QUALITY AND EFFICIENCY IMPROVEMENTS IN THE HEALTH CARE ADMINISTRATION SYSTEM OF MAURITIUS

By

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FINAL SUBMISSION

DECLARATION

I declare that **QUALITY AND EFFICIENCY IMPROVEMENTS IN THE HEALTH CARE ADMINISTRATION SYSTEM OF MAURITIUS** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

15th February 2019

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QUALITY AND EFFICIENCY IMPROVEMENTS IN THE HEALTH CARE ADMINISTRATION SYSTEM OF MAURITIUS

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ABSTRACT

Purpose: The purpose of this research was to develop quality and efficiency improvements in the health care administration system of Mauritius. The aim of the study is to describe how the health care services of Mauritius could be improved based on the results obtained during this investigation.

Methodology: The health care executives, board members, search firm executives, and health administration managers, as well as several patients, were selected by stratified sampling 1802 participants (quantitative) and by purposive sampling method nine focus groups of nine participants each (qualitative). The population for the qualitative research was comprised of patients and health care professionals selected by the purposive sampling technique. The population was comprised of patients and health care professionals for quantitative phase selected by stratified and the health care professionals for qualitative part selected through purposive sampling technique.

Findings: The participants showed a preference for Patients' Satisfactions, ISO Quality Standards Compliance, workforce efficiency, infrastructure fitness, and adaptability principally experience a better quality of care. Moreover, there was no statistical difference between financial cost and quality of health care was depicted.

The outcome of the study: A common aspect, recognised empirically, is the approach regarding enhanced external pressure on the healthcare administrators in their work. Higher administration decisions, patient pressure and judgments made by policymakers have impacted and established the choices prepared by health care managers regarding where to concentrate attempts of growth. In the context of practical implications, health care administrators must properly make new management control systems so that they help healthcare systems in their work. Implications for the healthcare leader's perceptions are that knowledge from the environment is normally complicated and not easy to define and also transmitted from particular stakeholders.

Keywords: Efficiency; Quality Management System; ISO Standards; Health Care Administration; Health Care Administrative System and Mixed methods research.

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"If I have seen further than others, it is by standing on the shoulders of giants."

Isaac Newton (1643-1724)

DEDICATION

I want to dedicate this work to my teacher and supervisor, who has supported me throughout this research and my family, who was always a source of inspiration for me throughout this work.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AHCs	Area Health Centres
AIDS	Acquired Immune Deficiency Syndrome
CASP	Critical Appraisal Skills Programme
CCA	Common Country Assessment
CH	Community Hospital
CT	Computerized Tomography
DRG	Diagnosis Related Group
EBP	Evidence-Based Practice
ECG	Electrocardiogram
ED	Emergency Department
EHR	Electronic Health Records
EMR	Electronic Medical Records
EMRAM	Electronic Medical Record Adoption Model
FC	Financial Costs
GDP	Gross Domestic Product
GP	General Practitioner
HIV	Human Immunodeficiency Virus
HR	Human Resources
HSE	Health Service Executive
HSS	Hospital Specialty Score
ICT	Information and Communication Technologies
ICU	Intensive Care Unit
IDP	Internally Displaced People
IF	Infrastructure Fitness
ILC	Intermediate Level of Care
ISO	International Organisation for Standardisation
IT	Information Technologies
IWA	International Workshop Agreement
MCs	Medi-Clinics
MOI	Ministry of Information

MRI	Magnetic Resonance Imaging
NGO	Non-Governmental Organization
OPD	Out Patient Department
PACT	Patient Aligned Care Team
PCMH	Patient-centred Medical Home
PDSA	Plan, Do, Study, Act
PHC	Primary Health Care
PS	Patients' Satisfactions
QHC	Quality of Health Care
QMS	Quality Management System
SADEC	South African Development Community
SPSS	Statistical Package for the Social Science.
TB	Tuberculosis
TQM	Total Quality Management
UN	United Nations
WE	Workforce Efficiency
WHO	World Health Organisation
WTO	World Trade Organization

CHAPTER 1 ORIENTATION TO THE STUDY

1.1 INTRODUCTION

The quality of lives of people was dependent on the public and private sectors of the health care system. It includes delivering care to people of all ages i.e. from a healthy baby to a frail elderly. Abdelhak, Grostick, and Hanken, (2014: 230) described that the health care system is crucial for the healthy development of societies, families, and individuals. From the last 100 years, health care systems have undergone several developments, which include an extension of social insurance schemes and the founding of national health care systems (Abdelhak, Grostick & Hanken 2014). The major goal is to achieve affordable universal coverage by promoting health care system and delivering better quality care to all. Instead of many virtues associated with the health care sector, one of the drawbacks is that it gave very little attention to particular health care demands of people, and it exclusively concentrated on their perceived desires. This concept of intergenerational sustainable development was adopted at the 1992 UN Conference on Environment and Development in Rio de Janeir Armony, et al, (2015: 55). Moreover, health care management includes the most basic and simplest care for those who are poor that is the best possible care for everyone. It directs to provide essential high-quality care, as defined by most of the criteria of social acceptability, cost, effectiveness, and efficiency. It entails an explicit choice of priorities to all the interventions to respect the ethical principle that might be efficient and necessary to ration services. However, it is irrelevant to exclude the entire groups of the population. This modification is because of profound economic and political changes occurred during the last twenty years (Abdelhak et al 2014). Over time, the evolution of sustainable development definition was to adopt a more holistic approach. The major

goal is to link the three dimensions of environmental sustainability, social inclusion, economic development, and sustainable development (Alligood, 2014). In the case of individuals facing, preventable events on a regular basis that could influence the condition of patients, it is essential to determine the underpinning factor for the occurrence of errors. Therefore, it is necessary to identify the major cause behind the adverse condition of patients in context to African health care. The reason for gaining more trust by Africa in Western medicine is due to the improved technology along with its proven evidence-based characteristics. However, in rural areas, a great number of Africans usually prefers hospitals with traditional interventions for their ailments. This could be estimated by the ratio of traditional healer per population in Sub-Saharan Africa that is about 1:500, where the number of doctors was around 1:40,000 (World Health Organisation 2016).

Strong political ownership and leadership can reduce dependence on external resources, for instance, domestic resources are accounted for more than 70% of HIV/ AIDS budget in Namibia, Botswana, Mauritius and South Africa (Alexander, 2014). In Mauritius, the health care system is principally comprised of about 9.8% expenditures in public health care systems instigated by the Ministry of Health (MOH & QL 2017). This service provision has allowed permanent residents to benefit from free of cost health and health care needs. The Ministry of Health and Quality of Life is accountable for the growth of health service to fulfil the demands of citizens in Mauritius (MOH & QL 2017). According to a statistical estimation, the expenditure on health care in African countries was on the rise standing at $ 483 in the year 2014 (Bork-Hüffer 2016).

In addition, WHO has ranked Mauritius at number 84 out of 191 nations regarding its quality services of and performance of the health care administration system (World

Health Organisation 2016)? There is a wide range of public hospitals and clinics across Mauritius and other inexpensive private facilities, and state-run health care centres that provide free medical services to populations (Blais, 2015). It is essential to note that most health care providers, administrators, and managers have received education locally although modern equipment is lacking in many public institutions (Kalendzhyan, Salnikov & Gumilevskaya 2016). This lack of resource and channels for comprehensive communication and conduit between various fractions of a current health care system that ensures long-term provision of services can be observed.

Hence, the essence of this study is to describe the health care sector by analysing satisfaction and needs of the service users. It could suggest strategies that will improve the efficiency of the public hospital administration in Mauritius. Moreover, it involves the process of creating awareness regarding modern medical innovations along with better quality and efficiency of the system.

1.2   BACKGROUND INFORMATION ABOUT THE PROBLEM

Bloom, et al, (2015:460) mentioned that there are several areas in which the effectiveness and influence of health administrators have been questioned in the existing Mauritius health care system. It is essential to note that these efficiencies in Mauritius health care administration are dependent on its costs and financing, the sharing of power for decision-making, organisational structure, manpower utilisation, and quality of patient care both in public and private medical sector (Hashjin, Delgoshaei, Kringos, Tabibi, Manouchehri & Klazinga 2015). In fact, there are specific areas wherein the health administrator may face challenges in executing their management. The pertinent issues lead to the problem regarding costs and the financing of operation (Bholah, and Beharee, 2016). While these can often be cajoled

at the hospital level, the administrator lacks the authority to make those kinds of decisions that have been made 10% to 20% of the first doctor and hospital services. Secondly, the health administrator cannot easily influence the size and scope of the available health facilities due to politics established in the community (Hashjin et al 2015).

It has been noted that the first level of contact of the individuals with the national health system is represented by Primary Health Care (PHC) as stated by Bholah and Beharee (2016). Currently, in Mauritius, there is 1 Community Hospital (CH), 2 Medi-Clinics (MCs), and 23 Area Health Centres (AHCs) which are spread across the country. These peripheral health units are known as the primary points of contact; many of the cases are referred from them to the specialised and regional hospitals for other specialist services (Ross, Moussa, and Harris & Ajodhea 2017). It is equally difficult for the health administrator to gain the cooperation of other institutions and to increase in- and inter-hospital scheduling for small services. Lastly, the power of the health administrator over the medical staff is questionable when he/she cannot obtain the cooperation of the medical staff to close, for instance, underutilised units or to increase utilisation of hospital facilities during evenings and weekends (Castillo, Caruana, and Morgan & Mizzi 2016). In short, those who have the power to change and implement decisions in the hospital are trustees and the medical staff. According to Bernheim, et al, (2014: 510) when the health administrator must make decisions, he is compelled to represent his interests to the trustees who have employed him and to the medical staff who needs to tolerate decisions.

Figure 1.1 Mauritius year 2005

(Google images)

In a study by Memon, Wagner, Pedersen, Beevi and Hansen (2014), it is characterised that a professional organisation is one in which groups struggle for varying levels of professional recognition with differential success at different levels. Further, it is imperative to know that the rewards for success are autonomy and influence in defining problems, in determining solutions, and in monitoring the functioning system. In

addition, health administrator might make any claim about having the occupation with the most highly developed body of knowledge needed to make decisions for the organisation (Beach, et al, 2013). He may be subjected to challenges from the medical staff and the board of trustees (Carayon, Wetterneck, Rivera-Rodriguez, Hundt, Hoonakker, Holden & Gurses 2014). It is essential to note that whenever the health administrator decides to intervene in the use and payment of salaried medical specialists or to control the quality of surgery, his authority may be questioned. Similarly, authority is often questioned whenever he investigates the impact of new drugs, sterilisation techniques or anaesthetics, or, even the scheduling of operations or admission. In similar terms, Raghupathi and Raghupathi (2014) stressed the informal and negotiation aspects of the health administrator's role in reaching an agreement with other medical staff; he also noted the formal organisation aspects, which assures authentication of authority and accountability.

As further noted by Bokhoree, Beeharry, Makoondlall-Chadee, Doobah and Soomary (2014), a good relationship between the health administrator, the medical directors, and third parties is an obligation that needs to exist. To maintain power, an administrator needs to have a feel not only for finances but also for how a problem can be solved, despite budgetary or other issues. As Modaffari, Panuccio, Zimmiti, Mozo, Vidal, Rabischong, Bourdel, Canis and Botchorishvili (2016), defined its power as the ability to make or influence important decisions. Consequently, if the health administrator is the sole channel of communication between the trustees and the medical staff, he tends to have the power (Bokhoree et al 2014). Similarly, Oleske (2014) also noted that where a single trustee or a small group of trustees became particularly active, the health administrator's power diminishes.

It is therefore essential to rationalise the use of existing resources and improve their efficiency to provide better service with the resources available, as well as to improve their planning to increase the fairness of access to services (Khanassov, Vedel & Pluye 2014). At this point, the present thesis, by proposing an analysis of what can positively affect the current health care system management built on research evidence that shall make an important contribution, assessing the extent to which the current health care network in Mauritius achieves the proposed objectives (Khanassov et al 2014). It is imperative to understand that possible impacts of changes in both supply and demand for health services, taking into account the stochastic nature of the same, is being a tool capable of assisting decision-makers in the development and improvement of Ministry of Health Planning (Bardach, et al, 2013).

1.3 CONTEXT OF THE RESEARCH PROBLEM

It is significant to note that technological advances are geometric, and the prices charged by Mauritius hospitals are increasing. Technology is a determining factor for rising health costs. In the case of Mauritius hospitals, however, there is another crucial problem; administration. According to Weller, Boyd and Cumin (2014), only one% of Mauritius hospitals had professional management, which meant the lack of absence of a qualified hospital administrator. Most at that time had an administrative-financial direction occupied by doctors who did not have the technical preparation to run a company of such administrative complexity. Hollup (2014) further argued that the costs of Mauritius hospitals were poorly worked out. In fact, few hospital administrations were concerned about costs. The vast majority lived by increasing their price list regardless of the actual analysis of their hospital cost. Pursem, Peeroo, Mangar, Sohawon, Seheri, Mphahlele, Mwenda and Manraj (2014) explained at the time that one of the difficulties

of the change in Mauritius hospitals was due to immobility. Immobility means not changing the modus operandi in order not to create new demands or to remain quiet in its corner as a well-established strategy of territorial defence.

Ball, et al, (2013:55) said that the power relation is another characteristic that hinders the process of change. This may be related to the end activity, whose technical knowledge of the physician, traditionally in the front line, places him at the top of the hierarchy, even if in some situations informally, although the organisational chart can define another order of power (Bailey, et al, 2013). Past researchers diverge in their point because it did not consider this double power or the autonomy of the doctors as a problem, but the organisational arrangement is possible and necessary for the assistance activities to be performed in the hospital (Backhouse 2014; Bokhoree et al 2014; Modaffari et al 2016). Past researchers when analysing professional health care organisations and the role of managers in this context, states that, as compared to industrial organisations, such executives have less power because they are not fully capable of directly controlling professionals:

"The professional manager retains the power only the time while the professionals realise that he or she is serving their interests effectively."

(Abdelhak et al 2014:54).

It needs to be highlighted that this debate brings the realisation that the management of hospital organisations requires becoming professionalised (Backhouse, 2014). Faced with this reality of increasing expenditures in the health area, one begins to look for alternatives and knowledge that allow greater control of costs (Abdelhak et al 2014). It

is necessary to identify that the training of the medical professional in administration reinforces the strategy, planning, and human relations side, although some of these skills may be incorporated and apprehended in the daily routine by the specialised professional himself (Abdelhak et al 2014). Thus, it can be said that, in parallel with the growth of technological complexity and the implicit costs of the treatments, there is a growing interest in obtaining managerial knowledge (Babbie, 2015). This implies maintaining the quality of medical care, associated with professional management, driven by competitive market strategies.

Atkins, et al, (2017: 480) explained that the health area is now looking for industry and production engineering, examples of how to optimise hospital management through the improvement of its processes and the use of management tools. The change process requires the manager to have a horizontal view of the organisation, general knowledge, and leadership on the most varied professional areas. Unfortunately, managerial training that is not always adequate for managers especially in public health contributes to the lack of vision of these hospitals as a company (Abdelhak et al 2014). Administrative and financial tools are increasingly needed. Further, the hospital organisations, particularly public ones, need well-formed guidance that will contribute to their maturation as companies (Alligood, 2014).

Asandului, et al, (2014: 265) said that it is significant to consider that physicians are primarily concerned with care and service delivery, according to the needs of each case regardless of costs. If the manager thinks primarily of the financial balance of the organisation and the patient's final costs, it will be adding the ingredient of tension between two sets of values (Abdelhak et al 2014). In this way, it will be creating a conflict of objectives, that is, the money versus services dilemma. As if foreseeing these

dilemmas, past researchers suggest that there was a need to establish a system of control of care activities under the responsibility of the hospital administration, seeking to fill a system of medical self-regulation and not simply as a bureaucratic tool. According to Abdelhak et al (2014), this debate probably inserts the first dilemmas of modern medicine in relation to the rationalisation of intra-hospital costs. On the one hand is the administrator, who establishes the accounting procedures, intending to reduce as much as possible the expenses with patients who were able to pay the bills and waited for the formal rules. Armony, et al, (2015: 55) mentioned that at the other end, there is medical personnel who perform procedures and who judge the services for the clinical results achieved and not for their costs.

However, Abdelhak et al (2014) further instigated that the era of empiricism in hospital management has its days counted. Administrative and financial tools are increasingly needed. The management tool will be of higher quality for the public or private administration both in financial and administrative planning. This new paradigm tends to demand more relevant information related to the costs of activities, processes, products, and patients. These changes require greater expenses with training, technological development, engineering, marketing and improvement in the quality of patient service delivery (Ogrinc, Davies, Goodman, Batalden, Davidoff & Stevens 2015). The concept of hospital administration is changed; the way of managing is changed. Managers are more receptive to transformations. Perceptions about the processes of strategic change in a hospital are very varied, which is highly explicable and understandable because of its complexity (Alexander, 2014). However, on the other hand, the change today is of great importance to organisations, even as a means of their survival and sustainability in a future scenario, a fact that hospitals and their leaders are finding difficulty in managing. Some guidelines are important as they pertain to the

terms administration, organisation, and management. The organisation and administration are words commonly used in today are the world, but difficult to define for each one (Clegg, Kornberger & Pitsis 2015).

According to Abdelhak, Grostick, and Hanken, (2014: 230) a series of definitions for these most often partial and contradictory terms are observed in managerial evolution. The difficulty may reflect the complexity involved in these three words. That author includes the term organisation, entities, political parties, hospitals and other establishments (Modaffari et al 2016). Thus, the most commonly used way to define organisation comes to be the identification of the common traits present in all types of organisation. Some of the characteristics of organisations have shown that they comprise social organisations, internally articulated, and defined the body of members and internal differentiation of functions. Another aspect is to be consciously oriented towards achieving goals with specific goals and objectives (Wu, Enskär, Lee & Wang 2015). Past researchers adopting a model for comprehensive primary health care translates organisations in a metaphorical way through five dimensions suggesting organisations as machines, brains, specific cultures, psychic prisons and instruments of domination. What is important, however, is to emphasise that, in general, there is a tendency among several authors to define organisations with two essential dimensions (Wu et al 2015). Abdelhak, et al, (2014: 240) said that the first aspect is a technical prism defining the organisation as a rationally structured system with specific objectives. The other is related to the understanding of the organisation as a social system that interacts with the environment. It is integrated with obtaining the cooperation of the different groups and individuals of the organisation in a scenario of value conflicts where the power game and political decisions (Modaffari et al 2016). Aktas, Cebi, and Temiz, (2015: 1015) described that interest in the study of a hospital organisation was

motivated by the peculiar nature of these institutions, which are a more professional model than a bureaucratic one, by enabling the understanding of social processes, including rethinking future management models.

1.4   STATEMENT OF THE PROBLEM

Different issues have been observed currently regarding the underprivileged patient care and poor-quality service in government health care systems in Mauritius. There was a considerable but slow shift of patients from the national health care services to private health service services because of poor customer care in public hospitals (Alligood, 2014). Wrong views of people regarding the government hospitals have a harmful influence on the business image of these hospitals. This wrong view could support to low patronage of services and potential medico-legal issues. Therefore, the patients' presence in these facilities has reduced. Additionally, income has also reduced, and this has wrongly influenced their finances (Lian, Yen & Wang 2014). Growth has been very low. If this position of issues continues, private services will control health care service sector and the public hospitals will die off or be a shadow of their earlier selves. The major problem is to address the reason for poor consumer care and low level of workforce efficiency of various health care administrations. Attendances of patients are reducing, and some government facilities cannot generate the income they require to supplement government subventions (Lian et al 2014). To decide the performance of the health care management system of Mauritius, it is essential to understand the strengths and weaknesses of the health system.

1.5   PURPOSE OF THIS STUDY

The purpose of this study was to develop quality and efficiency improvements in the health care administration system of Mauritius.

1.6   RESEARCH OBJECTIVES

The objectives of this study were to

- Describe the factors that challenge the efficient administration of care in hospitals

- Identify if there are any challenges in the implementation of changes due to the administration-employee relationship

- Determine key service delivery when better administrative systems are effectively applied, for example, ISO standards

- Develop effective strategies for health care service delivery

1.7   RESEARCH QUESTIONS

In order to meet the above-mentioned research objectives, the researcher needed to answer the following research questions:

- What were the factors that challenge the efficient administration of care in hospitals?

- How quality and efficiency improvements can be established in the health care administration system of Mauritius?

- What were the challenges in the efficient implementation of care in hospitals?

- What was the influence of implementation of better administrative systems (ISO standards) on the service delivery?

- What were the strategies for effective delivery of health care administration system?

1.8   DEFINITIONS OF KEY TERMS USED IN THIS RESEARCH

The definitions of terms are stated as follows:

- Health care Administration: A health care administration is an interacted approach brought about by utilising the services of many professionals functioning together at all major medical centres. Health care administration is the subject of leadership, management, and administration of health systems, and hospitals (Myers, Racht, Tan & White 2014).

- Hospital Administration: it is the area about leadership, management, and administration of public health systems, and hospital networks (Backhouse, 2014).

- Hospital Administrator: Hospital administrators are responsible for the day-to-day operation of a hospital, clinic, managed care organisation or public health agency (Blais, 2015).

- Health care Efficiency: Efficiency can be mentioned by the comparison of what is done with what can be obtained with a similar consumption of resources. Also, health care efficiency is a performance of delivering health care needs in designated cost and resources (Demark-Wahnefried, Rogers, Alfano, Thomson, Courneya, Meyerhardt, Stout, Kvale, Ganzer & Ligibel 2015).

- Health care System: The health care system in which a therapeutic approach is delivered by health professionals, institutions, and resources to meet the health needs of target populations (Rashid, Coburn, Wu, Cheetham Curtis, Saag & Mikuls 2014).

- International Organisation for Standardisation (ISO): This is an international standard system that is composed of representatives from different national standards institutions. This management system has all the needs for quality assurance (Heras-Saizarbitoria & Boiral 2015).

- Quality in Health care: The situation to which a health care system is successful in delivering care services to individuals increases the possibility of required health outcomes and is dependent on being consistent with the professional knowledge (Aktas, Cebi & Temiz 2015).

1.9   SIGNIFICANCE OF THE STUDY

This research could help researchers in gaining in-depth knowledge regarding the field of health services, also in understanding ways by which problems associated to quality-of-care can be observed and focus to enhance efficiency and quality in health care. In addition, there is a subsequent lack of data about the perceptions of quality of care by the health care professionals and patients in a local context. Therefore, this study is aimed at providing up to date knowledge in the field of research and future improvement in service provision that has been brought about in Mauritius health care system. However, Mauritius is currently working to modernise and decentralise its health care system (Blais, 2015). Therefore, this study could aid in developing future participatory approaches to improve health service planning, and delivery in the country. This could also help in improving consumer care and efficiency of various health care

administrations to further increase the presence of patients in government hospitals. Subsequently, positively influence the revenue generation by these hospitals.

1.10 STRUCTURE OF THIS THESIS

The thesis is built from main divisions as follows:

Chapter 1: Orientation of the study in relation to the purpose, background to the study, the research problem as well as the aims and objectives, its key concepts and significance of the study.

Chapter 2: Theoretical foundations of this study. This chapter provides a detailed overview of the theories, which are used to develop a theoretical understanding of the research.

Chapter 3: systematic literature review. The empirical findings of different research studies carried out on a similar topic area have been presented.

Chapter 4: Research design and methodology. This chapter demonstrates the methodological approach, research design, sampling and sample population, and method employed for the collection of data.

Chapter 5: Data analysis and presentation, and discussion of the research findings. The outcomes obtained from the analysis of the data collected are presented in this chapter and these are discussed with respect to previous research studies.

Chapter 6: Development of strategies for quality and efficiency improvement in health care in Mauritius.

Chapter 7: Conclusion, recommendations, and limitations of the study.

1.11 SUMMARY

This chapter has provided a description of the research background, aims and objectives of the research, problem statement, and significance of research as well as the structure of this research study.

CHAPTER 2 THEORETICAL FOUNDATION OF THE STUDY

2.1   INTRODUCTION

The theory is described as a rational of abstract or generalising understanding or the outcomes of such thinking. Based on the situation, the outcomes might, for instance, comprise generalised justifications of how nature performs. A theory can be a body of information, which may or may not be related to considerable explanatory systems.

Some popular theories of direct relevance and wide usage in the field of health care administration had been identified (Bernheim, et al, 2014). The theoretical underpinning for this research is geared around four established philosophies widely applied to health care administration in organisations public and private; providing a comprehensive conceptual understanding of gears that have been pinned into this inquiry namely (1) Attribution Theory (2) Evidence-based Management Model (3) Utilisation Management Model (4) King's Open Systems Framework.

2.2   THE ATTRIBUTION THEORY

The attribution theory was first postulated by Fritz Heider in the 1960s (Ball, et al, 2013). This theory suggested that the human being makes all the necessary efforts to define the events to which the presence and for that establishes a difference between the causes. Abdelhak, et al, (2014: 240) believed in naive, common-sense psychology in which explanations of phenomena could be obtained naturally, without the need for scientific control. With this, the idea brought by Boyle, (2014: 146) seems to be clear that even without scientific psychology; the human being would have enough understanding of

himself to explain what happens to him. It would even be able to attribute causes to explain and justify facts that it observes or experiences. Therefore, it is possible to infer from this assertion that the human being is not satisfied merely to observe the events that surround him; he has a need to connect events, seeking a fixed relation of cause and effect between them. The result of this relationship allows, according to Bokhoree, et al, (2014:40), "a more or less stable, predictable and controllable world". The fixed relation of cause and effect between events also gives meaning to personal experiences and is so cognitively marked that the individual reacts to the reality of the environment on the basis of it. While knowing that individual actions are determined by the way in which the cognitions about the world and others are structured, it is possible to affirm that the processes of attribution of causes play a fundamental role in human behaviour (Bonett, and Wright, 2015).

However, to complicate, logical and rational principles are not always followed in the assignment process (Bork-Hüffer, 2016). Often, what exists is a personal logic and rationality (arising from the interference of desires, motivations and individual needs in the process), which make all sense to the subject, but find no evidence within the reality, which makes the process quite complex. According to Boyce, Browne, and Greenhalgh, (2014) Heider was the first to propose a systematic analysis of causal structures. The initial idea was that the attribution of causes to the outcome of action could be directed to two conditions: environmental factors and personal factors.

Environmental factors are external to the subject and the causes are considered impersonal, such as difficulties and ease of the task, chance and characteristics of other people. The personal factors are internal to the subject and the causes are considered directly related to him and can be classified in stable characteristics (ability and capacity) and unstable (effort, commitment and intention) (Bryman, 2015). Assuming that the force of the environment was zero, action would be determined only by personal factors. In the

same way, if there were no influence of personal factors, action would be exclusively determined by the force of the environment. However, it is not common the total absence of a factor, so that the other is exclusively responsible for the action, being the most correct to think of a relation between them. Thus, one can say that the relationship between the stable characteristics of personal strength (ability, ability) and the forces of the environment would compose the willingness to "be able". The subject would make the assignment of "being able" by believing that the environmental forces are smaller than his personal strengths. The opposite, with environmental forces greater than its ability or capacity, would lead to the association of "not being able".

ATTRIBUTION
What causes certain behaviour?

| It is something within the person we observe, i.e. their personality | Is it caused by something outside the person we observe, i.e. their situation |

| = internal attribution | = external attribution |

| We make a DISPOSITIONAL ATTRIBUTION | We make a SITUATIONAL ATTRIBUTION |
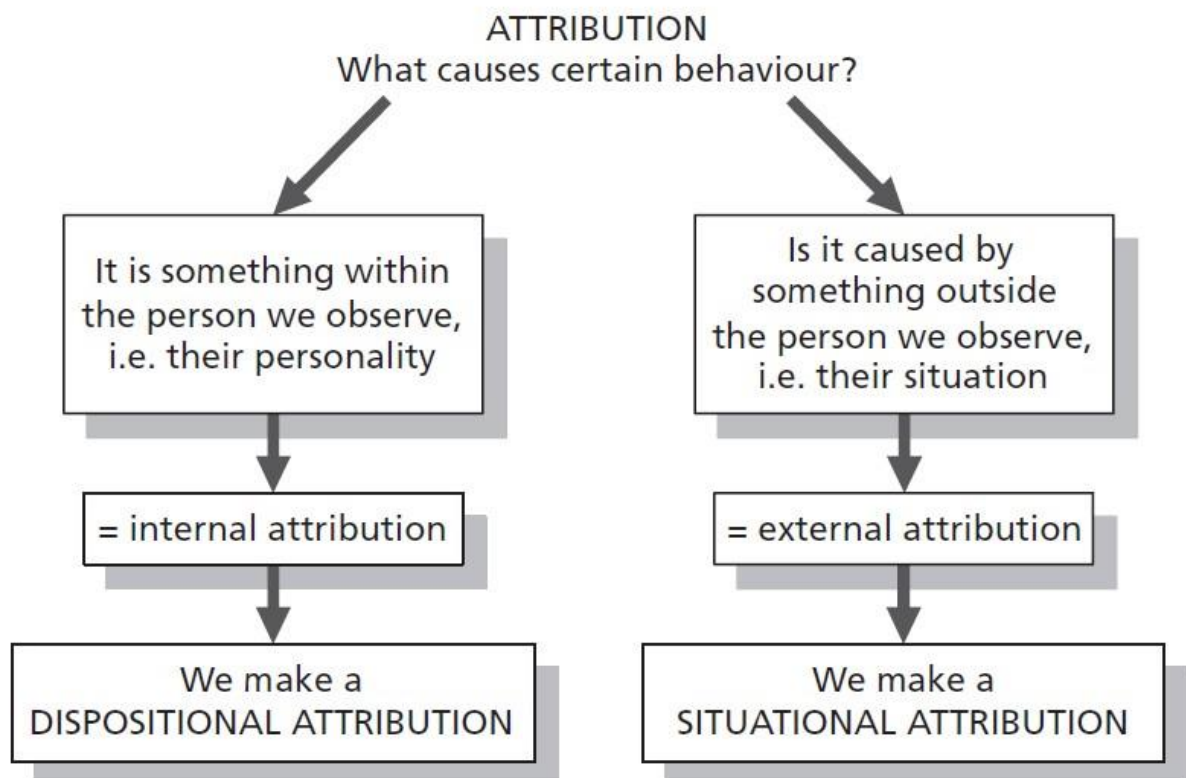
2.1 FIGURE Attribution (Jones et al 2016)

Boyle, (2014: 146) said that the other type of existing attribution, which composes the concept of "trying", is directed to the subject's efforts and intentions (unstable characteristics of the personal factor). And the relationship between effort and capacity, or more fully, and the possibility of an effort to compensate for lack of capacity. Thus,

for example, a sportsman with less ability than his opponent can even win the game, but he will have to try harder than he can to overcome it. According to Cantiello, et al (2016:76) this is necessary when the person has little power and the task is difficult. If the two athletes make the same effort, the one who wins will have more power and will be considered more capable. Another important consideration in causal attributions, which can be read in Carayon, et al, (2014:20), is that the search for the causes of events is more frequent in situations of failure or unexpected for the subject. Castillo, et al, (2016:88) stated that sometimes, in the absence of action or in the failure of it, the data make it very clear whether the missing condition is' being able 'or'. However, there may be needs or wants of the subject that influenced the assignment that is made. A person may not admit that he has not or was not able to perform a task and say that he did not do it because he did not want to, that is, he did not try. Accepting disability as a cause could undermine self-esteem while changing the type of attribution for lack of effort would be a way to preserve it. The type of attributed cause, therefore, plays a fundamental role in the subject's emotions (Buchbinder, and Shanks, 2016).

2.3   EVIDENCE-BASED MANAGEMENT MODEL

Evidence-based management began in medicine in the 19th century when it came to the conclusion that physicians should be guided on the basis of coherent research (Chartier, 2014). Before medicine uses evidence-based management, mistakes such as relying on one's own experience, rely on the institution's tradition or the personality strength of a physician who relies on his or her own experience to the detriment of research (Creswell, 2014).

Willingness to put conventional belief and wisdom aside - dangerous half-truths, and acting on facts, with relentless commitment to gather the findings and information needed to make more coherent and intelligent decisions are the two crucial components for based management. Evidence-based management stems from the premise of better and more fully using logic and facts, which enables leaders to do their job better (Davis, et al, 2014). Evidence-based management is grounded in the conviction that facing the harsh reality of what works or not, understanding the dangerous half-truths that make up much of the conventional wisdom about management and dismiss the absurdities totals that are usually accepted as perfect advice. People were able to improve the performance of healthcare institutes (Demark Wahnefried, et al 2015).

FIGURE 2.2 Evidence-based management (Jones et al 2016)

It's time to start an evidence-based move to the administrative class. It is true that, in a sense, the challenge here is greater than in medicine (Dhaliwal, et al, 2014). The

evidence is less solid, almost anyone can claim to be a management master (which commonly occurs) and a bewildering fountain of sources are used to produce management advice.

Manager in search of the best evidence also faces a more arduous problem than the doctor: such is the variation of company in size, shape and age (compared to humans), which is much riskier in business, assuming that an infallible "cure" arising in one organisation will have an effect on others.

Still, it is reasonable to assume that when a hospital manager uses logic and better evidence hospital will beat the competition (Eijkenaar, et al, 2013). Hence they have dedicated their entire research career, especially over the past five years, to developing and exposing the best available evidence on how a hospital should be touched and to disseminate among managers the right mindset and methods for evidence-based management practice. Like medicine, the administration is and probably always will be an art dominated only by practice and experience. People believe, however, that the manager (as well as the physician) can be more effective in the business if he is guided at all times by the best logic and the best evidence and incessantly seeking new information and discoveries both inside and outside the company, to keep updated their hypotheses, their knowledge and their qualification (Feeney, and Collins, 2015).

Initially, Chester Bernard in the year 1938 developed an organisation based on natural science, and the organisation was developed to study and understand unpredictable and unanticipated problems (Loveday et al 2014). Evidence-based management provides a guiding model on how to bridge the gap between research and practical applications in management. Mariam Webster dictionary explained management as a legal use of a source to get an end (Loveday et al 2014). Evidence-based management is identified as understanding principles, which are based on the finest evidence,

integrated into organisational practices (Hussey, Wertheimer & Mehrotra, 2013). By using evidence-based management, managers can easily take major organisational decisions aided by social sciences. According to fundamental principles regarding human behaviour and organisational activities, most principles are acquired from research-based evidence and the researchers translate these into actions taken to resolve organisational issues. This is a difficult task because the credibility of principles depends on clear evidence. Similarly, researchers and physicians interpret outcomes in a similar manner. Even with challenges and constraints, evidence-based management has the capability of attaining organisational goals related to employees, stockholders, and the public.

Evidence-based practice is a standard model for decisions making unified with the best research evidence available and will enable the decision maker to guide his practice towards improved results. Promoters of evidence-practice are unsure about the application of experience, knowledge, or individual credentials in their organisation. According to Loveday et al (2014), the first questions should be what evidence is? Introduction to evidence shows that the quality of a decision is highly focused on the role of readily available facts and giving reliable yet valid information when making decisions in management and overall organisation. The trend continues as open-book management. Loveday et al (2014) described that the quality of a decision relies heavily on the availability of facts rather than research findings. However, the decision makers, who depend on solving problems using scientific principles, are highly likely to collect facts systematically for selecting a proper course of action (Greenhalgh et al 2014).

2.4   UTILISATION MANAGEMENT MODEL

Forsingdal, et al, (2014: 590) said that the use of available health services is uneven. Hospitals in safe, densely populated areas that do not have sufficient capacity for filtering first contacts in their immediate area tend to be overstretched by patients with common pathologies who present themselves spontaneously, without medical prescription. In contrast, many peripheral health care facilities are underutilised due to poor service delivery, access difficulties and competition from other health care providers (Flick, 2014). Financial participation of patients has been identified as one of the main causes of low utilisation of health services. Informal billing of care by health workers also has a deterrent effect on the consumption of services. It is often difficult to have reliable and complete data on the volume of care provided. National figures can be misleading because the phenomenon of underreporting is important. According to Hsieh, Lin, and Hou, (2016: 185) to remedy this, a sample of institutions whose reports are deemed reliable can be used to calculate the average personal/patient ratio. In many cases, NGOs provide data related to the institutions they support. If these numbers are used, they must be interpreted with caution.

Service charge figures vary dramatically and randomly by period, depending on changes in security, supply and staffing levels. One-off evaluations can be misleading. Where they exist, the time series provide important indications of the direction taken by the services (Howick, 2016). However, due to the non-reporting of a large amount of data, considerable data cleansing and correction work is required to construct a time series. Changes in information flow and data errors are too often mistaken for variations in the volume of service activity. Average workloads for major facility categories or broad categories of services (hospitalisation, ambulatory care, major surgeries, etc.) are useful data for assessing the consumption of available services (Hollup, 2014). As each category of facility encompasses both overly and underutilised care units, the average figures should be completed with the highest and lowest numbers. The rate of service

utilisation can reach very high levels among IDPs, generally in poor health. Access to health centres, often facilitated or established by humanitarian relief organisations, encourages consumption. Hollis, et al, (2015: 264) mentioned that for displaced populations, the figure of four outpatient consultations per capita per year is considered a standard figure, while the national average is often less than one. These latter figures rarely include services offered to refugees and internally displaced persons.

The hypertrophied health sectors are more likely than others to squander their limited resources in underutilised institutions where the quality of care does not meet acceptable standards, creating a downward spiral in terms of effectiveness and efficiency (Hitt, and Tambe, 2016). When political power is contested, the authorities may attach particular importance to these decrepit institutions, which are more likely to signal government presence than to provide care. It is not uncommon to find excessive workloads in certain privileged institutions in terms of location, assets or means. Overloads can be transitory, linked to the presence of displaced persons or renowned practitioners (Hibbard, and Greene, 2013). Moreover, in times of war, the provision of services particularly appreciated by the patients, whatever their objective value and the practicality in a given establishment can occasionally boost consumption. For example, hospitals supported by charitable organisations may see an increase in hospitalisations for TB when they offer free meals. Due to the shrinkage of the perimeter care network, security issues or limited mobility, some patients may have extended stays in or near a health facility. Hospitalisation is becoming more and more popular, for reasons of convenience rather than technical reasons. In mission hospitals, the number of hospitalisations tends to be higher than elsewhere (Heras-Saizarbitoria, and Boiral, 2015).

2.4.1 Management by Exception

According to Hashjin, et al, (2015:76) Management by Exception can be defined as management (or leadership style) method that enables managers to devote themselves to the most important areas for growth and development of the organisation by delegating the remaining areas to levels organisational hierarchy. To this end, methodologies and tools are implemented that allow the lower levels of the hierarchy to keep their superiors informed only of the events of major importance and that require special treatment or decision-making by higher-level managers. All other issues should be analysed and dealt with directly by the people who deal with them, and there is no need for transmission to the hierarchical superiors (Harvey, et al, 2014).

Exception management involves the automation of business processes that are not ideal or more appropriate. For example, when a selected item is out of stock, this calls for an exception process that can also be automated, but in a different way from the normal process.

According to Harkin, et al, (2016:65) the notion that a high-level or primary enterprise integration standard encompasses error recovery and exception management is based on the easy recognition and repeatability of this standard. Whenever a specific error or exception occurs in an integration process, a predictable pattern of treatment is triggered. For the same reason, this message is a primary standard not because every message contains a pattern, but because the act of issuing the message is the standard of business processes (Hall, and Roussel, 2016). So errors and exceptions are also a primary pattern, not because all the errors are the same or all recovery steps are the same, but because they always exist in a patterned relationship to each other.

2.4.2 Continuous Monitoring

Implementation of utilisation management requires health care organisation to a continuous analysis by the rule of on and off which in turns transform budget, quality, the standard of operations, and characteristics of all members. This will result in a suitable market approach for shifting market demand contrasting current processes, which are suffering from lack of monitoring on a regular basis of its costs, capability or reliability.

2.4.3 Automation

For the automation of the processes and requirements, health care organisations implement detailed analysis for their utilisation. These processes are limiting request for clinician visits for review and reduce cost through delivering the faster decision to the providers. Status quo transformation can only be done through automation. Manual intervention requires utilisation management for the requests of 60% to 80% that is shown by the Accenture analysis.

2.4.4 Communication

Communication for increasing transparency and diminishing confusions of the providers and consumers, health care organisations publish requirements of targeted utilisation management.

2.5 RESEARCH PARADIGM

Smith (2015) explained that a research paradigm is regarding maintaining research by a group of researchers that had its foundations in different shared views, practices, principles, and concepts. It decided a system to conduct, review and assess the study. The two main philosophical aspects to distinguish prevailing study paradigms were epistemology and ontology (Bryman 2015).

A research paradigm was an agreement and common belief among scientists related to addressing and assessment of a problem. A research paradigm was understood by ontology, epistemology, and methodology. Ontology, epistemology, and methodology described the reality of the problem, what was the impact and knowledge gathered from the problem, and what was the best procedure to acquire knowledge for the problem and its resolution.

Pragmatism refused to join the 'worldview war' between the interpretivism and positivism research theories (Morgan 2014). Mertens (2014) considered instead of testing epistemology and ontology pragmatists start with the research question to build up their exploration system. They considered researchers should see research philosophy as a continuum, as opposed to an alternative that sets at opposite positions. Scott (2016) includes pragmatism and considered that subjectivist and objectivist viewpoints were not fundamentally exclusive. Thus, a mixture of axiology, epistemology, and ontology was worthy to investigate, approach, and comprehend social wonders. However, the goal of pragmatists was to address what works best to identify the main research problem in question. Moreover, Pragmatists incline toward working with both qualitative and quantitative information as it aided them to gain a greater grasp on social reality.

Table 2.1   Fundamental beliefs of research paradigms in social sciences

FUNDAMENTAL	RESEARCH PARADIGMS			
Beliefs	Positivism	Post Positivism	Interpretivism	Pragmatism
Ontology: the stance on the appearance of reality and its events	Objective and External	Objectivity, the observation of human factors through social norms and value conditioning (critical realist approach)	Constructed on the social, societal, and communal subjectivity of change	External, multiple, view was chosen to best achieve an answer to the research question
Epistemology: The generalisation of what comprises the part of acceptable facts and figure	The phenomenon of only observational data	In this category, only the observational data is considered and mainly focusing on explaining the contextual forms	Subjective connotation and social identification	Either or both observable phenomena and subjective meanings
Axiology: The connections between the norms, values, and beliefs of the researcher	The stance of the researcher on the data collected and	The research framework is considered valued and the researcher	The researcher is part of the study and is a vital component of	The researcher has adopted an objective as well as

	presented in findings	possesses the concepts of the bias contexts, experiences, and social norms	the data and subjects of the study and cannot be separated from one another	subjective insights
The methodology of the Research: The framework behind the study	Quantitative	Qualitative or Quantitative	Qualitative	Quantitative and qualitative

(Hussein 2015)

Babbie (2015) stated the scientist was the instrument of information gathering, and instead of utilising an institutionalised estimation device the subjective specialist gathers the information, makes understandings and records what was observed. Further, in doing as such, they attempted to appreciate the general population saw from the member's point of view demonstrating 'compassionate understanding as in subjective research the attention was on understanding the insider's viewpoint which required individual and participatory contact. Mixed method research was pondered inside social research circles for quite a while, however, there was lately revived enthusiasm for the worldview (Robson & McCartan 2016). Educational researchers, for example, Creswell (2014a) have added to these methodological verbal confrontations. As indicated by Babbie (2015), mixed methods research was characterised as incorporating qualitative and quantitative data collection and examination in a solitary report or a programme of the request. Creswell (2014a) differentiates between integrating research, where two strategies delivered two

arrangements of information and integrating data, where a solitary technique produces both quantitative and qualitative data. Besides, the promoters of mixed research, for example, Robson and McCartan (2016) keep up that it was vital to utilise both confirmatory and exploratory techniques in one.

2.6   KING'S OPEN SYSTEMS FRAMEWORK

Gummadi, Housri, and Koniaris, (2014: 240) said that nursing theories are a construction, based on an idealised practice, aimed at improving care. A conceptual model is a framework or framework of general and abstract concepts and propositions that provides a distinct frame of reference or perspective in a specific research domain. Given the need to base actions for nursing care, the topic has been one of the most discussed issues today. Thus, the paper describes the Conceptual Model of Interacting Open Systems and the Goal Range Theory of Imogene King, reflecting on care from this proposal. It was carried out from an extensive study of the theoretical structure of King, as well as its application to patients (Gulliver, et al, 2015).

According to Guetterman, Creswell, and Kuckartz, et al, (2015:155) the Conceptual Model used is the conceptual framework on which its Goal Scope Theory rests. The author is an outstanding figure in nursing worldwide by structuring her model of Open Systems Interacting. In the Open Systems Conceptual Model, health is defined as a constant adjustment to stressors in the internal and external context by optimizing a person's resources to reach the maximum potential for living. Three interactive systems are determined: personal, interpersonal and social (Griffiths, et al, 2014).

Personal system: is the kind of system identified by a person in an environment. This system encompasses the concepts of perception, ego, body image, growth, development, time and space.

Interpersonal system: it is done through the grouping of people in dyads, triads and small and large groups (Greenhalgh, Howick, and Maskrey, 2014). In this system, the following concepts are included: paper, interaction, communication, transaction and stress.

Social system: mentioned by the meeting of groups with particular needs and interests, making systems and forming communities. The concepts related in this system are organisation, authority, power, status, decision making and role (Graham, and Folkes, 2014).

Nursing is conceptualised as perception, thought, relationship and action, facing the behaviour of individuals who come to the immediate environment and to the spatial and temporal reality, which composes a nursing situation. In this, the nurse and the patient establish a coping relationship to the health states and adjust to activities of change in daily life, if the situation demands. Nursing is thus a process of action, reaction (response), interaction and transaction, by which information is given on the perceptions of the nurse and individual in the nursing situation (Goodman, et al, 2016).

In this conceptual model, one starts from the assumption that the goal of nursing is to help the individual to maintain his health so that he can perform his roles well, that is, above all, the care of human's beings (Goldzweig, et al, 2013). The conceptual framework is identified as open, intercommunicating. Nurses are supposed to teach, advice and guide individuals and groups, helping them to maintain their health. Its structure is based on the fact that the focus of nursing is the care of human beings. These remain in continuous interaction with the environment and with the people that

surround them (Gittell, Godfrey, and Thistlethwaite, 2013). Each system is in interaction with the others, guaranteeing individual and group balance. By the character of open systems, the changes in one of these systems can affect the others.

The related concepts in the personal, interpersonal and social systems provide a conceptual network on which the model rests, tracing a theoretical entanglement that delimits each system. In the personal system, the concepts are defined: Perception, as the representation of the reality of each human being. It is universal because all people have perception, although this is subjective, personal and selective (Furukawa, et al, 2014). Its action is focused on the present and is based on available information. The data obtained through the senses and memory is organised, interpreted and transformed. It is a very important concept for nurses to allow the development of a basis for gathering and interpreting information. Perception is the basis for the concept of ego. Self is an open system toward a goal. It is the individual's conception of who and what he is. It suffers influences from the past and speculates about the future (Friedberg, et al, 2014). A personal system is a unification that the self perceives, thinks, desires imagines, decides, identifies goals and selects those that it intends to achieve. The self is a reactive being by nature. Every nurse and patient has a self, but it is the consciousness of that which helps make a person sensitive. Each self is an entire person, with growth and development in the human body and cognitive structure (Friedberg, et al, 2014).

According to Friedberg, et al, (2015:1366) Growth and development are conceptualised as something that includes cellular, molecular, and behavioural changes in individuals. They are the very processes of life, in which people go from a potential to the achievement of actualizing the self. Knowing how people grow and develop, and their self, helps nurses understand people with body image problems. Body image is defined as the integral component of growth and development that is influenced by the self

(Graham, and Folkes, 2014). It is the method in which individuals consider not just their body, but also the reactions of others to their appearance. It is an extremely personal and subjective concept. It is essential for nurses to identify the view of body image and its changes so they can help those with self-image changes.

McHugh, et al, (2016: 230) mentioned that Space is an essential component in King's open-concept conceptual model. It is defined by its physical area (territory) and the behaviours of those who occupy it. It differs from the personal system because it has no visible limits. Space is universal because all people have some concept of space, but it is personal and situational insofar as it is perceived by people and changed from one situation to another. It is dimensional (has the area, volume, distance and time) and transactional (it determines the transactions between humans and the environment). Mathews, et al, (2017: 610) mentioned that time is the duration between one event and another. It is a unique experience for every individual. It is universal because it is inherent in the processes of life. It is relational because it is individual and based on the individuality of each person and their perceptual environment. It is unidirectional, moving from the past to the future. It is subjective because it is based on personal perceptions about the successive events of their lives. The knowledge of the perception of time that their patients have will help the nurses in attending to their needs. Time can be inherent in the stages of personal life. Space-time dimensions of the environment influence the personal system (Matava, and Görtz, 2016). All these concepts relate to dynamic human beings, who live in continuous interaction with the environment and, with the enhancement in the number of people, also enhances the complexity of relationships, which occurs in the interpersonal system: Interactions are behaviours observable in dyads, triads or in groups, in combined presence. In the interactive system, two people recognise aims and the source to reach them, and one of the maximum types of interaction is speech. When one person interacts with another, an

action takes place, and a reaction will follow because that person reacts in the presence of the other. The development of this reaction will determine if the interaction continues or not. If it continues, the transaction will take place (Martyka, and Lebecki, 2014). In nursing situations, it is important to have reciprocal interaction in the establishment of a positive interpersonal system. The interaction will be influenced by the performance of the individual roles

Theorist Imogene developed King's Theory of Goal Attainment theory based on concepts from the central focus that is the achievement of health goals for the client (Alligood 2014). For this, it is necessary to use three interactive systems:

2.6.1 King's Theory of Goal Attainment

King developed his theory based on concepts from the central focus that is the attainment of health goals for the client (Loveday, et al 2014). For him, this can only happen through the interaction and transaction between the nurse and the client, in an organisation formed by the people systems, interpersonal systems and social systems. The purpose of this theory is to support people keep a healthy situation and thereby support them to work their tasks in society. The source to acquire a common aim differs in every professional group and according to their responsibilities and functions in the community. The aim of nurses is to encourage health, stop the disease, and sick care (Lizzi, Collazzo, and & Goi, 2017).

```
                                    Feedback
     Perception
Nurse │
     Judgement
              Action ──────→ Reaction
                                         Interaction ──────→ Transaction
              Action ──────→ Reaction
     Judgement
Client │
     Perception
                                    Feedback
```

Action ──────→ Reaction ──────→ Interaction ──────→ Transaction
                                                      (Goal Outcome)
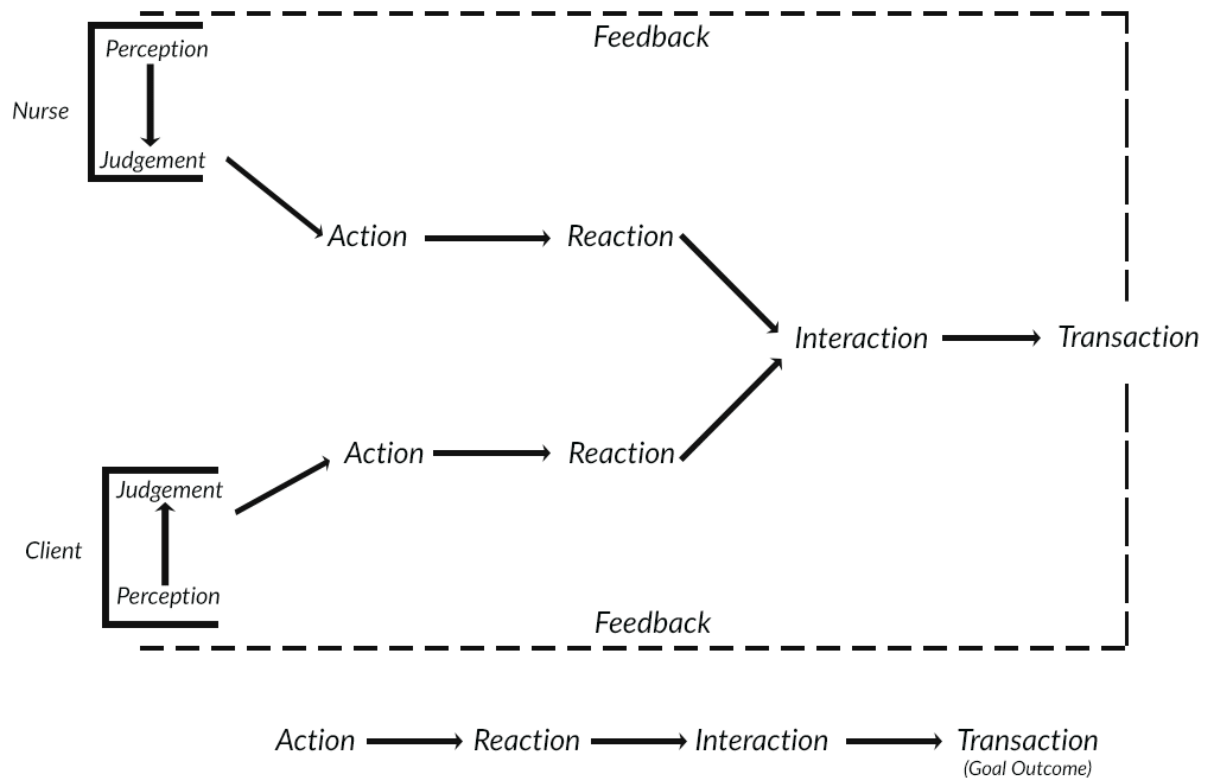
FIGURE 2.3 King's Theory of Goal Attainment Lindenauer, et al, (2014:1910)

Systematisation will aid in the changes and complexity of health organisations and is probably the most appropriate method to study human beings communicating with the situation through making a conceptual structure of dependent variables and associated views (Lillrank, 2015). Being possible its applicability in many pathologies, more specifically the chronic pathologies like hypertension and diabetes, cancer etc. In which we will emphasise on its application of this theory within the Family Health Program.

