, C., Sharara, E., El-Eid, G., & Hitti, E. A. (2020). Indirect impact of violent events on emergency department utilization and disease patterns. *BMC Emergency Medicine*, 20(1), 10. <https://doi.org/10.1186/s12873-020-0307-5>
- Mangwi Ayiasi, R., Rutebemberwa, E., & Martineau, T. (2019). “Posting policies don’t change because there is peace or war”: The staff deployment challenges for two large health employers during and after conflict in Northern Uganda. *Human Resources for Health*, 17(1), 27. <https://doi.org/10.1186/s12960-019-0361-9>
- Marie, M., Hannigan, B., & Jones, A. (2017). Challenges for nurses who work in community mental health centres in the West Bank, Palestine. *International Journal of Mental Health Systems*, 11, 3. <https://doi.org/10.1186/s13033-016-0112-4>
- Melander, E. (2016). *The UCDP Armed Conflict Definition*. 20.
- Melo, J. O. (2017). *Historia mínima de Colombia*. El Colegio de México.
- Michael, M. (1996). Medical Supplies Donated to Hospitals in Bosnia and Croatia, 1994-1995: Report of a Survey Evaluating Humanitarian Aid in War. *JAMA*, 276(5), 364–368. <https://doi.org/10.1001/jama.1996.03540050024008>
- Mills, A., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of Case Study Research*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412957397>
- Ministerio de Protección Social. (2009). *Resolución 976 de 2009*. https://www.icbf.gov.co/cargues/avance/docs/resolucion_minproteccion_0976_2009.htm
- Ministerio de Salud y Protección Social. (2010). *Resolución 1220 de 2010*. https://sucre.micolombiadigital.gov.co/sites/sucre/content/files/000065/3240_resolucion-1220-de-2010.pdf
- Ministerio de Salud y Protección Social. (2012). *Resolución 4481 de 2012*. https://sucre.micolombiadigital.gov.co/sites/sucre/content/files/000065/3241_manual-de-mision-medica.pdf
- Ministerio de Salud y Protección Social. (2014). *Resolución 2003 de 2014*. https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%202003%20de%202014.pdf

- Ministerio de Salud y Protección Social. (2017). *Resolución 330 de 2017*.
https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%200330%20de%202017.pdf
- Ministerio de Salud y Protección Social. (2020). *Comportamiento del aseguramiento*.
<https://www.minsalud.gov.co/proteccionsocial/Regimensubsubsidado/Paginas/coberturas-del-regimen-subsidiado.aspx>
- Miron, M. (2019). On irregular wars, insurgencies and how to counter them: Enemy and population-centric approaches in comparative perspective. *Revista Científica General José María Córdova*, 17(27), 456–480.
<https://doi.org/10.21830/19006586.497>
- Molina, G., & Spurgeon, P. (2007). *La descentralización del sector salud en Colombia*.
http://gestionypoliticapublica.cide.edu/num_antteriores/Vol.XVI_No.I_1ersem/Gloria_Molina_y_Peter_Spurgeon.pdf
- Morgan, D. L. (1996). Focus Groups. *Annual Review of Sociology*, 22, 129–152.
- Mowafi, H., Hariri, M., Alnahhas, H., Ludwig, E., Allodami, T., Mahameed, B., Koly, J. K., Aldbis, A., Saqqur, M., Zhang, B., & Al-Kassem, A. (2016). Results of a Nationwide Capacity Survey of Hospitals Providing Trauma Care in War-Affected Syria. *JAMA Surgery*, 151(9), 815–822.
<https://doi.org/10.1001/jamasurg.2016.1297>
- Mugo, N. S., Dibley, M. J., Damundu, E. Y., & Alam, A. (2018). Barriers Faced by the Health Workers to Deliver Maternal Care Services and Their Perceptions of the Factors Preventing Their Clients from Receiving the Services: A Qualitative Study in South Sudan. *Maternal and Child Health Journal*, 22(11), 1598–1606.
<https://doi.org/10.1007/s10995-018-2555-5>
- Namakula, J., & Witter, S. (2014). Living through conflict and post-conflict: Experiences of health workers in northern Uganda and lessons for people-centred health systems. *Health Policy and Planning*, 29(suppl_2), ii6–ii14.
<https://doi.org/10.1093/heapol/czu022>
- Newbrander, W. (2007). *Rebuilding Health Systems and Providing Health Services in Fragile States*. 40.
- Noble, H., & Mitchell, G. (2016). What is grounded theory? *Evidence-Based Nursing*, 19(2), 34–35. <https://doi.org/10.1136/eb-2016-102306>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1), 1609406917733847. <https://doi.org/10.1177/1609406917733847>
- OECD. (2015). *OECD Reviews of Health Systems: Colombia 2016*. OECD Publishing.
http://www.oecd-ilibrary.org/social-issues-migration-health/oecd-reviews-of-health-systems-colombia-2015_9789264248908-en
- Omar, A. (2020). Understanding and Preventing Attacks on Health Facilities During Armed Conflict in Syria. *Risk Management and Healthcare Policy*, Volume 13, 191–203. <https://doi.org/10.2147/RMHP.S237256>
- Orozco, A. J. (2015). *Un análisis del gasto público en salud de los entes territoriales colombianos*. Banco de La República (Banco Central de Colombia).
<http://www.banrep.gov.co/es/dtser-220>
- Ortiz, E., & Garcés, I. (2012). *En Blanco y Negro: Visión de Desarrollo del Pacífico Nariñense*.

- Padilla, A., & Bermúdez, Á. (2016). Normalizar el conflicto y des-normalizar la violencia: Retos y posibilidades de la enseñanza crítica de la historia del conflicto armado colombiano. *Revista Colombiana de Educación*, 1(71), 219–251. <https://doi.org/10.17227/01203916.71rce219.251>
- PAHO. (2007). *Safe Hospitals: A Regional Initiative on Disaster-Resilient Health Facilities*. <https://iris.paho.org/handle/10665.2/3991>
- Pares. (2017). *Tumaco: Una historia de recomposición de actores en el territorio*. <https://pares.com.co/2017/10/09/tumaco-una-historia-de-recomposicion-de-actores-en-el-territorio/>
- Pares. (2018a). Cómo va la paz Pacífico 2018. *Fundación Paz y Reconciliación*. <http://pares.com.co/2018/06/10/como-va-la-paz-pacifico/>
- Pares. (2018b). *Lo que ocurre en Tumaco puede ocurrir en diez municipios*. <http://pares.com.co/wp-content/uploads/2017/10/Tumaco-entre-la-guerra-y-la-paz.pdf>
- Paulus, A., & Vashakmadze, M. (2009). Asymmetrical war and the notion of armed conflict – a tentative conceptualization. *International Review of the Red Cross*, 91(873), 95–125. <https://doi.org/10.1017/S181638310999018X>
- Pavignani, E., & Colombo, S. (2009). *Analysing disrupted health sectors: A modular manual*.
- Petticrew, M., & Roberts, H. (2005). *Systematic Reviews in the Social Sciences: A Practical Guide* (1 edition). John Wiley & Sons.
- Policia Nacional de Colombia. (2020). *Homicidios*. Policía Nacional de Colombia. <https://www.policia.gov.co/delitos-de-impacto/homicidios>
- Policinski, E., & Kuzmanovic, J. (2019). Protracted Conflicts: The enduring legacy of endless war. *International Review of the Red Cross*, 101(912), 965–976. <https://doi.org/10.1017/S1816383120000399>
- Polkinghorne, D. E. (2005). Language and meaning: Data collection in qualitative research. *Journal of Counseling Psychology*, 52(2), 137–145. <https://doi.org/10.1037/0022-0167.52.2.137>
- Prada-Ríos, S. I., Pérez-Castaño, A. M., & Rivera-Triviño, A. F. (2017). Clasificación de instituciones prestadores de servicios de salud según el sistema de cuentas de la salud de la Organización para la Cooperación y el Desarrollo Económico: El caso de Colombia. *Gerencia y Políticas de Salud*, 16(32). <https://doi.org/10.11144/Javeriana.rgps16-32.cips>
- Presidencia de Colombia. (1996). *Decreto 2423—Manual tarifario SOAT actualizado a 2022*. <https://consultorsalud.com/wp-content/uploads/2021/12/Manual-Tarifario-SOAT-de-Salud-2022-Consultorsalud.pdf>
- Presidencia de Colombia. (2019). *Acuerdo de Punto Final para sanear deudas históricas ‘marcará un hito’ en el sistema de salud en Colombia: Presidente Duque*. Presidencia de la República. <https://id.presidencia.gov.co:443/Paginas/prensa/2019/190723-Acuerdo-Punto-Final-sanear-deudas-historicas-marcara-hito-sistema-salud-Colombia-Presidente-Duque.aspx>
- Presidencia de la República. (1994). *Decreto 1876 de 1994*. <http://bibliotecadigital.ccb.org.co/bitstream/handle/11520/13718/Decreto%201876%20de%201994.pdf?sequence=1&isAllowed=y>

- Qirbi, N., & Ismail, S. A. (2017). Health system functionality in a low-income country in the midst of conflict: The case of Yemen. *Health Policy and Planning*, 32(6), 911–922. <https://doi.org/10.1093/heapol/czx031>
- Ramos Jaraba, S. M., Quiceno Toro, N., Ochoa Sierra, M., Ruiz Sánchez, L., García Jiménez, M. A., Salazar-Barrientos, M. Y., Bedoya Bedoya, E., Vélez Álvarez, G. A., Langer, A., Gausman, J., & Garcés-Palacio, I. C. (2020). Health in conflict and post-conflict settings: Reproductive, maternal and child health in Colombia. *Conflict and Health*, 14(1), 33. <https://doi.org/10.1186/s13031-020-00273-1>
- República de Colombia. (1991). *Constitucion Política de Colombia*. Gobierno de Colombia. http://www.unesco.org/culture/natlaws/media/pdf/colombia/colombia_constitucion_politica_1991_spa_orof.pdf
- Resyst. (2016). *What is everyday health system resilience and how might it be nurtured?* <https://resyst.lshtm.ac.uk/resources/what-is-everyday-health-system-resilience-and-how-might-it-be-nurtured>
- Ritchie, J., Lewis, J., Lewis, P. of S. P. J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. SAGE.
- Rosetti, A. G. (2000). *Enhancing Political Feasibility Health Reform Colombia*. https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1989/2020/01/Colombia_-39-Enhancing_Political_Feasibility_Health_Reform-Colombia.pdf
- Rosetti, A. G., & Bossert, T. (2000). *Enhancing the Political Feasibility of Health Reform: A Comparative Analysis of Chile Colombia and Mexico*. https://cdn1.sph.harvard.edu/wp-content/uploads/sites/1989/2020/01/Chile_36_Enhancing-the-Political-Feasibility-of-Health-Reform-A-Comparative-Analysis-of-Chile-Colombia-and-Mexico.pdf
- Rushton, S., & Devkota, B. (2020). Choosing not to weaponize healthcare: Politics and health service delivery during Nepal's civil war, 1996-2006. *Medicine, Conflict and Survival*, 0(0), 1–20. <https://doi.org/10.1080/13623699.2020.1794366>
- Rytter, M. J. H., Kjældgaard, A.-L., Brønnum-Hansen, H., & Helweg-Larsen, K. (2006). Effects of armed conflict on access to emergency health care in Palestinian West Bank: Systematic collection of data in emergency departments. *BMJ: British Medical Journal*, 332(7550), 1122–1124. <https://doi.org/10.1136/bmj.38793.695081.AE>
- Safeguarding Healthcare in Conflict. (2016a). *Impunity must end: Attacks on health in 23 countries in Conflict in 2016*.
- Safeguarding Healthcare in Conflict. (2016b). *No Protection, No respect: Health worker and health facilities under attack 2015 and early 2016*. <https://www.safeguardinghealth.org/sites/shcc/files/SHCC2016final.pdf>
- Safeguarding Healthcare in Conflict. (2018). *Violence on the front line: Attacks on healthcare in 2017*. <https://www.safeguardinghealth.org/sites/shcc/files/SHCC2018final.pdf>
- Safeguarding Healthcare in Conflict. (2019). *Impunity remains: Attacks on health care in 23 countries in conflict*. <https://www.safeguardinghealth.org/sites/shcc/files/SHCC2019final.pdf>

