

Equity, access and utilisation in the state-funded universal insurance scheme (RSBY/MSBY) in Chhattisgarh State, India: What are the implications for Universal Health Coverage?

Sulakshana Nandi

Student number: 3011277

Thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Public Health) at the School of Public Health, University of the Western Cape

**UNIVERSITY of the
WESTERN CAPE**

Supervisor: Prof. Helen Schneider

DECLARATION

I, Sulakshana Nandi, hereby declare that the work contained in this thesis is my original work, that neither this work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I further declare that all sources that I have cited or quoted have been indicated and acknowledged by complete references.

Sulakshana Nandi

Signature: *Sulakshana Nandi*



ACKNOWLEDGEMENTS

I am grateful to the following people who have supported me in various ways during the course of my PhD:

My supervisor Helen Schneider who provided constant guidance and encouragement and helped me to maintain reflexivity and rigour in my research.

My collaborators Priyanka Dixit and Samir Garg, who contributed their unique set of skills to the research.

The Institute of Tropical Medicine, Antwerp, which provided a fellowship for my PhD.

My colleagues from Chaupal and Public Health Resource Network who gave me the space and time to work on my PhD.

Community members, Mitanins, Mitanin Trainers, Area Coordinators and the SHRC team who generously gave their time for my research.

T. Sundararaman and David Sanders for encouraging me to enrol for MPH at SOPH, UWC, which ultimately led to my doing a PhD.

My family and friends –Samir, Mummy, Ma, Koeli, Shreya and Arti– who provided all necessary emotional and logistics support, without which my PhD wouldn't have been possible.

Hiya, Saman and Joey for their love and support.



ACRONYMS/ABBREVIATION

BPL	Below Poverty Line
CPHC	Comprehensive Primary Health Care
HVD	Highest Vulnerability Districts
INR	India Rupee
LMIC	Low-and middle-income countries
LVD	Lowest Vulnerability Districts
MSBY	Mukhyamantri Swasthya Bima Yojana
MVD	Middle Vulnerability Districts
NHM	National Health Mission
NRHM	National Rural Health Mission
NSSO	National Sample Survey Organisation
OOP	Out-of-pocket
PDS	Public Distribution System
PFHI	Publicly-funded health insurance
PMJAY	Pradhan Mantri Jan Arogya Yojana
RSBY	Rashtriya Swasthya Bima Yojana
SDG	Sustainable Development Goals
UHC	Universal Health Coverage
US\$	United States Dollar
VI	Vulnerability Index

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENTS	ii
ACRONYMS/ABBREVIATION	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vi
ABSTRACT	vii
CHAPTER 1: INTRODUCTION	1
Overview of the thesis	1
Key concepts in thesis	4
Empirical evidence on equity and access in state-funded health insurance schemes (with a focus on LMICs)	12
Equity and access in publicly-funded health insurance schemes in India	14
Study setting	18
Study rationale	29
Aim	30
Objectives	30
CHAPTER 2: METHODS	31
Framework for assessing pathways of impact on equity of access in publicly-funded health insurance programmes for UHC in LMICs	31
Study design	33
Validity and reliability	40
Positionality	41
Ethics statement	42
CHAPTER 3: FINDINGS	44

Paper 1	44
Paper 2	45
Paper 3	46
Paper 4	47
CHAPTER 4: DISCUSSION, CONCLUSION AND RECOMMENDATIONS	48
Recapitulation of what the thesis does	48
Summary findings	49
Contribution of the thesis	53
Assumptions and limitations	56
Conclusion	57
Recommendations	59
REFERENCES	62
APPENDICES	83
Appendix 1: Participant information sheet and consent form (English version)	84
Appendix 2: Participant information sheet and consent form (Hindi version)	88
Appendix 3: UWC Senate Research Committee approval letter	91
Appendix 4: Review comments	92
Appendix 5: Other relevant publications by the student	116

LIST OF TABLES

Table 1: Demographic profile of Chhattisgarh	23
Table 2: Health indicators of Chhattisgarh	23
Table 3: Government health facilities in Chhattisgarh	24
Table 4: Actors involved in various process of PFHI at the state and national levels	28
Table 5: The list of studies in this PhD and the access dimensions they address	34

LIST OF FIGURES

Figure 1: Structure of the government health system in India	21
Figure 2: Location of Chhattisgarh State in India	22
Figure 3: Procedure wise claims PMJAY/MSBY	2
Figure 4: Percentage share of NHM and RSBY/MSBY of total Public Health and Family Welfare Department budget (2014–2019)	27
Figure 5: A framework for assessing pathways of impact on equity of access in publicly-funded health insurance programmes for UHC in LMICs	32
Figure 6: Conceptual framework illustrating pathways of equity under the universal PHFI scheme in Chhattisgarh	35
Figure 7: Conceptual framework representing elements of equity, enrolment, utilisation and financial protection	37
Figure 8: Conceptual framework of access and factors influencing this under state-funded health insurance schemes	39

ABSTRACT

Introduction: Universal Health Coverage (UHC) has provided the impetus for the introduction of publicly-funded health insurance (PFHI) schemes, involving the private sector, especially in low-and middle-income countries with mixed health systems. Although equity is considered as being core to UHC, the implication of UHC interventions for equity in access (availability, affordability and acceptability) beyond financial protection is inadequately researched. India introduced a national PFHI scheme (Rashtriya Swasthya Bima Yojana) in 2007 which has since then been expanded considerably through the Pradhan Mantri Jan Aarogya Yojana (PMJAY) scheme. However, contestation remains as to whether PFHI schemes are the most appropriate interventions for UHC in India. Evidence so far provides cause for concern regarding their impact on financial protection and health equity. With PFHI schemes burgeoning globally, there is an urgent need for a holistic understanding of the pathways of impact of these schemes, including their roles in promoting equity of access and achievement of UHC objectives. The state-funded universal health insurance scheme (RSBY/MSBY) in Chhattisgarh State provided the opportunity to explore these pathways of impact, especially on vulnerable communities, as the State has a universal health insurance scheme. This PhD aims to study equity, access and utilisation in the state-funded universal insurance scheme in Chhattisgarh State of India, in the context of Universal Health Coverage. It is presented as a thesis by publications.

Methods: The core framing of the thesis was provided by a framework of access which outlined the dimensions of availability, affordability and acceptability, which create the opportunity for utilisation, thereby leading to possible improved health outcomes. Access is, in turn, located in a broader equity-based framework of the likely pathways of impact of PFHI schemes. This links the design and objectives of the scheme, its implementation, and impact on access, service provision, utilisation, health systems functions, the services provided, access and equity, and health outcomes. Three empirical studies with a mix of quantitative and qualitative methodologies were undertaken. These drew on primary and secondary data, and explored various dimensions of access. The empirical findings of the three studies were then combined in an overall reflection of the PFHI scheme in Chhattisgarh, using the broader framework outlining the pathways of impact of PFHI schemes.

Ethical clearance for the PhD was given by UWC's Senate Research Committee.

Results: Chhattisgarh has one of the highest health insurance enrolment percentages in the country and enrolment was found overall to be equitable across gender, social groups and economic categories and geographical areas. However, equitable enrolment did not translate into financial protection, availability of services, equity in utilisation or acceptability of the PFHI scheme. While empanelled public hospitals were spread relatively evenly across the state and catered to the more vulnerable areas and populations, private hospitals were concentrated in the less vulnerable areas and urban areas. Unequal availability of hospitals under the PFHI scheme led to unequal health service utilisation and resource distribution, skewed against the vulnerable areas that had the most health and social need, exhibiting the ‘Inverse Care Law’. With respect to financial protection, the research showed that the insured continued to incur high out-of-pocket (OOP) expenditure for hospitalisation. The private sector was many times more expensive than the public sector, and a higher proportion of those using private facilities were incurring more OOP expenditure than those going to the public sector. Narratives of households in Raipur City utilising private hospitals revealed that, despite efforts to exercise agency during hospitalisation, they were rendered powerless during healthcare encounters and subjected to numerous additional arbitrary payments, contrary to the promise of ‘cashless services’. A key overall finding of the thesis is the need to examine the differential effects of PHFI on private and public sectors, as well as the cultural, normative and regulatory elements that influence each sector.

Conclusion: Publicly-funded health insurance schemes remain the core instruments being advanced in the name of UHC in LMICs. However, as this thesis finds, the impact of RSBY/MSBY in Chhattisgarh State on equity of access and financial protection has been weak. The thesis cautions on an over reliance and rapid expansion of PFHI schemes in the Indian health system, and in particular, on the ability of the private sector to align itself to public goals. To truly achieve UHC in India, the normative environment of health policy making needs to shift from a market-based commercialised provisioning of healthcare to a system based on solidarity, human rights and public accountability. Chhattisgarh is currently re-assessing the pitfalls of a private sector emphasis in its PFHI scheme and re-positioning the public health system at the core of service provision, while also espousing solidarity, equity and rights as the basis of health policy for universal health care. India still has some way to go in charting the pathways towards universal health care and a universal healthcare system.

CHAPTER 1: INTRODUCTION

This introductory chapter provides the overview of the thesis and contextualises the research in current developments in India and globally. In it a summary of the PhD research that was undertaken, the questions driving the research and its design are presented. The key concepts of Universal Health Coverage (UHC) and equity and access which form the basis of the thesis are reviewed. This is followed by a review of empirical literature on publicly-funded health insurance (PFHI) schemes in India and globally, within the context of UHC and equity of access. A section on the study setting provides an overview of the health system structure, the key health reforms and the history of state-funded health insurance in India generally and Chhattisgarh State (the location of the study), in particular. This is followed by the study rationale and the aims and objectives of the research.

Overview of the thesis

In India, profound inequity exists with respect to health service utilisation and access to health care (Joe, Mishra and Navaneetham, 2008; Baru *et al.*, 2010; Balarajan, Selvaraj and Subramanian, 2011; Raj, 2011; Drèze and Sen, 2013; Ghosh, 2014a). These inequities relate to socio economic and political status, geography, and gender differences, amongst others (Baru *et al.*, 2010; Balarajan, Selvaraj and Subramanian, 2011; Raj, 2011; Drèze and Sen, 2013). This is reflected in higher mortality rates, a larger burden of disease, along with high levels of malnutrition among vulnerable groups (Drèze and Sen, 2013). Health systems have a crucial role in addressing inequity (Whitehead and Dahlgren, 2006; Gilson *et al.*, 2007; Sen, 2015) and any country moving towards Universal Health Coverage has to ensure equity (Whitehead and Dahlgren, 2006; Frenz and Vega, 2010; Kutzin, 2012).

India has a mixed health system. It includes a complex network of public health facilities and programmes, aiming to provide universal coverage to the entire population of the country and offering preventive as well as curative health services. The formal private health sector in India, although very large, is heterogeneous, concentrated in urban centres and providing healthcare on a fee-for-service basis (Mackintosh *et al.*, 2016). The private sector is poorly regulated and rapidly expanding (Sengupta *et al.*, 2017), and this, combined with underfunding of public provisioning of healthcare by government, has resulted in rising financial burdens related to healthcare (Mackintosh *et al.*, 2016). Under-resourcing of the public health system along with growing public subsidies to the private sector have further undermined public services (Sen *et al.*, 2018). In India, out-of-pocket (OOP) payments by

households constitute 60.6 per cent of total health expenditure (NHSRC, 2018). The proportion of households reporting catastrophic expenditure on health rose from 15 per cent in 2004 to 18 per cent in 2014 (NHSRC, undated).

Over the last decade, there have been two major strands of health sector reform in India's health sector. The first, the National Rural Health Mission (NRHM) (since re-named National Health Mission) was launched in 2005 with the aim of reversing health losses resulting from structural adjustment policies of the 1990's (Banerji, 2001; Priya, 2005; Rao, 2009; Balarajan, Selvaraj and Subramanian, 2011). The NHM is regarded as an example of a Comprehensive Primary Health Care (CPHC) development strategy (Lawn *et al.*, 2008). Secondly, and in parallel to the inception of NHRM reforms, many states also began introducing publicly-funded health insurance (PFHI) schemes.

The National Health Insurance Scheme or Rashtriya Swasthya Bima Yojana (RSBY), launched by the Ministry of Labour in 2007, was the first national-level scheme for the unorganised sector, targeting insurance cover for 'Below Poverty Line' (BPL) households requiring hospital care and drawing extensively on the private health sector providers. The coverage and scope of RSBY was expanded beyond the national scheme in many states, with additional funding from state budgets. For instance, states like Chhattisgarh and Kerala expanded population coverage and developed a universal scheme. States such as Maharashtra and Tamil Nadu increased the annual insurance cover per family. In 2018, a further expansion of the RSBY was announced by the national government in the form of Pradhan Mantri Jan Arogya Yojana (PMJAY) under the 'Ayushman Bharat Yojana' reforms, increasing insurance coverage per household, from the previous INR 30,000 (US\$ 440) to INR 500,000 (US\$ 7296) annually (Chatterjee, 2018). This thesis examines the second of these reforms, specifically the access and equity impacts of the Rashtriya Swasthya Bima Yojana (RSBY) (implemented since 2009) and Mukhyamantri Swasthya Bima Yojana (MSBY) (implemented since 2012) in Chhattisgarh. State-funded health insurance schemes are being advanced as a way to achieving UHC not only in India (Sengupta, 2013; EGHA, 2014; Jain, 2014; Shroff, Roberts and Reich, 2015; Virk and Atun, 2015), but also globally (Lagomarsino *et al.*, 2012; Marten *et al.*, 2014).

Promoted largely for secondary and tertiary care, the emerging evidence across India on the impact of PFHI schemes shows a mixed picture of some gains as well as negative impacts (Karan, Yip and Mahal, 2017; Prinja *et al.*, 2017; Ranjan *et al.*, 2018). Contestation remains

over whether publicly-funded health insurance (PFHI) schemes are the best way to progress towards UHC in India. In particular, how to enable service provision at the secondary and tertiary levels and roles of insurance schemes and the private providers in this, are still being fiercely debated (Sengupta, 2013; Brundtland, 2018; Chatterjee, 2018; Jan Swasthya Abhiyan, 2018). Some state governments, mainly in those states that are ruled by parties in opposition to the union government, are not willing to adopt the latest reforms, while the private healthcare industry has emerged as a vocal advocate for UHC through PFHI schemes (CII and PWC, 2018; FICCI, 2018).

It is critical in this context to examine the implications of the state-funded insurance for achievement of the UHC objectives and of particular concern in India, their impacts on equity and access. The state-funded universal health insurance scheme in Chhattisgarh State provided the opportunity to explore these pathways of impact, especially on vulnerable communities.

This PhD is presented as a thesis by publications. An access framework, outlining the dimensions of availability, affordability and acceptability, creating the opportunity for utilisation and leading to possible improved health outcomes, provided the core framing of the thesis. Access is located within a broader framework for evaluating PFHI schemes as an instrument of UHC in India, synthesised from a range of concepts and literature. This broader framework outlines the pathways of impact of PFHI schemes, linking the design and objectives of the scheme, its implementation, and impact on service provision, utilisation, health systems functions, the services being provided, access and equity, and health outcomes.

Three empirical studies, with a mix of quantitative and qualitative methodologies drawing on primary and secondary data and exploring various dimensions of access, were undertaken. Study 1 drew on RSBY/MSBY programme data to compare availability of public and private hospital services under the PFHI scheme across districts of the State, ranked and grouped by socio-economic vulnerability. Study 2 analysed government household survey data to examine the relationships between enrolment, utilisation of public and private sector sectors and financial risk protection for the insured and uninsured. Study 3 was a qualitative case study of patients from the slums of Raipur city, purposefully selected as they incurred significant health expenditure despite using PFHI. It examined the way patients and their families sought to navigate and negotiate hospitalisation under the scheme, and illustrated the

relationships between the three access dimensions of affordability, availability and acceptability. The empirical findings of the three studies were then combined in an overall reflection on the PFHI scheme in Chhattisgarh, using the broader framework for evaluating the impacts of the PFHI schemes discussed earlier.

These studies are presented as journal articles (three published, one submitted) as follows:

- 1) Nandi, S., Schneider, H. and Garg, S. (2018) 'Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index', *Global Health Action*, 11(1). doi: 10.1080/16549716.2018.1541220.
- 2) Nandi, S., Schneider, H. and Dixit, P. (2017) 'Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage', *PLOS One*, 12(11). doi: 10.1371/journal.pone.0187904.
- 3) Nandi, S. and Schneider, H. (2019) 'When state-funded health insurance schemes fail to provide financial protection: An indepth exploration of the experiences of patients from urban slums of Chhattisgarh, India', *Global Public Health*. doi: 10.1080/17441692.2019.1651369.
- 4) Nandi, S. and Schneider, H. (2019) 'An equity-based framework for evaluating publicly-funded health insurance programmes as an instrument of UHC in India, with application to Chhattisgarh State' (Manuscript submitted to Health Research Policy and Systems).

Key concepts in thesis

Universal Health Coverage

Universal Health Coverage (UHC) arose out of a global concern about high levels of out-of-pocket expenditure and financial hardship experienced when accessing health care. The origins of UHC can be found in the resolution of the World Health Assembly on 'sustainable health financing, universal coverage and social health insurance' (WHO, 2005), further expanded in the World Health Report of 2010 (WHO, 2010) and a number of subsequent documents. UHC is defined as 'ensuring that everyone within a country can access the health services they need, which should be of sufficient quality to be effective, and providing all with financial protection from the costs of using health services' (McIntyre *et al.*, 2013, p. 3). The World Health Report of 2010 outlines coverage of populations, coverage of services and

financial protection as the three critical dimensions of UHC (WHO, 2010). The report further recommends that countries create well-functioning health financing systems to enable this to happen (WHO, 2010). A similar definition of UHC has been proposed by Boerma *et al.* (2014) who refer to the concept as coverage with health services that includes promotion, prevention, treatment, rehabilitation, and palliation and financial protection.

UHC was subsequently included in the Sustainable Development Goals (SDGs) as a sub-goal under the SDG 3. The relevant health target, SDG 3.8 aims to ‘achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all’ (WHO, 2019). This target has two indicators, one on coverage and the other on financial protection. It is pertinent to note that following representation from academics and civil society, the indicator on financial protection was revised from measuring coverage of the population by health insurance or a public health system, to measuring the proportion of population incurring catastrophic health expenditure (McIntyre *et al.*, 2016). The contention was that mere coverage would not necessarily guarantee financial protection (McIntyre *et al.*, 2016).

The 2017 Tokyo Declaration on Universal Health Coverage that emerged from the UHC 2030 Forum in Japan emphasised that UHC was ‘central to achieving health for all, health security and the SDG for health’ (Singh and Travis, 2018, p. 1). The post-2015 development framework is an opportunity for emphasising the role of UHC in responding to the inequities that exist in health outcomes and healthcare access, and financial hardships faced by the poor in accessing healthcare (Bearley, Marten and O’Connell, 2013).

Equity and access

Equity in health is when ‘everyone could attain their full health potential and that no one should be disadvantaged from achieving this potential because of their social position or other socially determined circumstance’ (Whitehead and Dahlgren, 2006, p. 4). Inequities are inequalities in health status that are considered avoidable and therefore unfair, as are inequalities in the distribution of health and health care. Rannan-Eliya and Somanathan (2006), who reviewed evidence of inequity in health systems in Asia, examined equity in terms of inequalities in health status, healthcare utilisation, progressivity in health care financing, and poverty impacts of health care expenditures. Whitehead and Dahlgren (2006, p. 20) propose equity principles for health systems, namely that: public health services should

not be driven by profit; provided ‘according to need, not ability to pay’, maintaining equitable care standards; and that equity objectives be explicitly defined and monitored.

Access is a multi-dimensional concept concerned with ‘degree of fit’ or interaction between the health care system and individuals, households, and communities (McIntyre, Thiede and Birch, 2009, p. 179). The key dimensions of access are availability (or physical access), affordability (or financial access) and acceptability (or cultural access) (Gilson and Schneider, 2007; Thiede, Akweongo and McIntyre, 2007; McIntyre, Thiede and Birch, 2009). Important foundations of access are information as a ‘core element’ cutting across dimensions of access (Thiede and McIntyre, 2008, p. 1169), and ‘empowerment of an individual to use health care’ (McIntyre, Thiede and Birch, 2009, p. 181). The central elements of the acceptability dimension are ‘the fit between lay and professional beliefs’, ‘patient-provider engagement and dialogue’ and ‘the way in which health care organizational arrangements influence patient response to services’ (Gilson and Schneider, 2007, p. 3).

Strategies to address access and access inequity require a combination of broader organisational and social change, empowerment and mobilisation of users and communities, public participation in decision-making and accountability mechanisms, policy emphasis on increasing access and reducing inequities, and monitoring of strategies and inequities through analysis of appropriately disaggregated data (Whitehead and Dahlgren, 2006; Gilson and Schneider, 2007; Thiede and McIntyre, 2008; McIntyre, Thiede and Birch, 2009).

Equity, access and Universal Health Coverage

In the initial frameworks of UHC, apart from financial barriers to access, there was little explicit consideration of issues of equity and access (WHO, 2010; Kutzin, 2012, 2013; Giedion, Alfonso and Diaz, 2013; Roberts, Hsiao and Reich, 2015). Critiquing the World Health Report 2010, Noronha (2013) expressed concern that equity had been made subordinate to financial protection. Specific mentions of equity emerged in subsequent articulations by the WHO (Etienne, 2013; WHO, 2013a; Singh and Travis, 2018). The document, ‘*Arguing for Universal Health Coverage,*’ produced by the WHO (2013a, p. 18) stated that, although coverage of population and services and financial protection are still the main concerns for UHC, any UHC effort needs to be ‘built on the foundation of human rights and equity’. The WHO Consultative Group on Equity and Universal Health Coverage further highlighted the importance of public accountability and participation, and the use of indicators such as process, coverage, financial protection and health outcomes (WHO, 2014).

A number of international organisations and researchers have advocated for an equity-oriented approach to and monitoring of equity within UHC (Boerma *et al.*, 2014; Hosseinpoor *et al.*, 2014; Rodney and Hill, 2015), arguing that schemes for UHC should lead to ‘equity in financing and financial protection’ and also ‘equity in service use’ (Mcintyre and Kutzin, 2016, pp. 21-26). However, a narrative review on equity in UHC found that a large number of the studies still did not specifically evaluate equity as an outcome of UHC (Rodney and Hill, 2015). The authors cautioned against assuming that equity is an ‘inevitable outcome of UHC’ and concluded that, unless there is a focus on equity, health inequities may persist and even widen (*ibid*, p. 6).

A recurrent concern has been that of the danger of UHC policies following the path of the MDG era of ‘trickle down’ approaches to improving equity, and the danger of exclusion of the poor (Gwatkin and Ergo, 2011; Hosseinpoor *et al.*, 2014; Rodney and Hill, 2015).

Discussions around equity within UHC have been closely linked to considerations of access. The WHO document (undated, p. 9), entitled ‘*Universal Health Coverage: Supporting Country Needs*’ lists a wide range of principles for expanding coverage that included: availability (all the resources needed should be available and as close as possible to the user); accessibility (includes physical accessibility, information accessibility, non-discrimination and equity); affordability; quality, adaptability, acceptability (includes people’s participation in all stages of service provision and decision-making, responsiveness of the providers and respect); and equity (with a special focus on groups that may be discriminated against). The document also argues for the explicit monitoring of inequalities within these elements, thus bringing together the ideas of access and equity (*ibid*).

Such a holistic approach to UHC has been supported by others. Tangcharoensathien, Mills and Palu (2015), writing on Thailand’s experiences, emphasised that in order to contribute to health equity through UHC, both physical access (geographical coverage of health services) and financial access (financial risk protection mechanisms) needed to be strengthened. Similarly, a review by Giedion, Alfonso & Diaz (2013) suggests that, although affordability is critical, all the dimensions of access need to be addressed if UHC were to be achieved. Overall, however, the emphasis has been mostly on equity in service coverage and financial access (WHO and World Bank Group, 2014) and to some extent on physical access (geographical coverage of health services) (Tangcharoensathien, Mills and Palu, 2015). The dimension of acceptability has been studied less with respect to UHC (WHO, 2010; Kutzin,

2012, 2013; Giedion, Alfonso and Diaz, 2013; Roberts, Hsiao and Reich, 2015), as have aspects such as appropriateness and quality of services (O'Connell, Rasanathan and Chopra, 2014). Frenz and Vega (2010, p. 27), in a review of evidence related to equity of access in the context of universal health coverage found that most studies focused on utilisation and financial protection and not on the dimensions of empowerment, agency, capacities to 'navigate and negotiate', or access in relation to health needs. They highlight the need for health system research methodologies to better understand interaction, perspectives and contexts. Utilisation, which is often taken as a proxy for studying access, fails to either explain the process of interaction between health system and the users, or about the adequacy or appropriateness of services utilised (Thiede, Akweongo and McIntyre, 2007).

Moreover, financial coverage is not enough to ensure equity in healthcare utilisation (Barraza-Lloréns, Panopoulou and Díaz, 2013). The other important factors are the non-financial factors (Macha *et al.*, 2012; Kusi *et al.*, 2015), the nature of the health system and supply-side interventions (Jacobs *et al.*, 2012; Roberts, Hsiao and Reich, 2015), the distribution of the healthcare resources such as geographical distribution of facilities, availability of staff and medicines (Macha *et al.*, 2012; Grogger, Arnold and Leon, 2014) and improving health care delivery, management and organisation (Meng *et al.*, 2011). The availability of services has been highlighted as an important determinant of equitable access. Bennett and Gilson (2001) found that even when there is universal coverage of social health insurance, unequal distribution of facilities results in lower healthcare access. Macha *et al.* (2012) have highlighted the importance of a holistic approach which, in addition to the above, includes the covering of travel and referral costs and addressing issues of staff morale and mistrust of the system.

Equity within UHC has also been associated with ideas of human rights and health for all, with UHC recognised as 'a practical expression of the concern for health equity and the right to health' (Ooms *et al.*, 2014, p. 5). In this perspective, UHC is placed within politics, ethics and in the belief that health is a fundamental health and human right (Sachs, 2012; Bearley, Marten and O'Connell, 2013; Sridhar *et al.*, 2015). In this sense, UHC aligns with the original message of Alma Ata, that of health being a fundamental right, that health inequalities are unacceptable and that the government is responsible for people's health (Paterno, 2013). In order to enable this, political will and involvement of civil society for a rights-based approach and institutionalised accountability towards the more disadvantaged is needed (O'Connell, Rasanathan and Chopra, 2014). Social movements, rights-based

advocacy and litigation and health systems strengthening are potentially ‘key enablers’ of UHC (Forman *et al.*, 2016, p. 31).

UHC and the social determinants of health

One of the critiques of UHC has been the failure to focus on the social determinants of health, and in this respect UHC cannot be seen as a natural successor to ‘Health for All’ as defined under Alma Ata (Clift, 2013). Clark (2014) goes further, referring to the bio-medicalisation of UHC evidenced by three features – the conflation of healthcare with health; the exclusion of the social and political determinants of health; and the prioritisation of financing over service delivery. She argues that these threaten the principles of equity and health as a social good that underlie UHC and, with others, has also expressed the concern that UHC would lead to commodifying health (Noronha, 2013; Sengupta, 2013; Clark, 2014). Marmot (2013) has opined that without simultaneous action on social determinants, UHC will not achieve health equity, proposing that social determinants be added to the UHC monitoring framework, through monitoring of equity in health status, in key indicators of social determinants of health and in the structural drivers of health inequity.

Provisioning through public and private sectors and implications for achieving UHC

The health financing system and how it engages with the mechanisms for provision of health care are core to the design of UHC and have implications for access and equity. Therefore, in moving towards UHC it is critical to examine the question of what strategies are most appropriate to ensure access and equity and further the objectives of UHC, especially in mixed health systems that have a public-private mix in the provision of health services. Very few have discussed the role of the private and public sectors, and specifically PFHI schemes, in this context. The lack of analysis with respect to the private and public health sectors in studies on insurance has been noted in systematic reviews (Acharya *et al.*, 2012).

Several studies have enumerated the strengths and weaknesses of the private and public health sectors, whilst also expressing the need for further research on examining equity and access in both sectors (Maarse, 2006; Berendes *et al.*, 2011; Basu *et al.*, 2012). While there seems to be some consensus on the fact that it would be difficult for the for-profit private sector to provide equity of access, different scholars have provided different perspectives on this issue.

One set of views suggests that public systems are more capable of promoting equity as the private sector would not find it cost effective to provide care for the disadvantaged, for those living in underserved areas or those who need care for longer duration (Sengupta, 2013). Similarly, Basu *et al.* (2012) suggest that an increase in privatisation of public services could lead to more unequal distribution, as the public sector still tries to cover under-served areas, the private sector does not. Some opine that involvement of the private sector may in fact lead to more exclusion (Oxfam, 2009). The Knowledge Network on Health Systems (Gilson *et al.*, 2007) puts the public sector at the core of addressing inequities.

Another set of arguments relate to the nature of service provision and the capacity of the government to ensure and regulate ‘supply side’ aspects of provision. After studying demand and supply side interventions, both monetary and non-monetary, to removing access barriers in low-income Asian countries, Jacobs *et al.* (2012) argue that while health insurance is a demand-side monetary intervention covering affordability and acceptability functions, the provision of essential services is a supply-side non-monetary intervention covering all aspects of access-geographical accessibility, availability, affordability and acceptability. They further conclude that interventions through the for-profit sector typically focus on limited services, result in inequity in access, and that most health systems currently do not have the capacity for regulating private provision. They also maintain that there is very little evidence of ‘issues related to cost, benefits and the impact on equity of interventions implemented through the private for-profit sector’ (ibid, p. 298). Similarly, Roberts *et al.* (2015, pp. 26–27) pointed out that a strong health system is essential for better coverage, financial risk protection and health outcomes and that much more attention needs to be paid to the supply-side to ensure effectiveness and availability of services otherwise it will lead to ‘nominal’ rather than ‘effective’ Universal Health Coverage.