Nurses and patients are reactive human beings who interact in specific situations to achieve specific purposes. Imogene King does not hold its concern only in hospitalised patients, but as quoted, in individuals with chronic diseases and those in need of rehabilitation. Its use allows the development of a curriculum for the nurse to implement a theoretical basis that allows developing quality care to the individuals in the hospitals, clinics and communities (Lian, Yen, and Wang, 2014).

Leppänen, et al, (2016: 270) said that there are controversies of King's theory regarding the limitation of its application to patients with difficulty to interact competently with the nurse, but that it is still possible its applicability.

TRANSACTION

GOAL-SETTING

AGREEEMENT

GOA

INTERACTION

INTERACTION

NURSE

ENVIRONMENT

PERCEPTION

PERCEPTION

COMMUNICATO N

COMMUNICATIO N

BODY

SPACE

TIME

GROWTH AND DEVELOPMEN

LEARNING

AWARENESS OF

HEALT H NEED

PERSON
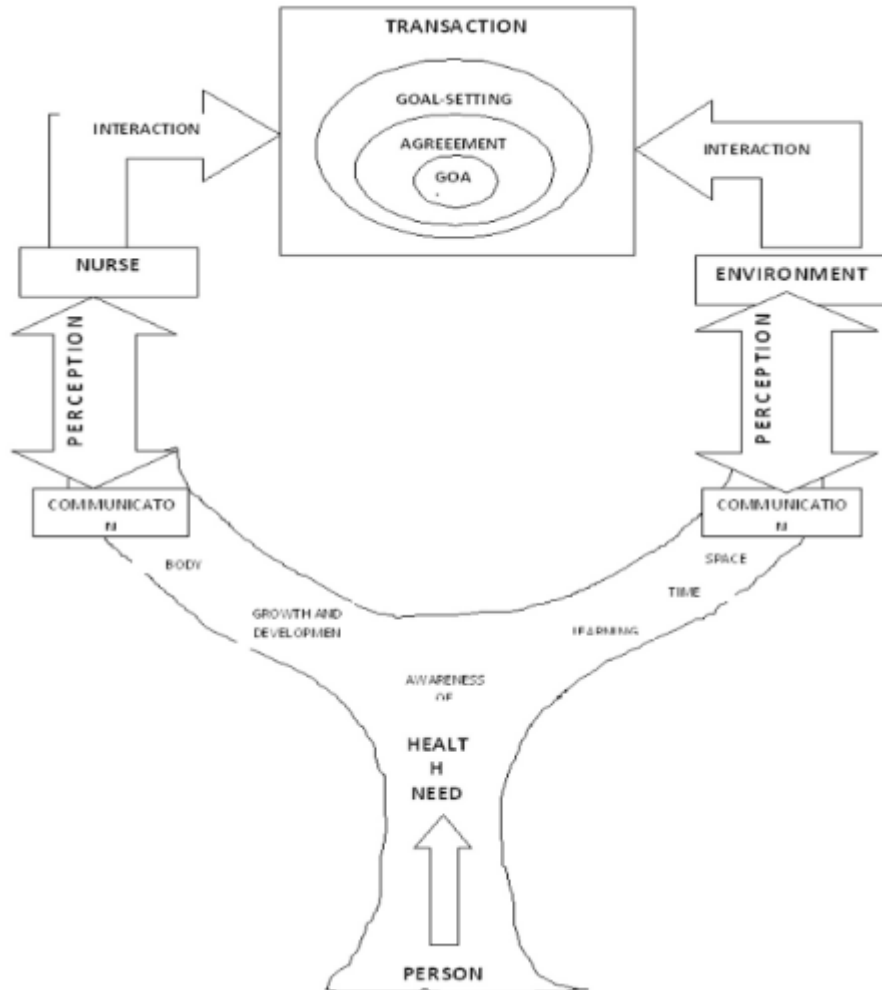
FIGURE 2.4 King's theory Leon Demare, et al, (2015: 635)

This theory is aimed to support people to keep a healthy state and support them to perform their activities properly. The nurse should thus seek to interact with the client/patient, considering each individual as a personal system, in which perception, being, growth and development are important, body image, space, learning and time (Leleu, Al-Amin, and Valdmanis, 2017). The focus on the personal system is the person. In the interpersonal system, King considers the interactive relationship between people, when in small or large groups, where the relevant concepts are interaction, communication, transaction, role (of each of the elements in the group) and stress

individual-environment to maintain balance, with energy exchange), seeking interaction (Lee, et al, 2014).

Social systems include religious groups, family, educational system, work system and groups of friends, in which the predominant concepts are an organisation, authority, power, state, decision making and control. King's theory of goal attainment was based on these concepts and on the systems of their conceptual structure. The nurse, in this process, interacts with the client/patient through the perception, communication, transaction, being, the role of each one, the stress involved, growth and development, time and space, establishing goals obtained.

2.6.2 Health Care Management Model

The theme of management mobilizes scholars, analysts, executives from all areas of society. It is a controversial subject that presents diverse opinions, whether in the discussion of models, instruments, techniques and practices or in the very profile of the managers and professionals of the area. But why study management? Maybe the answer is in our own day to day. Management activity permeates all daily tasks. At all times people are forced to make choices or make decisions about the best way to achieve their goals. Management model is actually making those choices. Choices about how people will coordinate their activities, choices about the nature of their goals, how to prioritize them, and choices about how to motivate themselves and the other individuals involved in the process. Bringing this concept to the level of organisations, the management model is a product of the institutional subsystem and represents the manager's main determinations, wants and expectations, of how things should happen

in the company. Thus, the management model is the most significant management tool. It would be the set of norms and principles that guide managers in choosing the best alternatives to get the company to fulfil its mission effectively. Despite the wide debate and mobilisation around the subject, it must not be forgotten that management is not restricted to managerial practice. The political, economic, that is more general aspects, greatly influence the management model adopted in organisations. One cannot only discuss conceptual, methodological and instrumental aspects of management. According to the author, it would be naive to believe that management is merely an instrument or a mere process. Kiresuk, Smith, and Cardillo, (2014:67) encompasses three conceptual levels: a) the concept of "Transformation Waves": these are the great historical moments of evolution of human society, each with its own paradigms related to political, economic, social, technological and organisational aspects; b) the concept of "Entrepreneurial Ages": these are the stages of business evolution, since the Industrial Revolution (Second Wave of Transformation); c) the concept of "Management Models": this is the proper set of philosophical concepts and administrative ideas that operationalize management practices in organisations.

Khanassov, Vedel, and Pluye, (2014:75). In this sense, people can observe that, in order to meet these objectives, the new management models must have as assumptions the strong orientation towards the client not only seeking to meet their needs, but also their expectations focus on results and style participative in the management with more horizontal structures and the networking, allowing a systemic view of the organisation (Kalendzhyan, Salnikov, and Gumilevskaya, 2016).

Health organisations, regardless of size, are always complex. Their processes are standardised by rules imposed by the government, service buyers, and class representatives (Jones, et al, 2016). Their workforce is highly skilled and skilled. Faced with this, professionals from different areas are present in the same work environment

(doctors, nurses, nutritionists, pharmacists, physiotherapists, etc.) which leads to interests that are not always convergent. Managing a health organisation presupposes the understanding of all this complexity. This situation is conflicting, according to the author, with the need for continuous innovation of processes aimed at maintaining competitiveness in the market. Staying competitive requires innovation, which increases customer satisfaction and makes you loyal to the organisation (Ivers, et al, 2014). This, in turn, reduces the costs of services, which ends up making more investments in innovation possible. This is what Hussey, Wertheimer, and Mehrotra, (2013:30) called the Corporate Innovation Cycle of Service Delivery Organisations. Ensuring competitiveness and continuous innovation is a major challenge for the management of health organisations. Dealing with the diversity of professionals, which require some autonomy, is only possible in an environment that enables dialogue and negotiation. At the same time that they care about their professional careers, they must be involved in the organisation's goals (Hussein, 2015).

2.6.3 Trends in Health Management

Considering the complexity of health organisations and the relevance of services provided to society, new management models become necessary and essential for organisations to reach levels of excellence in service delivery. In this context, Pera, Kaur, and Rao, (2014:55) observed some trends in health management, noting that they were not exhaustive. Just as there was no ideal management model, a unique recipe for the success of any organisation, so health organisations must take into account their history, mission, vision and values as well as organisational culture. All these factors made a unique organisation, which demands specific management actions. Thus, only the models of Quality Management, Health Care Networks, Strategic Management and

Participatory Management - Management are highlighted, as some possibilities for the enormous challenge in this area (Ormston, Spencer, and Snape, 2014).

2.6.4 Quality Management

It is noticeable in recent years to approach the quality issue and its methods to reach a service delivery with quality in the health area, a trend that seeks strengthening and strategies interacted with a set of interventions in health organisations. Ogrinc, et al, (2015: 505) mentioned the concepts that can be considered as the basis for the modern evaluation of the quality of health systems. He is the author of the proposal to evaluate health systems by approaching its three main elements that became known as structure, process and outcome. Efficiency is the relationship between the benefit offered by the health care system or medical care and its economic cost (Oleske, 2014). Effectiveness is the relationship between the actual benefit offered by the health care system or care and the expected (or ideal) potential. Adequacy or optimisation consists in establishing the relative equilibrium point where the benefit is raised to the maximum relative to its economic cost. Conformity or acceptability is the adaptation of medical care and attention to the health, expectations, desires and values of patients and family members. Legitimacy is the same possibility of satisfactorily adapting service to the community or society as a whole, implying individual compliance, satisfaction and wellbeing of the community (Obermeyer, et al, 2014). Equity is the determination of the proper and fair distribution of services and benefits to the community, population or society. In 1992, the Ministry of Health of Mauritius developed the Quality Assurance in Health project with the World Bank. Its structure comprised four basic components: information network, managerial development, regulation and control of the use of technologies in health and social control, informed by specific systems related to epidemiological surveillance and sanitary surveillance and health services and had as

main objective the definition of health care at all three levels of government (Nietzsche, and Vico, 2017).

Since the 1980s, there have been two major trends in quality management: the first is quality assurance based mainly on ISO 9000 standards and the second is total quality management, aimed at improving the management and results of the company (Nelson, Groom, and Potrac, 2014). The pursuit of this award leads organisations to stand out for the use of management practices presenting superior performance results. The Management Excellence Model is based on a set of concepts and the foundations that support them are Leadership, Strategies and Plans, Clients, Society, Information and Knowledge, People, Processes and Results. The organisation that adopts this model is able to clearly map its business through the systemic vision of the organisation (Nelson, et al 2014).

2.6.5 Health Care Networks
According to Myers, Racht, and White, (2014:87) Networks are organisational systems able of bringing together people and institutions, in a participatory and democratic manner, around associated causes. Structures are horizontally and flexibly form, the work dynamics of systems consider combined actions and are maintained through the will and empathy of its members, describing itself as a considerable business resource for social structuring. According to Murdoch, and Detsky, (2013: 1351), in the context of health organisations, fragmented systems characterised by discontinuous attention, with a strong polarisation between the hospital and the outpatient clinic, under the hegemony of hospital care, and the lack of coordination of the points of attention to health, of an intelligence system that confers to the system and, normally, without an attached population. On the other hand, the integrated systems are based on three

central characteristics: the supply of services in a continuous way, through several points of coordinated attention; the integration of these points of attention through powerful logistics systems; and the existence of a population with defined needs that is the responsibility of the health system (Mukherjee, Romero, and Uzzi, 2017).
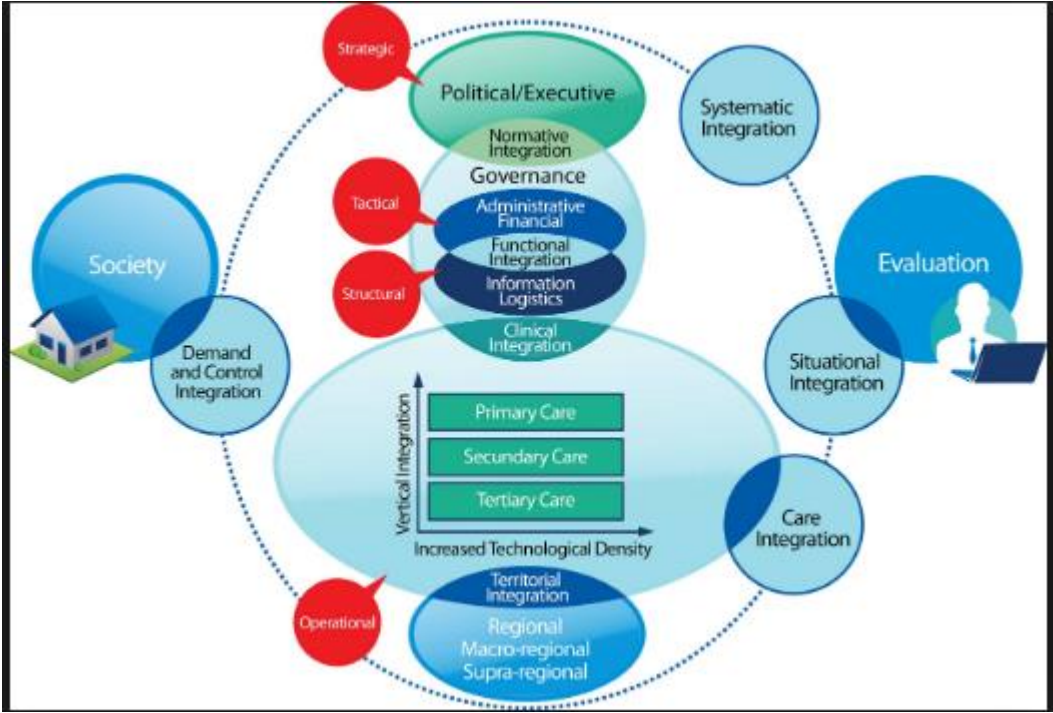
FIGURE 2.5 Health Care Networks Moser, and Kalton, (2017:35)

A number of problems stem from this fragmentation: These systems are ineffective because they are aimed at caring for sick people, as they do not emphasise promotional and preventive measures, nor do they have unequivocal accountability by a population. They are also inefficient because they are not focused on population risk management; they do not serve people in the right places; they divide the event of illnesses and attention by parts that do not communicate, breaking the principle of continuity of attention; tend to provide financial incentives for health-care points with a higher technological density; lead to the multiplication of technological resources and create incentives for the induction of demand for supply; and present quality problems (Morgan, Ensor, and Waters, 2016). In health, the concept of Health Care Network meets the need to solve these fragments. Health Care Network is an organisational

arrangement of activities and health services, of particular technological densities that, incorporated by technical, logistical and management support networks, focus the care integrity. The implementation of Health Care Network points to greater efficiency in health production, an improvement in the efficiency of health system management in the regional space, and contributes to the advancement of the process of achieving healthcare. The transition from an integrated health system to a network, and its implementation is constantly being built in the territories so that the real value of a proposal for innovation in the organisation and management of the health system can be known (Morgan, 2014). The current great guideline of the Health Care Secretariat of the Ministry of Health for the period from 2017 to 2018 is the implementation of Health Care Network, being its manager at the federal level. The Health Care Networks aim to encourage the systemic incorporation of health actions and services with the provision of constant, integral, quality, responsible and humanised care, and to enhance the system's performance regarding access, equity, efficacy clinical and sanitary; and economic performance (Modaffari, et al, 2016).

2.7 CONCEPTUAL FRAMEWORK

The conceptual model developed for this research is based on the fusion of the four theories, which are described above. These theories are the attribution theory, utilisation management model, evidence-based management model, and King's open system framework. The fusion of these theories is used to understand the improvement in quality and efficiency of the health care system. The combination of all these theories

is used to guide the significance of advanced health care administration for bringing improvements in quality and efficiency of the health care system.
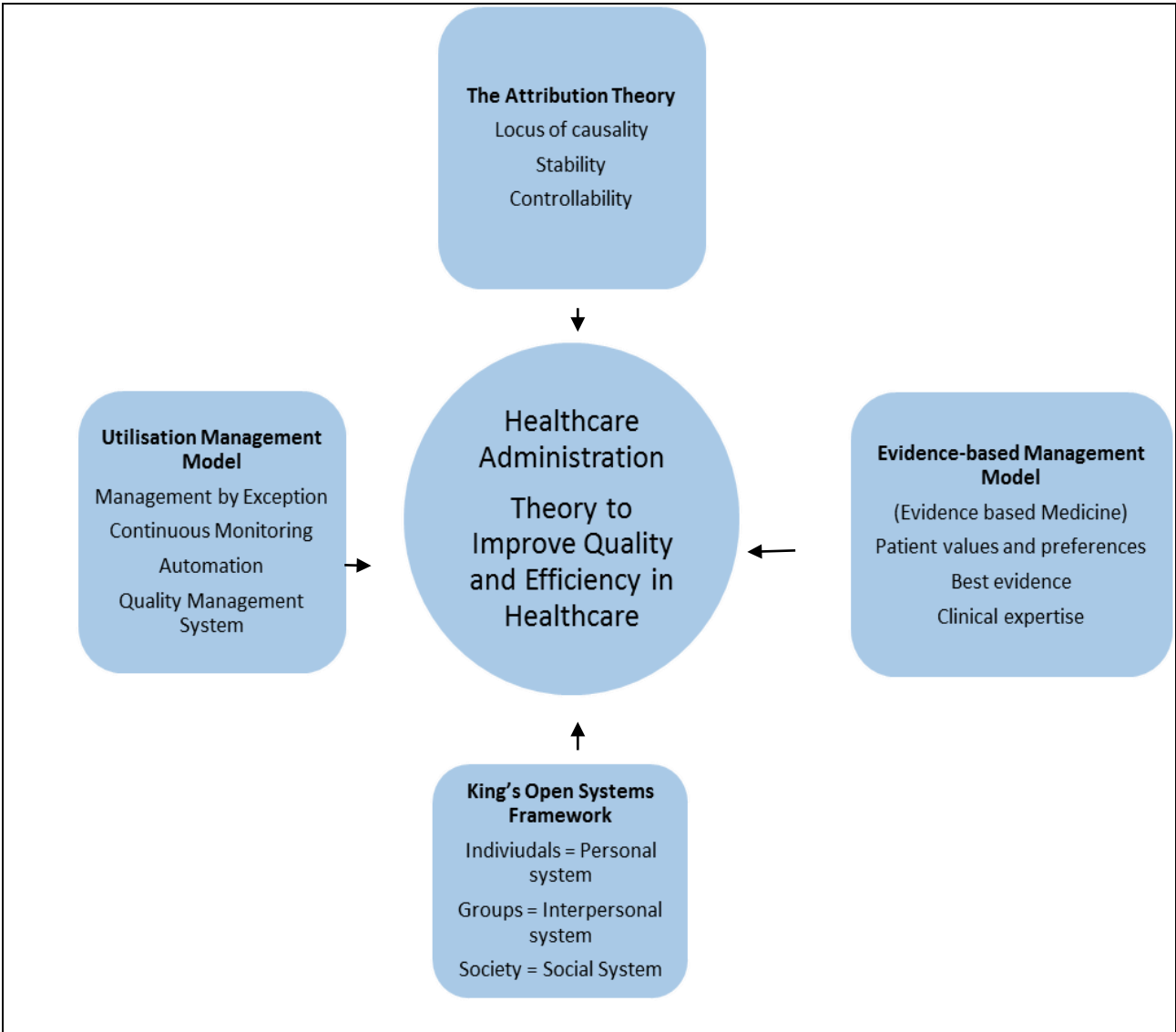
FIGURE 2.6 Integration of four models (Source: Mitra, 2016)

The above integration of four different models used in elaboration and evaluation of health care administration. The attribution theory is used for the locus of causality, stability, and controllability of the health care administration. Secondly, the evidence-based management model helps to gain a better insight into the health care

administration. In fact, this model is used to ensure that the existing practices and real-life examples are used as a sample for determining better health care administration.

Moreover, this helps determine the practitioner's attitude through these real-life examples, making it easier to make amendments as per the requirements for the practitioners. Utilisation management model is used to ensure that the health care costs are managed and kept in accordance with the current inflation to ensure that patient care is provided at an affordable cost. It further assesses the delivery of health care services to determine the necessity, appropriateness, and efficiency of patient care and meet quality standards by utilising the health benefit plan. King's open system framework is used to adapt the theory of goal attainment. The major goals of this theory are regarding human beings, health, environment, and nursing. This theory helps in assessment, nursing diagnosis, planning, implementation, and evaluation.

The reason behind describing all these models is to develop a theoretical framework for evaluating the health care administration from different aspects. The attribution theory is used for the purpose of the evaluation of controllability and stability. Another theory, which is used to evaluate the health care administration and improvements in the efficiency and quality in health care, is the utilisation management model, which presents the concept of automation, quality management system, and continuous monitoring in the health care system. In addition, another model is evidence-based management model and the reason for using this model is to develop a theoretical understanding of the clinical expertise and the evaluation of the preference and patient values. The key aspects of the King's Open Systems Framework are used to describe the significance of personal and interpersonal systems. Thus, the reason for presenting

different theoretical models is to present a better understanding of the health care administration. The attribution theory is used in the health care management for the assessment of failure and success related to a health care programme or the system. In addition, this theory is also utilised for the development of a safer environment by the identification of different administration errors. In addition, the conceptual framework of this theory is used for fostering safe and positive environment not only for the patients but also for the care workers.

2.8 CHANGE MODEL IN RELEVANCE TO THEORETICAL MODEL

Organisational change is a subject on which much is spoken; but with regard to scientific publications, one usually perceives the lack of clear conceptual definitions at the theoretical level, which impairs the analysis of the reported empirical cases and, therefore, their replication in terms of academic research (Mitra, 2016). This is regrettable since conceptual precision leads to the adequate operationalisation of research that, when evidenced in published works, allows replication, leading to the accumulation of knowledge and the advancement of science.

2.9 SUMMARY

These theories and management model were used to investigate the field of health care administration and helps to gain a better insight into the health care administration. The concepts presented by these theories are considered to describe the key aspects related to the organisational management of the hospitals. These theories help to

determine the necessity, appropriateness, and efficiency of patient care and meet quality standards by utilising the health benefit plan. It is also used to ensure that health care costs are managed and kept in accordance with the current inflation to ensure that patient care is provided at an affordable cost. The theories are linked to hospital management by accessing the delivery of health care services in the public and private hospitals. The health care profession is positively affected by such an evidence-based approach to learning and practice. The motive to review these theories primarily to identify the appropriate theoretical framework applicable in this complex research, its appropriateness, eases of application, and explanatory power.

CHAPTER 3 LITERATURE REVIEW

3.1 INTRODUCTION

This chapter includes literature in context to the efficiency of health care administration. As there was a necessity of undertaking a robust systematic review to identify gaps in knowledge, academic trends, and up-to-date information about the topic, therefore, a systematic approach is used here. Also, the systematic review presents a unique opportunity to find original direction and distinction; for this research navigate to identify the challenges and barriers to efficient and robust service delivery. Furthermore, an organisation of this literature review was formulated in the form of identified concepts in the existing works.

3.2 SYSTEMATIC REVIEW

The systematic review of the literature is a study that aims to gather similar materials from several authors and perform a statistical analysis. It is considered secondary research because it uses primary studies to do the analysis. It encompasses research to answer a key question by doing a critical study of the literature. It starts with an issue that guides the main purpose of doing a review project. Then, a literature search is conducted to find similar studies, and then methodological criteria are applied to produce an analysis. The systematic review is done during academic life in scientific articles, dissertations, and academic works to develop writing, to learn to review, to stand out, to interpret data and to expand knowledge in theoretical references. In addition, it helps to guide future research - especially when there are conflicting issues and negative outcomes.
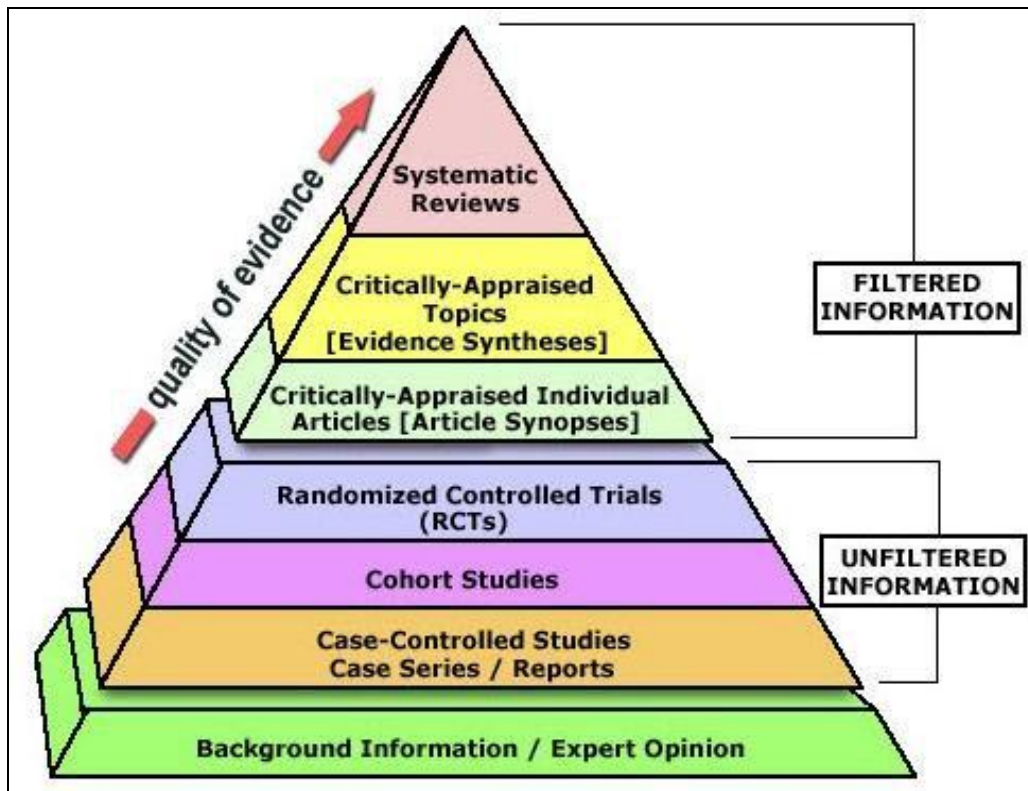
FIGURE 3.1 Quality of evidence in a Systematic Review

There has been a need to conduct a robust search for evidence regarding the quality and effectiveness of health care administration system. According to Ivers, Grimshaw, Jamtvedt, Flottorp, O'Brien, French, Young and Odgaard-Jensen (2014), a systematic review is a summarised form of results of carefully conducted health care research and provides an optimum level of evidence on the efficiency of health care interventions.

3.3 DATA COLLECTION

3.3.1 Databases

In this study, the method used for data collection was searching for peer-reviewed published articles by using relevant keywords in the database. It was essential to apply an optimum set of criteria in order to increase the levels of research in context to validity and reliability by selecting the best quality of research papers (Lewis 2015). The criteria set for this research study was by using only those research articles that were published

and are not less than five years earlier. The total of fifteen studies was selected, presented in CINHAL, Medline, and Cochrane and those articles whose full-text pdf were retrieved. Moreover, the selected papers were published in English only. All the credentials of the author in the articles, as well as the extent of text contribution to the development of the research area, were satisfactory. The depth of analysis, quality of discussions and the reliability of the source were well presented. Additionally, the research articles were selected that were strong in their textual foundations with no bias in their validity of results, such as quantitative, systematic review, qualitative, observation study and/or retrospective researches.

3.4 INCLUSION CRITERIA AND SEARCH STRATEGY

Studies published from 2014 to 2018 in the English language were selected and studies conducted in Europe, the UK, Canada, and Australia were included because these countries have a contrasting model of health care administrations. The inclusion criteria gave the author support for focusing on literature related to health care administration in various clinic settings as this helped to look at the barriers in different health care practices while using papers written in English to avoid misinterpretation of what being read. The exclusion criteria were used as it eliminated topics of non-interest and specified on the many topics of interest within health care administrations. Individual case reports, individual interviews, and studies from Asia were excluded from the literature search. Moreover, articles which did not address barriers to health care administrations were excluded from the search. Articles published in or after 2014 were included and this helped to eliminate old and outdated research papers. Irrelevant information was excluded to extract the most recent and latest developments on the selected topic.

The selection process of articles was dependent based on inclusion and exclusion criteria. Furthermore, the investigator has cross-checked the selection of research-based articles. Reading and assessment were the most common approach, which was used for the shortlist of studies. The majority of the shortlisting decisions were taken after reading the abstracts and conclusions. In the case of confusion, the entire paper was taken into consideration for the selection process. The final approach was the inclusion of another experienced reviewer, the project supervisor, which was responsible for the verification of decisions.

3.5 PROGRESSION OF THE SYSTEMATIC REVIEW

The following steps were taken to extract the data most relevant to the topic of research; the identification of a number of publications. Abdelhak et al (2014) included the longer follow-ups or other outcomes instead of publication reporting subgroups. It has been identified to examine the author affiliation, enrolment dates, and the focus area of the research and whether have presented information about the quality and efficiency in the health care system (Ball et al 2013). However, the study has been selected to use as the primary report for data analysis besides considering all other as secondary publications. The investigators, who selected the research-based articles, extracted the relevant data independently. The second reviewer also played a major role in the extraction of data. The extraction process was not as simple as the selection of studies. All the articles were reviewed before the selection of articles and data was extracted with the help of factors (Jones, Taylor, MacArthur, Pritchett & Cummins 2016).

There were three important factors, which were used for the extraction of data. The information, which was totally relevant to the health care administration and processes, were immediately extracted. Furthermore, the time and inclusion criteria of the studies were also reviewed for making positive decisions in favour of this organised review.

Conclusions and major objectives of the selected studies were also identified for the extraction of studies effectively (Jones et al 2016). All these approaches were helpful for the proper extraction of relevant data from the selected studies refers to clinical trials and experiment. Thus, the study selected by the researcher is with the latest publication of the primary report or with the major number of cases.

The investigator, who selected the research-based articles, extracted the relevant data independently. A third reviewer also played a major role in the extraction of data. The extraction process was not as simple as the selection of studies. Entire articles were reviewed before the selection of articles and data was extracted with the help of factors. There were three important factors, which were used for the extraction of data. The information, which was totally relevant to the health care administration and processes, were immediately extracted. Furthermore, the time and inclusion criteria of the studies were also reviewed for making positive decisions in favour of this organised review. Conclusions and major objectives of the selected studies were also identified for the extraction of studies effectively. All these approaches were helpful for the proper extraction of relevant data from the selected studies. To extract relevant data from the included literature, a data extraction flowchart was developed in which each article is categorised into the categories as shown in the classification scheme (Jones et al 2016). Following this form of data extraction, the screening of every study was performed for related data, which further reduced the demand to entirely overview all studies. This procedure was performed through the researchers which results in a possible subjectivity bias. Then the recovered information was reviewed to reply to the major research questions.

3.6 DATA EVALUATION

The assessment of the chosen studies with valid content (n = 15) was performed. This assessment was performed based on the valuation form presented by Hawker et al. (2002). There are different sections in this assessment.

3.61 SYSTEMATIC REVIEW FLOWCHART (RESULTS)

Identification

Number of studies retrieved through databases including No of records collected through data bases including Science Direct PubMed, CINAHL and Medline (N=897)

Number of studies retrieved from other sources

(N= 245)

Screening

Record of elimination of articles that are duplicate for reduction of replicated information
(N=112)

Number of records screened (Titles/ abstract reviewed) (n=109)

Number of records excluded after screening of titles/abstract (n=97)

Eligibility

Number of studies excluded with specific reasons (n=7)

Methodology was not reliable=7

Statistical analysis was not clear=5

Research design was Incomprehensive=2

Number of full-text articles assessment for eligibility (n=36)

Included

Number of articles included in This review (n=15

FIGURE 3.2 Schematic presentation of the search outcome

Table 3.1   Studies Selected for Systematic Review

No	Title of research	Year	Authors	Aim of study	Journal	Methods	Results
1	Human factors systems approach to health care quality and patient safety	2014	Carayon, P Wetterneck, TB Rivera Rodriguez, AJ Hundt, AS Hoonakker, P Holden, R Gurses, AP	To identify the human factors systems approaches like SEIPS (Systems Engineering Initiative for Patient Safety) in improving health care quality and patient safety.	Applied Ergonomics	Observation study	The SEIPS model has been used successfully to introduce and promote HFE to health care researchers, professionals, and educators.

| 2 | The Environmental Management The system in a Health Structure: The Case study of ORC- Aviano (Italy) | 2017 | Lizzi, GD Collazzo, R Capra, E Lazzarini, R Goi, D | The adoption of environmental sustainable management voluntary systems such as ISO 14000 and EMAS has been evaluated and proposed | The Open Waste Management Journal | Observation study | The installation of mixers in medical applications and water dispensers in the toilets has been recommended to reduce the amount of liquid waste arising from discharges of the bathrooms of the patients. |
| 3 | Attitudes of hospital leaders toward publicly reported measures | 2014 | Lindenauer, PK Lagu, T Ross, JS Pekow, PS Shatz, A | To describe US hospital leaders' attitudes toward | JAMA Internal Medicine | Quantitative study | Hospital leaders indicated that the measures reported on the Hospital Compare website exert a strong |

	of health care quality		Hannon, N Rothberg, MB Benjamin, EM	hospital quality measures and assess these measures for quality improvement, and examine the association between			influence on local planning and improvement efforts.

No	Title of research	Year	Authors	Aim of study	Journal	Methods	Results
				leaders' attitudes and hospital quality performance			

4	Applying different quality and safety models in health care improvement work: Boundary objects and system thinking	2014	Wiig, S Robert, G Anderson, JE Pietikainen, E Reiman, T Macchi, L Aase, K	The overall aim of this study was to address the current gap in the literature on how health care organisations use theoretical models in their own efforts to improve quality and safety.	Reliability Engineering and System Safety	Qualitative study	The study has indicated that the choice between the OQ and DISC models was of less importance for practical improvement work than the role of the model as a boundary object
5	Experiencing health care service quality: through patients' eyes	2015	Schembri, S	The primary aim of the present study was to consider health care service quality from the patients'	Australian Health Review	A qualitative study (narrative analysis)	Patient stories offer an authentic view of the complex ways that patients experience health care service quality

				perspective, specifically through the patient's eyes.			
6	The efficiency of health care systems in Europe: A data envelopment analysis approach	2014	Asandului, L Roman, M Fatulescu, P	The paper aims at evaluating the efficiency of public health care systems in Europe by applying a nonparametric method such is Data Envelopment Analysis	Procedia Economics and Finance	Quantitative study	There are a number of both developed and developing countries on the efficiency frontier, while the great majority of the countries in the sample are inefficient.

No	Title of research	Year	Authors	Aim of study	Journal	Methods	Results
7	Re-examining Health IT policy: what will it take to derive value from our investment?	2015	Riskin, L Koppel, R Riskin, D	The article is aimed at describing current problems and recommended changes in HIT policy, including approaches to usability, interoperability, and quality measurement.	Journal of the American Medical Informatics Association	Observation study	Attaining the ambitious and noble goals of improving outcomes and reducing costs in health care will meaningfully influence our economy and national well-being.

| 8 | Patient access to medical records and health care outcomes: a systematic review | 2014 | Davis Giardina, T

Menon, S

Parrish, DE

Sittig, DF

Singh, H | To determine the effect of providing patients access to their medical records (electronic or paper-based) on health care quality, as defined by measures of safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity | Journal of the American Medical Informatics Association | Systematic review | Access to health records appeared to enhance patients' perceptions of control and reduced or had no effect on patient anxiety. |

No	Title of research	Year	Authors	Aim of study	Journal	Methods	Results
9	Moving From Discovery to System-Wide Change: The Role of Research in a Learning Health care System: Experience from Three Decades of	2017	Atkins, D Kilbourne, AM Shulkin, D	To explore the unique health issues affecting veterans, through an extensive network of partnerships and clinical investigators embedded in its facilities	Annual Review of Public Health	Observation study	During a time of disruptive innovation in the greater health care market, VA research will also need to adapt quicker approaches to evaluate technologies and ideas from within and external to the VA.
	Health Systems Research in the Veterans Health Administration						

| 10 | Implementation of the patient-centred medical home in the Veterans Health Administration: associations with patient satisfaction, quality of care, staff burnout, and hospital and emergency department use | 2014 | Nelson, KM Helfrich, C Sun, H Hebert, PL Liu, CF Dolan, E Taylor, L Wong, E Maynard, C Hernandez, SE Sanders, W | To create an index that measures the extent of PCMH implementation, describe variation in implementation, and examine the association between the implementation index and key outcomes | JAMA Internal Medicine | Observation study | The extent of PCMH implementation was highly associated with important outcomes for both patients and providers. This measure will be used to track the effectiveness of implementing PACT over time and to elucidate the correlates of desired health outcomes. |

| 11 | Patient, hospital, and local health system characteristics associated with the use of observation stays in veterans' health administration hospitals, 2005 to 2012 | 2016 | Wright, B O'Shea, AM Glasgow, JM Ayyagari, P Vaughan-Sarrazin, M | The objective of this longitudinal observational study was to examine the extent to which patient, hospital, and local health system characteristics explain variation in observation stay rates across the Veterans Health Administration (VHA) hospitals | Medicine | Longitudinal observational study | The observation stay rates are inversely related to hospital bed size and that hospitals with a greater proportion of younger or rural patients have higher observation stay rates. Observation stays rates were nearly 15%age points higher in 2012 than in 2005. |

No	Title of research	Year	Authors	Aim of study	Journal	Methods	Results
12	Association between the Medicare hospice benefit and health care utilisation and costs for patients with poor-prognosis cancer	2014	Obermeyer, Z Makar, M Abujaber, S Dominici, F Block, S Cutler, DM	To compare utilisation and costs of health care for patients with poor-prognosis cancers enrolled in hospice vs similar patients without hospice care	Jama	Quantitative study	Those participants receiving hospice care, compared with matched control patients not receiving hospice care, had significantly lower rates of hospitalisation, intensive care unit admission, and invasive procedures at the end of life, along with significantly lower health care expenditures during the last year of life.

13	On patient flow in hospitals: A databased queueing science perspective	2015	Armony, M Israelit, S Mandelbaum, A Marmor, YN Tseytlin, Y Yom-Tov, GB	The aim of the research is to provide an entry to and accelerate the learning of data-based OR of hospitals; researchers can use it to reproduce our EDA, which would serve as a trigger and a starting point for further data mining and novel research of their own	Stochastic Systems	Longitudinal observational study	Fundamental changes are therefore essential; both within our OR/AP community as well as our potential health care partners: changes in accessibility to health care data, in education and funding priorities

No	Title of research	Year	Authors	Aim of study	Journal	Methods	Results
14	Making use of cloud computing for health care provision:	2014	Sultan, N	The aim of this article is to shed some light on this development	International Journal of Information	Qualitative case study	Despite its growing popularity, there are still some serious and real
	Opportunities and challenges			and explore the potential of cloud computing in contributing to the advancement of health care provision	Management		Concerns relating to cloud computing such as security, outages, and vendor-locking.

| 15 | Patient satisfaction and quality of surgical care in US hospitals | 2015 | Tsai, TC Orav, EJ Jha, AK | To investigate the hospitals that score the best on patient experience provide higher quality surgical care adherence to surgical processes of care, mortality rates, and readmission rates | Annals of surgery | Quantitative exploratory study | While results do not imply causality between patient experience and quality and efficiency of care, patient satisfaction was associated with both the quality and efficiency of surgical care, with high patient satisfaction hospitals having higher process quality, lower readmission rates, lower mortality rates, and shorter length of stay. |

3.7 FINAL DATA

After the data assessment, the number of studies was 15. Different themes were reviewed in these studies. Improving health care administrative system in Mauritius, Factors affecting health care quality, Implementation and improvement of health care administration, and Strategies for improving health care service delivery.

3.8 DATA ANALYSIS

Data from 15 studies were reviewed. After becoming aware of the data, the assessment began through selecting a unit of assessment, which was one combination of words or the description of phrases or a sentence. After this, the data were decreased. Similarities and dissimilarities were identified by decreases impressions. Impressions with a similar description were collected first into one class through doing a classification. Next, after experiencing categorisation, classes with the same data were merged into subcategories and these were marked.

Studies of recent years show that the greatest number of medical errors in the management of patients occurs in hospitals (Lizzi, Collazzo, Capra, Lazzarini & Goi 2017). This is due to the fact that hospitals conduct treatment for the most severe and complicated patients, and on how medical aid will be organised, its quality largely depends. One of the important components for improving the quality of care is the continuous professional training of medical personnel and reliance on the evidence base. The report is based on evidence-based medicine and is intended for decision-makers in health, responsible for ensuring the quality of care (Lizzi et al 2017). It contains examples of good practice in ensuring high quality in hospitals, details are strategies are more suited

to specific tasks posed, approaches that contribute to improving the quality and safety of patient management.

Human services in the health care sector are looked with significant difficulties. It is blamed for being inhumane, reductionist, interventionist, and paternalistic. Furthermore, it is debilitated by an asset emergency and a hierarchical emergency, yet more significantly (Riskin, Koppel & Riskinc 2015). A considerable lot of these difficulties have been ascribed to present day medicinal services' infringement of the self-sufficiency of patients. One imperative term presented in the level-headed discussion on patients' self-rule is respected (Riskin et al 2015). For the most part, it is contended that promoting and respecting the dignity of patients is a productive method for facing up to the significant difficulties going up against present-day health care.

Improving the quality of care for most countries is one of the main links in the reform of the health system and the provision of services. All countries face accessibility, equity, safety, and patient participation, and improvement of skills and abilities, technologies, and the introduction of evidence-based medicine available resources. There are four main criteria for the quality of care: effective and timely assistance, effective use of resources, patient satisfaction, and effectiveness of treatment. Quality management should include the following necessary components: assessment and quality control, quality improvement, and provision of quality. Quality assurance includes three important criteria: it is continuous, has various methods of measuring and improving quality, and conducts a clear distinction between internal and external approaches to quality assessment.

 Since the beginning of the 1990s, research has been conducted on factors that affect the quality of medical assistance. During this time, great differences in the tactics of managing patients in different institutions of medical care and at its various stages (primary care, hospital, emergency aid), as well as accumulated facts about the low quality of medical services. Low-quality facts are noted all over the world, but there is

evidence that a low quality of care is particularly characteristic of poor economies (developing countries and countries with economies in transition) and public hospitals in the poor areas of developed countries. This is due to the poor infrastructure of medical institutions, old age and worn-out equipment, lack of motivation, and opportunities for physicians increase their professional knowledge and skills.

Currently, in the countries of Europe (both Western and Eastern), there is an active process improvement of inpatient care to make it the most effective (Tsai, Orav & Jha 2015). When developing the plan, one of the important components of programmes should be quality assurance inpatient care. The document presents six main directions of quality assurance medical care in hospitals: clinical effectiveness; patient safety; focus on the patient; productivity of care, training of medical personnel and state responsibility for ensuring the quality of medical care (Tsai et al 2015). The document also discusses the standards of inpatient care and indicators for assessing the quality of this assistance.

3.8.1 Identified Concept 1: Improving health care administrative system in Mauritius

Carayon and colleagues in 2014 conducted a study on improving health care quality and patient safety and instigated that health care system based on reducing the expenditures and release of resources resulting from:

- Improving the morbidity and disability resulting from screening and early diagnosis, intervention in key pathologies, speedy resolution of health problems, for instance, scheduled surgeries and early rehabilitation to decrease the overall health care cost of the population.

- A suitable clinical course between and within institutions, with integrated care, shorter internments, recovery and continued care in the community or in units close to the residence.

- Better communication among health professionals, with improved quality and less probability of error,

- A better capacity for planning and organisation of institutions, including obtaining and analysing information for the definition of health needs.

- Definition of interventions for continuous improvement and subsequent prevention of waste of any resource.

- Implementation and sustainability of measures.

- Monitoring and evaluation of health outcomes to equate capacity to organise services and proactive responses.

- Fragmentation of health services, with high responsibility for the evolution of the health status of a population.

- Channels of communication and articulation between providers and care with high responsibility of the providers for the management of the case and for guiding the clinical course of the patient by the health service.

- The better orientation of health services to achieve health outcomes, focusing on the opportunistic and proactive delivery of the disease, as well as focused investment in risk management.

- High literacy and autonomy of the patient towards impersonal health services based on technology and focused on service delivery versus care.

- Sufficient perception of the impact of social determinants of health on access and health care related disability, morbidity, and mortality.

- Health care should not be understood as mere commercial goods, tradable in market logic, without respect for the ethical principles necessary to create trust and therapeutic alliance.

- Easy affordability to a wide range of patient population by the dispersion and fragmentation of care in the hospitals united by distant geographical institutions.

- Likewise, health systems such as holistic, proximity, continuity and cross-sectional care, show better performance, better results, more equity and accessibility, cost-benefit ratio and patient satisfaction.

- Inadequate access to services, for instance, the use of emergency services is due not only to the perception of the seriousness of the situation but also to the difficulties of access to care.

It is significant to ponder that the accessibility of laboratory procedures like ultrasound depends on prior referral, except in properly identified emergency situations and therefore, spending on services and treatment can be a barrier to access to health care. The authors depicted that patient approaches are constructive, but extensive use can need attempts to control racial, ethnic, and literacy obstacles. According to Nelson et al (2015), better accessibility can be achieved from several interrelated dimensions:

- An adequate service demand, because of the perception of health and service as the most advantageous response.

- Availability, referring to the adequate supply of care to the needs of the population.

- Proximity reflected by the geographic dispersion of services.

- Direct costs, such as the acquisition of services.

- Indirect costs, such as absences from employment and transportation.

- Quality, regarding the organisation of services and the technical dimension and humanisation.

- Acceptance, resulting from the expectations, attitudes, and behaviour of the patients.

Given the responsibility of the social state to ensure the response to the health care needs of the population, the private sector assumes three functionalities:

- Enables the complementarity of public services, broadening the technical and response capacity, in a convention relationship at health care level;

- It broadens the freedom of choice and diversity of models and the provision of services, based on free initiatives, respecting the necessary guarantees of quality and information.

- Shares with the public sector the responsibility for the basic provision of health services, ensuring infrastructure, management and other aspects of care.

Overall, the accessibility planning in health care is based on needs assessment, service quality criteria, and resource management principles. The adequacy of care thus responds to local needs and discriminates between perceived, expressed and affordable needs, health service demand and response. Atkins, Kilbourne and Shulki (2017) explained in their study that effectiveness and efficiency relate to the clinical practice guidelines and are equated to norms of health care operational practice. It is imperative that health care service effectiveness has been shown positive effects on outcome quality. Riskin et al (2015) accentuated that as hospital and health care operations are a

specific type of service operations, relationships found within other service industries should directly translate to the health care industry. Further, patients exposed to a service-oriented administration will develop a level of satisfaction, based on the specific performance, about these operational practices. The health care administration literature often refers to service effectiveness as process variation when evaluating its relation to quality outcomes.

It is also demonstrated by Wright, O'Shea, Glasgow, Ayyagari and Vaughan-Sarrazin (2016) that many studies are primarily concerned with evaluating service effectiveness and its relation to quality; for instance, in an airline industry consistent enhancement in service effectiveness have been shown to be positively related to customer satisfaction, a measure of outcome quality within a service industry (Nelson et al 2014). Similarly, in the real estate industry, customer satisfaction has been shown to be closely related to outcome quality. Specifically, within the health care industry, evidence of a positive relationship between patient satisfaction and clinical and health care quality has been shown to exist.