- Safeguarding Healthcare in Conflict. (2020). *Health workers at risk: Violence against health care*.
- Safeguarding Healthcare in Conflict. (2021). *No respite: Violence against health care in conflict*.
<https://www.safeguardinghealth.org/sites/shcc/files/SHCC%202021%20Report%20No%20respite%20Violence%20against%20health%20care%20in%20conflict.pdf>
- Safeguarding Healthcare in Conflict, & HRW. (2015). *Attacks on Health: Global Report (May 2015) - World*. ReliefWeb. <https://reliefweb.int/report/world/attacks-health-global-report-may-2015>
- Sahloul, E., Salem, R., Alrez, W., Alkarim, T., Sukari, A., Maziak, W., & Atassi, M. B. (2016). Cancer Care at Times of Crisis and War: The Syrian Example. *Journal of Global Oncology*, 3(4), 338–345. <https://doi.org/10.1200/JGO.2016.006189>
- Salazar, O. R. (1991). En los orígenes de la crisis de la seguridad social: El caso de los seguros sociales. *Anuario Colombiano de Historia Social y de la Cultura*, 281–307.
- Santos, J. M. (2019). *La Batalla Por La Paz*. <https://www.amazon.co.uk/batalla-por-paz-Spanish-ebook/dp/B07Q1DPP7J>
- Savigny, D. de, Adam, T., Research, A. for H. P. and S., & Organization, W. H. (2009). *Systems thinking for health systems strengthening*. World Health Organization. <https://apps.who.int/iris/handle/10665/44204>
- Schipani, A. (2016, September 27). Colombia and Farc sign historic peace deal. *Financial Times*. <https://www.ft.com/content/eadfbdec-8450-11e6-8897-2359a58ac7a5>
- Semana. (2018). *Procuraduría suspende al alcalde de Tumaco*. Procuraduría suspende al alcalde de Tumaco. <https://www.semana.com/nacion/articulo/procuraduria-suspende-al-alcalde-de-tumaco/559093>
- Semana. (2022, December 17). *La ministra de Salud, Carolina Corcho, propuso que las EPS sean desmontadas de forma progresiva. ¿Cómo sería?* Semana.com Últimas Noticias de Colombia y el Mundo. <https://www.semana.com/nacion/articulo/la-ministra-de-salud-carolina-corcho-propuso-que-las-eps-sean-desmontadas-de-forma-progresiva-como-seria/202200/>
- Silverman, D. (2013). *Doing Qualitative Research* (4 edition). Sage Publications Ltd.
- Sinha, S., David, S., Gerdin, M., & Roy, N. (2013). Vulnerabilities of Local Healthcare Providers in Complex Emergencies: Findings from the Manipur Micro-level Insurgency Database 2008-2009. *PLoS Currents*, 5. <https://doi.org/10.1371/currents.dis.397bcdc6602b84f9677fe49ee283def7>
- Smith, C., & Elger, T. (2012). *Critical Realism and Interviewing Subjects*. 31.
- Smithson, J. (2000). Using and analysing focus groups: Limitations and possibilities. *International Journal of Social Research Methodology*, 3(2), 103–119. <https://doi.org/10.1080/136455700405172>
- Suárez-Rozo, L. F., Puerto-García, S., Rodríguez-Moreno, L. M., & Ramírez-Moreno, J. (2017). La crisis del sistema de salud colombiano: Una aproximación desde la legitimidad y la regulación. *Gerencia y Políticas de Salud*, 16(32). <https://doi.org/10.11144/Javeriana.rgps16-32.cssc>

- Supersalud. (2017). *Resolución 515 de 2017*.
<https://docs.supersalud.gov.co/PortalWeb/Juridica/Resoluciones/res%20515%20de%202017.pdf>
- Supersalud (Director). (2020). *Avance de intervención a Hospitales: Hospital San Andrés de Tumaco, Nariño*. <https://www.youtube.com/watch?v=T9DwJMviixl>
- Taha, A. A., & Westlake, C. (2017). Palestinian nurses' lived experiences working in the occupied West Bank. *International Nursing Review*, 64(1), 83–90.
<https://doi.org/10.1111/inr.12332>
- Taira, B. R., Cherian, M. N., Yakandawala, H., Kesavan, R., Samarage, S. M., & DeSilva, M. (2010). Survey of Emergency and Surgical Capacity in the Conflict-Affected Regions of Sri Lanka. *World Journal of Surgery*, 34(3), 428–432.
<https://doi.org/10.1007/s00268-009-0254-5>
- Tappis, H., Elaraby, S., Elnakib, S., AlShawafi, N. A. A., BaSaleem, H., Al-Gawfi, I. A. S., Othman, F., Shafique, F., Al-Kubati, E., Rafique, N., & Spiegel, P. (2020). Reproductive, maternal, newborn and child health service delivery during conflict in Yemen: A case study. *Conflict and Health*, 14(1), 30.
<https://doi.org/10.1186/s13031-020-00269-x>
- The Health Foundation. (2010). *Complex Adaptive Systems (CAS)*. The Health Foundation. <https://www.health.org.uk/publications/complex-adaptive-systems>
- Tomaszewski, L. E., Zarestky, J., & Gonzalez, E. (2020). Planning Qualitative Research: Design and Decision Making for New Researchers. *International Journal of Qualitative Methods*, 19, 1609406920967174.
<https://doi.org/10.1177/1609406920967174>
- Trelles, M., Dominguez, L., Tayler-Smith, K., Kisswani, K., Zerboni, A., Vandenborre, T., Dallatomasina, S., Rahmoun, A., & Ferir, M.-C. (2015). Providing surgery in a war-torn context: The Médecins Sans Frontières experience in Syria. *Conflict and Health*, 9(1), 36. <https://doi.org/10.1186/s13031-015-0064-3>
- UDCP. (2021). *Definitions—Department of Peace and Conflict Research—Uppsala University, Sweden*. Uppsala University, Sweden.
https://www.pcr.uu.se/research/ucdp/definitions/#tocjump_23212058616844367_10
- UN. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>
- UNDAC. (2014). *UNDAC Disaster Response Preparedness Mission to the State of Palestine*. https://unispal.un.org/pdfs/UNDAC_PalMissionRep.pdf
- United Nations (Ed.). (2011). *International legal protection of human rights in armed conflict*. United Nations.
- Valencia, L. (2019). *El regreso del uribismo*. Grupo Planeta - Colombia.
- Vera, R. (2012). *ALGUNAS CAUSAS DE LA CRISIS FINANCIERA EN EL SISTEMA DE SALUD EN COLOMBIA EN EL 2009*. 24.
- Welsh, E. (2002). Dealing with Data: Using NVivo in the Qualitative Data Analysis Process. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 3(2), Article 2. <https://doi.org/10.17169/fqs-3.2.865>
- WHO. (1957). *The role of hospitals in programmes of community health protection*. WHO.

- https://apps.who.int/iris/bitstream/handle/10665/40375/WHO_TRS_122.pdf?sequence=1
- WHO. (2007). *Everyone's business: Strengthening health systems to improve health outcomes—WHO's framework for action*.
https://www.who.int/healthsystems/strategy/everybodys_business.pdf?ua=1
- WHO. (2009). *Hospital Safe from Disasters. Reduce Risks, Protect Health facilities, Save lives*. <https://www.unisdr.org/2009/campaign/pdf/wdrc-2008-2009-information-kit.pdf>
- WHO. (2010). *Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies*. World Health Organization.
<https://apps.who.int/iris/handle/10665/258734>
- WHO. (2016). *Attacks on health care report: Prevent, Protect, Provide*.
- Witter, S. (2012). Health financing in fragile and post-conflict states: What do we know and what are the gaps? *Social Science & Medicine*, 75(12), 2370–2377.
<https://doi.org/10.1016/j.socscimed.2012.09.012>
- Witter, S., Wurie, H., Chandiwana, P., Namakula, J., So, S., Alonso-Garbayo, A., Ssengooba, F., & Raven, J. (2017). How do health workers experience and cope with shocks? Learning from four fragile and conflict-affected health systems in Uganda, Sierra Leone, Zimbabwe and Cambodia. *Health Policy and Planning*, 32(suppl_3), iii3–iii13. <https://doi.org/10.1093/heapol/czx112>
- Woodward, A., Sondorp, E., Witter, S., & Martineau, T. (2016). Health systems research in fragile and conflict-affected states: A research agenda-setting exercise. *Health Research Policy and Systems*, 14(1). <https://doi.org/10.1186/s12961-016-0124-1>
- Wynn & Williams. (2012). Principles for Conducting Critical Realist Case Study Research in Information Systems. *MIS Quarterly*, 36(3), 787.
<https://doi.org/10.2307/41703481>
- Yin, R. (2013). *Case Study Research: Design and Methods*. SAGE Publications.

APPENDIX 1. HOSPITAL SAN ANDRES ESE MAIN AND COMPLEMENTARY SERVICES

| HOSPITAL SAN ANDRÉS ESE MAIN AND SPECIFIC SERVICES | |
|--|--|
| <p>1. INPATIENT CARE</p> <ul style="list-style-type: none"> Adults Children Neonatal intermediate care Obstetrics Neonatal basic care <p>2. OUTPATIENT CARE</p> <ul style="list-style-type: none"> Anaesthesia Basic surgery Dermatology Obstetrics Gynaecology Internal medicine Nutrition and dietary Ophthalmology Orthopaedics Otorhinolaryngology Paediatrics Psychology Urology Gastroenterology Physical therapy | <p>3. SURGERY</p> <ul style="list-style-type: none"> General surgery Gynaecological surgery Orthopaedic surgery Urologic surgery Dermatologic surgery Otorhinolaryngology surgery Ophthalmologic surgery <p>4. EMERGENCY CARE</p> <ul style="list-style-type: none"> Emergency care of medium complexity <p>5. COMPLEMENTARY SERVICES</p> <p>Medical Diagnostics</p> <ul style="list-style-type: none"> Clinical laboratory Sampling Radiology and diagnostic imaging Blood transfusion Ultrasound Pharmacy Breathing therapy Speech therapy Occupational therapy <p>Transport services</p> <ul style="list-style-type: none"> Ambulance services |

Source: Hospital San Andrés ESE (2022b)

APPENDIX 2. THE NODES INTEGRATING NARIÑO'S PROVIDER NETWORK

Figure 1 delivers a visualisation of the nodes integrating Nariño's provider network. Hospital San Andrés ESE leads the western node (The green area in Figure 1) (IDSN, 2014). Health facilities of the municipalities belonging to the green area of Figure 1 refer patients to the hospital. Figure 2 explains how the referral process works toward and outward Hospital San Andrés ESE.

Figure 1. The nodes integrating Nariño's provider network

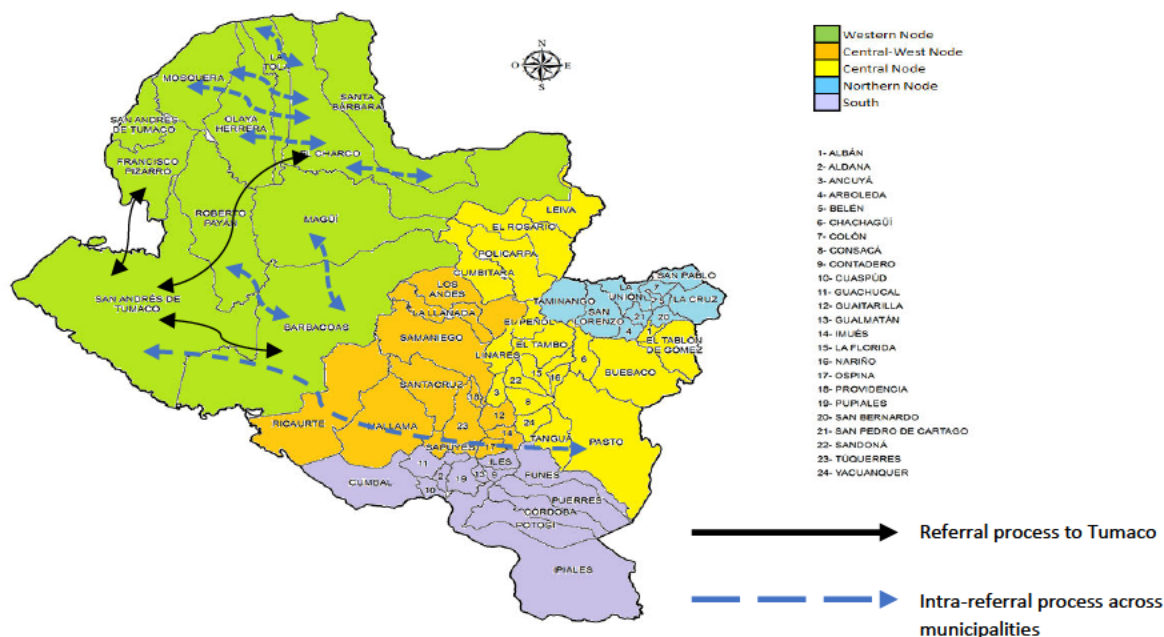
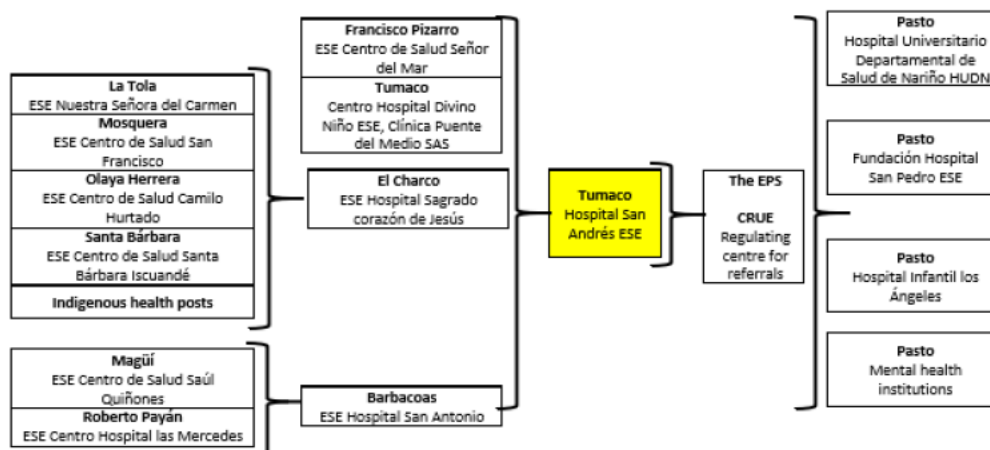