A recent article argued for the need to involve the private sector in achieving UHC, while highlighting the problems with the for-private sector, such as the ‘abuse of market power (market skimming monopolistic behaviour and predatory pricing), unresolved conflicts of interest and regulatory capture’ (Clarke *et al.*, 2019, p. 434). Experiences with social health insurance has brought to the fore concerns of possible adverse selection and the threat of moral hazard, especially with respect to the private sector (Liu *et al.*, 2012; Odeyemi and Nixon, 2013; Maurya and Ramesh, 2018). It has been argued that promoting the role of the private sector in health care provision under publicly-funded health insurance schemes rather than tackling the existing problems of publicly-provided health care, may not solve the

problems of social and financial protection (Sengupta, 2013; Das Gupta and Muraleedharan, 2014; Sen *et al.*, 2018).

Universal Health Coverage versus Universal Health Systems

Notwithstanding extensive global debate on widening the meanings of UHC, the practices of UHC at country level have tended to remain narrowly focused on financial protection and coverage through insurance schemes. The conflation of UHC with health insurance scheme coverage has been raised as a concern by Kutzin (2013, p. 604), who emphasises that ‘making progress towards UHC is not inherently synonymous with increasing the percentage of the population in an explicit insurance scheme’, and that the focus has to shift from a scheme to the health system, in which transparency, accountability and equity are important elements. He reiterates that in monitoring UHC, it is less important to know whether a scheme has attained some level of coverage, than the ‘impact of that scheme on the attainment of the objectives for the population and system as a whole’ (*ibid.*, p. 607). He further warns, ‘depending on the details of policy design in a given context, a scheme may contribute to or detract from UHC objectives for the population as a whole’ (*ibid.*, p. 607).

Despite these concerns, UHC at country level has often been operationalised as government engaging the private sector through PFHI schemes and public-private partnerships (Lagomarsino *et al.*, 2012; Marten *et al.*, 2014). International agencies have played a role in promoting UHC as ‘a health financing system based on pooling of funds to provide health coverage for a country’s entire population, often in the form of a ‘basic package’ of services made available through health insurance and provided by a growing private sector’ (Sengupta, 2013, p. 2). This has been the case, especially in LMICs with mixed health systems, where the existence of a large private sector alongside the public sector alongside political support for market-based reform, have driven such policies (Mackintosh *et al.*, 2016).

Some have suggested a shift in language from Universal Health Coverage (UHC) to universal health systems (UHS) (Hernández and Salgado, 2014; McIntyre, 2017). Universal health systems are based on principles of universalism and social solidarity in which people pay according to ability and benefit from use of services according to need (McIntyre, 2017). Therefore equity forms the core of such systems. In operationalising universal health systems, Hernandez and Salgado (2014) suggest promoting the development of a single public entity to provide the full range of health services, as against insurance schemes that cover a limited

package of health services provided by public and private healthcare providers, that UHC has come to mainly promote. After comparing Chile's UHC policy and Costa Rica's UHS approach the authors conclude that the UHS approach had more advantages with regards to financial and health outcomes for universal health (Hernández and Salgado, 2014).

The multiple ways in which UHC is invoked suggests that it has become something of a 'container concept'. Some critique the 'ambiguous' articulations of UHC, including with respect to equity (O'Connell, Rasanathan and Chopra, 2014, p. 277). With changing definitions of UHC, clarity is missing on its practical implication for health equity and the right to health and due to its ambiguity, UHC could be exploited in the 'market-driven global environment' (Forman *et al.*, 2016, p. 31). On the one hand, the lack of clarity regarding UHC has helped in broad-basing it, so people with different views are able to talk about UHC (Clift, 2013). However, the term 'Universal' needs to be discussed in the context of the limits that a state sets on its obligation to UHC by defining citizenship, 'Health' in terms of how much of health UHC can deliver and the extent it can deliver on equity and 'Coverage' defined with respect to effective utilisation of services (O'Connell, Rasanathan and Chopra, 2014). There is need to keep pushing for UHC to be articulated clearly and with a human rights perspective (Forman *et al.*, 2016).

Empirical evidence on equity and access in state-funded health insurance schemes (with a focus on LMICs)

A review was undertaken of the literature on studies on state-funded health insurance schemes in LMICs in addition to those in India, including Ghana, Mexico, Vietnam and Nigeria, the focus being on aspects of enrolment, utilisation and financial protection with an emphasis on their equity impacts. These countries were selected for review as their insurance schemes were similar to that of India (Lagomarsino *et al.*, 2012). In a number of countries – India, Indonesia, Ghana, Nigeria, Vietnam, Philippines, Rwanda, Kenya and Mali – people are required to be enrolled to access services, and there is a third party purchasing agency (Lagomarsino *et al.*, 2012). In Rwanda and Vietnam, services are mainly provided by the public providers, while in Ghana, Indonesia, the Philippines, Kenya, Nigeria and India services are purchased from both public and private providers (Lagomarsino *et al.*, 2012).

Enrolment

In their review of studies on the impact of national health insurance for the poor and the informal sector in LMICs, Acharya *et al.* (2012) found low enrolment in many of the

schemes studied. Lower enrolment in insurance schemes among the poor is a common finding (Jehu-Appiah *et al.*, 2011; Odeyemi and Nixon, 2013; Kusi *et al.*, 2015; Dake, 2018). Odeyemi and Nixon (2013) found clear differences in participation in Nigeria based on rural-urban divide, with similar findings from another study in Ghana (Dake, 2018). Education emerged as another determinant in increasing enrolment (Jehu-Appiah *et al.*, 2011; Acharya *et al.*, 2012; Dake, 2018).

In contrast, in Ghana, some studies have shown that the poorest are better covered through subsidised premiums than other socio-economic classes (Jehu-Appiah *et al.*, 2011; Odeyemi and Nixon, 2013; Kusi *et al.*, 2015). Similarly, in some of the studies reviewed, rural residents had better enrolment than their urban counterparts (Jehu-Appiah *et al.*, 2011; Acharya *et al.*, 2012). These findings suggest that the scheme may have been designed to enrol the more vulnerable (Meng *et al.*, 2011).

In the studies reviewed, gender was mostly not a determinant of low enrolment (Jehu-Appiah *et al.*, 2011; Acharya *et al.*, 2012; Dake, 2018), although one study on Ghana found wealth as a determinant of enrolment among women, more so than for men (Dixon *et al.*, 2014).

Meng *et al.* (2011) undertook a systematic review of options for expanding coverage of health insurance to vulnerable groups. They listed the main strategies as modifying eligibility criteria, increasing awareness of schemes and benefits, making premiums affordable, modifying enrolment processes and requirements, improving health care delivery, and improving management and organisation. These strategies have been echoed in a number of other studies (Jehu-Appiah *et al.*, 2011; Liu *et al.*, 2012; Macha *et al.*, 2012).

Utilisation and financial protection

The evidence on utilisation under state health insurance schemes is mixed, sometimes even in the same country (Acharya *et al.*, 2012). While in most studies enrolment in insurance increased financial protection and healthcare utilisation (Galárraga *et al.*, 2010; Knaul *et al.*, 2012), the effects on the poorest varied: sometimes showing pro-poor patterns (Liu *et al.*, 2012), others showing less utilisation of health services among the poor (King *et al.*, 2009; Barraza-Lloréns, Panopoulou and Díaz, 2013).

Grogger *et al.* (2014) showed that the effect of public health insurance on catastrophic OOP expenditure in Mexico depended on where the person lived and which health facilities they had access to. Poor people and people living in remote rural areas, with poorly staffed

facilities, did not experience any significant reduction of OOP expenditure (King *et al.*, 2009; Grogger Arnold and Leon, 2014). Similarly, Acharya *et al.* (2012) found that though there was some evidence that insurance prevents high OOP expenditure, the impact on the insured poor was less. A study in the Philippines concluded that the expansion of health insurance did not necessarily lead to increased financial protection indicators or a decrease in OOP expenditure (Bredenkamp and Buisman, 2016). Similar results were documented in Vietnam (Ahmed, Szabo and Nilsen, 2018).

A study of the National Hospital Insurance Fund in Kenya found a pro-rich pattern of utilisation of health services, inequity in enrolment and financial protection and geographical inequity in the distribution of hospitals (Munge *et al.*, 2018). Another study in Kenya and Ghana found that though patients and private providers felt that the national health insurance schemes had led to reduced OOP payments, private hospitals were still charging the patients additional money (Suchman, 2018).

A systematic review on health insurance schemes in Asia and Africa by Spaan *et al.* (2012) found that despite an improvement in health service utilisation and a decrease in OOP expenditure there was weak evidence as to any positive impact on the quality of care and social inclusion.

Though the role of government insurance in ensuring access and equity and furthering the objectives of UHC has been discussed in various studies, two major limitations emerged of the studies that were reviewed. First, very few studies have commented on the role of the private and public sectors individually and, secondly, studies have tended to examine a limited number of indicators and have not contextualised PFHI schemes within a comprehensive ambit of a health systems approach or looked at how such schemes interact with the larger health system.

Equity and access in publicly-funded health insurance schemes in India

Studies and publications on PFHI schemes in India, especially of RSBY, started emerging a few years (2011–2013) into the implementation of the scheme. A number of these studies or reports were undertaken by agencies who had been involved in introducing PFHI schemes in India, or by people associated with them, of which the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the World Bank were predominant (Palacios, Das and Sun, 2011; La Forgia and Nagpal, 2012; Nagpal, 2013). However, this period also saw other studies, mainly originating from state level actors in Andhra Pradesh, Gujrat and

Chhattisgarh, including the research by the student. These studies provided early evidence regarding lack of financial protection (Nandi *et al.*, 2012; Rathi, 2012; Selvaraj and Karan, 2012; Dasgupta *et al.*, 2013; Devadasan *et al.*, 2013), growing involvement of the private sector, the commercialisation of health through PFHI schemes (Shukla, Shatrugna and Srivatsan, 2011; Prasad and Raghavendra, 2012), the rise in moral hazard and lack of fiscal sustainability of schemes (PHFI, 2011). There were also a few studies exploring the policy process and evolution of the scheme (Shroff, Roberts and Reich, 2015; Virk and Atun, 2015).

In recent years, the quantum of research on PFHI schemes, especially on RSBY, has increased both at the state and national levels. Most studies evaluating the impact of PFHI schemes on access have explored the issue of affordability and financial protection, though only few have studied it from an equity perspective. Studies assessing enrolment or population coverage have dealt with equity to an extent. However studies till now have mostly been quantitative in nature, even if the need for more qualitative research in understanding the impact of PFHI schemes has been highlighted (Ahlin, Nichter and Pillai, 2016; Dao and Nichter, 2015; Sen and Gupta, 2017). A review of the literature on PFHI schemes in India specifically on the aspect of equity is presented below, organised according to their findings on the dimensions of access.

Enrolment

PFHI schemes such as RSBY were introduced for the families who are classified as Below Poverty Line (BPL), and a first set of critiques related to the targeting approach versus a universal approach (Lagomarsino *et al.*, 2012; Ghosh, 2014b; Sen and Gupta, 2017). Moreover, exclusion errors were a commonly known fact of the BPL list and there was evidence of eligible poor families being excluded from health insurance coverage while richer families would get enrolled (*ibid*). Subsequent studies have documented an increase in enrolment in PFHI schemes amongst eligible households (GIZ, 2016), some arguing that the vulnerable groups have been covered appropriately with RSBY (Nagpal, 2013).

However, lower enrolments have been reported in remote rural areas, and poorer districts, among socio-economically vulnerable and indigenous (or tribal) communities, female-headed households and in the poor quintiles (Narayana, 2010; Rathi, 2012; Devadasan *et al.*, 2013; Ghosh, 2014b; Rao *et al.*, 2014; Ranjan *et al.*, 2018). In terms of equity, caste, including tribal group has emerged as significant determinants of inequity in enrolment and utilisation in most studies, highlighting the interplay of the multiple disadvantages faced by these groups

(Health Inc, 2014; Rao *et al.*, 2014; Thakur, 2015). In terms of gender, data shows that the overall enrolment of women in RSBY has been increasing and is equal to that of men (GIZ, 2016). However, studies have also found that girls 15 years or younger are less likely to be enrolled than boys of the same age group (Palacios, Das and Sun, 2011). It is possible girls of this age are not enrolled by families because of their soon impending marriages and shifting of residence to the husband's house. A recent review of studies on PFHI schemes in India with a gender lens concluded that for women, enrolment has become an additional barrier to accessing health services (Ramprakash and Lingam, 2018)

Availability

Very few studies have assessed the availability of hospitals and services under PFHI schemes. Those which have, highlight the inequitable distribution of empanelled hospitals, especially of hospitals in the private sector, leading to inequitable access (Narayana, 2010; Nundy *et al.*, 2013).

Affordability

Financial risk protection from catastrophic health expenditures is seen as the main objective of PFHI schemes. A decrease in OOP expenditure, comparing differences in hospitalisation expenditures between two time periods and between the enrolled and those not enrolled, has emerged in a few studies (Fan, Karan and Mahal, 2012; Sood *et al.*, 2014). However, in one of the studies, of the Aarogyasri scheme in Andhra Pradesh State, the positive effects on Scheduled Caste and Scheduled Tribe households were much smaller, with no change in levels of catastrophic health expenditure in the whole study population (Fan, Karan and Mahal 2012). Moreover, these studies showed that people still had to incur OOP expenditure, albeit lower amounts than before, contrary to the supposed 'cashless' nature of PFHI schemes in India.

These findings have been echoed in the majority of studies of PFHI schemes in India, where significant OOP expenditure continues despite insurance coverage, and the failure of schemes to protect against catastrophic health expenditure (Palacios, Das and Sun, 2011; CTRD, 2012; Selvaraj and Karan, 2012; Nandi *et al.*, 2012; Ghosh, 2014b; Rao *et al.*, 2014; Dhanaraj, 2016; Ravi, Ahluwalia and Bergkvist, 2016; Gupta *et al.*, 2017; Karan, Yip and Mahal, 2017; Prinja *et al.*, 2017; Ranjan *et al.*, 2018). Some have, in fact, documented increases in OOP expenditure on hospitalisations for those enrolled under RSBY (Karan, Yip

and Mahal, 2017). Rent and Ghosh (2015) showed that a higher proportion of BPL families than non-BPL families incurred OOP expenditure.

Of these, studies that have assessed the differential impacts of private and public facilities under these schemes have found that instances of OOP expenditure are higher when utilising private facilities. In one study, the mean OOP expenditure in private hospitals was more than twice that in public hospitals (Rent and Ghosh, 2015). Impermissible co-payments from the patients have been the main reason for continuing OOP expenditure (Devadasan *et al.*, 2013; Rent and Ghosh, 2015; Garg, 2019).

Acceptability

Very few studies have examined the dimension of user and community acceptability of insurance schemes. While a greater choice of provider is considered an important design feature of PFHI schemes, women in West Bengal indicated a preference for the public sector because of an inherent trust in it and a mistrust of the private sector (Sen and Gupta, 2017). Lack of transparency and access to data, information and grievance redress mechanism have all been highlighted as problems under PFHI schemes in India (Narayana, 2010; CTRD, 2012; Nandi *et al.*, 2012; Rathi, 2012; Thakur, 2015).

In analysing the reasons for continuing OOP expenses under PFHI schemes, some suggested that these emerge from lack of user/demand side awareness of the guidelines (La Forgia and Nagpal, 2012; Nagpal, 2013; Rao *et al.*, 2016), others have argued, based on qualitative evidence, that people using the PFHI schemes acted rationally because of a combination of legitimate expectations and their lived experiences (Sen and Gupta, 2017).

Utilisation

As with the international experience, the impact of PFHI schemes on hospitalisation has been mixed. Using National Sample Survey (71st Round) data, Ravi *et al.* (2016) found that insurance enrolment was significantly associated with increases in hospitalisation, although in subsequent analyses controlling for other factors, this association disappeared (Ranjan *et al.*, 2018).

A number of studies have examined equity in hospitalisation rates under PFHI schemes. Exclusion during enrolment subsequently translated to lower utilisation by the excluded groups in a study on equity in enrolment and utilisation under PFHI schemes in Maharashtra and Karnataka (Health Inc, 2014). In a before-after analysis of two cross-sectional surveys of

the Aarogyasri insurance scheme in Andhra Pradesh, Rao *et al.* (2014) showed a greater increase in hospitalisations among female-headed households and certain excluded groups, although there was also a reduction in hospitalisations among scheduled tribes and the poorest.

Women have had a higher proportion of hospitalisation than men in some states and have also been the most vulnerable to provider-induced demand (Jain and Kataria, 2012; Prasad and Raghavendra, 2012; Nundy *et al.*, 2013; Ramprakash and Lingam, 2018; Chatterjee, 2019b). Instances of unnecessary hysterectomies and a rise in caesarean section rates under these schemes have been documented in many states (*ibid*). Prusty, Choithanu and Dutt Gupta (2018) analysed national and state data and found that health insurance coverage was a predictor of hysterectomy, with women in insured households two times more likely to go for hysterectomy than women in uninsured households.

Studies have also documented trends towards hospitalisation for simple conditions and unnecessary surgical procedures, particularly in the private sector, with women more vulnerable to these processes (Narayana, 2010; Palacios, Das and Sun, 2011; Shukla, Shatrugna and Srivatsan, 2011; La Forgia and Nagpal, 2012; Prasad and Raghavendra, 2012; Selvaraj and Karan, 2012; Dasgupta *et al.*, 2013; Kapilashrami and Venkatachalam, 2013).

Very few studies have analysed data separately for the public and private sectors, showing that even with insurance coverage, the utilisation of the public sector is higher for the poor and more vulnerable groups (Ranjan *et al.*, 2018), as well as private sector practices of converting outpatient to inpatient care, 'cherry picking' of more profitable packages and provision of a selective and narrow set of services (Dasgupta *et al.*, 2013; Maurya and Ramesh, 2018).

Study setting

Historical context of Indian health system

The historical development of India's health system has been influenced by its colonial past, post-independence aspirations, a shifting national political-economy and global discourses on health and healthcare.

The British colonists developed a health system in India centred on their military camps and surrounding areas, along with specific public health measures like vaccinations and selected interventions in maternal and child health (Harrison, 1994). While Britain had made great

gains in child and infant mortality by the beginning of the 20th century, this was not the case in India. Health policies in post-independence India have their origins in the anti-colonial movements of this period (Banerji, 2001). In 1938, the Indian National Congress, through its National Planning Committee recommended a focus on rural and socialised health services, an increase in public health provisions, preventive and curative care, health education and investment (Jeffery, 1988). The subsequent Bhore Committee Report of 1948 played a crucial role in shaping India's post-independence health system. This report espoused a state-run system of comprehensive primary healthcare, with emphasis on universal coverage, curative, promotive, and preventive care and equity (Banerji, 2001). Following independence in 1947, the right to life was embedded in the new Indian Constitution as a fundamental right (Banerji, 2001), and a series of Five Year Plans provided policy direction in the post-independence era, including for health (Jeffery, 1988; Banerji, 2001; Rao, 2009).

However, dictated by international financial aid and the prevailing 'germ theory', the 1950s and 60s saw the emergence of techno-centric, vertical programmes focused on disease eradication, vaccines and managing epidemics, and a shift away from basic determinants of health and general health service development (Gangolli, Duggal and Shukla, 2005; Rao, 2009). There were, nevertheless, major achievements in this period, including the building of a network of health institutions, near eradication of small pox and improvements in economic conditions, resulting in declining mortality rates (Priya, 2005).

Towards the end of 1960s, widespread drought and the subsequent global oil crisis in the 1970s led to a decrease in social sector expenditure (ibid). Damaging to overall health system development was the singular preoccupation with the Family Planning Programme in this era, aggressively implemented at the cost of all other health services, especially for the poor (Banerji, 2001; Priya, 2005). Following recommendations by the Shrivastav and Kartar Singh Committees in 1975 and 1973, respectively, Community Health Workers (CHWs) were introduced to provide health services in rural areas (Gangolli, Duggal and Shukla, 2005). The Fifth Plan (1974-79) introduced the 'Minimum Needs' programme for rural areas which included multipurpose health staff (ibid). This signalled something of a return to a comprehensive health system focus.

The 1980s saw a boom in rural primary health care institutions, influenced by the Alma Ata Declaration of 1978 and reports by the Indian Councils of Social Science and Medical Research. This resulted in the formulation of a National Health Policy in 1983 which was

critical of the existing treatment focus approach and propagated comprehensive primary health care, whilst also simultaneously endorsing privatisation and achievement of demographic targets (Gangolli, Duggal and Shukla, 2005; Priya, 2005; Rao, 2009). The Seventh Plan further expanded rural services but went back on universalisation (Gangolli, Duggal and Shukla, 2005).

In 1991, India was forced to take an IMF loan, a condition of which was the implementation of a Structural Adjustment Programme (SAP). Spending on social sectors that included health, fell from 1.4 per cent of GDP in the mid-80s to 0.9 per cent in 2002, user fees were introduced and Public-Private Partnerships encouraged through government subsidies (Rao, 2009). These measures had significant effects on access to health services and OOP expenditure, and during this period (mid-80s to 2000), expenditure on treatment was one of the most common cause for rural indebtedness among the poor (Banerji, 2001). India was forced to take World Bank loans for disease control programmes like leprosy, TB and polio, implemented as vertical, technocratic programmes, while the overall government health system faced resource shortages. By 2002, government figures recorded a decline of routine immunisation coverage implemented through the general health system (Priya, 2005).

The mismatch between rapid economic growth and stagnation in health spending, along with pressure from left-wing parties, led to formation of the National Rural Health Mission (NRHM) in 2005 (Rao, 2009). The NRHM emphasised strengthening public health systems to provide effective healthcare and improve 'access, equity, quality, accountability and effectiveness of public health services' and introduced community-based mechanisms for planning and monitoring health services (National Health Systems Resource Centre, 2012, p. 1). During the same period, many states introduced state-funded insurance schemes (such as the Yeshasvini Health Insurance Scheme in Karnataka, Rajiv Aarogyasri Scheme in Andhra Pradesh, Kalaingar Insurance Scheme in Tamil Nadu), to protect the poor from catastrophic health expenditure (PHFI, 2011). The National Health Insurance Scheme or RSBY, launched by the Ministry of Labour in 2007, was the first national-level scheme for the unorganised sector, targeting insurance cover for Below Poverty Line (BPL) households requiring hospital care and drawing extensively on the private health sector providers.

In 2010, India's Planning Commission commissioned the High Level Expert Group (HLEG) on UHC that raised concerns regarding PFHI schemes as seen in India and globally (HLEG, 2011). The Commission recommended a tax-based system of health financing, with an

expansion of primary level healthcare. In 2014, with the change of government, a new Expert Group on Health Assurance was formed with a predominance of insurance experts (EGHA, 2014). As already discussed earlier, the PFHI scheme was expanded by the union government in 2018 through the PMJAY scheme under the ‘Ayushman Bharat’ set of reforms. While public budgets for these reforms have been increasing, there has been a by decrease or stagnation in budgets for the government health system (Ghosh, 2015; Sundararaman, Mukhopadhyay and Muraleedharan, 2016; Chatterjee, 2018). The government has instead sought to invest in private health sector development, announcing incentives, such as free land and funding for the private sector to set up hospitals in smaller cities, while promising to recognise healthcare as an industry (Jan Swasthya Abhiyan, 2019).

Health system structure in India

The health system structure in India today includes a complex network of public health facilities and programmes, all aiming to provide universal coverage to the entire population of the country and offering preventive as well as curative health services. The structure of the government health system is as follows (Mairembam, 2018):

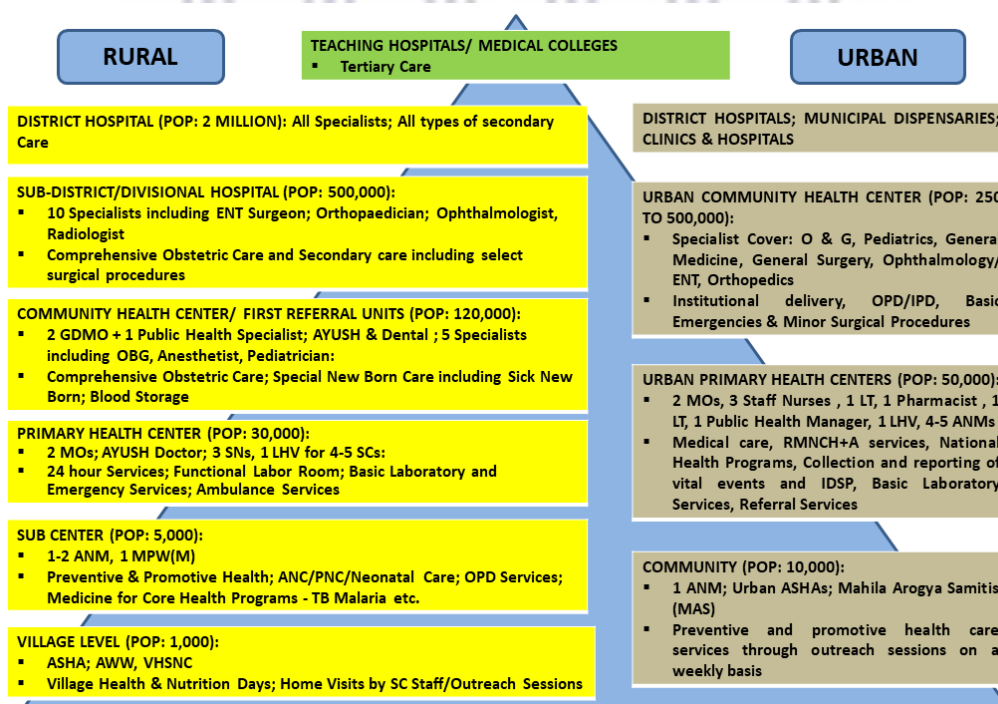


Figure 1: Structure of the government health system in India¹

¹ ANM- Auxiliary Nurse and Midwife; ASHA- Accredited Social Health Activist; AWW- Anganwadi Worker; AYUSH- Ayurveda, Yoga, Unani, Siddha, and Homeopathy; LHV-Lady Health Visitor;

Alongside the public sector is a heterogeneous private sector (Mackintosh *et al.*, 2016). Although the formal private health sector in India is very large, private facilities and human resources, especially specialists, are largely concentrated in urban centres (Balarajan, Selvaraj and Subramanian, 2011; Randive, Chaturvedi and Mistry, 2012). More than half (59.2 per cent) of India's health workforce is based in urban areas, serving only 27.8 per cent of the population (Anand and Fan, 2016).

Location of the study: Chhattisgarh

Chhattisgarh is the tenth largest state in India, with an area of 135,191 km², and the seventeenth most populous state, with a population of just over 25.5 million (Registrar General and Census Commissioner, 2011). It is located in the south-eastern part of central India and became a separate state in 2000 when it split from Madhya Pradesh. It is divided into 27 districts.



Figure 2: Location of Chhattisgarh State in India

Around 41 per cent of Chhattisgarh's geographical area comes under forests (Forest Survey of India, 2017). Nearly 86 per cent of the households in the State have been enumerated as poor. Out of the total population, 31 per cent are Scheduled Tribes and 13 per cent are

MO- Medical Officer; MPW (M)- Multipurpose Worker (Male); SC-Sub Centre; SN- Staff Nurse; VHSNC- Village Health Sanitation and Nutrition Committee

Scheduled Castes, both which are considered to be marginalised and socially excluded groups (Registrar General and Census Commissioner, 2011). The population is mostly rural with only 22 per cent of the households living in urban areas (Registrar General and Census Commissioner, 2011).

Table 1: Demographic profile of Chhattisgarh

Indicator	Data
Population	25 540 196
Rural population	19 607 961 (76.76%)
Scheduled Caste population	3 274 269 (12.8 %)
Scheduled Tribe population	7 822 902 (30.6%)
Sex Ratio	991
Child Sex Ratio	974

Source: (Registrar General and Census Commissioner, 2011)

Although Chhattisgarh has seen a significant improvement in health indicators since 2000, it is still one of the low performing states in India, with mortality rates higher than the national averages (RGI, 2017) (Table 2).

Table 2: Health Indicators of Chhattisgarh

Mortality Indicators	Chhattisgarh Previous	Chhattisgarh Current	India Current
Infant mortality rate (RGI, 2012, 2019)	48 (2011)	38 (2017)	33 (2017)
Under 5 mortality rate (RGI and Census Commissioner, 2016)	70 (2010-11)	60 (2012-13)	
Maternal Mortality Ratio (RGI, 2014, 2018)	221 (2011-13)	173 (2014-16)	130 (2014-16)
Access to health services (IIPS and Macro International, 2007; IIPS and ICF, 2017a, 2017b)	NFHS-3 Chhattisgarh (2005-2006)	NFHS-4 Chhattisgarh (2015-16)	NFHS-4 India (2015-16)
Households with any usual member covered by a health scheme or health insurance (%)	3.3	68.5	28.7
Use of any Family Planning Methods (currently married women age 15–49 years)	53.2	57.7	53.5
Mothers who had at least 4 antenatal care visits (%)	28.3	59.1	51.2
Institutional births (%)	14.3	70.2	78.9
Institutional births in public facility (%)	6.9	55.9	52.1
Children age 12-23 months fully immunised (%)	48.7	76.4	62

While there is a vast network of public health facilities, gaps exist in terms of infrastructure (Table 3), human resources, and governance and accountability mechanisms.