3.8.2 Identified Concept 2: Factors affecting health care quality

According to Milani, Bober, and Lavie, (2016: 580), Health care aimed at diagnosing and treating the individual individually does not have much impact on the population' health. Though, health plans focused at a wider social group increase the level of health of society. Therefore it must be broad, of quality, offer sufficient coverage and accessibility from all points of view (economic, situation, etc.) to the whole society. The resources that a country allocates to health, and the results of these, can be measured through various indicators (indexes and numerical values), whose study and correct interpretation is

fundamental for adequate health policy. Describing the health level of a population means measuring all aspects that provide information on how the health-disease process is distributed among its inhabitants. There are a lot of indicators. The most commonly used are those that indicate a population's lack of health, such as mortality and morbidity (Middleton, et al, 2013). Some health indicators are: financial and human resources, the percentage of expenditure devoted to public health in relation to GDP (Gross Domestic Product), the number of doctors or other health professionals per capita, the number of hospital beds per inhabitant , accessibility and quality of health services, demand for primary care and specialised attention. Examples of indicators of the health of a population are General morbidity and global mortality; Main causes of death; Mortality rate; Life expectancy and disability-free life expectancy; Indicators of lifestyle (smoking and consumption of legal and illegal drugs, physical exercise and rest) (Middleton, 2014). Quality is a phenomenon of interest that remains valid in the field of research. Its analysis over time has been approached from different contexts and perspectives. The investigations of this variable are not limited only to the environment of the private company or industrial activity. It is an issue that also attracts attention in the performance of government entities because societies are increasingly demanding with the results that public administration generates in various sectors. In fact, quality has become a priority factor in public management. In this sense, the quality of the health service has gained and maintained its prominence over the years, in the field of research, because health is a basic indicator of the social welfare of the peoples. As Memon, et al (2014:4335) explained that it is one of the aspects that are widely recognised as priorities, within the development plans of a society.

Although the concept of quality is born and is perceived with greater application in the industrial sector, its study has even extended to organisations that provide services

(Middleton, 2014). The measurement of quality in services and the development of measurement instruments are difficult due to the subjective nature of the concept, which complicates the identification, definition and assessment of the dimensions involved. In this regard, each organisation has its own quality assessment mechanisms (MHQL, 2017). When studying the application of the concept of quality in the health sector, McPherson, and Pincus, (2016:67) mention that it is an indicator that the health system has incorporated in the provision of its services, with the objective not only of having technical or intrinsic quality, but to also assess the extrinsic quality (patient satisfaction). However, experience points out in various contexts, that despite the efforts made, and how much is published on this variable, difficulties are still present in the effort to evaluate and guarantee the quality of medical care (Mertens, 2014). Nowadays, the quality of services in the public sector is one of the main elements taken into account for the fulfilment of governmental objectives and regulations, which seek to satisfy the expectations of an increasingly informed and demanding citizenry. Fundamentally because the current challenge that the different governments must face is the modernisation in their management, focusing their attention on the citizens, assuring them services with optimal levels of efficiency and effectiveness, which implies the rationality in the management of the resources and the ideal performance and responsible for civil servants of the public administration (McPherson, and Pincus, 2016).

According to Memon, et al (2014:4335) the quality of medical care refers to the degree of use of the most appropriate means, with the purpose of achieving the greatest progress in health. Middleton, et al, (2013:154) mentioned that this concept implies guaranteeing timely attention to the user through the most convenient medical resources and knowledge, with commitment and participation of all the actors involved in medical care and with the satisfaction of health needs. Milani, Bober, and Lavie, (2016: 580) mentioned that the interest of public and private institutions in the health sector, to explore the quality

of care in order to improve it, has led to the need to evaluate services based on the perception of users, through various techniques and tools. This idea is reinforced with Memon, et al (2014:4335) who point out that one of the aspects related to medical care that has gained importance in recent years is the quality of the service, which includes, among others, indicators the evaluation of user satisfaction. It is mentioned that user satisfaction is considered the most used indicator in the assessment of the quality of medical care. It is an issue that maintains the interest and concern of researchers and public sector authorities, as one of the key indicators to measure the effectiveness of health management. In this regard, it is pointed out that for more than thirty years the study of this variable aroused the interest of researchers and professionals who from of their contributions achieved that the quality of health services is a valid indicator in public management in many countries, due to the demands expressed by increasingly demanding users. According to Shaw, Asomugha, and Rein, (2014:87), it is mentioned that in Mauritius, the first efforts to improve the quality of health services were reflected in medical audits at the Institute of Social Security, from 1950 to 1960; then in the mid-eighties, the first contributions appeared in the country, which gave rise to the application of quality circles, beginning in 1985 at the National Institute of Perinatology (Shortliffe, and Cimino, 2013).

The evaluation of the quality of health services is an area of growing interest, whose study has been supported in social science methods and techniques. It is based on two basic aspects, assessment from the perspective of health professionals and from the perception of the user. In relation to this second perspective, the emphasis of its measurement is based on two models: the satisfaction of users, based on the concept of quality, and from the model developed by Parasuraman (Scott, 2016). Emphasising this research on the second perspective known as interpersonal, it has been observed that the measurement of quality in the service generally implies the multidimensional analysis

of this variable, finding in the literature a series of classifications about the dimensions that make up this concept (Scott, 2016).

In particular, in the field of health, the SERVQUAL model has been involved in important empirical studies. It is possible to identify in these scientific investigations that have analysed the quality of health services, the coincidence in the determination of the dimensions or components that make up this construct, I feel these: reliability, empathy, responsiveness, tangible elements and safety, order to offer quality medical care. These dimensions correspond to the SERVQUAL Model developed by Parasuraman, Berry and Zeithaml (1988) (Schoville, and Titler, 2015). By studying each dimension and in a concrete way the definition that each researcher has made in his studies of the characteristics that comprise the quality of health services as a multidimensional variable, similarities and complementary aspects in their measurement is determined. In fact, although researchers call a dimension differently, in essence, similarity is observed in categorisation. It is worth mentioning the interest of governments to include quality in their plans, programs and development strategies in public health care (Schembri, 2015). In this regard, in Mauritius quality in the provision of health services is a strategic factor incorporated into the national agenda, being considered for its strengthening from the National Development Plan 2013 - 2018, in the National Health Program, in the Sectoral Program of Health 2013 - 2018, in the National Crusade for the Quality of Health Services and in the Comprehensive Health Quality System, among other strategies (Ryan, 2015). However, according to the National Center for Technological Excellence in Health, although Mauritius has presented significant advances in health, there are still areas of opportunity to be addressed, and one of them refers to the quality of services doctors in the country. According to Ryan, et al, (2015:85), it can be noted that there is no defined strategy in this country to guarantee quality in medical care, factors such as citizen

demand for a better quality of service, a perception of services with abuse remain in force, lack of information and opportunity. Hence the interest in conducting research that analyses the quality of health services from the user's perception, in order to continue contributing to the analysis of this phenomenon and making recommendations that improve health services for the benefit of users (Ryan, et al, 2013).

Sultan (2014) instigated that the outcome measures are most frequently defined regarding mortality and morbidity rates within a given facility. Outcome quality has also been studied in conjunction with the focus of a hospital unit. The focus, in this case, refers to a health care facility's adoption of workflows like those found in cellular manufacturing and plant-within-a-plant orientations. In addition, the little relationship was found to exist between outcome qualities (a fundamental performance measure) and focus (Nelson et al 2014). Some studies have provided insights on how these definitions of quality might be combined and researched holistically. In this regard, Wiig et al (2014) studied the impact of operational and administrative failures and organisational learning on the quality of care in health care. The quality of care was defined regarding nurses' capability to follow the best exercises in the presence of supply chain and staffing restrictions.

Tsai et al (2015) in his longitudinal observational study found that the outcome quality was linked to profit status through a set of two intermediate variables, process, and input quality. The author further concluded that stay rates are inversely associated with hospital bed size and that hospitals with a larger proportion of younger or rural patients have higher assessment stay rates. Thus, the operationalisation of clinical and administrative quality will be evaluated for their effects upon outcome quality and are treated as individual drivers of outcome quality within this health care system. According to Obermeyer et al (2014), the concept of access to health care is a fundamental pillar of

health policies and need to be available for all the population despite race, ethnicity or socio-economic status. However, contrary to what one might think, it is a complex and multi-faceted idea. At the most basic level, availability depends only on the provision of care, that is, on its availability. If there is an adequate supply, the population can use the services, and it can be said that they have access to health care. However, effective availability of health care will also depend on possible barriers to the appropriate use of health care and these can be economic, social, organisational or cultural Wiig et al (2014) identified that the proper use is instrumental in maintaining, ensuring and improving one's state of health.

In short, the issue of availability of health care is inseparable from the issue of equity in the health system. It is significant to note that there can be other dimensions, such as the technical adequacy of the provision, but the most important element in the realisation of the right of availability of health care will be the issue of distributive justice in the system. Equity is one of the most important goals pursued by modern health systems. There are several principles of equity in health, each appealing to notions of justice in the distribution. For the World Health Organisation (WHO, 2017), all people should be able to reach their maximum health potential without their economic and social circumstances determining the attainment of this objective. So, equity in health can be explained as the absence of systematic and possibly preventable differences in one or more elements of health among socially, geographically, or demographically defined population groups. In this context, a key aspect is the availability of quality health care according to the clinical needs of citizens (Obermeyer et al 2014).

3.8.3 Identified Concept 3: Implementation and improvement of health care administration

Organisations of the most diverse sectors are now increasingly concerned about the quality of their services or products (Rubin, and Babbie, 2016). In this context, one sector that is increasingly expanding is, undoubtedly, health, because it has a growing impact on the economy of the various nations and also as its clientele wants to satisfy their health and health needs. In the scope of supply and demand of these products and services, it can be said that the world has finally discovered that the important thing is who buys or uses them. Companies and institutions from the most varied branches of health start to provide the product/service that the client wants, not what they want the customer to want, thus increasing their competitiveness and, consequently, the excellence of each one. One of the pioneers of Total Quality Management emphasises that quality consists precisely in the ability to meet customers' needs at a price they can afford. He adds that, in an organisation, everyone should do the best they can, but they must also know what to do (Ross, Moussa, and Ajodhea, 2017).

Recent literature review pointed to some results that were achieved by hospitals and Brazilian nursing services that adopted Total Quality Management (TQM) (Rosenthal, et al, 2013). After reporting the experience of four hospitals that decide to apply this view, the research portrayed, among other elements, the suitable outcomes coming from the TQM for these health systems. The accomplishments in human resources were noticeable, since the focus in understanding that the flaws are associated more to the system and less to the people formed the situations to make new cultural approach of relationship, of records and assessment of harmful activities and of verification and checking of the results (Robson, and McCartan, 2016). The satisfaction of the patient was another gain evidenced by the study, as well as the recognition of the society through awards, publications in the local press and increase of financial contributions by businessmen and the community in general. There were also changes in the hospital

statistics indicators, such as a reduction in mortality coefficients and a mean of permanence and a concomitant increase in occupancy rates (Riskin, Koppel, and Riskin, 2015).

According to Renedo, Marston, and Barlow, (2015:25) the Quality Management implies the questioning of traditional values, regarding both the people management and the role of consumers, as according to this view, knowing and "enchanting" consumers is the game in which everyone must engage. It has become essential to confront this issue as it is to assure organisational survival. In this context, user gratification has been applied as a method to assess the quality of health services, with hospital credibility (Reames, Ghaferi, and Dimick, 2014).

In order to manage a health service, taking into consideration the quality of health actions, it is necessary to adopt changes, transferring the focus of action centred on the disease to the production of health centred in the subject; thus, the work cannot be fragmented, individualised and hegemonic (Rashid, et al, 2014). Maybe one of the elements that define this occurrence is the fact that consumers are normally becoming focused on considering the care and health promotion. Individuals are becoming further responsive of their duties and rights and, generally have started to strongly focus that health and quality health care are essential rights and not a privilege (Rakhmawati, Sumaedi, and Judhi, 2014).

Rahurkar, Vest, and Menachemi,(2015:475) explained that in this manner, the consumer is the one who orders, and the individuals who present service to him are the ones who hold the maximum power as the rest of the organisation focuses to give resources and infrastructure so that the client, by the front line, achieves what either.

In a study of nursing care provided by the Department of Paediatrics at Hospital in Mauritius, groups of family members of hospitalised children were investigated (Ragin, 2014). One group received differential treatment from another group, control, regarding the attitude of the nursing profession when requested, amount of attention paid to their personal needs and degree to which the nurses kept informed about tests, equipment and treatments. Pursem, et al (2014:51) concluded, among other aspects, that the simple act of offering "sympathetic and comprehensive listening", as well as answering the questions, had a salutary effect on the general satisfaction of the patient and his family in relation to nursing care. Quality services are in constant contact with their customers, seeking to know them, to understand them, to define them and to value them (Raghupathi, and Raghupathi, 2014).

The nurse is the leader of the care provided to the client and this is their main source of continuous contact, implying guidance in respect of norms and rights, as well as providing complete, accurate and true information about the procedures of the patients and members of the nursing team and other professionals (Pursem, et al 2014).

The nurse is believed to be a privileged professional because he has the opportunity to interact directly with the client and to approach his or her referential, which is unique, to understand their wishes and expectations, maturing the practice of quality care (Pronovost, Bo-Linn, and Sapirstein, 2014). On the other hand, there is an increasing expectation that nurses will be involved with the management of their sector in the current health institutions. Therefore, besides being a professional who has constant contact with the client, he also engages in the management of care provided in hospital institutions throughout the country (Ragin, 2014).

Thus, a question that is considered important is: what is the opinion of the nurse regarding Quality Management, implanted in the nursing service in which it works. It is also worth

noting that although the health care industry has undergone, in recent years, transformations that have brought important scientific and technological advances, there are still cases such as inhumane care, queues and delays in care, relevant infection rates hospital management, ineffective cost management, low level of training, and lack of continuing education for people who provide health care, inadequate staffing, and others (Rashid, et al, 2014).

This situation calls for adequate management models, which optimize the resources applied, bringing improvement in productivity and satisfaction of both the assisted people and the professionals who work in the provision of health services (Ragin, 2014). Although there are not many hospitals that have opted for quality management in Mauritius, in recent years the number of these institutions has grown, because its administrators are realizing that - customers are increasingly demanding quality care, costs have to fall, employees need to be valued and it is necessary to keep pace with the changes observed in recent years (Rashid, et al, 2014).

On the other hand, for Yang, et al, (2015:1004), the Principles of Quality, proposed by Deming, have not yet been adapted efficiently to health services. Although the health sector has already been recognised to a large extent in the industry and other services, the health sector has not been able to address issues such as poor performance and health quality in the light of these principles. Thus the transfer of Deming's approach to health care will be attainable only with some serious considerations: team evaluations should replace individual evaluations, performance measures should be quality focused, and people training should take precedence over numbers and quotas. In addition, the use of statistical data should support decision-making rather than choices made on the basis of simple opinions (Yin, 2014). Everyone involved should be well acquainted with the work system they are in, including their responsibilities and the responsibilities of others. Mutual coordination and cooperation should be encouraged, not competition. For

these authors, until these and other quality tools are developed specifically for the management of health services, Deming's principles continue to be a challenge for current health managers.

Important research shows a historical survey of the beginning of quality evaluation in Brazilian health services, with the Hospital Standardisation Program, prepared by the Yang, et al, 2015: 10), until the creation of the National Accreditation Organisation aims to implement a permanent process of improving health care, encouraging services to reach higher quality standards.

However, it is necessary to emphasise that, in relation to the evaluation criteria of the nursing services identified in the aforementioned study, there is a predominant emphasis on the criteria of organisational structure and processes on the criteria of institutional results (Wu, et al, 2015). It was verified that in the evaluation of the services, it is necessary to change the traditional evaluation mechanisms, centred on the physical structure, the billing of services produced and the hotel industry, to seek the valorisation of the assistance results from programming with epidemiological criteria, standards and indicators of quality, ability and performance with excellence, the growth of qualitatively and quantitatively more equitable standards regarding structure, procedures and outcomes (Wright, et al, 2016) .

It is believed that, as an important part that integrates the health system, nursing has more recently been involved in the implementation and implementation of Quality Management in care management, as it is increasingly understood that only a standard can be achieved great customer service if people look for quality (Williams, et al 2016). It is increasingly hoped that Total Quality Management will also succeed in nursing, embracing focus areas such as the leadership role, action planning supported by standardised signs and instruments, cost-benefit development, consumer satisfaction, training and education, development and valorisation of individuals, focus on

communication processes and others. Based on the above, it is recognised the importance of the theme for the improvement of nursing services, which motivated this research (Wiig, et al, 2014).

Wiig et al (2014) stated that the availability is related to the existence of an adequate supply of services that allows the opportunity to use health care. Availability may also depend on the type of care covered by the public health service network. Proximity reflects the physical or geographical accessibility of care and is associated with the previous dimension (Wiig et al 2014). Furthermore, the costs aspect defines costs incurred in the consumption of health services which can comprise direct costs of getting care, like the non-reimbursed part of a medicinal product, but also the costs of transport to access health care, and the costs of waiting for service. Costs may be conditioned by the possession of health insurance or public subsystems. Quality characteristic of care is related not only to the quality of the services provided but also to their organisation, regarding working hours, consultations, and integration of care. Acceptance dimension assesses whether the provision of health care corresponds to the needs and expectations of the users. Services should be tailored to the characteristics of different population groups who may perceive differently the benefits they may derive from obtaining health care.

According to Asandului et al (2014), an integrated health care system facilitates proactive health care, prioritisation, and separation of funding and caregiving responsibilities. In this way, the following are identified as resources for access promotion in health care; information systems and access monitoring that include indicators on social determinants, to understand the problem and enable effective interventions. By implementing projects aimed at reducing health inequalities globally or in vulnerable groups, strategies, and resources to promote access to integrated health care can be devised:

- Information systems and monitoring.

- The territorial organisation in health care.

- Empowerment strategies like including health care network as a structure of proximity, continuity, and privileged access, centred on the patient, family and community.

- Pre-hospital care, namely the medical emergency; the number of hospitals, location, and typology understood as an integrated system of health care, highly specialised, urgent and emerging, organised in a coherent way, based on principles of rationality and efficiency.

- The articulation between hospitals allows the management of efficient hospital discharge, greater involvement of the family and informal caregivers, less risk of complications and comorbidities as well as lower expenses in health care.

According to Davis, Menon, Parrish, Sittig and Singh (2014), the strategies for articulating levels of care include; (1) sharing information through integrated disease management platforms; (2) information systems and clinical processes; (3) reference protocols; (4) consulting; (5) management of the route between levels of care management. Wiig et al (2014) identified that the inter-institutional health care organisations are responsible for defining, implementing, monitoring and evaluating the articulation between effective hospital cares by the clinical areas. In a similar context, strategic management and common administrative operations are mundane between service units of different levels and allow access to care in complementarity and technical support among hospital institutions, supported by an integrated system of inter-institutional information.

It is imperative to note that in a study by Obermeyer et al (2014), local health system characteristics variations were explored in observing stay rates across Veterans Health Administration (VHA) hospitals and found that the integrated care is based on medical specialities which can make this integration difficult, either by dispersion of professionals or in patients with multiple pathologies. However, strategic management and common operationalisation to several service delivery units provide the capacity to carry out intermediate planning and coordinate complementary resources. It is further accentuated that the integrated management of in-hospital resources and discharge management are processes that promote equity and accessibility and include; (1) the transfer of general care to specialised care and the community; (2) common management of beds for acute situations; (3) reinforcement of day hospital services and outpatient surgery; (4) planning hospital discharge, right from the moment of admission to the hospital In this context, it is important to highlight the importance of the inter-sectoral coordination strategies, facilitated through the case manager, whose mission includes mobilising the social resources necessary for each situation, through the various actors. Hence, the strategies for patient empowerment, informal caregivers, and promotion of volunteering, relevant to minimising the need for access and reducing the inadequate demand for health services (Wiig et al 2014).

3.8.4 Identified Concept 4: Strategies for improving health care service delivery

Quality is an essential aspect of care and a must for them. It goes without saying that it is taken into account for all care activities, both in terms of volumes and costs. Every patient and every community has the right to quality care. These have become a priority for Mauritius, particularly in a context marked by limited resources and budget restrictions (Wiig, et al, 2014).

One of the priority objectives of national health policies and the World Health Organisation (WHO) is the promotion of quality of care in terms of access to care, quality of life, patient satisfaction and quality of life, use of resources that ensure cost-effectiveness. It is legitimate for society to demand a systematic and rigorous evaluation of care to determine whether health resources are being used wisely and resulting in the highest quality of care.

There are many reasons for a policy of quality development. Ethically and socially, patients are increasingly demanding to participate in decisions and thus exercise their right, as men and as patients, to be informed and to influence their treatment. Likewise, governments and health authorities expect health agencies and health professionals to report more specifically on their work (Wicks, et al, 2014). At the professional level, care providers have always strived to provide the best possible care and demonstrate great interest in an evaluation leading to an improvement in their performance. They are aware of the continuing uncertainties in the field of care, dissimilar practices, the rapid development of medical knowledge and the growing demand for scientific medicine. On the economic side, the growing share of gross national product devoted to health means that European governments have only limited opportunities to guarantee a high quality of care and do not always have the means to finance the continued progress of health care medical technology (Whitehead, 2014). They should make judicious use of the means at their disposal. Managers in hospitals and primary care settings are also concerned with maximizing the quality of care at the best possible cost.

It is up to physicians' offices and health care institutions to systematically ensure and improve the quality of care through what people will call "quality improvement systems". These can be viewed as a set of procedures, measures and actions to ensure that the care provided to patients meets and will continue to meet specific criteria. These procedures and actions concern the entire process of providing care, from the

identification of the patient's needs to the results of the actual care. These systems have two functions, one internal and one external. For healthcare providers, medical practices and health care institutions, they are a tool to continuously improve their knowledge of care and quality. In this respect, self-assessment and internal evaluation are of crucial importance (Weller, Boyd, and Cumin, 2014). For society, the public, patients, payers and policymakers, these systems show how a caregiver, medical practice, team or hospital manages quality improvement. An external evaluation of the system is necessary for this purpose. The structural and systematic nature of activities involved in quality improvement is crucial in such a quality improvement system. It must also be feasible, acceptable to its users and accessible to other stakeholders.

In practice, the quality improvement systems of different countries may be different because of the current organisation of their health care system and their historical evolution in quality improvement (Weber, 2015). Quality improvement systems may not be identical between hospitals, health institutions, primary care providers, clinics and individual ambulatory care practices. However, the various quality improvement systems share some general characteristics.

Systematic improvement of quality is based on the following principles: the recognition of a great diversity between communities taking into account the level of development of their quality policy. A quality preventive approach, taking into account "pro-active" measures at an early stage of policy implementation, is important for health care organisation planning and distribution (Wager, Lee, and Glaser, 2017). Knowledge of patients' needs, opinions and experiences on all aspects of care provided to them (organisation, process and outcome) is a valuable source of information for systematic quality improvement and should be the object of regular feedback for its exploitation;

Systematic improvement of quality should permanently form an integral part of the daily work of all categories of staff and systematic improvement of quality is part of the care

providers' professional responsibilities (Tsai, Orav, and Jha, 2015). This notion refers to their obligation to determine a good level of care taking into account the opinion of patients and the public. It also includes the need to better understand the current quality of their work and progress. This knowledge provides an incentive to launch new quality improvements. Providing these providers with tools for evaluation should then be given special attention. The systematic improvement of quality should not be used in a constraining spirit. It focuses on the procedures by which care and services are provided rather than on individual performance. Experience has shown that the best way to improve the quality of care is to give caregivers more opportunities to self-assess and self-regulate than to introduce control with enforcement action (Toussaint, and Berry, 2013).

Care systems normally make long sequences of actions involving different health experts. Thus, the quality growth must proceed by a multi-professional system (Tipton, et al, 2014). It relates coordination between different health professions and between the health and social sectors. The systematic development of quality depends on the managers' dedication. It is the duty of all management levels to make business structures to make sure incorporation of quality growth into day-to-day routines and to increase staff engagement and contribution in the system (Tipton, et al, 2014).

All the activities involved in quality improvement are based on the formulation of objectives to be achieved in terms of quality. These qualitative goals should be decided after a dialogue between caregivers, patients, and policy and administrative decision-makers. A rational choice of these objectives should go hand in hand with the priorities established by national health policies, with the aim of achieving a marginal cost-benefit balance of all competing actions (Taylor, et al, 2014). This is particularly important in situations where some good quality objectives are in conflict with each other, such as accessibility and efficiency in sparsely populated countries. In this case, decentralisation

further promotes equality in access to care, while economies of scale call for greater centralisation of services;

Systematic improvement of quality is a positive step. It aims to identify the best results and use them to improve overall practices rather than identifying and eliminating unsatisfactory results (Tappenden, et al, 2013). However, if unsatisfactory results are identified, action should be taken to eliminate them or to achieve average results. Thus, for example, iatrogenic and non-medicated accidents should be analysed to influence their causes. Quality improvement activities should be based on scientific principles and methods such as traditional medical science.

3.9 RESULTS

Any good quality improvement system consists of a variety of interrelated activities that are carried out by means of effective and workable tools (Sultan, 2014). The activities performed are part of a constant cyclical system incorporated into the daily work. This procedure associates to four associated actions:

Recognition and selection of areas where development is required and problem description (by needs valuation and issue assessment from particular sources);

Choice of assistance, criteria or aims for effective quality care (by harmony building, description of scientific suggestions, local arrangements for the care provision, recognition of good exercises, benchmarking, etc.) (Sullivan, 2016);

Data collection and assessment of the care quality (assessment of the care presented, gaps identification, valuation of the situation to which quality approach have been fulfilled, etc.). This aim can be done "internally" (ie by the care presenters or institutions concerned) or "externally" (through third parties, like patients, paying agencies or particular organisations);

Clinical assessment will assure the quality of it's systems and the outcomes of its assessments through reviewing test values constantly or at common intervals, conducting studies to make sure that they are within an acceptable variety and adopting fixes when this is not the case (Smith, and Parker, 2015). A hospital supported team may initially brainstorm concerns about the organisation of particular care systems and gather some information on the value of these issues before describing good exercises or set aims for development, then attempt to solve the issues and, finally, assess if the aims have been obtained in light of particular criteria. For its part, a health institution can establish new clinical directions for the management of a pathology through showing the issues in practice, after which it will make and implement an implementation policy for these directions comprising different successful interventions. Finally, he will check if his application was successful (Smith, 2015). Thus, it is possible to use these four basic activities according to a variable order and priorities depending on the purpose and the framework in which they are implemented. Various methods can be used for each of these four basic activities (Simpao, et al, 2014).

This part deals with the effective organisation of the various processes and activities that contribute to quality improvement by involving stakeholders in the health care system and creating a framework for improving quality at different levels of the organisation. Quality improvement should be well organised at the central level (country, district) and local (hospitals, local or regional organisations for home care, collaboration with medical practices, etc.) as well as at the unit level (team in a practice or hospital unit) and individuals (care providers) (Smith, 2015).

Several methods of organising quality improvement can be envisaged at different levels. The organisation of quality improvement also involves various activities in the one hand, hospitals and institutions important in the field of care and, on the other hand, small offices providing primary care and dispensaries (Sultan, 2014). At the level of teams and firms,

it is the assistance of an expert to initiate the process of quality improvement which is of crucial importance. In hospitals, the commitment of management and the creation of commissions and working groups are necessary and, at the central level, the regulations and formal structures ensuring the management of the system and the motivation and commitment of all parties are essential.

The appropriate involvement of the various stakeholders in health care is another characteristic of quality improvement systems. Overall, a distinction can be made between health care providers/professionals, patients, paying agencies and policymakers and managers responsible for health policy, who are the actors in quality improvement. The contribution of each party is valuable in light of its specific characteristics and strengths (Whitehead, 2014).

The role of the various parties involved in the quality improvement system should be defined in the most concrete way possible. Health professionals and institutions should set up "internal quality improvement systems" in which the tasks of identifying quality issues, developing guidelines, evaluating care and implementing change is primarily the responsibility of the profession or institution concerned. However, these internal systems must be public and transparent to third parties, not only at the level of the plans but also at the level of the results of activities and measures related to quality assurance. To do this, it is possible to regularly publish a "report on quality improvement" (Williams, et al 2016).

Patients, maintaining their health and well-being are the reason for care. Their point of view should be taken into account when delivering care and in the quality improvement system. They should play a role in the internal quality improvement system, but they can also, through the organisations that represent them, carry out an "external" assessment of the Professional Quality Improvement System and health systems. Patient knowledge (care requirements, priorities, expectations, view, health status, quality of life, experience,

claims, satisfaction, assessments, etc.) at all phases of care aspect is very effective for recognising quality concerns, set directions, and assess and enhance the real care given. This knowledge must be gathered commonly and systematically (by group interviews, surveys, assessments, complaint managing processes, etc.) (Whitehead, 2014). Patient organisations would also contribute to external assessments of quality development systems for health institutions and experts.

Paying agencies should contribute to the internal quality management system by providing data on specific aspects of the provision of care (for example, analysis of the cost-effectiveness of providing care and identification of unsafe and unnecessary procedures and care). Their role will be to require health professions and institutions, in all contracts with health care providers, hospitals, medical offices and organisations that include health care providers, to implement a system. It is also the responsibility of the paying agencies to provide the necessary means, including budgetary means, for such a system to be set up effectively (Yin, 2014).

Policymakers and managers responsible for health policy will be involved at the national and regional levels as well as the medical institutions and practices. It is up to the decision-makers to put in place the legislative and regulatory framework necessary to support the system of health professions and institutions, and the support structure that goes hand in hand with them (commissions, committees, auxiliaries, etc.) (World Health Organisation, 2016). It is imperative that the management teams of hospitals and healthcare organisations play a leading role in setting up the system. This includes the creation of support structures, the collection of data, and the provision of training and specific staff in order to improve the quality and availability of resources for the activities involved.

An important dimension of quality improvement systems is the creation of the necessary conditions for the creation, implementation and maintenance of such a system. In fact, this dimension covers the tasks that, in the improvement of quality, naturally fall under management (Mertens, 2014). These conditions are as follows:

- Policies: legislation and regulations issued by the health authorities; definition of the missions and policies of professional bodies; teams of institutional managers creating a framework for quality improvement, etc.

Structures: formation of committees and commissions whose priority is to encourage activities contributing to the improvement of quality, etc (Middleton, 2014).

Formation of a committee whose mission, if necessary, is to check the compatibility of the planned systems and tools with the ethical requirements (Mitra, 2016).

Resources: provision of staff for specific tasks involved in quality improvement; providing (additional) resources, in time and money, for health professionals and medical teams/practices; provision of training on quality improvement and provision of experts to support the implementation of the system (Morgan, 2014).

Practical guidelines are recommendations that are developed systematically to help practitioners and their patients decide on appropriate treatment based on specific clinical parameters (Oleske, 2014). The effectiveness of the guidelines in inducing a change in clinical practice and affecting patient outcomes depends on the methods used to develop, disseminate and apply them.

The use and promotion of practical guidelines have expanded considerably in the area of care since the early 1980s (Raghupathi, and Raghupathi, 2014). Many countries have initiated programs for the systematic development of guidelines. The Swedish Council for the Evaluation of Medical Technology is implementing a continuous process of developing guidelines based on the systematic study of the technical literature. The guidelines of the Institute of Health Research and Policy Research are also based on

114

scientific medicine and are published simultaneously as a version for professionals and another for patients.

The Mauritius National Health Service has set up a Center for Reviews and Dissemination (CDR) to process and disseminate specialised literature. The guidelines should be developed first in the most important areas, according to the prevalence and severity of health problems and in accordance with national health policy priorities (Ragin, 2014).

There is evidence that the guidelines improve the process of providing care, but their effects on patients have not been established with a high degree of certainty. They are more likely to have an impact if they are adapted to suit local circumstances: national guidelines are better respected than international ones and the adaptation of a directive at regional or local level has all the more of scope that it is disseminated by the people who have played a decisive role in the adaptation process (Robson, and McCartan, 2016). In addition, the guidelines are best applied if they are disseminated through active educational methods (training visits and opinion leaders) and applied in such a way that they are brought directly to the attention of the doctor (computer reminders specific to a patient). Experience also shows that multiple interventions and decision support are likely to influence medical practice. It seems that, in practice, national consensus standards and declarations have little effect. Although health practitioners are well informed about the guidelines and believe they are following the recommendations, the changes appear to be minimal in practice (Mitra, 2016).

The quality of the guidelines is the result of several factors. It is imperative that the guideline development process be systematic and transparent and that all stakeholders be involved (Scott, 2016). Recommendations should be clear, include well-defined populations and clinical circumstances, and be based on the most established evidence. The guidelines will be all the more easily accepted as they have been developed with the participation of both the experts and their future users. It is impossible to produce valid

guidelines without first conducting a systematic review of the technical literature. All recommendations in a guideline cannot be supported by randomised controlled trials, which are the best evidence (Smith, 2015). It is, therefore, necessary to resort to other evidence: observational studies, other controlled studies and expert opinion. It is the users of the guidelines who appreciate whether the scientific validity of the recommendations they contain is established in a clear and systematic manner. Exceptions to recommendations should be indicated in the guidelines.

The importance of the public health problem covered by a directive and the means available to treat it should be measured (Smith, and Koppel, 2014). The guidelines should not only take into account the relative effectiveness of the proposed treatments, but also their cost-effectiveness. Any directive must be reviewed whenever new elements are identified in the field covered or when new medical technologies are emerging. For this purpose, a systematic method of updating the guidelines is essential. National and regional databases will be needed to continue to develop mathematical models and to ensure the maximum cost-effectiveness of computer systems (Schembri, 2015). To provide practical tools for decision-making, guidelines should be stated in clear language and be in an easily usable format. Ideally, health service users have access to a patient guideline that is easily understandable and a more detailed one for professionals. For caregivers, it is vital that guidelines are easy to find and can be readily referred to during consultations.

The groups for which the guidelines are intended should be carefully studied and their distribution methods should be compatible with their adaptation. Patients and the media can promote the guidelines effectively. Under ideal conditions, guidelines become an integral part of quality improvement systems. The impact of the guidelines on the improvement of the procedures of care, and in particular on the results in terms of health, should be systematically monitored (Schoville, and Titler, 2015). The knowledge provided

by this monitoring is particularly useful in the ongoing process of updating and implementing recommendations for clinical practice.

Doctors were concerned about the possible use of the guidelines in court proceedings. This issue has been raised in several countries. The general view is that it is unlikely that they will be used to the exclusion of any other evidence to judge misconduct unless they are so well established that a responsible physician would not fail to comply with them. Malpractice is also appreciated in light of the usual practices and the particular case of the patient. An open discussion on the value of guidelines in the forensic field must engage in all countries using them (Smith, and Koppel, 2014).

Mauritius has tried to use guidelines in health care contracts. This requires that these guidelines include indicators on the organisation, processes and outcomes of care. Most guidelines lack indicators and the procedures for writing them are different from those for which the indicators are designed. To use contractual guidelines, it is important to understand that a separate agreement on quality indicators is usually necessary (Ryan, 2015).

Technology assessment is used to assess the effectiveness of the methods of care. Prevention, diagnosis and treatment methods, both existing and new, can and should be evaluated. The effects of many common health care interventions have never been formally evaluated in comparison to placebo or lack of treatment (Scott, 2016). When the Oxford Perinatal Research Unit evaluated the technology used during pregnancy and at birth, it found that only one-third of the most common interventions provided a tangible benefit to the mother or child. The usefulness of most of the interventions could not be demonstrated and it turned out that more than 20% were harmful to the health of the mother or baby, or both.

Technology can be assessed in three stages: before it is marketed in selected patient populations, usually in a highly controlled environment (technical feasibility), in the early

stages of its introduction, where it is used by practitioners qualified in a specific environment for a larger population (theoretical efficiency) and in undifferentiated populations and different environments, its implementation being entrusted to practitioners more or less familiar with this technology (practical efficiency) (Shortliffe, and Cimino, 2013). Technology that works well in an optimal situation can be ineffective when it is used in real-life in the health system. Finally, the question of economics (cost-effectiveness) is worth asking: effective technology can be so expensive, in comparison with other options, that its use cannot be generalised.

When using the results of an evaluation to improve quality, the best solution is often to refer to those obtained in a real situation (practical efficiency). Instead of basing judgment on data from individual studies, systematic surveys accumulate available information. Technology assessment increasingly includes economic analyses comparing the cost-effectiveness of different treatments. It also provides guidance on how to use a particular method, but it is rarely enough to make a decision on its own (Shortliffe, and Cimino, 2013). Data from technology assessment should be applied to the situations in which they will be used and judgment of value is often necessary. The results of the technology assessment can be incorporated into the recommendations for clinical practice.

Mauritius has his own cells for technology assessment in health care. These cells work together to produce and disseminate information on theoretical and practical effects as well as on the efficiency of health interventions. As part of the international collaboration within Cochrane, systematic studies of treatment effects are conducted, disseminated and updated as new knowledge becomes available. These efforts deserve strong support as they provide valuable information to maintain and even improve the quality of care (Smith, 2015).

The design, choice and use of quality of care indicators are of interest to health service providers and consumers and to paying agencies (Middleton, 2014). These tasks are

executed optimally when they are performed jointly by all these actors. A good indicator is easily understandable and based on a scientific approach; it focuses on health outcomes and is ethically acceptable. It should be measurable as part of routine practice and be amenable to use to control and improve care services. The battery of indicators used to monitor quality care for a given health problem, in an institution or given clinical circumstances, must be complete in the light of the objective pursued (Mitra, 2016).

The development and selection of quality of care indicators should be based on information about both the effectiveness of interventions and the current level of health system performance for which the indicators are designed. The traditionally used goal-setting method in health care was exclusively about maximum performance (Raghupathi, and Raghupathi, 2014). For example, in the treatment of diabetes, the goal is to accurately control the amount of sugar in the blood estimated by the normal level of HbA1c. This sign is not observed yearly for all people with diabetes and just a small part of these have a percentage of HbA1c less than 7% (Ragin, 2014). WHO (Europe) has been active in explaining common signs in different areas of health care. Quality improvement software has been established for the cure of diabetes and hospital-based infections. With the support of these methods, a hospital can compare its particular outcomes to the best outcomes (benchmarking) and attempt to identify how the care it presents could be as good. The program, in which the system for the sound design of an information system has been observed, is an effective example of this calibration approach (Middleton, 2014).

The Medical Audit Advisory Groups in Mauritius, support health system units to explain their particular quality systems, comprising for the growth of local quality signs. The designing procedure of signs has been quite slow and boring, and the signs are so variable that comparisons between units are not possible. Equal experience from Finland

portrays that different primary care units have established their particular systems to observe patient gratification.

Health needs, and produces, large amounts of information. Systems for collecting, capturing and retrieving this information vary according to available means and historical evolution. Very simple methods of collecting and analysing data make it possible to obtain high quality. Several prerequisites must be met for existing information systems to be used effectively regardless of the methods employed (Robson, and McCartan, 2016).

Health status signs observe the quality of health care systems as a whole, while they must define service planning. Wider use must be made through indicators in relation to the intermediate health policy aims (Sultan, 2014). Data gathered as part of the routine must be applied as a quality sign whenever probable. Data collection must be easy and cheap and give quick answers to questions. Information systems must be user-friendly, and health providers are capable to extract the necessary data by themselves.

Indicators in health system units are observed by current patient record systems. Not all units are computerised, and those that are not, do not essentially record all patient knowledge in computer. Some software publishers currently comprise modules in their plans that support end users to review their data (Smith, 2015). However, it will take a long time to establish and apply approaches to gathering information by paper files or during consultations.

When information is produced for statistical purposes for a country, primary data process should be capable to apply their particular data in their quality development procedures. Once summary data have been compiled, the data must be returned rapidly after processing in a proper form to the units giving the actual figures, favourably presenting them the chance to compare their outcomes to those other units. Processes can be recognised for data that is needed to be compiled, but for those that are non-compulsory, the outcomes must be published without a sign of the producer (Weber, 2015). Important

self-valuation applying signs and the growth of networks between health centres for voluntary data exchange must be motivated. It is necessary, in all quality work, to assure the privacy of all data.

Simple access to present medical data is a compulsory quality aspect. Common libraries give just a part of the essential information. Modern approaches of retrieving data by electronic search modules, CD-ROMs and the Internet are becoming further extensive, particularly in large health centres (Sultan, 2014). Healthcare experts require simple access to medical knowledge at their particular workplace. They must be capable to consult information sources throughout their clinical work. The staff Caregivers must be presented with enough training to apply modern data retrieval systems. Patients should also have access to effective health care data in a language that is accessible to the inexperienced (Scott, 2016).

The patient's point of view is an irreplaceable compass for assessing whether the care service provided is suitable or not (Smith, and Koppel, 2014). Therefore, the priority should be empowering patients, informing them and helping them to participate in decisions about how services are delivered. Social, cultural, ethical and political developments have given rise in Europe to a movement that aims to strengthen and respect the rights of patients. Some have advocated new and more positive concepts on patients' rights. A lot of work has already been done to better involve patients in decisions and the choice of care they need (Toussaint, and Berry, 2013). In order to reinforce this development, the WHO Regional Office for Europe has issued a "Declaration on the Promotion of patients in Europe "(Declaration on the Promotion of Patients' Rights in Europe). The scope and concerns of this statement reflect the aspirations of the public, who expect not only improved care but also more complete recognition of patients' rights. The statement embraces both the perspective of patients and that of caregivers (Yip, and Hsiao, 2014).

European Council of Parliamentary Assembly also observed the need for quality care and established suggestions on the quality determination in the area of care and clinical and biological assessments (Sultan, 2014). Its aim is to put in position a system to assure and enhance quality, particularly for medical care, and to make sure that care is presented in a humane approach, with due respect for the right of each person to secure social and health. It identifies that all people can contribute actively to this system. In 1992, the United Kingdom published a Patient's Charter to illustrate the rights and guarantees provision of care. This document sets national standards for major health services and provides sources of information to monitor the performance of those providing services, such as hospitals and primary care services (Weber, 2015). The Department of Health (Health Department) produces statistics (rankings) on the various institutions annually to measure their performance and results. This mechanism also includes procedures for patients to file complaints and to express their point of view.

Clearly, ensuring that patients are involved at all stages and levels of the health service, and in particular that they participate in the quality assurance process, poses considerable challenges (Whitehead, 2014). The lack of consensus on the definition of consumer participation is demonstrated by the variety of methods used from one country to another and within each state. Consumers themselves will become more and more inclined to demand to participate in the control and evaluation of health care and to demand information on which to base their choice by exercising their judgment.

3.9.1 Methods of Patient Involvement

The question of what constitutes good practice in the provision, planning and monitoring of health services has been dealt with only incompletely. Consumer Involvement Initiatives in Clinical Outcomes, Yüksel, and (2017:66) addresses the issues rose by identifying good practices and stresses the importance of patient engagement for quality

assurance. One of the main reasons for taking this view into account in the evaluation of clinical auditing is that health professionals and patients do not have the same perception of quality and that they can look for different results. Participation can cover a wide range of activities, from minimal consultation to full and active participation. There is abundant documentation of participation techniques. For example, McIver has discussed in several books the various ways to get feedback from different user groups: inpatients and emergency department users; consultants; psychiatric services; primary care and care services outside the hospital setting (Weber, 2015). However, many of the techniques cited have only been subject to summary evaluations and the approaches explained are neither exhaustive nor exclusive.

3.9.2 Change Management

In a situation, managing change as dynamic as health care and keeping a change-responsive system is an extremely complicated procedure that relates a broad variety of interlinked association and the acquisition of the abilities essential to make such an environment (Raghupathi, and Raghupathi, 2014). Change is normally observed as a source of risk that works as a stimulus or a break and makes stresses within the organisation. Change is normally subject to natural confrontation until its performance is identified and threats are rapidly removed.

It is necessary to set proper aims and how to assess outcomes. It is particularly necessary that those whom the change concerns know why it has happened and is responsive to its possible advantages. Change planning involves a procedure of planning, implementing and assessing its impacts, and making successful communication systems to make a sure contribution at all levels (Mitra, 2016).

In order to achieve the objectives, a planning, implementation and evaluation strategy must be developed and effective communication established (Middleton, 2014). This strategy must comprise the policies that govern change and put in position the system to obtain the aims. There are different critical aspects that will impact the success rate:

Planning for change will be necessary to disseminate this idea and study it in order to empower those who participate in the change (Mitra, 2016). The nominal process has very often resulted in a consensus on objectives and shared responsibilities. Once goals are defined, it is essential to identify the factors that will make it possible to achieve them and those that will hinder them and affect progress. One of the systematic processes for recognising these forces is a famous approach identified as force field assessment. The procedure recognises and prioritizes positive and negative powers, which will pave the system for recognising major actors and stakeholders and make the action plan to strengthen positive forces and deteriorate wrong impacts (different studies concentrate on nominal procedure and force-based assessment) (Middleton, 2014). Early involvement of key stakeholders and stakeholders will ensure that change has been successfully introduced and that new practices have been accepted and integrated by those affected by the change. It is by understanding the forces that drive change and those who oppose it that project leaders will be able to deal more effectively with the concerns and uncertainties that change may cause. Conversely, this understanding will also recognise the stakeholders who will support the change process and champion the "product". It is important to involve health care providers and consumers (Yüksel, 2017). Effective communication is the key to smooth introduction of change; hence the urgent need to be able to quickly tell who needs what and when. This is a delicate operation that can keep away "blockages" because of the concern and "passive" coordination. Making an effective communication system cannot increase coordination but also encourage the end product by enthusiasm, openness and participation (Weber, 2015).

3.9.3 Evaluation of Quality Improvement Systems

An internal assessment, quality development and maintenance are performed by the probability of an external audit, which is in the best intention of patients, paying agencies and health care officials. As most nations have a long tradition of professional skills, the assessment of health institutions is still not broad (Sultan, 2014). External assessment of staff and organisations must complement internal assessment and constant quality development. The criteria for performing the assessment must be made through qualified experts, comprising the peers of those to be assessed. These criteria, with the system under which they will be used, must be transparent and the approaches by which they are used must be validated and reliable (Whitehead, 2014). Different nations just review professional ability at the time of initial acquisition, but few nations have established processes for the renewal of licensure for particular careers. This accreditation renewal process may comprise one or further assessments to review information and abilities or be supported by contribution in continuing medical education or other officials actions. It may comprise systems to enhance the professional ability of those who do not fulfil the needed criteria (Smith, and Koppel, 2014).

The Quality Improvement Report is a document containing all the essential information gathered during internal or external evaluations (Toussaint, and Berry, 2013). Its shape is variable, according to the methods and principles followed.

A clear and regular inventory of the main aspects of quality enables a health organisation to assess whether it has used its resources to improve the quality of care and service provided to patients. When the evaluation shows that certain objectives have not been achieved, it may submit recommendations for appropriate changes that will be incorporated into the quality improvement plan developed later. The level of detail of the evaluation and the manner in which its results will be communicated to staff, patients and

other interested parties are decided by the organisation that is the subject of the evaluation (Williams, et al 2016).

The requirements of accountability, disclosure and confidentiality should also be taken into account when presenting the results of the external evaluation. If an organisation agrees to submit to such an assessment, it is clear that results belong to him and he is free to publish them or not subject, of course, to appropriate protection of the confidentiality of the patient. An agreement should be reached beforehand on the scope of the evaluation and the means to be used to disseminate its results outside the body on which it will be applied. The results should be published in a collective format and as anonymous data. Mauritius should ensure that appropriate mechanisms exist for external evaluation, in order to assess both the competence of health professionals and, on a voluntary basis, health organisations. External evaluation can be done in a variety of ways, including certification and accreditation (Yüksel, 2017). Public health care faces a number of challenges. A large number of people in queues, unsatisfactory performance of professionals and low effectiveness, in many cases, reinforce the idea of low efficiency. Pioneer, the Unified Health System has much to offer patients with different conditions and needs (Whitehead, 2014). However, it is necessary to overcome these obstacles so that it is feasible to optimize the whole process. With this, hospital management needs to work so that everything can go off the paper. The use of appropriate strategies makes the difference at this time.

3.9.4 Main Processes of Attendance

When the team does not know which process should be implemented, it is common for everything to become less efficient. The result comes in the form of a long waiting time for care, as well as patient dissatisfaction in general (Williams, et al 2016). To address this issue, it is best to standardize all processes, from initial contact to the completion of

the query. It is the case of establishing the need for screening, determining which points cause a patient to receive urgent attention and which ones to wait, according to priorities. It is also necessary to determine how marking of appointments, the conduct of examinations and even of surgeries occurs. This helps to create a treatment that is egalitarian to patients and efficient to the staff, avoiding rework or difficulties caused by disorganisation. The communication must be clear and must be constantly reinforced, keeping the flow as expected (Yip, and Hsiao, 2014).

3.9.5 Employ Technology in the Tasks

One of the best ways to standardize processes and make everything follow well-defined parameters is by using technology. This is still a poor point in public health care, but it is important to change the outlook to improve the quality of patient care. Systems for automatic appointment scheduling speed up this task, as well as the use of options to confirm presence. Thus, it is possible to decrease the patient absenteeism rate. Tools that generate automatic passwords assist in sorting, while those who store personal and medical information for each patient encourage continued health care (Weber, 2015). There are also benefits in such issues as rotating ICU beds or communicating with other units to make a better distribution of people. Especially in highly complex networks, these elements facilitate work that otherwise runs the risk of losing efficiency.

The humanised care has everything to do with patients feeling at ease, welcomed and really understood in the health environment (Sultan, 2014). This is in opposition to the mechanic and with little consideration of specific needs, which usually happens in the public network.

This is also a matter of ethics and trust, improving patients' perceptions of what each specialist and employee can offer when they need it most. Humanised care, therefore, contributes to patient satisfaction, stimulating them to take care of health in a continuous

way. This also favours the relationship with the professionals and should be something that starts early in the beginning. Concrete attention must be paid to how the patient feels, what his or her background is, and what his experience is in the hospital (Williams, et al 2016). Using previously stored information, for example, is a great way to prepare for a consultation and then make it better. Everyone should be prepared to attend to each patient according to their needs, contributing effectively to the quality of health.

3.9.6 Capable Continuous Contributors

For the tasks to be performed correctly, from screening to consultation, training is indispensable. All staff must undergo training that takes into account the steps in the process, ensuring that they are ready for service (Williams, et al 2016). The point is that public health care is often weakened precisely by the lack of preparation for these steps. The more organisation, the better the use of financial, technical and human resources. Just as important as conducting training is ensuring that it is relevant over time. That is why we must invest in continuously training all employees so that best practices are always employed.

Lack of personnel can make a process more complex and less effective. As these results in patient dissatisfaction, one must think of the correct team dimensioning. Make a cross-reference between the services provided, the average volume of demand and the needs with greater urgency and priority. If the queries appear in greater volume, the team should have a greater focus on the attendance (Yüksel, 2017). However, if the hospital is a reference centre for highly complex surgeries, the priority of this element also requires a good sizing of people available for such activities. Such relocation avoids employee overload and helps ensure that all people (patients and employees) receive proper attention. At the same time, it helps to avoid a low occupancy rate, which is caused by an oversized team (Williams, et al 2016).

Although everything is properly structured, there is always something to improve. Knowing the perception of who is served and who helps in the continuous optimisation of parameters. Therefore, one of the strategies includes the collection and analysis of feedback. Try to understand people's experience of how things work by finding points that need to be improved (Toussaint, and Berry, 2013). This action leads to a strategic gain in relation to the performance since it will increase the satisfaction of all those involved. As this achievement is precisely one of the great difficulties, the use of feedback becomes even more relevant. Moreover, the use of this tool also has to do with the humanised approach, giving voice to the largest stakeholders and those involved in the whole process. As a consequence, there is better targeting of optimisation actions, improving the use of resources. From the application of these strategies, the trend is the improvement in public health care. With this, they gain patients and professionals, leading to much more effective care.