Figure 2. The referral process for the Western node of Nariño's health system

PRIMARY CARE ACROSS THE WESTERN NODE MUNICIPALITIES

HOSPITAL CARE — SECONDARY AND TERTIARY LEVEL



Source: Provincial health authority of Nariño, Document for health network planning (2014).

APPENDIX 3. TUMACO'S HEALTH SYSTEM

Health Financing/insurance

In the municipality of Tumaco there are six EPS administering both the subsidised and contributory regime. The subsidised regime is the prevailing form of health insurance in Tumaco evidencing the economic informality in the area (Alcaldía de Tumaco, 2016). Health insurance coverage in Tumaco is considerably low in comparison to national standards. About 33.54% of inhabitants still lack health insurance enrolment. Table 2 lists the insurers operating in the area.

Table 2. The health insurers operating in Tumaco, Colombia

| ORGANISATION | NATURE | REGIME ADMINISTERED | ENROLEES |
|---------------------|-----------------------------|------------------------------------|-----------------|
| Emsannar EPS SAS | Private | Subsidised Regime | 83,880 |
| Asmet Salud EPS SAS | Private | Subsidised Regime | 12,564 |
| Mallamas EPS | Mixed (indigenous oriented) | Subsidised Regime | 5,484 |
| Medimas EPS SAS | Private | Subsidised and Contributory Regime | 15,133 |
| Nueva EPS | Public | Subsidised and Contributory Regime | 13,571 |
| Comfamiliar EPS | Mixed (Public-private) | Subsidised and Contributory Regime | 40,203 |

Source: Office for quality and coverage, Provincial health authority of Nariño (2020)

Service provision

The main players of Tumaco's provision of services were already discuss in Chapter 1. This list of the main providers includes Hospital San Andrés ESE and 3 other facilities that deliver primary health services. Further, Non-profit and humanitarian organisations (e.g. ICRC, the Catholic Ministry, Médicins Sans Frontières MSF) have gradually begun to exercise a larger role in Tumaco's health care delivery (Cámara de Comercio de Tumaco, 2019). They focus in helping conflict victims on issues related to sexual assault, mental health, and physical aggression attributable to explosive devices. Likewise, they give support to conflict victims and impoverished citizens with transportation services toward health facilities. These organisations also work to increase awareness among the population on the importance and respect of the medical mission.

Governance

The main entities responsible to oversee Tumaco health system and particularly Hospital San Andrés ESE is the provincial health authority of Nariño called *Instituto Departamental de Salud de Nariño*. This entity monitors the compliance of health actors with compulsory operating standards to deliver care. The health authority also has full ownership of Hospital San Andrés ESE and becomes the main body responsible for its good operation. The authority receives help on its monitoring activities from Tumaco's municipal secretary for health, the decentralised branches of the judicial along with the Ministry of Health and the health superintendence.

Challenges affecting the health system in Tumaco

Concerning key issues affecting Tumaco's health system, these are as follows. Health facilities face shortage of human talent. The number of physicians in the municipality was of 1.6 per 10.000 inhabitants in 2018 (Instituto de Ciencia Política Hernán Echavarría Olózaga, 2018). This indicator is significantly low when compared to Colombia's which reports having 15 doctors per 10,000 inhabitants on average (La República, 2020). Further, the health posts integrating *Centro Hospital Divino Niño ESE* face shortcomings related to infrastructure. There is lack of continuous investment in such entities and usually do not have all the essential resources to provide care. Lastly, Hospital San Andrés ESE faces significant operating challenges. Chapter 4 will in more depth such problems. Yet, broadly speaking the hospital has had administrative problems that led it to a financial crisis and the armed conflict has affected the availability of supplies or staff to deliver adequate services.

APPENDIX 4. DETAILS ABOUT THE LITERATURE REVIEWED

| No | Author | Date | Type | Setting | Aims | Methodology/methods | Findings |
|----|--------------------|------|--|--|--|---|--|
| 1 | Abu-el-noor, et al | 2016 | Journal Article (Archives of psychiatric nursing) | Gaza strip | To assess the level of posttraumatic stress disorder and to examine the relationship between exposure to war stress and posttraumatic symptoms among health care providers following Israeli offensives against Gaza Strip | Survey to nurses of emergency departments, intense care, operating rooms, surgical departments, burn units. | The 89.8% of providers staff manifest PTSD. Key types of stress symptoms: "having strong feelings about the case", feeling irritable, recollection of the events like mental pictures, nausea, pounding heart. |
| 2 | Atzal & Jafar | 2019 | Journal article | Multiple settings, not specified | To explore the literature on attacks on health care in conflict zones to understand what is known of the wider and long-term impacts. | Literature review and document analysis | Different impacts had been acknowledged that can be grouped as follows: access to or delivery of health care, changes in mortality and health outcomes, and practice of health care in facilities and patients. |
| 3 | Ager, et al | 2015 | Journal Article (conflict and health) | Nigeria (Yobe state) | To identify key pathways of threat to health service provision and emerging pathways of response | Structured interviews with government officials and leader of a health services delivery project. These process aid to a Group Mode Building Methodology. | Health services provision (primary care) significantly affected by worker scarcity). Disruption of transport systems affecting access to facilities. Suspension of external technical assistance highly affecting providers service delivery. Policies of fee drugs, decentralised drug supplies, and community cohesion and resources helped the system to operate in crisis. |
| 4 | Ahamadani, et al | 2014 | Journal Article (Eastern Mediterranean Health Journal) | Iraq | To elucidate these needs and capabilities of maternal and newborn services | Semi structure interviews, small discussion, and direct observation of maternal care. Gather of new-born data to understand outcomes particularly neonatal and perinatal care. The later data analysed with logistic regression | Different limitations were encountered with the provision of maternal and new-born health care related to scarce supplies, limited availability of equipment to improve temperature to new-borns, lack of space in facilities to provide more time of inpatient care. Significant number of stillbirths which could had been fully avoided with more training to staff in obstetric practices. Hygiene standards should improve. |
| 5 | Ameh, et al | 2011 | Journal Article (Maternal and child health journal) | Iraq | To assess the availability of, and challenges to the provision of emergency obstetric care in Iraq | Self-administered questionnaire, in-depth interviews and focus group discussions | Only 26.3% of the hospital are able to provide all signal functions (services) of comprehensive obstetric care. Also face other challenges related to lack of security for going to work, insecurity for patients to arrive to hospitals, lack of supplies and equipment. Falling regulatory and training standards. |
| 6 | Ben-Erza, Bibi | 2016 | Journal article (Psychiatry) | Israel, during operation Protective Edge. | to study the association between psychological distress and decision regret during armed conflict among hospital personnel | A survey of employees in a hospital facility to understand how the conflict affects their decisions under a context of significant stress. | The context of armed conflict can create more decision problems for younger workers to make decisions and, therefore, there is more sense of regret on the decision made. Those considered as married have less regret while making medical decision in this environment. Finally, decision regret is highly present in these that have mental distress symptoms |
| 7 | Betsi, et al | 2006 | Journal article (Aids care) | Cote d'ivoire | to assess and quantify the effect this conflict had on human resources and health systems that provide the backbone for prevention, treatment and care associated with HIV/AIDS. | Survey to key informants in 24 urban settings in the country and review of documents | Significant disruption of health facilities with up to 90% of total closure in certain towns. AT least 88% of medical personnel left the areas where centres operated due to security reasons. Lack of records to establish epidemiological control on patients. Significant issues ahead to effectively control the spread and treatment of HIV/AIDS. |
| 8 | Briody, et al | 2018 | Journal Article (conflict and health) | Yemen, Syria, Iraq, Chechnya, Bosnia-Herzegovina | To examine attacks on health care facilities in conflicts in six countries to determine if attacks have become more common | Review of the existing reporting studies on attacks of health facilities. Also includes media accounts of such events particularly from Iraq. | Syria and Kosovo had the largest number of facilities attacked on a monthly basis (9.64), 6.67. The diverse range of methodologies used to report on events, however, makes difficult to precisely mentioned whether attacks were predetermined. Also there is risk of overreporting and underreporting events not providing an exact account on how many they are. |
| 9 | Cairo, et al | 2018 | Journal Article (Paediatric Surgery international) | Democratic Republic of Congo | To characterize paediatric surgical capacity in the eastern Democratic Republic of Congo (DRC) to identify areas of potential improvement. | Survey acknowledging the following factors: personnel, infrastructure, procedures, equipment, and supplies. | Emergency care for children having great difficulties in DRC in comparison to 37 other facilities of 14 sub-Saharan countries. Just 57.1% had working water, 78.6% depended on generators (power plants) for electricity. Just two hospitals had a paediatric surgeon. All these elements significant barriers for the adequate provision of paediatric surgery. |
| 10 | Casey, et al | 2009 | Journal Article (conflict and health) | Democratic Republic of Congo | to determine availability, utilization and quality of RH services including emergency obstetric care (EmOC) and family planning (FP). | Interviews, observations and clinical record review | None of the hospitals (9 in total) met criteria as an EmOC facility (basic or comprehensive). Facilities lacked FP services. Shortage of trained staff and essential supplies. Poor practices on infection control and not documented. Poor routine monitoring of Reproductive health services and emergency obstetric care. |