Table 3: Government health facilities in Chhattisgarh

Type of health facility	Existing Number of health facilities	Average population per health facility
Health Sub Centre (rural)	5 161	5232
Civil dispensary (urban)	29	931034
Primary Health Center (rural)	783	34483
Urban Primary Health Center	31	870968
Community Health Center	126	214286
Civil Hospital	14	1928571
District Hospital	27	1000000
Mobile Medical Units	30	900000
Ambulances/Referral Transport	206	131068

Source: NHM Programme Implementation Plan Chhattisgarh 2014–15 (National Health Mission Chhattisgarh, 2014)

Rashtriya Swasthya Bima Yojana (RSBY) and Mukhyamantri Swasthya Bima Yojana (MSBY) in Chhattisgarh

Chhattisgarh was one of the first states to launch the state insurance scheme, RSBY, in 2009. The objectives of the insurance scheme are to: (i) provide financial protection from health care expenses on hospitalisation; (ii) improve access to quality health care; (iii) provide beneficiaries the power to choose from a national network of providers; and (iv) provide a scheme which the non-literate can use easily (Jain, 2014).

The State Government later expanded the RSBY – meant for below-poverty-line (BPL) families –to all families living in the state by launching the Mukhyamantri Swasthya Bima Yojana (MSBY) in 2012 for the non-BPL families. The scheme has been referred to as a ‘business model’, in which incentives are aligned so that the stakeholders (service provider, insurance company, etc.), when getting direct benefits are expected to take a ‘proactive role in making this scheme successful’ (Government of Chhattisgarh, 2008, p. 1). Chhattisgarh is one of the few states to universalise the PFHI scheme.

As indicated earlier, RSBY was subsumed under PMJAY when it was launched in 2018. Both schemes (RSBY and MSBY) have identical provisions. The insurance scheme initially covered a family of five for hospitalisation costs up to a limit of INR 30 000 (US\$ 280) per

year, which was subsequently expanded to INR 50 000 (US\$ 460). The government pays an insurance premium to the insurance company for every household enrolled. The insurance company selects a Third Party Agency (TPA) to manage the claims and insurance payments. A fixed registration fee of INR 30 is paid by the family annually and the insurance covers pre- and post-hospitalisation expenses as well as pre-existing diseases. Subsequent to the launch of PMJAY, the state government expanded coverage to INR 5 lakh (US\$ 4,600) in a 'hybrid model' where expenditure above the insurance limit is covered through a Departmental fund. Under RSBY (now PMJAY), the Central Government contributes 60 per cent of the funds for paying the insurance premium while the remaining 40 per cent is provided by the State Government. The MSBY is wholly paid by the State Government.

Private and government hospitals are empanelled to provide services under this scheme. The claims are made by the hospitals empanelled under the scheme based on pre-determined packages. In case of public hospitals, a percentage of the claims amount is given to the hospital staff as incentives.

The total number of families enrolled under PMJAY and MSBY in Chhattisgarh is 6.3 million (4.2 million under PMJAY and 2.1 million under MSBY) with enrolment of around 21 million individuals. This means that around 90 per cent of families and close to 75 per cent of individuals are now covered by PFHI schemes. A total of 937 hospitals are currently empanelled, in which 467 are private hospitals (191 are dental clinics) while 470 are public facilities. Around 60% of the private hospitals are concentrated in five cities of the state (Garg, 2019b). In 2017, two-third of the private hospitals that were registered under the state's Clinical Establishment Act was empanelled under the PFHI scheme (Garg, 2019b). Around 805 procedures are covered under the insurance scheme. The pattern of claims shows that the most common claims are for dental and ophthalmology services (Figure 3).

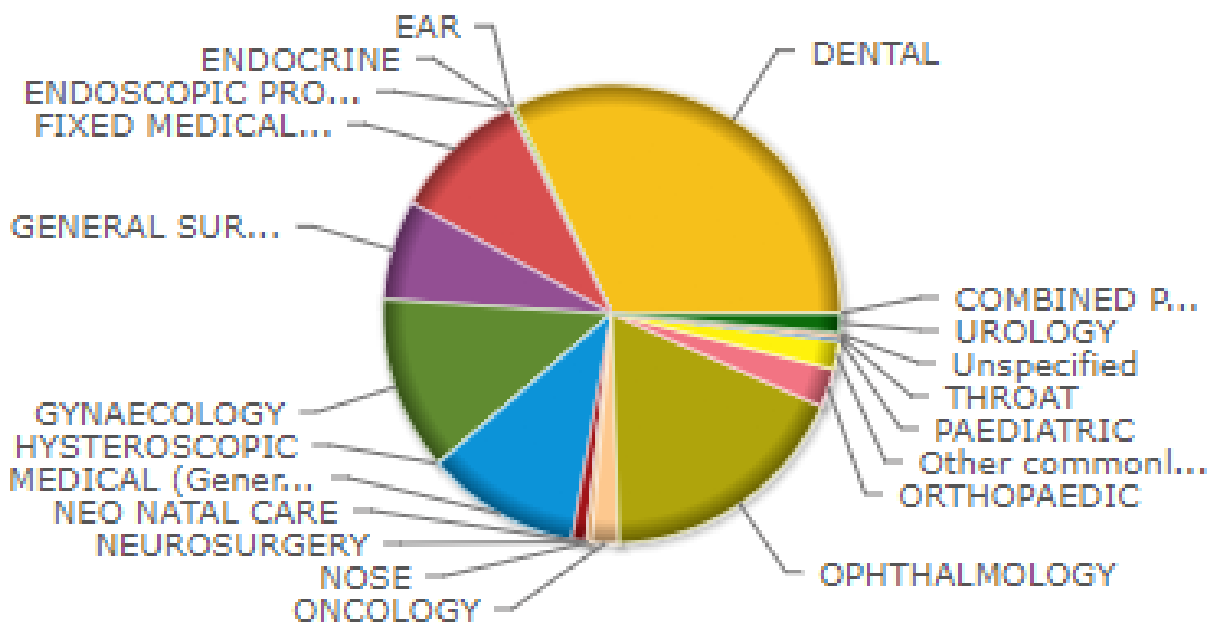


Figure 3: Procedure wise claims PMJAY/MSBY. Source: (Government of Chhattisgarh, 2018)

The proportion of the total health budget allocated for RSBY/MSBY in Chhattisgarh State has been progressively increasing while the percentage share of the NHM has been steadily declining (Figure 4). In real terms, though the NHM budget has been increasing, it has a much lower rate of increase than the PFHI scheme budget. Moreover, the increase barely covers inflation over the years. For instance, in 2015-16 the Chhattisgarh NHM budget was INR 9 billion (US\$ 126 million) while the PFHI scheme budget was INR 2 billion (US\$ 23 million). In 2018-19, the NHM budget was INR 10 billion (US\$ 144 million), while the PFHI scheme budget had doubled to INR 4 billion (US\$ 65 million) (Department of Finance Government of Chhattisgarh, 2019).

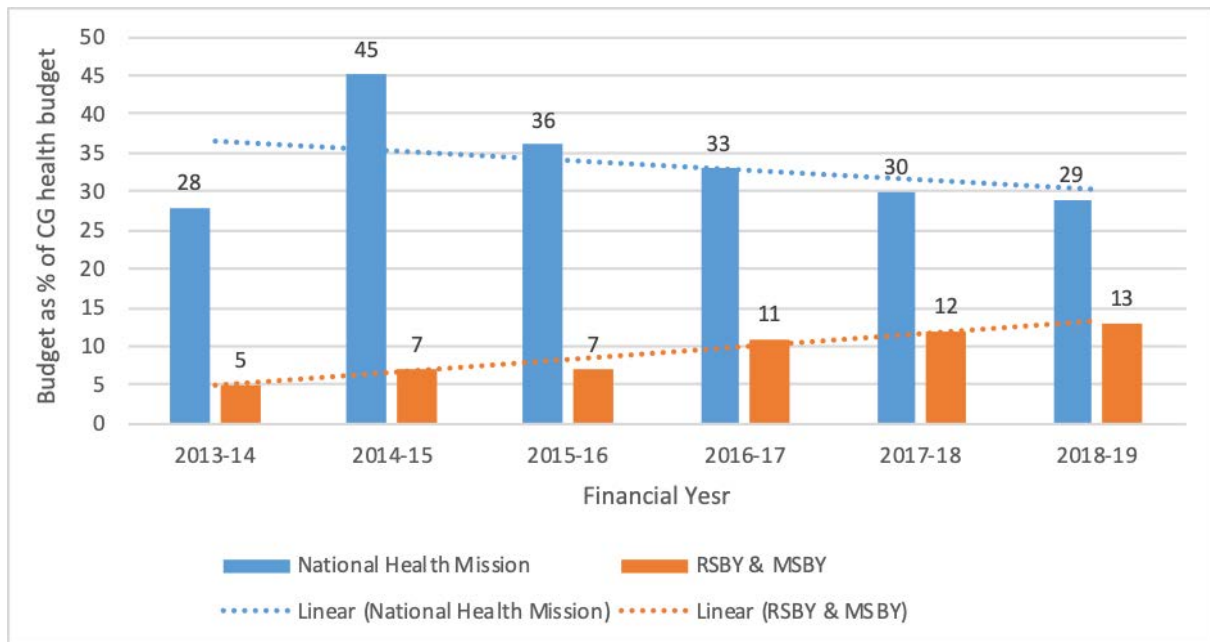


Figure 4: Percentage share of NHM and RSBY/MSBY of total Public Health and Family Welfare Department budget (Financial years 2013–2014 to 2018–2019)

Source: Budget Books of Public Health and Family Welfare Department (2013–14 to 2018–19) (Department of Finance Government of Chhattisgarh, 2019)

Key actors in health insurance

Various actors at both state and national levels have been involved in the policy process of RSBY/MSBY and its implementation in Chhattisgarh, including aspects of governance and leadership, service delivery and regulation (outlined in Table 4).

Proponents of PFHI schemes in organisations that had overseen the introduction of RSBY nationally also influenced policymaking at the state level. These include an array of bilateral, multilateral and other international organisations such as the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the Bill & Melinda Gates Foundation (BMGF) the World Bank and the WHO in collaboration with Indian agencies such as the Niti Aayog (a policy think tank of the Indian government), a newly constituted National Health Authority, and the Ministry of Health. At the state level, the decision to expand RSBY through MSBY mirrors the earlier universalisation of another social welfare scheme, namely the politically popular Public Distribution System (PDS) or subsidised grain programme.

Table 4: Actors involved in various process of PFHI schemes at the state and national levels

<p>Governance and leadership Actors</p> <p>State level</p> <ul style="list-style-type: none"> • Government of Chhattisgarh (led by the Chief Minister) • Department of Health, Chhattisgarh <p>National Level</p> <ul style="list-style-type: none"> • Ministry of Health, Government of India • Niti Aayog • National Health Authority (newly constituted) • Ministry of Labour, Government of India (previously) • International agencies (GIZ, ILO, BMGF, World Bank) • WHO <p>Pressure groups at both levels</p> <ul style="list-style-type: none"> • Indian Medical Association • Corporates/Hospitals • Insurance companies • Trade unions of government health staff • Doctor's cells in political parties • Political parties • NGOs, health activists and networks
<p>Service Delivery Actors</p> <ul style="list-style-type: none"> • Ministry of Health, Government of India • State Health Department • Empanelled facilities (private and public sectors) • Drug stores • Diagnostics and radiology centres
<p>Regulatory Actors</p> <ul style="list-style-type: none"> • Clinical Establishments Act • Medical Council of India • Insurance company (Claims related, fraud) • Third Party Agency • RSBY nodal office • Help line • District managers • Elected representatives and patients Patients (grievances regarding out-of-pocket expenses, quality of services, selective services) • Media

Associations of medical doctors and hospital owners such as the Indian Medical Association (IMA) have made concerted efforts to intervene in decision-making processes in order to increase package rates and further loosen regulation. Within this group, however, there are differences of opinion between owners of corporate and large hospitals and those of medium and small hospitals.

On the other side of the spectrum, civil society organisations such as Jan Swasthya Abhiyan have been bringing to the fore the problems with PFHI schemes, especially in the context of health care for vulnerable groups. State elections were held in Chhattisgarh in the months of November and December 2018, bringing a change in ruling party for the first time in 15 years. The political party that is in opposition at the national level is now ruling the state. The new State Health Minister has announced that Chhattisgarh will review the union government's current insurance model (Ghosh, 2019).

Study rationale

For many, RSBY or the new PMJAY is the way to achieve UHC in India. There is some evidence, both positive and negative, on the functioning of the scheme. It has enabled poor families to utilise healthcare both in the private and public sector. However, there are also numerous concerns regarding the impacts of PFHI schemes on equity of access, starting with 'intra-household-exclusion', the exclusion of beneficiaries and vulnerable groups at various levels of implementation, continuing OOP expenditure and issues in quality of care. The growing role of the private sector in exacerbating these inequities is of particular concern. In this context, whether the private sector, especially the for-profit sector, can play a role in achieving UHC goals is far from certain.

The global discourse on mixed health systems, while recognising the difficulties of regulating private providers, suggests that governments do not have an option but to engage the private sector (Clarke *et al.*, 2019). Ultimately, such decisions and assessments need to be made based on the evidence regarding equity and access and the experiences of people who are utilising services. This is especially important in the context of PFHI schemes where resource flows to the private health sector detract from the strengthening of the public health system. Unfortunately very few studies have examined the two sectors separately when undertaking research on PFHI schemes. The current research hopes to address this deficit.

The review of the literature showed some evidence on equity, utilisation and certain access dimensions like affordability (out-of-pocket expenditure) and availability (enrolment coverage). These studies have not provided a comprehensive perspective on equity in access when examining the various dimensions of access (affordability, availability, acceptability) and the relationships between them, or the implications for UHC objectives for the whole health system and population. Moreover, few studies have tried to understand the perceptions and experiences of people using the scheme.

RSBM/MSBY in Chhattisgarh State provides a good opportunity to address these knowledge gaps as it has a universal insurance scheme. In a state where all families are given an equal entitlement in the scheme, it is crucial to examine whether this translates into equity in access and utilisation, as well as the barriers being faced on the pathway from enrolment to utilisation and outcomes. Moreover, both the private and the public health sectors are involved in providing services under the scheme in Chhattisgarh, and provide a useful case study of public and private sector dynamics in mixed health systems.

The research hopes to contribute to the literature on equity and access in the context of UHC by studying dimensions of access and the relationships between them and their impacts on utilisation. It also proposes to add to the current debates on the role that the state-funded insurance schemes and private health sector can play in UHC.

Aim

The aim of this research is to study equity, access and utilisation in the state-funded universal health insurance scheme (RSBY/MSBY) in the Chhattisgarh State of India, in the context of Universal Health Coverage.

Objectives

1. To explore the access dimensions of availability, acceptability/agency and affordability pertaining to access to healthcare under the universal health insurance scheme.
2. To assess differential access to healthcare under the universal health insurance scheme based on gender, social, income and geographical differences.
3. To understand the relationships between the dimensions of access and how they affect utilisation.
4. To understand barriers to access faced by vulnerable groups under the universal health insurance scheme.
5. To compare access to and utilisation of private and public health facilities by vulnerable groups.

CHAPTER 2: METHODS

This PhD focuses on the dimensions of equity and access under Chhattisgarh's universal health insurance scheme. This study focus was arrived at following a holistic mapping of the likely pathways of impact of PFHI schemes in India. In order to contextualise the empirical research undertaken in the PhD, this chapter begins by presenting the framework developed as a result of the mapping exercise. The construction and rationale for the elements of framework are not discussed in any detail in this section, as these are the subject of the fourth paper of this PhD, presented in the body of the thesis. After presenting the framework, the chapter then goes on to present the designs of the individual studies undertaken to evaluate equity, access and utilisation under Chhattisgarh's PFHI scheme. Following this, sections on validity and reliability, the positionality of the researcher and the ethics statement are presented.

Framework for assessing pathways of impact on equity of access in publicly-funded health insurance programmes for UHC in LMICs

Drawing on the literature, an equity-based framework for examining the pathways of impact of state health insurance schemes is proposed below (Figure 5).

The framework outlines the pathways of impact of the insurance schemes, linking the design and objectives of the schemes, their implementation, and impact on service provision, utilisation, health systems functions, the services being provided, access and equity and health outcomes. It combines constructs from various frameworks and draws on literature and debates around UHC, access, healthcare provisioning and broader approaches to health policy and systems research (HPSR) to establish likely pathways of impact.

The framework starts with the global normative reference point of UHC and the way this has been incorporated in the Indian context as PFHI schemes. It then flows to the design elements of PFHI schemes and their impact on the health system building blocks and people's access (affordability, availability and acceptability) and utilisation, analysing public and private sectors separately. The goal is improved health outcomes which are produced by health systems, as well as broader social and economic factors.

The framework also depicts the dynamics of the policy process (from formulation to implementation and impact) as occurring at each stage of the pathway. Equity concerns are explicit in the elements of the framework and all the processes and elements are embedded

within the larger socio-economic and political context. Though the framework is presented as linear, the use of bi-directional arrows emphasises an interactive and iterative process of implementation and feedback along the pathway. Similarly, elements of the framework, while presented as distinct categories, have overlapping ideas and constructs, such as between health system inputs and access impacts, or between governance and the design of PFHI schemes. The framework is not intended to be used as a rigid guideline with precise indicators, but rather as a heuristic to enable a holistic approach to the appraisal of PFHI schemes.

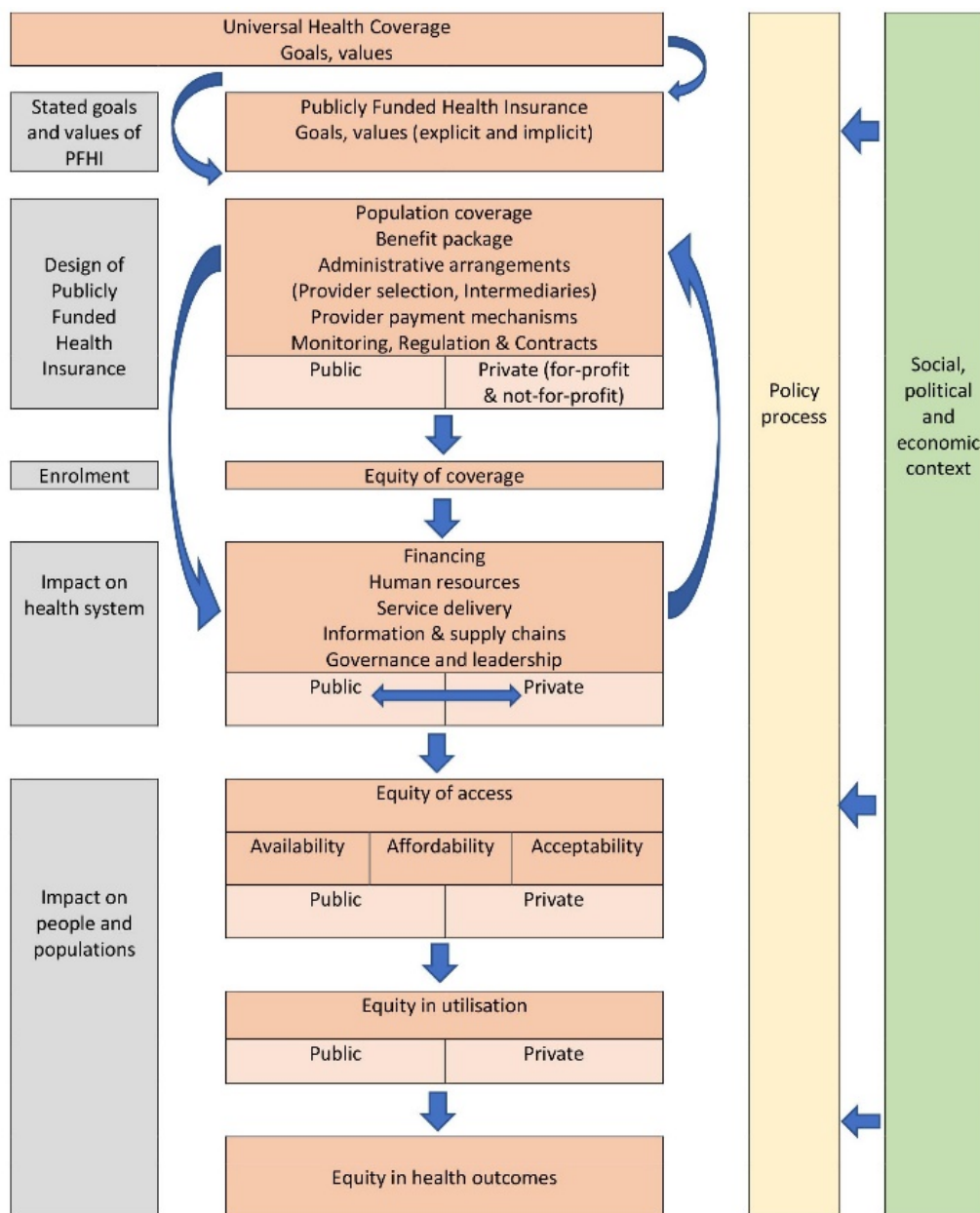


Figure 5: A framework for assessing pathways of impact on equity of access in publicly-funded health insurance programmes for UHC in LMICs

As outlined in the introduction, the definition of access adopted in the thesis is, a ‘degree of fit’ or interaction between the health care system and individuals, households, and communities (McIntyre, Thiede and Birch, 2009) that includes the key dimensions of availability (or physical access), affordability (or financial access) and acceptability (or cultural access) (Gilson and Schneider, 2007; Thiede, Akweongo and McIntyre, 2007; McIntyre, Thiede and Birch, 2009). Drawing from previous research in this field (REACH, 2012), the assessment of access has been operationalised as follows: affordability is understood as OOP expenditure, including catastrophic expenditure (calculated as the proportion of household expenditure above 10 per cent of total monthly household consumption expenditure) incurred by the patient/family for healthcare or while utilising insurance; availability refers to enrolment in the insurance scheme and availability of health facilities and health services; while acceptability includes providing a conducive service delivery environment, including mechanisms to negotiate and navigate the system, transparency and accountability. Although information and power relations cut across all the dimensions (McIntyre, Thiede and Birch, 2009), in order to study these elements they have been added to the acceptability dimension, with people’s ‘agency’ as a part of it. These access dimensions are considered to be inter-related, as are inequities in access. The nature of utilisation impacts on the health system which is, in turn, embedded in the larger political economy and shaping wider social inequalities. Though these latter aspects have not been studied explicitly, they form part of the broader understanding of the context within which this research is located.

Study design

For the PhD, three empirical studies, exploring the various dimensions of access, were undertaken. These studies adopted a mix of quantitative and qualitative methodologies, drawing on both primary and secondary data as follows:

- Study 1 drew on secondary data to examine the relationship between availability, utilisation and geographical equity.
- Study 2 analysed household survey data after introduction of the insurance schemes to examine the relationship between enrolment, affordability, utilisation and equity.
- Study 3 was a qualitative study exploring the experiences of vulnerable groups in navigating and negotiating access to health care under the insurance scheme in the private sector and the relationship between choice, affordability and acceptability.

In addition to these empirical studies, a desk study of concepts and literature formed the basis of a paper that presents the framework for assessing pathways of impact on equity of access in PFHI schemes (Study 4) which also brings together the findings of the three empirical studies.

The table below summarises the studies and the access dimensions they address:

Table 5: The list of studies in this PhD and the access dimensions they address

SN	Study	Availability	Affordability	Acceptability	Utilisation
1	Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh State, India, using a composite vulnerability index.	√			√
2	Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage.	√	√		√
3	When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India.		√	√	√
4	An equity-based framework for evaluating publicly-funded health insurance programmes as an instrument of UHC in India, with application to Chhattisgarh State.	√	√	√	√

The next section describes the design of the four studies that includes the aim of each study, the conceptual frameworks used, sampling methodology and data collection (wherever relevant) and analysis.

Study 1: Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh State, India, using a composite vulnerability index

Aim: To compare availability of public and private hospital services under the state-funded universal health insurance scheme across districts of Chhattisgarh State, ranked and grouped by socio-economic vulnerability.

Conceptual framework: The pathways of health inequity were explored in this study using the framework presented below (Figure 6). Socio-economic status, gender, education, rural status and availability of infrastructure were selected as indicators of inequity, which often converge geographically. The combination of insurance coverage and availability of hospitals enable access and, therefore, utilisation and, ultimately, effective coverage and improved health. Although access and utilisation depend on various factors, this study focused specifically on availability.

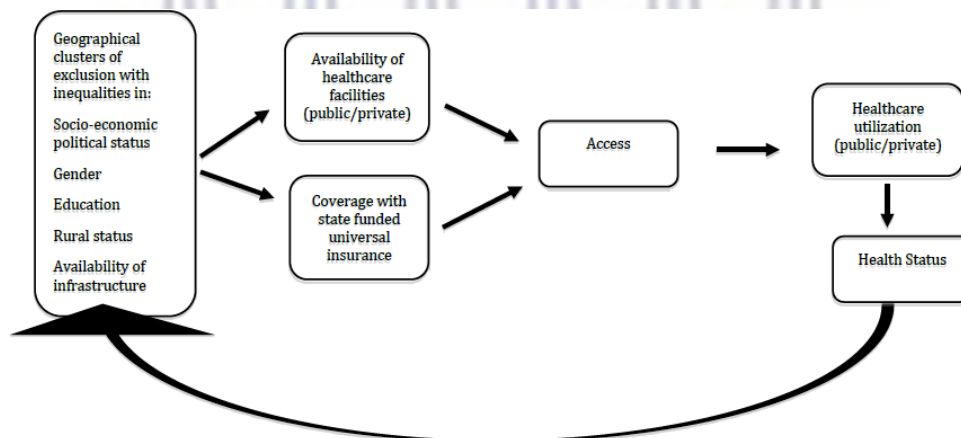


Figure 6: Conceptual framework illustrating pathways of equity under the universal PHFI scheme in Chhattisgarh

Study design: A cross-sectional, descriptive study of the relationship between geographical vulnerability, insurance coverage and hospital service availability under the universal health insurance scheme in Chhattisgarh state was conducted. First, the relationship between individual socio-economic or vulnerability indicators and RSBY/MSBY programme or availability indicators was examined across 27 districts. The districts were then ranked and

grouped into tertiles and categorised as highest, middle and lowest vulnerability groups using a composite vulnerability index (VI). Finally, the indicators of hospital services availability under the universal health insurance scheme were mapped across the tertiles.

Population/sample: The study made use of district level data from a number of sources. District socio-economic indicators were obtained from various government surveys, detailed in the next section. The district RSBY/MSBY programme data on empanelled hospitals, enrolment and claims for financial year 2015–16 in Chhattisgarh were accessed from the State Department of Health and Family Welfare.

Analysis: First, the relationship between the individual socio-economic/vulnerability indicators plus combined VI and the hospital service availability indicators was examined, using bivariate Pearson's correlation analysis across all 27 districts. Secondly, a comparative analysis of the three VI groups was done with respect to insurance coverage, availability of hospitals and number of claims made in the districts, using two measures to describe inequality, difference and ratio (WHO, 2013b). Historically, these measures of equality have been widely used as their simplicity 'makes them intuitive and easily understood' (ibid, p. 29). The ratio shows the relative inequality between two groups and is calculated by dividing the value of one group by the other. This measure can be calculated only for pairwise comparisons (WHO, 2013b). Ratios between the lowest vulnerability district and highest vulnerability district groups and between the middle vulnerability district and highest vulnerability district groups were thus calculated for each indicator. The difference was calculated by subtracting the value of one group by another. Finally, the 27 districts in the state were mapped by vulnerability tertiles and availability indicators through the Geographical Information System (GIS).

Study 2: Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: lessons for universal health coverage

Aim: To examine the relationships between enrolment, the utilisation of public and private sector sectors and financial risk protection for the insured and uninsured under PFHI schemes in Chhattisgarh.

Conceptual framework: The framework used for the study (Figure 7) represents the relationships between enrolment (yes/no), utilisation (public and private sector

hospitalisation) and financial risk protection (out-of-pocket and catastrophic household expenditures) that were explored in the study.

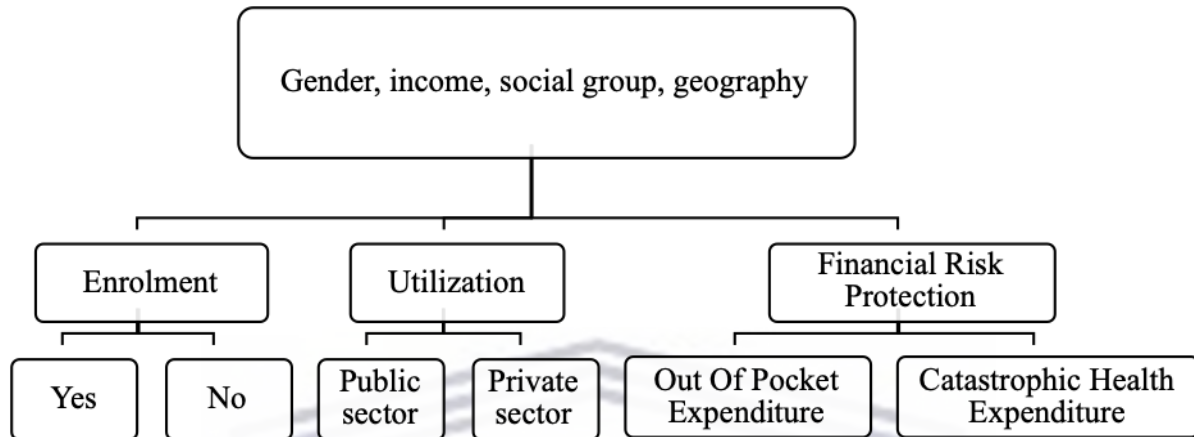


Figure 7: Conceptual framework representing elements of equity, enrolment, utilisation and financial protection (Nandi, Schneider and Dixit, 2017)

Study design: Descriptive study drawing on state household survey data.