3.9.7 Identified Concept: Introduction of ISO systems in health care

Guidelines for implementing ISO 9000 quality management systems in the health care sector, published by ISO (International Organisation for Standardisation) on 20 September 2001, constitute the first document of the type "Agreement of International Workshop "(IWA). Quality Management Systems - Guidelines for Process Improvement in Health Service Organisations, is available at a price from ISO National Institutes and the ISO Central Secretariat. Based on ISO 9004: 2000, Quality Management Systems - Guidelines for Improved Performance, the Guidelines contain much of the text of this standard, supplemented by particular direction for its implementation in the health care sector (Sultan, 2014). The document gives a structure for the design and development of

process-supported quality administration systems through health service institutions. These directions, which are voluntary implementation, are not focused on accreditation or certification.

ISO (International Organisation for Standardisation) is a global federation of national standards bodies (ISO member bodies). The growth of International Standards is normally entrusted to ISO technical committees. Each member committee interested in a study has the right to be part of the technical committee created for that purpose. International organisations, governmental and non-governmental, in liaison with ISO, also contribute to the work. ISO coordinates closely with the International Electrotechnical Commission (IEC) on electrotechnical standardisation (Williams, et al 2016).

The processes implemented in the preparation of this document and those for its updating are mentioned in the ISO / IEC Directives, Part 1. In considerable, particular approval criteria needed for the particular kinds of ISO documents must be observed. The focus is made to the fact that some of the aspects of this document can be the subject of intellectual property rights or the same rights. The ISO cannot be held responsible for not having identified such property rights and warned of their existence. Details of references to intellectual property rights or other similar rights identified in the development of the document are provided in the Introduction and/or in the list of patent declarations received by ISO (Williams, et al 2016).

The trade names if any, mentioned in this document are given for information, for the sake of convenience, for users and cannot constitute a commitment. For justification of the meaning of particular ISO terms and expressions about conformity valuation or for any knowledge regarding ISO's adherence to the WTO's policies on technical issues to trade. The aim of this International Standard is to explain the generic views essential for care continuity. Care continuity is an essential element of quality and safety of health care, and semantic interoperability is a necessary need for care continuity (Weber, 2015). The

concepts needed for these purposes should represent both the content and the context of health services. Health care is provided through activities in clinical processes and health care. These types of processes reflect the interaction between the subject of care and health professionals. A clinical process ensures continuity of the point of view of the subject of care. To achieve the concepts of continuity of care, a number of basic principles of management, resource processing and administration are also needed (Yüksel, 2017). The concept system for continuity of care defined in this International Standard is based on a clinical point of view, itself based on a clinical process. It defines its constituent concepts and descriptive terms for all types of health care, with particular reference to the continuity of care, on the patient side. This International Standard will establish a common conceptual framework that transcends national, cultural and professional barriers (Whitehead, 2014). The overall objective of this International Standard is to provide a comprehensive conceptual basis for the content and context of health benefits. It should be the foundation for interoperability at all levels within health care organisations and for the development of health care information systems. These concepts are intended to promote continuity of care in the context of health care that is part of clinical processes, and to allow the use of health care information for other purposes, such as secondary use for monitoring and control of health care and knowledge management (Robson, and McCartan, 2016). The main activity of the health care field is the interaction between the subjects of the care and health professionals. This type of interaction takes place in the context of clinical processes and health care and is the rationale for the process approach of this International Standard. In order to represent both the clinical content and the clinical context, this International Standard is based on a clinical point of view, itself focused on a clinical process that is the main concept necessary to achieve continuity of care. In order to promote continuity of care, this International Standard also proposes to include detailed definitions and conceptual relationships regarding the clinical,

management, and resource aspects of health services. In practice, this International Standard is intended to be applied whenever requirements for health care information are specified. This will cover all levels of specifications in development (Mitra, 2016):

This International Standard is based on the 1948 World Health Organisation (WHO) Declaration of Health: "... health is a state of complete physical, mental and social well-being, and does not consist of only in the absence of disease or infirmity (Ragin, 2014). In 1986, WHO added two amendments to the above definition: "a resource of everyday life, not the purpose of life" and "health is a positive concept emphasising social resources and personal and physical abilities "? In the WHO International Classification of Functioning, Disability and Health, the concept of health is more specifically classified. The theoretical model identifies the functional components of health: organic functions, anatomical structures, activities and participation, as well as personal and environmental factors. This International Standard applies the Health Model, which is based on the Health Declaration (Mitra, 2016).

In this International Standard, the word "health" is not used as an isolated term for any concept falling within the scope of this International Standard. In many terms, the word "health" is used only as a qualifier. This use as a qualifier means that the concept represented by the term is related to the condition or state of health of the subject of care, often in relation to a clinical or health care process (Middleton, 2014).

Both health care and social care are intended to influence, restore and maintain health as understood by WHO. All kinds of activities that have a potential influence on any of the five components of health mentioned in the model can be part of such care. There is a clear overlap between health care activities and social care activities (Mertens, 2014). This International Standard focuses on the part of health care that (in most cultures) does not include social care. The role of the subject of care is defined in relation to health care, and the chosen terms come from this sector. Many of these concepts, however, apply to

the social care sector and, because of the cooperation of the different fields of health care; this International Standard should also be applied to social care (Raghupathi, and Raghupathi, 2014).

All parties interested in interoperability situations in health care are potential users of this International Standard on Health Informatics. This includes, but is not limited to, health professionals and teams, care subjects, health care managers, health care funding agencies, and all types of health care providers and community care teams (Yüksel, 2017).

3.10 DISCUSSION

This system of concepts applies to all health care information as well as to the development and use of health information systems. It can also be used in business analysis as a basis for organisational decisions and, more generally, in developments not intrinsically related to the use of information systems. This system of concepts is based on a clinical point of view of health care, namely clinical or health care processes. All other areas of health care intervention relate to and interact with clinical or health care processes (Yip, and Hsiao, 2014). As such, health care management aspects are identified in the areas of process management; similarly, the areas of resource support are therefore identified as the results of support processes.

This design, including related areas related to clinical / health care processes, is depicted in Figure 1.

The architecture of the concept domains
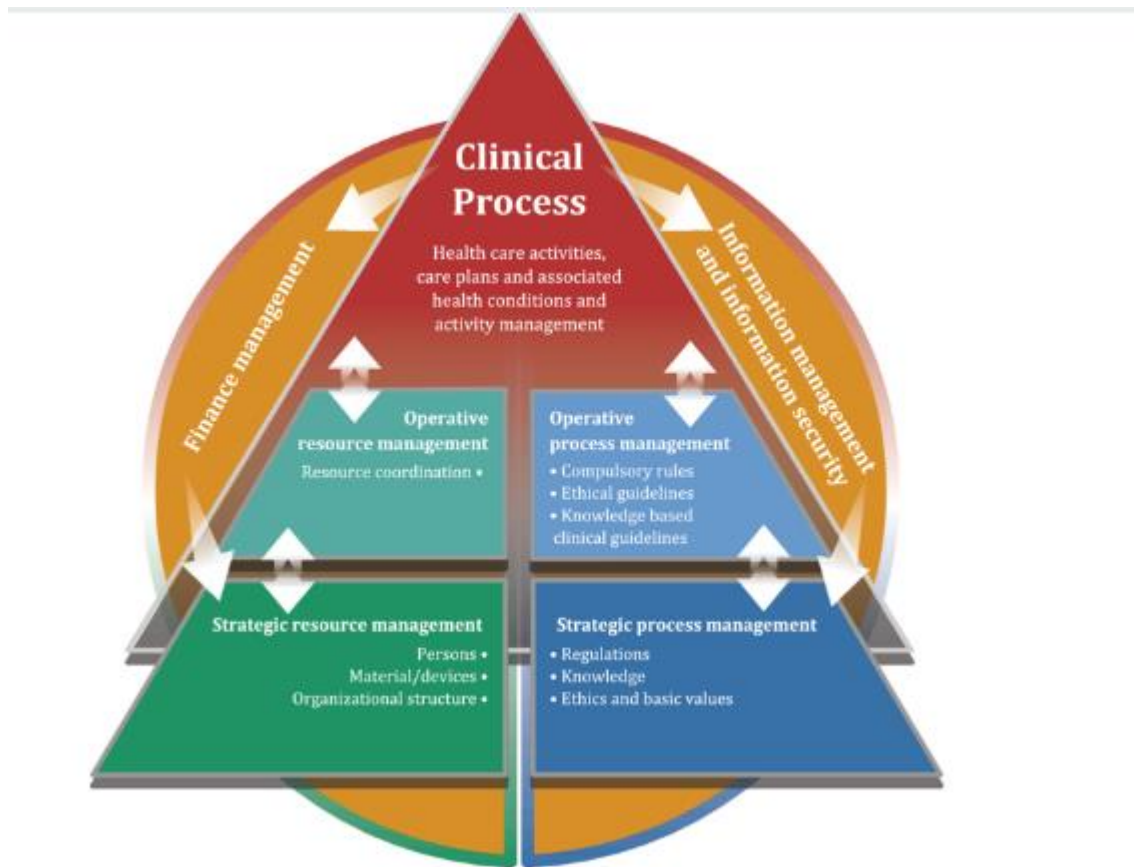
Figure 3.3 Architecture of the concept domains

(Weber, 2015)

In this International Standard, concepts are grouped in separate paragraphs. This

International Standard is structured according to the relationship between the business

areas and the information domains to be taken into account. Each of the concepts is

defined and described in a systematic way, and the relationships between the different

concepts are illustrated in models (Yüksel, 2017).

However, in general, people will look for examples of superordinate concepts at the

level of the corresponding subordinate concepts. To make it easier for the reader to

understand the relationships between these concepts, schemes based on model

conventions have been included. The use of concept models in this International

Standard is intended to emphasise the relationship between concepts. Attributes do not

belong to the domain of concept modelling. Attributes may be added during

implementation and fully comply with this International Standard. This International

Standard defines a system of concepts for different aspects of the provision of health care. The main activity of the health care field is the interaction between the subjects of the care and health professionals. This type of interaction occurs in the context of clinical or health care processes and is the rationale for the process approach of this standard. In order to be able to represent both clinical content and clinical context, this standard is based on a generic model of clinical or health care processes, as well as definitions and models of global concepts for clinical aspects, management and resources of health benefits (Smith, and Koppel, 2014). In practice, this standard covers the required definitions of concepts, whenever structured health care information is specified as a requirement. The definitions refer only to the conceptual level, and not to the implementation details.

From the analysis carried out, it has been identified that the objectives that were intending to achieve with this work: To know the perception of the nurses of the hospitals in Mauritius regarding the quality management system, according to the ISO standard; Investigate the strengths, weaknesses, threats and opportunities of implementing this standard in this hospital organisation. To achieve the objectives, a model of analysis was developed, which considers the relationship between the characteristics of health quality, hospital organisational culture, hi-tech cloud technology computing and the ISO standard system, for the development of continuous improvement in the organisation. In order to understand the implementation of the ISO 9001 standard from the perspective of nurses, the evolution of health quality and quality (concepts, continuous improvement, involvement and training of professionals), characteristics of hospital organisational culture (interaction of nursing culture and culture management), and, finally, the characteristics of the standard (advantages and disadvantages of its implementation) (Sultan 2014).

Quality awareness as a stakeholder in health development is because of the increasingly visible gap between the resources accessible for the health sector and the requirements of people and societies health services. In Mauritius, resources are improved to present maximum coverage and accessibility (Smith, and Koppel, 2014). Even in established nations, the desperate need to limit spending is observed as a considerable risk to the quality of current health services. This part reviews some of the approaches in which health services have managed with this question of quality, and some of the actions taking a position in the Western Pacific Region. With this description, the examples will demonstrate that the health sector has long portrayed an issue for quality in different approaches (Williams, et al 2016). In hospitals, physician tours and medical meetings can be seen as a means of ensuring that patient care meets the pre-determined biomedical and scientific criteria for good quality health care. At the same time, nurses' tours, like nursing supervision procedures, are designed to ensure that hospital care standards are respected in the field of nursing. Public health administrators have applied different techniques, like program reviews, monitoring and assessment of statistics and the application of health regimes, to fulfil the criteria of effective quality care, criteria fixed for every category of health care provider (Smith, and Koppel, 2014).

From the point of view of health care systems, the concept of quality is therefore hardly new. On the other hand, what is relatively new is the great demand for quality that comes directly from the public who, when they feel that more effective curative services exist, naturally do all they can to gain access. For example, the public tends to seek tertiary rather than primary services. Although the cost of these services is often prohibitive, the demand may be insistent, and in many cases may be met by better administration (Sultan, 2014). This puts pressure on policymakers and administrators to find ways to deliver and deliver affordable services in the most efficient way possible. As a result, the need for

more systematic and comprehensive methods is strongly felt, which ensures acceptable levels of quality by all participants in the health care process, providers, third-party payers, administrators among whom, of course, services. This is the definition of quality assurance applied to health. Also, in recent years, the health sector has begun to adapt industrial and commercial management techniques to meet the need for quality control and quality assurance. This study, looking at the different efforts of some countries in the Region in this area of health management, reflects their interest in making systematic quality assurance activities a part of the WHO program on the management process for national health development (Whitehead, 2014).

Most countries and areas in the Region apply in one way or another to improve the quality of services provided in their health service. In the second evaluation of health for all countries made explicit reference to one aspect of their health activities for all, related to the quality of care. In fact, only a few of the very small countries, besides those whose health care coverage is still the essential need, did not mention quality as an important concern. With regard to the countries ranking quality among their concerns, the spectrum of activities is very broad. Whitehead, (2014:88) shows the main types of activities that Mauritius is conducting in this area. It is not a question of showing all the quality assurance activities that go on there, but only those that are referred to in the health evaluation reports for all.

Today, declarations of political intent also reflect the sense that quality must be part of the criteria for health development. In August 1992, a national-level seminar will focus on identifying the first steps in establishing a quality assurance program at the national level. The Cook Islands, Kiribati and Samoa deal with the quality of care through nursing services. In the Cook Islands and Kiribati, hospital practices have been improved through the application of quality assurance approaches.

The use of quality assurance as a health management tool is to establish criteria and standards for the evaluation of the quality of health services, to develop and use protocols for assessing compliance with standards, and then improving services based on that assessment. A plan for the application of quality assurance protocols to the structure, process and outcome of health care services (Williams, et al 2016).

Consumer service delivery is a process that requires acceptance and use of these services, as well as their understanding and participation. "Result" means a change in the state of health or the future of individuals or communities. People can define this term by talking about longevity, comfort or satisfaction, notions applied to physical abilities. Positive outcomes include improvement, maintenance and restoration of health, ability to participate in social and economic life, pain relief, and satisfaction with care. In developing quality criteria in each of these elements of health services, it is important to bear in mind that 1) the interest of all participants in the health care process should be considered; and 2) that the structure, process and result must be considered together and not isolated from each other (Ryan, 2015). It must also be kept in mind that criteria and standards must be set for each level of the health care system. For example, if a patient suffers from a headache and a fever, is it sufficient from his point of view that he should be provided with remedies that will treat these symptoms at the point of the first contact with the system? From a public health point of view, however, particularly for highly endemic diseases such as malaria, it may be necessary for the first level of care to have the ability to diagnose and treat or guide these symptoms. From the biomedical point of view, there should also be a level in the system that can address problems such as brain tumours, which require more sophisticated diagnostic and treatment procedures (Ryan, 2015). Quality assurance protocols must, therefore, be specifically designed for each level of

care and each type of institution. In addition, it is particularly important that these protocols take into account the concerns of the different actors in the health development process. In addition to the procedures to be used for a particular activity, the physical and human resources to be employed are also derived by type and amount. For example, if during the course of a review it is found that staff with a certain specific qualification is not available, it will facilitate the explanation of problems that may have arisen in the program. Support services include technical, financial, logistical, educational, personnel and program information. Again, these areas must be expressed in specific terms, so that they can be monitored separately during implementation (Rubin, and Babbie, 2016). It is also necessary to specify the Community support required to meet the objectives of the program. This can be done in terms of technical commitment, social or cultural contribution, or in the form of a financial agreement with the community. Quality assurance is a process that identifies quality needs and ensures that these needs are addressed in a consistent and consistent manner. For this process to be an effective health management tool, it must be applied in a systematic and comprehensive way. Like all management tools, it will facilitate the allocation of resources to specific improvements in the health care of individuals and communities (Raghupathi, and Raghupathi, 2014).

3.10.1 The Key to Health Care

Oleske, (2014:89) attempts to show that the quality of care and methods such as the development of quality assurance protocols should be of great importance to the twenty-first-century public health agenda: a lot. The conceptual framework and the tools for its development can be adapted not only from those already existing in commerce and industry but also from those already existing in different ways in the sector of health. In most countries, the devices that make quality a part of healthy development is already in place. Policy orientation processes, managerial practices and training programs are

already being used to guide and support changes towards greater quality in the health system. Therefore, the next step in establishing quality as an element of development will involve taking some of the ideas and experience discussed in this document and incorporating them into policy, management and training plans. In particular, doctors and nurses, now in the course of training, should be perfectly familiar with the methods of quality evaluation and quality assurance (Ragin, 2014). This training should be followed by the establishment or improvement of feedback and learning mechanisms at both the community and national levels. The processes at work today at the national level can be greatly enhanced by the current recognition at the regional level that improving the quality of health care is essential for achieving health for all through care. Quality assurance policies formally adopted by all countries will strengthen national and regional commitment to equity in the delivery of health care. This, in turn, will provide a clear mandate to highlight the quality of care activities in the context of Mauritius programs to strengthen national health management capacity (Mitra, 2016).

At a time when the hospital is undergoing profound changes in relation to economic and social factors, the nursing department has been defined over time by legislation and/or recommendations in these three countries. People could see a willingness on the part of politicians and nursing leaders to recognise or have recognised the nursing service's mission, the hierarchical structure inherent in its operation, the different levels of responsibility and the necessary competencies that flow from it, and finally the participation of the nursing service in the management of the institution (Robson, and McCartan, 2016). Although in reality, the latter aspect is not always facilitated in some institutions, by the strategic place given to the direction of the nursing department.

In the institutions, the role is defined and not always exercised, which only reinforces the impression of unclearness in taking account of the department or in the place that it takes or wants to take in management. Wants to take can be explained by the fact that, in the

new hospital governance, statutory, the authority finds more and more legitimacy in the ability of leaders to carry out transversal actions, involving more independent actors, more qualified and more willing to demonstrate their capacity for initiative (Raghupathi, and Raghupathi, 2014). People can, therefore, ask themselves whether the nursing department has sufficiently developed its capacity for autonomy to exercise its creativity. Governance by cluster or management unit that mobilizes administrative, nursing and medical staff on the same objective can be an opportunity to demonstrate the department's ability to share a common project.

3.10.2 Quality of Health Care Management

With the evolution of health care management in organisations and the delivery of medical services on a large scale, there were enormous changes in work processes and productivity increase (Yang et al 2015). The intense use of technologies to aid mass production and the strong concern with the uniformity of the products gave rise to the activity of inspection, later organised as a department within the health care system. This period can be characterised as the first phase of the quality movement and the beginning of the activity aimed at this objective in a scientific and systematised way, using measures and templates with standard models in emerging health care systems. According to Khanassov et al (2014), the development of total quality control, cost quantification and the zero-defect programme in addition to reliability in medical sciences began.

Quality then became a matter of survival in the health care administration and an objective of higher managerial levels, from the beginning of the production chain, from the conception of the project to the finalisation of its services. This concept, according to McPherson and Pincus (2016), required a lot of attention in the manufacturing process and motivation of those who were involved in its realisation. This set a new course for the

quality assurance era when behavioural aspects were taken into account in the management of organisations since the instruments developed so far did not prevent and consequently solve the problems that caused poor quality and its repercussions on the performance of the health care organisation. It was, therefore, a still inefficient and ineffective process and subsequently, the concern with the costs of production and the incorporation of the concept of patients' satisfaction represented a substantial breakthrough.

 The market dispute, with increasingly demanding clients, supported by the creation of patient protection laws and codes, and especially the need for hospitals to produce more and better at lower costs, has given a new breath to quality s. With the increase of competitiveness and technological level, the search for quality has become an important differential for health care organisations. The application of the quality control programmes gave rise to the advent of ISO certifications, which incorporate rigorous parameters of evaluation of the organisational performance and link (Mitra 2016). According to the classification of the evaluated organisation, there is a possibility of obtaining a greater volume of resources and market expansion (Yang et al 2015). In its contemporary managerial approach, Strategic Quality Management involves the use of behavioural techniques, the use of the concept of internal and external clients, whose satisfaction is the main objective, the formation of teams that think and execute the projects, and the emphasis on processes and workflows, from the proper organisational structuring.

Hence, the quality has become an objective pursued by the strategic leadership of organisations, becoming an object of interest of the big corporations in the current days, both in the manufacturing sector and in the services sector. Nowadays, quality is seen as a set of attributes essential to the survival of organisations in a highly competitive market,

an object of strategic management, process leader, which involves strategic planning, goal setting and mobilisation of every organisation. According to McPherson and Pincus (2016), everyone agrees that the focus on the customer and services becomes the master spring of the vast majority of companies that intend to survive in the health care industry. The tendency of organisations to try every day more to satisfy the desires of clients changed the way they act. Just as the cultural change has brought great growth today the constant preoccupation with user satisfaction has promoted a radical change in the way employees act. The worldwide trend is for organisations to increasingly seek to improve their processes. Quality Management can be defined as a way to manage organisations in general so that the main and constant focus is always a continuous improvement, and the most important result under this management is complete patients' satisfaction.

The act of managing quality means seeking the assurance that the services provided are suitable for the use for which, it was designed. Going beyond the definition, quality management is closely linked to the model with which the organisation is managed as a whole as the quality management process is extremely comprehensive within the company and should, therefore, reach all of its areas. It is necessary, however, to make it clear that top management needs to be as involved as possible (Sultan 2014). One of the characteristics of hospital management is to organise itself in a way to reduce losses and, without increasing costs, to improve the quality of the service provided. The explosion of expenditures in hospital organisations and health costs boosted the development of these new managerial propositions, in a context of economic recession in developed countries that affected the policies to fight uncontrolled growth trends (Sultan 2014). In this context, hospitals are analysed not only as health care institutions but also as economic entities. There are not many alternatives for hospital administration

because there is an imperative need for efficiency in the conduction and internal organisation of these establishments.

An integrated health care delivery can be defined as an inter-professional health care system in which a therapeutic approach is characterised by a high degree of collaboration and communication among health professionals. It is imperative that an integrated health care system is an efficient clinical care method the extent to which clinical involvements, when applied in the area for considerable patients or populations, do what they are focused to do, that is, to keep and improve health, and to assure the maximum potential health gain from accessible resources at local levels. In this regard, Weller et al (2014) identified the concept of effectiveness comes to contain an intrinsic notion of the effect achieved, while effectiveness is only related to the fairness of the measure. For example, it is possible to have an effective treatment measure, regarding public health that does not achieve its goal because it is not accessible to the majority of the population that needs it. In Mauritius, a modern logic of health care is characterised by the return of the power of choice to the user, the quality of the act, of the product has gained an increasing dimension (McPherson & Pincus 2016). In the health care delivery system, the services can be taken as a cumulative sum of physician and patients interactions occurring in a social and organisational context and within the local dynamics of the health care organisation. It is significant for the health care system to assess quality beyond the expectations of the application of professional standards in practice.

Khanassov et al (2014) identified that the feedback and input of users give incentive views assessing the quality of health care services and helps the management in finding a balance between perceptions of the patients and various health care professionals. It is imperative to note that despite the fact that reforms have been stated in the health care system in Mauritius, no significant improvements have been

observed, and medical errors are continuously occurring in the treatment processes. Evidence of delays in the treatments and long waiting lines in care units are a norm in Mauritius health care system. To improve the health status of the population, and to effectively respond to patients' expectations about their well-being and health standards, it is essential to understand the relationship between patient's experiences and health care system.

In the Mauritius care services, links between quality of care and cost of care services have provided incentives for developing a set of clinical indicators based on the selected set of criteria identified through perceptions of patients and professionals in health care. The care service has undergone major changes in recent years, which regulates emergency care services at the primary care level. In Mauritius, care involves nursing participation in all these aspects, and as in any other area of care, it must be based on knowledge, technical training, and humanisation. Victim care at the emergency site is old and is derived from war experiences, where soldiers were treated with first aid at the battle site and then rushed to medical care far from conflict. Thereby, for reduction of both mortality along with morbidity, it is worth remembering that the team of the care service has a great novelty to attend cardiac patients when necessary, in the place or in the ambulance. It is performed by the nurse and electrocardiogram is obtained through a device called electrocardiographic, which was given by the Ministry of health and sends data to the team through a Smartphone.

3.10.3 Health Care Administration Approach

People are facing a difficult situation today. Our population is demanding more and more care. The concept of care is more and more extensive and no longer only concerns diseases and pathologies. The progress of science and medicine is accelerating, and on this side, we perceive that hopes are great and well-founded. Longevity, the undeniable

parameter of social and medical progress, is increasing (Whitehead, 2014). At the same time, the ageing of the population is leading to a natural increase in the need for care. The health sector is therefore inevitably forced to control its resources and budgets. This macroeconomic control can only be guaranteed at the cost of certain conditions: a balanced budget meeting the real needs of health and rational use of this budget excluding deviances of any kind in the allocation of available resources.

The current framework for financing the cost of care in industrialised countries implies that the reflection is based on axes requiring society to determine not only what it wants in terms of health care and equal access to health care, but it also raises the necessary question of common sense of the cost and effectiveness of care practices (Smith, and Koppel, 2014). In all cases, care needs to be changed so that they are coordinated between professionals and concordant with the progress of science, keeping in mind that each production unit must operate at the best cost. This requires that activities be clearly identified and defined for all professional categories and that each of the actors is employed and paid for what constitutes in the health system. However, is it possible to speak of a real health policy when the debate on Social Europe is just beginning and most European countries are stuck between increasingly restrictive rules of funding and expectations of higher users for the management of access to care and levels of results? The concept of quality must be integrated into this framework because, to the concept of price, are added the notions of reliability, relevance, the effectiveness of care provided in an ethical framework by competent staff (Williams, et al 2016).

As a result, the corporatism that still exists within hospital institutions should gradually fade away from the pooling of skills to achieve a qualitative objective that fits into a strategic plan shared by hospital executives as a whole and aimed at improving the efficiency of the service provided. One of the challenges of the hospital of tomorrow is to

innovate in terms of managerial structure and to reduce the divisions between healthcare professionals and other hospital players. By giving each of these professionals their rightful place in the management of transversal and participative projects, this will be possible. In this context, we are all facing a permanent change (Williams, et al 2016). This should not make us forget that any organisation is a human whole of which all the members are endowed with a faculty of thinking, that this plurality of actors defends particular stakes (that will not change) and that the hospital institution of which resources are scarce (still something that does not change and because it does not change) must, in order to evolve favourably to make the best use of all the resources at its disposal and, in particular, the thought of everyone whether it is innovative or conservative (Williams, et al 2016) . The process of organisational changes in some business enterprises has already been dealt with extensively in the academic literature. However, there is still a lack of deeper analysis of this process in the hospital context, given its specificities. Theoretical studies in this area have shown that there is great difficulty in developing processes of organisational change compatible with the current market competitiveness, including, among others, the computerisation process and the adoption of new management techniques. (Modaffari et al 2016). These changes, in turn, associated with the rules of governability, which define how access is given to the critical resources of the organisation by its various hierarchical levels. According to this rule, organisations would be more or less centralised, depending on the ability of each hierarchical level to define its high-value problems and access to critical resources to address them.

It is well known that the reversal of this framework will not be due to partial solutions, or only with the application of new resources. According to Lian et al (2014), the exclusive injection of resources will almost always result in greater waste, if not accompanied by new practices, necessarily based on social responsibility and renewed professionalism. Abdelhak et al (2014) also comment that the latter aspect refers to all professionals, not

only the leaders, which implies an urgent need to transform the culture that today permeates such organisations, expressed in general by professional practices with a limited commitment to the vision of organisations.

Due to this need to transform professional practices, some attempts have been made in the health area to seek management models that are alternative to traditional management models. The research is carried out to achieve models, in which the quality of the services provided the maintenance of the organisation and the satisfaction of the employees must be guaranteed. In turn, health service institutions, especially hospitals, have traditionally been organised in the light of classical administrative theories, which can be seen in the extremely rigorous structures with several hierarchical levels, centralisation of power and limited autonomy and responsibility at intermediate managerial and operational levels. Furthermore, Weller et al (2014) emphasised the need to invest in decentralising managerial approaches that focus on mechanisms that favour worker participation, decision making, and consensus building, interdisciplinary cooperation, and increasing accountability for organisational goals. Lillrank (2015) indicated with points that illustrated the managerial difficulties in the public health care service, among them the centralisation of decision making, lack of transparency in the allocation of resources, lack of mechanisms for social control, no concern with patients' needs. The assumption that the traditional form of hospital administration is ineffective not only to confront but even to problematise these issues. On the other hand, Chartier (2014) emphasises that one should not only blame administrative conditions for the problems of the public health care sector.

The inefficiency and institutional weakness of health organisations can have their causes in administrative devaluation or lack of managerial skills. Hence, the administrative dilemmas associated with political, financial, and cultural problems coexist. Therefore, one should not be making propositions of a managerial change in these organisations as

if they were magical solutions capable of solving everything. One of the critical characteristics of these administrations would be the absence of clearly defined objectives to guide management action. This makes hospital organisations move by punctual actions and because of the lack of a reference for the organisation's management, goal substitution occurs. In this case, the organisation tends to institute survival as its primary mission. Nowadays, the adoption of limiting measures or even prerequisites for the fulfilment of management positions is making it difficult for those individuals without previous training in health administration. The other line of propositions involves the decentralisation as cited by Chartier (2014) and one of the aspects that have drawn attention to the new discussions about hospital management and that of organisations, in general, is the need for decentralisation in decision making. Author has mentioned that one of the ways, by which, an organisation works with greater or less efficiency would be to decentralise decision making power, making them more autonomous in management and administrative ability. In other words, it is not enough for the manager to have the interest and the capacity to make decisions; and it is indispensable that he has the authority to decide.

In this sense, the responsibility of local managers for the performance of their organisations can only be charged if they are delegated the power of control over the human, material, and financial resources and means necessary to achieve the organisational objectives. Assuming that managerial training and decentralisation of decision-making power are primary measures for the transformation of managerial practices and therefore, another question arises about the health services performance. It would not be the case to think of the current models of management systems aimed at efficient and effective administration and the main aspect is to consider is to demonstrate factors, which leads an institution to centralise or decentralise its structure. Centralisation is the appropriate way to coordinate decision making in an organisation. All decisions are

made by a person and then implemented through action under direct supervision. Sultan (2014) presented the need for decentralisation by describing that all decisions could not be understood in a single centre or brain.

It follows that sometimes the information can be transmitted to a centre, but it may not be understood. It is difficult for the director of a hospital to understand or know all the flows and processes of an organisation even in the presence of information about processes and flow charts due to lack of time. Thus, Yang et al (2015) reinforce the idea that decentralisation allows the organisation to respond quickly to local conditions. This means that having decision makers in the places where events occur provides better services and results. Another reason pointed out by Chartier (2014) to develop decentralisation is that it constitutes a stimulus for motivation. Institutions can keep creative and intelligent employees longer; from the moment they have delegated the ability to make decisions. Motivating through delegation of power and allowing initiative is very important to the organisation.

3.11 SUMMARY

A systematic review of the literature has allowed the researcher to contemplate the efficiency of health care administration, wherein 15 studies were used to identify the factors, which are responsible for making an administrative system successful. As indicated by Lizzi et al (2017), the establishment of mixers in medical applications and the recommendation of water dispensers in the toilets to decrease the amount of fluid waste emerging from bathroom discharges of the patients. Lindenauer et al (2014) expressed that health care centres leaders showed that the measures gave an account of the Hospital Compare site apply a solid impact on improvement efforts and local planning. Additional, access to wellbeing records seemed to upgrade patients' view of the control and diminished or had no impact on patient anxiety (Wiig et al 2014). The observation stays rates are contrarily identified with hospital facility of bed size and that

clinics with a more prominent number of rural or younger patients have higher observation stay rates (Wright et al 2016).

Obermeyer et al (2014) delineated that those members are getting hospice care, contrasted and coordinated control patients not accepting hospice care, had significantly down rates of hospitalisation, emergency unit, and invasive procedures toward the end of life. Beside fundamentally reduced social insurance consumptions during the most recent year of life. While outcomes do not usually suggest causality between patient experience and quality and effectiveness of care, however, the satisfaction of patient was related to both the efficiency and quality of surgical care. Accompanied by the hospital that with greater patient satisfaction getting the shorter length of stay, lower rates of mortality, lower rates of readmission, and higher process quality (Tsai et al 2015).

Health care improvement relies on the concept of technical efficiency in the relationship of observed productive output to maximum productive output. For any set of productive inputs, there exists a theoretical maximum or productive output frontier. Availability may also depend on the type of care covered by the public health service network. Proximity reflects the physical or geographical accessibility of care and is associated with the previous dimension (Sultan 2014). The principles of integrated care can also be understood as a demand-driven response with the aim of solving or alleviating a range of problems facing organised health care systems, in particular as regards access to health care and quality of care provided. The fragmentation of services and the provision of care, as well as the inefficiencies inherent in the functioning of the system itself and the difficulties in cost control. The health models were developed by nurses with the aim of understanding the attitudes and values of the user as regards health and disease and for

effective health to be provided (Armony et al 2015). These models allow the patient to understand and predict the behaviour of the users, the health aspect, and the way in which they use the health services, participate in the therapeutic regimen, and take care of themselves. All in all, there are five essential elements to maintaining a continuous improvement of quality: the clients in the centre of the organisation; process management; involvement of people; the mastery of the innovation process and, finally, transformational leadership.

CHAPTER 4 RESEARCH DESIGN AND METHOD

4.1 INTRODUCTION

This chapter describes the study design and methods for sample collection Research methodology is a procedure aimed to investigate the research issue. Identifying the most effective research strategy is a vital part of any research as it helps the researcher to conduct research in an effective manner by implementing a particular research strategy. In addition to that, it has been stated that research strategy helps the researcher to use methods of data collection in order to support the arguments of the study (Guetterman, Creswell & Kuckartz 2015).

4.1.1 OPERATIONAL DEFINITIONS RELATED TO THE RESEARCH METHODS

Quantitative component: 2000 questionnaires were distributed across nine districts of Mauritius. The dependent variable was the overall quality of health care administration services rating according to the WHO. Alternatively, the independent variables include the following:

• Patients' satisfaction was defined by how convincing specific health care services are to the members of the public.

• ISO quality standards were the compliance criteria for health services management such as guiding health professionals in their lines of duties, ensuring that health care setups were accessible. It also ensured the hospital environment can sustain human health.

• Financial costs of the services that were offered in various health care systems.

- Workforce efficiency of various health care stakeholders in the accomplishment of their professional responsibilities.

- Infrastructure fitness for the purpose of rendering quality health care services to the patients.

- Adaptability to revolution requirements including flexibility measures that were put in place to address rising health care concerns and issues.

Qualitative component: It included interviews with representatives of nine focus groups of ten participants each. It was in the form of verbatim and words quotes and the transcripts were further recorded, coded, and thematically analysed.

In general, the researcher experienced in conducting interviews does not know the basic assumptions of a regression model. Similarly, researchers with advanced knowledge of econometrics do not know how to conduct participant observation. The combination of methods depends on a restructuring of the undergraduate and postgraduate curricula in order to ensure not only the regular and intensive provision of courses of quantitative and qualitative methods but especially a specific discipline on how to integrate them. In addition to the analytical benefits of triangulation, one has the technical gain for the researcher himself. Moreover, since there are few works that actually integrate different techniques, those interested in mixed methods also suffer from the absence of examples (Toussaint, and Berry, 2013). Moreover, the pedagogical literature in Mauritius is limited, which greatly hinders the effective integration of quantitative and qualitative techniques. The focus is on defining the concept, describing characteristics and identifying situations where the combination of techniques is analytically desirable. The research design summarizes the main recommendations of the literature and uses two examples to illustrate how the triangulation of techniques

can be employed. With this research, we hope to disseminate the use of mixed methods in research.

4.2 Research Methods

A research method referred the data collection methods, comprising the description of the research population, sampling frame, sampling method, sample size, data collection instrument, with the measures to assure data validity and reliability. Polit and Beck (2013) mentioned the research method as the approach researchers implement to make research and to collect and review related data.

4.2.1 Quantitative methods versus Qualitative Methods

The stress between quantitative and qualitative methods dates back to an ontological and epistemological debate within the Philosophy of Science. On the one hand, there is the positivist view that the methods and techniques of the Human Sciences must approximate those of the Natural Sciences. On the other hand, followers of interpretivism argue that Natural and Social Sciences are distinct approaches and therefore require specific methods (Ryan, 2015). Studying a chemical component in a laboratory is totally different from the investigation of social phenomena. For the interpretative position, there is a fundamental difference between the natural and social worlds: meaning. Therefore, social reality must be interpreted. The main component of the hermeneutic approach is the subjective meaning of actions. Before presenting the definition and potentialities of the multi-method approach, it is important to review the rationale behind quantitative and qualitative methods. For Rubin, and Babbie, (2016;107), quantitative data such as numbers and indicators can be analysed using statistics (frequency, mean, median, fashion, etc.) and reveal useful, fast and reliable information on a large number of observations. According to Scott, (2016:67), people

understand that both quantitative and qualitative techniques have potentials and limitations. In general, they are used for different purposes. The advantage of integration is to get the best out of each to answer a specific question (Schoville, and Titler, 2015).

The goal of science is to describe/interpret/explain/predict reality. Each approach has its specific contribution. The integration allows an unexplored area to be incorporated into the analytical model, favouring the construction of more robust research design. Scott, (2016:84) identifies two main approaches to method integration. One that combines mixed data-collection studies and another combining mixed data-analysis studies. The literature suggests two main arguments to justify the importance of integration, both data and techniques: confirmation and complementarity. In the confirmatory perspective, the more convergent the results observed using different types of data and/or techniques, the more consistent the results of the research. One of the main functions of triangulation is to ensure that results are not dependent on the nature of the data and/or techniques used. For example, suppose that in research on a particular topic, the researcher combines survey techniques, with in-depth interviews, documentary analysis, and focus groups. The more similar the inferences, the greater the consistency of their results (Rubin, and Babbie, 2016). Whenever the researcher identifies the existence of a puzzle in the literature associated with a divergence in the formatting of research designs and/or types of data, there is an important motivation to adopt a multi-method approach. On the other hand, in the perspective of complementarity, the objective is to consider the advantages and limitations of each specific technique and/or data type. For example, when analysing a large database, it is not possible to identify the values/feelings of the respondents. Each type of data and/or research technique will contribute a specific amount of knowledge about a particular object of study (Robson, and McCartan, 2016). The fundamental advantage of

integration is to maximize the amount of information incorporated into the research design, favouring its improvement and raising the quality of the conclusions of the work.

4.2.2 Quantitative Studies

Quantitative surveys are the most common means of obtaining consumer information. These are population studies and patient satisfaction surveys (Yüksel, 2017). Population studies are used to establish national and local health values and priorities and to carry out health audits of the population. The purpose of health needs assessment is twofold: first, it is frequently presented as a means of responding to the consumer; second, the results should be understood as measures of health status. However, using the information separately to plan an alternative care delivery device is not without drawbacks.

Patient satisfaction surveys are essential tools to know what consumers think of the service rendered. Satisfaction strongly influences an individual's decision to seek medical advice, compliance, outcome, and health status, and is useful for assessing the consultation and communication between the patient and the clinician. Surveys are conducted using several methods: structured self-completion questionnaires directed interviews and postal questionnaires. In 1990, WHO published a questionnaire on health surveys conducted through interviews titled "Measuring Consumer Satisfaction with Health Care" to facilitate and encourage consumer satisfaction by the Member States. The purpose of the standard questionnaire was, inter alia, to make comparisons between different population groups or countries possible (WHO 2016). Surveys have their limits in that their results frequently indicate that patient satisfaction is high but where they do not develop their point of view. It may happen that surveys do not reveal why they behave in a certain way and how they would like the service rendered to be improved.

4.2.3 Qualitative Studies

Qualitative studies are more likely to highlight topics of discontent. It is suggested that the evaluation of care and the efforts to maintain and improve quality benefit from the use of more appropriate qualitative methods to "open" a new area of research and data collection (in-depth interviews, targeted groups) (Middleton, 2014). Qualitative surveys allow buyers and suppliers to know the user's point of view and can ensure increased participant participation. Above all, qualitative surveys allow users to set an agenda for the study of the various topics, allowing them to address the points they consider important.

Future attempts to identify and thereby promote good practice in consumer engagement initiatives will depend on progress in three areas: developing consensus on what constitutes good practice, developing organisational infrastructure to assess existing practices and the emergence of new initiatives and the dissemination of these assessments to contribute to integrated strategies for defining and refining models of good practice (Ragin, 2014). This development must be supported by training measures to inform participants (health professions, managers and consumers) of the most appropriate means to obtain consumer participation that is both effective and acceptable to all parties.

4.2.4 Mixed Method

Schoville and Titler, (2015:23) explained mixed methods as a system for collecting, reviewing and combining quantitative and qualitative methods in similar research design. The main assumption supporting the multi-method technique is that the interaction between them gives effective analytical possibilities. According to Rubin, and

Babbie, (2016:67), mixed methods are the class of research where the researcher mixes or combines quantitative and qualitative research methods, approaches, views or language into single research.

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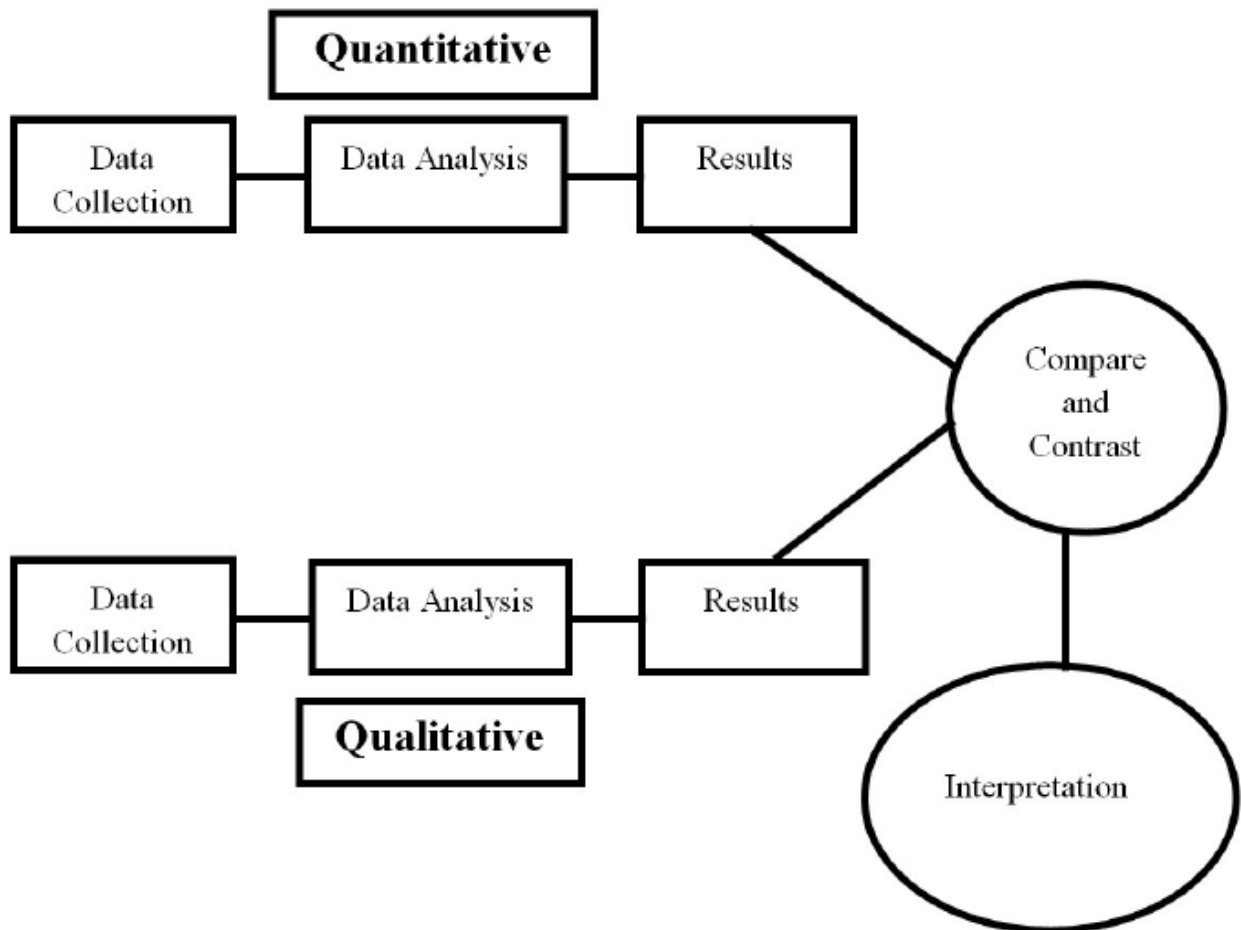
Figure 4.1 Mixed Method

With regard to the first step, a single research question must be secured that can be investigated by different techniques or two or more complementary research questions that can be investigated by different techniques. For example, it is possible to inquire what the variables that explain social mobility are. Initially, the researcher can use a regression model to estimate the impact of schooling on individual income. Second, he can use structured interviews and focus groups with the same sample or with another group to try to understand how opinions/feelings/ values vary in relation to the factors

that explain social ascension (Robson, and McCartan, 2016). In relation to the unit of analysis, it is important to define the basic unit of analysis of the research design. After that, the challenge is to guarantee its homogeneity against the natural tendency that different techniques privilege different units. For example, in a study of the impact of public prosecutorial independence on corruption, the unit of analysis is the institution itself. It is then possible to collect data on the institutional design of each case and then analyse descriptively and/or test hypotheses. In a second moment, the researcher can interview the members of the institution. Here, we have a new unit of analysis (Ragin, 2014).

The sample is a central element in scientific research. It is from this that the researchers collected information about different objects of study, select the variables analytically relevantly and conduct the research design itself. There are two main reasons for using samples: (1) time savings and (2) resource savings. In general, cataloguing information about all observations of the universe (census) may make some research designs unfeasible. For example, suppose a survey aims to examine the perception of union members about the performance of their leaders. Logistically, it makes no sense to interview all affiliates (Ryan, 2015). The research would be too costly and time-consuming. In addition, the computational effort required to work with samples is much smaller than those used to analyse large databases. Thus, whenever samples were correctly selected, the inferences produced were accurate, reliable and detailed. When the goal was to perform valid generalisations for the population, the randomness of the sample must be ensured in order to guarantee the equiprobability, that is, all cases have the same chance of being selected. However, the researcher was interested in carrying out a case study and/or comparison of a few cases, so that selection was not random, but rather guided by theoretical and/or empirical criteria (Scott, 2016). From the perspective of the integration of techniques, one of the analytical possibilities of sample

selection was to ensure that it was nested. For example, in a study of school performance, the researcher selected schools within a state/city, students from different grades and classes. At first, it can use variables related to the school (budget, teacher training, physical structure, etc.). Subsequently, it can collect information about the students themselves, either through standardised performance tests, through interviews and/or a focus group.

Each search method uses different ways of collecting the data. The interviewers were used some electronic device to record the audio of the conversation, in addition to notes. In a survey, the questionnaire was the required item to collect the information of interest. A multi-method search drawing cannot be different (Scott, 2016). In fact, it was desirable that items /themes/subjects be shared between different techniques. For example, include in a questionnaire an item that summarizes the idea, although generally, of the interview script. For Yüksel, (2017:55) the greater the level of overlap and/or complementarity of the items, the greater the integration level of the different research techniques. Finally, in relation to the strategies of analysis, the researcher maximized the harmony between the quantitative and qualitative logics. For example, when using a multivariate regression model to estimate the value of the dependent variable, the researcher was interested in identifying the impact of each factor on the response variable. One way to integrate the analysis strategy was to conduct a case study with the same objective. For that particular case, what were the variables that explain the dependent variable? Usually, these strategies were not integrated and end up being used independently. People recommended that researchers dedicated a lot of time, talent and energy to the development of the analytical strategy of their research designs; otherwise, they lost what was most beneficial in integrating methods (Yip, and Hsiao, 2014).

Sequential exploratory strategy design may or may not be theoretically oriented. Sultan, 2014:58) argued that this approach can also be used to test hypotheses and make generalisations for other samples. On the other hand, Yüksel, 2017:50) affirmed that this type of approach was especially suitable to develop new instruments of collection and/or to improve existing instruments. The typical example of this approach was the use of a focus group (quality) to inform the process of elaboration of the questionnaire (quantity). Sequential transformative strategy ensured a structure of methods for data collection and for results. Within this approach, we developed a method of data collection that involved a sequential or concomitant approach.

Another important dimension of the combination of methods was the level of analysis in which the data was collected. For Yip, and Hsiao, 2014:76) nesting referred to the degree to which different types of data were collected for the same actors, organisations or entities. That is, to what extent the data collected was delimited to a type of observation that belongs to a specific level of analysis. The classic example of nested data was information about student performance. The most basic unit of observation was the performance of the student, but in turn was nested in a particular class, a specific series and within a particular school (Whitehead, 2014). The school, in turn, integrated a county that was also nestled in a state. Hierarchical models, also called multi-levels, were the most appropriate tool for dealing with data of this nature. With respect to nesting search design from the perspective of combining methods, the typical procedure was to apply questionnaires and subsequently select some respondents from substantive criteria or randomly to participate in in-depth interviews.

In general, studies did not present sufficient information to understand the specific context of the observed units, as it was very difficult to guarantee reliability in interviews and participant observation (Sultan, 2014). It was precisely against these limitations that

the analytical gain of the multi-method approach rests. Although the importance of a combination of quantitative and qualitative methods was consensual, it was still rare that the works that effectively integrate different research techniques. In substantive terms, the goal was to provide a starting point for researchers interested in the subject to develop research designs combining quantitative and qualitative techniques with the aim of producing more robust inferences about reality (Sultan, 2014).