| No | Author | Date | Type | Setting | Aims | Methodology/methods | Findings |
|----|------------------|------|---|---|---|--|--|
| 11 | Chi, et al | 2015 | Journal Article (international health and human rights) | Burundi and Northern Uganda | <i>to explore how armed conflict may lead to limited access to and quality of MRH services</i> | Qualitative study using semi-structured interviews and focused groups through a diverse range of informants: users or mothers, local health providers including health personnel, administrative staff of facilities and local public officials, in addition to representatives of NGOs. | The conflict affect provision of maternal health services through the destruction of health facilities, irregular opening hours for services, looting and disruption of supplies, killing, abduction of health workers or migration/fleeing from the area, discrimination in provision of care due to ethnic background. There has been a long-term effect of conflict which is the disruption in completing health care projects in conflict-affected areas due to insecurity product of the armed conflict. |
| 12 | Dhar, et al | 2012 | Journal Article (Prehospital Disaster Medicine) | Kashmir (India) | <i>to identify the problems faced by ambulance drivers working in a conflict zone.</i> | Interviews with semi-structure instrument (35 participants) | The conflict affected adversely hospital's ambulance drivers both physically and psychologically, measures should be put in place to improve their stress situations |
| 13 | Donaldson, et al | 2012 | Journal Article (Prehospital and Disaster Medicine) | Iraq | <i>To assess the status and challenges of Emergency Medical Care in Iraq</i> | Convenience samples of physicians working for emergency departments of 50 hospitals in Iraq | Main causes of death and treatment related to cardiovascular disease, traffic accidents, blast and bullet injuries. Many of the physicians have experienced threats inside the hospital even with guns and assaulted by patients. Little knowledge about the triage system for the ED they worked for and insufficient training on ACLS, ATLS. |
| 14 | Elamein, et al | 2017 | Journal article (The lancet) | Syria | <i>to detect and verify attacks on health-care services and describe their effect.</i> | Tool/questionnaire using WhatsApp | 44% of hospitals and 5% of primary care clinics experienced attacks in opposition controlled areas. About 936 people reported as directly harmed which about 677 (62%) belonged to the health care sector. |
| 15 | Fardousi, et al | 2019 | Journal Article (British medical journal) | Syria | <i>To explore experiences and coping strategies of health workers and service-users during the sieges of Aleppo (June-December 2016) and Ghouta (2013-2018).</i> | Qualitative study using semi-structured interviews and inductive coding | Workers face severe resource constraints while responding to mass casualty events and besiegement. Lessons to mitigate this include training staff for mass casualties, management of triage systems, access to low technology equipment, fortification of facilities to handle attacks, access to internet and low-technology to provide electricity during besiegement, stock for fuel, supplies. |
| 16 | Fouad, et al | 2017 | Journal article (Lancet — health policy) | Syria | <i>Studying attacks on health-care facilities and targeting of health workers as part of a broader pattern of systematic violations of international humanitarian law, the attrition of health workers, the challenges facing health workers in different areas, and the evolving roles of health workers.</i> | Review of documents and literature | The weaponization of health care as an strategy of war. Many health professionals facing different challenges such as abduction, death threats, incarceration, murder. Health facilities subject of destruction, bombing, etc. There is need for capacity building, political advocacy, implement the rule of law and accountability to those committing war crimes. Different methods to adapt to the environment are report also not systematically analysed. (e.g. using urine bags to store blood, established a factory to create saline water). Some reports about the challenges of operating health facilities also announced (e.g. decentralisation of services in different buildings) |
| 17 | Haar, Rohini | 2018 | Journal article (Plos medicine) | Syria | <i>To implement and test a method of collecting field data on the scope of and details about the attacks based on direct field reporting using questions centred on international human rights and humanitarian law. Also aimed to identify any characteristics that increase or mitigate vulnerability of healthcare facilities.</i> | Survey instrument applied on the field. The survey relied on mobile technology. It used workers to collect data on the field. Also the survey relied on information gathered from text messaging. | Direct attacks on health facilities were the most situations reported (88% of cases). Hospitals were likely to be attacked more than once. The data collected in the survey was compared with another data collection survey used by another organisation. There were significant differences between the reports of datasets. There were significant difficulties to obtain the full information when obtaining data. Data collectors did not provided most of the information given technical difficulties and survey extensive need for information. |
| 18 | Hadary, et al. | 2009 | Journal Article (Annals of Surgery) | Lebanon | <i>To study the impact of war on the workload/finances of a community hospital</i> | Observational study in a hospital called ZIV of patient and financial information | 23% more trauma related patients in the emergency department and increased workload in orthopaedic surgery. Reduction in elective emergency procedures, obstetric delivery and procedures. Hospital finances, hospitalised patients, bed occupancy and visits to outpatient services. (finances down to 43%). Reorganisation of hospital operation with accrued revenue. |
| 19 | ICRC | 2013 | Journal Article (International Reviewed of the Red Cross) | Colombia | <i>To understand the roles and challenges the medical mission roundtable faces to safeguard health care in Colombia and what inspires its members to undertake their work.</i> | Semi-structure interviews with certain members of the round table for the protection of the medical mission. | Understand the activities they do: training/workshops about International Humanitarian Law to protect the medical mission. Establishing the policy or legal regulation on how to guarantee safety to workers. Understand that the medical mission emblem helps civilian health personnel not directly involved in armed conflict could be recognised when they provide health services in such conditions. Challenges for the effective work of the mission: misuse of the medical mission emblem, effective collaboration between roundtable members, the great distances to send help for health personnel living conflict problems. |
| 20 | ICRC | 2011 | Report - Health care in Danger | Multiple settings (16 not identified countries) | <i>To understand, in conflict contexts, who commits violent attacks to health care, when, where and how.</i> | Collection of reports from multiple conflict affected sites. Diverse source of reports including, radio, newspapers, websites, and specialised humanitarian media outlets. | The study encountered 655 reports of violent events affecting health care. Health facilities were affected through explosive devices including damage of infrastructure or armed entry. Furthermore, both patients and staff had been affected by violent events. Such effects occur when conflict events affected facilities at the same time. Due to attacks health services had to be cancelled or withdrawn altogether. |

| No | Author | Date | Type | Setting | Aims | Methodology/methods | Findings |
|----|---------------------|------|--|---|---|--|---|
| 21 | ICRC | 2012 | Report - Health care in Danger | Multiple settings (22 countries not identified) | <i>Increase respect for all health-care providers including those within communities</i> | Gathering and analysis of different/several reports | The study encountered 319 violent events affecting health care. In such affectations were included health facilities, staff, patients and by-standers. |
| 22 | ICRC | 2013 | Report - Health care in Danger | Multiple settings (23 countries not identified) | <i>To analyse the reports provided by 23 delegations of the ICRC on effects of conflict in health care</i> | Gathering and analysis of different/several reports | There is a worrisome rising trend of attacks on health care particularly on health facilities and transport systems. |
| 23 | ICRC | 2014 | Report - Health care in Danger | Multiple settings (23 countries not identified) | <i>To collect and analyse information about attacks on health care to inform operational strategies and encourage decision makers to take action to prevent violence against health care.</i> | Gathering and analysis of different/several reports | Most of the information of incidents or infractions to the medical mission have occurred nearby health care facilities. Patients could be killed wounded or beaten. |
| 24 | Jola-Sanchez, et al | 2016 | Journal Article (Journal of operations management) | Colombia, through sectorising the country between peace and localities with severe conflict | <i>analyses the effect of armed conflicts on the operational performance of first-layer response organizations this case hospitals</i> | Quantitative study using DEA or Variables Returns of Scale (VRS) and Tobit regressions and a Cob-Douglas model design. Sample size 163 hospitals | They acknowledge that conflict have a positive effect on TPF given the unobservable variables it depends on like managerial skills or knowledge. Further, conflict has a negative effect on efficiency due to supply chain disruptions. And variability on efficiency is less in hospitals experiencing armed conflict because they learn how to hedge against disruptions. |
| 25 | Karemere, et al | 2015 | Journal Article (conflict and health) | Democratic Republic of Congo | <i>to generate theoretical proposals for analysing hospital governance in conflict settings</i> | Case study (embedded, maybe?) of a hospital in DRC. It is called Katana hospital | Interaction of hospital agent is a positive force for adaption when actor share the same vision, the interaction depends on institutional arrangements, the interaction of the owner and management team play an important role to setup institutional arrangement that could be beneficial, service receipts preference for service should be consider to adapt service provision, |
| 26 | Kevlihan | 2013 | Journal Article (Disasters) | South Sudan | <i>To explore the social and political dynamics of service provision in and around the town during the war</i> | Qualitative study focused on interviews, focused groups and informal conversations | Health services can be significantly affected by war such as destruction of facilities or harassment of personnel. The government became a opportunistic hoarder when monopolised the service delivery of certain areas of south Sudan when locating health services in a garrison town. Also, the concept of exploitation was explored. Here it is evidence that government as monopoliser of the health services exploits the labour of those disfranchised and victims of the war (displaced people) to work to maintain the services on almost slave basis. Even though an important strategy from the government was to win the hearts and minds of the population to their cause it became difficult given the poor services delivered. |
| 27 | Khan, et al | 2016 | Journal Article (Social work and public health) | Pakistan, tribal areas | <i>To empirically substantiate the successful strategies adopted by the NGOs to run their projects under armed conflict and population's perception on their services.</i> | In-depth interviews, semi-structured questionnaire, focused group discussions, personal observations | Armed conflict damaged facilities, increased lack of medicine of equipment. Took over health facilities to provide care although faced political interference in this process, |
| 28 | Koren, et al | 2009 | Journal Article (Depression and Anxiety research) | Israel | <i>To assess the rates and severity of PTSD symptoms (PS) among hospital workers operating under fire while treating war related injured patients, To explore the effect of PS on level of functioning in real time, and To estimate the added effect of secondary traumatization over and above that of primary traumatization</i> | Posttraumatic Stress Disorder Scale (PSS) was used to assess severity of PS, as well as to estimate probable DSM-IV diagnosis of PTSD among 412 workers. All in a single facility. | 10.2% of participants reached the threshold for probable diagnosis of severe PTSD and must under moderate risk of this illness. |
| 29 | Labat and Sharma | 2016 | Journal Article (British medical journal) | Democratic Republic of Congo | <i>To identify potential barriers to patient safety from the perspective of surgical team in an operating theatre in DRC</i> | Content analysis with semi-structure interviews | Lack of engagement of hospital managers hampers implementation of PS. Great levels of patronage and nepotism in human resource management leading to difficult management of staff, bad working attitudes. |
| 30 | Lafta & Falah | 2019 | Journal Article (Medicine, conflict and survival) | Iraq (Baghdad) | <i>To explore the exposure of providers' staff to different forms of violence and the influence on work and life</i> | Survey of health professionals mainly oriented to clinical and technical staff | Health workers would experience violence from relatives often during broad daylight. Also, would be threaten on bad patient outcomes. Consumers would become angry also with bad services such as lack of supplies or overcrowdings. Workers also have report more aggressive violence such as kidnapping or killings. The great issues with violence leads workers to flee the country or with mental stress. |