Population/sample: The Chhattisgarh State data used in this study were extracted from the 25th schedule of the 71st round of the cross-sectional Indian National Sample Survey, conducted between January and June 2014 (NSSO, 2015). The National Sample Survey Office (NSSO), under the Ministry of Statistics of the Government of India, conducts the survey on a periodic basis. The data is available from the Deputy Director General, Computer Centre, Ministry of Statistics and Programme Implementation, Government of India, New Delhi. The Chhattisgarh sample included 1 205 households and 6 026 individuals (household members), obtained in a stratified two-stage sampling design, with census villages and urban frame survey blocks as the first-stage units (FSUs) for the rural and urban areas, respectively, and households as the second-stage units (SSUs).

Analysis: Variables of enrolment, hospitalisation, use of public and private sectors, out-of-pocket (OOP) expenditure and catastrophic expenditure were descriptively analysed. Multivariate logistic analyses were undertaken to examine the following relationships:

- Between enrolment and variables of gender (women/men), social group (Scheduled Caste, Scheduled Tribe, Other Backward Classes and General), place of residence (urban/rural) and UMPCE (referred to collectively as socio-economic factors).
- Between hospitalisation and the above socio-economic factors, adding enrolment status.
- Between public sector hospitalisation and the above socio-economic factors, adding enrolment and type of ailment.
- Between OOP expenditure and socio-economic factors, enrolment, type of ailment and level of facility.

Adjusted Odds Ratios (AOR) and 95 per cent confidence intervals (CI) were estimated for each of the models.

Study 3: When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India

Aim: To examine the way patients and their families from the slums of urban Raipur navigate and negotiate hospitalisation under the state-funded universal health insurance scheme

Conceptual framework: In the conceptual framing adopted in the study (Figure 8), healthcare utilisation (in this case hospitalisation) is the event within which the three dimensions of access –availability, affordability and acceptability interact with and influence each other. These factors are played out in the process of negotiation and navigation, behaviour and interactions between the patient and provider, along with the ‘purchaser’ (government). These are influenced and located within a larger political economy of healthcare and social structures.

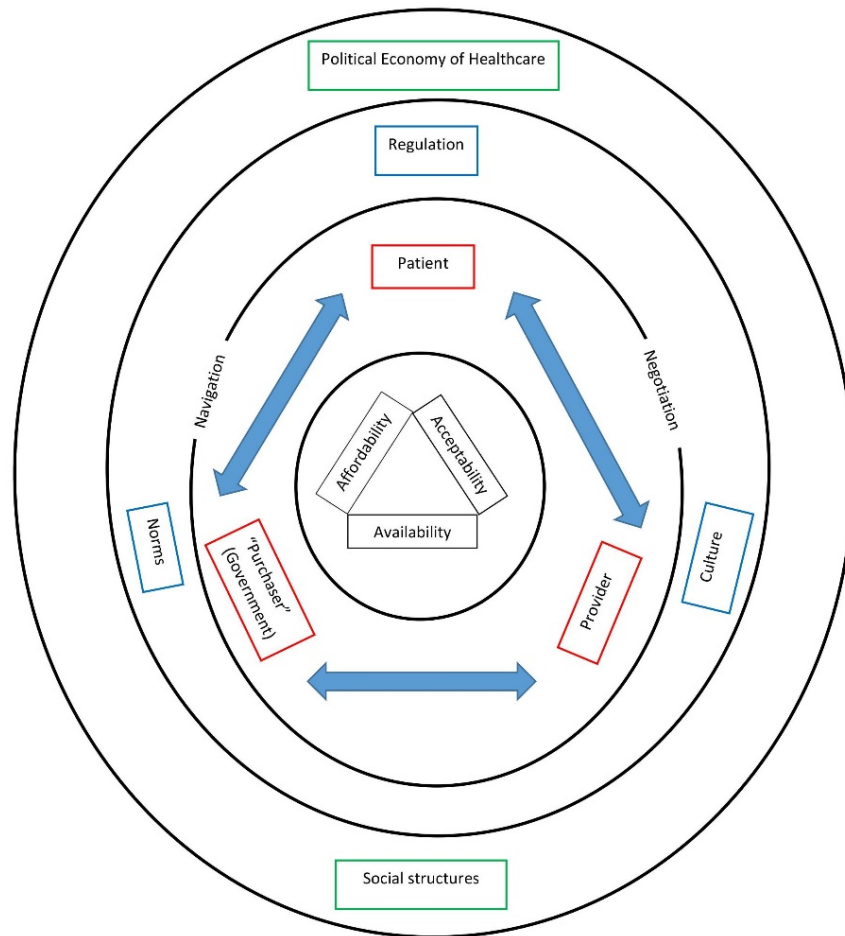


Figure 8: Conceptual framework of access and factors influencing this under state-funded health insurance schemes

Study design: A qualitative case study of choice, financial protection and patient experiences under RSBY.

Population/sample: Cases of eight patients and households incurring excessive out-of-pocket expenditure constituting ‘revelatory’ cases with ‘exemplary outcomes’ were purposefully selected (Yin, 2009, p. 59). Cases were identified and data collected until saturation was reached. Thirteen families were approached, nine of which consented to be interviewed. Of the nine, one case has been excluded from this analysis as it was not a case of high OOP expenditure but of extreme inconvenience. All involved private sector care.

Data collection/instruments: The family members of the patients and patients, where available and consenting, were interviewed using a semi-structured interview schedule. All the respondents were women. The interviews were recorded using a voice recorder only if the respondent gave verbal consent. If offered to the researcher, documents available to patients such as medical reports, prescriptions, bills and health cards were also reviewed.

Analysis: Based on the interviews and other documents, each patient's trajectory from pre- to post-hospitalisation was mapped, and individual case reports constructed of the processes of negotiation and navigation. These were then compared and contrasted across the eight respondents and emerging themes identified.

Study 4: An equity-based framework for evaluating publicly-funded health insurance programmes as an instrument of UHC in India, with application to Chhattisgarh State

Aim: Developing a framework for assessing pathways of impact on equity of access in PFHI schemes that could be used to drive inquiry in India and other LMICs with similar a health system context.

Study design: The framework outlines the pathways of impact of the insurance scheme, linking the design and objectives of the scheme, its implementation, and impact on service provision, utilisation, health systems functions, the services being provided, access and equity and health outcomes. Subsequently it has been applied to the case of the universal PFHI scheme (RSBY/MSBY) in Chhattisgarh.

Population/sample: Chhattisgarh state

Data collection/instruments: The student's PhD and previous studies, supplemented by review of a secondary literature.

Analysis: The framework (Figure 5) has been constructed using concepts and frameworks from the Health Policy and Systems (HPSR) literature on UHC, access, health system building blocks, healthcare provisioning in mixed health systems, and policy analysis, and is underpinned by the values of human rights, including the right to health and equity. In its application to the PFHI scheme in Chhattisgarh, the analysis draws on empirical studies, including the studies included in this thesis, supplemented by review of a secondary literature, to comprehensively assess the impact of PFHI schemes using the framework.

Validity and reliability

In study 1 routine programmatic data published by the government were analysed, while in study 2 the data was from an official government survey. In both instances the researcher did not have any control over the validity or reliability of data. However, the NSSO data used in study 2 are regarded as some of the most important sources of public health data in India, having high validity (Katyal *et al.*, 2013).

Rigour in the qualitative research (study 3) has been attempted through reflexivity, by identifying and documenting the perceptions of the researcher and her beliefs regarding the context and motivations for undertaking this research (Malterud, 2001). The context and background information of the cases have been made explicit which will help to determine extent and areas of transferability (ibid). External validity has been addressed through the use of replication logic in the multiple case studies in study 3 (Yin, 2009).

The strategies of data analysis for all the studies have been made explicit (Gifford, 1996). The journal peer review process has further led to maintaining rigour in the studies.

Positionality

For the last sixteen years I have been working in Chhattisgarh with indigenous communities on issues of health, food, gender and tribal rights. Living and working in Chhattisgarh with indigenous communities as RSBY unfolded, I was a witness to exactly what was and was not happening under the newly initiated PFHI scheme. In the community where I worked, poor families were being frequently and arbitrarily excluded from the scheme, or were unable to utilise the scheme due to various reasons. In the better-off areas people were getting hospitalised, apparently unnecessarily, for simple conditions. The gap between my observations of the irrelevance of RSBY, at least in the tribal areas where I was working, and public pronouncements touting Chhattisgarh as being one of the ‘best performing’ states under RSBY, made me want to find out more. I also simultaneously became aware of, and concerned about, new private sector dynamics, and the consequences of engaging and paying the private sector under the scheme which was more the case in the urban than the rural areas of the state.

With co-researchers, I undertook a primary survey of beneficiary experiences in 2012, which I believe was one of the first of such studies on RSBY (Nandi *et al.*, 2012). As utilisation of the scheme was concentrated in urban areas, we undertook the study in the district with the highest proportion of claims, conducting exit interviews at empanelled hospitals. Subsequently, we studied the experiences of the providers (private, public and non-profit) with the scheme (Dasgupta *et al.*, 2013) and undertook a community based survey in urban slums (Nandi *et al.*, 2016). I also undertook research in understanding the status of PFHI scheme enrolment and usage among Particularly Vulnerable Tribal Groups (Nandi *et al.*, 2012; PHRN, 2017).

Meanwhile, as part of the People's Health Movement (PHM), I was also presenting critiques of the Chhattisgarh's PFHI scheme based on the studies I had done and on my observations. I am a regular commentator in media and popular material on PFHI schemes, contributing to the debates within PHM both in India and globally regarding such schemes. When I registered for my PhD in 2014, studying equity of access under the universal PFHI scheme in Chhattisgarh therefore became an obvious choice.

When it comes to PFHI schemes, I am an 'insider' to the issues, performing the dual roles of activist and researcher. I have explicitly framed my role as a researcher in 'solidarity work' within social movements (Mishler and Steinitz, 2001). Being an 'insider' to the issues has lent strength to my research. It helped me to develop a comprehensive understanding about PFHI schemes and identify its various facets. Working in the state has helped me to develop trusting relationships with marginalised groups and engage them in research.

Certain assumptions are inherent in the research. Equity has always been of concern to me in research as I have been working with vulnerable groups. I tend to believe that if a scheme or programme is not reaching the poorest and the most vulnerable, then it can never be called a 'success', and if it is harming them in any way, then it should not continue in the same way. Furthermore, the thesis assumes that government has the ultimate responsibility to provide health services to all and is accountable for any lapses thereof. The regulation of the private sector is also the responsibility of the government.

Due to my positionality, my findings may be viewed by others as a reflection of the positions regarding PFHI schemes that I take as an activist. I have tried to maintain a critical distance between my stances as a researcher and an activist through maintaining reflexivity and rigour in my research (Malterud, 2001). Throughout my PhD I have been aware of my positionality and have made it explicit where needed. The peer review process for the journal publications also supported rigour. My supervisor has also provided the outsider's critical perspectives and helped me to maintain that distance.

Ethics statement

Ethical clearance for this study was given by UWC's Senate Research Committee (Appendix 3). As studies 1 and 2 were based on secondary data, consent procedures were not required. For the qualitative study (study 3), a participant information sheet and consent form were prepared in Hindi (Appendices 1 and 2). Due to prior experience of forced signed 'consent' amongst poor communities, verbal consent was considered more suitable and viable than

written consent. The information sheet and consent form were read out to the participants and verbal consent obtained and noted in the presence of an independent witness who then signed the informed consent form. In instances where the participants did not give consent for voice recording, detailed notes were taken by the researcher. In study 3 patients have been assigned pseudonyms and hospitals have been anonymised in this paper. Overall, there was a commitment to sensitivity, respect and courteousness towards the participants. Confidentiality has been maintained during data analysis and writing of the study.



CHAPTER 3: FINDINGS

Paper 1: Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh State, India, using a composite vulnerability index

Introduction: This study, though presented as the first one here, was the second study of the PhD to be published. It is one of the first studies to map the availability of hospital services under PFHI schemes, taking into account multiple aspects of vulnerability. The vulnerability index that was constructed is an original one that drew from existing indices but also from the context where the study was being done. The index was used to rank and group the 27 districts in the state and insurance scheme indicators compared across districts and tertiles.

Conclusion: The study found that indicators of socio-economic vulnerability converged geographically to form ‘clusters of inequity’, reflecting the multi-dimensional and intersectional nature of deprivation. The availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh was unequal and inversely related to vulnerability and thus, the need for these services. Equitable enrolment in health insurance schemes did not automatically translate into equitable access to healthcare. There is a need to focus on and strengthen the supply side of health service provision if all aspects of access and equity are to be addressed, failing which, Universal Health Coverage would be ‘nominal’ rather than ‘effective’. Without appropriate policies for improving services availability in the more vulnerable areas, coverage with an insurance scheme is unlikely to achieve the equity goals of Universal Health Coverage (UHC).

Contribution of candidate: SN conceived the study. SN, HS and SG made substantial contributions to the design of the study and contributed to data analysis. SN wrote the first draft of the manuscript. All authors reviewed drafts of the manuscript and provided intellectual content.

Review comments from the peer review process are available in Appendix 4.



Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index

Sulakshana Nandi, Helen Schneider & Samir Garg

To cite this article: Sulakshana Nandi, Helen Schneider & Samir Garg (2018) Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index, Global Health Action, 11:1, 1541220, DOI: [10.1080/16549716.2018.1541220](https://doi.org/10.1080/16549716.2018.1541220)

To link to this article: <https://doi.org/10.1080/16549716.2018.1541220>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



[View supplementary material](#)



Published online: 14 Nov 2018.



[Submit your article to this journal](#)



Article views: 942



[View related articles](#)



[View Crossmark data](#)



Citing articles: 3 [View citing articles](#)

Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index

Sulakshana Nandi ^{a,b}, Helen Schneider^c and Samir Garg^{d,e}

^aSchool of Public Health, University of the Western Cape, Bellville, South Africa; ^bPublic Health Resource Network, Chhattisgarh, Raipur, India; ^cSchool of Public Health, UWC/MRC Health Services to Systems Unit, University of the Western Cape, Bellville, South Africa; ^dState Health Resource Centre, Chhattisgarh, Raipur, India; ^eSchool of Health Systems Studies, Tata Institute of Social Sciences, Mumbai, India

ABSTRACT

Background: Countries are increasingly adopting health insurance schemes for achieving Universal Health Coverage. India's state-funded health insurance scheme covers hospital care provided by 'empanelled' private and public hospitals.

Objective: This paper assesses geographical equity in availability of hospital services under the universal health insurance scheme in Chhattisgarh state.

Methods: The study makes use of district data from the insurance scheme and government surveys. Selected socio-economic indicators are combined to form a composite vulnerability index, which is used to rank and group the state's 27 districts into tertiles, named as highest, middle and lowest vulnerability districts (HVDs, MVDs, LVDs). Indicators of hospital service availability under the scheme – insurance coverage, number of empanelled private/public hospitals, numbers and amounts of claims – are compared across districts and tertiles. Two measures of inequality, difference and ratio, are used to compare availability between tertiles.

Results: The study finds that there is a geographical pattern to vulnerability in Chhattisgarh state. Vulnerability increases with distance from the state's centre towards the periphery. The highest vulnerability districts have the highest insurance coverage, but the lowest availability of empanelled hospitals (3.4 hospitals per 100,000 enrolled in HVDs, vs 8.2/100,000 enrolled in LVDs). While public sector hospitals are distributed equally, the distribution of private hospitals across tertiles is highly unequal, with higher availability in LVDs. The number of claims (per 100,000 enrolled) in the HVDs is 3.5-times less than that in the LVDs. The claim amounts show a similar pattern.

Conclusions: Although insurance coverage is higher in the more vulnerable districts, availability of hospital services is inversely proportional to vulnerability and, therefore, the need for these services. Equitable enrolment in health insurance schemes does not automatically translate into equitable access to healthcare, which is also dependent on availability and specific dynamics of service provision under the scheme.

ARTICLE HISTORY

Received 12 June 2018
Accepted 23 October 2018

RESPONSIBLE EDITOR

Stig Wall, Umeå University, Sweden

KEYWORDS

Health equity; vulnerable populations; health insurance; availability of health services; universal health coverage

Background

Inequity in health refers to differences in health that are 'systematic, socially produced (and therefore modifiable) and unfair' ([1], p. 3). Such inequities emerge from a number of social, economic, political and geographical factors [1,2]. These factors often converge geographically in multi-dimensional forms of deprivation [2,3]. Such areas or populations typically also have less access to healthcare, despite being in greater need, exhibiting the phenomenon described as the 'Inverse Care Law' by Hart [4]. Moreover, historical factors and absorptive capacity often lead to an 'infrastructure-inequality trap' from which these areas find it very difficult to emerge [5].

In India, inequalities in healthcare availability and utilization exist along geographical (rural–urban), gender, class and caste lines, and are reflected in

inequitable health outcomes [6–9]. As elsewhere, these patterns of inequality are often clustered geographically across states or within a state in areas [8]. As these inequalities can be regarded as both avoidable and unfair, we refer to them as 'geographical inequities'.

The health system has a crucial role in addressing social inequity [1,10–12] and health equity is considered a central goal of Universal Health Coverage (UHC) [13,14]. Low- and middle-income countries (LMICs) are increasingly adopting state-funded health insurance schemes as a strategy for achieving UHC [15,16]. Many of these countries have mixed health systems and their insurance schemes have sought to include private hospitals as providers of healthcare, along with public hospitals [15]. However, evidence from India and other LMICs shows that there is a skewed distribution of health

CONTACT Sulakshana Nandi  sulakshana@phrindia.org  Public Health Resource Network, Raipur, India

 Supplementary data for this article can be accessed [here](#).

© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

facilities and resources, with the formal private sector mostly concentrated in urban and richer areas and employing the majority of the medical specialists [8,16–21]. Studies have also found that insurance coverage is not a sufficient condition to ensure equity in healthcare utilization [22,23] and that non-financial factors, such as the nature, distribution and performance of health systems, are equally important for improved access [19,23–29]. Moreover, inequitable utilization tends to be clustered geographically [19,26,29]. This study seeks to further examine the phenomenon of geographical equity in availability of facilities under publicly-funded health insurance schemes, including the distribution of private and public hospitals.

In the last decade and a half, many Indian states have introduced publicly-financed health insurance schemes [30,31]. At the national level, the *Rashtriya Swasthya Bima Yojana* (RSBY) or the National Health Insurance Scheme, a state funded scheme for hospitalization, was introduced by the Government of India in 2007. The goal of RSBY/MSBY is greater financial risk protection for all, through choice of public or private provider [32,33]. RSBY has, thus, enabled large-scale state funding of private sector hospital care in India for the first time. Studies in India assessing the equity impact of the publicly-financed insurance schemes have mainly examined equity in insurance coverage. Lower enrolments have been found in remote rural areas, poorer districts, socio-economically vulnerable groups, indigenous communities and female-headed households [34–36]. A few studies of utilization of hospital care under state-funded health insurance in India have found inequities based on caste, economic status, education and urban–rural residence [36–38].

Where geographical equity has been studied, the focus has been on differences between urban and rural areas or between regions or states [34,36–39]. For example, Narayana [34] found inequitable distribution of empanelled hospitals, especially of private hospitals, within six Indian states.

Recognizing the multi-dimensional nature of vulnerability and its frequent geographical clustering, the aim of this study was to assess geographical inequity in availability of hospital services under the publicly-funded universal health insurance scheme in the state of Chhattisgarh [8,40].

Chhattisgarh is a useful case to examine for a number of reasons. It is one of the poorest states in India [41], with around one-third of its population belonging to indigenous tribal communities [42]. It has a state-funded health insurance scheme for hospital care that is universal in design [32] and the second highest rate of state-funded insurance enrollment in the country [43]. Further, the state has

empanelled public and private sector hospitals to provide services under this scheme [32].

State-funded universal health insurance scheme in Chhattisgarh

Chhattisgarh is one of the first states to start implementing RSBY in 2009. In 2012, the state expanded RSBY, meant for people living below the poverty line, to all families of the state through the *Mukhyamantri Swasthya Bima Yojana* (MSBY) or the Chief Minister's Health Insurance Scheme [32]. This universal scheme is, thus, supposed to cover all families living in the state, regardless of income or nature or type of employment. Chhattisgarh has a total of 27 districts and the insurance scheme covers all of them. The benefit package is uniform for all enrolled, irrespective of economic status, employment or residence. The scheme allows for enrolment of a maximum of five members per household. Even if a household member is part of another scheme, they are still eligible for enrolment under RSBY/MSBY. RSBY and MSBY constitute the bulk (nearly 94%) of health insurance enrolment in the state [44]. Each household has to pay a one-time registration fee of Rs. 30 (USD 0.43 in August 2018), after which they are enrolled and provided a biometric smart card. The government (state and centre) pays the premium on behalf of the enrolled families. Currently there are 5.5 million active insurance cards in the state [32]. The premium is paid to an insurance company that is selected through a bidding process. The empanelled private and public hospitals are supposed to provide cashless services, based on pre-determined packages. The hospitals then claim the insurance amount as per the package used, from the insurance company [32]. At the time of the study, enrolled households were eligible for hospitalization costs of up to Indian Rupee (INR) 30,000 (USD 430 in August 2018) annually, which has since increased to an annual entitlement of INR 50,000 (USD 717 in August 2018). The scheme also provides for transport costs of INR 100 (USD 1.43 in August 2018) per hospitalization, up to a maximum of INR 1,000 (USD 14.33 in August 2018) annually [32].

Studies in Chhattisgarh by the authors and others have found that the more vulnerable groups, such as the poor, tribal communities, urban poor and those living in rural areas, are more likely to use the public sector for hospitalization, irrespective of their enrolment status [44–47]. In addition, out of pocket expenditure in the private sector is much higher than in government facilities, even with the use of insurance [44,45]. Practices of 'cherry picking' and selective provision of services have also been documented in the private sector under the insurance scheme [45,48,49].

Both the state and central governments of India are looking to expand the publicly-funded health insurance scheme. An analysis of the main budget heads of the Chhattisgarh state budget from financial years 2013–14 to 2017–18 shows that the budget for the universal health insurance scheme has increased, both in real terms and as a proportion of the total health budget [50]. Recently, the Government of India announced an expansion of state-funded health insurance with the intention to cover 100 million poor families with an annual insurance entitlement of half a million rupees per family [51].

Aim

The aim of this paper is to assess geographical equity in the availability of hospital services under the state-funded universal health insurance scheme across Chhattisgarh state.

Methods

Conceptual framework

In this study, ‘availability’ is understood to be one dimension of the broader concept of access [52]. Access is defined as the ‘degree of fit’ between the health system and individuals, and communities, with respect to the dimensions of availability, affordability and acceptability [53]. Access creates the opportunity for utilization and the possibility for improved health outcomes [54]. Further, equity in access means the fair or equal distribution of health and health-care [55].

Figure 1 illustrates the pathways of health inequity explored by this study. Socio-economic status, gender, education, rural status and availability of infrastructure have been selected as indicators of inequity, which often converge geographically. The combination of

insurance coverage and availability of hospitals enable access and, therefore, utilization and, ultimately, effective coverage and improved health. Although access and utilization depend on various factors, this analysis focuses specifically on the availability factor. Other dimensions of access, such as affordability, are reported elsewhere by the authors [44].

Study design

Using secondary data, a cross-sectional, descriptive study of the relationship between geographical vulnerability, insurance coverage and hospital service availability under the universal health insurance scheme in Chhattisgarh state was conducted. Since the study seeks to study this across geographical areas of the entire state, all 27 districts were taken into consideration. First, the relationship between individual socio-economic or vulnerability indicators and health insurance indicators was examined across the 27 districts of the state. The districts were then ranked and grouped into tertiles and categorized as highest, middle and lowest vulnerability groups using a composite vulnerability index (VI). Finally, the indicators of hospital services availability under the universal health insurance scheme were mapped across the tertiles.

Data sources

The study made use of district level data from a number of sources. District socio-economic indicators were obtained from various government surveys, detailed in the next section [42,56]. The district RSBY/MSBY programme data on empanelled hospitals, enrolment and claims for the financial year 2015–16 in Chhattisgarh were accessed from the State Department of Health and Family Welfare. The data used as inputs for the analysis are reported in Supplementary File 1.

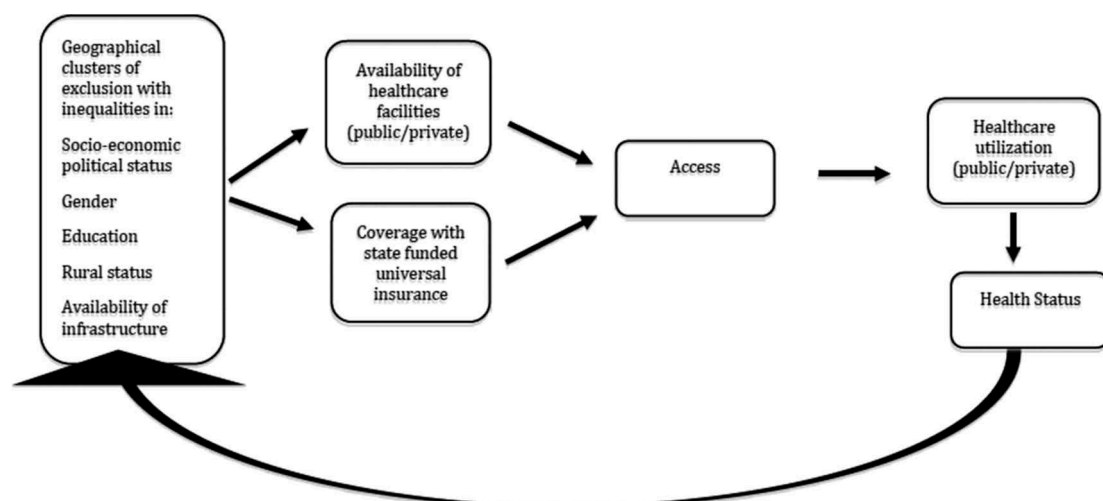


Figure 1. Conceptual framework illustrating pathways of equity under the universal health insurance scheme.

Vulnerability index

The methodology for measuring multi-dimensional vulnerability is well established in the literature [57–61]. However, global indices do not include certain factors, such as caste, which has been found to be a critical determinant of socio-economic vulnerability in India [7,8]. The Constitution of India has recognized disadvantaged social groups and categorized them into the ‘Scheduled Castes’, ‘Scheduled Tribes’, and ‘Other Backward Classes’. For this study, the authors, thus, developed an adapted composite vulnerability index by combining selected socio-economic or vulnerability indicators relevant to the Indian and state context. Specifically, the index includes indices related to the agricultural economy, caste, rural–urban divide, gender inequality and infrastructure availability. The indicators were, thus, selected based on their face validity in the Indian context, accepted practice in the literature, the availability of data for all 27 districts and reliability of the data source. The indicators and the rationale for their selection are presented in Table 1 [7,8,42,56,62–68].

Global indices tend to take into account health status or health service utilization. However, the index developed for this study deliberately did not include these indicators, because health status and utilization can be an outcome of availability of services, as presented in the conceptual framework.

The index was computed using the United Nations Development Programme’s (UNDP) method for calculating the Human Development Index (HDI) [58], namely, as an unweighted average of normalized values of the five indicators in the index. The HDI method was used for this study, as a normalized indicator provides performance measure of a geographical unit in relation to the best and worst performance on that indicator. This is useful to rank the districts and, thereby, assess geographical equity. Following the UNDP method, the indicators were given equal weightage in the index. This is because, as mentioned above, the authors selected the indicators to highlight different kinds of vulnerability.

All the dimensions were regarded as equally important, with no hierarchy imposed amongst them.

The method for computation was as follows: Indicators were normalized (brought into a common scale) using the formula $Y_i = (X_i - X_{min}) / (X_{max} - X_{min})$, where Y_i is the normalized indicator for district i , X_i is the corresponding pre-normalization figure and X_{max} and X_{min} are the maximum and minimum values of the same indicator across all districts. The normalized indicator varies between 0 and 1 for all districts, with 0 being the least vulnerable and 1 being the most vulnerable. A simple addition of the normalized values for the five indicators forms the index of vulnerability. The calculations of the VI are presented in Supplementary File 2.

The 27 districts were ranked using the vulnerability index (VI) and grouped into vulnerability tertiles, named as highest vulnerability districts (HVDs), middle vulnerability districts (MVDs) and lowest vulnerability districts (LVDs). The VI scores of the tertiles ranged from 4.9–3.7 for the HVDs; 3.6–2.9 for MVDs and 2.9–0.2 for LVDs. Division into tertiles allowed comparison of availability and representation of its inequality through ratios and differences. Categorization into vulnerability tertiles and presenting the results through maps is also proposed as a method to better communicate the results and simplify assimilation of data by policy-makers, practitioners and community stakeholders [69].

The vulnerability index could not be validated statistically, as the authors worked on aggregate district level rather than individual data.

Indicators of the health insurance scheme

The insurance scheme indicators are given in Table 2. Health insurance enrolment rate was computed per 100,000 population for each district and vulnerability group. Availability of hospital services was calculated as the number of empanelled (public and private) hospitals per 100,000

Table 1. List of indicators selected for developing the vulnerability index, along with the rationale for their selection.