Table 4.1   Used research techniques

Method	Techniques	Instruments	Collection	Data Analysis
A mixed method research design is very helpful in gaining desirable information when the research technique is rigorously triangulated	Questionnaire Survey with five Likert Scale option Focus Group Interviews session	Questionnaire (close ended) Semi-Structured Interview Guided Questions	Primary Data (a) Questionnaire session for 35- 45 minutes (b) Focus group and some individuals interviews session for 30- 40 minutes with a break (c) Plus a few individual interviews	Questionnaire involve SPSS analysis Advanced Statistics: Structured Equation Modelling Testing: Interview findings involve content analysis

				with themes identified
			(d) Secondary Data Review and research articles, reports, available online data	

Creswell (2014a) mentioned that qualitative and quantitative research was portrayed by particular points of view of human behaviour. Since the quantitative research depended on the presumption how groups or people act was normally predictable and can be rationalised. As per Ragin (2014), there was a supposition of determinism and such activities are dictated by at least one element. Researchers, for example, McNabb (2015) additionally proposed that quantitative research did not pinpoint boundless principles of human conduct. However, most recent quantitative scientists searched for probabilistic causes, and this implied estimation utilising numbers whereby behaviours and attitudes can be gauged by using rating scales. On the other hand, as per Creswell (2014b), qualitative analysts generally considered that the truth was socially developed, and social conduct takes after norms and standards defined by society. It was fundamental to get close to their study subjects through member perception with the goal that they can have a private conception of themselves of the subjective extent of their specific area of research. The qualitative method of research captured the wholeness and complexity of

the respondents' experiences whereas the quantitative approach captured the statistical and numerical data through using SPSS software.

4.3 Setting and Population

The setting was the Republic of Mauritius. The country estimated resident population as at 31 December 2015 was 1,220,530 inhabitants. The number of admissions in Government Hospitals in 2015 was 208,241 and the number of operations performed on them was 44,427. Therefore, designing a working sample framework for different participants to be recruited from both public and private health facilities unveiled a remarkable revelation in containing the pertinent health issues.

As per the World Health Organisation (2018) definition, health professionals would be

Medical Doctors, Nursing Professionals, Midwifery Professionals, Dentists, and Pharmacists. The major hospitals being the Sir Seewoosagur Ramgoolam National Hospital, AG Jeetoo Hospital, Dr Agalwal Hospital and Victoria in Quatres Bornes were included in the study. Both public and private hospitals of at least 200 beds have been considered looking at all districts. The health care executives, board members, search firm executives, and health administration managers, as well as several patients, were selected by stratified sampling 1802 participants (quantitative) and by purposive sampling method nine focus groups of nine participants each (qualitative). Furthermore, 434 patients were attending the hospitals at that time were given questionnaires to fill them out. The collection of raw data was conducted in two phases;

4.4 QUANTITATIVE PHASE (QUESTIONNAIRES)

4.4.1 Targeted Participants

The targeted population for this study was health care professionals at the selected institutions and patients visiting the hospitals both public and private at the time of the study.

4.4.2 Sample size for Quantitative Stage

Phase 1 was a quantitative research design in which the survey questionnaire was administered. Creswell (2014b) identified that the survey questionnaire allows easy analysis of results with built-in tools without a need to have background knowledge in statistics or scientific research. These interpretative tools helped in analysing reports and visualisations leading researchers to quickly interpret reports into results. The sample size was 1802 participants; health care professionals and patients selected through stratified sampling method. Tipton, Hedges, Vaden-Kiernan, Borman, Sullivan and Caverly (2014) identified that survey research was also capable of collecting data from a large sample size of participants and thus, adding validity and reliability to the research process. When the researcher wanted to highlight a specific subgroup within the population, stratified random sampling was most preferred (Tipton et al 2014).

The total population of the patient attending the hospitals on a given day as well the health professions attendance was calculated at 1220530 (Ministry of Health and Quality of Life 2017).

4.4.3 Stratification Ratio

Table 4.2   Sample Size Stratification

Confidence level	Confidence interval	Population	Sample size needed
95%	2.31	1,220,530	>1797

The questionnaire was self-administered, and every participant has presented a printed copy with a cover letter defining the research aim and objectives. The questionnaires were distributed to health care officials and to particular categories of health care officials who were on duty throughout the data collection period. Additionally, questionnaires were also distributed among people visiting the hospital at that time.

The reliability was observed in terms of Cronbach's Alpha and ranged from 0.63 to 0.84. This reliability index was implemented in research by Bonett and Wright (2015), who inferred that items and aspects of a survey were completed at the unit or hospital level of valuation. It can be used through the researchers and hospitals focusing on assessing the performance of care services in health care systems.
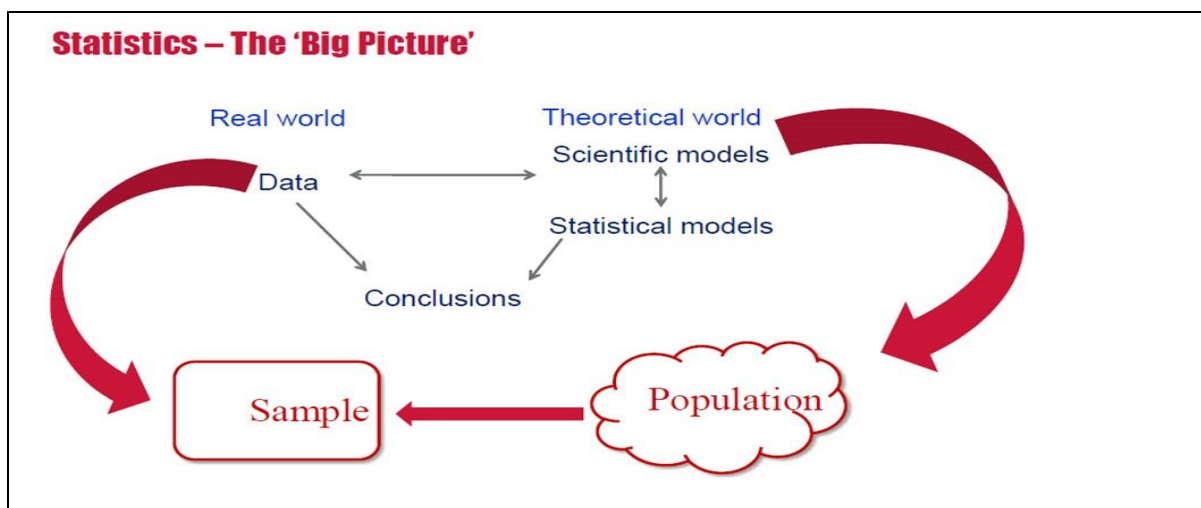
Figure 4.2 Sampling model used (Jones et al 2016)

The sample size was calculated using Statistical Package for the Social Sciences (SPSS) with Alpha set at 0.05; Power at 0.80, Effect Size at 0.10 and Predictors at 18.

The questionnaires were 5-point Likert scale ranging from 'strongly agree to disagree strongly'. The following table is representing the demographic information of the respondents. The demographic variables were also included information about the gender, age, and academic levels for this study.

4.4.4 Data Collection for the Quantitative Phase

As the study was initially designed, the number of survey questionnaire administered was dependent on access to the participants, available resources, time schedules, and personal energy. According to Creswell (2014a), the principal mode of data collection in a quantitative study was close-ended questionnaires which were known as affordable ways of collecting quantitative data. For phase 1, a survey questionnaire was administered among participants from Sir Seewoosagur Ramgoolam National Hospital, Dr AG Jeetoo Hospital, Victoria regional public hospitals.

4.4.5 Questionnaire Design

The questionnaire intended for the patients depended on the markers for the patients' concept of participation in his particular care. The exploration instrument for the patients was all closed-ended and much direct to be translated to the patients for simple understanding. The instrument consists of items where patients reacted from 'significant disagrees to significantly agree'. It was likewise visualised that few patients would be

uncomfortable (either in torment or mentally unstable) as at the time of controlling the instrument and so far as that was concerned would not have the patience to peruse and consider facts and principles as it might be. The questionnaire for the patients was managed by the specialist with the assistance of a therapist who was on house-man-ship at the local hospital and helped the analyst in all the process. The instruments (questionnaires) for the health care employees were made by operationalizing the ideas of identified concepts into factors, and the questions were then made out of the markers. The composition of the instrument for this phase was closed-ended for quantitative examination.

4.4.6 Piloting

Once 'trigger tool' designed (for research question one), it was pre-tested to examine this phase whether the first 'trigger tool embraced was applicable and could give the required result. The charts (N=11, Public Hospital N=2, and Private Hospital N=2) that were picked randomly from the registry of the health care facilities had indistinguishable attributes from those utilised as a part of the fundamental examination. These hospitals were selected with the availability of the respondents. Methodology for the pre-testing was that the initial five of the charts in the column of the racks were chosen as the raised number and another five picked. This method was repeated to the point that the required number of charts was achieved. This was conducted in health care centre. The pre-testing of questionnaires for the health care professionals needs to be pre-tested for any conceivable problems, (for example, non-participation or rejection) that could be uncounted during the process of the organisation of the instruments. The pre-testing was additionally to discover the feasibility and reliability of the items to address the research main questions.

4.4.7 Ethical Approval for this Study

The research proposal presented was scientifically reviewed and designed in full compliance with the Research and Ethical Policies of the University of South Africa. It was imperative to note that the University has a strong set and standardised principles to ensure good respect of the participant's rights, the integrity of the study involving human subjects and general principles for data accessibility and confidentiality. The researcher has informed potential participants prior to the study of all features of the project that was expected to affect their willingness to take part in the research. The ethical protocol included verbatim instructions for the informed consent procedure and consent was obtained in writing. The researcher was open and honest about the research, its purpose, and application. McNabb (2015) responded that the utilisation of open-ended questions in a qualitative report has enabled the analysts to investigate deep conceptual observations and knowledge as they conduct keen research on the given point.

The Research Ethics Committee of the Department of Health Studies of UNISA allotted the Ethical Clearance Certificate serial numbered: HSDC: 623/2017.

Protection of human subjects occurred by obtaining prior Institutional Review Board (IRB) approval Obligations to the participants were followed stringently. These obligations included protecting the human participants from harm, respecting the participants' rights to know the nature and purpose of the study and their right to give or withhold consent from participating and respecting the participants' privacy. Signed participant consent forms were obtained before the administration of survey questionnaires. Reciprocity occurred by sharing the data with the participants and by providing them with a copy of their questionnaire. A confidentiality agreement for transcriptions was reviewed and

signed by each contracted transcribe who word processed the data to ensure they understood the confidential nature of the data and subsequently took measures to guard the confidentiality of the data. Hardcopies of the data and computer files of the data are securely stored in a bank lockbox, along with participants' signed consent forms, to ensure confidentiality, security, and long-term irretrievability. In summary, confidentiality, Institutional Review Board assent, and participant reciprocity procedures were used to ensure the overall method of inquiry maintained a professional approach to the study. Hence, appropriate research procedures were followed to successfully proceed with the survey which includes health care professionals and patients.

The strict rules of data protection principles need to be followed by everyone responsible to use data. It should validate the information follows the given criteria:

1.   Used lawfully and fairly

2.   Used in a way that was not excessive accurate, adequate, and relevant

3.   It should be limited, used for specifically stated purposes

4.   It should not be kept longer than necessary

5.   It should be kept secure and safe

6.   It should be handled according to the rights of people for data protection

7.   It should not be transferred outside the South African Development Community

     (SADEC)

4.4.8 Inclusion Criteria for Participants Selection

Criteria for the sampling were applied and adjusted as recommended by Yuksel (2017) as follows:

> The theoretical purposeful sampling criteria were made to be used in the combined collection and data analysis related to the theory generation. Thus, they were constantly tailored to fit the information and are used at the correct point and moment in the assessment.

The participant sample was designed to allow mutual data collection and analysis linked with the theory generation.

4.4.9 Data Collection Procedures for the Quantitative Phase

A project monitoring and evaluation system can only be implemented successfully when the aim was to obtain reliable data on results, products, and processes. An evaluation system, along with perfect planning, can fully assess whether the data needed for analysis cannot be achieved, or whether it was inaccurate or unreliable. In this study, this area and knowledge involved assumptions about a wide variety of aspects, such as the design of collection instruments and data, estimation of procurement costs, quality control, reliability, validation, sample selection, processing methods, analysis methods, statistical methods, and presentation techniques. It was a challenge for the researcher to make a decision on which instrument to use, how, where and when to apply and was complex, depending on the size and scope of the project. On the other hand, smaller projects, such as those that develop within the boundaries of a hospital setting, can be monitored and evaluated with data from simple and low-cost instruments. In this study, several hospitals

were contacted to administer questionnaires and hence, it was difficult to keep the collection of data free from ambiguities.

4.4.10 *Validity and Reliability of Quantitative Instrument*

Statistical investigations, like any other form of scientific activity, must satisfy the core requirements of reliability, validity, and objectivity. Reliability or consistency was the formal precision of scientific research. This means that the investigations were combined with a maximum of efforts to exclude measurement errors of all kinds. Reliability was thus an indicator of the reproducibility (repeatability) of the results. Questions, for example, must be so clearly formulated that they cannot be understood very differently.

Validity was when the selected indicators, questions, and response options really and precisely measured what needs to be measured. If one asked whether the subject was eating pork, the negation is by no means a proof that he was a vegetarian, but only that he did not like pork for various reasons. If the question of eating pork were the only meat related question in the questionnaire, the questionnaire would not be valid to conclude on vegetarianism.

The objectivity of measurement procedures and questions was largely guaranteed if the choice of the surveyors, interviewers, auditors had no influence on the results. Objectivity would be doubtful, for example, if unsuccessful men were asked to interview their insecure men with a questionnaire, which had been given personally, by men who were also insecure, and on the other by young, attractive and self-confident women them. One would very likely get very different answers. In the same way, falsifications should be foreseen when business executives or employees question their employees to the

satisfaction of their work situation. Quality criteria and other sources of error require that statistical investigations be always carried out with the utmost care from the collection of the data to their analysis. The correct methods were applied, the choice of which depends on the nature of the data and their distributions, and that the interpretation by no means beyond the meaningfulness of the data.

4.5   QUALITATIVE PHASE (INTERVIEWS)

For the second phase of the mixed method study, semi-structured interviews were conducted using a sample of 9 respondents each for nine focus groups. This phase encompassed the qualitative method applied in the study. The population comprised of patients and health care professionals selected by the purposive sampling technique. Bonett and Wright (2015) accentuated that purposive sampling method was particularly useful in exploratory qualitative research, research with limited resources, as well as research where a single case can be decisive in explaining the phenomenon of interest. The interviews were conducted in a focus group setting wherein respondents can discuss and converse about their views, perspectives and ideas about the effectiveness of the health care system in Mauritius. Health care administration may not develop the knowledge, skills, and experiences required to improve the quality of care. The purpose of the study was to explore, identify, and describe the perceptions of major health care stakeholders of current health administrator roles and responsibilities, practice issues, and related knowledge, skills, and experiences required to improve the quality of care today and implementation of quality management system in order to bring improvement in Mauritius health care. This method provided the exploratory data and emergent theory needed to develop a theoretical model to address the research problem. Interview data revealed ways in which the changing health care environment impacted the participants'

professional lives as health administrators, professionals governing or hiring health administrators, and educators and students are teaching or learning in the health administration programmes. On the other hand, the survey questionnaire generated statistical values about the use of the ISO classification system in health care and the number of hospitals using quality management systems.

For one to understand the meaning of a process or experience requires that the knowledge was gained from an inductive hypothesis or theory-generating mode of inquiry where individuals socially construct multiple realities. In this study, guided (semi-structured) interviews were used to capture the perceptions and experiences of each major stakeholder's way of life in the changing health care environment. The interpretive orientation was used to process the perceptions and experiences of these participants. It was important to learn, record, and ultimately portray the culture of health administrators to understand the different ways they attempted to resolve administrative practice issues related to the quality of health care. The study was based on the view that reality is constructed by individuals interacting with their social worlds. To generate theory on the knowledge, skills, and experiences needed in health administration practice today, interview questions were used to collect data from the participants to reflect experiences of events they lived, felt, and underwent related to health care environment changes they encountered in their various workplace settings throughout their professional lives. This understanding was an end and was not meant to predict what may happen in the future, but to understand the current nature of the setting and to promote interest in future action research. Future action research should explore the need for specific health administration programme curriculum changes to develop the clinical management knowledge, and experiences needed to enhance the health care quality.

4.5.1 Sampling Technique

The phenomenological studies focused on getting in-depth knowledge and do not provision random sampling for the particular aim. The selected interviewees were regardless of their age and gender with particular views and experiences (Neuman 2016). The respondents were chosen as they could provide a particular view with respect to shortcomings of health care context in the situation of public and private sectors. Just those respondents were selected who were eager to participate in the research and agreed on giving time to their busy schedules.

4.5.2 Scientific rigour of the Qualitative Instrument

An important role was played by in the quantitative research, had little ecological relevance, which means the agreement between the conditions of investigation and the natural environmental conditions of the persons or phenomena under investigation. There were several methods for determining validity, which was called validation (Flick 2014). Validation aimed at establishing a consensus in qualitative research; typical methods were:

Consensual validation: consensus creation between different researchers when evaluating.

- Communicative validation: Consensus-building between researchers and "investigators" in the field.

- Argumentative validation: consensus creation between researchers and outsiders.

The interviews were further evaluated through a thematic analysis, where the responses of each participant were distributed into themes and the common themes were selected as the most prominent answers for the question. Hence, this allowed an exhaustive approach to the qualitative part of this study.

4.5.3 Interview Procedures

The purpose of the study was to explore, identify, and describe the perceptions of major health care stakeholders, including health care executives, board members, search firm executives, and health administration programme professor. In order to obtain perceptions of current health administrator roles and responsibilities and practice issues, as well as the related knowledge, skills, and experiences were also required to improve the quality of care. In the process of contacting participants and scheduling interviews, the entry into the health care administration culture was relatively easy because of the tenure in health care management and leadership positions. Trust was established with the participants by reviewing the data collection procedures with them that would be used to ensure the confidentiality of the interview data. Initial access to the participants was achieved by mailing standard introductory letters to six potential participants at a time in hopes of securing two to three affirmations. The introductory letter indicates the purpose of the research and how the research would be used. It also stated that they would be contacted within two weeks from the date of the letter to arrange an interview time at their place of employment and their convenience. The letter gave the recipients the option to contact and schedule an appointment before contacting them if they so desired (Bork-Hüffer, 2016).

Within a couple of days after initial mailing, a number of telephone calls from health care executives have been received and shows their willingness to be interviewed. Therefore, the letter proved to be an excellent way to prepare possible participants to request their assistance. The reason for declining by that prospective stakeholder, as she did not feel her background and work experience was strong enough to be a valuable participant in this study. However, she did indicate that if she were still needed for an interview later in the study, she would consent to be interviewed at that time. During the initial telephone call to schedule the interviews, participants were requested to arrange for the interview site to be as quiet and free of distractions as possible. This was accomplished for all of the interviews, except one search firm executive who preferred to be interviewed at his home. This environment proved a very distracting environment as the interview began after a considerable delay and during the interview, he excused himself many times to take phone calls in another room. The interview was much longer than anticipated, as additional time was needed for him to refocus on the last interview question each time he returned from taking a phone call. However, a comprehensive interview was conducted despite the interruptions. Interview guide considered participants' availability and the established selection procedure. The survey was distributed among the focus groups and discussed in a lengthy session where the respondents answered individually to the questions and expressed their concerns related to it (Boyce, Browne, and Greenhalgh, 2014).

The health care executive that contacted shortly after the first group of letters was mailed was the first participant to be interviewed. A total of fifteen interviews were conducted: four with health care system executives with titles of Chief Executive Officer, three with search firm executives, two with board members, three with professors, and three with management executives. The sequencing and timing of the interviews allowed for the

178

ongoing collection of data and analysis to discover emerging theory. The interviews were between 35 to 50 minutes in length. The interviews incorporated the three most important elements i.e. explicit purpose, explanations, and questions (Backhouse, 2014).

The ideal interview reminds of a lively and easy conversation between two people equally interested in it. However, one of the participants - the interviewer - remembers that in this situation he acts as a researcher, imitating the role of an equal interlocutor. Direct contact with the interviewee and the psychological relationships that are established between the interviewer and the respondent create many advantages for obtaining information. Unfortunately, these advantages can lead to new difficulties (Backhouse, 2014). The main problem is minimising the "disturbing" influence of the personality of the interviewer. The influence of the interviewer effects in a variety of ways. The task is to objectively and objectively fix the answers to the planned questions. Ways to 'break' the possible barrier, behave as easily as possible, and start a conversation with the most neutral and generally understood things. Moreover, do not adjust to the interviewee and choose the pace of speech (not fast and not too slow) and the situation should be to the conversation. It also includes an unfavourable situation such as the absence of a separate room, interviewing at the workplace in the very process of work, when the respondent sometimes returns to the interrupted occupation; the presence of third parties and their interference in the interview; multiple breaks by extraneous conversations, phone calls, and people walking. The interviewer must be well aware of the purpose of the research, its intention, be sociable in character, and active. The best type of interviewer is calm and balanced to have a fairly high culture and education (Bonett, and Wright, 2015).

Moreover, the establishment of contact with the respondent and obtaining consent to participate in the survey obtaining consent for the interview was a very important moment.

From the first impression that the respondent has about the interviewer, the further course of the survey, the reliability of the answers greatly received. Therefore, the interviewer's task at meeting with the respondent was to create a benevolent, quiet atmosphere for the future conversation, to convince in importance and necessity to participate in the survey of exactly who was in the sample (Boyce, Browne, and Greenhalgh, 2014)

First of all, it was necessary to introduce yourself and inform about the purposes of your visit. Often, people were interested: "Why did you choose me?" The interviewer explains, on the basis of what the selection of officials (questionnaire blocks) was based on. Sometimes those selected for interviews were advised to refer to other people who, in their opinion, were "more educated", "younger" "better understand these issues." In such cases, the interviewer should politely explain that the research was conducted according to a special scientifically developed method, that it was necessary to interview representatives of various positions and professions. If there was a concern about the undesirable consequences of participating in the survey, it should be clarified that the answers to the questionnaire were not disclosed in any way and only be used in a generalised form in the form of statistical tables reflecting the opinion of all respondents. If the refusal to participate in the survey was explained by the lack of time, you should offer the interviewee another time, more convenient for him. If the respondent categorically refused to participate in the survey, one should express regret, apologise for concern and say goodbye. However, the number of such failures should be kept to a minimum. Here a lot depends on the interviewer: the ability to locate one's interlocutor, to convince him of the scientific and practical value of the poll, and also to emphasise the anonymity of the answers once again - all these guarantees the success of the interview.

4.5.4 The Interview Guide

In phase two, the interview guide was used as an outline to explore the focus questions needed to answer the research question and was developed before beginning the participant interviews. The interview guide contained questions to assist with the interview process. Five major categories of interview questions were developed. Within these five major categories, three main questions described as descriptive, structural, and contrast questions were used to create the initial interview questions and additional questions asked throughout the interviews to ensure adequate data were obtained. Initially, the participants tended to digress and, in some instances, hesitated as if they were not sure what was being asked. After the first two interviews, changes were made to the original questions. The changes in the questions made a significant impact on the participants' understanding of the questions, thus increasing the amount and quality of the data obtained, as participants were able to relate very well to the revised questions, and their answers were comprehensive. Specifically, instead of asking about areas of administration the questions were changed to ask about "roles and responsibilities," and in addition to asking about "the most pressing and stressful administrative issues". The questions were changed to ask about "what issues kept them awake at night" and, instead of asking about the "context of these administrative issues" questions were asked about what the "environment was like when dealing with these administrative issues." Early participants commented on what health administration higher education programmes should teach. Therefore, a question was added to subsequent interviews that asked this question.

A question was also added to ask about "what was needed in health administration residency programmes in relation to quality and efficiency of care." In addition, participants were asked whether they thought the "role was greater than it was 20 years

ago" as this theme began to emerge from the early participants. Therefore, this question was added to subsequent interviews to explore this area, as it seemed to allow the participants to expand on their roles and responsibilities, which provided additional data related to the study. Finally, a question was added as to whether participants thought health care executives were prepared to deliver clinical effectiveness today. This theme emerged very early in the interview process as the most significant new area related to their roles and responsibilities for improving the quality of health care, which specifically related to the problem statement and purpose of this study. A new question was added to the interview guide on improving the quality of care, as this question was a critical question for allowing data to emerge directly related to the research problem. Early participants excluded or minimally addressed this area, which was a significant finding indicating that quality of care was not one of their top priorities.

 The initial guide was designed without directly asking a question about administrators' responsibilities related to the quality of care. It was expected that this aspect would emerge without a direct interview question on this subject, which it did. Therefore, a question was added regarding the quality of care role and responsibilities of the health administrator after this aspect emerged without using a direct question to prompt the response. Additional interview questions were added as the need arose and as the constant comparative method dictates to analyse new data against emerging themes and categories. It is very necessary for the researcher to kept field notes in a journal of noted biases, which contains participants, and his own biases. These journal notes were also coded in addition to the interview data. Like a diary, this journal contained a record of experiences, ideas, fears, mistakes, confusions, breakthroughs, and problems that arose during fieldwork in addition to the biases noted in the journal. The notes were developed during and after the interviews. This introspective record of fieldwork enabled the researcher, to be aware of his biases that surfaced during each interview, to curb

these and feelings during the process, and to understand how his biases might influence the research findings. All notes taken during the interviews were a condensed version of what occurred during the interview. As quickly as possible after leaving the interview, an expanded account of the interview, including verbatim statements, were included in the notes. Examples of the data helped to elaborate on the themes and categories that were found in the analysis. Ultimately, the data collected from these interviews were used to assess whether the participants could define practice issues they were experiencing, and the knowledge, skills, and experience required to improve the quality of care. This process of data collection assisted in the discovery of cultural knowledge. In summary, the data collection procedures described supported the research method of inquiry and ultimately provided credible findings in answer to the research question (Boyce, Browne, and Greenhalgh, 2014).

There were instructions for communication of the interviewer with the organisers of the study. If necessary, the interviewer applies to the resource centre for resolving questions on the organisation of work or the content of the questionnaire that arise during the interview. The purpose of the study was to analyse the shortcomings of the health care sector in context to public and private hospitals in Mauritius. During the research, it was necessary to interview various officials at a particular enterprise. In interviews, the interviewer was the main performer of the work and ensures the quality of the investigation results. The completeness and accuracy of the investigation results depend on the honesty and responsibility of the participants. Therefore, the exact observance of this instruction was your main and priority task as an interviewer. To carefully study this manual and followed its requirements to identify the content of the questionnaire and the technique of filling it in order to be able to answer the respondent to all questions, arising during the conversation. Promptly, qualitatively and in the scheduled time to conduct a survey of respondents and submit the results of the survey

to the head of the working group. The content of the answers should not disclose, as well as the names of the respondents. The interviewer was personally responsible for maintaining the anonymity of respondents' answers (Bork-Hüffer, 2016).

 The completed questionnaires cannot be passed on to anyone other than those responsible for working in the region. To search for the respondents before starting work, they will be given out the lists of officials selected by the survey organisers for the survey. The researcher needed to select a specific official to conduct an interview. If the selected respondent at the time of the first visit is not getting agreed, then it was necessary through colleagues to make him agree about the time of the meeting. The transfer of the questionnaire to the respondent for further self-filling of it is strictly prohibited. If the selected respondent was unavailable during the interview time (vacation, business trip, hospital stay), or he cannot be caught within three visits, the interviewer had the right not to interview him. The replacement of the respondent was carried out in agreement with the head of the working group (Blais, 2015).

4.5.5 Trustworthiness in Qualitative Studies

 The study was narrowed to five large hospitals due to the extensive resources in time and money needed to upscale to a more widely dispersed geographical area. Limiting of the participants to Sir Seewoosagur Ramgoolam National Hospital, AG Jeetoo Hospital, Dr Agalwal Hospital, and Victoria in Quatres Borne's hospitals and Dr Agarwal hospital was not seen as an issue because the results were true for the hospital selected at the time. Therefore, it was believed that the transferability of the findings may be possible. The directories included names of health care administrators and their related titles, health care administration certifications, demographics, and affiliated health care systems. All nine health care executives included in the study were from these sources except for one. This health care executive participant was selected due to his affiliation

with a very large integrated health care system in one of the hospitals used. The two search firm executives were selected from the state directories as well.

The two board members were selected from health care system lists of board members obtained by contacting various health care system administrative offices. Board members were not selected from the same health care system as the health administrators. It was discovered that selecting board members and health administrators from the same health care system made the respective health care executive uncomfortable knowing their governing board members were also being interviewed. One of the board members was a physician, which enriched the data because his perceptions were as a board member and as a physician. Physician stakeholders were not considered in the initial design of the study, and this was an unexpected development. However, this interview data became an important addition to the study as it included a perception from a clinical stakeholder. As initially designed, the sources for selecting the health care search firm executives were listings of large, nationally or regionally known search firms. Their prominence was validated during their interviews as they related the extensive national health care executive searches they had performed over the last few years.

The third search firm executive selected to participate specialised in outplacement services for terminated health care executives. All three of these search firm executives had previously held health care executive positions in large health care systems in the past, although it was not known before their interviews. Their additional experience as health care executives enriched the data. As the study was initially designed, the ultimate number of questions administered was determined during the study according to evolving theory materials (Weber 2015). Semi-structured, guided interviews were conducted until the interview data-saturated the categories and detailed theory. On the other hand, a survey questionnaire was administered until the dimensions and properties

demonstrating variation for the category were well developed, and the relationships among categories were validated and well established. Saturation also occurs when no new data are found or when new data only add in a minor way to the numerous variations of key patterns.

This approach to selecting participants proved to be very effective in obtaining the necessary number of interviews needed to reach saturation of the data. Participants selected were inaccessible places and situations and provided the greatest opportunity for discovery. The deductive process was minimised by avoiding the act of purposefully choosing all the participants at the beginning of the interview process. The final three participants were selected more purposefully later in the interviewing process as selective coding was performed. This was done to integrate categories along a dimensional level to fill in any categories in need of further refinement, validate the statements of the relationship among concepts, and form a theory (Weber 2015). Response to the research question on whether the knowledge, skills, and experiences required to improve the quality of care were available in health administration programmes did emerge from the data.

4.6   ETHICAL COMPLIANCE IN THIS STUDY

4.6.1 Ethical considerations about sampling

Since scientific the generated knowledge was legitimised, and the researcher could be sure to serve the noble cause of the progress of science. According to Weber (2015), until very recently, there was no institutional concern in Mauritius with the ethical aspects of the research. Creswell (2014b) argues that ethical issues must be considered and reflected throughout the research process. The author discussed, at each stage of the

research, which ethical issues should be observed by researchers. The theoretical framework presented some of the ethical issues that underlined the present study.

According to Weber (2015), the link between researcher and respondents must be kept within strict ethical limits. The planning act of a research activity was important for the maintenance of moral integrity. Researchers should recognise approaches in which privacy could be attacked and stop this from occurring. Thus, a responsible study was the one that expects the potential ethical issues and not the one that was validated later to perform the research (Flick 2015). People in a scientific community society or organisation have different scientific and cultural backgrounds, distinct opinions, and diverse social experiences about the facts of life. Hence, codes of ethics have the mission of standardising and formalising understanding about a subject (Flick 2015). However, professional ethics cannot be reduced to codes of ethics, which in fact constitute moral codes, but must be the search for a critical reflection on the professional's action in their workspace, which should base their well-being and of the others, since the work was given by a relation. Ethics as critical reflection helped to analyse the moral foundations that guide the actions of each researcher or professional (Creswell 2014a).

Once the profile of the respondents was identified, the following results focused on whether the ethical issues described in the academic literature were considered in the research process in administration. According to research, 64.3% of the respondents realised that the reflection on ethical issues was very necessary for the research process in administration, followed by 19% that tended to the frequency of much needed. The results raise the question that these data indicated that people already had a view of the need to ethically reflect on research in administration. It was worth emphasising that, having a perception about the need for reflection did not necessarily mean that this reflection was done in research practice. In the process of developing the research, an

important point was researched ethics. This was because, according to Flick (2015), in today's world, there was a disproportion between the speed of scientific-technological progress and an ethical vacuum, which was formed from the negation of traditional value systems. Until recently, there was no institutional concern in Mauritius with the ethical aspects of the research.

The researcher was the sole arbiter of the ethical adequacy of his research (Creswell 2014a). Given this, the perception of the respondents was raised regarding the stages of the research process in administration in which the researcher must reflect on the ethical issues. The research process in administration, corroborating with what Creswell (2014a), that at all stages of the research process ethical issues must be observed by researchers in management. Measures to ensure strict compliance with the condition governing the Issue of the Ethical Clearance Certificate included:

- Researchers have the right to academic freedom, which included the freedom to conduct scientific research of their choice.

- Researchers ensured that they undertake research work that falls within their fields of expertise and competence.

- All researchers and related practitioners were responsible for familiarising themselves with any relevant discipline-specific ethical principles and ensuring that their knowledge was up to date.

- Researchers were required to show commitment to high standards of ethical and professional conduct and had an obligation to ensure that their research activities and methodologies were scientifically and ethically sound and not harmful to people, animals, and the environment generally, and to the Institution's credibility and reputation.

- Primary responsibility for ensuring that these policies and procedures adhere to rests with the principal researcher and project supervisor, or in the case of teaching-related activities, the lecturer setting the class project, assignment or task.

- In the case of conducting collaborative research, the principal investigator or research project leader was responsible to ensure that the participants of the research term are fully aware of the provision of this policy. It also included all other applicable norms that govern the research conduct.

- The supervisor was responsible to inform the student regarding his/her obligations when the researcher was a student and conducting research for the academic study, Moreover, in context to the ethical conduct of research, it ensured that the student research was carried out by the delivering the particular policy.

4.6.2 Ethical Protocol of the Researcher

Researchers in the field of academia (Creswell 2014b) had highlighted the researcher's behaviour and related ethical issues that came with the increasing levels of scrutiny. Besides, any doubts concerning ethical practices result in adverse publicity for the community of the research. Qualitative and quantitative research was generally used in educational research, as presented by Yüksel (2017) concerns related to privacy, consent, and dishonesty. As the participants may not feel obliged to get involved in the research nor may they understand what research was about. The detailed information sheet was used in this research study for avoiding such unpleasant situations. It was used for explaining clearly, what the research was all about and given complete autonomy to participate. Moreover, it was also mentioned in the information sheet that all recordings would be stored safely, and all survey questionnaire are secured. The researcher and the supervisor only would be able to run statistical tests on the results.

In addition, it was ensured that their identity was protected as pseudonyms rather than their real names. The researcher was also responsible to address any issues of power whereby a participant may feel that their participation could influence their career as a result. To reduce any concerns about this, it was ensured that all ethical issues were taken care before applying.

4.7   SUMMARY

This chapter has provided a detailed description of the data collection method both for the purpose of collection of qualitative and quantitative data. This chapter was described sampling, sample, data collection approaches and tools used for this research and how these data collection approaches are effective to provide detailed information.

CHAPTER 5 ANALYSIS, PRESENTATION AND DESCRIPTION OF RESEARCH FINDINGS

5.1 INTRODUCTION

Here, the study main findings have been presented and further describe the details of data management and analysis. This section was divided into two sections on the basis of findings of the study i.e. qualitative and quantitative. In the first section of the chapter, the quantitative phase has been described and the second section consists of a qualitative phase. The results of each phase were separately deliberated for the flow discussion and clarity.

5.2 Phase 1: Quantitative phase - Likert Questionnaires

A total of 1802 questionnaires were received from participants were analysed and checked as usable, data collected was fed into a computer to drive results starting by generating random numbers. Statistical software SPSS 20.0 was used to perform statistical analysis on the data collected through the survey. Descriptive statistics for the demographic characteristics of the respondents and the items in the survey were first analysed. A t-test was performed and then conducted to compare the mean differences between the dimensions of the questionnaire and positive responses' score. One-way ANOVA examined the mean differences between the responses and the rate of responses between the selected hospitals. Chi-square test was also performed to access the trends in the opinions of health care professionals and patients. Pearson correlation was conducted to examine the relationship between independent variables with a mean% age reporting a positive score as the dependent variable.

5.2.1 Independent (outcome) Variable

Overall quality of health care administration services rating according to the WHO.

5.2.2 Dependent Variables

Patients' satisfaction that was defined by how convincing specific health care services were to the members of the public:

- ISO quality standards compliance criteria for health services management such as guiding health professionals in their lines of duties, ensuring that health care setups were accessible as well as ensuring the hospital environment can sustain human health.

- Financial costs of the services that were offered in various health care systems.

- Workforce efficiency of various health care stakeholders in the accomplishment of their professional responsibilities.

- Infrastructure fitness for purpose of rendering quality health care services to the patients.

- Adaptability to revolution requirements including flexibility measures that were put in place to address rising health care concerns and issues.

The demographics of this study were represented in mean and medium form along with variance in the following table:

Table 5.1   Demographic Statistics

Demographic statistics			
		Age (1= 25-30 years, 2=31-40 years; 3=41-50 years)	Gender	Educational Level (1= Matic, 2=College Degree; 3=Post Graduation)
N	Valid	1802	1802	1802
	Missing	0	0	0
Mean		2.93	2.68	1.27
Median		2.00	2.00	2.00
Mode		2	2	2
Std. Deviation		5.211	1.196	10.035
Variance		10.258	1.955	5.692

According to the statistics, the mean age of the participants were above 20 years old i.e. 29.3. Moreover, the majority of the participants were male as seen in the mean, i.e. 26.8yrs. lastly, the education level of the majority of the participants was 10th grade. This is since the majority of the participants were the patients enrolled in the hospitals for treatment.

5.3 PRESENTATION AND DESCRIPTION OF THE QUANTITATIVE RESULTS (PHASE 1 FINDINGS)

The 2000 questionnaires were distributed among participants, who include health care professionals and patients selected through stratified sampling method, obviously, some

were not returned after the deadline and few others checked as unusable. Therefore, only 1802 were considered to be valid.

5.4   INTERPRETATION

5.4.1 Reliability

Scale: ALL VARIABLES

Table 5.2 Case processing summary

		N	**%**
Cases	Valid	1802	100.0
	Excluded[a]	0	0.0
	Total	1802	100.0

a.   Listwise deletion based on all variables in the procedure

Table 5.3 Reliability statistics

Cronbach's Alpha	**N of Items**
0.943	77

Cronbach's alpha was the most reliable measure of the reliability of the survey instrument, also called inter-rater reliability or internal consistency rating. This statistical measure was commonly used in multiple Likert or survey questionnaires to form a scale. This scale functions on the basis of the survey structured response framework, ranging from "strongly disagree" to "strongly agree". This scale was used to measure and understand whether the questions included in the survey are all reliable and have similar latent variables. This scale was used on a sample of 1802 questionnaires and depicted a value of 0.943. This portrayed that the survey questionnaire had high internal reliability.

5.4.2 T-test

For reasons of simplicity, the independent variables were given initials in order to make it easy to put in statistical software.

Table 5.4 Dependent variable

1. Overall Quality of Health care (QHC)

Table 5.5 Independent variable

1. Patients' Satisfactions (PS)
2. ISO Quality Standards Compliance (ISO)
3. Financial Costs of the Services (FC)
4. Workforce Efficiency (WE)

| 5. | Infrastructure Fitness (IF) |
| 6. | Adaptability (Adap) |

5.4.3 QHC in comparison to PS

H1: There was no difference between the patients' satisfaction and overall quality of health care in the health care system in Mauritius.

Table 5.6 Paired samples statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	QHC	3.0013	1802	0.42909	0.01108
	PS	3.0327	1802	0.43634	0.01127

In the Paired Samples Statistics Box, the mean for the QHC was 3.0013. The mean for the PS was 3.0327. The standard deviation for the QHC was 0.42909 and for the PS, also 0.43634. The number of participants in the sample (N) was 1802.

Paired samples test

Thus, it was concluded that there was a statistically significant difference between the QHC and PS. Since our Paired Samples Statistics box revealed that the Mean number for patient satisfaction was equal to the Mean for the quality of health care. Thus, it was stated that participants who showed a preference for PS principally experienced a better quality of care.

5.4.4 QHC in Comparison ISO

H_1: There was no difference between the ISO compliance and overall quality of health care in the health care system in Mauritius.

Table 5.7 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	QHC	3.0013	1802	0.42909	0.01108
	ISO	3.0093	1802	0.45466	0.01174

Paired samples test

In the Paired Samples Statistics Box, the mean for the QHC was 3.0013. The mean for the PS was 3.0093. The standard deviation for the QHC is 0.42909 and for the ISO, also .45466. The number of participants in the sample (N) was 1802.

Table 5.8 Paired Differences

		Paired Differences					t	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	QHC - ISO	-.00800	0.62519	0.01614	-0.03966	0.02366	-0.496	0.020

Because of this, it was concluded that there was a statistically significant difference between the QHC and ISO. Since our Paired Samples Statistics box revealed that the Mean number for ISO compliance was less than the Mean for the quality of health care. Thus, it was stated that participants who showed a preference for ISO compliance principally experience a better quality of care.

Paired samples test

5.4.5 QHC in Comparison FC

H[1]: There was no difference between the financial cost and overall quality of health care in the health care system in Mauritius**.**

Table 5.9 Paired Samples Statistics

		Mean	**N**	**Std. Deviation**	**Std. Error Mean**
Pair 1	QHC	3.0013	1802	0.42909	0.01108
	FC	2.9987	1802	0.47062	0.01215

In the Paired Samples Statistics Box, the mean for the QHC was 3.0013. The mean for the FC was 2.9987. The standard deviation for the QHC was .42909 and for the FC, also .47062. The number of participants in the sample (N) was 1802.

Because of this, it was concluded that there was a statistically significant difference between the QHC and FC. Since our Paired Samples Statistics box revealed that the Mean number for organisational fitness compliance was greater than the Mean for the

Paired samples test

quality of health care. Thus, it was stated that there was no statistical difference between financial cost and quality of health care.

5.4.6 QHC in Comparison WE

H_1: There was no difference between the workforce efficiency and overall quality of health care in the health care system in Mauritius.

Table 5.10 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	QHC	3.0013	1802	0.42909	0.01108
	WE	3.0073	1802	0.35312	0.00912

In the Paired Samples Statistics Box, the mean for the QHC is 3.0013. The mean for the WE is 3.0073. The standard deviation for the QHC is .42909 and for the WE, also .35312. The number of participants in the sample (N) was 1802.

Table 5.11 Paired **Differences**

Paired samples test

		Paired Differences						t	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	QHC - WE	-0.00600	0.54726	0.01413	-0.03372	0.02172		-0.425	0.051

Because of this, it can be concluded that there is a statistically significant difference between the QHC and WE. Since our Paired Samples Statistics box revealed that the Mean number for ISO compliance was less than the Mean for the quality of health care. Thus, it was stated that participants who showed a preference for workforce efficiency principally experience a better quality of care.

5.4.7 QHC in Comparison IF

H_1: There is no difference between the infrastructure fitness and overall quality of health care in the health care system in Mauritius**.**

Paired samples test

Table 5.12 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	QHC	3.0013	1802	0.42909	0.01108
	IF	2.9973	1802	0.47484	0.01226

In the Paired Samples Statistics Box, the mean for the QHC was 3.0013. The mean for the IF was 2.9973. The standard deviation for the QHC was .42909 and for the IF, also .47484.

The number of participants in the sample (N) was 1802.

 Because of this, it was concluded that there was a statistically significant difference between the QHC and IF. Since our Paired Samples Statistics box revealed that the Mean number for ISO compliance was less than the Mean for the quality of health care. Thus, it was stated that participants who showed a preference for infrastructure fitness principally experience a better quality of care.

 Table 5.13 Paired Differences

5.4.8 QHC in Comparison Adapt

Paired samples test

		Paired Differences					t	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower	Upper		
Pair 1	QHC - IF	0.00400	0.63160	0.01631	-0.02799	0.03599	0.245	0.046

H$_1$: There was no difference between adaptability and overall quality of health care in the health care system in Mauritius.

Table 5.14 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	QHC	3.0013	1802	0.42909	0.01108
	ADAP	3.0020	1802	0.54116	0.01397

Paired samples test

In the Paired Samples Statistics Box, the mean for the QHC was 3.0013. The mean for the Adap was 3.0020. The standard deviation for the QHC was .42909 and for the Adap, also .54116. The number of participants in the sample (N) was 1802.

Table 5.15 Paired Differences

		Paired Differences						t	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	QHC - ADAP	-0.00067	0.68967	0.01781	-0.03560	0.03426	-0.037	.030	

Because of this, it was concluded that there was a statistically significant difference between the QHC and Adaptability. Since our Paired Samples Statistics box revealed that the Mean number for ISO compliance was less than the Mean for the quality of health care. Thus, it was stated that participants who showed a preference for adaptability principally experience a better quality of care.

Paired samples test

5.4.9 Chi-Square

In the Chi-square test, the relationship was calculated between the gender of the patients and their preference for either cost or quality of health care.

H_1: People based on their different gender did not prefer satisfactions on cost.

Table 5.16 Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	%	N	%	N	%
Gender * Preference	1802	100.0%	0	0.0%	1802	100.0%

Table 5.17 Gender * Preference Cross-Tabulation

| | | | Preference | | Total |
			PS	FC	
Gender	Male	Count	1772	30	1802
		% within Gender	98.4%	1.6%	100.0%
		% within Preference	94.2%	1.8%	50.7%
		% of Total	49.9%	0.8%	50.7%
	Female	Count	114	1688	1802
		% within Gender	6.3%	93.7%	100.0%
		% within Preference	5.8%	98.2%	49.3%
		% of Total	3.1%	46.2%	49.3%
Total		Count	955	847	1802
		% within Gender	53.0%	47.0%	100.0%
		% within Preference	100.0%	100.0%	100.0%
		% of Total	53.0%	47.0%	100.0%

According to the results, 53% of the male participants and 43% of females prefer patients' satisfaction. Thus, the null hypothesis would be rejected that there was no relationship between patients' satisfaction and gender.

Table 5.18 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2sided)	Exact Sig. (1sided)
Pearson Chi-Square	2551.435[a]	1	0.000		
Continuity Correction	2547.740	1	0.000		
Likelihood Ratio	3198.576	1	0.000		
Fisher's Exact Test				0.000	0.000
Linear-by-Linear Association	2550.585	1	0.000		
N of Valid Cases	1802				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 694.66.

b. Computed only for a 2x2 table

Our data told that there was a relationship between satisfaction preference and gender. Since the P-value (0.0003) was less than the significance level (0.05), the null hypothesis was not accepted. Thus, it was concluded that there was a relationship between gender and preference to patients' satisfaction.

H$_1$: People based on their different residential location do not prefer satisfactions on cost

Table 5.19 Case Processing Summary

	Cases

	Valid		Missing		Total	
	N	%	N	%	N	%
Location * Preference	1802	100.0%	0	0.0%	1802	100.0%

Table 5.20 Location * Preference Cross-Tabulation

			Preference		Total
			PS	FC	
Location	Urban	Count	1724	78	1802
		% within Location	95.7%	4.3%	100.0%
		% within Preference	89.0%	4.6%	50.0%
		% of Total	47.9%	2.1%	50.0%
	Rural	Count	215	1587	1802
		% within Location	11.9%	88.1%	100.0%
		% within Preference	11.0%	95.4%	50.0%
		% of Total	5.9%	44.0%	50.0%
Total		Count	967	833	1802
		% within Location	53.8%	46.2%	100.0%
		% within Preference	100.0%	100.0%	100.0%
		% of Total	53.8%	46.2%	100.0%

Table 5.21 Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1sided)
Pearson Chi-Square	2154.703[a]	1	.000		
Continuity Correction	2151.308	1	.000		
Likelihood Ratio	2557.977	1	.000		
Fisher's Exact Test				0.000	0.000
Linear-by-Linear Association	2153.985	1	.000		
N of Valid Cases	1802				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 704.53.

b. Computed only for a 2x2 table

According to the results, 53.8% of the urban participants and 46.2% rural prefer patients' satisfaction over cost. Thus, the null hypothesis was rejected that there was no relationship between patients' satisfaction and location of participants. Our data told that there was a relationship between satisfaction preference among urban and rural dwellers. Since the P-value (0.0032) was less than the significance level (0.05), accept the null hypothesis was not accepted. Thus, it was concluded that there was a relationship between the place of living and preference to patients' satisfaction.

The findings of the quantitative study were analysed from responses of 1802 participants using statistical software SPSS 20. It was concluded that Patients' Satisfactions, ISO Quality Standards Compliance, workforce efficiency, infrastructure fitness, and adaptability principally was directly related to the quality of care. As the conceptual framework developed for this study was described different standards, therefore, it was used to relate different parameters for evaluation of quality. Whereas, there was no statistical difference between financial cost and quality of health care. In addition, in

context to the demographics of the study, it was found that there was a direct relationship between gender and place of living to patients' satisfaction. The main quantitative findings along with justification from different research studies were presented to understand the findings of this research.

5.5 Relationships between patient satisfaction and hospital performance

The independent latent variable patient's satisfaction was positively and significantly related to the dependent latent variable quality of health care and hospital performance. In this analysis, higher levels of patient's satisfaction were indicative of facilities exhibiting a broader range of services. Hence, in a more general sense, hospital performance was enhanced within those facilities exhibiting a broader range of services as described by the theories presented in the theoretical framework of this study (Shortliffe and Cimino 2013). The Patients satisfaction indicator variables Volume Levels among Products and Number of Specific Lines of Service were both significant. Volume Levels among Products contributes negatively to Focus. The Number of Specific Lines of Service contributed positively to patient satisfaction. Each of these indicator variables increased as the range of services within the hospital increases (Simpao, Ahumada, and Gálvez & Rehman 2014). However, Volume Levels among Products increased as a hospital offers many services (i.e. procedures) across a relatively few service lines. The number of Specific Service Lines increased simply as the total number of procedures increases at the hospital, regardless of relative levels. When omitting Number of Specific Lines of Service from the CCA (Common country assessment), Hospital Specialty Score exhibits the significant strong positive effect. Due to their strong positive correlation, Hospital Specialty Score and Number of Specific Lines of Service can be view as proxies for each other and should not be included simultaneously within the CCA (Simpao et al 2014). The

observed variables Patient-Centeredness and Efficiency each significantly and positively contribute to the latent variable Hospital Performance. As each of these indicator variables increased in value, the overall level of Hospital Performance was enhanced.

Integrating the findings, this study suggested that a significant relationship between indicator variables for patient's satisfaction and hospital performance. Specifically, the number of the product, or service, lines (Number of Specific Lines of Service and Hospital Specialty Score) were positively related to the performance indicators Patient Centeredness and Efficiency and to a lesser degree Safety (Tappenden, Quatrara, Parkhurst, Malone, and Fanjiang & Ziegler 2013). These relationships supported the findings of the first essay that as hospitals enhance their overall breadth of services (i.e. the number of product lines) both efficiency and safety (outcome quality) were enhanced. Of interest in the significant negative relationship between Volume Levels among Products and Patient-Centeredness and Efficiency and to a lesser degree Safety (Tappenden et al 2013). This relationship supported the traditional relationship between satisfaction and performance present in the academic literature. Hospitals exhibiting a broad range of services, but an emphasis on a line of services might be well served to reduce the emphasis on those services or procedures performed infrequently.