| No | Author | Date | Type | Setting | Aims | Methodology/methods | Findings |
|----|--------------------------|------|---|--------------------------------------|---|--|--|
| 31 | Lagrou, et al | 2018 | Journal Article (conflict and health) | Afghanistan | Assess the performance of a well-functioning primary health care system in the absence of quality primary health service and referral | Studying the number of admissions for EmOC. Calculating the mortality ratio of mothers diagnosed with EMOC. Synthesis of the data on economic background/profile, and place where they come from. | Quality of services are relatively good given that mortality rate of mothers facing acute obstetric or antenatal symptoms was 0.2% (<1% benchmark). Analysing of trends on admitted patients: between those for normal delivery and those treated in acute conditions. |
| 32 | Lee, Romeo | 208 | Journal Article (Reproductive health matters) | Philippines (Maguindanao) | To describe the experiences of local government service providers and two NGOs in a context of long-standing internal armed conflict. | Interviews with 6 participants from government organisations and NGOs | Health care providers relatively respected during the war because of the following factors: neutrality in the provision of health care, declare peace areas for providers to operate without conflict-pressure, make services available at the sites where populations would move due to conflict-related displacements. |
| 33 | Lembani, et al | 2014 | Rebuild Consortium | Cote d'Ivoire | to identify factors which contributed to the vulnerability of service delivery, and those factors that strengthened service resilience | Structured interviews and group discussion to establish a Group Model Building that includes four phases | Factors in the continuity of HIV services of facilities include coordination between actors, task-shifting, flexibility in drug supplies, staff motivation and availability, external support and service prioritization |
| 34 | Makhlouf-Obermeyer et al | 2020 | Journal article (BMC Emergency Medicine) | Beirut Lebanon | to assess the extent to which the volume of visits, the severity of cases, and the frequencies of various discharge diagnoses differed significantly between periods when violent events occurred, compared to quieter periods. | Quantitative (looks to hospital records on usage of ED services) Variables selected: The following variables were used: age, gender, nationality, residence, admitting diagnosis, how bill was paid (a variable associated with employment and socio-economic status), length of stay, discharge information (admitted or discharged), and discharge diagnosis. | Reduced demand for ED services right after violent events, people treated present more acute/difficult health problems, contradictory not many patients treated for injuries for wounds, during the events there were less people discharged and mostly presented a discharged diagnostic related to gastritis, anxiety disorders, sprains/strains |
| 35 | Mangwi Ayias, et al | 2019 | Journal article (Human resources for health) | Northern Uganda | The aim of this study was to identify changes in deployment policies and practice during the conflict (1986-2006) and post-conflict period (2006-2013). / Explore how deployment policies and practices were adapted during the conflict and post-conflict periods with the aim of drawing lessons for future responses to similar conflicts. | Cross-sectional qualitative study with two large health employers: The local government a private hospital. 48 interviews in Total. | The implementation of deploying policies can differ during conflict. Private organisations are more nimble to adapt to the context. The NGOs can help providing salaries for health worker for providers but also can become competitors for human resources. The conflict also makes difficult the process for advertising new posts. |
| 36 | Marie, et al | 2017 | Journal article (International journal of mental health systems). | West Bank, Palestine | the aim was to observe and describe the environment within community mental health workplaces, and to explore the challenges facing Palestinian CMHNs. | Interpretative qualitative study with mental health professionals of 12 facilities in Palestine. 11 were government based and 1 was run by a non-profit organisation. Observations were undertaken across the facilities in order to compare working situations and challenges. organisational documents were also collected for review. The data was analysed using thematic analysis like Braun's and Clark. | Violence affects the workers commuting efforts, the facilities lack sufficient financial resources for mental professionals to provide care. There is lack of transparency to assign motivators. People feel unmotivated due to low wages, also untimely payments. Training is it is insufficient and must be strengthened. There is not significant organisation among the trade union to request for more support. Organisational support is rather limited. |
| 37 | Michael, Markus | 1996 | Journal article (Journal of the American Medical Association) | Bosnia-Herzegovina, Croatia, Srpska. | To evaluate access, distribution and quality of medical supplies donated by humanitarian aid organizations to hospitals and health services during the war in Bosnia and Croatia. | Survey to health providers representatives in Bosnia, Croatia and Srpska (77 in total) | Lack of supplies highly significant among hospital during the conflict (up to 62% of respondents agreed on this). Lack of security to staff. Physical isolation and lack of infrastructure also were considered as challenges. Five humanitarian organisations supplied most elements. Relatively few organisations depended on their own means for supplies (9%). Whereas 93% of respondents agreed the quality of materials provided by humanitarian actors very good. |
| 38 | Mowafi, et al | 2016 | Journal article (Jama surgery) | Syria | To identify the number of trauma hospitals operating in Syria and to delineate their capacities. | Survey of hospital in the mainly focused on the surgical-trauma facilities in the northern part of Syria. Survey accounted for conditions of surgery room, equipment, laboratory and surgical-related personnel | 94 hospitals provide operative trauma, with 538 surgeons, 378 physicians, and 1569 nurses. Biomedical technology must be improved. |
| 39 | Mugo, et al | 2018 | Journal Article (Maternal and child health journal) | South Sudan | To explore the challenges and barriers maternal and child healthcare providers face to deliver adequate quality health services to women during antenatal care visits, facility delivery and post-delivery care. | 18 in-depth-interviews with maternal and child health professionals including midwives/nurses, trained traditional birth attendants (TBAs), gynaecologists, and paediatricians in three public health facilities | Poor management and coordination of staff, lack of supplies, lack utilities, lack of supervision and training, low salary. Security instability in the midst of armed conflict also impacts service delivery particularly at night time. |
| 40 | Namakula & Witter | 2014 | Journal Article (Health policy and planning) | Northern Uganda | To understand why health workers stay in conflict-affected areas and how they cope. | 26 life-story interviews from staff belonging to health providers of diverse nature (public, private) | Several Challenges: Abduction, ambush, injury, death. Difficulties with work regarding supplies, workload, demotivation of staff due to lack of recognition or poor communication with management. Some coping strategies: Intrinsic motivation ranging from serving the community, relying on a faith, and look for safety such as sleeping in patient wards, in the bushes, or interact with the community more frequently. |

| No | Author | Date | Type | Setting | Aims | Methodology/methods | Findings |
|----|--|------|--|---|--|---|--|
| 41 | Omar, Abdulaziz | 2020 | Journal article (Risk management and health care policy) | Syria | <i>Examines the impact of the conflict in Syria on its health facilities and looks at the reasons why these services are under attack and the international response to the conflict</i> | Review of documents about the attacks on health facilities | Several facilities have been targeted, 50% of the health system rendered inoperative in Syria. Significant loss of human lives. |
| 42 | Qirbi and Ismail | 2017 | Journal Article (Health policy and planning) | Yemen | <i>To describe the impact of war on health system functionality and how it has been affected in comparison with a baseline.</i> | Document/literature review of journal articles and officials documents | Looking at WHO building blocks to provide an explanation of the stance of the Yemen's health systems during the conflict. Regarding finances, facilities highly dependant on out-the-pocket financing, service delivery and medical technologies: providers endure sporadic shortage of medicine and equipment, health workforce: inadequate distribution of workers across facilities and significant scarcity of doctors. Poor information systems lack of data on patient records and epidemiological profile. |
| 43 | Ramos, et al. | 2020 | Journal Article (conflict and health) | Colombia | <i>To describe maternal and child health indicators and interventions between 1998 and 2016 comparing high and low conflict areas in Colombia.</i> | Quantitative and qualitative methods. The quantitative part mainly revolves on establishing violence rates across cities through the number of women victims. The qualitative studies looked at the perception on health providers, government and NGO officials on the services maternal and sexual health programmes deliver in town with less and more conflict intensity. | Municipalities with high conflict levels see impact on programme development in relation to attacks on health personnel and access of the community to facilities. Further, the facilities both in context with high or low conflict face important resource-related challenges. Another difficulty relates to the programmes delivering health services are not context relevant. There is need to pay important attention to traditional medicine/healers to help in programme implementation and improve coordination between actors (NGOs, UN agencies, government). |
| 44 | Rushton and Devkota | 2020 | Journal Article (Medicine, conflict and survival) | Nepal | <i>To understand why warring parties take strategic decisions not to weaponize healthcare</i> | Semi structure interviews (12 in total) and document review | Health care was not targeted in the war basically for four reasons: i) the government and militias considered valuable to keep services operating for their own benefit ii) the sector did not become a ideological battleground, iii) humanitarian organisations shaped the behaviour of warring parties, iv) health professionals navigating violent pressures. |
| 45 | Rytter, Heilskov et al | 2006 | Journal Article (British medical journal) | Palestinian west bank | <i>To assess the impact of restrictions in access to hospital services imposed on the civilian population during the armed conflict in the Palestinian territories occupied by Israel.</i> | Descriptive statistics analysing using data on routine service delivery | About 18% of the patients that three hospitals provided services to perceived delays for health care due to checkpoints and road restrictions. Those that perceived delayed were more prone to obtain medical care. |
| 46 | Safeguarding health care in conflict, Violence on the front line 2017 | 2018 | Report | Afghanistan, Burkina faso, Cameroon, CAR, DRC, Egypt, Ethiopia, Iraq, Israel/oPt, Libya, Mali, Myanmar, Nigeria, Pakistan, The Philippines, Somalia, S Sudan, Syria, Turkey, Ukraine, Yemen | <i>The report tries to show the vast and devastating consequences of attacks on health care in conflict and political unrest</i> | Collection of diverse reports from different sources | Several incidents or attacks to health care including threats or killing of medical personnel, destruction of facilities and hindering access to medical supplies. This also includes damage to referral infrastructure. |
| 47 | Safeguarding health care in conflict, Impunity remains attacks on healthcare in 2018 | 2019 | Report | Afghanistan, Burkina faso, Cameroon, CAR, DRC, Egypt, Ethiopia, Iraq, Israel/oPt, Libya, Mali, Myanmar, Nigeria, Pakistan, The Philippines, Somalia, S Sudan, Syria, Turkey, Ukraine, Yemen | <i>The report documents attacks against health care violating of longstanding human rights laws to protect and respect health care in conflict</i> | Collection of diverse reports from different sources | Several incidents or attacks to health care including threats or killing of medical personnel, destruction of facilities and hindering access to medical supplies. This also includes damage to referral infrastructure. |
| 48 | Safeguarding health care in conflict, health workers at risks in 2019 | 2020 | Report | Afghanistan, Burkina Faso, Cameroon, CAR, DRC, Egypt, Ethiopia, Iraq, Israel/oPt, Libya, Mali, Myanmar, Nigeria, Pakistan, The Philippines, Somalia, S Sudan, Syria, Turkey, Ukraine, Yemen | <i>The report documents attacks against health care violating of longstanding human rights laws to protect and respect health care in conflict</i> | Collection of diverse reports from different sources | Several incidents or attacks to health care including threats or killing of medical personnel, destruction of facilities and hindering access to medical supplies. This also includes damage to referral infrastructure. |
| 49 | Safeguarding health care in conflict, No respite 2020 | 2021 | Report | Afghanistan, Bangladesh, Brazil, Burkina Faso, Burundi, Cameroon, CAR, Colombia, DRC, Egypt, El Salvador, Equatorial Guinea, Ethiopia, Greece, Haiti, India, Indonesia, Iran, Iraq, Kenya, Lebanon, Libya, Madagascar, Mali, Mexico, Mozambique, Myanmar, Nagorno-Karabakh, Niger, Nigeria, oPt, Pakistan, Philippines, Somalia, South Sudan, Sudan, Syria, Turkey, Uganda, Ukraine, USA, | <i>The report documents attacks against health care violating of longstanding human rights laws to protect and respect health care in conflict</i> | Collection of diverse reports from different sources | Several incidents or attacks to health care including threats or killing of medical personnel, destruction of facilities and hindering access to medical supplies. This also includes damage to referral infrastructure. |
| 50 | Safeguarding health care in conflict, HRW | 2015 | Report | Central African Republic (CAR), South Sudan, Afghanistan, Iraq, Syria, Burma, Colombia, Nigeria, Pakistan, Palestine (Gaza), Somalia, Turkey, Ukraine, Yemen | <i>Presents data of attacks on health care to put them into long term context</i> | Collection of diverse reports from different sources. The main reliance is on Security numbers database (SIND) a part of Insecurity Insight. | Several incidents or attacks to health care including threats or killing of medical personnel, destruction of facilities and hindering access to medical supplies |

| No | Author | Date | Type | Setting | Aims | Methodology/methods | Findings |
|----|---|------|--|---|--|---|--|
| 51 | Safeguarding health care in conflict. Impunity must end. Attacks on health in 23 countries in conflict 2016 | 2016 | Report | Alghanistan, Armenia, CAR, DRC, Egypt, Ethiopia, Iraq, Jammu and Kashmir, Libya, Mali, Mozambique, Myanmar, Niger, Nigeria, Israel and OPT, Pakistan, Somalia, South Sudan, Sudan, Syria, Turkey, Ukraine, Yemen | <i>The report tries to show the vast and devastating consequences of attacks on health care in conflict and political unrest</i> | Collection of diverse reports from different sources. | Several incidents or attacks to health care including threats or killing of medical personnel, destruction of facilities and hindering access to medical supplies. This also includes damage to referral infrastructure. |
| 52 | Safeguarding health care in conflict, No protection, No respect 2015 | 2016 | R port | yanmar, Nigeria, Occupie | <i>The reports reviews attacks on an interference with hospitals, health workers, ambulances, medical supply transport and patients in armed conflict and times of political violence</i> | Collection of reliable reports from the UN agencies and NGOs | Attacks on health services take many form but can be group in four large categories. Bombing, Shelling and Looting of facilities , Violence on health workers, Military takeover of facilities, Obstruction of access to health care or essential supplies. |
| 53 | Sahloul, et al. | 2016 | Journal Article (Journal of global oncology) | Syria | <i>To determine physician and equipment availability, cancer screening and management, and possible solutions relative to various major cities</i> | Online survey applied to oncologists and general physicians. The first working for specialised clinics and the second in mobile clinics. | Shortage of specialised physicians inhibit accessibility to screening and cancer management. Limited to targeted reagents, radiation therapy, clinal trials, positrons scans, bone marrow transplantation, magnetic resonance imaging and genetic tests. |
| 54 | Sinha, et al | 2013 | Journal Article (Plos current disasters) | Manipur, India | <i>to assess longitudinal and spatial trends in incidents involving health care workers and institutions in Manipur during the period 2008 to 2009.</i> | Simple linear regression using a conflict-related report database | Several infractions toward health workers including physical attacks, intimidation, threats, abduction and wounds. There is difficulty to predict exactly what would occur in relation to attacks on health system and workers. There is a rising trend of such events happening throughout time. |
| 55 | Taha, AA | 2017 | Journal Article (International nursing review) | West Bank, Palestine | <i>To explore the lived experience of Palestinian nurses working in the occupied West Bank hospitals.</i> | Qualitative phenomenological study (interviews with 17 nurses) | Nurses endure several challenges: trauma and humiliation both physically or professionally, professional and personal conflicts, political bias at workplace, blurred role boundaries. Coping mechanism: high sense of moral duty with the community and the land. |
| 56 | Taira, et al | 2010 | Journal Article (World Journal of Surgery) | Sri Lanka | <i>To quantify the current status of capacity to deliver emergency, anaesthesia, and surgical interventions in the conflict affected areas of Sri Lanka</i> | Survey using the WHO to Assess Emergency and Essential Medical Services | There is adequacy on trained medical personnel to provide services but there is significant shortage of infrastructure and equipment. |
| 57 | Tappis, et al | 2020 | Journal Article (conflict and health) | Yemen | <i>This case study examines how reproductive, maternal, newborn, child and adolescent health and nutrition (RMNCAH+N) services have been delivered since 2015, and identifies factors influencing implementation of these services</i> | Case study using content analysis with semi-structure interviews (94 in total) and six focused groups conducted with midwives and volunteers. | Quantity and quality of reproductive, maternal, new-born, child and nutrition services limited by insecurity, limited functionality of facilities, and challenges in the important and distribution of supplies. Humanitarian actors help in maintaining basic services or facility functionality deploying their own mobile clinics. |
| 58 | Trelles, et al. | 2015 | Journal Article (conflict and health) | Syria | <i>to report on how quality surgical care can be provided in a complex conflict setting and what volume and type of surgical activities are feasible</i> | Descriptive statistics analysing using data on routine service delivery | The field hospital provided services to combat and non-combat patients. The latter mainly oriented to obstetric care. Relatively good quality of care because of following standard procedures, establishing care centres with minimum parameters, good surgical team. Field hospital possible if a operators have a minimum set of standards for operating facilities and procedures to provide care. |
| 59 | WHO, 2014-2015 | 2016 | Report | Syria, West Bank and Gaza Strip, Iraq, Pakistan, Libya, Ukraine, Central African Republic (CAR), Yemen, Sudan, Afghanistan, South Sudan, Guinea, Democratic Republic of Congo, Nigeria, Somalia, Liberia, Sierra Leone, Myanmar, Colombia | <i>Compiled and analysed available secondary data from open sources on individual attacks on health care in emergencies</i> | Collection of diverse reports from different sources | Reports several incidents on health care including attacks to facilities, workers, ambulances and mobile health services/campaigns, and patients. |
| 60 | Witter, et al | 2017 | Journal Article (Health policy and planning) | Multiple settings (those in conflict: Uganda, Sierra Leone, Cambodia: some countries moved from conflict several years before) | <i>To captured insights on how shocks of different kinds affected health staff, and how they coped for drawing together lessons for enhancing staff and therefore system resilience</i> | Life stories, in-depth interviews to 128 health workers | Different types of shocks created to health system to health facilities: worker scarcity, worker fear and abduction, insecurity and death. Workers establishing a series of strategies to cope divided as physical survival strategies (e.g. hide in the bushes), psychosocial support, (e.g. religion or family chat), and practical strategies related to work remuneration and workload (e.g. farming, borrowing money) . |