Name of indicator	Dimension	Rationale for selection	Source of data
Proportion of Scheduled Caste (SC) and Scheduled Tribe (ST) population	Social vulnerability	Caste or social group is considered as a critical determinant of socio-economic vulnerability in India [7,8]	Registrar General of India. Gol [42]
Proportion of un-irrigated net sown area	Economic vulnerability	Rural poverty is much lower in irrigated than in rainfed areas [62,63]	Directorate of Economics & Statistics. GoCG [56]
Female illiteracy	Education and gender inequality	Education and gender inequality are important indicators of vulnerability [64–66]	Registrar General of India. Gol [42]
Proportion of rural population	Rural status	Rural populations are more vulnerable than urban [8]	Registrar General of India. Gol [42]
Year of formation of the district	Availability of infrastructure	The older districts would have better health and other relevant infrastructure and administrative capacity than newer districts established in the last few years [67,68]. For instance, in the newer districts, the district hospitals are still under the process of being established	Directorate of Economics & Statistics. GoCG [56]

enrolled (Table 2). Further, in order to explore utilization (public and private), the claims (numbers and amount) under health insurance were similarly calculated and compared. The above indicators have been calculated as 'per 100,000 enrolled' in the districts and not on the total census population of the districts. This was done in order to make one dimension of availability, which is insurance coverage and opportunity to use insurance, equal for all groups. Although the primary purpose of the study was to assess the availability of hospitals, utilization was also examined to see whether it followed the pattern of availability.

The location of health services and hospitals is very important for access, especially for the poor, and, although the services may be available outside the district, either within the state or in adjoining states, cost and distance act as barriers to access [8,15,19,21]. Therefore, 'claims made by hospitals in the district' was used in calculating the outcome indicators, instead of 'claims of people living in the district' that would have also included claims made outside the district.

Data analysis

First, the relationship between the individual socioeconomic/vulnerability indicators plus combined VI and the hospital service availability indicators was examined, using bivariate Pearson's correlation analyses across all 27 districts. Significance was assessed as the 0.05 level.

Second, a comparative analysis of the three VI groups was done with respect to insurance coverage, availability of hospitals and number of claims made in the districts, using two measures to describe inequality, difference and ratio [70]. Historically, these measures of equality have been widely used as

their simplicity 'makes them intuitive and easily understood' ([70], p. 29).

The ratio shows the relative inequality between two groups and is calculated by dividing the value of one group by the other. This measure can be calculated only for pairwise comparisons [70]. Ratios between the lowest vulnerability district and highest vulnerability district groups and between the middle vulnerability district and highest vulnerability district groups were, thus, calculated for each indicator.

Finally, the 27 districts in the state were mapped by vulnerability tertiles and availability indicators through Geographical Information System (GIS) mapping. This was done using software called Map Window (version 5), an open source desktop GIS application [71]. The shape file of the map of Chhattisgarh with district boundaries marked was obtained from the state government. The first layering on the shape file involved showing the districts in three different shades according to their MVD-HVD-LVD status from a MS Excel file. Then districtwise indicators of availability of public and private facilities per 100,000 enrolled was superimposed on the map as the next layer. This method was used, as spatial differences can be better represented through visualization via maps.

Ethics approval

As this study is based on secondary data, consent procedures were not required. Ethics approval for the research programme, of which this study forms one component, was obtained from the University of the Western Cape, where the first author is registered for a PhD.

Results

Vulnerability index and health insurance indicators across 27 districts

The correlation between individual vulnerability indicators and the insurance scheme indicators was studied using Pearson's Correlation Coefficients (Supplementary File 3). It shows, amongst others, that the number of empanelled hospitals per 100,000 enrolled was negatively correlated with rural population and positively correlated with age of district, namely, the older the district, the higher the availability of hospitals.

The districtwise distribution of the VI and insurance scheme indicators, along with the classification of the districts into HVD, MVD and LVD, are presented in Table 3.

Table 2. Indicators of the health insurance scheme.

Dimension	Indicators
Availability of empanelled hospitals	No. of hospitals empanelled per 100,000 persons enrolled
	No. of private hospitals empanelled per 100,000 persons enrolled
	No. of public hospitals empanelled per 100,000 persons enrolled
	Proportion of Private/Public hospitals empanelled to total empanelled
Enrolment	Proportion of census (2011) population enrolled
	Proportion of census (2011) Households enrolled
Number and amount of claims	Total no. of claims/amount of claims per 100,000 persons enrolled
	No. of claims/amount of claims by private providers per 100,000 persons enrolled
	No. of claims/amount of claims by public providers per 100,000 persons enrolled
	Proportion of number by Public/Private hospitals to total claims/amount of claims

Table 3. Vulnerability Index and insurance scheme indicators across districts.

SN	District	Vulnerability VI	Vulnerability tertile	Insurance scheme indicators					
				Hospitals/100,000 enrolled population	Public hospital/100,000 enrolled	Private hospital/100,000 enrolled	No. of claims/100,000 enrolled population	No. of public claims/100,000 enrolled population	No. of private claims/100,000 enrolled population
1	Sukma	4.9	HVD	6.8	3.4	3.4	399	334	65
2	Bijapur	4.7	HVD	4.5	4.5	0.0	5628	5628	0
3	Narayanpur	4.5	HVD	7.3	4.9	2.4	6762	5052	1709
4	Kondagaon	4.3	HVD	4.8	2.9	1.9	3441	1247	2194
5	Balrampur	4.2	HVD	5.5	5.2	0.3	1718	1341	377
6	Dantewada	4.2	HVD	3.9	3.9	0.0	4053	4053	0
7	Jashpur	3.9	HVD	3.0	2.6	0.4	2672	1289	1383
8	Surajpur	3.8	HVD	1.3	1.1	0.1	937	893	44
9	Bastar	3.7	HVD	3.5	2.6	1.0	3492	1968	1524
10	Kanker	3.6	MVD	5.8	4.0	1.9	6841	3462	3379
11	Sarguja	3.4	MVD	5.6	3.0	2.6	7185	2427	4758
12	Gariyabandh	3.3	MVD	2.4	1.6	0.8	878	649	229
13	Kawardha	3.3	MVD	3.3	1.1	2.2	1890	161	1730
14	Koria	3.2	MVD	3.0	2.1	0.9	3001	2061	940
15	Mungeli	3.2	MVD	2.0	0.8	1.2	1215	25	1190
16	Korba	3.1	MVD	5.4	1.2	4.2	3928	872	3056
17	Mahasamund	3.0	MVD	2.7	0.8	1.9	2693	634	2059
18	Bemetara	2.9	MVD	1.5	1.2	0.3	933	575	358
19	Balodabazar	2.9	LVD	2.5	1.4	1.2	1583	1202	381
20	Raigarh	2.8	LVD	6.0	3.2	2.7	3148	686	2461
21	Rajnandgaon	2.7	LVD	8.5	5.2	3.3	5120	1327	3793
22	Balod	2.6	LVD	3.4	1.4	2.0	3882	841	3041
23	Janjgir	2.4	LVD	2.3	1.0	1.3	2590	937	1653
24	Dhamtari	2.1	LVD	9.0	4.7	4.3	12,849	2511	10,338
25	Bilaspur	1.7	LVD	11.6	1.5	10.1	15,000	1092	13,908
26	Durg	0.6	LVD	9.4	2.2	7.3	7428	1449	5978
27	Raipur	0.2	LVD	18.7	1.0	17.7	20,042	3136	16,906

Table 4. Correlation between the district vulnerability index and insurance scheme indicators (Pearson's correlation coefficient with 95% confidence intervals).

Availability indicators	Vulnerability index			
	Correlation coefficient	p-value	95% CI	
			Lower limit	Upper limit
Enrolled population as proportion of census population	-0.077	0.702	-0.444	0.312
Enrolled HHs as proportion of census HHs	-0.133	0.508	-0.488	0.260
Number of empanelled hospitals/100,000 enrolled	-0.583	0.001*	-0.788	-0.260
Public empanelled hospitals/100,000 enrolled	0.414	0.032*	0.040	0.686
Private empanelled hospitals/100,000 enrolled	-0.750	< 0.001*	-0.879	-0.517
Number of claims/100,000 enrolled	-0.630	< 0.001*	-0.815	-0.328
Number of public claims/100,000 enrolled	0.197	0.324	-0.198	0.537
Number of private claims/100,000 enrolled	-0.760	< 0.001*	-0.884	-0.533

* Significant values at 0.05 level.

The Pearson's Correlation Coefficients between the combined vulnerability index and hospital availability indicators, with significance at the 0.05 level, are reported in Table 4. The findings show that the number of empanelled hospitals per 100,000 enrolled was negatively correlated with the vulnerability index. When compared by sector, availability of empanelled private hospitals was negatively correlated with the vulnerability index, while empanelled public hospitals showed a pro-vulnerability pattern.

Vulnerability tertiles

The map of the 27 districts in the state shows the distribution of the vulnerability index tertiles (Figure 2). The Highest Vulnerability Districts (HVDs) are the farthest

(both north and south) from the state capital, Raipur (represented by the black dot). The Middle Vulnerability Districts (MVDs) are also in the periphery, while the Lower Vulnerability Districts (LVDs) consist of districts that are in the middle of the state and near to the state capital.

Comparison of health insurance indicators across vulnerability groups

As of April 2016, 4.1 million households and 12.5 million persons had been enrolled in RSBY/MSBY. Enrolment was highest in the HVDs (52.5%), followed by MVDs (51.7%) and LVDs (46.1%).

In 2016, a total of 735 hospitals were empanelled under RSBY/MSBY in Chhattisgarh. Of these, 273 (37.1%) were public and 462 (62.9%) were private

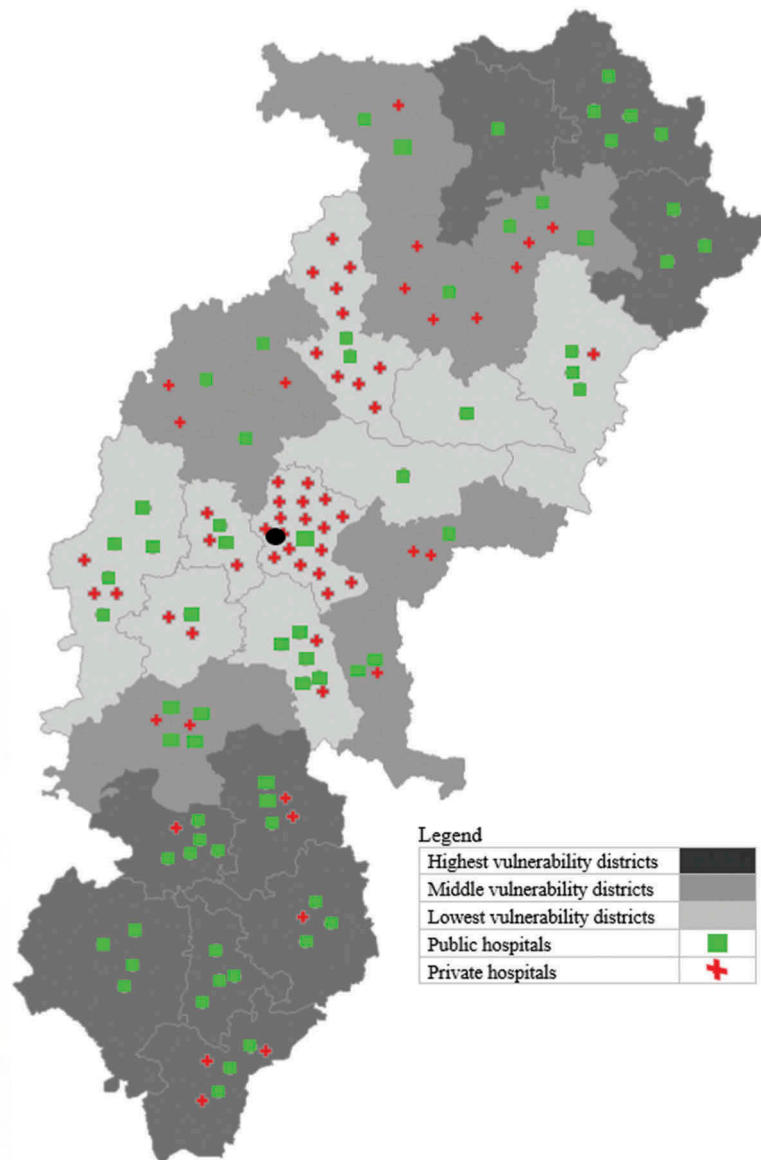


Figure 2. Chhattisgarh state map showing empanelled public and private hospitals per 100,000 enrolled across districts and vulnerability groups.

hospitals. The number of hospitals per 100,000 enrolled was highest in the LVDs (8.2) and lowest in the HVDs (3.4), followed by the MVDs (3.7) (Table 5). The availability of public hospitals was similar across the district groups, with slightly higher availability in HVDs (2.8 in HVDs, 1.8 in MVDs and 2.2 in LVDs per 100,000 enrolled). In contrast, there was variation in availability of private hospitals (6.0 in LVDs, 1.9 in MVDs and 0.6 in HVDs per 100,000 enrolled) (Table 5).

Figure 2 also shows the distribution of empanelled public and private hospitals across the vulnerability tertiles per 100,000 enrolled. Hospitals, especially private hospitals, are concentrated in the LVDs, and in particular the capital Raipur, and the more urban districts of Bilaspur, Durg and Dhamtari.

The number of claims made by hospitals was also calculated across tertiles. The pattern of utilization was similar to hospital service availability (Table 5). There was a 3.5-fold difference in the number of claims per 100,000 enrolled in the HVDs (2,400) vs the LVDs (8,342) (Table 5). When disaggregated by sector, the number of claims (per 100,000 enrolled) made by the public sector across district groups was similar, in contrast to the number of claims (per 100,000 enrolled) made by the private hospitals. Claim numbers in the private sector in the LVDs were close to 9-times that of the HVDs (Table 5). Finally, the total claim amount in the financial year 2015–16 was INR 3864.9 million (USD 60 million) for the whole state, following the same patterns of inequality across vulnerability tertiles as claim numbers.

Table 5. Number of hospitals empanelled, number of claims and claim amount for the financial year 2015–16, disaggregated by public/private, according to vulnerability group.

VI Groups	Highest vulnerability districts (HVD)	Middle vulnerability districts (MVD)	Lowest vulnerability districts (LVD)	State total	Ratio between MVD and HVD	Ratio between LVD and HVD
Total number of empanelled hospitals (2016)	83	142	510	735		
Empanelled hospitals per 100,000 enrolled population	3.4	3.7	8.2	5.9	1.1	2.4
Empanelled public hospitals per 100,000 enrolled population	2.8	1.8	2.2	2.2	0.6	0.8
Empanelled private hospitals per 100,000 enrolled population	0.6	1.9	6	3.7	3.2	10
Total number of claims in 2015–16	59,432	133,237	516,104	708,773		
Total claims (nos) per 100,000 enrolled	2,399.7	3,480.3	8,341.8	5,673.9	1.5	3.5
Public claims (nos) per 100,000 enrolled	1,606.0	1,291.9	1,461.0	1,437.9	0.8	0.9
Private claims (nos) per 100,000 enrolled	793.7	2,188.4	6,880.9	4,235.9	2.8	8.7
Total claims amount (in INR million) in 2015–16	307	780	2,778	3,864.9		
Total claims amount (in INR 100,000) per 100,000 enrolled	124.1	203.6	449.0	309.4	1.6	3.6
Public claims amount (in INR 100,000) per 100,000 enrolled	70.3	49.1	48.3	52.9	0.7	0.7
Private claims amount (in INR 100,000) per 100,000 enrolled	53.9	154.6	400.6	256.5	2.9	7.4

Discussion

The study found a geographical pattern of vulnerability, increasing with distance from the centre (and the state capital) towards the periphery of the state. Indicators of socio-economic vulnerability converged geographically to form geographical clusters of inequity, reflecting the multi-dimensional and inter-sectional nature of deprivation [2,3,25].

When the districts were grouped into vulnerability tertiles, insurance enrolment tended towards a pro-poor pattern, with enrolment levels greater in the highest vulnerability districts.

However, on examining the availability of empanelled hospitals, patterns of inequality emerged among the vulnerability tertiles. The availability of hospitals under the insurance scheme was highly unequal among the tertiles. The geographical areas that were suffering from multiple vulnerabilities had poorer availability of hospital service. While the public sector hospitals were distributed equally, the distribution of the private hospitals across the vulnerability groups was highly unequal. Utilization (claim numbers and amounts) also followed a similar pattern to the availability of hospitals.

One of the main objectives of the RSBY/MSBY is that of giving people a 'choice of provider' [32,33]. The findings suggest that, in the more vulnerable areas, this 'choice' was limited. The findings on the concentration of hospitals, especially private hospitals in less vulnerable and more urbanized areas, is corroborated by studies in India and other LMICs [8,17,19,21].

Literature also shows that areas and populations with higher socio-economic vulnerability usually

have the worst health indicators, and, therefore, have higher health needs [2,3,6–8,72]. The above pattern, thus, exhibits Hart's [4] 'Inverse Care Law', where availability of health services is inversely correlated with need. The unequal resource allocations through claims under the state insurance scheme may also lead to a deepening of the 'infrastructure inequality trap' [5] in the state.

Those who have discussed the inherent limitations of insurance-like, demand-side interventions argue that there is a need to focus on and strengthen the supply side of health service provision if all aspects of access and equity are to be addressed [24,73,74], failing which, Universal Health Coverage would be 'nominal' rather than 'effective' ([28], pp. 26–27).

Limitations

First, the vulnerability index (VI) could not be validated statistically, as the authors worked on aggregate data. However, the indicators were selected based on literature and theory and the index has face validity. The index is an improvement over a single indicator for determining vulnerability and indices measuring multi-dimensional vulnerability have been used by many [57–61]. Further, the VI was computed using a validated procedure used by the United Nations Development Programme (UNDP) for the Human Development Index (HDI) [58].

Second, data on the profile of services and size of the empanelled hospitals could not be accessed. Although these may vary, public and private hospitals are empanelled by the government under RSBY/MSBY on the basis of certain defined criteria like size of hospital. It is, therefore, assumed that the

same parameters have been used by government in empanelling the hospitals in all districts.

Third, people with RSBY enrolment are eligible for using the insurance in other states that are implementing RSBY. However, it was not possible to find out whether anyone had accessed RSBY-based care in other states during 2015–16, as the data is not available from the Chhattisgarh state nodal office.

Conclusion

The study finds that there is a geographical concentration of vulnerability. The study provides directions and tools for further research on the impact of geographical clustering of vulnerability on health equity. The availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh is unequal and inversely related to vulnerability and, thus, the need for these services. Although health insurance coverage was equitable, the availability of services was not. The study underlines the need for governments to make efforts to improve availability of services and ensure equitable distribution of hospital services in all areas and populations. Without appropriate policies for improving services availability in the more vulnerable areas, coverage with an insurance scheme is unlikely to achieve the equity goals of Universal Health Coverage (UHC).

Acknowledgments

The authors are grateful to Dr. Dipa Sinha, Ms. Preeti Gurung, Mr. Sayantan Chowdhury and Mr. Rohit Yadav for their inputs into the study. The authors thank the Chhattisgarh Health Department and the Chhattisgarh State RSBY Nodal Office for providing the RSBY/MSBY programme data.

Author contributions

SN conceived the study. SN, HS and SG made substantial contributions to the design of the study and contributed to data analysis. SN wrote the first draft of the manuscript. All authors reviewed drafts of the manuscript and provided intellectual content. All authors have approved this version of the manuscript.

Disclosure statement

No potential conflict of interest was reported by the authors.

Ethics and consent

As this study is based on secondary data, consent procedures were not required. Ethics approval for the research programme, of which this study forms one component, was

obtained from the University of the Western Cape, where the first author is registered for a PhD.

The study has used RSBY/MSBY programme data collected by the RSBY Nodal Office, Department of Health, Chhattisgarh and other survey data collected by the Government of India and Government of Chhattisgarh as part of their regular survey and census and, therefore, informed consent was not required to be taken by the authors.

Funding information

This work was partly supported by the Belgian Development Cooperation (DGD) through the Institute of Tropical Medicine, Antwerp. This paper is part of the PhD of the first author, for which a part fellowship was provided by the Belgian Development Cooperation (DGD) through the Institute of Tropical Medicine, Antwerp. The funders had no role in study design, data collection and analysis, decision to publish or preparation of the manuscript.

Paper context

Countries are increasingly choosing to implement state health insurance schemes for achieving Universal Health Coverage. This study finds that equitable enrolment in health insurance schemes does not automatically translate into equitable healthcare access. Dimensions of socio-economic vulnerability often converge geographically to form ‘clusters of inequity’ that have less availability of healthcare. Without improving health services availability in the more vulnerable areas, coverage with an insurance scheme is unlikely to achieve the equity goals of UHC.

ORCID

Sulakshana Nandi  <http://orcid.org/0000-0002-4366-4566>

References

- [1] Whitehead M, Dahlgren G. Levelling up (part 1): a discussion paper on concepts and principles for tackling social inequities in health [Internet]. Copenhagen: Copenhagen WHO; 2006. Available from: http://www.who.int/social_determinants/resources/leveling_up_part1.pdf
- [2] McIntyre D, Muirhead D, Gilson L. Geographic patterns of deprivation in South Africa : informing health equity analyses and public resource allocation. *Health Policy Plan.* 2002;17:30–39.
- [3] Pratt B, Hyder AA. How can health systems research reach the worst-off? A conceptual exploration. *BMC Health Serv Res* [Internet]. 2016;16. DOI:10.1186/s12913-016-1868-6
- [4] Hart JT. The inverse care law. *Lancet* [Internet]. 1971 [cited 2018 May 31];297:405–412. Available from: <https://www.sciencedirect.com/science/article/pii/S014067367192410X>
- [5] Stuckler D, Basu S, McKee M. Health care capacity and allocations among South Africa’s provinces: infrastructure-inequality traps after the end of apartheid. *Am J Public Health* [Internet]. 2011 [cited 2014 Mar

- 25];101:165–172. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3000713/pdf/165.pdf>
- [6] Joe W, Mishra US, Navaneetham K. Health inequality in India: evidence from NFHS 3. *Econ Polit Wkly* [Internet]. 2008;43:41–48. Available from: <http://www.epw.in/special-articles/health-inequality-india-evidence-nfhs-3.html>
- [7] Baru R, Acharya A, Acharya S, et al. Inequities in access to health services in India. *Econ Polit Wkly*. 2010;45:49–58.
- [8] Balarajan Y, Selvaraj S, Subramanian SV. India: towards universal health coverage 4 health care and equity in India. *Lancet* [Internet]. 2011;377:505–515.
- [9] RGI. Sample Registration System (SRS) bulletin volume 51, no. 1 [Internet]. 2017 [cited 2018 May 29]. Available from: http://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS_Bulletin-Sep_2017-Rate-2016.pdf
- [10] Gilson L, Doherty J, Loewenson R, et al. Challenging inequity through health systems: final report of the knowledge network on health systems [Internet]. 2007. Available from: http://www.who.int/social_determinants/resources/csdh_media/hskn_final_2007_en.pdf
- [11] Mooney G, McIntyre D. Why this book? In: McIntyre D, Mooney G, editors. *Econ. Heal. Equity*. Cambridge: Cambridge University Press; 2007. p. 3–10.
- [12] Sen A. Universal healthcare: the affordable dream. *Harvard Public Heal Rev* [Internet]. 2015;4. Available from: <http://harvardpublichealthreview.org/universal-health-care-the-affordable-dream/>
- [13] WHO. Making fair choices on the path to universal health coverage. Final report of the WHO consultative group on equity and universal health coverage [Internet]. Geneva; 2014 [cited 2014 May 20]. Available from: http://apps.who.int/iris/bitstream/10665/112671/1/9789241507158_eng.pdf?ua=1
- [14] McIntyre D, Kutzin J. Health financing country diagnostic: a foundation for national strategy development [Internet]. Geneva: World Health Organization; 2016. Available from: http://apps.who.int/iris/bitstream/handle/10665/204283/9789241510110_eng.pdf;jsessionid=34150943047ADC9E7BF7095B10D64EC1?sequence=1
- [15] Lagomarsino G, Garabrant A, Adyas A, et al. Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia. *Lancet* [Internet]. 2012 [cited 2014 Mar 24];380:933–943. Available from: <http://www.science-direct.com/science/article/pii/S0140673612611477>
- [16] Marten R, McIntyre D, Travassos C, et al. An assessment of progress towards universal health coverage in Brazil, Russia, India, China, and South Africa (BRICS). *Lancet (London, England)* [Internet]. 2014 [cited 2015 Sep 17];384:2164–2171. Available from <http://www.ncbi.nlm.nih.gov/pubmed/24793339>
- [17] Randive B, Chaturvedi S, Mistry N. Contracting in specialists for emergency obstetric care- does it work in rural India? *BMC Health Serv Res* [Internet]. 2012;12:485. Available from: <https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-12-485>
- [18] De Costa A, Al-Muniri A, Diwan VK, et al. Where are healthcare providers? Exploring relationships between context and human resources for health Madhya Pradesh province, India. *Health Policy (New York)*. 2009;84:269–276.
- [19] Macha J, Harris B, Garshong B, et al. Factors influencing the burden of health care financing and the distribution of health care benefits in Ghana, Tanzania and South Africa. *Health Policy Plan* [Internet]. 2012;27:i46–i54. Available from: <http://www.heapol.oxfordjournals.org/cgi/doi/10.1093/heapol/czs024>
- [20] Jin C, Cheng J, Lu Y, et al. Spatial inequity in access to healthcare facilities at a county level in a developing country: a case study of Deqing County, Zhejiang, China. *Int J Equity Health*. 2014;14(1):67.
- [21] Limwattananon S, Vongmongkol V, Prakongsai P, et al. The equity impact of Universal Coverage : health care finance, catastrophic health expenditure, utilization and government subsidies in Thailand [Internet]. 2011. Available from: http://www.crehs.lshtm.ac.uk/thai_biafia_19jul.pdf
- [22] Barraza-Lloréns M, Panopoulou G, Díaz BY. Income-related inequalities and inequities in health and health care utilization in Mexico, 2000–2006. *Rev Panam Salud Pública* [Internet]. 2013;33:122–130. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23525342>
- [23] Bennett S, Gilson L. Health financing: designing and implementing pro-poor policies. *DFID Heal Syst Resour Cent* [Internet]. 2001;44:1–22. Available from: <http://www.heart-resources.org/wp-content/uploads/2012/10/Health-financing.pdf>
- [24] Jacobs B, Ir P, Bigdeli M, et al. Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. *Heal Policy Planning*. 2012;27:288–300.
- [25] Meng Q, Xu L, Zhang Y, et al. Trends in access to health services and financial protection in China between 2003 and 2011: A cross-sectional study. *Lancet* [Internet]. 2012;379:805–814.
- [26] Grogger J, Arnold T, Leon A, et al. Heterogeneity in the effect of public health insurance on catastrophic out-of-pocket health expenditures: the case of Mexico. *Health Policy Plan* [Internet]. 2014 [cited 2014 Jul 7]:1–7. Available from: <http://heapol.oxfordjournals.org/content/early/2014/06/12/heapol.czu037.full.pdf>
- [27] Kusi A, Enemark U, Hansen KS, et al. Refusal to enrol in Ghana's national health insurance scheme: is affordability the problem? *Int J Equity Health* [Internet]. 2015 [cited 2015 Dec 5];14:2. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4300159/pdf/12939_2014_Article_130.pdf
- [28] Roberts MJ, Hsiao WC, Reich MR. Disaggregating the universal coverage cube : putting equity in the picture. *Heal Syst Reform*. 2015;1:22–27.
- [29] Fenny AP, Kusi A, Arhinful DK, et al. Factors contributing to low uptake and renewal of health insurance: a qualitative study in Ghana. *Glob Heal Res Policy* [Internet]. 2016;1:18. Available from: <http://ghrp.biomedcentral.com/articles/10.1186/s41256-016-0018-3>
- [30] Mackintosh M, Channon A, Karan A, et al. Series UHC : markets, profit, and the public good 1 What is the private sector? Understanding private provision in the health systems of low-income and middle-income. *Lancet* [Internet]. 2016;6736:1–10.
- [31] Public Health Foundation of India. A critical assessment of the existing health insurance models in India [Internet]. New Delhi; 2011. Available from: http://planningcommission.nic.in/reports/sereport/ser/ser_heal1305.pdf
- [32] Government of Chhattisgarh. Website of RSBY and MSBY. Health and family welfare department government of Chhattisgarh [Internet]. 2018 [cited 2018 May 29]. Available from: <http://cg.nic.in/healthrsby/>