5.6 The Role of Process Improvement in Quality Improvement

As health care facilities expand their range of services (i.e. decrease operational focus), the concurrently were provided with the opportunity to develop an expanding range of competencies. This enhancement of competencies provided the motivation to realise improvements key measures of performance (Tsai et al 2015). Health care facilities should wish to enhance performance measures of patient-centeredness, efficiency, and

safety; the results of this study suggested that an expansion of the range of services would provide desired improvements. This study was suggested that facilities exhibiting a high degree of service variation exhibit a negative relationship to the performance indicators patient-centeredness, efficiency, and quality (Tsai et al 2015). This finding was in line with traditional focus/performance relationships. For optimal performance, it seemed that hospitals might want to provide a relatively broad range of services without exhibiting a strong degree of variation within the selected range of services.

The positive narrow focus/higher performance relationship exists within manufacturing firms because of relatively larger investments in plant and equipment which are closely tied to their choice of manufacturing competence, or focus (Wager, Lee & Glaser 2017). Attempts to broaden the product-range, or decrease focus, were limited by existing plant infrastructure and managerial resources. This research suggested that hospitals, a major component of the service sector, providing a broader range of services can exhibit enhanced performance. Services (i.e. hospitals) were more dependent upon labour, as opposed to a dependence upon fixed assets within manufacturing. This labour component can develop and maintain a broader range of core competencies, or a broader service offering, and provides significant competitive advantages, or enhanced performance (Heskett et al 1997).

It was interesting to note that there was at least a degree of support to the traditional manufacturing patient's satisfaction relationship to performance within this study. The level of volume among patients of various hospitals showed a significant, negative relationship to Focus and by extension to Performance. Hospitals seemed to exhibit the same relationship to variation among products/service that manufacturing firm's exhibit. A product/service offering that shown wide variations among its volume level were

detrimental to performance in both the manufacturing and service sector. These two indicators exhibited a strong positive correlation. Because of this relationship, the finding of an essay that hospitals exhibiting a broad range of services also providing enhanced quality outcomes is additionally supported, regardless of the indicator variable deployed. The findings from the four-and three-variable focus CCA were congruent (Wicks, Stamford, Grootenhuis, Haverman & Ahmed 2014).

Among the four proposed variables contributing to patient's satisfaction, Volume Levels among Products and Number of Specific Lines of Service/Hospital Specialty Score were found to significantly contribute to the patient's satisfaction. However, these variables contributed to Patients satisfaction and by extension Hospital Performance in a converse fashion. Hospitals exhibiting a relatively large number of procedure activities within a narrow range of general lines of service (Volume Levels among Products) exhibited more focus and detract from overall performance. Conversely, as the number of specific lines of service increased (Number of Specific Service Lines/Hospital Specialty Score), or a decreased in focus, overall performance is enhanced. This finding provided evidence of the utility of a multidimensional evaluation of the construct Hospital Focus (Hyer et al 2009). Using a one-dimensional evaluation, this dissertation suggested that broader ranges of services contribute to enhanced performance in terms of both quality and efficiency. Using a multidimensional approach, this service has provided further insights into the Focus /Performance relationship.

The findings of this study provided insights as to which indicators of performance were significant within the proposed focus/ performance framework. The study found Patient Centeredness, Efficiency and to a lesser extent Safety were significant indicators of enhanced performance in the presence of the indicators of focus used in this study (Yip

& Hsiao 2014). The interest was the lack of support in financial performance contributing to performance within the health care setting. This lack of relationship between financial performance and indicators of patient satisfaction was reinforced by subsequent regression analysis (Yip and Hsiao 2014). This analysis indicated that none of the indicators of Patients satisfaction is significant predictors of financial performance.

5.7   SUMMARY OF QUANTITATIVE FINDINGS

The participants who showed a preference for Patients' Satisfactions, ISO Quality Standards Compliance, workforce efficiency, infrastructure fitness, and adaptability principally experience a better quality of care. Moreover, there was no statistical difference between financial cost and quality of health care. Hence, it was stated that Adap, IF, WE, FC, ISO, and PS were directly related to QHC. In addition, in context to the demographics of the study, it was found that there was a direct relationship between gender and place of living to patients' satisfaction. The total number of participants in this phase was 1802. These participants were health care professionals and patients who were undergoing health care treatment or have recently been discharged from the respective hospitals. It is noteworthy, that the hospitals where the study was conducted belonged to Mauritius.

5.8   PHASE 2: QUALITATIVE DATA

The qualitative data was in the form of verbatim and words quotes that were the interviews conducted from nine different focus groups, each comprising of nine participants and some individuals. It included open-ended questionnaires to conduct semi-structured interviews, which were recorded, coded, and thematically analysed from the transcripts

provided. The population was comprised of patients and health care professionals selected by the purposive sampling technique. The study was participants (health care professionals) were selected from four hospitals i.e. Sir Seewoosagur Ramgoolam National Hospital, AG Jeetoo Hospital, Dr Agalwal Hospital and Victoria in Quatres Borne's hospitals. A total number of nine focus groups were used for the research. Each focus group comprised of 10 participants. This assured that a total of 90 participants were evaluated in this qualitative study.

5.8.1 Procedures of the Qualitative Data Analysis

The method of data analysis for this phase was informed by making a thematic assessment. Generally, the thematic assessment was broadly implemented qualitative method to review semi-structured interviews. According to Yüksel (2017), thematic assessment is a technique applied for identifying, assessing, and reporting approaches within the data gathered. The reason for selecting this approach for this research as the thematic method to data assessment was rigorous in making an insight that answers the study questions. Furthermore, this technique of assessment complements the study questions through supporting an assessment of an interview data, firstly by a perspective supported by deconstructing knowledge; secondly, by being stable with the questions of the study and so, presents enough data. Rubin and Babbie (2016) observed that the major aim of applying a thematic assessment in qualitative research was:

- To make large, wide and multifaceted information from a raw textual style to a brief summary configuration.
- To decide the clear relations between the study aims and the outcomes of the raw data.

- It supports in making a theory or a model supported by experiences apparent in the raw data.

The interview session was conducted with nine different focus groups (each comprising of ten participants) by elaborating the content of the interview and began with the introduction of the researcher to the respondents. The introduction was brief, informal and positive and the anonymity of interviewed and the confidentiality of responses was ensured. The interview sessions lasted for nearly half an hour and all respondents were given open-ended questions to answer and express themselves. However, the researcher also probed small questions in between the main questions in order to extract more information out of respondents. The interview was conducted in a friendly environment and the researcher was concerned not to influence the responses, put themselves in a posture of the listener and seek to maintain a good and stimulating environment. The researcher also extracted information while the respondents were answering the questions any observation by the way the respondents were answering, their gestures and through their non-verbal or body language. In this sense, Creswell (2014b) ratified the use of a tape recorder, because it allowed the interviewer to focus on the talk and record the interviewee's non-verbal gestures during the interview. The next step was a deconstruction of the themes and the following step was undertaken to deconstruct the themes in accordance with the collected data; this was content analysis process used for analysing the data collected to come up with themes.

Copying and reading through the transcripts and making brief notes whenever interesting information was noted

↓

Repetitively going through the notes and listing a different set of information

↓

Reading through the list and categorising each item that represents valuable information

↓

Identifying whether or not the categories made are linked with the themes identified

↓

Comparing and contrasting different categories

Repeating the above-mentioned steps for each transcript

When all the transcripts were collected and categorised, they were checked in detail for their relevance

↓

Once all the transcript data were categorised into themes, the review process was conducted to ensure the reliability of the collected information

↓

Returning to original transcripts to ensure all the information that was needed to be categorised so as the process of content analysis was lengthy and required the researcher to go over and over the data to ensure trustworthiness of the data was ensured

From this process, seven major themes and 28 sub-themes emerged from the data analysis. Presentation for the results was presented according to the way each focused group was coded and the sub-themes that emerged from that major theme.

5.9   QUALITATIVE RESULTS

The results of this qualitative phase approach were sorted with the individual and focus groups showed the following qualitative findings:

5.9.1 Respondents (from few individuals and the nine focus groups)

Table 5.22   Respondents of focus groups

Respondent (FG and I)	Codes
Focus Group 1	F1
Focus Group 2	F2
Focus Group 3	F3
Focus Group 4	F4
Focus Group 5	F5
Focus Group 6	F6
Focus Group 7	F7
Focus Group 8	F8

Focus Group 9	F9

5.9.2 Theme 1: Appropriate technology

Table 5.23   Appropriate technology

Sub-themes	Coding
Lack of resources	A1
In progress	B1
Innovation plays an important role	C1
Lack of awareness	D1

The origin of health care technologies and innovations were associated with the search for communication-based solutions to allow isolated or scattered population access to effective health care services. Moreover, technological inventories were always considered the only feasible way to approach modern medical services and systems in many underserved scenarios, notably those of the rural areas of developing countries. The interview with the director of the managers, health care employees and other leaders in health administration exemplifies:

"… The innovative use of health care technology would be particular in various places and particular condition. It does not have any standard description. Various nations have a various infrastructure based on their financial situation, manpower, and geographical structure. If anybody implements ISO for medical care whether it is store-forward or real-time; in

that context, we were working telemedicine in Mauritius ..." (Participant no. 4 and 5)

It was necessary to identify that the health care administration activities were associated to the health data system and comprised data collection by particular health sources and cleaning, assessing and summarising the information to produce and distribute reports by the common administrative report, website, yearbook, health bulletin, newsletter, and others. However, different online databases were made and also customised excel forms were being applied for gathering data in tertiary care hospitals in Mauritius. The attempts were experienced to quickly change all data inputs through online databases. GPs offices and other units of the hospitals, for this the patient has to go, physician then got essential assistance for assessments then go to the laboratory and yet again have to go to the laboratory to gather investigations' outcome and go to the physician. The researcher also inquired; do you consider that the growth of standards of exercises like the International Organisation for Standardisation (ISO) that guided the operations of health care systems was relieved the country from its pending health care problems? One administrative manager replied:

"We just have begun to work in this area and we had a strategy regarding EHR but it was the fact that we don't have sufficient workforce yet about telemedicine and e-health. Knowledge regarding this issue is very much essential among the health experts with the patients … the private health sector can also take actions about this problem, as 60% of patients take health care facilities from private clinics and hospitals in Mauritius?"

It was compulsory to observe that the skilled human behind the backbone was the intellect and to materialise the view of health care that was successful and free of flaws in Mauritius. As the growth of the national backbone and an anticipated number of human recourses were the essential requirements. In contrast, as individuals were a concern, accessibility, convenience, and affordability should be confirmed; otherwise, the aim of health for all in Mauritius could not be obtained appropriately. As one of the participants from the interviewee explained:

"It is actually an effective approach for rural individuals and patients can have expert consultancy from far away from a major city. But we don't have sufficient system to identify the patients so; finally, we have to send the patients to a major city for ECG, MRI, and CT scan and others even for digital X-ray."

This was another issue to make this type of developments in Mauritius because of insufficient laboratory for diagnosis. Even some of the hospitals have not ECG service so patients have to go to the main city. There were some famous hospitals, clinics and consultation centres with diagnostic services that are associated with EMR; I have selected some of them and asked main personnel. He added:

It is not so effective for this country and for the patients. Mauritius is losing patients and money have to go far to acquire quality health service and pay more; while we have all of the aspects to assure these services…"

I asked for justifications how it is. He defined:

"… When a patient comes here for follow-up his cardiac surgery is done earlier, the patient becomes very satisfied by the consultant' response. It is due to the database; health care experts are keeping their patient's database (EHR). Whenever a patient comes for follow-up, health care staffs can have all record by EHR simply and rapidly. Patients are pleased as health care officials are worried about them. Our medical officials are qualified, but we don't have sufficient ICT culture among health staffs... there are other issues like the high price of bandwidth and interrupted power supply ..."

The final anticipation of patients and their associations were to be pleased with services rendered by health care systems and also to get well soon. One of the participants said:

"Patients' pleasure is supported by the reasonable fee, promptness of focus, effective staff approach, patients respect and their rights, giving confidentiality and privacy, giving enough knowledge, accessibility of medicines and logistics and above all a healthy and clean environment ..."

Human Resources Manager said:

"The programmes dominate us". Not as we don't get the complete functionality that we require or could get – because of inadequate financial support. Thus we don't observe end game obtained..."

Manager Patient Safety and Quality said:

"Abilities mismatch as left. Also the issue of a complication of time-poor staff having to communicate with inactive systems. Feeling of IT systems replacing (not in a proper manner) expert employees in some contexts. Skill mix/experience in decision makers not suitable…"

Clinical Service Manager mentioned:

"Some systems don't discuss to each other. Present HR system not very effective. "Don't tell what we wish to understand" – the outcome is arguing over correctness vs. the issues. Inaccuracy/inconsistency over data entry. Small data entry flaws can induce thousands of dollars' worth of flaws regarding revenue/expenditure ..."

IT Executive said:

"Reliability of system and information – perfect, successful knowledge. Normally a lack of consideration and training on how to apply technology? In the context of HR - strong feeling of wrong knowledge…"

5.9.3 Theme 2: ISO quality standards compliance

Table 5.24   ISO quality standards compliance

Sub-themes	Coding
ISO standards were not being followed	A1
In progress	B1
ISO standards were being followed but not to the maximum potential	C1
Illegal medical activities were evident in the country	D1

Participants described the perceived impact of quality improvement standards on their organisation. The implementation of quality improvement standards contributed to increased awareness and focuses on quality improvement and led to the development of strategies to improve quality of care. Although most participants expressed that the quality improvement plans have not had a substantial impact on quality of care, many felt that quality improvement plans have led to an increased awareness of performance measurement and QHC.

One participant (Participant #6, Clinical Service Manager) stated:

"I think there is a lot of benefit to [quality standards compliance]. For one thing, it makes the staff aware that we need to focus on quality improvement all the time."

Another participant described how the quality standards compliance at her community health care has made both clinical and administrative staff more aware of QHC. This led to increased efforts to ensure patients are effectively transitioned from hospital to primary care and are receiving preventive health care services:

"I'd say [quality standards compliance] had been a little bit of … a driving force. I would not say they've had a huge impact just because at a community health centre a lot of the things we're already doing … it does make the providers more aware and … the front desk staffs likes the medical secretary and receptionists who are booking appointments for example. It's more in the forefront around them trying to get people in around 7 days of discharge from hospital and the providers a bit more aware of making sure they're pushing the screening and the flu shots and what not. It has had a minimal amount of impact I think but I wouldn't say significant." - Participant #2, Clinical Service Manager

Coupled with an increased awareness of QHC, some participants felt that the quality improvement plan provided an overall focus on areas for practice improvement and provides a structure for reporting on performance. For example, quality improvement plans have enabled primary care organisations to discuss indicator findings and QHC efforts with their staff, Board and QHC Committees on a regular basis.

5.9.4 Theme 3: Financial costs

Table 5.25   Financial cost

Sub-themes	Coding
Lack of funding in public hospitals	A1
Therapy discontinuation due to increased cost	B1
Unaffordable by the majority of patients	C1

An important resource to retain	D1

Some participants described how the Financial Costs influence their practice of performance measurement and aligned with their organisational efforts to improve quality of care:

"With the inception of our team, which operationally is 8 years, we were involved in a lot of early initiatives. So, I think it became how we did work. So, from a QHC, we didn't have hospital financial planning, we were always looking at ways of improving and becoming more efficient … [QHC] is embedded in our values." – Participant #10

"We've always measured quality things. We've always had indicators for what we wanted to improve on. So, the fact that we're mandated now [to use hospital financial planning] didn't change the culture here. It just maybe changed what we were measuring. Or forced us to measure more than we already were. The culture was already here; it was already part of what we believed in and thought about." – Participant #2,

5.9.5 Theme 4: Patient's satisfaction

Table 5.26   Patient's satisfaction

Sub-themes	Coding

Strongly related	A1
It depends upon the area	B1
Not related	C1
Quality of health care can be improved	D1

The four health care organisations reported better patient satisfaction on scheduled post-discharge follow-up visits and one organisation reported improved access to same or next day appointments, two indicators of quality care. The ability of quality improvement to increase focus on areas for improvement, as well as the general system-wide focus on improving quality, was often described as a driving force for implementing initiatives to improve post-discharge follow-up visits and access to primary care. For the organisations that were able to increase post-hospital follow-up visits, the main strategy used was a collaboration with local hospitals or patients. One participant

(Participant #1) described how her organisation formed a "great partnership" with the local hospital to track patients who were admitted to the hospital and to get information on their discharge. This allowed the primary care organisation to follow-up with patients after discharge and provides them with the needed follow-up supports (e.g. visit with a family physician or a nurse practitioner). This added to patient satisfaction and improving their health care quality. In addition, they also tracked all patients who were having pre-operative assessments and sent these patients' letters asking them to call their primary care organisation post-surgery. According to the participant, these strategies led to substantial improvements in the number of patients visiting their primary care provider after hospital discharge.

5.9.6 Theme 5: Infrastructure fitness

Table 5.27   Infrastructure fitness

Sub-themes	Coding
Infrastructure was crucial in the provision of health care	A1
The private sector was well-maintained infrastructure	B1
The public sector had state of the art and latest infrastructure	C1
Infrastructure was an important factor for health care	D1

Some participants felt that that infrastructure is an important factor for health care and quality improvement alone or in tandem with other initiatives have created an environment where they can reflect on things and has helped to shift the organisational culture to one that was more support for quality improvement. For example, shift one organisation's culture to a more collaborative culture with physicians and staff working together to look at performance data and areas for improvement:

"I think [our culture] was a little bit more separate. I think that was why it was so daunting the first year we collected this data. Now it is more, let us work together to figure out what else we can collect. It has changed the culture from the physicians vs. the family health team to 'okay, we have to report this let us figure out ways of working around this together' and it's better. It has taken a bit to get there. It is more collaborative. There's a little bit more engagement of looking at how we can do things better, which there was not any of that at all. Before it was just 'people should be grateful that we're here and accept what, we give them'."– Participant #1

5.9.7 Theme 6: Workforce efficiency

Table 5.28   Workforce efficiency

Sub-themes	Coding
Evident role	A1
Does not affect health care	B1
Workforce efficiency contribute to other factors also	C1
The efficient workforce was the major requirement in the health care sector	D1

All participants described challenges that affected the success of quality improvement in health care. The success of an organisation did not appear to affect the types of challenges they experienced. The challenges were related to data quality, staff and physician engagement and buy-in, and needed resources for measurement and quality improvement. Such as efficient workforce was the major requirement in the health care sector as it contributed to other factors? Another participant described how a nurse practitioner spent a considerable amount of time trying to get a patient the resources she needed and coordinating her care, but this effort was not usually captured in the quality improvement of health care:

> "It's so hard in a community health centre to really measure the things we do… how do you measure that four hours you spent with that lady and getting her health care that she never had before. How do you measure that? That's what we'd like to know. That's what we're proud of. The fact that we screened 2% more people this year than last year, okay, we get

that, we can see that, but I think most people do not get excited about that measurement. They might get excited if they felt that a person that didn't ever have health care before finally got health care, that's more exciting." – Participant #2

5.9.8 Theme 7: Adaptability to revolution

Table 5.29   Adaptability to revolution

Sub-themes	Coding
Revolution requirements were mandatory for health care	A1
It was important to concentrate on existing issues and diseases	B1
Digital technology now played important role in health care sector	C1
Issues and concerns were addressed at utmost priority in the Health care sector	D1

	F1	F2	F3	F4	F5	F6	F7	F8	F9	TOTAL
A1	1		2	3	3		2		2	13
B1	8	9	7			8		2		34
C1		1		8	6	2	7		6	30
D1	1		1		1		1	8	2	14

Results: 34 of the participants believed that adaptability was important to concentrate on existing issue and diseases. 30 participants suggested that digital technology now played important role in health care sector than ever before. 14 participants suggested issues and concerns were addressed at utmost priority in the health care sector. Lastly, 13 participants required revolutionary requirements to be mandatory for health care**.**

Positive attributes of the quality improvement plan, as described by participants, include its adaptability to local practice. Participants recognised that there were indicators that they were required to address but appreciated the ability to include additional indicators that were important to their organisation and staff. A participant

(Participant #1) stated: "I like that aspect of the quality improvement in health care that these are the things [Health Quality Mauritius] want to be answered, but these are the things [primary care organisations can choose to answer. We picked up one extra thing this year to sort of work on, but it gives us a bit more flexibility". Another participant (Participant #5) said, "we had the opportunity to include things that we wanted to do, which was great…we did include some that were relevant".

5.10 Qualitative Findings

The qualitative findings were derived from thematic analyses of the responses retrieved from the participants of nine focus groups. The population was comprised of patients and health care professionals selected by the purposive sampling technique. The study participants (health care professionals) were selected from four hospitals i.e. Sir Seewoosagur Ramgoolam National Hospital, AG Jeetoo Hospital, Dr Agalwal Hospital and Victoria in Quatres Borne's hospitals. It included open-ended questionnaires to conduct semi-structured interviews, which were recorded, coded, and thematically analysed from the transcripts provided.

5.10.1 Appropriate technology in increasing efficiency in health care settings

It has been observed by conducting interviews with the focus group that technology plays an important role in health care. As the majority of the respondents agreed that, the lack of resources was the biggest hurdle for introducing new health care technology particularly in public health care settings (Yip & Hsiao 2014). However, employee technology awareness was also considered important for health care security and thus for better health care outcomes. The desired result was achieved more quickly and efficiently when the technology and the corresponding resources were managed as a process. The process approach was a powerful methodological tool for studying and improving the performance of any organisation (Yip & Hsiao 2014). However, in practice, its implementation was not such a simple matter. It was necessary to consider the process approach as a kind of technology for management modelling and design.

The best management systems were always based on system analysis and process optimisation. An effective manager focused for and models processes everywhere. Their nature was universal; therefore, it was recommended to use common terminology, principles, and methods of process management, set out in the QMS standards. All of them were applicable to the treatment and diagnostic process, including its planning, organisation, control, increasing labour activity and motivation of health workers, improving the regulatory and information support for their activities.

All phenomena were dynamic processes, however, some of them proceed arbitrarily according to their objective laws and some were subject to human influence. The managed processes in health care were widespread as already the name of one of them is 'treatment-diagnostic process.' It implied the use of the processor approach in the

practice of medical care. Effective health leaders were constantly striving (and most importantly doing this) to improve all aspects of the organisation's activities, not forgetting to concentrate their attention, strengths, and resources on solving, initially, priority tasks. They clearly represented the work of their institutions as a system of interrelated and interacting dynamic processes. Their systematic approach to management was aimed at coordinating all aspects of the organisation's activities.

Thus, any activity that utilised technology and resources to transform inputs into outputs can be considered as a process (Yip & Hsiao 2014). To function effectively, organisations must manage numerous interrelated and interacting processes. Often the output from one process directly forms the input to the next. Moreover, the definition, identification and management processes and, above all, ensuring their interaction can be considered a 'process approach'. For the effective and efficient functioning of the organisation must manage numerous interrelated types of its operations. The advantage of the process approach was in continuity control, which provided at the junction of the individual processes within their system, as well as their combination and interaction.

The implementation of technology by process improvement increases efficiency in health care; whereas if process improvement were defined, as a method of improving efficiency, then it would follow those studies of process, improvement in health care found increased efficiencies (Yip & Hsiao 2014). Evidently, not all implementation efforts result in successful outcomes; failures of implementation exist but were unlikely to be published. However, repeated evidence that such efforts do exist and have been successful implies that technology can be appropriately applied to health care organisations by this methodology.

5.10.2 Workforce Efficiency related to Quality Improvement

Efficiency was defined as the ratio between the actual of service and the maximum impact that this service or programme can have under ideal conditions as derived from outcomes of this study. However, workforce efficiency was directly related to quality improvement in health care. The focus groups interviews affirmed that an efficient workforce was the major requirement in the health care sector. Whereas, the majority of the respondents believed that workforce efficiency alone does not affect health care, as there were many other factors that were considered more important in improving health care efficiency. It was also observed that workforce efficiency also contributes to other factors.

If the first question was replied by empirical examples with by self-description, the second was less intuitively apparent. As long ago as 1994, Berwick mentioned performance (reduced waiting times, decreased inventories, streamlined documentation systems) as part of a long list of medical focused to establish "fundamental" modifications to the health system to enhance population health positions and social justice (Leleu, Al-Amin Rosko & Valdmanis 2017).

In the non-health care world, performance and quality were closely tied. The description of efficiency was mentioned to a customer/supplier view of value; what was wasteful detracts from the product and enhances its cost, while decreasing variability enhances reliability and decreases cost (Naveh 2004). Berwick mentioned to include hopes regarding efficiency in his call to hospitals for "Pursuing Perfection" (Berwick *et al* 2005), and seven of the hospital studies recognised efficiency as essentially associated with quality. For five of these hospital studies (Hibbard & Greene 2013), procedure development applications to enhance performance translated directly into safer care,

further accessible care, less clinical flaws, enhanced patient and staff gratification, lower than anticipated mortality, and other quality signs.

In hospitals, clinical staffs (normally physicians) were believed important in making sustainable transformations to health care systems but were suspicious of organisational efforts to make transformations circulated by non-clinical hospital leaders. However, meanwhile, these clinical staffs may themselves be distrusted through their fellows (Flynn et al 2015). Moreover, hospitals and other health care institutions have an inverted power structure, in which individuals at the bottom normally have a broader impact over decision-making on a day-to-day basis than do those who are nominally in command at the top. In these disconnected domains, business leaders have to discuss, despite than enforce strategies and processes (Ham 2003). Concerns regarding business culture might be anticipated to arise in studies about procedure change, however, that transformation supports development.

Quality control on the result would be more accurate to call the control of efficiency as an element of quality. Evaluating the possibilities of quality control in health care according to the result, it is necessary to answer the question of what the result should be. Planning for the result of activity requires a realistic assessment of the factors affecting it. A huge number of unmanageable factors (unaffected by health workers) affect the result in health care. Combined with the many factors that determine the inconsistency of the quality of medical services, it was very difficult to control the quality of the result. Currently, unfortunately, the planning of the result and its assessment were imperfect and based more on professional intuition, rather than on objective methods.

5.10.3 Patients Satisfaction and Quality Improvement

Organisations depend on their customers and their need and satisfaction to understand their current and future needs, fulfil their requirements, and strive to exceed their expectations. This principle applied to the participants concerned. The results indicated focused group interviews that patient satisfaction was strongly related to quality improvement. Whereas, it was also depended on the area in context to public and private sectors. The consumer and interested persons may be internal or external to the health care institution and represent the patient, his family, the attending physician (Griffiths et al 2014). In the health facility, as in any other organisation, in addition to the final consumer of medical services, there were numerous consumers of auxiliary and intermediate services. For example, a medical worker can be a consumer of information, communication, and transportation services, supplies to medical equipment, etc.

As stated above, the success of the activities of any organisation depends on consumers, both external and internal, so it was necessary to understand their current and forecast future needs. Without considering and meeting the needs of domestic consumers in health care institutions, the quality of the diagnostic and treatment process inevitably decreases. Without the satisfaction of the needs (requests) of the consumer of medical services and other interested parties, the meaning of the functioning of the health system as such is lost altogether. Thus, QMS standards were aimed at satisfying not only the end user of medical services but also all interested parties and society.

Quality improvement plans were formal, documented commitments to improve quality of care through focused performance targets and actions that ideally align with provincial and system priorities (Griffiths et al 2014). Each organisation must make its quality improvement plan publicly available. Each quality improvement plan contains information pertaining to the aim of the performance indicators; organisation's self-reported current performance, target performance for the upcoming year, planned improvement initiatives (change ideas), methods and process measures for the change ideas, and goals for the change ideas.

Quality improvement plans were developed by the primary care organisations and were meant to demonstrate a public commitment to improving the quality of care. Health Quality Mauritius provides the overall vision for the priority areas that organisations should focus on, which align with provincial priorities and were developed in collaboration with partners and patients across the system (Griffiths et al 2014). As of 2016, Health Quality Mauritius recommends a focus on three quality dimensions i.e. Timely, Patient-centred and Effective with priority indicators specified for each quality dimension. Organisations were asked to review the list of priority indicators and determine which indicators are relevant to their organisation. To do this, Health Quality Mauritius suggested that organisations review their current performance against provincial data and benchmarks if they exist. For indicators where organisations are performing poorly, Health Quality Mauritius strongly encourages including these indicators in the quality improvement plan. If an organisation decides not to report on a priority indicator, Health Quality Mauritius asks them about this action. Health Quality Mauritius does not specify the targets that should be set for each indicator (Hibbard & Greene 2013). In addition to the recommended priority indicators, organisations can choose to report on any additional indicators that were relevant to them.

Organisations complete quality improvement plans every year allowing them to monitor the progress they have made on selected indicators. Neither Health Quality Mauritius nor the Ministry of Health and Long-Term Care provides rewards or imposes consequences, as the data were meant to identify areas for improvement where quality improvement interventions can be targeted. During the study period, five priority indicators were recommended by Health Quality Mauritius within three quality dimensions i.e. Access, Integrated and Patient-centred (the priority areas were changed to Timely, Patient-centred, Efficient, And Effective and Population Health as described above). These indicators, which were recommended by Health Quality Mauritius, assess timely access to primary care, improved integration between primary and acute care and improved patient experience.

5.10.4 Practice Standards in the Health Care Sector

The results of the study indicated that ISO standards were not being followed in most of the health care organisations. It results in compromising the quality of health care services and facilities in an organisation. It was also observed that ISO standards were followed but not to the maximum level. However, in the majority of the public hospitals, its implementation was in progress. However there were different quality instruments, not all systems were appropriate for the health care sector. Quality care by quality management systems was effective as it was regarding growing the procedure around the customer/patient and thus increases the customer /patient' satisfaction (Leleu et al 2017). Other motives for the quality improvements' necessities were patients become further demanding. The reality that the competitiveness of other hospitals was developed not just by price but also by service and quality management supported to a better result and lastly, it was performed a further expert institution. The issue in observing hospital service

quality was that there was no established and dependable method with respect to the working aspect of quality as people explained quality supported by their subjective views.

5.10.5 Financial Costs of the Health Care

The findings of the study indicated that the lack of funding in public hospitals was the major cause of poor health care quality. Moreover, there were many other issues related to cost-effectiveness in health care such as therapy discontinuation due to increased cost. However, private hospitals were unaffordable by the majority of the patient due to their expensive treatment.

Out-of-pocket financing of health care was a most regressive way to pay for health care, thus, the most vulnerable groups are low-income households (Kearney-Nunnery 2015). Since people with low income are the most sensitive to the price of health care (Olfson et al 2014), access to health care was caused to be restricted (Middleton, Bloomrosen, Dente, Hashmat, Koppel, Overhage, Payne, Rosenbloom, Weaver & Zhang 2013). In combination with other characteristics such as age and the presence of chronic illness, cost sharing might cause financial barriers to consuming care.

Furthermore, cost-sharing influences total resources in health care systems. Firstly, the additional revenue was accumulated through cost sharing. The total amount, of course, depends on the rates for various cost-sharing types and on the character of health care services imposed by cost sharing (Morgan, Ensor & Waters 2016). Based on the legal setting, the revenue derived from cost sharing can become an income of health care funds or health care providers. Cost sharing as the additional revenue was mostly used to

increase salaries for physicians or medical stuff, to secure a higher quality of care, to refurbish health care facilities or to contribute to a decrease in debts. Although cost sharing increased the revenue, there were related additional costs administrative costs to collect and levy payments (Ventola 2014). The more complicated the system (various forms of cost sharing, numerous exemptions from the payment) the higher the costs.

The net revenue from cost sharing was, therefore, lower than officially collected data says. Secondly, changes in the consumption of health care may influence total spending in the form of savings. There were financial and time savings. Health care funds were able to save their resources emerging from a lower consumption (drop in prescribed medications, in the number of visits, examinations, and others) (Murdoch & Detsky 2013). The saved resources may be shifted to other costly health care services. Reductions in the number of visits to health care providers result in time savings (physicians have more time for needy patients). Nevertheless, some opponents warn that cost sharing might be counterproductive as an additional source of financing and the reduction in total spending is unclear (Leppänen, Lindgren, Sundberg, Petzold & Tomson 2016). The total revenue from cost sharing was mostly moderate and it usually takes only a small proportion of total resources while total private spending is getting higher. In addition, net performance strongly depends on administrative and accounting procedures. The more complicated the system, the higher administrative costs will be (Lee, Tsai, and Chai & Koh 2014). Finally, cost sharing has also an effect on the formalisation of a part of resources, which traditionally have been paid in unofficial transactions between patients and providers. Informal payments were usually paid to guarantee access to health care services or specific providers, to secure a higher quality of care to obtain above-standard services or materials (Betancourt et al 2016). For these reasons, cost sharing can contribute to lower

the amount of under-the-table payments, i.e. to redirect under-the-table payments to official out-of-pocket payments (Ventola 2014).

5.10.6 Infrastructure Fitness and Health Care Services

It has been observed by the findings of the study that infrastructure fitness of hospitals helps in rendering quality health care services to the patients. As most of the respondents affirmed that infrastructure, fitness was crucial in the provision of health care services. The findings also indicated that the private sector had the well-maintained infrastructure, whereas the public sector had state of art and the latest infrastructure. Thus, infrastructure was considered an important factor for health care. According to Bates et al (2014), the relationship between a hospital and a patient and between employer employees was a typical principal-agent relation. It was imperative to note that the patient must depend on the official knowledge of the health care experts and there was an irregularity in knowledge regarding the care process management. It was not easy for the patient to observe hospital performance. According to a respondent:

> "…Expectations can be regarding national benchmarking - but is an issue with this as the business itself has less than an appropriate consideration of performance and indicators - let alone the public …"

Owing to difficult health care requirements, the hospital might support to improve its utility function, decreasing costs as mainly considered in efficiency studies. Thus, this may go at the utility cost of the patient, who had an intention in getting high-quality care. Numerous approaches to improving quality of care have been described. These

approaches were all based on theoretical assumptions about behaviour change (as described earlier) and include strategies directed at the cognitive, motivational, marketing, reinforcement, social interaction, management and control and compulsion levels.

The cognitive approach assumes that individuals engage in rational decision-making, so providing individuals with evidence-based information influenced them to change their behaviour to improve care. The motivational approach assumed that individuals need to be intrinsically motivated to change; strategies that incorporate problem-based learning are optimal for creating change (Nelson et al 2014). The marketing approach focused on developing an attractive message that was adapted to the needs of the target group; as such, strategies for this approach included conducting a needs analysis to understand the needs of the target group, an adaptation of the message to fit the local situation and distribution of the message through multiple channels. The reinforcement approach assumed that external factors influenced behaviour, so strategies to improve care include economic incentives and performance feedback.

Structural, organisational, individual and innovation-level factors were described as influencing the success of QHC initiatives (Porter, Kaur & Rao 2013). Structural factors represent aspects of the external structure of the community or sociocultural context in which an organisation was situated such as the physical environment, public policies, social or political climate, economic climate, and infrastructure. Organisational factors represented aspects of the organisation in which a QHC initiative was being implemented such as leadership effectiveness, culture and employee satisfaction (Porter et al 2013). Individual-level factors represented aspects of the individual provider who was involved in the QHC initiative such as attitudes toward QHC and perceived behavioural control over the QHC initiative. Innovation-level factors represent aspects of the innovation or

QHC initiative to be implemented such as the relative advantage of using the innovation over usual practice and the quality of evidence for the innovation's efficacy.

Structural factors that impact the success of QHC initiatives include external motivators and project sponsorship. External pressures and incentives to improve quality and performance as well as external contributions of resources such as personnel, money, expertise, and facilities may result in more successful QHC initiatives. Organisational factors that impact the success of QHC initiatives included the innovativeness of an organisation and contextual factors relating to an organisation, microsystems within an organisation and QHC teams within an organisation. Determinants of innovativeness within an organisation have been described. Greenhalgh et al (2014) conducted a systematic review and found that decentralisation, good internal and external communication, and positive attitude towards change by management. Moreover, increased professionalism, complexity, functional differentiation, adequate resources, increased technical capacity and diversity of specialisation had a significant and positive association with organisational innovativeness (Rahurkar, Vest & Menachemi 2015).

The authors hypothesised that an organisation's readiness for innovation depends on several factors: tension for change, dedicated resources, support and advocacy, innovation-organisation compatibility, assessment of implications and capacity to evaluate the innovation. They described several factors influencing the successful adoption of innovations within organisations: incorporation of end users' perspectives during the development stage, positive and supportive change agents, and effective external change agents (Goodman, Ogrinc, Davies, Baker, Barnsteiner, Foster, Gali, Hilden, Horwitz, and Kaplan & Leis 2016).

Variability in the context of QHC initiatives also described as influencing QHC success. Through a systematic review and expert opinion, Kaplan et al identified important

contextual factors that affect the success of QHC initiatives (Rahurkar et al 2015). Contextual factors relating to the microsystem and QHC team within an organisation i.e. QHC leadership, culture supportive of QHC, motivation to change, QHC team diversity, physician involvement in the QHC team, subject matter expert, prior QHC experience, team decision-making process, team norms and team QHC skill were thought to directly impact the success of QHC initiatives. Contextual factors relating to the organisation such as QHC leadership, culture supportive of QHC, the maturity of organisational QHC, and physician payment structure are thought to indirectly influence the success of QHC initiatives.

Individual-level factors that influenced the success of QHC initiatives include perceptions of self-efficacy, skill proficiency, potential benefits of innovation and need for innovation. Providers who were confident in their ability to perform a specific behaviour (self-efficacy), have the skills needed to use an innovation, believe an innovation produced beneficial results and believe there was a need for innovation were more likely to implement a QHC programme successfully.

Innovation-level factors that impact the success of QHC initiatives include the adaptability and compatibility of an innovation. Innovations or QHC initiatives that can be modified based on the needs of the providers, organisation, and community have a higher chance of implementation compared to innovations that are not adaptable. Additionally, innovations that aligned with an organisation's existing practices, priorities and mission will be implemented more effectively compared to innovations that lack compatibility. Factors associated with high quality of care in primary care have been described. The physician remuneration model, the presence of allied health professionals and/or specialist physicians, the presence of mechanisms to maintain or evaluate competence, the extent of sharing of administrative resources, average organisational access to the practice and number of physicians are associated with high

quality of care (Rahurkar et al 2015). Additionally, common features of primary care organisations that deliver high-quality care is a continuous effort to develop a shared vision of high-quality care, aligning resource use and work processes with that vision, and balancing professional aspirations with population needs (i.e. favouring access for registered patients rather than the general population).

5.11 QUALITATIVE FINDINGS SUMMARISED

It was identified by the interview session of 9 focus groups and each group was comprised of 9 participants. Whereas, there were no individual interviews conducted with the participants. The patient satisfaction and appropriate technology play an important role in improving the health care quality of individuals in both the public and private sectors. However, financial cost and ISO quality standards compliance, and infrastructure fitness were found to be the major lacking in most public sectors and hospitals. Consequently, it was influenced by the work efficiency of health care professionals and thus the quality of health care.

5.12 SUMMARY

This chapter provided the analysis of data collected from a qualitative and quantitative approach. The qualitative and quantitative data were analysed by using statistical and other approaches or getting the outcomes of research.

CHAPTER 6 DISCUSSION

6.1   INTRODUCTION

The findings of this study were discussed in relation to the literature search and the theoretical framework guiding the study. The fusion of different theories assisted in the development of the standards for evaluation of the current health care system.

6.2 Discussion

The triangulation of quantitative and qualitative data made some important revelations to the study. The research revealed that patients who visit the hospital for health care service are pleased with the environment. It was also revealed that health service providers at the hospital show their clients and patients an appreciable level of respect, sympathy, courtesy and friendship (Bardach, Wang, De Leon, Shih, Boscardin, and Goldman & Dudley 2013). On internal service provision, it was revealed that internal service providers provide quality and timely service to their internal consumers such as health care professionals, nurses, and this also enables them to provide high quality and timely services to external consumers. Few respondents for that matter indicate that patients were dissatisfied with services at the OPD, Dispensary, Laboratory and the Consulting Rooms (Beach, Roter, Korthuis, Epstein, Sharp, Ratanawongsa, Cohn, Eggly, and Sankar & Moore 2013). As well as their dissatisfactions were seen in waiting times, lackadaisical and disrespectful attitudes and behaviour of some health care professionals, unavailability of prescribed drugs which had to be procured elsewhere by the patient and unfriendliness language of few hospital staff.

 Management has put in place consumer care and satisfaction programmes (Carayon et al 2014). They were planned capacity-building programmes to educate and train health

care delivery staff on consumer care and satisfaction. According to the results, patients' participants depicted that there was a range of factors responsible for their satisfaction from health care administrative services. In the health care delivery sector, the factors, which largely affected patient care and satisfaction, were quality services, waiting time, the behaviour of health care professionals, availability of specialists, the behaviour of other clinical staff and assistants, clean environment, and technological administrative tools for better care delivery. In relevance to our results, Abdelhak et al (2014) have realised the interrelated values of service quality and patient satisfaction and conclude that service quality and patient satisfaction share a close relationship. According to Bloom,

Propper, Seiler and Van Reenen (2015), service quality was the key to measure user satisfaction and therefore, an intensified competition and rapid deregulation have led many service and retail businesses to seek effective ways to differentiate themselves from their competitors. Participants explained that health care administration has been a problem for most people in Mauritius. It is imperative to understand that to survive and succeed under the current competitive health service market, hospitals and other health facilities must know their clients, their needs, and wants and satisfy them efficiently and effectively. Bokhoree et al (2014) indicated that health care administrations that are still in competitive business are those that can maintain their most valued clients throughout time. Accordingly, an improvement of service quality leads to patient satisfaction and loyalty as well as enhancement of the corporate image. This, in the end, affects how the organisation can effectively compete and succeed in this increasingly competitive environment. Patient care and satisfaction and for that matter marketing relationship are relatively new concepts to many government health care institutions. These institutions for years widely believed that their consumers who were mainly patients were the ones who need their services and not the health facilities, which need the patients to stay in

business (Eijkenaar et al 2013). The results also indicated that the health care institutions were beginning to recognise that the national health insurance scheme has made health care delivery quite competitive and more so need the clients to survive.

It is further notified of the results that the health care environment in Mauritius when the competition has become quite keen, patient care and satisfaction has become the prime concerns of each health care facility. In the contemporary time, health care administrations were increasingly becoming clients' focused. Hence, by satisfying the needs and wants of patients more efficiently and effectively enable them to secure higher market share, increase sales, sales revenue and profitability as well as corporate image. Both the qualitative and quantitative findings of this study suggested that quality improvement plans in primary care have had minimal impact on the perceived quality of care. This was arguably an unexpected finding. It was recognised, however, that quality improvement plans enabled the development and implementation of improvement interventions and, therefore, have the potential to improve quality of care. In addition, quality improvement plans were perceived to increase awareness of the need for quality improvement and enable an overall focus on areas for practice improvement and a structure for reporting on it. For some organisations, quality improvement plans have led to QHC being engrained in the way organisations work.

Although quality improvement was often advocated to improve health care, the evidence that quality improvement improves health care quality was mixed. For example, a systematic review examining the effect of Lean (i.e. a quality improvement methodology commonly used in the automotive and manufacturing industries that has expanded to the health care sector) on health care found that Lean had no statistically significant association with health outcomes and patient satisfaction, a negative association with

worker satisfaction and financial costs, and inconsistent benefits on process outcomes (e.g. safety).

Literature and findings of this research suggested several reasons that could help explain why quality improvement may not improve health care. Firstly, quality improvement efforts are often small-scale, time-limited projects led by individuals who may not have the expertise, resources, or power to create the desired change. With competing clinical or administrative duties and a lack of training in quality improvement, they may come up with workarounds or small fixes that fail to address the true problems. Secondly, there may be a poor understanding of the basic principles of quality improvement methods.

This variation in practice may compromise the effectiveness of PDSA cycles to improve health care. Thirdly, there was a lack of information sharing about successes and failures. In published reports of quality improvement work, outcomes were often described but not the reasons for why the interventions worked or failed. At a minimum, descriptions of the activities undertaken and the mechanisms that contributed to improved outcomes would be of value. For example, an organisation that has been able to implement a successful quality improvement intervention and sustains positive process or system changes were often an organisation that had other qualities (e.g. quality culture, sufficient skills and resources, infrastructure supportive of quality improvement work) that facilitate quality care.

Lastly, for quality improvement to be successful, people needed to recognise that improvements in quality of care are needed. The Dunning-Kruger effect a cognitive bias in which people tend to have overly favourable views of their abilities suggested that some low-performing individuals do not easily recognise that they were, in fact, low performing (Friedberg, Rosenthal, Werner, Volpp & Schneider 2015). If clinicians do not recognise

that they need to improve the quality of the care they provide, they are of course unlikely to participate in quality improvement initiatives in a manner that would result in improved quality of care.

Improving timely access to primary care was a provincial priority. As such, since 2012, primary care organisations were strongly encouraged to report on two indicators assessing timely access to primary care access to same and next day appointments and access to primary care post-discharge. Findings suggested that, on average, only 47% of patients were able to see their primary care provider on the same or next day when needed and 60% of patients visited their primary care provider within 7 days of hospital discharge in 2014/15. For these two indicators, the change in performance was not statistically significant (Friedberg, Schneider, Rosenthal, Volpp & Werner 2014a). Although the study had insufficient power to detect small effects, we can conclude that performance on both examined indicators did not improve substantially across all included practices, given that the 95% confidence intervals for the change were -6% to 3% for the access indicator and -8.7 to 11.2% for the post discharge follow up indicator (Friedberg, Chen, Van Busum, Aunon, Pham, Caloyeras, Mattke, Pitchforth, Quigley, Brook & Crosson 2014b). Organisational characteristics such as the type of primary care organisation, number of family physicians, availability of resources for QHC and reality were not found to have statistically significant associations with performance improvement for either of the two indicators that were examined.

Participants expressed numerous challenges that affected the implementation and adoption of quality improvement plans. These challenges include poor data quality, lack of needed resources for measurement and quality improvement, and lack of staff and physician engagement and buy-in. Efforts to improve data quality such as providing organisations with real-time data on their performance and standardising data entry in electronic medical records. It led to greater staff engagement and buy-in. providing

resources such as measurement and quality improvement training and funding for additional personnel could also increase staff engagement, as many participants described needing more time and personnel to dedicate to quality improvement work (Furukawa, King, Patel, Hsiao, and Adler-Milstein & Jha 2014). It was important for Health Quality Mauritius to work with these primary care organisations to identify their priority areas for measurement and select/develop indicators that represented these priority areas (Gittell, Godfrey & Thistlethwaite 2013). Engaging primary care organisations and using a bottom-up approach ensured their perspectives were incorporated in the quality improvement plans, which increased the likelihood that these organisations understood that quality improvement plans were a useful tool for improving quality of care.

Several factors were described as affecting the level of staff and physician engagement with quality improvement plans. These factors likely contributed to the perception that quality improvement plans were just "one more thing" rather than a useful tool for quality improvement (attitude), which influenced their intention to adopt the tool, which in turn led to a lack of behaviour change, as explained by the theory of planned behaviour. One factor influencing staff engagement and buy-in was the perception that the data was not an accurate reflection of reality. For example, data on access to same and next day appointments and access to primary care post-discharge do not capture patient choice (i.e. appointments may be available, but patients choose an alternate date that is more convenient for them), medical advice provided over the phone or care provided by nurses or allied health professionals (Goldzweig, Orshansky, Paige, Towfigh, Haggstrom, Miake-Lye, Beroes & Shekelle 2013).

Another factor influencing staff engagement and buy-in was the perception that improvement was outside of their control. Many participants expressed that improving transitions from hospital to primary care was outside of their control because it required relationship building and collaborating with hospitals, and hospitals were often unable to provide timely discharge information (Goldzweig et al 2013). To improve the quality of care transitions, it was important for all sectors to focus on this issue. As such, a potential strategy could be to include a priority indicator on hospital quality improvement plans that assess the timeliness of discharge information provided to primary care providers; this helped direct attention and focus on the need to improve transitions from hospital to primary care.

Quality Management Systems (QMS) were a powerful tool for improving the quality of medical services and the satisfaction of consumers and other interested parties. Undoubtedly, the role of these reasons only increased with time. In the future, the existence of a QMS in a health facility in working condition was the same mandatory requirement as compliance with the procedures for the provision of medical assistance, medical standards, sanitary rules, and other regulatory legal acts (Schembri 2015). The implementation of the QMS prompts the health facility to analyse existing and potential requirements and requests of consumers, other interested parties, identify processes that facilitate the provision of quality medical, and other services, and systematically manage these processes and their interaction. Thus, with proper organisation, QMS can become the basis for continuous improvement of health facilities, improving the quality and effectiveness of medical care and, consequently, improving the satisfaction of consumers and other interested parties (Yip & Hsiao 2014). In turn, patients and other stakeholders need medical services, the characteristics of which meet their needs and expectations. As consumers' needs and expectations change, health care organisations must constantly improve their services and processes within the QMS.

The quality management system in health care implied the implementation of eight basic principles of quality management, which include, first, customer orientation, secondly, leadership, third, employee involvement, and fourth, the process approach, in sixth, systematic and continuous improvement, seventhly, decision-making based on facts, and, finally, eighth, mutually beneficial relations with suppliers (Hyer et al 2009). The quality management system in health care implies, first, customer orientation. Therefore, for example, in a medical and diagnostic institution, as well as in any other office or organisation, in addition to the final consumer of provided medical services, there were numerous consumers of the various auxiliary, intermediate, and other services. It is necessary to invent, plan, create, and develop a management system, appropriate policy and plan for further actions. In order to determine the current strategy and tactics and list the main goals and objectives in raising the level of culture and quality of medical care (Wager et al 2017). It was necessary to formulate ideologies corresponding to this, and socio-psychological microclimate in the medical labour collective of employees.

On the other hand, in response to changes in the external and internal environment of health care facilities based on the system analysis of the incoming data. The development of corrective and preventive actions necessary to improve the management and production of algorithms for repeatable processes eliminate the causes of emerging problems (inconsistencies) and prevent recurrence. To this end, a formalised documented procedure should be developed. Leaders ensure the unity of the purpose and direction of the organisation. They must create and maintain an internal environment in which workers can be fully involved in the organisation's tasks. Heads of health care as the main goal of the health facility and due to their job duties should ensure a high CMS (Wager et al 2017). It was necessary to develop an appropriate policy and plan of

action, to determine the strategy and tactics, the main goals and objectives in the field of quality, to form the appropriate ideology, a system of labour motivation with an emphasis on ensuring high CAP and a favourable socio-psychological microclimate in the workforce. Employees of all levels form the basis of the organisation, so their full involvement in solving problems in the field of quality makes it possible to use their abilities with profit. Employees of health care institutions, the basis of the system of medical care, so it is essential to determine their needs and expectations, job satisfaction, the desire for professional growth, which helped to ensure their fullest involvement in the production (medical-diagnostic) process and increase labour motivation (Shortliffe & Cimino 2013). The increase of the ILC was possible only through the active involvement of all health workers and their support for the quality policy.

Heads of health care institutions need to create a cultural environment that encourages the involvement of workers in actively seeking opportunities to improve the treatment and prevention process, performance indicators and characteristics of medical and other services (Yip & Hsiao 2014). The authority should be delegated so that employees take responsibility for their implementation, including improving the quality of work processes and services.