APPENDIX 5. CORRESPONDENCE WITH HOSPITAL SAN ANDRÉS ESE

Edinburgh, Noviembre 21, 2018

Doctor

(Anonymised from original)

Gerente

Hospital ESE San Andrés de Tumaco



Cordial Saludo.

Mi nombre es **DIEGO MAURICIO DIAZ VELÁSQUEZ**, economista egresado de la Universidad de Nariño y en el momento me encuentro estudiando un doctorado en política social (Social Policy) en el tema específico de análisis de sistemas de salud. Mis estudios se adelantan en la Universidad de Edinburgh, Escocia, Reino Unido. Me encuentro estudiando en este país con ayuda de una beca brindada por el programa de formación de talento humano CEIBA, Nariño.

Para obtener el título de doctor –PhD–, he planteado la realización de la siguiente investigación: "SUPPORTING HEALTHCARE PROVIDERS OPERATING IN CONFLICT-AFFECTED SETTINGS: THE CASE OF TUMACO, COLOMBIA" – traducido como "APOYANDO A LOS PROVEEDORES DE SALUD QUE OPERAN EN ZONAS DE CONFLICTO: EL CASO DE TUMACO, COLOMBIA". Este proyecto permite ampliar el conocimiento existente sobre el funcionamiento y apoyo que se debe brindar a sistemas salud y, particularmente a hospitales que operan en estados-nación frágiles o afectados por conflicto.

La investigación utiliza como diseño metodológico el estudio de caso y recurre a entrevistas y recolección documental como métodos de levantamiento de información primaria. La investigación se hará principalmente en el hospital que usted dirige y las entrevistas se adelantaran al cuerpo administrativo del hospital ESE SAN ANDRÉS DE TUMACO y directores de organizaciones cooperantes que se encuentran apoyando o están interesadas en colaborar al funcionamiento del hospital, para que la institución pueda cumplir adecuadamente con su función social de prestación de servicios de salud. Igualmente, los documentos que se recolectaran serán únicamente los más relevantes que logren complementar adecuadamente la información obtenida en las entrevistas. Como requisito de la Universidad, la investigación cuenta con un consentimiento informado con el fin de cumplir con los criterios de anonimidad, confidencialidad y protección de las fuentes que hicieron parte del proceso investigativo.

Dado que el lugar donde voy a investigar es una zona con un escenario de seguridad complejo, el comité de ética de la universidad requiere que yo cuente con el respaldo oficial por parte del hospital a través de una carta, en donde se manifieste que el hospital me reconoce como un PROFESOR INVESTIGADOR VISITANTE, y se exprese la disposición de la institución en colaborarme facilitándome la información que yo crea conveniente para adelantar la investigación, al igual que acceder a recursos específicos que yo pueda necesitar durante el proceso investigativo como: acceso a internet, baño, e ingreso a las instalaciones del hospital.

La carta brindará claridad ante el comité de ética de la Universidad de Edinburgh la disposición del hospital para colaborar para el desarrollo de la investigación, y aminora en Escocia las preocupaciones que se tiene sobre los riesgos que implican hacer mi investigación en Tumaco.

La intención de esta investigación es que el hospital pueda tener un recurso a través del cual pueda lograr apoyo de entidades nacionales o internacionales para su operación en el entorno de Tumaco.

Muchas por su tiempo y colaboración.

Atentamente,

Diego Mauricio Diaz Velasquez
Candidato a PhD – Social Policy
School of Social & Political Science
University of Edinburgh
Chrystal Macmillan Building,
15a George Square, Edinburgh, EH8 9LD
Tel: +44 (0) 77 09 788 923
(57) 3184673760
E-mail:



San Juan de Pasto, noviembre 21, 2018

Señores

COMITÉ DE ÉTICA

Programa de Doctorado en Política Social
Facultad de Ciencias Políticas y Sociales
Universidad de Edimburgo

REF: APOYO INSTITUCIONAL

Por medio de la presente, en calidad de Agente Especial Interventor de la Superintendencia Nacional de Salud, del HOSPITAL SAN ANDRÉS DE TUMACO E.S.E., me permito informar que la investigación adelantada por el Sr. DIEGO MAURICIO DIAZ, denominada "SUPPORTING HEALTH CARE PROVIDERS: OPERATING IN CONFLICT-AFFECTED SETTINGS" o en su nombre en español denominada "APOYANDO A PROVEEDORES DE SALUD QUE OPERAN EN CONTEXTOS DE CONFLICTO: EL CASO DE TUMACO, COLOMBIA", es muy importante para nuestra institución. A través de este estudio, el investigador hace un análisis de los retos que enfrentamos para operar en Tumaco y mostrará ante entidades de cooperación tanto nacionales como internacionales las áreas en las que ellos pueden canalizar recursos para fortalecer el trabajo del hospital y dar cumplimiento con nuestra misión institucional. Por lo tanto, el Sr. DIAZ VELASQUEZ tendrá todo nuestro apoyo para llevar a cabo su estudio. El hospital ha considerado darle el estatus al señor DIAZ VELASQUEZ como PROFESOR INVESTIGADOR VISITANTE.

La investigación es muy pertinente en este momento, dado que Tumaco se constituye en un entorno muy difícil para operar organizaciones del sector salud, particularmente hospitales. Cada elemento de apoyo o cooperación que podamos recibir es de gran ayuda para mejorar nuestra capacidad resolutive de los problemas de salud que aquejan la población que acude a nuestros servicios. Igualmente, tanto el comité de ética de nuestra organización y a título personal, consideramos que la investigación se ajusta adecuadamente a criterios de ética como lo son la anonimidad de los participantes consultados y el manejo confidencial de la información, lo que nos brinda confianza del proceso investigativo que adelantará el señor DIAZ VELASQUEZ.

Asimismo, además de suministrar la información necesaria que el estudiante requiera para realizar su trabajo de grado, el hospital colaborará al Sr. DIAZ VELASQUEZ en brindar acceso a recursos, como internet, baño, escritorio y entrada continua a nuestras instalaciones cuando él lo necesite.

Atentamente,

(Original Signed)

Agente Especial Interventor.
Superintendencia Nacional de Salud.
HOSPITAL SAN ANDRÉS DE TUMACO E.S.E.
Tumaco, Nariño

APPENDIX 6. LETTER SENT TO SUPPORTING ACTORS FOR PARTICIPATION – GENERIC VERSION



THE UNIVERSITY
of EDINBURGH

San Juan de Pasto, Month, Day, 2019

Doctor

Name(s) of key person(s) (Original in Spanish)

Name of the organisation (Original in Spanish)

Cordial Saludo,

A través de la presente informo a usted que en el marco de la investigación doctoral denominada: **"SUPPORTING HEALTH CARE PROVIDERS OPERATING IN CONFLICT-AFFECTED SETTINGS: THE CASE OF TUMACO, COLOMBIA"** o en español con el nombre de "APOYANDO A PROVEEDORES DE SALUD QUE OPERAN EN ZONAS DE CONFLICTO: EL CASO DE TUMACO, COLOMBIA", la cual cuenta con aval por parte del Instituto Departamental De Salud De Nariño y se desarrolla en la Universidad de Edinburgh, Escocia, solicito a usted comedidamente conceder unas entrevistas semiestructuradas por parte de las siguientes personas:

- Director de la organización
- Director o persona a cargo de la asistencia médica en la zona de Tumaco, Colombia

El proyecto de investigación depende de entrevistas semiestructuradas para la recolección de información primaria. Por lo tanto, su ayuda con el testimonio de las personas antes relacionadas contribuye en gran medida en el desarrollo de este estudio.

Muchas gracias por su colaboración.

Atentamente,

DIEGO MAURICIO DIAZ VELASQUEZ

Estudiante PhD en Políticas Sociales
University of Edinburgh, Escocia, UK.
Correo electrónico:
Teléfonos: 3184673760 -- 7366836

APPENDIX 7. TOPIC GUIDES

OBSERVERS

1. What is currently happening in Tumaco's social, economic, and political contexts?
2. What is your perception of security within Tumaco? Who is involved in the conflict and what territory they control?
3. How the armed conflict in Tumaco affects daily activities and what people do to keep safe?
4. What is your perception of the work undertaken by law enforcement authorities in the area (military, police, and judicial system, government)?
5. What is the overall quality of public utilities and the infrastructure of health care organisations in the region? What are the main problems?
6. To what extent do you perceive people are aware on how to use the health system and how safe they are while using it?
7. What's your perception of the overall organisation and functionality of the health system in Tumaco and its effectiveness to deliver health care services?
8. How committed are local authorities with the adequate operation of the health sector?
9. What you consider to be the main issues Hospital San Andrés ESE in Tumaco faces? In what ways do you think the hospital address them?
10. What cultural factors do you think prevents Tumaco to overcome its social problems?

Extra questions.

- ✓ Can we have another call/interview to follow up on the issues we discussed?
- ✓ Do you have or know any documents that can help the study, and would you like to share them?
- ✓ Do you know of other people I should talk to?

INTERNAL SUPPORTING ACTORS - HOSPITAL PERSONNEL

Challenges and hospital operation.

1. Could you explain your work at Hospital San Andrés ESE?
2. What does it mean to be a hospital operating in a conflict setting as Tumaco and what services is the hospital expected to provide in such context?
3. What challenges Hospital San Andrés ESE has endured to operate in the context of Tumaco, particularly due to its armed conflict? Provide details on hospital finances, supplies (including drugs, equipment, lab products and blood), personnel (physical and mental health, safety, pay and benefits, daily work, working behaviour and morale, regarding work hours), service delivery (supplies, referral process and delivery of services), infrastructure and public services, negotiations and contracting with insurers and suppliers, management decisions, internal governance and leadership, communications, infrastructure.
4. What can you tell me about the problem of corruption in the hospital and how this problem interacts with the armed conflict in Tumaco? (e.g., paying extortions to illegal groups).
5. To what extent the armed conflict has affected trust of: a) hospital collaborators and b) patients/community towards the hospital and vice versa.
6. How have the challenges mentioned above affected the hospital's ability to meet the local population health needs?