- [33] Government of India G. RSBY: Rashtriya Swasthya Bima Yojna [Internet]. 2017 [cited 2018 May 29]. Available from: <http://www.rsby.gov.in/>
- [34] Narayana D. Review of the Rashtriya Swasthya Bima Yojana. *Econ Polit Wkly.* 2010;45:13–18.
- [35] Rathi P. Evaluation of Rashtriya Swasthya Bima Yojana (RSBY): evaluation of Rashtriya Swasthya Bima Yojana (RSBY): a case study of Amravati district [Internet]. Bangalore; 2012 [cited 2018 May 29]. Available from: http://www.iimb.ac.in/sites/default/files/u181/IIMB_PGPPM_Policy_Folio_Paper_Prateek_Rathi_March_2012.pdf
- [36] Rao M, Katyal A, Singh PV, et al. Changes in addressing inequalities in access to hospital care in Andhra Pradesh and Maharashtra states of India: a difference-in-differences study using repeated cross-sectional surveys. *BMJ Open* [Internet]. 2014 [cited 2015 Sep 10];4:e004471. Available from: <https://bmjopen.bmj.com/content/4/6/e004471>
- [37] Prinja S, Chauhan AS, Karan A, et al. Impact of publicly financed health insurance schemes on health-care utilization and financial risk protection in India: a systematic review. *PLoS One* [Internet]. 2017;12:e0170996. Available from: <http://dx.plos.org/10.1371/journal.pone.0170996>
- [38] Ranjan A, Dixit P, Mukhopadhyay I, et al. Effectiveness of government strategies for financial protection against costs of hospitalization care in India. *BMC Public Health* [Internet]. 2018 [cited 2018 Jul 2];18. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5902925/pdf/12889_2018_Article_5431.pdf
- [39] Ghosh S. Publicly-financed health insurance for the poor: understanding RSBY in Maharashtra. *Econ Polit Wkly.* 2014;49:93–99.
- [40] Larson E, George A, Morgan R, et al. 10 best resources on... intersectionality with an emphasis on low- and middle-income countries. *Health Policy Plan.* 2016;31:964–969.
- [41] World Bank Group. Chhattisgarh poverty, growth & inequality [Internet]. 2016 [cited 2018 Aug 19]. Available from: <http://documents.worldbank.org/curated/en/166551468194958356/pdf/105848-BRI-P157572-PUBLIC-Chhattisgarh-Proverty.pdf>
- [42] Office of the registrar general & census commissioner I. Census of India website [Internet]. 2011 [cited 2018 May 29]. Available from: <http://censusindia.gov.in/2011-Common/CensusData2011.html>
- [43] International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-4), 2015–16. Mumbai, India: IIPS; 2017.
- [44] Nandi S, Schneider H, Dixit P. Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh state, India: lessons for universal health coverage. *PLoS One* [Internet]. 2017;12. Available from: <http://dx.plos.org/10.1371/journal.pone.0187904>
- [45] Nandi S, Dasgupta R, Garg S, et al. Uncovering coverage: utilisation of the universal health insurance scheme, Chhattisgarh by women in slums of Raipur. *Indian J Gend Stud* [Internet]. 2016;23:43–68. Available from: <http://ijg.sagepub.com/cgi/doi/10.1177/0971521515612863>
- [46] Nandi S, Kanungo K, Khan H, et al. A study of Rashtriya Swasthya Bima Yojana in. *BMC Proc* [Internet]. 2012;6:O5. Available from: <http://www.biomedcentral.com/1753-6561/6/S1/O5>
- [47] Kundu D, Sharma N, Chadha S, et al. Analysis of multi drug resistant tuberculosis (MDR-TB) financial protection policy: MDR- TB health insurance schemes, in Chhattisgarh state, India. *Health Econ Rev* [Internet]. 2018 [cited 2018 Jul 2];8:3. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5787110/pdf/13561_2018_Article_187.pdf
- [48] Dasgupta R, Nandi S, Kanungo K, et al. What the good doctor said: a critical examination of design issues of the RSBY through provider perspectives in Chhattisgarh, India. *Soc Change.* 2013;43:227–243.
- [49] CTRD. Final report on evaluation of Rashtriya Swasthya Bima Yojana scheme in Chhattisgarh. [Internet]. Raipur; 2012. Available from: <http://rsbychhattisgarh.in/WebSite/UploadDoc/70.pdf>
- [50] Department of finance GoCG G of C. Budget estimate, revised estimate and actual expenditure [Internet]. 2016 [cited 2018 May 29]. Available from: http://finance.cg.gov.in/Budget_data/Yearwise7_object.asp
- [51] Chatterjee P. National health protection scheme revealed in India. *Lancet* (London, England) [Internet]. 2018;391:523–524.
- [52] Thiede M, Akweongo P, McIntyre D. Exploring the dimensions of access. In: McIntyre D, Mooney G, editors. *Econ. Heal. Equity.* Cambridge: Cambridge University Press; 2007. p. 103–123.
- [53] McIntyre D, Thiede M, Birch S. Access as a policy-relevant concept in low- and middle-income countries. *Health Econ. Policy. Law* [Internet]. 2009 [cited 2014 Jun 21];4:179–193. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19187569>
- [54] REACH Collaboration. Researching Equity in Access to Health Care (REACH). Final technical report. Johannesburg, Cape Town, Hamilton (Ontario, Canada): Universities of Cape Town Witwatersrand & McMaster; 2012
- [55] Rannan-Eliya R, Somanathan A. Equity in health and health care systems in Asia. In Ja M, editor. *Elgar Companion to Heal. Econ.* [Internet]. 2016 [cited 2014 May 18]. Available from: <http://www.equitap.org/publications/docs/Edward2006.pdf>
- [56] Government of Chhattisgarh. Directorate of Economics and Statistics, Chhattisgarh. [Internet]. *Econ. Surv.* 2014–15. 2015 [cited 2018 May 29]. Available from: <http://descg.gov.in/>
- [57] Alkire S, Robles G. OPHI briefing 47 | Global multi-dimensional poverty index 2017 [Internet]. 2017 [cited 2018 Aug 20]. Available from: www.ophi.org.uk
- [58] UNDP. Technical notes: Human Development Report 2015 [Internet]. New York: United Nations Development Programme; 2015. Available from: http://hdr.undp.org/sites/default/files/hdr2015_technical_notes.pdf
- [59] Statistics South Africa. The South African MPI [Internet]. Pretoria; 2014. Available from: <http://www.statssa.gov.za/publications/Report-03-10-08/Report-03-10-082014.pdf>
- [60] Hosseinpoor AR, Bergen N, Barros AJD, et al. Monitoring subnational regional inequalities in health: measurement approaches and challenges. *Int J Equity Health* [Internet]. 2016;15:18. Available from: <http://>

- equityhealthj.biomedcentral.com/articles/10.1186/s12939-016-0307-y
- [61] United Nations. Transforming our world: the 2030 agenda for sustainable development. general assembly 70 session [Internet]. 2015. p. 1–35. Available from: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
- [62] Beero SK, Narayanamoorthy A. Rural poverty and irrigation performance in India: a district-level study. *Int J Soc Sci.* 2014;3:329–345.
- [63] Sharma RL, Abraham S, Bhagat R, et al. Comparative performance of integrated farming system models in Gariyaband region under rainfed and irrigated conditions. *Indian J Agric Res.* 2017;51:64–68.
- [64] Raj A. Gender equity and universal health coverage in India. *Lancet* [Internet]. 2011 [cited 2018 May 29];377:618–619. Available from: [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(10\)62112-5.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(10)62112-5.pdf)
- [65] Drèze J, Sen A. *An uncertain glory: India and its contradictions.* New Delhi: Penguin Books; 2013.
- [66] Vaid D. Gendered inequality in educational transitions. *Econ. Polit. Wkly.* [Internet]. 2004 [cited 2018 May 29];39:3927–3938. Available from: <https://www.epw.in/journal/2004/35/special-articles/gendered-inequality-educational-transitions.html>
- [67] Tillin L. *Remapping India: new states and their political origins.* New Delhi and New York: Oxford University Press; 2013.
- [68] Chotia V, Rao NVM. Examining the interlinkages between regional infrastructure disparities, economic growth, and poverty: A case of Indian States. *Econ Ann.* 2015;60:53–71.
- [69] Dagenais C, Ridde V. Policy brief as a knowledge transfer tool: to “make a splash”, your policy brief must first be read. *Gac Sanit* [Internet]. 2018 [cited 2018 Aug 28];32:203–205. Available from: <https://www.sciencedirect.com/science/article/pii/S0213911118300360#!>
- [70] WHO. Handbook on health inequality monitoring: with a special focus on low- and middle-income countries [Internet]. Geneva: World Health Organisation; 2013 [cited 2018 May 29]. Available from: http://apps.who.int/iris/bitstream/handle/10665/85345/9789241548632_eng.pdf;jsessionid=D5C1A0B9B1E296D03894744619557D1B?sequence=1
- [71] The MapWindow Project [Internet]. 2018 [cited 2018 Aug 22]. Available from: <https://www.mapwindow.org/>
- [72] Frenz P, Vega J. Universal health coverage with equity: what we know, don’t know and need to know. Background paper for the First Global Symposium on Health Systems Research. Montreux, Switzerland; Nov 16–19; 2010.
- [73] McIntyre D. *Learning from experience: health care financing in low- and middle-income countries.* Geneva: Global Forum for Health Research; 2007.
- [74] Hooda SK. Health insurance, health access and financial risk protection. *Econ Polit Wkly.* 2015;50:63–72.



Paper 2: Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for Universal Health Coverage

Introduction: This study was undertaken using data from the National Sample Survey that had recently got released. It examined enrolment, utilisation (public and private) and OOP expenditure for the insured and uninsured, taking into account gender, socio-economic status, residence, type of facility and ailment. This study filled a gap in current research by examining the dynamics of public and private sector use under such schemes. Moreover, it reinforced the suggestions by academics and civil society related to revising the indicator for measuring financial protection for UHC in the Sustainable Development Goals (SDGs).

Conclusion: The study found that of the insured who got hospitalised, more went to the public sector. The public sector catered more to women, rural residents, Scheduled Tribes and poorer groups. Though the insured were less likely to incur OOP expenditure, most of the insured who went to the private sector and two-third of those who went to the private sector, incurred OOP expenditure. The medium OOP payments were multiple times higher in the private as compared to the public sector.

Contribution of candidate: SN conceived the study. SN and HS made substantial contributions to design of the study and contributed to data analysis. PD was responsible for carrying out statistical analyses. SN and wrote the first draft of the manuscript. Subsequently HS and PD contributed to finalising the article.

Review comments from the peer review process are available in Appendix 4.

RESEARCH ARTICLE

Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage

Sulakshana Nandi^{1,2*}, Helen Schneider³, Priyanka Dixit⁴

1 Public Health Resource Network, India, Raipur, Chhattisgarh, India, **2** School of Public Health, University of the Western Cape, Bellville, South Africa, **3** School of Public Health, UWC/MRC Health Services to Systems Unit, University of the Western Cape, Bellville, South Africa, **4** School of Health Systems Studies (SHSS), Tata Institute of Social Sciences (TISS), Mumbai, India

* sulakshana@phrindia.org



OPEN ACCESS

Citation: Nandi S, Schneider H, Dixit P (2017) Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage. PLoS ONE 12(11): e0187904. <https://doi.org/10.1371/journal.pone.0187904>

Editor: Shankar Prinja, Post Graduate Institute of Medical Education and Research School of Public Health, INDIA

Received: April 4, 2017

Accepted: October 28, 2017

Published: November 17, 2017

Copyright: © 2017 Nandi et al. This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the manuscript and the supplementary files. The complete Chhattisgarh unit level information from the 71st round of the National Sample Survey, conducted by the office of National Sample Survey Organization (NSSO) is available from the Deputy Director General, Computer Centre, Ministry of Statistics and Programme Implementation, Government of India, East Block No. 10 R.K. Puram, New Delhi-110066. The access

Abstract

Research on impact of publicly financed health insurance has paid relatively little attention to the nature of healthcare provision the schemes engage. India's National Health Insurance Scheme or RSBY was made universal by Chhattisgarh State in 2012. In the State, public and private sectors provide hospital services in a context of extensive gender, social, economic and geographical inequities. This study examined enrolment, utilization (public and private) and out of pocket (OOP) expenditure for the insured and uninsured, in Chhattisgarh. The Chhattisgarh State Central sample (n = 6026 members) of the 2014 National Sample Survey (71st Round) on Health was extracted and analyzed. Variables of enrolment, hospitalization, out of pocket (OOP) expenditure and catastrophic expenditure were descriptively analyzed. Multivariate analyses of factors associated with enrolment, hospitalization (by sector) and OOP expenditure were conducted, taking into account gender, socio-economic status, residence, type of facility and ailment. Insurance coverage was 38.8%. Rates of hospitalization were 33/1000 population among the insured and 29/1000 among the uninsured. Of those insured and hospitalized, 67.2% utilized the public sector. Women, rural residents, Scheduled Tribes and poorer groups were more likely to utilize the public sector for hospitalizations. Although the insured were less likely to incur out of pocket (OOP) expenditure, 95.1% of insured private sector users and 66.0% of insured public sector users, still incurred costs. Median OOP payments in the private sector were eight times those in the public sector. Of households with at least one member hospitalized, 35.5% experienced catastrophic health expenditures (>10% monthly household consumption expenditure).

The study finds that despite insurance coverage, the majority still incurred OOP expenditure. The public sector was nevertheless less expensive, and catered to the more vulnerable groups. It suggests the need to further examine the roles of public and private sectors in financial risk protection through government health insurance.

policy for this data is available here: <http://mail.mospi.gov.in/index.php/catalog/161/study-description#page=accesspolicy&tab=study-desc>.

Funding: This paper is part of the PhD of the first author for which a part fellowship had been provided by the Institute of Tropical Medicine, Belgium. The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Competing interests: The authors have declared that no competing interests exist.

Introduction

Universal health coverage and government health insurance schemes

The concept of Universal Health Coverage (UHC) arose out of a global concern for high levels of out of pocket expenditure for health care in many low- and middle-income countries (LMIC) [1]. UHC has the goal of “ensuring that everyone within a country can access the health services they need, which should be of sufficient quality to be effective, and providing all with financial protection from the costs of using health services” [2: 3]. The three critical dimensions of UHC are: coverage of the population, coverage by services and financial protection [1]. Core to the design of UHC is the health financing system and how it engages with the mechanisms for provision of healthcare. Progress towards UHC requires strengthened health system functioning [1, 3–6] and a focus on equity [7–11].

Despite this broad vision, at country level, UHC has often focused on the establishment of state funded insurance schemes [12, 13] and stopped short of addressing the health systems strengthening or equity aspects of UHC. Kutzin [12: 607] raises this as a concern and calls for a shift in emphasis from a scheme to the health system in its entirety and for the “impact of that scheme on the attainment of the objectives for the population and system as a whole” to be monitored. The impact of state funded insurance schemes on financial protection and health equity are currently a subject of keen debate the world over, including in India [5, 13–16].

In their review of studies on the impact of national health insurance for the poor and the informal sector in LMICs, Acharya et al [17] found generally low enrolment rates in many of the schemes. There was lower enrolment among the poor, unless special efforts were made, and mixed findings with respect to rural versus urban enrolment. To date, gender has not been identified as a determinant of low enrolment [17–20]. Once enrolled, the evidence on subsequent utilization and financial risk protection is mixed [17], sometimes within the same country. While most studies found that insurance increased these parameters [21, 22], sometimes more for the poor [23], in others the impacts were unevenly distributed, with the poor benefitting less than the rich [17, 24–26].

The role of the health system capacity in determining the impact of the insurance schemes has been extensively documented [4, 20, 25–29]. However, few studies have explicitly disaggregated or compared the roles of the private and public sectors in achieving the objectives of UHC [1, 17].

Beyond the UHC debates, systematic reviews have concluded that the private health sector may not be more efficient than the public sector [30] nor result in greater access equity [28], although others maintain that the evidence is not conclusive [31].

Government Health Insurance In India

India has a mixed health system, consisting of a network of government health facilities and health programmes as well as a dominant and unregulated private health sector [32, 33]. It is characterized by extensive inequities in health service utilization and access related to socio economic status, caste, geography, and gender, amongst others [33–39]. Private expenditure (including out of pocket payments) constitutes 70% of total health expenditure and 75% of primary and ambulatory healthcare episodes and 61% of inpatient episodes or hospital visits are in the private sector. Two percent (2%) of public sector expenditure relies on out of pocket fees and charges [32].

Studies of healthcare utilization patterns have found the poor in India are more likely to utilize the public sector for healthcare, making it pro-equity, than the private sector which relies

predominantly on fee-for-service payment [39, 40]. However, Jain et al [16] argue that utilization of the public sector by the poor is not by choice but due to financial constraints that could be overcome by health insurance.

In India many players, including government, view state funded health insurance as the key mechanism to achieve UHC [41–44]. Over the last decades, states across India introduced government funded insurance schemes with the aim to protect the poor from catastrophic health expenditure [32, 45]. The National Health Insurance Scheme or RSBY, launched by the Ministry of Labour in 2007, and taken over by the Health Ministry in 2015, was the first national scheme for the unorganized sector, providing hospital cover for mainly Below Poverty Line (BPL) households. The key initial considerations for introducing RSBY were to promote India's economic growth, the private healthcare market (drawing extensively on private healthcare providers) and worker productivity, especially in the informal sector [46, 47].

Health insurance schemes in India emerged in parallel to an existing major strand of health sector reform, namely the National Rural Health Mission (NRHM), launched in 2005, re-named the National Health Mission (NHM) in 2013, incorporating the Urban Health Mission. While the NHM aims to strengthen public health systems to provide “universal access to equitable, affordable and quality health care” [33, 48], the RSBY aims to actively draw in private sector providers through a “business model” involving both private and public sectors [49].

The stated objectives of RSBY are to provide financial protection and improve access to quality health care for the poor and other vulnerable groups, through “empowering the beneficiary” with “freedom of choice between public and private hospitals”, and providing “cashless” services [49].

The emerging evidence on the impact of the national and state government health insurance schemes in India shows that its beneficial effects have been, at best, limited. Some studies report an increase in enrolment and utilization of health care [50, 51, 52] and appropriate coverage of vulnerable groups [53]. However, in many others, socio-economic status, place of residence, caste, tribal group and women-headed households have emerged as significant determinants of inequity in enrolment and utilization [13, 37, 50, 54–58]. Moreover, instances of unnecessary hospitalizations and procedures and “provider-induced demand” have been documented, especially in the private sector [54, 59–65], also found in previous studies conducted by the authors in Chhattisgarh [66, 67].

Some studies have shown a decrease in out of pocket payments in those covered with insurance [52, 68, 69] but most find that enrolled patients continue to pay out of pocket, more so in the private sector, with instances of increased payment also reported [52, 58, 60, 65, 70–75].

Government health insurance in chhattisgarh

Chhattisgarh State has a population of more than 25 million people [76], 79% of whom have been identified as poor, and requiring food security support [77]. With 44% of its geographical area under forests [78], the population is predominantly rural (77%) [76]. In a complex landscape of social groupings, “Scheduled Tribes” (indigenous groups) constitute 31% of the total population and “Scheduled Castes” a further 13% [76], both of whom are considered as marginalized and socially excluded groups relative to the others (“Other Backward Classes” and “Others”) [35].

Although Chhattisgarh has recorded improvements in health status since it was formed in 2000, it is still one of the low performing states in India [79].

Chhattisgarh was one of the first states to launch RSBY in 2009, expanding the scheme to all families living in the state in 2012 through the Mukhyamantri Swasthya Bima Yojana (MSBY) or Chief Minister's Health Insurance Scheme. This move is seen as positive [80], as targeting

in social programmes often leads to exclusion of the poor and disadvantaged [13, 81]. Both schemes (RSBY and MSBY) have identical provisions. They cover a family of five for pre and post hospitalization expenses up to an annual limit of Rs.30,000 (US\$ 442), with a one-time registration fee of Rs.30 to be paid by the family. Private and government hospitals are “empanelled” to provide services through pre-determined packages, reimbursed at fixed rates. As per the government data of April 2016, around 12.5 million people in Chhattisgarh are enrolled under RSBY/MSBY [82], mostly mobilized through processes involving rural grass-roots workers, like the *Mitanins* (Community Health Workers) [83]. Of the 735 hospitals empanelled, 462 (62.9%) are private facilities [84]. Programme data for the 2015–16 financial year shows that the public sector made a smaller proportion of total number of claims (25.3%) than the private sector (74.7%), while the private sector received 82.9% of the claim amounts disbursed [84].

Rationale for the study

Evidence on the extent of financial protection through government funded insurance schemes is mixed both globally and in India. Further, little attention has been given to evaluating the healthcare provision mechanisms government insurance schemes engage, and on the differential effects of public and private sector use on financial protection and reducing inequity. Moreover, recent debates related to measuring financial protection for UHC in the Sustainable Development Goals (SDGs) emphasize the need for looking at household expenditure on health and its ‘impoverishing effect’, instead of simply measuring coverage with an insurance scheme [85].

In Chhattisgarh, both public and private sectors are involved in providing services under the insurance scheme, in a context of extensive geographical, socio economic and gender inequities. The state funded Universal Health Insurance Scheme in Chhattisgarh provides the opportunity to study these elements and explore the pathways of utilization and extent of financial protection.

Materials and methods

Conceptual framework

The conceptual framework for the study is illustrated in Fig 1. It represents the relationships between enrolment (yes/no), utilization (public and private sector hospitalization) and financial risk protection (out of pocket and catastrophic household expenditures).

Study design, sampling and data collection

Drawing on household survey data, this descriptive study aimed to examine the relationships between enrolment, utilization of public and private sector sectors and financial risk protection for the insured and uninsured under the state funded health insurance in Chhattisgarh.

The Chhattisgarh State data used in this study were extracted from the 25th schedule of the 71st round of the cross-sectional Indian National Sample Survey, conducted between January and June 2014. The National Sample Survey Office (NSSO), under the Ministry of Statistics of the Government of India, conducts the survey on a periodic basis. The data is available from the Deputy Director General, Computer Centre, Ministry of Statistics and Programme Implementation, Government of India, New Delhi. The Chhattisgarh sample included 1205 households and 6026 individuals (household members), obtained in a stratified two-stage sampling design, with census villages and urban frame survey blocks as the first-stage units (FSUs) for the rural and urban areas respectively, and households as the second-stage units (SSUs).

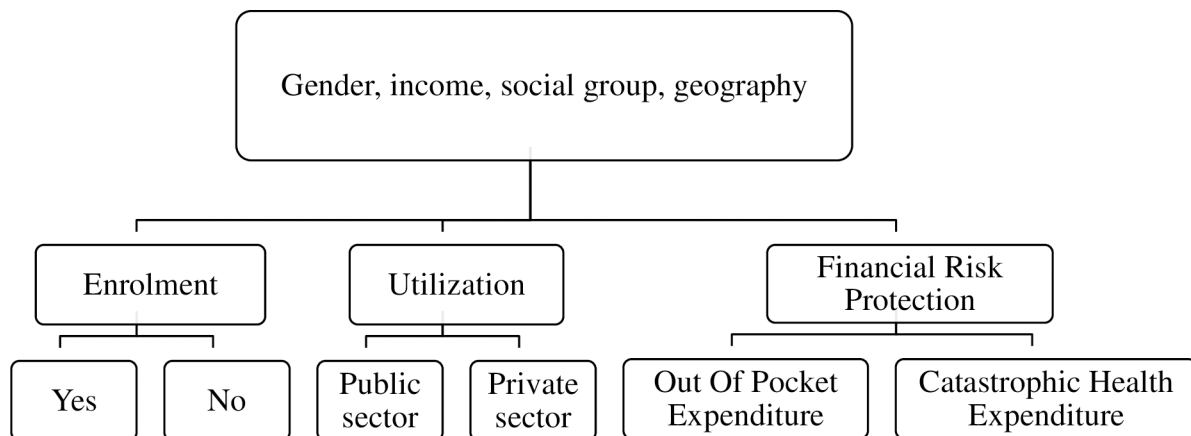


Fig 1. Conceptual framework for the study.

<https://doi.org/10.1371/journal.pone.0187904.g001>

The survey collected data in face-to-face interviews, using an interview schedule, on morbidity (self-reported), utilization of health care services (including types), and household expenditure on health care. Information was collected on every event of hospitalization of a household member, whether living or deceased at the time of survey, during the 365 days preceding the date of enquiry [86].

Information on household consumption expenditure was collected to create a consumption aggregate in the 30 days prior to the survey. Questions were asked to assess the “sum total of monetary values of all goods and services usually consumed (out of purchase or procured otherwise) by the household on domestic account during a month” [86: 8].

The NSSO survey does not ask about the specific type of government funded insurance scheme in its question on enrolment. The government health insurance schemes in the State, other than RSBY/MSBY are the Employees’ State Insurance Scheme (ESIS) and Central Government Health Scheme (CGHS). However, coverage data of these schemes reveal that during the period of the study the families covered under RSBY/MSBY made up the highest proportion of the enrolled under any government insurance. Under the RSBY 4th round of enrolment for 2013–2015, the number of enrolled families was 38,28,024 [87]. Under the Employees’ State Insurance (ESI) in 2014, 2,50,720 families were covered [88]. In 2014 (year of the NSSO survey), RSBY/MSBY thus constituted 93.9% of the enrolled. The Central Government Health Scheme (CGHS) gives coverage to central government employees residing in ‘CGHS-covered cities’, however, no areas or cities in Chhattisgarh are designated as CGHS-covered cities [89]. Moreover, CGHS eligibility [89] also includes retired central government personnel, of whom the numbers residing in Chhattisgarh would be very small. Hence the data on insured in government insurance schemes in the NSSO survey primarily reflects the coverage under RSBY/MSBY.

Analysis

The NSSO used a multistage sampling design that is not self-weighting. The NSSO provides the appropriate weights for analyses to ensure representativeness of aggregated data. These were applied in all the analyses, unless otherwise specified. The details of the sampling weights, methods and organization of the NSSO are reported elsewhere [86].

Descriptive analyses of the elements in Fig 1 (enrolment, hospitalization, use of public and private sectors, out of pocket and catastrophic expenditures) were conducted. The usual

monthly per capita consumer expenditure (UMPCE) was calculated as the household's usual consumption expenditure in a month divided by the size of the household and then divided into five economic quintiles, from Q1 (poorest) to Q5 (richest). Out of pocket expenditure on hospitalization was calculated per episode as medical expenditure minus reimbursements. Weighted medians of OOP expenditure were calculated. The methodology proposed by Wagstaff and van Doorslaer [90] was applied for assessing catastrophic payments for health care, namely, expenditure that exceeded 10% of annual total household consumption expenditure.

Further, multivariate logistic analyses were undertaken to examine the following relationships:

- Between enrolment and variables of gender (women-men), social group (Scheduled Caste, Scheduled Tribe, Other Backward Classes and General), place of residence (urban-rural) and UMPCE (referred to collectively as socio-economic factors).
- Between hospitalization and the above socio-economic factors, adding enrolment status.
- Between public sector hospitalization and the above socio-economic factors, adding enrolment and type of ailment.
- Between OOP expenditure and socio-economic factors, enrolment, type of ailment and level of facility.

Adjusted Odds Ratios (AOR) and 95% confidence intervals (CI) were estimated for each of the models.

In the logistic regressions, outcome variable was coded as '1' for an individual enrolled in government insurance scheme and '0' for an individual not enrolled in any insurance scheme; '1' for an individual who was hospitalized and '0' if not; '1' if an individual was hospitalized in the public sector during last 365 days from the date of survey and '0' if hospitalized in the private sector; '1' if incurred any OOP expenditure and '0' if did not incur any OOP expenditure. The binary response ('y'), enrolled in government insurance scheme or not/hospitalized or not/hospitalized in public sector or private sector/incurred OOP expenditure or not) for each individual was related to a set of categorical predictors, 'X', and a fixed effect by a logit link function as follows:

$$\text{logit}(\pi_i) = \log[\pi_i/1 - \pi_i] = \beta_0 + \beta(x) + \varepsilon$$

The probability of an individual who had enrolled in government insurance scheme/hospitalized/hospitalized in public sector/incurred OOP expenses is π_i . The parameter β_0 estimates the log odds of enrolled in government insurance scheme/hospitalized/hospitalized in public sector/incurred OOP expenses for the reference group, and the parameter β estimates with maximum likelihood, the differential log odds of enrolled in government insurance scheme/hospitalized/hospitalized in public sector/incurred OOP expenses are associated with the predictor X, as compared to the reference group and ε represents the error term in the model.

As the data is from an official government survey, the researchers did not have any control over the validity or reliability of data. However, it is regarded as one of the most important sources of public health data in India, having high validity [91].

Ethics approval

The Senate Research Committee of the University of the Western Cape gave ethics approval for this secondary analysis, as part of the PhD studies of the first author.

Results

Characteristics of the study sample

The gender, residential (urban/rural) and social group distribution (number and weighted percentage), of the 6026 household members, is shown in [Table 1](#). The study used the complete sample in its analysis.

Coverage with insurance

Of the total surveyed, 38.8% were covered by any government insurance scheme, which includes both the universal insurance scheme and central and state schemes for government employees ([Table 2](#)). A further 0.5% was covered with private insurance, while 60.7% of the sample had no insurance coverage of any kind.

Henceforth, ‘insurance’ refers only to government health insurance, and no further data on private insurance is presented.

[Table 2](#) gives the socio-economic characteristics of the insured and uninsured. When gender, residence, social group and consumption expenditure (UMPCE) were combined in a logistic regression model, with enrolment as an outcome variable ([Table 2](#)), social group and UMPCE emerged as predictors of coverage. Scheduled Tribes were significantly more likely to be enrolled than other social groups while the richest (Q5) were significantly less likely to be enrolled (AOR 0.654; 95% CI: 0.516–0.761) among the UMPCE groups.

Hospitalization and choice of facility

Of the sample, 817 persons were hospitalized during the prior 365 days, with a total of 856 episodes of hospitalization. Weighted rates of hospitalization were 33 per 1000 in those with insurance, compared to 29 per 1000 in those with no insurance. After controlling for gender, place of residence, social group and UMPCE quintile, a person with insurance was significantly more likely to be hospitalized compared to a person with no insurance (AOR 1.388; 95% CI: 1.190–1.620) ([S1 Table](#)).

In those covered by insurance, two thirds of hospitalization episodes were in the public sector (67.2%), compared to less than half (46.6%) in those with no insurance ([Fig 2](#)).

The level of facility for hospitalizations for the insured and uninsured are given in [Table 3](#). It shows that most of the hospitalizations were in the higher level facilities both in the public and private sectors, which for the public sector means that they were in district hospitals and medical colleges (as opposed to lower level health centers).

The multivariate logistic regression showed that women (AOR 1.80; 95% CI: 1.25–2.58), Scheduled Tribes and the poorest (Q1) were significantly more likely to be hospitalized in the

Table 1. Characteristics of the study sample (N = 6026).

Characteristic		N	W %
Gender	Men	3,080	53.4
	Women	2,946	46.6
Residence	Rural	3,524	81.9
	Urban	2,502	18.1
Social Group	ST	1,895	34.6
	SC	655	12.6
	OBC	2,694	45.8
	Others	782	7.0

<https://doi.org/10.1371/journal.pone.0187904.t001>

Table 2. Enrolment in insurance by different characteristics and results of adjusted odds ratio of insurance enrolment and its 95% CI (N = 5977)*.