Effective solutions must be based on reliable data and objective analysis of the information abstracting from the psychological characteristics of perception and processing of information. It can be argued that the formalisation of many administrative and clinical processes in health care was still possible (Wicks et al 2014). Especially it concerns the control of technological processes of care. Managers of health facilities should ensure efficient measurement, collection and validation of data to ensure the effective and efficient work of the organisation and satisfaction of consumers and other stakeholders. This procedure includes the analysis of the objectives and the adequacy of their quantitative and qualitative measurement and uses this data to improve the

efficiency of medical care (Wicks et al 2014). The organisational and methodological basis for the collection, processing, and analysis of the status of the Commission's information were the methods of statistical control.

Increasing the Commission's impossible without the use of evidence-based medicine. Unfortunately, practice explained that the level of training of health workers in this area was quite low (Tappenden et al 2013). The reason for this was not only the absence of relevant literature (recently just came out a few books that deserve a positive assessment) or learning opportunities but also purely psychological factors. Employees were usually unwilling to use their legacy installations and work skills. Restructuring of existing clinical thinking is associated with psychological stress and difficulty of perception of new approaches (Tsai et al 2015). Although, for effective clinical and organisational decisions necessary to purposefully seek, critically evaluate and correctly use the relevant information. Skills such work was necessary not only for physicians but also for the administrative head of the health and medical organisations (Shortliffe & Cimino 2013). Inability to carry out a critical analysis increases the likelihood of errors, which led to a reduction in the quality and efficiency of care. In other words, every administrative and clinical decision must be based on strictly proven scientific facts.

Preparation of information materials should be entrusted to specialists in the field of evidence-based medicine. Hence, the preparation of various legal documents and teaching materials (standards and practices of care, clinical protocols, guidelines and directives, orders, etc.) must be carried out strictly in accordance with scientifically sound data and evidence-based medicine. Information provision and management of clinical processes based on the facts and the results of the statistical analysis is a critical component of the QMS in the health institution.

6.2.1 STRATEGIES FOR IMPROVEMENT OF QUALITY AND EFFICIENCY OF HEALTH CARE IN MAURITIUS

The Excellent Care for All Act has helped move the provincial quality agenda forward by increasing awareness and focusing attention on the need for high-quality patient care. Since the Excellent Care for All Act came into law in 2010, health care organisations have submitted three quality improvement plans. It was important to ensure that the quality improvement plan was viewed as an important tool to enable QHC rather than a tool that has been imposed on people. To do this, there were different strategies control and compulsion, motivation, cognitive, social interaction and management to improve the success of quality improvement plans. These strategies have different theoretical assumptions about the effective implementation of innovations and can be used to address some of the challenges that were identified.

A strategy already being used was the power of external pressure, control, and compulsion (e.g. legislation) to change performance. This type of strategy assumes that many people changed their behaviour to avoid negative consequences and has been helpful in standardising the approach to QHC across the health care sectors. The Excellent Care for All Act sets out that organisations establish quality committees, create annual quality improvement plans that are publicly available and put patient satisfaction surveys in place, among other things. Neither Health Quality Mauritius nor the Ministry of Health and Long-Term Care, however, provide rewards or impose consequences, as the data are meant to identify areas for improvement where quality improvement interventions can be targeted. Findings suggest that the requirements, as described in the Excellent

Care for All Act, were being fulfilled by many organisations, but many organisations have yet to achieve improvements in quality of care.

It was important to be aware of challenges associated with top-down approaches such as bureaucratised management, effort substitution and draining of professional will. Bureaucratised management refers to the notion that management becomes reactive and focused on visual displays of compliance, which decrease the effectiveness of improvement efforts. Effort substitution was when people become focused on performance that was being measured, which may have negative consequences on performance that was not being measured. Lastly, the draining of professional will was the sense that innovations were being imposed on people, which inhibits their motivation to improve. As such, it was important to use both top-down and bottom-up strategies to get stakeholder buy-in and increase the success of quality improvement plans.

Table 6.1   Quality improvement strategies, options, targets and indicators

IDENTIFIED GAP	OBJECTIVE	STRATEGIC OPTIONS	STRATEGIC TARGETS	PERFORMANCE INDICATORS
Lack of motivation among the health care providers affecting the quality of the services provided to the patient	To improve the standards and practices followed in the health care organisation and give preference to needs and demands of the health care provides to create a motivational environment, which can improve the	• Implementation of performance appraisal for analysing the reasons for lack of motivation. • In case of lack of motivation due to the absence of work-life balance, the duty hours will be reduced • If the lack of motivation is due to the absence of bonuses and other monetary benefits, the	The strategic targets for using the strategies for this the issue is to follow the standard approaches to improve the engagement of health care workers towards their responsibilities and enhance their level of motivation to improve the standards of the services provided to the patients	• The engagement of health care professionals to the practices followed in the health care organisations • Retention of health care providers • Lack of stress and depression among the professionals

	performance of professionals and make them more focused towards patients' health	changes will be made in the system for introducing the monetary benefits for employees to motivate them • If the motivation is absent or low due to lack of recognition and feedback, the recognition system must be implemented for recognition of health care providers on their performance		

IDENTIFIED GAP	OBJECTIVE	STRATEGIC OPTIONS	STRATEGIC TARGETS	PERFORMANCE INDICATORS
Improper information systems resulting in an inappropriate flow of information	To develop an effective information system in the organisation such as Electronic health records (EHR), which can be effective for management of health record and flow	• Implementation of EHR for the management of health records of the patients • EHR is implemented for managing the information of patients and share the information with all professionals	• To ensure the implementation of the EHR system to ensure the appropriate flow of information • To save the confidentiality and privacy of information	• Records management • Appropriate flow of information • Improvements in the satisfaction level of the customers

	of information in the health care organisation			
Lack of monitoring	To develop an evaluation and check balance system for the appropriate monitoring of different organisational practices	• Development and implementation of the evaluation system • To implement an updated check and balance system for monitoring activities of all health care professionals	• The strategic targets for using the strategies for this issue is to ensure that a check and balance system is implemented to keep a check on the health care professional that they are according to the quality standards of health care system • Increased accountability	☐ Increase in accountability of health care professionals

			of all health care professionals to improve the performance and commitment to quality of health services • To ensure standards of health care services are followed	
Lack of Management Strategies	To develop management strategies and approaches, which can manage all the activities	• Development and implementation of Quality health care programmes • Continuously focusing on process improvement to improve quality of care	• Building the infrastructure and processes needed for QHC maintaining transparency and accountability	• Effective management of different organisational activities, which can ensure quality management in the health care sector

		• Establishing an organisational culture supportive of QHC	• Alleviating staff resistance, attaining staff support and meeting training needs	• Increased performance of health care providers • Improved quality of the health care sector
IDENTIFIED GAP	**OBJECTIVE**	**STRATEGIC OPTIONS**	**STRATEGIC TARGETS**	**PERFORMANCE INDICATORS**
	and implement QHC initiatives			
Lack of empowerment strategies	Having empowered staff equipped with the necessary knowledge, skills, and support to	☐ Development of training and learning for the health care providers	☐ Continuous focus on process improvement to improve quality of care.	☐ Empowered staff equipped with the necessary knowledge, skills, and support to embed QHC into their daily work

	embed QHC into their daily work;			

6.2.1.1 Motivational Strategies

Motivational strategies considered that transformation can be made by an internal inspiration to obtain maximum performance. Plans to enhance performance were to apply bottom-up methods that engaged end users (e.g. frontline clinicians) in the development of the innovation. Outcomes recommend that some institutions observe the quality growth strategy as a top-down system that had no input from those on the "ground". However the importance of the quality improvement plan signs and their purpose in making system-level, the cross-sector growth was identified, some institutions did not understand that the signs were related to or focused priority areas for their institutions. Similarly, the wider involvement of frontline clinicians in the growth of signs and change concepts may support end users observe the quality improvement strategy as an important system for development. Furthermore, benchmarking and giving comparative information highlighting how every institution was working in comparison to the same organisation may support to inspire performance development.

It may also be effective to support staff to concentrate on "small wins", small development interventions that are related to their organisation. Small success can support to diminish the disconnection between a strategy and its implementation and can decrease the feeling that concerns were so complicated that they cannot be solved. They can also make trust, encourage positive reinforcement, and enhance motivation for QHC work.

6.2.1.2 Cognitive Strategies

Cognitive strategies assumed that people made decisions based on considering and weighing rational arguments related to any aspect. If clinicians do not adopt an innovation,

it was because they had not been presented with sufficient or convincing evidence about its value. Findings suggested that there were several concerns with respect to the performance data such as its quality and timeliness and, as such, clinicians may not be convinced that their performance needs to be improved. Efforts to improve data quality (e.g. standardising data collection in the electronic medical records) and timeliness (e.g. using data sources that were capable of providing real-time data allowing clinicians to see the effect of improvement interventions on performance) may help improve the success of quality improvement plans.

6.2.1.3 Social Interaction Strategies

Social interaction strategies assumed that change can be achieved through interactions with and influence of individuals considered being important such as opinion leaders "respected sources of information that are connected to novel ideas and possess sufficient interpersonal skills to exert influence on others' decision-making". Many of the indicators on the quality improvement plan are focused on the performance of health care providers (i.e. family physicians or nurse practitioners). Findings suggested that in some organisations, management (e.g. Directors) led improvement interventions and there was difficulty in getting physician involvement and buy-in for the quality improvement plan and change ideas. Interventions driven by physician opinion leaders may be helpful in influencing performance and maximising buy-in.

6.2.1.4 Enhanced Management Strategies

Management strategies assumed that poor quality of care was a "systems problem" and, therefore, focus on influencing organisational conditions needed for change. Health care organisations were in varying phases of their quality improvement journey, with some organisations having mature QHC programmes and others having no experience with QHC prior to the implementation of quality improvement plans. For organisations that were new to QHC, establishing a culture supportive of QHC was essential for the success of quality improvement plans. Foundational elements of a QHC culture include having strong leadership commitment to address the process side of change (e.g. building the infrastructure and processes needed for QHC) and human side of change (e.g. maintaining transparency and accountability, alleviating staff resistance, attaining staff support and meeting training needs):

- Having the infrastructure needed to support QHC such as a QHC Committee and performance management system (the e.g. process of measuring, monitoring and reporting on performance).
- Having empowered staff equipped with the necessary knowledge, skills, and support to embed QHC into their daily work.
- Continuously assessing patient needs and implementing improvement efforts to address their needs.
- Using teamwork and collaboration to solve problems, share ideas and lessons learned, and implement QHC initiatives.
- Continuously focusing on process improvement to improve quality of care.

Some organisations were in the beginning phases of establishing an organisational culture supportive of QHC, but it was critical to get buy-in for the quality improvement plan and its success.

The findings of the study indicated that it was important to concentrate on existing issues and diseases in order to eradicate them. However, the majority of the respondents agreed that digital technology played an important role in the health care sector. Moreover, the issues and concerns should be addressed at the utmost priority in the health care sector for better outcomes. Although, the field of Emergency Health care in Mauritius was now struggling to adapt to diverse changes in utilisation patterns of care services for the patient population. It was found that the increase in visitation by the patients over the last 10 years in the health care system has been by those patients with insufficient health care insurances, the elderly, the mentally ill, and those outside the current private payer system. Whereas, no more than 10% of the population of any one Mauritius country is covered by health care insurance (Goodman et al 2016). Although in Mauritius, the higher number of patient population was uninsured, this trend was prevalent for most of the hospitals and further complicating this trend, some estimates were claiming that as few as 5% of the patients coming to emergency departments were truly critically ill (Mathews, Demski, Hooper, Biddison, Berry, Petty, Chen, Hill, Miller, Witter and Allen 2017). At present, the emergency departments were being used by patients with non-existent health care coverage, and by a larger number of patients who can be treated in less acute medical environments.

In response to these emergent trends, a nucleus of literature appeared over the last several years in the field of clinical emergency health care research journals calling upon those within the field to reorient themselves to the necessity of an increasing public health

role for emergency medicine. As the failures of the health care system have played a significant role in preventing conditions like communicable and chronic illnesses, cases of poisoning, injuries, the result of violence, addictive behaviours, psychological disorders and HIV occurrences, to come into perspectives in the emergency health care departments. Goodman et al (2016) identified that these changes in the utilisation patterns are just beginning to be addressed. Hence, this new direction within emergency medicine illuminated the concurrent dialogue occurring in the general sciences and in medicine around the need to change prevailing social perceptions on concepts of health and how treatment problems were approached.

According to Mathews et al (2017), the pressure to change the emergency health care mission is forthcoming from the governments and health care policymakers. McHugh, Martin, Hennessy, Collins and Byrne (2016) argued that the emergency departments are increasingly cited for their enormous capital costs, and their tendency to treat non-acute patients in a high-cost, and a high technology environment. This trend was offered as evidence towards the escalation of the social cost of health care McHugh et al (2016), in one of the few historical analyses of the evolution of emergency health care, anticipated this central issue in the following words:

> "Emergency health care system has directed its efforts at reducing disease and disability among the critically ill and injured; however, 95% patients treated by emergency medical services fall outside this main goal of emergency care."

Within the field of emergency health care, the confusion over the issues of function and responsibility has inadvertently given rise to a set of subsystems within emergency departments that have evolved to meet the needs of patients presenting with complex bio-psychosocial and clinical health problems in addition to acute medical needs (Ram 2014). These subsystems were collectively known as crisis intervention services. These Emergency Department (ED)-based services began addressing emerging health care needs of the speciality of emergency care services long before the discipline of emergency medicine itself formally acknowledged these problems (Goodman et al 2016).

To some extent, this can be attributed specifically to the lack of any coordinated policies or programmes to address these systemic issues in the field of emergency health care. It is imperative to understand that the emergency departments now face pressure to accommodate their increasingly diverse patient populations in novel ways that were more effective and more cost-efficient. As indicated in a study by Yang et al (2015) the hospitals and health care systems needed to respond to the changing environment with several different strategies that may include both expanded service provision, as well as linkages to other providers in the community. In similar terms, McHugh et al (2016) supported that the use of the emergency departments by the non-urgent patient population has led to steady rates of increased utilisation for emergency department ancillary services such as Electronic Medical Records, Health care Information Technology and other Simulation-based technological advancements. On the other hand, McHugh et al (2016) accentuated that the emergency departments through the process of attrition have become the only logical parameters and accessible modalities for medical, social and mental health care for growing number of potential patient population. His reciprocated trend has allowed the government officials to develop a diverse number of emergency department-based simulations and innovative methods to improve quality of health care services.

It was essential to note that the federal in Mauritius was focusing on transitional and transformational changes in electronic databases to implement a plan that has already won national and internal awards for this excellence. Alkraiji, Osama and Fawzi (2014) identified that electronic information systems were deployed in emergency units after careful realisation to incorporate and merge with forces from different areas of authority so as to formulate information-based society and establish new goals and objectives.
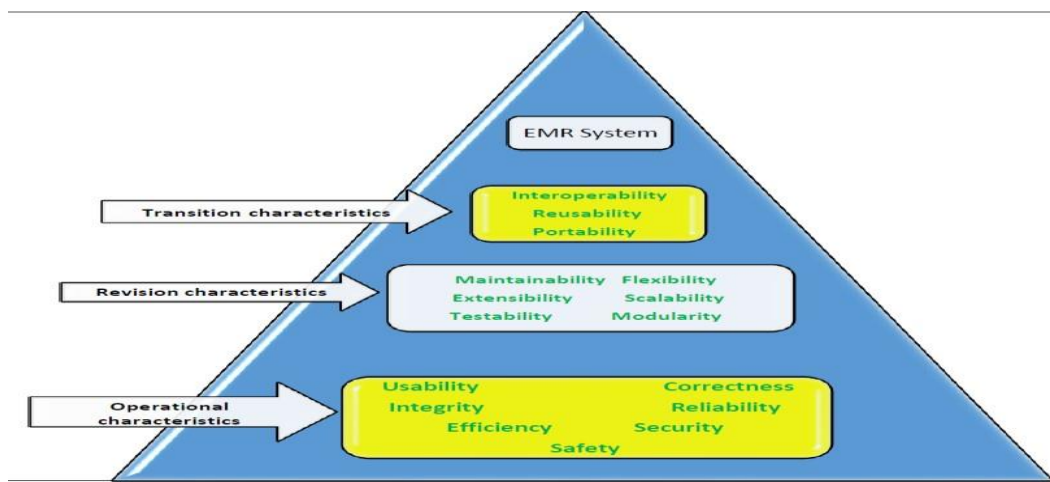
Figure 6.1 the three main characteristics of the EMR System

(McPherson and Pincus 2016)

The operational features of EHR include the correctness, the usability, reliability, efficiency, security and the safety of software implemented. Operational characteristics include such things as system correctness, usability, integrity, reliability, efficiency, security and safety. These characteristics were reviewed in detail below:

One of the main areas of consideration before making an investment in an EMR system is to ensure it is accurate, and therefore has a high level of precision and is highly

consistent. As much as EMR systems were generally perceived to be highly accurate and correct, some were more efficient and accurate than others; therefore, caution should be taken in designing the system to be applied (Enani 2016). Essentially, the first step is to collect patient's requirements for the EMR system and these requirements should be stated through user medical histories, following the stringent development process (McPherson & Pincus 2016). After user specifications are stated by creating user data and information, the system should meet all those specifications to satisfy the suitability of characteristic (Weber 2016). The system should be able to accept patient information and be able to produce accurate information when matched with the system information. Furthermore, the system should be able to make the information consistent such that when accessed from a different health facility, it displays similar results so that the information in one system is not different from that in another facility (Schoville &Titler 2015).

The usability characteristic simply infers to the ease of use of the system as past research studies indicated that there have been numerous obstacles and barriers hindering effective implementation and use of these emergency health care systems. Human resource barriers were indicated as the most prevalent barrier among all other limitations (Hsieh, Lin & Hou 2014). Some of the other barriers highlighted include a lack of experience in using EMRs, low numbers of health informatics specialists and lack of knowledge of using EMRs. To enhance usability, enabling multiple languages for the EMR system was highly recommended; creating user-friendly interfaces and eases of access to the system from anywhere and anytime. The issue on the integrity of any EMR system was a widely debated issue around the globe and despite the EMR system being recently adopted in the United Arab Emirates; many issues have been raised regarding

the level of integrity of the system. Some of the integrity issues raised about the system regard security and privacy of patient information (Weber 2016).

The system incorporated a lot of security and privacy measures, such as the use of passwords and restricting access to unauthorised persons (McPherson & Pincus 2016). Therefore, system adoption by the Mauritius government and especially with cooperation between federal bodies and health care sector will decrease concerns regarding system integrity (Renedo, Marston, and Spyridonidis & Barlow 2015). However, according to the fact that our suggested system developed and work using cloud technology, the integrity of the system will be able to protect and control the data access for authorised users. All integrity issues regarding the use of the system will be dealt with. Undoubtedly, the desire of any user was to have a reliable system that does not result in inconvenience and EHR system has put in place all the required measures to ensure that the system was more reliable and accurate (Yang et al 2015). First, as a cloud-based system, it will be of high performance and quality and will operate around the clock. Therefore, there is be a need for two EMR systems that were identical and parallel; if one of them goes down; the other serves as a backup (figure below). By having two systems in place, when one system breaks down the other system automatically picks up, thereby eliminating inconveniences that could arise.

It was important to note that the security of patient data was fundamental in the implementation of any EMR system (Yang et al 2015). Thus, the implementation of the EMR recommended in this work will also be based on the fact that it has to secure the patient's records from unauthorised access (Hollis, Morriss, Martin, Amani, Cotton, Denis & Lewis 2015). This system will involve complex programming that will see to it that there is a high level of security to prevent breaches. Therefore, the idea of adopting EMR

system through the Mauritius government will lead to a fully protected system. The Ministry of Information (MOI) in Mauritius has already adopted other security critical systems on the cloud, such as e-passport, which means they have a ready cloud infrastructure with security systems set up. Nevertheless, an added security protocol will be put in place to strengthen this notion.

Safety issues go hand in hand with security concerns and are an essential characteristic of any system. This system will be made in a manner so that it guarantees total security for users of the system (Weber 2016). Around the world, EMR systems have been adopted locally, which have in turn raised different issues, such as safety and privacy. Our system is a cloud-based system, which means the host of our system will be responsible to take a backup and ensure that our system will be available under any environmental circumstances (Yang et al 2015). Existing safety protocols by the Saudis (MOI) are taking an automatic data backup as daily, monthly and yearly to satisfy the safety of systems. Moreover, the physical outlook of the system was metallic and very strong and durable. The users will also be inducted on the usage of the system, including the necessary security measures how to best minimise accidents.

During the development of this EMR system, heavy testing was done. In this thesis, a test plan has been included in the later chapters to highlight the importance of testing using agile development process. Every step has been tested to ensure that the system has little to no flaws so as to ensure it was user-friendly and functions effectively. Thus, the ultimate goal of the system is to ensure that the end users and customer are satisfied and that their expectations are met (Smith & Koppel 2014). HIMSS analytics created a model to measure the adopting of EMR system (Yang et al 2015). It is imperative to know that the EMR system was considered as a fully functional system when it was implemented

and needs to be able to perform the entire hospital functions automatically. These functions included but were not limited to document imaging, data warehousing, and medical images within its EMR environment. When the system combined all the independent functions together, level or stage 7 in the HIMSS model can be achieved, and this system was expected to have high modularity.

Currently, research has shown that EMR systems used by hospitals in most of Mauritius lack the ability to share or exchange information (Pronovost, Bo-Linn & Sapirstein 2014). Therefore, the main goal of this research was to design and implement an EMR system that can inter-operate with others as a main and standard system. Moreover, the system will make use of data and information transparently between patients, physicians, and health care providers (Weber 2016).

It was essential to note that the hospitals using Federated Model are still struggling in defining their profile and standards and as much as the Centralised Approach to EMR has been credited with some positive reasons, it also has some demerits. A Centralised Approach for adopting EMR requires strong central coordination since the central database cluster needs to be carefully managed and maintained for this system to work (Zhang et al 2014). In addition, the privacy and security aspect required more effort and protections according to the single point of failure. Furthermore, it also required a large effort to keep not only demographic records but also clinical records free from duplication, since these records collected from numerous disparate sources. Using the Hybrid Approach, not all the actual data were simulated to the central data depository (Health care Information and Management Systems Society 2015). This may lead to a lot of inconveniences in the data that have not been replicated.

The findings indicated that Mauritius has performed considerably in encouraging and increasing their health care sector by using the current and highly qualified systems and approaches in emergency health care facilities. (Weber, Verjee, Rahman, Ameerudeen & Al-Baz 2014). One of these systems that give a competitive edge of some countries over the other in Health care information technology is adapting specialised Electronic Health Records (EHR) system and the potentiality for exchange and sharing of these records between different health care providers within a country.

It was essential to note that those non-profit global organisations who have been founded to improve health care quality, efficiency, access adopted EMR through using IT and management systems (Middleton 2014). For instance, Health care Information and Management Systems Society (HIMSS) was a global organisation focused on leading health care providers to optimise provided services using specialised formats of Information Technology. Pera, Kaur and Rao (2014) identified that HIMSS analytics created a model called the Electronic Medical Record Adoption Model (EMRAM) to allow a specific health care organisation to measure and score their progress in adopting EMR over and against other organisations, either inside their own country or for outside utilisation.

6.2.2 EMR SYSTEM AS STANDARD ELECTRONIC DEVICE

Implementing EMR system in Mauritius hospitals helped to create their own customised EMR standard that works for the whole country. According to Yang et al (2015), when it comes to cloud services, a lot of concern revolves around privacy and security issues in the current state of EMR usage in a health care emergency settings. This research was based on a cloud EMR system as a national system (Hitt and Tambe 2016). Therefore, there was a need to maintain access for EMR available and while protecting data privacy

and security. For this implementation, three basic reasons have been the fundamentals for the adoption of EMR system; (1) Decision makers; (2) Physical Infrastructure and (3) Data representation (Zhang et al 2014).

Countries that have implemented EMR systems through different health care providers have been struggling with exchanging EMR because of who was authorised to access and check the patient data and who was responsible to administrate the access control to these data. Thus, the privacy issue raised and conflict between health care providers about controlling the access to data appeared. Various solutions have been proposed to solve this issue; however, the results have been unsatisfactory. After facing many EMR privacy challenges and some proposed solutions, the idea of adopting the EMR system became the optimal choice for this research project. The reasons are a) Governments are more capable and ready to follow and implement international standards such as HIPAA, ISO and HL7. The Mauritius government systems running now on the cloud, and all the regulations for access controls and privileges were ready and implemented; c) Health care personnel were well trained to protect and secure the data more than others in the country according to the systems that were running and the response to attacks that happened in the past (Weber et al 2014).

It was essential to note that nowadays, whole Mauritius government systems and even some private systems administrated and provided via MOI, including advance hardware infrastructure (servers, hubs, switches), highly qualified data centres certified with ISO, and highly secured places as data centres for the hardware (Lian et al 2014). Moreover, the most precious thing in the entire system was the data itself. Thus, the need to protect the content of data through encryption was critical Naming the database, tables, and

columns should not indicate or hint to the real meaning (Cantiello, Kitsantas, Moncada & Abdul 2016). Also, statistical patient data should be stored in different databases.

This research proposed the adoption of standardised EMR systems on cloud-based technology for all Mauritius emergency health care organisations, both private and public health centres. The centralised databases with web services provided to enable patients, physicians, and all the other stakeholders who use the EMR system to be able to interact with EMR systems everywhere and anytime. During the adoption of the proposed solution, three different scenarios were most likely to be experienced. There was no accurate statistics that explained the numbers of hospitals or health care providers that still use paper-based systems for their patients in Mauritius. However, one recent study conducted by Hasanain and Cooper (2014) on the adapting of EHR system on 22 hospitals in Riyadh city showed that three hospitals out of 22 still have not adopted an EMR system. Therefore, the coordination and cooperation between government and the health care providers that still use paper-based forms should start by letting them provide preliminary patient information and the names of responsible people who interact with this information or data. Two suggested methods were: Design and use a customised excel sheet that met the proposed centric database characteristics in this research (EHR system database), then send it to the concerned health care provider to fill it out with appropriate data and send it back to Ministry of Health to import it to the EHR database (Lian et al 2014).

Further, the adoption of the EHR system in some hospitals in Mauritius has already taken place or is currently underway to implementation. Some hospitals have a fully functioning EHR system, while others are still in the process of implementing it in emergency health care units (Cantiello et al 2016). Moreover, different health care facilities are embracing

the system and hence, different systems are used. In this scenario, the integration and interaction of data from different systems brought about some issues based on the incompatibility of the data and application (Zhang et al 2014).

In fact, to embrace a central EMR system on a cloud-based solution as proposed in this research, coordination is required between the Ministry of Health and hospitals that adopted EMR systems and vendors of these systems. The suggested solutions for these issues were:

- Sending the hospital data to MOH to import it to the EMR system database on a cloud after customising it. However, the current system used by the hospitals will consider useless and the contract of systems vendor will need to be reviewed.
- Making an agreement with the EHR system vendor to integrate or develop API for their current system to make the interaction with the proposed solution more compatible.

Cantiello et al (2016) identified that the use of Cloud-based EHR system has not been deployed freely in providing online or web-based health care services in Mauritius.

Thus, by developing EMR system requirements, building the case diagrams may facilitate in understanding the interactions between system users (actors) and functions that the system performs (Rahurkar et al 2015). The sequence diagrams portrayed how our system objects interacted with each other and provide the order of the actions or events that users interact with. Four main sequence diagrams were added to improve the understanding of our system.

The findings illustrated that there was a number of problems that physicians in Mauritius find challenging to cater during serving patients in emergency units, increased in the provider's time, computer downtime, lack of consistency and subsequent care standards, the prolonged waiting time for the patients, and systemic errors and above all the issues of confidentiality. About 75.2% of respondents instigated that apart from the problems in computers and errors in uploading and downloading medical information, the privacy and confidentiality of patients was the main concern (Reames et al 2014). The medication errors in the Mauritius hospitals were at a frightening rate of 18.7% and proper systems, performance improvement programmes, and information management aids in improvement in patients' waiting time can be the possible solution. Using EMRAM to measure the current progress of adapting EMR in health care organisations in Mauritius emergency health care system as a scope of this research work led to better understanding of the current situation of EMR in these countries. Implementing EMR system in Mauritius hospitals helped to create their own customised EMR standard that works for the whole country. Further, the adoption of the EHR system in some hospitals in Mauritius has already taken place or is currently underway to implementation. Some hospitals have a fully functioning EHR system, while others are still in the process of implementing it in emergency health care units.

6.2.3 THE HEALTH SERVICE EXECUTIVE (HSE) CHANGE MODEL

To make a successful transformation and assure its accomplishment, it was necessary to identify people' concepts about change and the business culture. Furthermore, it was important to implement the change activities which comprises; support by example method, making shared purpose for change, concentrating on service users, engaging major stakeholders, communicating properly, resourcing the change, encouraging

successful team performance, making feeling of urgency, balancing transformation and stability and supporting constant education and assessment (Bates et al 2014).

Figure 6.2 Health Service Executive (HSE) Change Model (Sorescu et al 2003)

The HSE Change Model portrays the movement of the change by current situation into the new required future which passes by four phases of the project management lifecycle such as Initiation, planning, implementation and mainstreaming. Measures used in this study are divided into two separate subgroups; (1) Measures of hospital focus and (2) Measures of hospital performance. Measures of hospital focus include (1) Hospital Specialty Score (HSS), (2) Number of General Lines of Service within the Hospital, (3) Volume Levels Among Products and (4) Number of Specific Service Lines Exhibiting Procedure Activity.

Health care facilities differ greatly in the breadth of services they offer. This breadth of service was a critical component of a hospital's overall measure of focus. This study computes a Hospital Specialty Score (HSS) score for each hospital and uses this variable as one of four items in determining a hospital's overall measure of focus. This HSS score provided a measure of the degree to which an individual hospital focused on specific procedures or provided a wide variety of procedural services. Individual procedures were coded through a "diagnosis-related group" or DRG. Practically speaking, the HSS ranges from 0 (a highly specialised facility) to under 10, due to the limited number (46 total) of DRGs specified by the Department of Health and Human Services.

Hospital Specialty Score was ultimately a measure of the hospital's degree of diversification of services. Varadarajan (2013) devised a methodology determining a measure of diversification. This methodology was modified within this study as the HSS and was operationalised as follows (Sorescu et al 2003):

A number of General Lines of Service within the Hospital: The number of general lines of service within each hospital was computed by grouping the 46 individual DRG's into one of six "product lines." These product line groupings include (number of DRGs) pulmonary (2), circulatory (13), gastrointestinal (10), orthopaedic (12), renal (5), and reproductive (4) procedure groups (Ryan, Bishop, Shih and Casalino, 2013). For each hospital within the sample, the number of product lines where at least one DRG is performed was summed to determine the total number of product lines within the facility. The product line measure ranges from a low of 1 to a high of 6. Volume Levels among Products. This measure of focus was the variance in the number of procedures performed within each general line of service. Facilities with a high variance indicate that a particular hospital performs some procedures very rarely relative to other procedures.

Procedures that were performed more frequently can be thought of as being "core" to that hospital's business. Equating this measure to prior literature, this measure captured. Incompatibility among product volumes. Facilities with a low variance were indicative of a compatible volume level among products (Ryan et al 2013). A number of Specific Service Lines Exhibiting Procedure Activity; the measure was determined by computing the total number of DRGs with at least one procedure reported as being performed for each hospital within the sample. This measure ranges from a low of 1 to a high of 46 (Ryan, Burgess, Pesko, Borden & Dimick 2015). The following measures of hospital performance were included in this study: hospital safety, hospital effectiveness, hospital patient-centeredness, hospital efficiency, and hospital financial performance.

Hospital safety was equated to overall mortality and readmission rates for each facility within the study. Patients were safer in hospitals that exhibit relatively lower mortality and readmission rates (Ryan et al 2015). Thirty-day risk-standardised mortality and readmission rates for each condition at each hospital were summed to create a safety score for each of the three conditions (heart attack, heart failure, and pneumonia) included in the study. While data were available for other conditions, these three conditions were specifically selected due to the correspondence of these measures with other data reported within the HHS data set (e.g. the process of care best practices performed for a given condition) (Ryan et al 2015). This presented a robust data set which provides the data breadth and depth required for a study of this type. These combined scores were then averaged to create an overall outcome quality score for individual hospitals. This overall outcome quality score was then used as the measure of hospital safety within the subsequent analysis. It should be noted that low to high mortality and readmission rates were equated with high to low safety measures.

Risk-standardised mortality and readmission rates were often used as indicators when studying outcome quality (Krumholz et al 2006). This risk-standardised methodology overcame a common critique of using outcome measures as a proxy for quality or safety, namely that their interpretation is dependent upon the case mix and other hospital-specific variables. Risk-standardised outcome measures specifically overcome this limitation and provide a robust proxy for hospital safety. The risk-standardisation utilised a hierarchical regression model was utilised to compute hospital-specific 30-day readmission rates. (Note: This hierarchical regression was not part of this study. Data within the dataset have already been subjected to this regression.) (Shaw, Asomugha, Conway & Rein 2014). Specific patient-level factors considered in determining the risk standardised mortality and readmission rates include gender, existing comorbidities, and past medical history specific hospital-level factors utilised in determining the risk standardised mortality and readmission rates include the unique quality of care for all patients treated for that condition in that hospital

Hospital effectiveness measures provided a process of care detail indicating "how often hospitals give recommended treatments known to get the best results for patients with medical conditions or surgical procedures." Information about these treatments was taken from the patients' records and converted into a % age." (HCD Updated March 3, 2010) The process of care measures for three specific conditions was included in this study; heart attack, heart failure, and pneumonia. These measures were summarised below. An aggregate effectiveness score for each hospital was computed by averaging each of the process scores for each condition into a single hospital average. Missing process scores were not included in the computation of the aggregate process standardisation score.

6.2.4 ANALYSIS AND EVALUATION OF THE DEVELOPED STRATEGY

The evaluation was defined as the objective and systematic assessment of the project, programme or the policy, which was used to determine efficacy after implementation of the project. The presented strategy related to the adoption of EMR would also be evaluated for its effectiveness and consequences. For evaluating the present strategy, the researchers have developed a strategy for analysis and evaluation of strategy. The analysis was important to demonstrate the outcome, which was obtained after the implication of a strategy to differentiate between expected and achieved outcomes.

The developed strategy for the present research was sent to experts who have experience in the field to carry out the internal and external review for validation. The researchers used the experience and the survey for the validation of the adoption of EMR for improvement of the quality of services provided to the patient. The expert developed below given criteria for validation. In addition to this, the perception of the expert was also taken for some other strategies, which must be implemented for the improvement of quality and efficiency.

Table 6.2   Criteria for Selection

Criteria	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
Clarity				

The specific strategy is understandable and simple				
Specificity The focus of the strategy is on the quality and efficacy improvement in health care				
Reliability The strategy is reliable and can be consistently used by other stakeholders				
Flexibility The strategy is flexible in health care settings				
Effectiveness The strategy is able to achieve the objective i.e. to improve quality and efficiency in the health care system				
Validity The strategy is valid				
Relevance the strategy is relevant to the topic area of consideration				
Applicability of the scope of strategy is clearly defined				
Acceptability				

The strategy is based on realistic goals and is acceptable				
Achievability this strategy can be used by the Government and stakeholders to enhance and promote the quality and efficiency of health care services				

The developed strategy was sent to different experts via their e-mail. In addition to this, synopsis (abstract) of the study and ethical approval was attached. The above-developed criteria were also sent to the experts. If the overall score for the strategy would be more than 37.5%, it would be accepted.

6.2.5 QUALITY AND EFFICIENCY ISSUES IN HEALTH CARE

Numerous issues have been identified in context to quality and efficiency in a health care setting. Although, it was essential to note that the administrative improvement was recognised as a valid measure in ranking hospitals regarding overall efficiency. It has been suggested that quality and efficiency were at odds with the health care setting due to the increased resources required to achieve increased outcome quality levels (Armony et al 2015). Empirical research found varying relationships between quality and health care administrative efficiency. Poor quality has been associated with technical efficiency at Finnish hospitals and residential homes (Obermeyer et al 2014). It was imperative to note that health care improvement tends to originate in the social determinants of health, such as education or work, but also in the lifestyles of the population and, crucially, in their availability of health care. Inability to carry out a critical analysis increases the likelihood of errors, which led to a reduction in the quality and efficiency of care. In other

words, every administrative and clinical decision must be based on strictly proven scientific facts.

In the context of health care, as the range of services is expanded, the hospital (firm) was exposed to varying degrees of previously exogenous knowledge and capabilities. As this knowledge set was assimilated, enhanced health care delivery capabilities develop in the form of enhanced quality of outcomes and overall efficiencies. These resource development and knowledge assimilation activities were long-term in nature, providing further support for the cumulative progression reasoning in developing both quality and efficiency capabilities within health care. From the data and analyses of this research, strong support was provided that hospitals residing well off their performance frontier exhibit competitive progressive capabilities and were capable of advancing both quality and efficiency capability dimensions (Hyer et al 2009).

It was imperative to understand that the effective mode of revitalisation in the current EMR systems can reduce the incompatibility between various fractions of emergency care units and can generate different contrasts of valuable data which can be collected from different locations and systems. On the other hand, the proposed technological advancement of EMR system on a cloud-based system cannot only enhance the integrity of the system throughout the country but also can enhance the effectiveness, accuracy, speed, and efficiency of the emergency health care operations in the African States (Cantiello et al 2016). It was also concluded that as the increasing number of health care providers in the emergency departments began to use health IT in response to legislative requirements, the focus of health IT research was shifted from IT adoption to post-adoption and IT usage in critical clinical scenarios. It was significant to comprehend that the use of extensive money in the field of health care IT in Mauritius may not be sufficient to reap the benefits

of EMR. It was how health care professionals use IT plays an important role in deciding the effectiveness of the implemented health care technology (Milani, Bober & Lavie 2016). In addition to IT functionalities and health providers,' IT experiences, future research could explore other factors which might facilitate the use of health information systems in emergency units.

In addition, prior research explained that a poor-designed health information system could cause some unintended consequences such as interruptions and errors, long waiting time, prolonged system downtime, which could bring negative impacts on health care outcomes and were attributed to the failure of implementation of EMR systems despite extensive financial input. In the end, it was imperative to understand that the EMR with higher quality can bring more benefits, but what characteristics of EMR systems contribute to high quality needs to be further examined in future research. By understanding the factors affecting EMR quality can further facilitate the selection of EMR installations and applications by health care providers, improve the design of health IT system, and increase the effectiveness of health IT use.

All in all, the policymakers should not simply urge the adoption of EMR systems; rather, they should provide support to the use of the system for a longer period of time and keep monitoring the outcomes. Taken together, health IT is transforming the delivery of health care and affecting both health care providers and patients. As a part of health care reform, health IT has the potential to reduce costs and improve patients' health care outcomes. It helps in maintaining quality and efficiency issues and also helps patients to use online health information more effectively. In addition, health care providers use EMR systems in emergency units to create more values pose a challenging question to future IT research. Substantial findings in this study included benefits of implementation of an EMR

health care cloud-based system into the emergency department of increased access to care and shorter waiting times for health evaluation, assessment and treatment.

A huge gap exists in fundamental care continuum in Mauritius health care system. Patients admitted with acute clinical complaints are sometimes way too complicated for a physician's office but do not need multi-day hospitalisation often have any choice but to admit in ER, especially at weekends and nights. Once admitted in Emergency Room (ER), patients are made to wait several hours to be more critical cases are in schedule ahead of them. When talking about new alternatives to ER, urgent care units and other freestanding Emergency Departments (EDs) provide chronic treatments. Consequently, these services were not specialised enough to provide the advanced lab and imaging facilities and do not directly connect with Electronic Medical Records (EMR) of the patients or attending physicians.

This study provided one of the first empirically driven, cross-sectional examinations of multidimensional relationships between patient satisfaction and needs and health care quality. The main purpose of the study was to first identify the shortcomings of the health care sector and analyse service users' satisfaction and needs. Secondly, the purpose was to explore and describe the perceptions of health care executives, administration executives, and health administration programme managers. The current roles and responsibilities of health administrators, as well as related knowledge, skills, and experiences, were also needed to improve the quality of care. It also helped in detecting prescription errors and exposes doctors to new drugs on the market. Both patient satisfaction and health care quality are found to be multidimensional in nature, in support of previous research (Hyer et al 2009). Prior research highlighting the differences between patient satisfaction and health care quality effects on performance measures were highlighted.

The qualitative and quantitative findings of this study served as an impetus for further examinations of this relationship utilising a broader set of hospital measures, a limitation of this study. However, the quantitative finding of this study indicated that Patients' Satisfactions, ISO Quality Standards Compliance, workforce efficiency, infrastructure fitness, and adaptability principally was directly related to the quality of care. There was no statistical difference between financial cost and quality of health care. In addition, in context to the demographics of the study, it was found that there was a direct relationship between gender and place of living to patients' satisfaction.

The quantitative study indicated that the lack of resources is the biggest hurdle for introducing new health care technology, particularly in public health care settings. However, employee technology awareness was also considered important for health care security and thus, for better health care outcomes. It was also observed that efficient workforce was the major requirement in the health care sector. Whereas, the majority of the respondents believed that workforce efficiency alone does not affect health care, as there were many other factors that were considered more important in improving health care efficiency.

Moreover, patient satisfaction was strongly related to quality improvement. Whereas, it also depended on the area in context to public and private sectors. On the other hand, ISO standards were not being followed in most of the health care organisations which results in compromising the quality of health care services and facilitated in an organisation. Furthermore, the lack of funding in public hospitals was the major cause of poor health care quality. As there were many other issues related to cost-effectiveness in

health care such as therapy discontinuation due to increased cost. In addition, infrastructure fitness of hospitals helps in rendering quality health care services to the patients. Although, the field of Emergency Health care in Mauritius was focused to adapt to diverse changes in utilisation patterns of care services for the patient population.

This line of inquiry would also benefit from the use of additional analytical methods. The canonical correlation analysis methods used in this study were largely exploratory in nature and offer little in terms of explanatory effect (Montabon et al 2007). Potential explanatory methods would include confirmatory factor analyses or structural equation modelling. By introducing additional measures of patient satisfaction and health care quality, the power of these explanatory techniques would likely be enhanced.

Supplemental analysis, for public and private hospitals, has been shown to exhibit a positive relationship with the performance indicator variables Safety, Efficiency, and Patient Centeredness. This relationship suggested that nongovernment-owned hospitals perform better than government-owned hospitals in the presence of focus indicator variables. This relationship warrants further investigation. This exploratory study examined hospital performance throughout California, without regard to geographic differences. A fruitful research attempt would be to examine the patient satisfaction/health care quality differences across varying hospital geographies and demographics such as urban versus rural, high versus low-income population centres, and the relative age of the population served.

This mixed-methods study suggested that although quality improvement plans have helped to advance the provincial quality agenda by increasing awareness and focusing attention on the need for high-quality patient care, improvements in quality of care have

yet to be achieved. Quantitative findings suggested generally low performance on access to primary care when needed and timely transitions from hospital to primary care; there were also minimal changes in performance from year to year.

From the data and analyses of this research, strong support was provided that hospitals residing well off their performance frontier exhibit competitive progressive capabilities and were capable of advancing both quality and efficiency capability dimensions. Limited support was provided that facilities and performance exhibit trade-off relationships between their quality and cost efficiency capabilities. This research utilised data from 146 hospitals across two timeframes. A key limitation of this research in that data from only two timeframes or panels was utilised. As additional data were released by the suppliers of data for this study, more rigour using time-series analysis techniques can be used to model and test the hypotheses. From prior researches within this dissertation, it was apparent that distinct differences exist when evaluating outcome quality and efficiency within hospitals under different ownership structures. These differences in ownership can be evaluated when conducting follow-on longitudinal research.

6.3   SUMMARY

In this chapter, the researcher presented the research findings and developed the strategy for quality and Efficiency Improvements in the Health Care Administration System of Mauritius. Specifically, this study described the perceived impact of quality improvement plans on the quality of primary care, the factors contributing to the successful adoption and use of quality improvement plans in primary care, and the challenges encountered that interfere with clinicians' ability to use the quality

improvement plans to facilitate quality improvement (Simpao et al 2014). In addition, the findings showed that quality improvement plans were not "magic bullets" to improving quality of care. Innovation, individual, organisational and structural factors interact to create an environment that either supports or impedes the ability of quality improvement plans to improve quality of care. This was an important finding as the quality improvement literature often describes characteristics of the intervention and implementation process but rarely explains how and why an intervention succeeded or failed.

In addition, this study utilised multidimensional measures of patient's satisfaction and performance and suggested that hospitals exhibiting relatively broader ranges of services (i.e. lower focus) exhibit higher levels of overall performance (Toussaint and Berry 2013). As health care facilities have extended their range of services, this has resulted in performance improvement. These results also suggest that the focus/performance relationships suggested within the manufacturing literature (Ketokivi & Jokinen 2006; Mukherjee, Romero, Jones & Uzzi 2000) was not present in the health care sector.

CHAPTER 7 CONCLUSION AND RECOMMENDATIONS

7.1   INTRODUCTION

This research study was focused on the following points:

• describe current operatives within Mauritius health care administrative system regarding service delivery

• describe the factors that challenge the efficient administration of care in hospitals

• identify if there are any challenges in the implementation of changes due to the administration-employee relationship

• determine key service delivery when better administrative systems are effectively applied, for example, ISO standards

• develop effective strategies for health care service delivery

7.2 CONCLUSION

This chapter has provided some recommendation for improvements in the health care sector, which can bring improvements in the overall quality of the health care sector. The recommendations are derived on the basis of outcomes of this study and also deriving information from other resources. As far as the researcher was aware, this was the first study identifying the shortcomings of the health care sector and analyse service users' satisfaction and needs in context to public and private sectors in Mauritius. The study contributed knowledge to stakeholders' experiences with quality improvement plans in primary care, a policy intervention with the goal of facilitating quality improvement across

Mauritius (Wiig et al 2014). This research contributed to gaining in-depth knowledge regarding the field of health services, its complete history and definition. However, the main purpose of this study was to suggest strategies, which enhanced the efficiency of the public hospital administration in Mauritius. Moreover, the ways by which numerous issues related to quality-of-care can be examined to improve quality and efficiency in health care were also identified. Furthermore, the quality and efficiency of the Health care administration system are analysed in context to the public (government) and private hospitals in Mauritius. There was a large body of literature available to address quality of care from patients as well as physicians' perspectives. Furthermore, it was time to develop significant milestones for future participatory approaches to health service planning, and delivery as Mauritius is aiming to both decentralise and modernise its current health care system. This research also had implications for policymakers and health care providers. First, this study explained the potential of laying down the framework for improving the benefits of EMR adoption. Using specialised EMRs like cloud-based software and the core functionalities will not just qualify its users for financial benefits of EMR implementation but may also bring important advantages through growing the quality and the performance of emergency clinical care.

The success factors and challenges to improving the quality of care identified in this study have been described in the literature. For example, the Health Foundation conducted a systematic review of empirical studies to understand factors that contribute to successful quality improvement interventions. This review found that leadership and supportive organisational culture positively affect quality improvement, which aligns with study findings. Five Health Foundation improvement programmes and reviewed the relevant literature to identify challenges in improving quality of care. Study findings supported some of these challenges. For example, some participants expressed that existing data collection systems produce poor quality data, that there is a lack of staff and physician

engagement because they are not convinced. The indicators were assessing real problems, they were not convinced that quality improvement plans can lead to improved quality of care and there was a lack of incentives (positive or negative) to participate in quality improvement work and that there was a lack of capacity and resources to dedicate to quality improvement.

 It was not easy to enhance the organisational performance if they are not suitably reviewed, it was essential to properly explain the features and quality of the services given to the patients. It should be observed that the medical care services provision was better quality and this work can be the basis for future study. At present, public and private health care organisations must be oriented regarding the management quality systems. Ogrinc et al (2015) mentioned that the benefit of observing the actions of an organisation as different systems was the ease with which it can be standardised, observed and managed. It was necessary to observe that the standards are documented contracts that comprise technical details applied as policies or guides to make sure that the procedures, products or services serve their aim. There was considerable stress worldwide to return ISO 9000 certification, a need in the health sector; there was already a direction for the development of health services processes (Rakhmawati, Sumaedi & Judhi Astrini 2014).

 Further, the researcher believed that the current health administration programmes may not develop the knowledge, skills, and experiences required to improve quality of care practice issues in Mauritius health care system. These complex quality-of-care practice issues developed and were evidenced by public reports on medical errors and growing public concern related to the quality of care. The hospital was a highly complex organisation, both for the diversity of activities developed there, as well as for the simultaneity of objectives pursued and for the specialised knowledge and specific skills required for its operation (Rakhmawati et al 2014). However, it can be seen from the preceding that there was a feeling among the various authors mentioned that the medical

professional consciously rejects the principles of administration (Rakhmawati et al 2014). The focus of this research was not only about the training of the health admin programme, but it was also primarily about the efficiency of the health care administration principles. The challenges to the credibility and integrity of the continued use of the inherited colonial administration of the health system in Mauritius were important to be discussed.

7.3 LIMITATIONS

There were different limitations in this research. First, this study used only a mixed methodology. This would have helped the researcher to formulate the findings based on perspectives, views, and experiences of the health care professionals working in health care units in Mauritius. Future research could use longitudinal data to further test our model. Second, the measures for the health care outcomes in this paper are self-reported, so future research may use objective measures to validate the proposed EMR implementation (Milani et al 2016). Third, this study focused on physicians' practices, and future research might help in improving the quality of health care in public and private hospital settings. Fourth, this study only investigated how the total number of functionalities used in a practice affects health care outcomes in emergency units, and future research could examine how the impacts of different groups of functionalities on different medical and surgical units in health care outcomes vary.

The moderating and confounding effects of other factors including the characteristics of practices (for instance, speciality and rurality) and characteristics of EMR products (system usability) are worth investigation in future research. This thesis also points out two future research directions: First, as EMRs are becoming increasingly comprehensive

and more modules are built in the system, the selection and implementation of an EMR system to meet patients' diversified needs are becoming more challenging for health care providers. More studies are needed to understand the similarities and differences between EMR functionalities. Therefore, future research should examine how different EMR functionalities could be clustered and the varied impact they have on health care inferences. One example of such studies was conducted by Yang et al (2015) who identified two types of health IT-administrative IT and clinical IT.

In this study, Alkathiri (2016) found administrative IT is different from clinical IT in that administrative IT has a negative short-term effect and positive long-term effect. Further, previous studies have shown that health care providers differ in their expertise for IT usage. For example, HIMSS (Health Care Information and Management Systems Society) proposed a seven-stage EMR adoption model in which stage one only includes limited clinical automation and stage seven requires a full digitalisation of patients' medical records. In similar term, Gummadi, Housri, Zimmers and Koniaris (2014) showed that hospitals choose different sequences to implement Information Technology, which in turn affects their performances. In addition, health care providers exert a different level of sophistication in their health IT use (Gummadi et al 2014).