Response to challenges and support: type, resources, activities, and durability.

7. How does Hospital San Andrés ESE respond to the challenges? To what extent does the hospital receive support from third parties to address the problems, particularly related to the armed conflict? (e.g., staff, technical expertise, supplies, utilities, management activities, financial resources, security) who provides the assistance? (e.g., national, or local government entities, supervisory entities, health insurers, voluntary organisations, providers, the local community, watchdog organisations) for how long? What are the strengths and limitations? What can be improved? How important are hospital contacts to obtain this support?
8. When the response to challenges involves third party support, how is the support relationship established? Is support something the hospital always seeks when facing challenges? (e.g., shortage of drugs/other supplies) Do support organisations ever initiate or offer support? How the support process works and what activities does it involve? Has the hospital established a support strategy to deal with the challenges?
9. Can you provide details on the strengths and limitations of hospital response to challenges or the support process? What actions and resources were crucial to respond to challenges and what are the limitations on this regard?

10. I learned about the hospital's safe policy and the hospital's emergency and risk management plan. Are these initiatives closely related? How do these initiatives help the hospital face challenges particularly of armed conflict? Who participates within the emergency response plan and what are their main responsibilities? What are the strengths and limitations of this system and what can be improved?

11. In your experience, community members have ever encountered invisible barriers to accessing care due to armed conflict? What kind of response the hospital establishes to overcome such barriers and help the patients obtain hospital services? What type of support does the hospital receive to cope with these issues?

Extra questions.

- ✓ Can we have another call/interview to follow up on the issues we discussed?
- ✓ Do you have or know any documents that can help the study and, would you like to share them?
- ✓ Do you know of other people I should talk to?

EXTERNAL SUPPORTING ACTORS

Challenges and hospital operation.

1. Could you briefly explain what are your responsibilities within the organisation and what relationship do you have with Tumaco's health system and Hospital San Andrés ESE?
2. What kind of challenges does Hospital San Andrés ESE encounter to operate in the armed conflict setting of Tumaco? Concerning: hospital supplies (including laboratory and blood products), personnel (availability, physical and mental health, safety, payments, benefits, work attitude and morale, working hours), equipment, hospital finances, public services, governance and management, relationship with health insurers, communication, and infrastructure.

Support to the hospital

3. What type of support/assistance does your organisation provide to Hospital San Andrés ESE to address the challenges it faces to operate in the conflict setting of Tumaco? (e.g., finance, supplies, utilities, staff, knowledge or information, training, etc.).
4. To what extent the support depends on the circumstances that arise or is there a previous planning or agreement about the support to be provided?
5. What are the characteristics of support agreements? Does the hospital always seek support?
6. To what extent it is undertaken a needs assessment to provide support? Who participates in such assessment?
7. To what extent your support activities require the consent or approval of authorities, the hospital, or other local organisations? What problems have occurred?

About the support process and resources/capacities.

8. What activities and resources are involved during the support process to the hospital? How are the activities managed or controlled?
9. To what extent the support you provide depends on the collaborative work of other local entities (eg NGO, local or national government, etc.)? What are the advantages or disadvantages of such work?
10. What difficulties has the armed conflict created in carrying out support activities? (e.g., safety, skills, availability, morale, workload)
11. How do you finance support activities? How is funding for support managed and controlled?

12. What are the strengths and limitations of the support process, what are its valuable results and what needs to improve? Has the hospital generated overdependence on support activities? Please provide details.

Extra questions.

- ✓ Can we have another call/interview to follow up on the issues we discussed?
- ✓ Do you have or know any documents that can help the study and you would like to share?
- ✓ Do you know of other people I should talk to?

APPENDIX 8. ETHICS COMMITTEE APPROVAL



SCHOOL of SOCIAL and POLITICAL SCIENCE
Research Ethics Committee

The University of Edinburgh
Chrystal Macmillan Building
15A George Square
Edinburgh EH8 9LD

DIEGO MAURICIO DÍAZ VELASQUEZ
School of Social and Political Science
PhD in International Public Health Policy
Global Health Unit
Social Policy

April 25, 2022

Research Ethics Review

Ref No: Ethical Review Level 2

Project Title: How do hospitals sustain delivery of health care in conditions of protracted armed conflict? A case study of the Hospital San Andrés ESE in Tumaco, Colombia

Dear Diego,

The above application was considered on December 10, 2018, by the School of Social & Political Science Research Ethics review process, in accordance with the procedures laid down by the University of Edinburgh for ethical approval of all research activities.

I inform you that, based on the information provided to the Ethics Committee, the proposed research received a favourable ethical opinion at Level 2, contingent on applying fieldwork methods (interviews) remotely to assure safety for the researcher and participants given the conflict setting where the research takes place.

Should there be any subsequent changes to the stated protocol, or if any ethical challenges unexpectedly arise in the field, you should submit details to the Ethics Committee for consideration.

Yours sincerely,

Dr Elke Heins
(former) Director of Postgraduate Research
School of Social and Political Science
The University of Edinburgh

APPENDIX 9. INFORMED CONSENT FORM

INFORMED CONSENT FORM



PhD Student Diego Mauricio Diaz Velasquez
School of Social & Political Science
University of Edinburgh
Chrystal Macmillan Building,
15a George Square, Edinburgh, EH8 9LD
Tel: +44 (0) 77 09 788 923
(57) 3184673760
E-mail:

Consent form for interviews - PhD research project

Hello!

I am Diego Diaz and currently I am studying a PhD at the University of Edinburgh in Scotland, United Kingdom. My research aims to evaluate the support arrangements that government authorities, global development partners, and third sector organisations provide to healthcare providers in Tumaco – which is a region experiencing armed conflict. In particular, I aim to study the different ways that the conflict impacts on the operation of the hospital and its capacity to provide the care that local people need, the main organisations that provide support to the hospital and what they do to provide that support, and how well these support mechanisms work and what could be done to improve them.

The research will provide insights for decision-makers in Colombia and other countries in terms of how best to support healthcare providers and alleviate the pressures they face in providing care in conditions of conflict.

According to the University of Edinburgh's ethical guidelines, I must ensure that only individuals that wish to be involved in the project do so. If you are willing to be interviewed, please sign this form (overleaf) to confirm that you have freely decided to participate. If you agree to be interviewed, it does not mean you need to answer all my questions - you can choose not to answer any question I ask, and request that the interview be stopped at any time you wish. You can do so by simply letting me know you wish to do so. Likewise, you can ask me any question that you wish about the interview process or the research project.

If you agree to participate in the interview process, it will be digitally-recorded and later the interview will be stored in a cloud-based storage called OneDrive of the University of Edinburgh with password protection. If you prefer the interview not to be recorded I will not do so. Also, I will be taking notes during the interview with my personal computer – but, again, if you prefer me not to do so, please just let me know. The contents of the interviews will be anonymised, digitally transcribed, translated, analysed and quoted during the research project. I will be personally in-charge of the translation process.

I will ensure that all the data you provide is not traceable to you. Your identity and personal details will be kept completely confidential. In all research outputs (such as academic

publications and presentations), your statements made as part of your interview with me may be quoted, but they will not be attributed to you – but rather to just general professional and/or organisational categories (e.g. 'senior manager, local health authority). I will ensure you that any other personal information collected during the interview process will be anonymised and I will not reveal your identity to anyone. Once I have fully submitted the PhD thesis, I will delete all the information related to the interview within the OneDrive System, the recording device and my personal computer to keep full confidentiality of the information.

The findings will be used primarily for the PhD thesis as well as other scholarly publications such as academic journal articles. Neither your name nor your personal details will be associated with the data that may be published (e.g. quotations).

By filling and signing the form below, I confirm you are happy that I can use the recorded interview for the purposes explained before.

CONSENT FORM

- I confirm I have read and understood the information about the research.
 - I confirm that I have been given the opportunity to ask questions about the research and the interview process.
 - I confirm that I voluntarily agree to participate in the research interview process.
 - I understand that I can withdraw at any time without giving reasons and without penalty.
 - I understand how confidentiality will be protected and how the interview data will be anonymised, etc.
 - I understand that the audio recordings will be deleted once the research project finishes.
 - I understand that the transcriptions will be anonymised and will be safely secured in a password protected file contained in the OneDrive system of the University of Edinburgh.
 - I understand how interview data might be used in publications, e.g. anonymised quotes.
- Hereby I sign below, confirming I have understood everything related with the research project, the interview process as well as the anonymization and use of the information, and consent to being interviewed on this basis.

Signature:
Print Name:
Date:

FORMATO DE CONSENTIMIENTO INFORMADO



Estudiante de PhD Diego Mauricio Diaz Velasquez
Facultad de ciencias políticas y sociales
Universidad de Edimburgo
Edificio Chrystal Macmillan,
15a George Square, Edimburgo, EH8 9LD
Tel: +44 (0) 77 09 788 923
(57) 3184673760
E-mail:

Formato de consentimiento para entrevistas - Proyecto de investigación de doctorado

iHola!

Mi nombre es Diego Diaz Velásquez y actualmente me encuentro estudiando un programa de doctorado en la Universidad de Edimburgo en Escocia, Reino Unido. En este momento me encuentro desarrollando una investigación que tiene como objetivo evaluar los esquemas de apoyo establecidos por organismos gubernamentales y socios de desarrollo a nivel local, nacional y global, para el adecuado funcionamiento de hospitales en zonas de conflicto. Para este estudio se analizará particularmente el caso de Tumaco y su hospital principal denominado San Andrés ESE. El estudio depende de entrevistas semiestructuradas para obtener información primaria.

La investigación proporcionará información para los tomadores de decisiones en Colombia y otros países sobre la mejor manera de apoyar a los proveedores de atención médica que operan en zonas de conflicto y aliviar las presiones que enfrentan en dichos contextos.

De acuerdo con las directrices éticas de la Universidad de Edimburgo, debo garantizar que las personas que deseen participar en el proyecto a través de una entrevista lo han hecho de manera libre o voluntaria. Si está dispuesto a ser entrevistado, firme este formulario (a continuación) para confirmar que ha decidido libremente participar. Si acepta ser entrevistado, no significa que tenga que responder todas mis preguntas; puede optar por no responder a alguna pregunta que formule, o solicitar que se detenga la entrevista en cualquier momento que desee. Puede hacerlo simplemente haciéndome saber que desea hacerlo. Del mismo modo, puede hacerme cualquier pregunta que desee sobre el proceso de la entrevista o el proyecto de investigación.

Si acepta participar en el proceso de la entrevista, esta se grabará digitalmente y, posteriormente, la entrevista se almacenará en un sistema de almacenamiento de nube llamado OneDrive de la Universidad de Edimburgo con protección por contraseña. Si prefiere que la entrevista no sea grabada, no lo haré. Durante la entrevista, tomaré notas con mi computadora personal o en cuaderno, pero, nuevamente, si prefiere que no lo haga, hágame

saber. Los contenidos de las entrevistas serán anonimizados, transcritos digitalmente, traducidos, analizados y citados durante el proyecto de investigación. Estaré personalmente a cargo del proceso de traducción.

Me aseguraré de que todos los datos que proporcione no sean rastreables hacia usted. Su identidad y datos personales se mantendrán completamente confidenciales. En todos los resultados de la investigación (como publicaciones académicas y presentaciones), sus declaraciones hechas como parte de su entrevista conmigo pueden ser citadas, pero no se le atribuirán a usted, sino a categorías profesionales y/u organizacionales en general (por ejemplo, gerente sénior, autoridad de salud local). En un apartado posterior podemos ponernos de acuerdo a su nombre genérico o categórico con el cual usted quiere ser identificado en el proyecto. Le aseguraré que toda otra información personal recopilada durante el proceso de la entrevista será anónima y no revelaré su identidad a nadie. Una vez que haya presentado la tesis doctoral en su totalidad, eliminaré toda la información relacionada con la entrevista dentro del sistema OneDrive, el dispositivo de grabación y mi computadora personal para mantener la total confidencialidad de la información.

Los hallazgos se utilizarán principalmente para la tesis doctoral, así como para otras publicaciones académicas, como artículos de revistas académicas. Ni su nombre ni sus datos personales se asociarán con los datos que pueden publicarse (por ejemplo, citas).

Al completar y firmar el formulario a continuación, confirmo que está usted de acuerdo en que yo pueda usar la entrevista grabada para los fines explicados anteriormente.