Characteristic		N	Total	Enrolled in insurance	Not enrolled in any insurance	Adjusted Odds Ratio	P value	95% Confidence Interval	
			w%	w %	w %			Lower limit	Upper limit
Total		5,977		38.8	60.7				
Gender	Men [#]	3,055	53.4	52.6	54.0	1			
	Women	2,922	46.6	47.4	46.1	0.919	0.120	0.828	1.022
Residence	Rural [#]	3,506	81.9	83.9	80.6	1			
	Urban	2,471	18.1	16.1	19.4	0.885	0.063	0.786	1.013
Social Group	ST [#]	1,875	34.4	36.3	33.2	1			
	SC	649	12.6	11.9	13.1	0.750	0.006	0.642	0.928
	OBC	2,680	46.0	46.2	45.8	0.634	0.000	0.561	0.719
	Others	773	7.0	5.6	7.9	0.416	0.000	0.342	0.516
UMPCE	Q1 [#]	1,203	24.9	24.2	25.3	1			
	Q2	1,199	24.3	25.9	23.3	0.840	0.031	0.701	0.973
	Q3	1,189	21.4	24.1	19.7	1.093	0.287	0.929	1.291
	Q4	1,205	18.9	20.2	18.0	1.184	0.049	1.004	1.404
	Q5	1,181	10.6	5.6	13.7	0.654	0.000	0.516	0.761

Note
 * 49 individuals had private insurance and therefore are not included in this analysis
 # Reference category

<https://doi.org/10.1371/journal.pone.0187904.t002>

public sector than men, other social groups and other UMPCE groups respectively (S2 Table). Taking infection as the reference group, conditions like cancer (AOR 0.11; 95% CI: 0.01–0.94) and respiratory conditions (AOR 0.30; 95% CI: 0.09–0.97) were significantly less likely causes of admission in the public sector, while obstetric and child birth-related conditions were significantly more likely in the public sector (AOR 1.63; 95% CI: 1.03–2.57) (S2 Table).

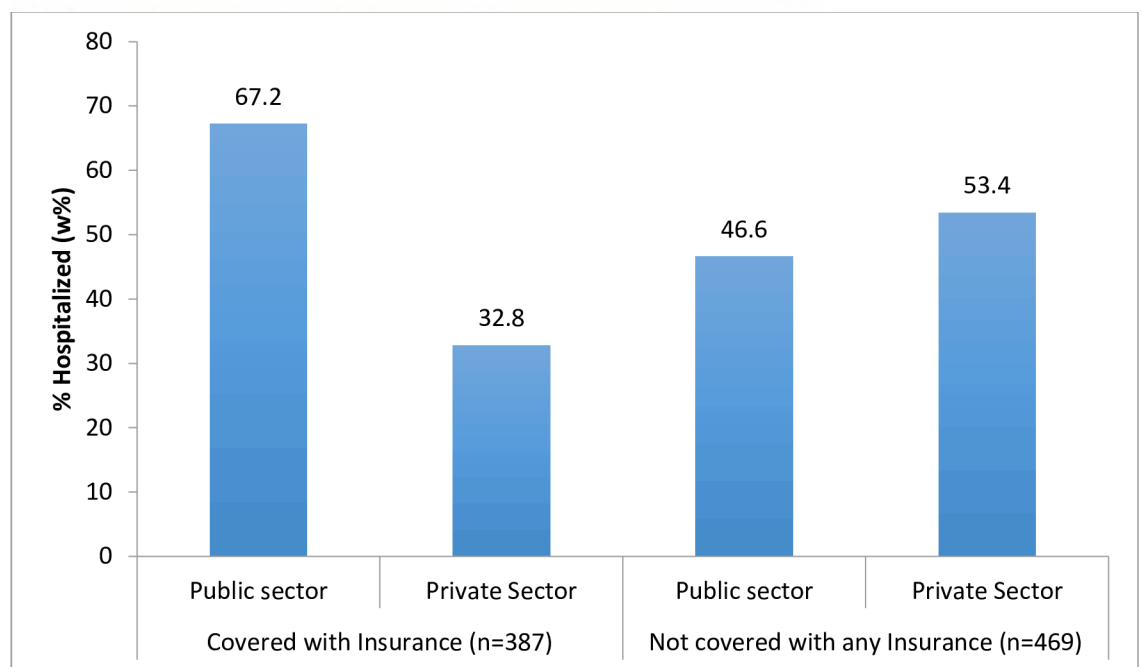


Fig 2. Proportion of hospitalization by in public and private sector by insurance coverage (n = 856).

<https://doi.org/10.1371/journal.pone.0187904.g002>

Table 3. Place of hospitalization by insured and uninsured (n = 856).

Level of facility	Enrolled in insurance		Not enrolled in any insurance		Total	
	N	W %	N	W %	N	W %
Sub center/ASHA/AWW	5	3.2	7	2.5	12	2.8
PHC/Dispensary/CHC/Mobile medical unit	27	5.7	23	5.4	50	5.5
Public hospital	195	58.4	190	38.7	385	47.0
Private doctor/clinic+	-	-	-	-	-	-
Private hospital	160	32.8	249	53.4	409	44.7
Total	387	100	469	100	856	100

+ No cases found hospitalized under this category

<https://doi.org/10.1371/journal.pone.0187904.t003>

Enrolment in government insurance was associated with hospitalization in the public sector at 90% Confidence Levels (AOR 1.32; 90% CI: 1.01–1.72) (S2 Table).

Out of pocket expenditure

Of those with insurance, 34.0% of hospitalization episodes in the public sector were ‘cashless’, that is, no OOP expenditure was incurred, whereas 16.1% of public sector users without insurance got cashless services. For those going to the private sector, 5.0% of the insured and 5.7% of those not insured did not incur any OOP expenditure. In those with insurance who incurred OOP expenditure, the median OOP expenditure in private (Rs.10, 000) was eight times more than in the public sector (Rs.1, 200). In the uninsured, median OOP expenditure in private (Rs.17, 900) was nearly twelve times higher than in the public sector (Rs.1, 500).

Table 4 gives the median OOP expenditure disaggregated by insurance coverage and socio-economic categories, although analysis is limited by small sample sizes in the disaggregated analysis precluding public/private comparisons.

Multivariate logistic regression with OOP expenditure (Y/N) as the outcome variable showed that government insurance coverage (AOR 0.265; 95% CI: 0.174–0.405) and childbirth conditions (AOR 0.516; 95% CI: 0.290–0.918) were significantly less likely to entail OOP expenditure than no insurance and other ailments respectively (S3 Table). On the other hand,

Table 4. Median OOP expenditure (OOPE) (medical expenses minus reimbursements) per hospitalization episode for various categories (N = 856).

Characteristic		Enrolled in insurance		Not enrolled in any insurance	
		N	Median OOPE (Rs.)	N	Median OOPE (Rs.)
Total		387	2550	469	4500
Gender	Male	167	2500	180	6400
	Female	220	3080	289	3000
Residence	Rural	230	2500	208	3370
	Urban	157	5900	261	6000
Social Group	ST	137	2500	89	1550
	SC	52	5000	55	3500
	OBC	162	5500	224	6400
	Others	36	2000	101	9900
UMPCE	Q1	70	1200	73	2000
	Q2	57	0	76	2200
	Q3	94	2500	86	3000
	Q4	95	4200	84	6400
	Q5	71	10000	150	27000

<https://doi.org/10.1371/journal.pone.0187904.t004>

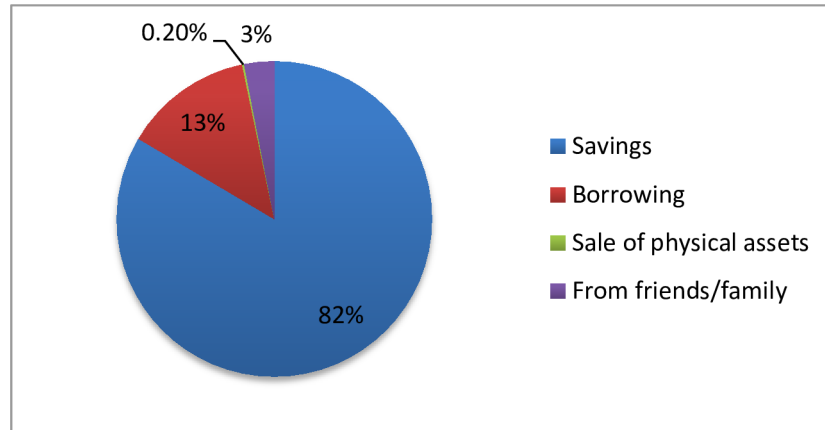


Fig 3. Source of funds for OOP expenditure.

<https://doi.org/10.1371/journal.pone.0187904.g003>

women (AOR 1.700; 95% CI: 1.012–2.858) were more likely to incur OOP expenditure than men and hospitalization in private hospital had a significantly higher possibility of incurring OOP expenditure than any other type of facility (S3 Table).

Among people who were hospitalized and incurred OOP payments, 82% used their savings, and 13% borrowed money (Fig 3). The others took money from friends or family (3%), sold physical assets (0.2%) or arranged for it in some other way (2%).

Catastrophic expenditure due to hospitalization costs

Household catastrophic expenditure due to hospitalization was calculated for the 645 households where at least one person was hospitalized during the prior 365 days. Using 10% of household consumer expenditure on OOP expenditure for hospitalization as the cut-off mark, 35.5% of the households experienced catastrophic expenditure due to hospitalization costs. It was not possible to assess the effects of insurance coverage on this as within the households, members had a mixed profile of enrolment.

Fig 4 summarizes the main findings on the study dimensions, based on the conceptual framework (Fig 1).



Fig 4. Summary of study findings.

<https://doi.org/10.1371/journal.pone.0187904.g004>

Discussion

This study, using the National Sample Survey (71st Round) on Health conducted in 2014, explored coverage of government insurance schemes, utilization of hospitalization and out of pocket expenditure for the insured and uninsured in Chhattisgarh State of India. The discussion below examines these findings in the context of other studies and their relevance to the larger debates on government insurance and UHC.

Chhattisgarh, a state with predominantly rural and poor populations started implementing RSBY in 2009 and universalized the scheme in 2012. At the time of the study (2014) enrolment percentages were low, although the recent programme data shows continuing growth—the number of families enrolled increased from 1.04 million in March 2011 (before universalization) [72] to 4.16 million in April 2016 [82]. The study found that enrolment was marginally higher in rural areas, among women and Scheduled Tribes, compared to the total covered. These findings on gender and rural residence echo findings from other studies [17, 18, 52].

The rates of hospitalization for those who were covered with insurance were slightly higher than for those not covered with insurance. The evidence on impacts of insurance on utilization elsewhere is mixed [17]. In the utilization of hospital services, one of the critical purposes of the health insurance scheme is to “empower” people by providing freedom of choice to go to a public or private sector facility [49]. Jain et al [16] argue that a purchasing mechanism like health insurance can make the private sector more accessible to the poor. However, this study shows that even when insured, people appear to be utilizing the public sector more. Certain explanations could be drawn using the evidence from this and other studies. Firstly, multivariate logistic regression on public sector hospitalization shows that women, tribal populations and poorest are significantly more likely to go to the public sector. Other studies too have documented the higher use of the public sector by poorer populations [40] and the lower availability of private facilities in poorer and rural areas [36, 39, 40]. Moreover, a recent study comparing two rounds of NSSO data for whole of the country has found that use of public sector hospitals has increased and for the insured, there is higher probability of being hospitalized in a public, rather than a private hospital [92]. Secondly, our study also shows obstetrics and gynecological conditions were significantly more likely to be hospitalized in the public sector. The National Family Health Survey-4 data of Chhattisgarh shows that deliveries in the public sector increased by eight times over ten years (from 6.9% in 2005–06 to 55.9% in 2015–16), one of the highest increases in the country [93]. Therefore the high number of public sector hospitalizations could be related to the high public sector utilization by women for delivery and other conditions, which has also emerged from other studies [92]. Thirdly, the data on OOP expenditure shows that there was greater probability of incurring expenditure in the private sector and the median amounts in the private sector even for the insured were higher than in the public sector. Lack of financial protection is a critical barrier to access and utilizing health services [1, 2] and therefore higher affordability of the public sector may have led to more people utilizing it.

Although the study shows a higher rate of utilization of the public sector by the people who were enrolled in the government insurance, programme data of the scheme shows that the insurance card is being used more in private than in public sector [84]. One possible explanation for this difference could be that although people are making greater use of the public sector, they may not be routinely using the insurance card in the public sector.

Financial protection has been the mainstay of any government insurance scheme. For RSBY too, providing “cashless” hospitalization services and reducing catastrophic expenditure for hospitalization has been highlighted as the most important objective of the scheme [87]. The results of the study show that although the insured were less likely to incur OOP

expenditure than the uninsured, most of the insured had to incur OOP expenditure. One third (35.5%) of the households experienced catastrophic health expenditure (CHE) due to medical expenses for hospitalizations.

Studies both from India [52, 68, 69] and other countries [21, 22] have found evidence of financial protection from insurance schemes. However, most studies from India also show that patients continue to incur OOP expenditure despite coverage with government insurance [15, 58, 60, 65, 70, 71, 73, 75]. A recent systematic review on the impact of publicly financed health insurance schemes found that though utilization increased with coverage, there was no impact on reduction of OOP expenditure [51]. Moreover, studies have also shown that the impact is often less on the poor and rural populations [17, 25, 51, 68, 75]. Analyzing the same NSSO survey data for the whole of India, Sundararaman et al [15] argue that the difference in net OOP expenditure between the insured and uninsured is too small to claim financial protection.

Comparing OOP expenditure in the public and private sectors, “cashless” hospitalizations were more common in public than in private facilities and those going to the private sector were more likely to incur OOP expenditure. Where OOP expenditure was incurred, amounts were eight times higher in private than in public facilities for people covered with insurance. Previous work in Chhattisgarh [72, 94] by the authors, and by Rent & Ghosh [75] in neighbouring Maharashtra has found similar differences. It is pertinent to note that in Chhattisgarh, the private sector receives the major share (82.9%) of claim amounts, and accounts for two-third of hospitalizations under the scheme [82]. While the NSSO data-set does not indicate whether the insurance was actually used during hospitalization, it is assumed that those covered would try to utilize it and ensure “cashless” hospitalizations. The findings of this analysis suggest that the core RSBY/MSBY goal of “cashless” utilization of health facilities is far from being achieved.

Limitations

The NSSO survey data on enrolment includes enrolment in ESIS and CGHS in addition to RSBY/MSBY, although, as discussed in the methods, the RSBY/MSBY made up the highest proportion of the enrolled under any government insurance.

The study found that in the private sector, 5.7% of the uninsured did not incur OOP expenditure. On examining these six cases, no pattern was found in terms of their socio-economic characteristics, age, rural/urban residence or type of ailment, and no reason could be gauged for the zero OOP expenditure. There may also have been a problem of recall bias in these cases.

Chhattisgarh is a predominantly rural state, as is the case with most of India. Of India's population, 69% is rural with more than half (16 out of 29) of the states having rural populations of above 70% [95]. All states have a similar healthcare system, with a private/public mix, and with government insurance schemes primarily relying on private providers. However, in most states, the insurance scheme has not been universalized and enrolment in the schemes is much lower than in Chhattisgarh. Nevertheless, universal insurance coverage is seen as a move towards UHC [13]. Therefore the findings on enrolment, private and public sector utilization, and OOP expenditure for the insured and uninsured, which emerge from this study, in the context of geographical, socio-economic and gender inequities, are relevant for India and have lessons for UHC elsewhere. It also illustrates the relevance of the recently changed indicator for measuring financial risk protection of UHC in the SDGs [96].

Conclusion

This study of Chhattisgarh's universal government health insurance scheme found that despite insurance coverage, most had to incur OOP expenditure, which was higher in the private than

the public sector. Moreover, a large proportion of households with members hospitalized experienced catastrophic health expenditure. Whether through choice or availability, those with insurance coverage made greater use of services in the public sector. The public sector was less expensive, and catered to the more vulnerable groups. The patterns of utilization and differential OOP expenditure across public and private sectors under publicly financed health insurance warrant further investigation, so as to inform strategies that make best use of scarce public resources and deliver on the promise of equity under Universal Health Coverage.

Supporting information

S1 Table. Adjusted Odds Ratio of hospitalization by characteristics and its 95% CI

(N = 5977).

(DOCX)

S2 Table. Adjusted Odds Ratio of hospitalization in the public sector by characteristics and its 95% CI (N = 856*).

(DOCX)

S3 Table. Adjusted Odds Ratio of OOPE (medical expenses minus reimbursements) by characteristics and its 95% CI (N = 856*).

(DOCX)

Acknowledgments

The authors wish to thank Dr. T. Sundararaman and Dr. Indranil Mukhopadhyay for their support in accessing and understanding the NSSO 71st round survey data.

Author Contributions

Conceptualization: Sulakshana Nandi, Helen Schneider.

Data curation: Priyanka Dixit.

Formal analysis: Sulakshana Nandi, Helen Schneider, Priyanka Dixit.

Funding acquisition: Helen Schneider.

Investigation: Sulakshana Nandi, Helen Schneider, Priyanka Dixit.

Methodology: Sulakshana Nandi, Helen Schneider, Priyanka Dixit.

Project administration: Sulakshana Nandi.

Supervision: Helen Schneider.

Validation: Sulakshana Nandi, Helen Schneider.

Visualization: Sulakshana Nandi, Helen Schneider.

Writing – original draft: Sulakshana Nandi.

Writing – review & editing: Sulakshana Nandi, Helen Schneider, Priyanka Dixit.

References

1. World Health Organisation (WHO). The World Health Report—Health Systems Financing: The path to Universal Coverage. Geneva: World Health Organization; 2010.

2. McIntyre D., Ranson M. K., Aulakh B. K. and Honda A. Promoting universal financial protection: evidence from seven low- and middle-income countries on factors facilitating or hindering progress. *Health Research Policy and Systems* 2013; 11:36. <https://doi.org/10.1186/1478-4505-11-36> PMID: 24228762
3. House Chatham. Shared Responsibilities for Health: A Coherent Global Framework for Health Financing. Final Report of the Centre on Global Health Security Working Group on Health Financing. London: Chatham House; 2014.
4. Roberts M. J., Hsiao W. C., & Reich M. R. Disaggregating the Universal Coverage Cube: Putting Equity in the Picture. *Health Systems & Reform*. 2015; 1(1): 22–27.
5. Sen A. Universal healthcare: the affordable dream. *The Guardian*. 2015. Available from: www.theguardian.com/society/2015/jan/06/-sp-universal-healthcare-the-affordable-dream-amartya-sen
6. Kutzin J and Sparkes S. P. Health systems strengthening, universal health coverage, health security and resilience. *Bulletin of the World Health Organisation*. 2016; 94:2.
7. Frenz P., and Vega J. Universal health coverage with equity: what we know, don't know and need to know. Background paper for the First Global Symposium on Health Systems Research, 16–19 November 2010, Montreux, Switzerland. 2010. Available from: www.healthsystemsresearch.org/hsr2010/images/stories/9coverage_with_equity.pdf
8. Kutzin J. Anything goes on the path to universal health coverage? No. *Bulletin of the World Health Organization*. 2012; 90: 867–868. <https://doi.org/10.2471/BLT.12.113654> PMID: 23226900
9. World Health Organisation (WHO). *Arguing for Universal Health Coverage*. Geneva: World Health Organisation; 2013.
10. Ooms G., Latif L. A., Waris A., Brolan C. E., Hammonds R., Friedman E.A. et al Is universal health coverage the practical expression of the right to health care? *BMC International Health and Human Rights*. 2014; 14 (3): 1–7.
11. World Health Organisation (WHO). *Making fair choices on the path to universal health coverage: Final report of the WHO Consultative Group on Equity and Universal Health Coverage*. Geneva: World Health Organization; 2014.
12. Kutzin J. Health financing for universal coverage and health system performance: concepts and implications for policy. *Bulletin of the World Health Organisation*. 2013; 91: 602–611.
13. Lagomarsino G., Garabrant A, Adyas A, Muga E., Otoo N. Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia. *Lancet*. 2012; 380: 933–43. [https://doi.org/10.1016/S0140-6736\(12\)61147-7](https://doi.org/10.1016/S0140-6736(12)61147-7) PMID: 22959390
14. Oxfam. *Universal Health Coverage: Why health insurance schemes are leaving the poor behind*. 2013. Available from: www.oxfam.org/sites/www.oxfam.org/files/bp176-universal-health-coverage-091013-en_.pdf
15. Sundararaman T., Muraleedharan V. R., Mukhopadhyay I. NSSO 71st Round Data on Health and Beyond Questioning Frameworks of Analysis. *Economic & Political Weekly*. 2016a; 51 (3): 85–88 <https://doi.org/10.1708/2304.24788> PMID: 27362818
16. Jain N., Kumar A., Nandraj S., Furtado K. M. NSSO 71st Round Same Data, Multiple Interpretations. *Economic and Political Weekly*. 2015; 50 (46 & 47): 84–87.
17. Acharya A., Vellakkal S., Taylor F., Masset E., Satija A., Burke M. et al. Impact of national health insurance for the poor and the informal sector in low- and middle-income countries: a systematic review. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London; 2012.
18. Jehu-Appiah C., Aryeetey G., Spaan E., de Hoop T., Agepong I. and Baltussen R. Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why? *Social Science & Medicine*. 2011; 72:157–165
19. Odeyemi I. AO. and Nixon J. Assessing equity in health care through the national health insurance schemes of Nigeria and Ghana: a review-based comparative analysis. *International Journal for Equity in Health*. 2013; 12:9. <https://doi.org/10.1186/1475-9276-12-9> PMID: 23339606
20. Kusi A., Enemark U., Hansen K.S. and Asante F. A. Refusal to enrol in Ghana's National Health Insurance Scheme: is affordability the problem? *International Journal for Equity in Health*. 2015; 14:2. <https://doi.org/10.1186/s12939-014-0130-2> PMID: 25595036
21. Galarraga O., Sosa-Rubi S. G., Salinas-Rodriguez A., and Sesma-Vazquez S. Health insurance for the poor: impact on catastrophic and out-of-pocket health expenditures in Mexico. *European Journal of Health Economics*. 2010; 11: 437–447 <https://doi.org/10.1007/s10198-009-0180-3> PMID: 19756796
22. Knaul F. M., González-Pier E., Gómez-Dantés O., García-Junco D., Arreola-Ornelas H., Barraza-Lloréns M. et al. The quest for universal health coverage: achieving social protection for all in Mexico. *Lancet*. 2012; 380: 1259–79. [https://doi.org/10.1016/S0140-6736\(12\)61068-X](https://doi.org/10.1016/S0140-6736(12)61068-X) PMID: 22901864

23. Liu X., Tang S., Yu B., Phuong N. K., Yan F., Thien D.D. et al. Can rural health insurance improve equity in health care utilization? a comparison between China and Vietnam. *International Journal for Equity in Health*. 2012; 11:10. <https://doi.org/10.1186/1475-9276-11-10> PMID: 22376290
24. Spaan E., Mathijssen J., Tromp N., McBain F., ten Have A. and Baltussen R. The impact of health insurance in Africa and Asia: a systematic review. *Bulletin of the World Health Organisation*. 2012; 90:685–92.
25. Barraza-Lloréns M., Panopoulou G. and Díaz B.Y. Income-related inequalities and inequities in health and health care utilization in Mexico, 2000–2006. *Rev Panam Salud Publica*. 2013; 33(2): 122–30. PMID: 23525342
26. Grogger J., Arnold T., Leo'n A.S. and Ome A. Heterogeneity in the effect of public health insurance on catastrophic out-of-pocket health expenditures: the case of Mexico. *Health Policy and Planning*. 2014; 30 (5).
27. Meng Q., Yuan B., Jia L., Wang J., Yu B., Gao J. et al. Expanding health insurance coverage in vulnerable groups: a systematic review of options. *Health Policy and Planning*. 2011; 26: 93–104. <https://doi.org/10.1093/heapol/czq038> PMID: 20813837
28. Jacobs B., Ir P., Bigdeli M., Annear P. L., and Van Damme W. Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. *Health Policy and Planning*. 2012; 27: 288–300. <https://doi.org/10.1093/heapol/czr038> PMID: 21565939
29. Macha J., Harris B., Garshong B., Ataguba J. E., Akazili J., Kuwawenaruwa A. et al. Factors influencing the burden of health care financing and the distribution of health care benefits in Ghana, Tanzania and South Africa. *Health Policy and Planning*. 2012; 27: 46–54.
30. Basu S., Andrews J., Kishore S., Panjabi R., Stuckler D. Comparative performance of private and public healthcare systems in low- and middle-income countries: a systematic review. *PLoS Med*. 2012; 9 (6).
31. Hsu J. The relative efficiency of public and private service delivery. *World Health Report (2010) Background Paper, No. 39*. World Health Organisation. 2010. Available from: www.who.int/healthsystems/topics/financing/healthreport/P-P_HSU039.pdf
32. Mackintosh M., Channon A., Karan A., Selvaraj S., Zhao H., Cavagnero E. What is the private sector? Understanding private provision in the health systems of low-income and middle-income countries. *Lancet*. 2016; 388: 596–605. [https://doi.org/10.1016/S0140-6736\(16\)00342-1](https://doi.org/10.1016/S0140-6736(16)00342-1) PMID: 27358253
33. Patel V., Parikh R., Nandraj S., Balasubramaniam P., Narayan K., Paul V. K. et al. Assuring health coverage for all in India. *Lancet*. 2015; 386: 2422–2435. [https://doi.org/10.1016/S0140-6736\(15\)00955-1](https://doi.org/10.1016/S0140-6736(15)00955-1) PMID: 26700532
34. Joe W., Mishra U. S. and Navaneetham K. Health Inequality in India: Evidence from NFHS. *Economic and Political Weekly*. 2008; 43 (31): 41–48.
35. Baru R., Acharya A., Acharya S., Shiva Kumar A.K., Nagaraj K. Inequities in Access to Health Services in India: Caste, Class and Region. *Economic & Political Weekly*. 2010; 45:49–58.
36. Balarajan Y., Selvaraj S., Subramanian SV. Health care and equity in India. *Lancet*. 2011; 377(9764): 505–515. [https://doi.org/10.1016/S0140-6736\(10\)61894-6](https://doi.org/10.1016/S0140-6736(10)61894-6) PMID: 21227492
37. Nandi A., Ashok A., Laxminarayan R. The Socioeconomic and Institutional Determinants of Participation in India's Health Insurance Scheme for the Poor. *PLoS ONE*. 2013; 8(6).
38. Dreze J. and Sen A. *An Uncertain Glory: India and Its Contradictions*. New Delhi: Penguin Books; 2013.
39. Ghosh S. Equity in the utilization of healthcare services in India: evidence from National Sample Survey. *International Journal of Health Policy and Management*. 2014; 2(1): 29–38. <https://doi.org/10.15171/ijhpm.2014.06> PMID: 24596902
40. Prinja S., Kumar M. I., Pinto A.D., Jan S., Kumar R. Equity in Hospital Services Utilisation in India. *Economic & Political Weekly*. 2013; 48 (12).
41. Shiva Kumar A. K., Chen L.C., Choudhury M., Ganju S., Mahajan V., Sinha A. et al. Financing health care for all: challenges and opportunities. *Lancet*. 2011; 377 (9766): 668–679. [https://doi.org/10.1016/S0140-6736\(10\)61884-3](https://doi.org/10.1016/S0140-6736(10)61884-3) PMID: 21227490
42. Dror D. M., and Vellakkal S. Is RSBY India's platform to implementing universal hospital insurance? *Indian Journal of Medical Research*. 2012; 135: 56–63. <https://doi.org/10.4103/0971-5916.93425> PMID: 22382184
43. Federation of Indian Chambers of Commerce and Industry (FICCI). *Health Insurance Vision 2020*. 2013. Available from: www.ficci.com/spdocument/20347/Hi-Vision-2020-Exec-Summ.pdf
44. Singh J. Budget 2016: Health insurance for all. *Live Mint*. 2016. Available from: www.livemint.com/Politics/hQihM87Emz6wxsieulUZvO/Budget-2016-Health-insurance-for-all.html

45. Public Health Foundation of India (PHFI). A Critical Assessment of the Existing Health Insurance Models in India. The Planning Commission of India: New Delhi; 2011.
46. Shroff Z. C., Roberts M. J., and Reich M. R. Agenda Setting and Policy Adoption of India's National Health Insurance Scheme: Rashtriya Swasthya Bima Yojana. *Health Systems & Reform*. 2015; 1 (2): 107–118.
47. Virk A. K. and Atun R. Towards universal health coverage in India: a historical examination of the genesis of Rashtriya Swasthya Bima Yojana- The health insurance scheme for low-income groups. *Public Health*. 2015; 129 (6): 810–817. <https://doi.org/10.1016/j.puhe.2015.02.002> PMID: 25753280
48. National Health Systems Resource Center (NHSRC). NRHM in the Eleventh Five Year Plan (2007–2012): Strengthening Public Health Systems. New Delhi: NHSRC; 2012.
49. www.rsby.gov.in [Internet]. Website of the Rashtriya Swasthya Bima Yojana (RSBY). Ministry of Health and Family Welfare, Government of India. 2016. Available from: www.rsby.gov.in
50. Ghosh S. Publicly-Financed Health Insurance for the Poor Understanding RSBY in Maharashtra. *Economic & Political Weekly*. 2014b; 49 (43 & 44):93–99
51. Prinja S., Chauhan A.S., Karan A., Kaur G., Kumar R. Impact of Publicly Financed Health Insurance Schemes on Healthcare Utilization and Financial Risk Protection in India: A Systematic Review. *PLoS One* [Internet]. 2017; 12(2):e0170996. <https://doi.org/10.1371/journal.pone.0170996> PMID: 28151946
52. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. (2015). Health Insurance for India's poor: Meeting the challenge with information technology. A publication in the German Health Practice Collection. 2015. Available from: www.health.bmz.de/good-practices/GHPC/Health_Insurance_India_New/RSBY_EN_long-Oct-2011.pdf
53. Nagpal S. Expanding Health Coverage for Vulnerable Groups in India. Universal Health Coverage Studies Series (UNICO) No. 13. Washington DC: The World Bank; 2013.
54. Narayana D. Review of the Rashtriya Swasthya Bima Yojana. *Economic and Political Weekly*. 2010; 45 (29): 13–18.
55. Sun Changqing. Chapter 4: An analysis of RSBY enrolment patterns: Preliminary evidence and lessons from the early experience. In Palacios, Robert, Das, Jishnu and Sun, Changqing (eds) "India's Health Insurance Scheme for the Poor: Evidence from the Early Experience of the Rashtriya Swasthya Bima Yojana". New Delhi: Centre for Policy Research; 2012. p. 84–116.
56. Rathi P. Evaluation of Rashtriya Swasthya Bima Yojana, a Health Insurance Scheme for below poverty line people in Amravati. 2012. Available from: www.iimb.ernet.in/sites/default/files/u181/IIMB%20PGPPM%20Policy%20Folio_Paper_Prateek%20Rathi_March%202012.pdf
57. Health Inc Consortium (Health Inc). Health Inc- Towards equitable coverage and more inclusive social protection in health. *Studies in Health Services Organisation & Policy (SHSOP)*, 32, 2014. (Series ed) B. Criel, V. De Brouwere, W. Van Damme and B. Marchal, series editor. Antwerp: ITGPress; 2014.
58. Rao M, Katyal A, Singh P V, Samarth A, Bergkvist S, Kancharla M, et al. Changes in addressing inequalities in access to hospital care in Andhra Pradesh and Maharashtra states of India: a difference-in-differences study using repeated cross-sectional surveys. *BMJ Open* [Internet]. 2014 Jan [cited 2015 Sep 10]; 4(6):e004471. <https://doi.org/10.1136/bmjopen-2013-004471> PMID: 24898084
59. Desai S. Keeping the 'Health' in Health Insurance. *Economic and Political Weekly*. 2009; 44(38): 18–21.
60. Grover S. & Palacios R. Chapter 6: The first two years of RSBY in Delhi. In: Palacios Robert, Das Jishnu and Sun Changqing, editors. *India's Health Insurance Scheme for the Poor: Evidence from the Early Experience of the Rashtriya Swasthya Bima Yojana*. New Delhi: Centre for Policy Research; 2011. p. 153–188.
61. Shukla R., Shatrugna V., & Srivatsan R. Aarogyasri healthcare model: Advantage private sector. *Economic and Political Weekly*. 2011; 46(49): 38–42.
62. La Forgia G. and Nagpal S. Government-Sponsored Health Insurance in India: Are You Covered? *Directions in Development*. Washington DC: World Bank; 2012.
63. Kapilashrami A., and Venkatachalam D. Health Insurance: Evaluating the Impact on the Right to Health. Working Paper. New Delhi: Sama—Resource Group for Women and Health; 2013.
64. Prasad N. P. and Raghavendra P. Healthcare Models in the Era of Medical Neo-liberalism: A Study of Aarogyasri in Andhra Pradesh. *Economic and Political Weekly*. 2012; 47 (43).
65. Selvaraj S., & Karan A. K. Why publicly-financed health insurance schemes are ineffective in providing financial risk protection. *Economic and Political Weekly*. 2012; 48(11): 60–68.
66. Nundy M., Dasgupta R., Kanungo K., Nandi S. and Murugan G. The Rashtriya Swasthya Bima Yojana (RSBY) Experience in Chhattisgarh: What does it mean for Health For All. New Delhi: Sama—Resource Group for Women and Health; 2013.