While clerks and nurses were major users for health information systems at some physicians' practices, physicians take a more active role in entering and reviewing patients' data at other practices (Health Care Information and Management Systems Society 2015). Also, while many practices limited their health information system used to patient visits, others used health information systems to proactively monitor patients' health on a regular basis (Kim et al 2016). As Health IT adoption was mandated by the regulations, the understanding of actual IT usage was becoming more important for

policymakers and health care providers than simply IT adoption. Therefore, future research could investigate the patterns of health IT use and their impacts on health care outcomes (Kim et al 2016).

7.4 RECOMMENDATIONS

The possibility of answering another dimension of research question has arisen out of this study. These are reproduced below for further consideration. Is it possible to further define and even isolate the invariant characteristics of a highly complex model of a local organisation such as the emergency room and its subsystems of EMR on cloud-based software applications? If these emergency health care characteristics can be defined in terms of human inputs and classified by their dynamic qualities, can these qualities by imported to other less dynamic clinical units to increase their respective efficiencies? Is it possible to use this prototype model and replicate it in other emergency units across the African region? If so, what would be the model used for this and how could this replication be facilitated? Can the conceptual model employed in this study be adapted to represent relationships between other similar systems relationships within the larger health care system? The research opportunities in this challenging and complex environment present a worthwhile endeavour for the creative health care researcher. Discovering new methods of providing health care services in an era characterised by transition remains a daunting challenge to all health care practitioners (Gummadi et al 2014). Recruiting, retaining, and training practitioners in EMR health care is an ongoing challenge with the implementation of an EMR-cloud-based programme. The trainer approach is often used in the case studies shown in the literature by Alkathiri (2016) and Hsieh (2014), to ensure that the EMR health care service programme is sustainable with shifting and development of health care staff (Matava & Görtz 2016).

It is imperative to know that while EMR health care improved access to patients and providers EMR is also responsible to change the fundamental nature of provider-patient interaction. This implication is since the EMR health care replaces face-to-face consultation, basic diagnostic skills that traditionally relied on observation and palpation are missing. This will necessitate providers to learn new ways to communicate and assess patients (Matava & Görtz 2016). There is a subsequent challenge in using the technology to design a developmental model. To overcome such problem, the health care administrator needs to be engaged in training the staff members and other employees so that EMR cloud-based systems will be easy to install and successfully applied (Matava & Görtz 2016). In addition, the advent of emergency health care EMR has out-spaced other paper-based system of health care storage and thus obstacles arise such as licensing, obtaining informed consent, liability and malpractice, reimbursement issues, utilisation of health care services and safety of patients' health records and subsequent confidentiality (Blair, Grivna & Sharif 2014).

It was suggested that efforts should be taken by Healthy Quality Mauritius to ensure innovation; individual, organisational and structural factors that optimise buy-in and success of innovations are considered. Regarding the innovation, it was important that quality improvement plans continue to be adaptable and compatible with existing workflow processes; this will increase the likelihood that the innovation becomes embedded into workflow rather than viewed as an administrative burden. Individual factors such as self-efficacy and the perceived advantages or disadvantages of quality improvement plan also influence buy-in; capitalising on "small wins" to build confidence in QHC and including indicators that are meaningful to frontline clinicians and align with organisational priorities can help motivate clinicians to use quality improvement plans. Social factors (e.g. ensuring local consensus regarding the use of quality improvement plans, using local opinion leaders who support its use), organisational factors (i.e. getting

buy-in from leadership, implementing changes at the organisational-level to support QHC efforts, creating a culture supportive of QHC) and structural factors (i.e. having external motivators and contributions of resources) can also positively influence buy-in and the use of quality improvement plans.

Health Quality Mauritius should continue to work together to develop quality improvement plans that align with both system- and organisation-level priorities and needs, and to ensure resources are available and effectively disseminated to support QHC work. In addition, health care organisations should continue to focus on improving the infrastructure and capacity for measuring, monitoring and reporting on QHC, and nurturing a culture of quality by ensuring there is strong leadership that is supportive of QHC and ensuring staff feel engaged and supported with QHC work.

7.5   FUTURE DIRECTIONS

This paper also points out two future research directions: First, as EMRs are becoming increasingly comprehensive and more modules are built into to the system, the selection and implementation of an EMR system to meet their needs are becoming more challenging for health care providers. More studies are needed to understand the similarities and differences between EMR functionalities. Therefore, future research should examine how different EMR functionalities could be clustered and the varied impact they have on health care outcomes. Moreover, Transactional functionalities refer to basic functionaries enabling physicians to enter, browse and edit patients and chart information. Data sharing functionalities refer to the functionalities enabling physicians to share patients' information with other entities including hospitals, labs, and pharmacies. Decision support functionalities refer to the functionalities providing medication, disease, and allergy information which facilitate the physician's decision on diagnoses and prescriptions. It is imperative to

understand that the direct effects of EMR health care programmes in Mauritius can be a failure and success depending on the degree of support given by the legislative assembly and the governmental institutions (Williams, Asi, Raffenaud, Bagwell & Zeini 2016). It is also recommended that the success of project implementation is dependent on the involvement of the providers and users of the technology, the expertise of project management teams and clinical champions, clear objectives for use of the programme, and availability of financial and human resource which is manageable for sustainability of the service (Alkathiri 2016). Therefore, it is imperative that the implementation is given approval through all the appropriate venues of the health care organisation for commitment to the endorsement. For the project to be most successful in improving the quality of emergency care services by minimising the medical errors, length of waiting and breech in confidentiality of patients' data and information in Mauritius hospitals (Matava & Görtz 2016).

7.6   IMPLICATIONS FOR FUTURE RESEARCH

This research supports the literature about health care Information Technology. First, it explained that the particular outcomes in earlier studies about the link between EMR adoption and health care results can be attributed to the variations in the extent and length of EMR usability. Thus, when assessing or comparing the results of EMRs, researchers must focus aspects like the number of functionalities applied, the length of use, and the EMR software quality (Milani et al 2016). Second, outcomes consisted of earlier studies performed in emergency units of hospitals, which observed the field to apply the new IT software performed a vital role in EMR implementation (Zhang et al 2014). Because of the complexity of EMR implementation, the advantage of EMR implementation may not emerge until the late phases of adoption (Kim, Lee, Hwang & Yoo 2016).

An important strength of the study was the use of massive amount of raw data obtained from the mixed methods approach to examine stakeholders' perception of quality improvement plans and its ability to improve quality of care. Mixed methods research can produce more complete knowledge to inform practice and can add insights that may not have been evident if only a single approach is used. Specifically, quantitative results suggested that there have only been slight changes in performance scores from 2013/14 to 2014/15. To complement this finding, qualitative data provided a greater understanding of the challenges health care organisations' face with improving performance in Mauritius.

For the quantitative portion of the study, a key limitation is that one of the performance metrics (i.e. access to a health care provider on the same or next day when needed) is self-reported and each organisation determines its own data collection strategy. As a result, the performance data was not collected in a standardised fashion, which may compromise data quality. Although the survey question measuring access to health care is consistent across organisations, the sample size, time of administering the survey and frequency of administering the survey varies across health care organisations. With respect to study design, an inherent disadvantage of retrospective cohort studies is that the range of predictors was limited to the existing data set and, as such, we do not have a comprehensive list of all potential predictors of success for QHC initiatives. For example, we were not able to include any structural, individual or innovation-level predictors and were able to include only a subset of organisation-level predictors of success for QHC initiatives (see the conceptual framework for more information). As such, this may result in omitted variable bias when a model leaves out important causal factors which may compromise the internal validity of the study.

For the qualitative portion of the study, all interviews were occurred face to face due to researcher preference to conduct focus group interviews. Some researchers view telephone interviews as an inferior option to face-to-face interviewing due to the loss of nonverbal and contextual information. However, telephone interviews may make participants feel more relaxed and comfortable to talk freely and literature has reported that data gathered through the telephone can be of high quality and is as valid as face to-face interviewing. However, interviews were conducted until data saturation, so it is unlikely that new themes would have been identified if more people were interviewed. Lastly, the lead investigator was the only person to code the interview transcripts. All authors, however, reviewed the themes and some coded extracts and agreed with the findings.

7.6.1 Implications for theory

The need for the health care institutions particularly to restructure their patient care orientation programmes and makes care and satisfaction part of their organisational culture is long overdue. Based on this assertion and the findings of the study, the following recommendations are made for consideration of the board, management, and staff and other government hospitals in the country. There should be an intensive in-service training for all the staff of the hospital on patient care and effective management. The hospital should periodically measure patient care satisfaction levels through surveys and open forums with the communities that patronise their services. Even though the hospital has done a few surveys on client satisfaction and rational use of medicine, the scope should be widening to include communities and all identifiable groups in the municipality. Furthermore, the hospital should ensure patient relationship marketing. That is the facility should open avenues for frequent interactions with its clients. Health care consumers' needs, wants and concerns are constantly changing.

The hospital should keep asking and listen to patients' feedback and analyse the feedback on an ongoing basis. By doing so, the hospital will be able to not only retain more patients but continually recruit fresh and new patients. It should map out programmes and strategies that can be used to introduce new services tailored to patients' needs. This will surely increase the hospital's revenue. The existing quality assurance team should be strengthened by the management. This team will be the main body that will ensure that the doctrines of quality service are adhered to and that they will work vigorously to achieve them. It will also be responsible for identifying quality problems and drawing up action plans as well as monitor and implement quality activities in the hospital all staff should be made aware of the need to improve quality in their routine duties.

The units within the hospital should be regarded as quality action teams, which identify and solve problems that emerge at the unit level. Every staff member in each unit should be part of the action team. The hospital should establish patients' complaints and information desk immediately. There is no proper and established procedure at the hospital for the handling of complaints. Worldwide health care services industry study shows that among patients who register a complaint, 95% will consult the same hospital again if their complaint is resolved quickly. The study further reveals that patients whose complaints are resolved satisfactorily tell an average of five people about their good treatment (Betancourt et al 2016). The hospital should also institute awards and prizes for the staff who distinguish themselves in patient relations. This will serve as a challenge to the other staff to strive for such recognition in the cause of their work. Last but not least, the directional signs of the hospital need an immediate improvement to assist the first time visitors locate their way easily.

It was realised that most of the patients had difficulties in locating the eye clinic, laboratory and maternity units. This could be addressed partly if an information desk is established. These recommendations if adhered to and properly implemented will see the hospital reap the benefits of ensuring consumer care and satisfaction.

7.6.2 Implications for Practice

This research mentioned that patients at the Sir Seewoosagur Ramgoolam National Hospital, AG Jeetoo Hospital, Dr Agalwal Hospital and Victoria in Quatres Bornes were pleased but still, there was room for quality improvements. As the tertiary care hospitals in Mauritius were in the change condition, also for quality developments, suggestions were made to persuade management to take transformations into account when applying quality standards. Patient's satisfaction surveys confirmed that development was made when for instance patients were not pleased after medical cure. One more reason for the signalling function was that most institutions in Mauritius had traditional authority systems and introducing quality systems in these organisations referred introducing management procedures which challenged the current systems and culture and thus were refused. Though, to overcome these conditions multidisciplinary development team methods should be used for current culture in these institutions.

The proportions that were not significant (p >0.1) in this research for observing the variations in satisfaction between the three groups (Waiting time, Appropriateness, Information, and Staff diversity). They were approached in a system that in next research they can be established important, from which conclusions were drawn for quality policy aim at the Sir Seewoosagur Ramgoolam National Hospital, AG Jeetoo Hospital, Dr

Agalwal Hospital and Victoria in Quatres Borne's hospitals. Potential motives for the irrelevance of different aspects can be that the patient population was very small or that further related questions on those aspects must have been comprised in the questionnaire. Researchers were being suggested to take those two elements into account in the future. Moreover, hospital management was being suggested to investigate which other elements were related to the patients about earlier defined aspects.

Management must focus on an important resource to enhance health care quality: the patient. The system by which, the patients were cured through hospital personnel throughout their staying were identified the patients' needs. As pain and fear made stress which made them susceptible for wrong situations. When the patient entered the hospital, they received a questionnaire, in which they mentioned their views about improvement on aspects throughout their staying at the hospital. In contrast, taking surveys on regular basis was also another system to listen to the patient's voice for developments. Quality care commission was not capable to incorporate the tasks related to quality care in their common tasks and this was separated from their nursery roles. As the hospital planned to install a quality mentor, these tasks from the commission were carried over. Moreover, stimuli for developments like inspiration were introduced to support the departments that effectively applied the standards and sanctions for those, who overlooked the standards.

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ANNEXURES

ANNEXURE A: ETHICAL CLEARANCE CERTIFICATE, DEPARTMENT OF HEALTH STUDIES, UNISA

UNISA | university of south africa

RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)

15 February 2017

HSHDC/623/2017
Mr G Roland
Student: 3078-060-8
Supervisor: Prof M Moleki
Qualification: D Litt et Phil
Joint Supervisor: -

Dear Mr G Roland

Decision: Ethics Approval

Name: Mr G Roland

Proposal: Assessment of the Efficiency of the Health Care Administration System of Mauritius.

Qualification: DPCHS04

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted for the duration of the research period as indicated in your application.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 15 February 2017.

The proposed research may now commence with the proviso that:

1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

Open Rubric

3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

4) [Stipulate any reporting requirements if applicable].

Note:

The reference numbers [top middle and right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Research Ethics Committee: Department of Health Studies.

Kind regards,

Prof L Roets
CHAIRPERSON
roetsl@unisa.ac.za

Prof MM Moleki
ACADEMIC CHAIRPERSON
molekmm@unisa.ac.za

Approval template 2014

ANNEXURE B: LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH

To the Executive Director

Dr Agalwal Hospital

Private Bag 12345

Reduit Mauritius

15 Feb 2017

Dear Ms/Mr

REQUEST FOR AGREEMENT TO COLLECT DATA

I am a registered Doctorate student in the Department of Health Studies at the University of South Africa.

The proposed topic of my research is:

AN ANALYSIS OF THE EFFICIENCY OF THE HEALTH CARE ADMINISTRATION SYSTEM OF MAURITIUS

I am hereby seeking your permission to ask your nursing staff to fill the questionnaires or be interviewed. Participation is voluntary.

To assist you in reaching a decision, I have attached to this letter:

(a)   A copy of an ethical clearance certificate issued by the University
(b)   A copy the research instruments which I intend using in my research

Should you require any further information, please do not hesitate to contact me or my supervisor. Our contact details are as follows:

Researcher: Gilbert Roland: +23058855468 E: groland642@gmail.com

Supervisor: Prof Mrs M Mary Moleki; @ UNISA

To Ethical Clearance Committee,

Ministry of Health,

E Anquetil Bldg, Port Louis

Mauritius

25th Feb 2017

Dear Ms/Mr

REQUEST FOR AGREEMENT TO COLLECT DATA

I am a registered Doctorate student in the Department of Health Studies at the University of South Africa.

The proposed topic of my research is:

AN ANALYSIS OF THE EFFICIENCY OF THE HEALTH CARE ADMINISTRATION SYSTEM OF MAURITIUS

I am hereby seeking your permission to ask your nursing staff to fill the questionnaires or be interviewed. Participation is voluntary.

To assist you in reaching a decision, I have attached to this letter:

(a)   A copy of an ethical clearance certificate issued by the University
(b)   A copy the research instruments which I intend using in my research

Should you require any further information, please do not hesitate to contact me or my supervisor. Our contact details are as follows:

Researcher: Gilbert Roland: +23058855468 E: groland642@gmail.com

Supervisor: Prof Mrs M Mary Moleki; @ UNISA

ANNEXURE C: LETTER OF APPROVAL TO CONDUCT THE STUDY

Dr. Agarwals
EYE HOSPITAL

To Mr Gilbert Roland

4 Jules Mallac Street

Tranquebar, Port Louis

Our Ref: TAN/17027/RM/17

Sir,

With reference to your recent application for data collection for your study dated 15th February 2017.

The authorisation decision is set out below:

The researchers have agreed to provide to my office a copy of all the approved study protocol materials including the approved consent documents before [s/he] recruits participants on here.

Any data collected by shall will be kept fully confidential as per the agreement. You have also agreed to provide to us a copy of the aggregate results of the research.

Any deviation from the Ethical clearance protocol must be reported to us.

11th March 2017

Faithfully

Dr O. Sanctchi

Dr Agarwal Hospital Morc Begga Ebene Rose Hill Mauritius

ANNEXURE D: ETHICAL CLEARANCE FROM THE MINISTRY OF HEALTH TO CONDUCT THE STUDY
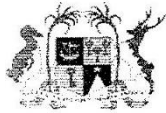
Republic of Mauritius

Your Ref: MHC/CT/NETH/ROLG

Request for Ethical Clearance

Dear Mr Roland,

Please refer to your letter of 25 February 2017.

I am directed to inform you that the Ethical Committee has reviewed your application.

The committee has approved in principle data collection subject to the condition laid down in the Annex
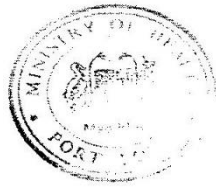
Yours Faithfully

L P Thialig

For Secretary

ANNEXURE E: RESEARCH INFORMATION SHEET

<u>**RESEARCH INFORMATION SHEET**</u>

<center>Health Care Administration Mauritius</center>

Contact details

Gilbert Roland   Email: <u>groland642@gmail.com</u>   Tel +23058855468

  Port Louis /   Mauritius

What is this research study about?

Through this research, I will attempt to explore the health care administration of in Mauritius.

Why is this research being done?

To understand this phenomenon and raise awareness about it, also to provide recommendations from the findings.

How will the information be collected?

Participants will be asked to answer a few questions. Then, interviews will be conducted with a limited number of volunteers.

Do I have to be involved?

Not at all, of you do not want to. We will ask for your consent before we ask any information from you, and you are perfectly free to change your mind at any time without having effect whatsoever on my life.

Are there any risks in being involved in this research?

None that I know of, but if you have any concerns, please raise them with the researcher.

**What will you do with all this information?**

Firstly, we will make sure that individuals who provide us with information cannot be identified — so, your name or any other information that may identify you will not be stored with the information. I will make sure that all information is kept safely and no-one except me will have access to it. Secondly, I will examine all of the information carefully, to see how and why stress occurs among nurses and we can find out better ways of dealing with this issue.

Will be able to find out what happens?

Yes, of course. We will provide a report on completion of the project which will be available to anyone who wishes to see it at the practice reception.

Informed consent

This research information has been clearly explained to me and I understood clearly its content.

ANNEXURE F: PARTICIPANTS INFORMED CONSENT FORM

Participant Informed Consent

I (participant,)……………………………………………………………………………….

of (Town/ place)………………………………………………………………………..

Hereby confirm that the nature of this research has been explicitly explained to me and I appreciate and accept them. I also understand that my withdrawal from the research at any time if I find that I do not wish to continue for any reason is guaranteed to be without affecting my employment within the practice. I have read the information sheet and have been given the opportunity to ask questions/ clarifications on the study.

Signed:……………………………… ……….. Dated this:…………………………

Investigator(s) Statement:

I have explained the aims, purpose and nature and demands of the research to the volunteers and is satisfied that these have been understood.

Name: Gilbert Roland   Signature:..……………………….…….

Date:….……………

ANNEXURE G: LIKERT SCALE QUESTIONNAIRE

UNISA | university of south africa

Dear Participant

You have been selected to participate in this research by completing the following survey. Your answers will be compiled with responses from several other employees and therefore will be anonymous. This information will be used to help set goals and objectives for the health care sector of Mauritius. Consent is voluntary; debriefing is in the accompanying research information sheet. All information provided is guaranteed for strictly confidentiality. Note: this information is required for collecting a response to the questions and will only be used within the scope of this research. This research has ethical clearance certificate 15 Feb 2017 from the University.

Next is a list of statements kindly rate the best answer as per your perception about various aspects of health care systems across Mauritius. Place a tick into the box which you believe is the most appropriate answer.

SD: Strongly Disagree, D: Disagree, N: Neutral, A: Agree, SA: Strongly Agree, Y: Yes, N: No

Example

You are a permanent resident of Mauritius	Y √	N

332

LIKERT SCALE QUESTIONNAIRE

Health Care Administration in Mauritius

Please note: this information is required for the purpose of collecting a response to the questions and will only be used within the scope of this research.

BIODEMOGRAPHIC DATA

Age: **Gender:**   **Male/ Female**

Marital Status: **Education Level:**

Years in Employment: **Appointment Status:**

1	Giving honest answers to these questions will help improve the quality of health care in Mauritius.	SD	D	N	A	SA
2	You have a considerable experience in health care system of Mauritius.	SD	D	N	A	SA
3	You have been working in the health care profession for a period of between 5 to 10 years.	SD	D	N	A	SA
4	Do you hold a position within the health care system of the country?	SD	D	N	A	SA
5	You have a healthy working relationship with your co-workers (health care professionals).	SD	D	N	A	SA
6	Do you think your organisation is achieving its agendas and objectives effectively?	SD	D	N	A	SA
7	Your health care system is effective in the fulfillment of its administrative duties	SD	D	N	A	SA
8	You are amongst the primary health care administrators in your health care system	SD	D	N	A	SA
9	You have a good working relationship with your hospital management.	SD	D	N	A	SA
10	You want to become a part of the administrative department of your health care organisation.	SD	D	N	A	SA
11	You are working for a public health care organisation.	SD	D	N	A	SA
12	You are working for a private health care organisation.	SD	D	N	A	SA
13	Lack of technology hinders the provision of effective health care facilities.	SD	D	N	A	SA
14	New and modern technology is a mandatory part of the health care system.	SD	D	N	A	SA
15	New technologies need to be implemented for the effective working of health care administrative departments of Mauritius.	SD	D	N	A	SA
16	Research and development programs should be introduced to improve the administration framework of Mauritius health care sector.	SD	D	N	A	SA
17	The public health care sector is working more efficiently than the private health care sector.	SD	D	N	A	SA
18	The private health care sector is working more efficiently than the public health care sector.	SD	D	N	A	SA
19	Relatively large percentage of the population of Mauritius depends on public health care system.	SD	D	N	A	SA
20	Health care mangers and leaders are required for the improvement of health care administration system of Mauritius.	SD	D	N	A	SA

21	Your health care administration department has sufficient amount of nurse mangers and other worker categories.	SD	D	N	A	SA
22	The health care administration department of Mauritius is effective in its management duties.	SD	D	N	A	SA
23	The health care administration department of Mauritius is providing cost effective treatments and operations.	SD	D	N	A	SA
24	All health care stakeholders staff of Mauritius are adequately qualified.	SD	D	N	A	SA
25	The health care administrative workers of Mauritius health care administration are skilled.	SD	D	N	A	SA
26	The health care administration department of Mauritius is effectively managing the spread and epidemics related to infectious diseases.	SD	D	N	A	SA
27	The health care administration department is conducting effective workshops and training programs for its workers.	SD	D	N	A	SA
28	The time spent waiting for getting registered is very fast in the Accident and Emergency department.	SD	D	N	A	SA
29	Does 15-30 minutes waiting time that are scheduled after registration satisfactory?	SD	D	N	A	SA
30	Queuing for taking the prescribed medication at the pharmacy is not at all time consuming.	SD	D	N	A	SA
31	Have there been complains from the patients regarding the waiting time at health care services points?	SD	D	N	A	SA
32	The health care administration is promoting awareness about prevention of lethal diseases like AIDS, among the masses.	SD	D	N	A	SA
33	The health care administration is managing the finance and funding processes of the health care sector.	SD	D	N	A	SA
34	Mauritius health care administrators are efficient in the management of the problems and issues facing their workers.	SD	D	N	A	SA
35	The health care administration department maintains a calm and serene patient care services.	SD	D	N	A	SA
36	Job burnout is one of the reasons for ineffective working of the health care administration system.	SD	D	N	A	SA
37	All service users are generally satisfied with what they get from the health sector.	SD	D	N	A	SA
38	Services that are offered in public hospitals are poor.	SD	D	N	A	SA
39	Lack of proper educational skills hiders the effective working of the health care administration system.	SD	D	N	A	SA
40	The health care administration lacks a proper set of goals and objectives.	SD	D	N	A	SA
41	The health care system is not providing awareness about sexually transmitted diseases like syphilis and gonorrhea, to the masses.	SD	D	N	A	SA

42	Cultural diversity is a stumbling block in the cultivation of an efficient health care workforce.	SD	D	N	A	SA
43	The health care administration department lacks funding to carryout valuable research work that would be helpful for the doctors, physicians and nurses.	SD	D	N	A	SA
44	The health care administration department is unable to provide adequate and important knowledge about health care issues to the young people in Mauritius.	SD	D	N	A	SA
45	Ineffective working of the health care administrative sector of Mauritius is leading to increase in job burnout among health care providers.	SD	D	N	A	SA
46	Health care workers have huge workloads.	SD	D	N	A	SA
47	There is a communication gap between the administration department and health care workers of health care organisations in Mauritius.	SD	D	N	A	SA
48	Bureaucracy hinders that quality of health care services that are offered across the country.	SD	D	N	A	SA
49	Community members should support health care systems in the country.	SD	D	N	A	SA
50	Access to specialized units in hospitals is very easy in Mauritius?	SD	D	N	A	SA
51	The workforce of the administration department has impaired leadership skills.	SD	D	N	A	SA
52	Fragmentation of different systems and operations within the health care organisation is the sole reason for ineffective working of health care administration.	SD	D	N	A	SA
53	The health care administration department lack resources and funding to carry out their functions and operations.	SD	D	N	A	SA
54	An integrated system is required for the proper and effective working of the health care administration and organisation.	SD	D	N	A	SA
55	In an integrated working system, the sharing and recording of patient information becomes easier and cheaper for the health care organisation.	SD	D	N	A	SA
56	Similar leaders among health care administration and organisation can manage the operations effectively.	SD	D	N	A	SA
57	The health care administration and the health care providers i.e. the nurses and physicians need to work in coordination with each other to provide effective health care services.	SD	D	N	A	SA
58	Chances should be provided to the nurses, physicians and other health care providers to work in the administration department.	SD	D	N	A	SA
58	The phenomena of health disparity are present in the health care organisations of Mauritius.	SD	D	N	A	SA
59	The health care administration is responsible for creating health disparity in the health care organisation.	SD	D	N	A	SA
60	Effective treatment and health care services should be provided to the rich and poor in the health care organisations of Mauritius.	SD	D	N	A	SA
61	The lab diagnostics and drugs assessment systems are outdated and lack modern technologies.	SD	D	N	A	SA

62	New computer technologies are needed to be implemented for better working of the lab diagnostics and drugs assessments and operations.	SD	D	N	A	SA
63	The health care administration department of Mauritius needs to set its goals and objectives according to that of WHO.	SD	D	N	A	SA
64	A new computer system should be generated by the administration department that can keep record of patient disease and treatment history.	SD	D	N	A	SA
65	The health care administration department is providing the important and necessary information about diseases to the patients.	SD	D	N	A	SA
66	The health care administrative help patients to take important decisions regarding their health and safety.	SD	D	N	A	SA
67	The health care administrative working with the government should launch new schemes and awareness programs about e-health.	SD	D	N	A	SA
68	The health care administrative should force the health care providers and administrative management of the organisations to work in collaboration with each other.	SD	D	N	A	SA
69	The health care administration should devise polices that should be cost effective.	SD	D	N	A	SA
70	The health care administration should plan long-term policies for the effective provision of cost effective health care facilities.	SD	D	N	A	SA
71	The government should provide more resources and funding to the health care administration department for its effective working.	SD	D	N	A	SA
72	ISO certificate has been issued to your health care administration department.	SD	D	N	A	SA
73	The services of health care administration are up to the mark of ISO certification level.	SD	D	N	A	SA
74	The health care administration sector of Mauritius follows the evidence-based practices for better treatments and outcomes.	SD	D	N	A	SA
75	The health care administration of Mauritius is carrying out evidence-based practices in the field of medicine and new diseases.	SD	D	N	A	SA
76	The health care administration department needs to increase its workforce population for the efficient provision of health services.	SD	D	N	A	SA

Thank you for dedicating part of your time and effort for providing a response.

If you require additional assistance

Contact the researcher at   E: groland642@gmail.com : T +23058855468

ANNEXURE H: INITIAL INTERVIEW GUIDE

Please note: this information is required for collecting a response to the questions and will only be used within the scope of this research.

Information collected are processed in strict compliance with the current data protection act in Mauritius. This research has the University Ethics clearance certificate 15 Feb 2017.

All information provided are strictly confidential

Semi Structured Interview Guide

Purposive Sample _ Focus Group Interviews

Health Care Administration in Mauritius

BIODEMOGRAPHIC DATA

Focus Group Number: A. B ...

Informal Start up questions

1. What is your current position in your health care organisation?
2. Did you ever think of perusing a career as a health care administrative?
3. Do you think the health care administration department of Mauritius is working effectively? Tell more please.

Open-ended Key Questions

1. What is the role of technology in improving Health care sector in Mauritius
2. Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?
3. What is the influence of Financial Costs on the overall quality of health care services in public and private sectors?
4. What is the relationship between patient satisfaction and quality of health care
5. Does workforce efficiency of health care stakeholders play sufficient role in improving quality of health care
6. Does infrastructure fitness of hospitals help in rendering quality health care services to the patients
7. Does the Adaptability to revolution requirements aids in increasing health care issues and concerns?

ANNEXURE I: FOCUS GROUP INTERVIEW TRANSCRIPTS

The following transcripts present some of the important data collected from each focus group. The summary of responses of each target group is presented in the in below summarised transcripts.

Interview Transcript Focus Group 1

1.   What is the role of technology in improving Health care sector in Mauritius?

It is not so good for our country as well as the patients. The country is losing money and patients have to go far to achieve quality health service and pay more; where as we have all of elements to ensure these facilities…" I requested for explanation how it is? He exemplifies; "When a patient comes here for follow-up his cardiac operation is done in last year, patient becomes very pleased by the response of consultant. It is because of database; health care professionals are maintaining their patient's database (EHR). Whenever a patient comes for follow-up, health care professional can have all record by EHR very easily and quickly. Patients are satisfied because health care professionals are concerned about them……. Hmmm……. I would like to add that Our medical specialists are enough qualified but we don't have enough ICT culture among health personnel….there are other constrains such as high price of bandwidth and interrupted power supply …."

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

I'd say [quality standards compliance] had been a little bit of…a driving force. I would not say they've had a huge impact just because at a community health centre a lot of the things we're already doing…it does make the providers more aware and…the front desk staff, like the medical secretary and receptionists who are booking appointments for example. It's more in the forefront around them trying to get people in around 7 days of discharge from hospita.l And the providers a bit more aware of making sure they're pushing the screening and the flu shots and what not. It has had a minimal amount of impact I think but I wouldn't say significant."

3.	What is the influence of financial costs on the overall quality of health care services in public and private sectors?

Lack of funding in the public hospital is a financial constraint for the health care. Majority of the therapy discontinuation is due to increased health care cost…… and I would like to add that finances are important resource for the health care sector to retain……and thus financial costs on the overall quality of health care services in public and private sectors.... …..

4.	What is the relationship between patient satisfaction and quality of health care?

Organisations depend on their customers and their need and satisfaction to understand their current and future needs, fulfil their requirements, and strive to exceed their expectations and that is an important point of consideration that patient satisfaction is strongly related to quality improvement……

5.	Does workforce efficiency of health care stakeholders play sufficient role in improving quality of health care?

It's so hard in a community health centre to really measure the things we do… how you measure that four hours you spent with that lady and getting her health care that she never had before. How do you measure that? That's what we'd like to know. That's what we're proud of. The fact that we screened 2% more people this year than last year, okay, we get that, we can see that, but I think most people do not get excited about that measurement. They might get excited if they felt that a person that didn't ever have health care before finally got health care, that's more exciting.

6.	Does infrastructure fitness of hospitals help in rendering quality health care services to the patients?

I think [our culture] was a little bit more separate. I think that was why it was so daunting the first year we collected this data. Now it is more, let us work together to figure out what else we can collect. It has changed the culture from the physicians vs. the family health team to 'okay, we have to report this let us figure out ways of working around this together' and its better. It has taken a bit to get there. It is more collaborative. There's a little bit more

engagement of looking at how we can do things better, which there was not any of that at all. Before it was just 'people should be grateful that we're here and accept what, we give them.

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns.

I like that aspect of the quality improvement in health care that these are the things [Health Quality Mauritius] want answered, but these are the things [primary care organisations] can choose to answer. We picked up one extra thing this year to sort of work on but it gives us a bit more flexibility……... The revolution requirements aids in increasing health care issues and concerns by providing assistance and support…..

Interview Transcript Focus Group 2

1.   What is the role of technology in improving Health care sector in Mauritius?

The use of IT in health care in the information society is assessed by addressing specific social and economic problems and improving the quality of diagnosis and treatment while reducing costs…..Hmmm. I agree and electronic medical records; Telemedicine and information structure of health are effective technologies to improve performance….. However, reliability of system and information - accurate, effective information. Sometimes a lack of understanding and training on how to use technology?? . In case of HR - strong sense of inaccurate information… Okayyy….I would like to add that medical IT is being intensively introduced into health care. An example is the British project to create a national database of electronic medical records for all patients……Improving the medical services provided to patients is primarily related to every medical institution, which must understand that in order to make services better, financial investments in new technologies, including information technologies, are necessary.

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problem?

This is true as this brings health care information to a new level of development, positively affecting all aspects of its activities. Hmmmm, I would like to add that the standards in the health care sphere allows to improve the quality of services, significantly speed up the work of personnel and reduce the cost of care for patients.

3.   What is the influence of financial costs on the overall quality of health care services in public and private sectors?

The financial costs influence practice of performance measurement and must be aligned with organisational efforts to improve quality of care……..

4.   What is the relationship between patient satisfaction and quality of health care?

The success of the activities of any organisation depends on consumers, both external and internal, so it is necessary to understand their current and forecast future needs…….hmm…. as I would like to add that without taking into account and meeting the needs of domestic consumers in health care institutions, the quality of the diagnostic and treatment process inevitably decreases.

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

There are different challenges that affected the success of quality improvement in health care. The success of an organisation did not appear to affect the types of challenges they experienced………..And I would like to say that the challenges are related to data quality, staff and physician engagement and buy-in, and needed resources for measurement and quality improvement. Such as efficient workforce is the major requirement in health care sector as it contribute to other factors also……..

6.   Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

The degree of influence that competition between medical institutions can have on the quality of care and cost control depends on the segment and the conditions for the provision of medical services. The factor of competition has the highest importance in the segment of ambulatory medical care.

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

We had the opportunity to include things that we wanted to do, which was great…we did include some that were relevant….but still adaptability to revolution requirements is at initial phases and more improvements are required in increasing health care issues and concerns.

Interview Transcript Focus Group 3

1.   What is the role of technology in improving Health care sector in Mauritius?

The innovative use of health care technology would be different in different place and different situation. It does not have any standard definition.

Different country has different infrastructure according to their economic condition, manpower and geographical structure….. If anybody uses ISO for medical care whether it is store-forward or real time; in that sense, we are doing telemedicine in Mauritius.

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

I think there is a lot of benefit to [quality standards compliance]. For one thing it makes the staff aware that we need to focus on quality improvement all the time…..

3.   What is the influence of financial costs on the overall quality of health care services in public and private sectors?

With the inception of our team, which operationally is 8 years, we were involved in a lot of early initiatives. So I think it became how we did work. So from a QHC, we didn't have hospital financial planning, we were always looking at ways of improving and becoming more efficient [QHC] is embedded in our values………

4.   What is the relationship between patient satisfaction and quality of health care?

Quality of health care has a direct association with satisfaction level of the patients. The ability of quality improvement to increase focus on areas for improvement, as well as the general system-wide focus on improving quality, act as a driving force for implementing initiatives to improve post-discharge follow-up visits and access to primary care, which in turn can increase the satisfaction of the patients.

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

Workforce efficiency of health care stakeholders' plays sufficient role in improving quality of health care…… In order to improve the professionalism of the management team, it is necessary to constantly improve the system of their training and retraining…….Hmmmm….The most important direction is the development of the State educational standard in the specialty "Public Health and Health Management", on the basis of which training and retraining of medical personnel should be carried out…….Well, changes in curricula and programs should be based on the priority areas of health development and the needs of management practices in the field of public health, based on a national project in the health sector.

6.   Does infrastructure fitness of hospitals help in rendering quality health care services to the patients?

However, financial cost and ISO quality standards compliance, and infrastructure fitness has been found be the major lacking in mostly public sectors and hospitals, which affect the satisfaction of the patients in a negative manner…….

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

All the currents of administrative thought left their contribution in the organisation of modern companies, initially through the incorporation of rationality in companies and, gradually, adaptation to the social context and technological evolution and incorporation.

Interview Transcript Focus Group 4

1.   What is the role of technology in improving Health care sector in Mauritius?

We just have started to work in this field and we have plan about EHR but it is true that, we don't have enough workforce yet regarding telemedicine and e-health…….

Awareness about this matter is very much important among the health personnel as well as the patients……private health sector can also take initiatives concerning this issue, as 60 percent of patients take health care services from private clinics and hospitals in Mauritius.

Modern IT developments have a positive impact on the development of new ways of organising medical care for the population……

A large number of countries have long been actively using new technologies in the health sector. Carrying out of teleconsultations of patients and personnel, exchange of information about patients between different institutions, remote recording of physiological parameters, monitoring of real-time operations-all these possibilities are provided by the introduction of information technology into medicine.

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

The quality improvement plan provided an overall focus on areas for practice improvement and provides a structure for reporting on performance.

3.   What is the influence of financial costs on the overall quality of health care services in public and private sectors?

We've always measured quality things. We've always had indicators for what we wanted to improve on. So the fact that we're mandated now [to use hospital financial planning] didn't change the culture here. It just maybe changed what we were measuring. Or forced us to measure more than we already were. The culture was already here, it was already part of what we believed in and thought about……

4.   What is the relationship between patient satisfaction and quality of health care?

Patient satisfaction and quality of health care have a significant relationship. Information technology in medicine makes it possible to conduct quality monitoring of patients' condition, which is also effective to increase satisfaction level of consumers…………and….. The maintenance of electronic medical records allows to reduce the time spent by the clinic staff on the design of various forms. All the information about the patient is presented in one document accessible to the medical personnel of the institution. ……

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

It is matter of fact that workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care…..For this purpose, there is an essential need of educational training…..In this regard, the main training courses for health facility organisers should be new programs: theory of management methods, management of organisational processes, motivation theory, financial and economic management, human resources management and development of innovative and leadership qualities in the health care industry…….Ah perhaps, the effectiveness of the training process is, first of all, on the quality of the training program preparation, the inclusion of new technologies and training processes in the program, including the most relevant and modern areas of training of medical personnel in a new formation that meets modern health care development requirements at the present stage.

6.   Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

There is evidence that a low quality of care is particularly characteristic of poor economies (developing countries and countries with economies in transition) and public hospitals in the poor areas of developed countries…….. This is due to poor infrastructure of medical institutions, old age and worn-out equipment, lack of motivation, and opportunities for physicians increase their professional knowledge and skills……Thus, it is considerable that infrastructure fitness of hospitals helps in rendering quality health care services to the patients.

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

To adapt the technological incorporation is the challenge that is posed by the reality to the structure of health needs, since in the world, much less in a country such as Mauritius. As, there are not enough economical and financial resources to support the logic of complementary diagnoses and tests based on technology of equipment of very high cost and of rapid obsolescence.

Interview Transcript Focus Group 5

1.   What is the role of technology in improving Health care sector in Mauritius?

It is imperative to note that the trained human behind the backbone are the intellect and to materialise the idea of health care that is effective and free of error in Mauritius……As the development of countrywide backbone and expected number of human recourses are the basic needs…….. hmmm. It is really a good step for rural people and patients can have specialised consultancy from faraway from main city. But we don't have enough setup to diagnose the patients so; ultimately we have to send the patients to capital city for ECG, MRI, and CT scan and others even for digital X-ray.

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

Quality improvement plans have enabled primary care organisations to discuss indicator findings and QHC efforts with their staff, Board and QHC Committees on a regular basis.

3.   What is the influence of Financial Costs on the overall quality of health care services in public and private sectors?

A huge number of unmanageable factors (unaffected by health workers) affects the result in health care and of financial costs affect the overall quality of health care services in public and private sectors…

4.   What is the relationship between patient satisfaction and quality of health care?

Quality health care is directly related to patient's satisfaction and is dependent upon the area of treatment……and in this regard, health care can be improved to increase patient's satisfaction..

5.   Does workforce efficiency of health care stakeholders play sufficient role in improving quality of health care?

Improving public health and demographic indicators is a national strategic goal, which is planned to be resolved in the health sector by increasing the availability and quality of medical care……………….. In modern conditions, the improvement of medical care is aimed at the development and adoption of standards as the main resource-saving tool that assurance…. Workforce efficiency of health care stakeholders is one of these standards and plays sufficient role in improving quality of health care

6. Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

There is no difference between the infrastructure fitness and overall quality of health care in health care system in Mauritius…..as infrastructure fitness principally experience better quality of care…

7. Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

At present, there is a rapid change in history, which requires constant updating and adaptation to the new needs of the population, by health professionals and adapting to the demands of the patients is a major need of the present time….

Interview Transcript Focus Group 6

1. What is the role of technology in improving Health care sector in Mauritius?

The technology in health care appeared provided accounting and planning of medical care resources, accounting services, control of payment for treatment. I would like to add that in some large medical centres, attempts have been made to conduct a formalized electronic medical history (EIB)….. I would like to add that development of information technologies (IT) is connected, first of all, with such a technological revolution as the emergence of a way of digital recording of information (digital technologies). The advent of the 21st century is marked by the penetration of IT into all spheres of public life, including health care, and the transformation of the IT industry into one of the main driving forces of economic growth and development of our country…Hmm…. the lack of resources is the biggest hurdle for introducing new health care technology particularly in public health care settings.

2. Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

The development of standards of practices such as (ISO) will relive the country from its pending health care problems will bring improvements…….hmm……….. The development of standards of practices such as (ISO) will relive the country from its pending health care

problems by bringing improvements in the overall performance of the activities of health organisations.

3.   What is the influence of Financial Costs on the overall quality of health care services in public and private sectors?

The workforce efficiency is directly related to the quality improvement in health care. It is affirmed that efficient workforce is the major requirement in health care sector.

4.   What is the relationship between patient satisfaction and quality of health care?

Patient's satisfaction is positively and significantly related to the dependent latent variable quality of health care and hospital performance. This relationship supports the traditional relationship between satisfaction and performance present in the academic literature. Hospitals exhibiting a broad range of services, but an emphasis on a particular line of services, might be well served to reduce emphasis on those services or procedures performed infrequently…….And….another added, The quality of medical care is what depends on standards of treatment, evidence services, medical education, our systems, which must be addressed to the patient. They make services more accessible and effective, which allows us to use limited resources in a more efficient way.

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

The introduction of medical care standards will avoid costs in the work of medical organisations and play a role in the creation of a quality management system that will ensure: achievement of the planned outcome of treatment, increasing the level of patient satisfaction with the quality of medical services, rational use of all types of resources……. Workforce efficiency of health care stakeholders must be therefore considered as one of the major sector to bring improvements in the quality of the services.

6.   Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

Different countries have different infrastructure according to their economic condition, manpower and geographical structure…yet, it is an accepted fact that infrastructure fitness of hospitals helps in rendering quality health care services to the patients…….infrastructure is considered as an important aspect of quality of services provided….

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

Adaptability to revolution requirements including flexibility measures that are put in place to address rising health care concerns and issues is one of the major factor that must be adopted to bring positive changes and improvements in the processes….

Interview Transcript Focus Group 7

1.   What is the role of technology in improving Health care sector in Mauritius?

Skills mismatch as left. Also issue of difficulty of time poor staff having to interact with sluggish systems. Sense of IT systems replacing (not in a good way) skilled staff in some situations. Skill mix/experience in decision makers not ideal….

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

The quality standards compliance at community health care has made both clinical and administrative staff more aware of QHC. This led to increased efforts to ensure patients are effectively transitioned from hospital to primary care and are receiving preventive health care service

3.   What is the influence of financial costs on the overall quality of health care services in public and private sectors?

The influence of Financial Costs on the overall quality of health care services in public and private sectors is difficult to be analysed. However, it affects the quality and efficiency… The efficiency is part of a quality improvement framework, one of several QHC strategies of health care organisations or a proposed national policy in order to achieve the reinforcing effect of simultaneously pursuing quality and efficiency…

4.   What is the relationship between patient satisfaction and quality of health care?

The relationship between patient satisfaction and quality of health care is significant. In the health care delivery sector, the factors, which largely affect patient care and satisfaction, are quality services, waiting time, behaviour of health care professionals, availability of specialists, behaviour of other clinical staff and assistants, clean environment, and technological administrative tools for better care delivery…..Hmmmm…..service quality and patient satisfaction share a close relationship……Service quality is the key to measure user satisfaction and therefore, an intensified competition and rapid deregulation have led many service and retail businesses to seek effective ways to differentiate themselves from their competitors.

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

Workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care as they are associated with the development In general, the effectiveness of health care is expressed by the degree of influence and influence it has on preserving and improving the health of the population, increasing labour productivity, preventing health care expenditures and spending on social insurance and social security, saving costs in the branches of material production and the non-productive sphere, and increasing the growth in national income……..In all these aspects, the workforce efficiency has considerable importance.

6. Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

Infrastructure fitness of hospitals helps in rendering quality health care services to the patients affecting quality of care significantly and affecting quality of services. Although, internal information and communication infrastructure in health system of Mauritius is still very basic, and therefore most of the interactions are 'physical' in the laboratory……

7. Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

There is a significant relationship between adaptability and overall quality of health care in health care system in Mauritius…..

Interview Transcript Focus Group 8

1. What is the role of technology in improving Health care sector in Mauritius?

Some systems don't talk to each other. Current HR system not very good. "Don't tell us what we want to know" - result is arguing over correctness vs. the problems. Inaccuracy/inconsistency over data entry…….Small data entry errors can extrapolate to thousands of dollars' worth of errors in terms of revenue/expenditure….Skills mismatch as left. Also issue of difficulty of time poor staff having to interact with sluggish systems. Sense of IT systems replacing (not in a good way) skilled staff in some situations. Skill mix/experience in decision makers not ideal….

2. Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

Quality control on the final result would be more accurate to call the control of efficiency as an element of quality. Planning for the result of an activity requires a real assessment of the factors affecting it. A huge number of unmanageable factors (unaffected by health workers) affects the result in health care. Thus, the development of standards of practices such as (ISO) will relive the country from its pending health care problems.

3.   What is the influence of financial costs on the overall quality of health care services in public and private sectors?

It is the most influenced variable (being affected by implementation policies and practices, implementation values fit, and champions) and it is the most influential, directly affecting implementation effectiveness. The influence of financial costs on the overall quality of health care services in public and private sectors is prevalent.

4.   What is the relationship between patient satisfaction and quality of health care?

Customer satisfaction does have a positive effect on an organisational profitability. Satisfied customers form the foundation of any successful business as customer satisfaction leads to repeat purchase, brand loyalty, and positive word of mouth. In the health care sector, the patients…….hmmm…… The quality of care is a priority in the provision of health services, and the price-quality ratio and patient satisfaction are more important in the functioning of the health care system, which aims to be friendlier to patients….

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

Different professionals play a significant role in the improvement of quality standards of the health care. The workforce efficiency of health care stakeholders therefore affect the quality of care services provided to the patients….Hmmmm…as the standards of medical care are formed by taking into account the principles of evidence-based medicine, and therefore a source of reliable information on the appropriateness of using certain medical technologies in specific clinical situations require skilled and efficiency staff……

6.   Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

Shift one organisation's culture to a more collaborative culture with physicians and staff working together to look at performance data and areas for improvement can bring improvements and this indicates that infrastructure fitness of hospitals helps in rendering quality health care services to the patients…………… Infrastructure is crucial in provision of health care……Private sector have well maintained infrastructure…..On the other hand, the

public sector have state of the art and latest infrastructure……. Attempts to broaden the product-range, or decrease focus, are limited by existing plant infrastructure and managerial resources.

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

The adaptability to revolution requirements aids in increasing health care issues and concerns…. Revolution requirements are mandatory for health care….. It is important to concentrate on existing issues and diseases and the issues and concerns should be addressed at utmost priority in Health care sector……

Interview Transcript Focus Group 9

1.   What is the role of technology in improving Health care sector in Mauritius?

The programming of medical IT is based on a system approach and two standards: an electronic patient record and a standard (protocol) for electronic data interchange. Patients' satisfaction is based on affordable fee, promptness of attention, good staff attitude, respect for patients and their rights, providing privacy and confidentiality, providing adequate information, availability of drugs and logistics and above all a healthy and clean environment…

2.   Does the development of standards of practices such as (ISO) will relive the country from its pending health care problems?

Process improvement applications and development of standards of practices such as (ISO) can improve efficiency translated directly into safer care, more accessible care, fewer clinical errors, increased patient and staff satisfaction, lower than expected mortality, and other quality indicators….

3.   What is the influence of financial costs on the overall quality of health care services in public and private sectors?

The financial costs influence the overall performance of health care sector and also affect practice of performance measurement and organisational efforts to improve quality of care. Financial constraint faced by both the private and government health care sector can lead to different management issues.

4.   What is the relationship between patient satisfaction and quality of health care?

Improving efficiency, performance and quality control in the field of health can lead to the patient satisfaction…..Improving the quality of medical services is a priority for us. I must admit that healthy competition is also an excellent motivation for the development of medical services….The level of patient satisfaction with the result of the received medical services is one of the aspects of assessing the quality of medical care. The consideration of legal materials and other factors on the problem of consumers' satisfaction with medical services is can be used to develop recommendations for medical organisations on increasing the level of patient satisfaction with the quality of medical services are developed…….

5.   Does workforce efficiency of health care stakeholders plays sufficient role in improving quality of health care?

The organisations determine the need for workers of a particular category (workers, managers, employees) independently, proceeding from the concluded contracts for the production of products, the production program and recommendations for controllability or, based on practical experience…..in the health care sector, the need of workforce efficiency is more than any other organisation…..the computer program for the analysis and monitoring of indicators of the health care sector has been developed, with the implementation of advanced technology and therefore, the efficient workforce is required

6.   Does infrastructure fitness of hospitals helps in rendering quality health care services to the patients?

Infrastructure is an important factor for health care and quality improvement alone or in tandem with other initiatives have created an environment where they can reflect on things and has helped to shift organisational culture to one that was more supportive for quality improvement…… Infrastructure fitness of hospitals helps in rendering quality health care services to the patients…

7.   Does the adaptability to revolution requirements aids in increasing health care issues and concerns?

Innovation-level factors impact the success of QHC initiatives and, hmmm… almost always depends on the adaptability and compatibility of an innovation. Innovations or QHC initiatives that can be modified based on the needs of the providers, organisation and community have a higher chance of implementation compared to innovations that are not adaptable. However, I think that it is difficult to understand the content of the standards, which requires their specific adaptation for the perception of medical workers and use in practice…..

ANNEXURE J: SPSS DATA

The SPSS data file related to the quantitative phase of this research is available in soft copy from the library of the University upon request.

https://www.ibm.com/analytics/spss-statistics-software

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