FORMULARIO DE CONSENTIMIENTO

Por favor marque las siguientes casillas:

- Confirmando que he leído y entendido la información sobre la investigación.
- Confirmando que se me ha brindado la oportunidad de hacer preguntas sobre la investigación y el proceso de la entrevista.
- Confirmando que voluntariamente acepto participar en el proceso de entrevista de investigación.
- Entiendo que puedo retirarme en cualquier momento sin dar razones ni penalización.
- Se me ha explicado como se me identificará en la transcripción anónima y hemos acordado lo siguiente:.....
- Entiendo cómo se protegerá la confidencialidad y cómo se anonimizarán los datos de la entrevista, etc.
- Entiendo que las grabaciones de audio se eliminarán una vez que finalice el proyecto de investigación.
- Entiendo que las transcripciones serán anónimas y estarán protegidas de forma segura en computadoras protegidas con contraseña.
- Entiendo cómo se pueden usar los datos de las entrevistas en publicaciones, o citas anonimizadas

Por la presente firmo a continuación, confirmando que he entendido toda la información relacionada con el proyecto de investigación, el proceso de entrevista, así como la anonimización del uso de la información.

Firma:

Nombre completo:.....

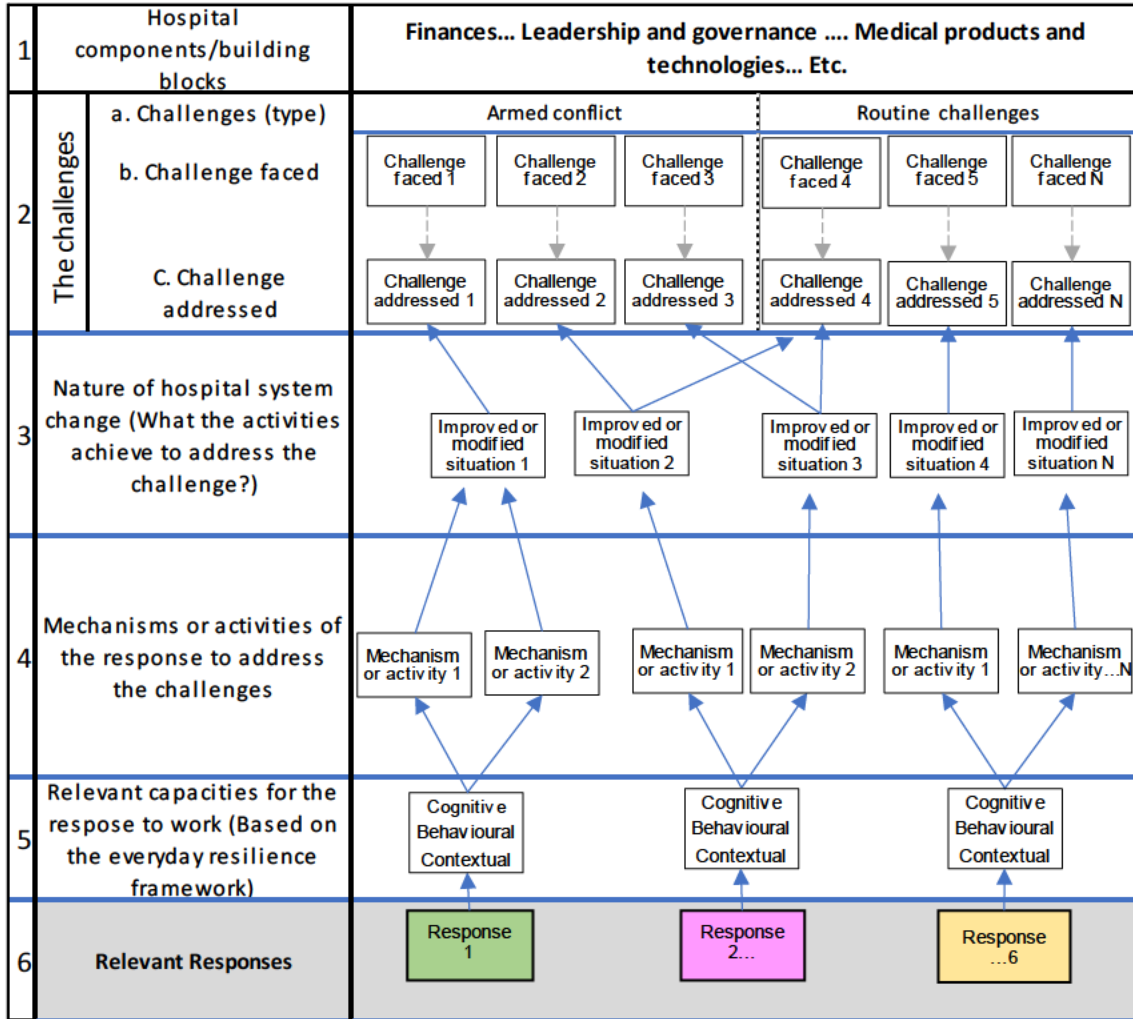
Fecha:

APPENDIX 10. BRAUN AND CLARKE (2006) SIX PHASES GUIDING THE PROJECT'S THEMATIC ANALYSIS (TA)

| Phases for the Thematic Analysis | Means to Establish Trustworthiness |
|---|--|
| Phase 1: Familiarising with the data | This stage mainly entailed the researcher getting to know the data. This meant reading the data from both the semi-structure interviews and documents to notice key issues or patterns. This phase also involved understanding what was compiled and what people said. Additionally, the researcher began early thoughts on codes and triangulating information on key issues mentioned. |
| Phase 2: Generating initial codes | This stage involved the production of initial codes to index or label the data at hand. To conduct this process the researcher established a list of different ideas or key concepts on how to label the data. It could be argued this stage entailed the process to think on how to organise the data. This initial coding process also allowed the researcher to collate similar terms used for the coding of data. |
| Phase 3: Searching for themes | For this stage, the researcher established supervision meetings to obtain guidance on how to develop themes. Initially, the supervision team decided to begin using key terms of the everyday resilience framework as themes to group the data. This helped to see how the data worked with such framework. Also, it was manifested to keep an open mind and establish themes from the data itself when important patterns were noticed. Then, the researcher looked for similar codes that could be grouped within an overarching category (theme). This helped to see relationships across codes, establish a hierarchy among themes, and eliminate irrelevant themes. The final result led to have a list of potential themes candidates that explained the data at hand. |
| Phase 4: Reviewing themes | This stage entailed refining the themes developed. The refinement consisted of the researcher assessing whether the data supporting each theme is sufficient or coherent with the overall category or theme. This also involves collapsing themes between each other and improving theme hierarchy. |
| Phase 5: Defining and naming themes | This phase of the thematic analysis corresponded to the researcher establishing a definitive name for the theme and provide a definition. Both the name and definition had to encapsulate the pattern recognised in the data in a simple concise way. To name and define the themes the researcher had to compare the themes between each other to determine if they are sufficiently different and how relevant they were to explain the issue under analysis. The relevancy mainly entailed considering if they are fundamental to build the overall 'narrative' or story about the topic of study. |
| Phase 6: Producing the report | This stage basically entails on telling the story or explain the themes and how they help to understand the central research problem. During this stage or the 'write up' of the report it can be provided data extracts from the themes to show the information backing them up and demonstrate points on the themes or the overall research problem. In this thesis this process is found across the results chapters. |

APPENDIX 11. GENERAL VERSION OF THE VISUAL MODEL USED TO UNDERSTAND THE HOSPITAL RESPONSE TO THE CHALLENGES

Subsections 5.2.1. to 5.2.6 use the visual model presented below to explain the Hospital response to challenges to continue service delivery. This model uses the WHO building blocks/themes to illustrate the hospital challenges and responses.



The model should mainly be read from a **bottom-up perspective** relying on the narrative structure presented in Chapter 5, Section 5.2. Below is brief reiteration of the narrative.

Narrative structure

Rows 1, 2a, 2b. The introduction of the hospital system component (building block theme) and its challenges.

Row 6. Introduce the key responses to the challenges. Then, begin to discuss/explain each response individually. The discussion of each response means moving upward in

the model within each individual response until reaching the top. The response receiving the number 1 in Row 6 is the first to be explained. Once response 1 has been explained, then it is explained response No 2 and so on.

Row 5. Explain the response cognitive, behavioural, and contextual capacities used to face the challenges.

Rows 4. Explain the response mechanisms or activities used to face the challenges.

Row 3 and 2c. Explain what the response mechanisms achieve or the change they create in the hospital system to address the challenge.

Response limitations. This is a section introduced to recognise the limitations each hospital response has for addressing challenges.

**APPENDIX 12. FORMAT TO REPORT THE MEDICAL MISSION INFRACTIONS IN
COLOMBIA ACCORDING TO RESOLUTION 4481 OF 2012**

**FORMATO DE REPORTE DE INFRACCIONES
E INCIDENTES A LA MISIÓN MÉDICA EN COLOMBIA
ANTES DE DILIGENCIAR EL FORMULARIO, POR FAVOR LEA EL INSTRUCTIVO**

| INFORMACIÓN DEL DILIGENCIAMIENTO DEL FORMULARIO | | |
|---|--|---------------|
| Fecha reporte: | Quien diligencia (institución o persona): | |
| Lugar: | Municipio: | Departamento: |
| INFORMACIÓN SOBRE LA INFRACCIÓN | | |
| Fecha ocurrencia: | Lugar: | |
| Municipio: | Departamento: | |
| Institución afectada: | | |
| Publica:___ Privada:___ | Hospital: Puesto de salud:___ Centro de salud:___ Otra, cual: | |
| Fuente de la información (institución o persona): | | |
| ¿Las instalaciones o medios de transporte estaban debidamente señalizados con el Emblema Protector? SI___ NO___ NO SABE:___ | ¿El personal sanitario estaba debidamente identificado?: SI___ NO___ NO SABE:___ | |
| DESCRIPCIÓN DE LA INFRACCIÓN: | | |
| | | |
| INFORMACIÓN SOBRE APOYO O SOPORTE RECIBIDO | | |
| ¿Recibió apoyo inicial la institución o persona afectada? SI___ NO_x___ NO SABE:___ | | |
| ¿Cual?: | | |

APPENDIX 13. THE COGNITIVE, BEHAVIOURAL, AND CONTEXTUAL CAPACITIES UNDERPINNING THE HOSPITAL RESPONSE TO THE CHALLENGES

| Response | The organisational capacities | | | |
|---|--|--|--|--|
| | Cognitive | Behavioural | Contextual | |
| | | | Hard Resources | Soft Resources |
| <i>Activation of hospital and provincial emergencies system to address challenges</i> | Hospital staff and/or authorities recognise or identify challenges or risks. | Use of the hospital emergency system, contact security council members, contrasting information, hospital equipped with emergency response technologies | Telecommunication technologies, availability of humanitarian organisations, availability of police outpost and personnel, the CRUE office, meeting facilities, extra stocks for supplies, hospital utility backup infrastructure, the medical mission round table, helicopter transport, fire department | Legal dispositions at the global and national level on emergency response (includes the establishment of the CRUE office), national policy to protect armed conflict victims, skilled personnel on life support, the hospital emergency plan, life support courses |
| <i>The intervention of central government agencies in hospital operations</i> | Authorities and voluntary organisations recognise hospital problems, risks or challenges | National government assumes control of the hospital | Financial resources assigned through a fund | Legal instrument to intervene the hospital, skilled personnel (special emphasis on managerial leadership and military experience) |
| <i>Activation of support networks to address challenges</i> | Hospital staff recognise organisational and environmental problems | Building and approach contacts for support | Telecommunication technologies | Contacts/relationships (with people within organisations) |
| <i>Collaboration with voluntary groups to address challenges</i> | Voluntary groups recognise hospital and environmental problems | Hold discussions with the community and hospital management, Plan activities to mitigate hospital problems, | The voluntary oversight organisation, the patient's advocacy group, volunteers' income or financial resources | Trust (on volunteer groups), safety, |
| <i>The structuring of investment projects to strengthen service delivery</i> | Hospital management recognise organisational problems | Plan an investment proposal | Methodology to structure projects | Skilled personnel (to structure projects), lobby capabilities |
| <i>Managerial activities to address challenges</i> | Hospital management recognise organisational and environmental problems, resourcefulness | Use clinical and administrative information, discuss with peers, undertake rounds to hospital services, examining and planning resources and working conditions, effective communication, collecting information to monitor hospital performance | Hospital staff | Planning skills, negotiation skills, |