67. Dasgupta R., Nandi S., Kanungo K., Nundy M., Murugan G. and Neog R. What the Good Doctor Said: A Critical Examination of Design Issues of the RSBY Through Provider Perspectives in Chhattisgarh, India. *Social Change*. 2013; 43 (2): 227–243.
68. Fan V., Karan A., Mahal A. State Health Insurance and Out-of-Pocket Health Expenditures in Andhra Pradesh, India. *International Journal of Health Care Finance and Economics*. 2012; 12 (3): 189–215 <https://doi.org/10.1007/s10754-012-9110-5> PMID: 22767078
69. Sood N., Bendavid E., Mukherji A., Wagner Z., Nagpal S., and Mullen P. Government health insurance for people below poverty line in India: quasi-experimental evaluation of insurance and health outcomes. *British Medical Journal*. 2014; 349: g5114. <https://doi.org/10.1136/bmj.g5114> PMID: 25214509
70. Jain N. and Chandra U. Evaluating the impact of national health insurance programme 'Rashtriya Swasthya Bima Yojana' in India. Abstract no. L1.28. Abstracts of the Third Global Symposium on Health Systems Research: The Science and Practice of People-Centred Health Systems, 30 September–3 October 2014, Cape Town, South Africa. 2014. Available from: www.healthsystemsresearch.org/hsr2014/sites/default/files/Poster-Presentations.pdf
71. Centre for Tribal and Rural Development (CTRD). Final Report on Evaluation of the 'Rashtriya Swasthya Bima Yojana Scheme' in Chhattisgarh. 2012. Available from: www.rsbychhattisgarh.in/WebSite/UploadDoc/70.pdf
72. Nandi S., Nundy M., Prasad V., Kanungo K., Khan H., Haripriya S. et al. The Implementation of RSBY in Chhattisgarh, India: A Study of the Durg District. *Health, Culture and Society, (Health System Dynamics and Barriers)*. 2012; 2 (1).
73. Rajasekhar D., Berg E., Ghatak M., Manjula M., & Roy S. Implementing health insurance: The rollout of Rashtriya Swasthya Bima Yojana in Karnataka. *Economic and Political Weekly*. 2011; 46(20): 56–63.
74. Rao M., Kadam S., Sathyanarayana T.N., Shidhaye R., Shukla R., Ramachandra S. S. et al. A Rapid Evaluation of the Rajiv Aarogyasri Community Health Insurance Scheme-Andhra Pradesh. *BMC Proceedings* 2012; 6 Suppl 1:O4.
75. Rent P. and Ghosh S. Understanding the “Cash-Less” Nature of Government-Sponsored Health Insurance Schemes: Evidence From Rajiv Gandhi Jeevodayee Aarogya Yojana in Mumbai. *SAGE Open*. 2015; October-December: 1–10.
76. Registrar General, India (RGI). Provisional Population Totals: Chhattisgarh, CENSUS OF INDIA 2011. New Delhi: Government of India; 2011.
77. Department of Food and Public Distribution (DFPD). Coverage of Population under Nation Food Security Act, 2013. *Foodgrain Bulletin*, Government of India. 2015. Available from: www.dfpd.nic.in/writereaddata/images/EstdStatewiseNFSA.pdf
78. Forest Survey of India (FSI). India State of Forest Report, 2011. Dehradun: Ministry of Environment & Forests. 2011. Available from: www.fsi.nic.in/cover_2011/chhattisgarh.pdf
79. Sinha D. Maternal and Child Health: Inching Ahead, Miles to Go. *Economic and Political Weekly*. 2015; 50(49): 16–19.
80. Joint Learning Network (JLN). India–Chhattisgarh State: Approaches to covering poor & informal populations to achieve UHC. Undated. Available from: www.jointlearningnetwork.org/resources/india-chhattisgarh-state-approaches-to-covering-poor-informal-populations-t
81. Dreze J. and Khara R. The BPL Census and a Possible Alternative. *Economic & Political Weekly*. 2010; 45 (9): 54–63
82. State Nodal Agency—RSBY and MSBY. Information on Enrolment in RSBY and MSBY till 30th April 2016. Health & Family Welfare Department, Government of Chhattisgarh.
83. Centre for Tribal and Rural Development (CTRD). Independent Assessment Study on Process of Enrolment under Rashtriya Swasthya Bima Yojana and Mukhyamantri Swasthya Bima Yojana in Chhattisgarh. 2013. Available from: www.cg.nic.in/healthrsby/RSBY_Documents/Revised%20FINAL%20REPORT%20on%20RSBY%20Enrollment%20%2029-06-2013.pdf
84. State Nodal Agency—RSBY and MSBY. Information on utilization in RSBY and MSBY for the financial year 2015–16. Health & Family Welfare Department, Government of Chhattisgarh.
85. McIntyre D., McKee M., Balabanova D., Atim C., Reddy K. S. and Patcharanarumol W. Open letter on the SDGs: a robust measure for universal health coverage is essential. *The Lancet*. 2016; 6736 (16).
86. National Sample Survey Office. Key Indicators of Social Consumption in India: Health, NSS 71st Round (January to June 2014). New Delhi: Ministry of Statistics and Programme Implementation, Government of India; 2015.
87. cg.nic.in/healthrsby [Internet]. Raipur: Health and Family Welfare Department, Government of Chhattisgarh; c2017 [cited 2017 Sept 20]. Available from: <http://cg.nic.in/healthrsby/>
88. Employees' State Insurance Corporation (ESIC). Annual Report 2013–14. Available from: <http://www.esic.nic.in/Publications/ESICAnnual%20Report%202013-14.pdf>

89. cghs.gov.in [Internet]. Delhi: Central Government Health Scheme, Ministry of Health and Family Welfare; c2017 [cited 2017 Sept 20]. Available from: <http://cghs.gov.in/index.php>
90. Wagstaff A., and van Doorslaer E. Catastrophe and impoverishment in paying for health care: with applications to Vietnam 1993–98. *Health Economics*. 2003; 12: 921–34. <https://doi.org/10.1002/hec.776> PMID: 14601155
91. Katyal A., Singh P. V., Samarth A., Bergkvist S. and Rao M. Using the Indian National Sample Survey data in public health research. *The National Medical Journal of India*. 2013; 26:5:291–294. PMID: 25017839
92. Ravi S., Ahluwalia R., Bergkvist S. Health and Morbidity in India (2004–2014). Brookings India Research Paper No. 092016. 2016. Available from: https://www.brookings.edu/wp-content/uploads/2016/12/201612_health-and-morbidity.pdf
93. International Institute for Population Sciences (IIPS), Macro International. National Family Health Survey (NFHS-4) 2005–16: State Fact Sheet Chhattisgarh. 2017. Available from: http://rchiips.org/NFHS/pdf/NFHS4/CT_FactSheet.pdf
94. Nandi S., Dasgupta R., Garg S., Sinha D., Sahu S., Mahobe R. Uncovering Coverage: Utilisation of the Universal Health Insurance Scheme, Chhattisgarh by Women in Slums of Raipur. *Indian Journal of Gender Studies*. 2016; 23 (1): 43–68.
95. Ministry of Rural Development. Demographic Profile. 2016. Available from: rural.nic.in/sites/downloads/IRDR/1.%20Demographic%20Profile.xls
96. A victory today for Universal Health Coverage- Statement from Oxfam. Available from: <http://www.globalhealthcheck.org/?p=1943>



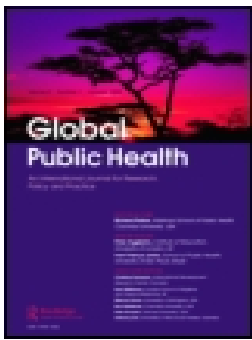
Paper 3: When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India

Introduction: This study is a qualitative study which explores the dynamics of access under PFHI schemes and the relationship between choice, affordability and acceptability. Experiences of families who had incurred significant health expenditure despite using insurance, were documented through speaking to the women of the family, and analysed. The study sought to understand the way patients and their families navigated and negotiates hospitalisation under the scheme. This study is one the very few studies examining PFHI schemes that uses qualitative methods.

Conclusion: The study found that patients and their families exercised agency to the extent that they could be and were engaged in constant negotiation and efforts to navigate the system. Real choice was absent for patients and exit was possible only on the terms set by hospitals. Healthcare utilisation was experienced more as a market transaction, than as a right. Along with weak regulation, the normative and cultural context of private provisioning did not favour risk-protection.

Contribution of candidate: The candidate (SN) conceptualised the study, undertook data collection and the initial data analysis. SN also wrote the first draft. HS reviewed and edited the article and provided intellectual content.

Review comments from the peer review process are available in Appendix 4.



When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India

Sulakshana Nandi & Helen Schneider

To cite this article: Sulakshana Nandi & Helen Schneider (2019): When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India, Global Public Health

To link to this article: <https://doi.org/10.1080/17441692.2019.1651369>



Published online: 13 Aug 2019.




Submit your article to this journal [↗](#)



View Crossmark data [↗](#)



When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India

Sulakshana Nandi ^{a,b} and Helen Schneider^c

^aSchool of Public Health, University of the Western Cape, Bellville, South Africa; ^bPublic Health Resource Network, Raipur, Chhattisgarh, India; ^cSchool of Public Health, UWC/MRC Health Services to Systems Unit, University of the Western Cape, Bellville, South Africa

ABSTRACT

This paper explores the dynamics of access under the state-funded universal health insurance scheme in Chhattisgarh, India, and specifically the relationship between choice, affordability and acceptability. A qualitative case study of patients from the slums of Raipur City incurring significant health expenditure despite using insurance, was conducted, examining the way patients and their families sought to navigate and negotiate hospitalisation under the scheme. Eight purposefully selected ('revealing') instances of patients (and their families) utilising private hospitals are presented. Patients and their family exercised their agency to the extent that they could. Negotiations on payments took place at every stage, from admission to post-hospitalisation. Once admitted, however, families rapidly lost the initiative, and faced mounting costs, and increasingly harsh interactions with providers. The paper analyses how these outcomes were produced by a combination of failures of key regulatory mechanisms (notably the 'smart card'), dominant norms of care as a market transaction (rather than a right), and wider cultural acceptance of illegal informal healthcare payments. The unfavourable normative and cultural context of (especially) private sector provisioning in India needs to be recognised by policy makers seeking to ensure financial risk protection through publicly financed health insurance.

ARTICLE HISTORY

Received 19 December 2018
Accepted 13 July 2019

KEYWORDS

Publicly funded health insurance; financial protection; regulation; qualitative study; India

Introduction

Financial protection is one of the critical dimensions of Universal Health Coverage (UHC) (WHO, 2010). In low – and middle-income countries (LMICs), state-funded health insurance schemes are increasingly being promoted as vehicles to provide protection from catastrophic expenditure and financial hardship due to healthcare expenses, and thus achieve Universal Health Coverage (UHC) (Lagomarsino, Garabrant, Adyas, Muga, & Otoo, 2012; Marten et al., 2014; Sengupta, 2013). In India, the National Health Insurance Scheme or Rashtriya Swasthya Bima Yojana (RSBY) was launched in 2007, providing annual insurance coverage of Rs. 30,000 (USD 430) for hospitalisation care to families who are categorised as poor (or Below Poverty Line)¹ by government.

Globally, the evidence on financial risk protection through state-funded health insurance is mixed (Acharya et al., 2012). While many studies have found that insurance increases financial protection (Galárraga, Sosa-Rubí, Salinas-Rodríguez, & Sesma-Vázquez, 2010; Knaul et al., 2012; Spaan et al., 2012), in others insurance has not necessarily led to increased financial protection or a decrease

CONTACT Sulakshana Nandi  sulakshana@phrnindia.org  Public Health Resource Network, 2nd Floor, 29, New Panchsheel Nagar, Raipur, Chhattisgarh 492001, India

© 2019 Informa UK Limited, trading as Taylor & Francis Group

in out of pocket expenditure (Ahmed, Szabo, & Nilsen, 2018; Bredekamp & Buisman, 2016). Studies have also found that positive impacts of health insurance are unevenly distributed, with the poor benefitting less than the rich (Acharya et al., 2012; Barraza-Lloréns, Panopoulou, & Díaz, 2013; Grogger, Arnold, Leon, & Ome, 2014; King et al., 2009; Munge, Mulupi, Barasa, & Chuma, 2018).

India has a mixed health system which includes a network of public health facilities and a large and heterogeneous private health sector providing services on a fee-for-service basis (Mackintosh et al., 2016). Underfunding and neglect of public provisioning of healthcare by the government have resulted in the rapid expansion of the private sector and rising financial burdens related to healthcare (Mackintosh et al., 2016). The lack of financial risk protection is seen in high out of pocket (OOP) payments by households, which constitute 60.6% of total health expenditure in India (NHSRC, 2018). The proportion of households reporting catastrophic out of pocket health expenditure rose from 15% in 2004 to 18% in 2014 (NHSRC, n.d.).

RSBY was initially introduced with the aim to protect unorganised sector workers from 'financial shocks arising out of an emergency medical situation' and to 'reduce the out of pocket expenses of the target population for every visit to hospital' (Ministry of Labour & Employment, 2014, p. 9). It was also seen as a strategy to involve the private sector in providing publicly funded healthcare, thereby giving citizens a 'choice' of provider (Shroff, Roberts, & Reich, 2015; Virk & Atun, 2015). Hospitalisations under the scheme are intended to be 'cashless' for the patient, i.e. without any co-payments. The use of the 'smart card'-based biometric system was introduced as the key design element to unlock access for the poor and the non-literate by enabling the scheme to be 'cashless, paperless, and portable' (Jain, 2017).

By 2015–2016, RSBY was operational in nineteen states with a total of 41 million families (57.8% of the eligible families) enrolled and 1.6 million hospitalisations paid for under the scheme (Ministry of Health and Family Welfare, 2016). According to the national sample survey (NSS) in 2014, 13.1% of the urban and 12% of the rural population were enrolled (Ranjan, Dixit, Mukhopadhyay, & Thiagarajan, 2018). Several studies on RSBY and other state health insurance schemes have documented higher hospitalisation rates with insurance status (Prinja, Chauhan, Karan, Kaur, & Kumar, 2017). The NSS found that of the enrolled, 5.4% utilised hospital care whereas the proportion among the non-enrolled was 4.2% (Ranjan et al., 2018). However, inequities in utilisation have been reported based on income, caste, education and rural-urban residence status (Prinja et al., 2017; Ranjan et al., 2018). Non-availability or inequitable distribution of health facilities, lack of information and lack of awareness on entitlements have been put forward as factors limiting 'choice' (Maurya & Ramesh, 2018; Nandi, Schneider, & Garg, 2018; Ranjan et al., 2018). Most importantly, RSBY and other state health insurance schemes have not led to the hoped-for financial risk protection for hospitalisation (Hooda, 2015; Karan, Yip, & Mahal, 2017; Prinja, Bahuguna, Gupta, Chowdhury, & Trivedi, 2019; Prinja et al., 2017; Ranjan et al., 2018; Selvaraj & Karan, 2012). Ongoing OOP expenditure and catastrophic health expenditure is a particular challenge in the private sector (Nandi, Schneider, & Dixit, 2017; Ranjan et al., 2018; Rent & Ghosh, 2015).

Rationale and conceptual framing

Studies on RSBY to date have focused on measuring financial protection (such as OOP expenditure) in state-funded health insurance schemes, but little on how financial protection is produced (or not), the way users engage or their subjective experiences (Frenz & Vega, 2010) of these schemes. Dao and Nichter (2015) point out that it should not be assumed that insurance coverage will lead to financial protection and highlight the need to more closely examine the 'social life' of insurance programmes, including through ethnographies. Exploring interactions between patients and providers and the factors shaping these is especially relevant to understanding how financial hardship continues, despite the intentions of health insurance schemes. Although the need for qualitative studies of the experiences and perceptions of beneficiaries in these schemes has been recognised, there have been few

such studies (Ahlin, Nichter, & Pillai, 2016; Narasimhan et al., 2014; Sen & Gupta, 2017; Vasan, Karpagam, Seethappa, Chakravarthi, & Mahila Sanghatan, 2014).

Taking the framework of access (Gilson & Schneider, 2007; Thiede, Akweongo, & McIntyre, 2007) as its organising idea, this study explores the relationship between choice, financial protection and patient experiences of care in Chhattisgarh's state-funded health insurance scheme. It does this by examining the way patients and their families who reported catastrophic health expenditure, despite health insurance, sought to navigate and negotiate (Freeman, 2012; Frenz & Vega, 2010) hospitalisation under the scheme. As proposed by Thiede et al. (2007), the framework adopts the core constructs of access as acceptability, affordability and availability that refer to cultural, financial and physical aspects respectively. These dimensions of access are realised in the behaviour and interactions between the patient and provider, along with the 'purchaser' (government), through negotiation and navigation. Navigation and negotiation occur through the different stages of hospitalisation, from selecting a provider to post-discharge and include the strategies adopted by patients and families to prevent or address obstacles along the way. These processes, in turn, are embedded in social institutions, defined by Scott (1995, 2014) as the 'three pillars' of regulation (legal sanctions), prevailing norms (moral injunctions) and cognitive (culturally supported) elements of health care. Relevant considerations here would be the agency, trust, information and responsiveness of providers (Frenz & Vega, 2010; Gilson & Schneider, 2007), and the inherently unequal power relations (Schneider et al., 2010) and unequal access to information (McIntyre, Thiede, & Birch, 2009) between patients and providers. These institutions are governed by broader social structures and the political economy of health, including the commodification of health care.

Location of the study

This study is set in Chhattisgarh, which started implementing the RSBY in 2009. In 2012 the state expanded the scheme to non-BPL families through the Chief Minister's Health Insurance Scheme (MSBY) with the promise of achieving UHC. The schemes provide annual insurance coverage of Rs. 50,000 (USD 700) for a family of five (Government of Chhattisgarh, 2018). The stated objectives of the universal scheme in Chhattisgarh align with the objectives of the national scheme (RSBY), i.e. to provide beneficiaries with the power to choose from a network of public and private providers, financial protection from hospital expenses and access to quality health services (Government of Chhattisgarh, 2018). Chhattisgarh government's website further talks of increasing accountability to the community and ensuring 'access and quality of service to those with no influence or voice' (Government of Chhattisgarh, 2018).

The government runs the scheme through a Third Party Agency (TPA) selected by an insurance company and makes payments to hospitals according to pre-decided package rates (Government of Chhattisgarh, n.d.). Empanelled hospitals are not supposed to take any co-payments, whether formal or informal, under the scheme. The package rates include all charges, specified as bed charges, fees, diagnostics, procedures, food, prosthetic devices, medicines, diagnostic tests and medicine for up to five days after discharge, transportation charges of Rs. 100 (USD 1.5) per trip and any other expenses (Government of Chhattisgarh, n.d.).

By April 2016, 4.1 million households and 12.5 million people (45% of the state's population) had been enrolled in Chhattisgarh's state-funded universal health insurance scheme, while 5.5 million smart cards were active and 574 public and 572 private hospitals were empanelled to provide services under the scheme (Nandi et al., 2018). Chhattisgarh has one of the highest enrolment rates in a government-funded health insurance scheme in India (International Institute for Population Sciences (IIPS) & ICF, 2017). There is also evidence of equitable enrolment across geographical and social lines (Nandi et al., 2017).

In 2015–2016, there were a total of 708,773 claims made to the scheme, amounting to INR 3865 million (USD 55 million) (Nandi et al., 2018). The private sector received 82.9% of the amounts disbursed, a pattern that has remained the same since the beginning of the scheme. National Sample

Survey data for the state shows that 66.0% of insured public sector users and 95.1% of insured private sector users incurred OOP expenditure (Nandi et al., 2017). The median OOP expenses in the private sector were eight times more than in the public sector (Nandi et al., 2017). Among households that had at least one member hospitalised, 35.5% experienced catastrophic health expenditures (Nandi et al., 2017). Despite the intentions of the scheme, financial risk thus continues to be a reality for users of Chhattisgarh's health system.

In 2018, the national government expanded health insurance through a new scheme called Pradhan Mantri Jan Arogya Yojana (PMJAY) providing an annual insurance cover of Rs. 5,00,000 (half million) [USD 7000] per family (Chatterjee, 2018). This study, therefore, comes at a critical juncture and hopes to fill a gap in understanding of the implementation of publicly funded health insurance schemes for the poor both of India and other LMICs.

Methods

Study design and case selection

A qualitative case study of access, specifically exploring choice, financial protection and patient experiences under RSBY in slums of Raipur city, the capital city of Chhattisgarh state, was conducted. The case was of patients and households incurring excessive out of pocket expenditure while utilising the state-funded health insurance scheme, thus constituting a 'revelatory' case with 'exemplary outcomes' (Yin, 2009, p. 59) related to the phenomenon of interest.

Instances of high OOP expenditure while utilising RSBY/MSBY were identified from a list of complaints made to members of the Urban Mitadin Programme (community health workers). Data were collected until saturation was reached. Thirteen families were approached, of which nine consented to be interviewed. Those who declined either had to spend less money or feared repercussions if their case was documented. Of the nine, one case has been excluded from this analysis as it was not a case of high OOP expenditure but of extreme inconvenience. All involved private sector care.

Data collection and analysis

Patients and the family members of patients, where available and consenting, were interviewed using a semi-structured interview schedule. The respondents were all women. This was done purposefully as often in research, women's voices and their perceptions of any event are not documented. Moreover, the women respondents would have had the first contact regarding the case with the Mitadin (a woman herself), who initially documented the case. The interviews were recorded using a voice recorder only if the respondent gave verbal consent. If offered to the researcher, documents available to patients such as medical reports, prescriptions, bills and health cards were also reviewed.

Based on the interviews and other documents, each patient's trajectory from pre- to post-hospitalisation was mapped, and individual case reports constructed of the processes of negotiation and navigation. These were then compared and contrasted across the eight respondents and emerging themes identified.

The first author (SN) undertook data collection. She has been working in Chhattisgarh for the last sixteen years with indigenous and poor communities on issues of health rights and advocacy. She is, therefore, an 'insider' to the issues, performing the dual roles of activist and researcher, and has explicitly framed her role as a researcher in 'solidarity work' within social movements (Mishler & Steinitz, 2001). This has enabled her to develop trusting relationships with marginalised groups and engage them in research. The role of the second author has been to take an outsider's critical distance, supporting reflexivity and rigour (Malterud, 2001).

Ethical considerations

Ethical clearance for this study was given by the University of the Western Cape, South Africa, where the first author (SN) is registered for a PhD. A participant information sheet and consent form were prepared in Hindi. Due to prior experience of forced signed 'consent' amongst poor communities, verbal consent was considered more suitable and viable than written consent. The information sheet and consent form were read out to the participants and verbal consent obtained and noted in the presence of an independent witness who then signed the informed consent form. In instances where the participants did not give consent for voice recording, detailed notes were taken by the researcher. Overall, there was a commitment to sensitivity, respect and courteousness towards the participants. Patients have been assigned pseudonyms and hospitals have been anonymised in this paper.

Results

Table 1 presents details of the eight patient journeys analysed, five of women and three of men. Patients were hospitalised for a range of reasons. They included three maternal deliveries, a reproductive illness, a vehicle accident, neonatal asphyxia, liver disease and an orthopaedic condition. In all cases, the health insurance smart card was used, with the hospital booking insurance claims ranging from Rs. 7000 to Rs. 34,000 (USD 100 to USD 485). The additional OOP expenditure incurred ranged from Rs. 10,000 to Rs. 60,000 (USD 142 to USD 860). All families, except for one, went into debt as a result of the hospitalisation.

The next section presents a thematic analysis of the navigation and negotiation experiences through hospitalisation. We then discuss how the formal regulatory mechanisms of the insurance fund failed to prevent escalating payments, and finally how patients and their families evaluated and made sense of the experience.

Selection of hospital

The decision to go to a particular hospital emerged from a number of different factors, and in most instances, there was more than one consideration. One set of factors was related to familiarity, proximity and availability of services at a private facility and being in possession of the smart card.

When Kanta broke her hand, her sons and husband first thought of taking her to the government medical college but were doubtful whether she would immediately receive treatment there as required (recounted by Kanta's daughter in law). They took her to a private hospital which had a well-known orthopaedic surgeon. Additionally, as her daughter-in-law said: 'We thought that now the smart card can be used in all hospitals now, and so we took her there'.

Patients were also referred from one hospital to another, or brought in by the government ambulance. In one instance there was social pressure to take the patient to a private rather than to a government hospital. Perceived unavailability of services in public hospitals, especially for complications, also determined the choice of a private hospital.

Although the Mitandin and the Auxiliary Nurse Midwife had advised Rita's mother in law to take her to the government facility for delivery, she decided to take her to a private hospital suggested by neighbours. She says: 'I thought that people would say "she dumped her daughter in law in [government] hospital", so I took her to [private] hospital on my own accord'. (Rita's mother in law)

Negotiations prior to admission

Negotiations with the hospital started before admission. Except for the accident case, in all cases, the family and hospital discussed the insurance smart card and whether it would work at the hospital prior to admission. In most cases, the hospital and family also had the conversation about the

Table 1. Details of the eight cases.

SN	1	2	3	4	5	6	7	8
Patient's Name	Kiran	Meena's son	Malti	Rita	Devanti's son	Reena's brother in law	Kanta	Sita
Sex of patient	Female	Male	Female	Female	Male	Male	Female	Female
Age	23	Neonate	25	24	22	40	50	16
Respondent/s	Self	Meena	Self	Rita & her mother-in-law	Devanti	Reena	Kanta's daughter in law	Sita's mother
Condition for hospitalisation	Delivery	Newborn asphyxia	Delivery	Delivery	Accident	Gastro/liver	Ortho	Reproductive health issues
Amount booked from insurance card (INR)	30,000	25,000	Not available	13,000	23,000	Not available	34,000	7000
OOP Expenses (INR)	10,000	25,400	10,000	22,000	36,500	60,000	38,000	12,000
How the family arranged money	Loan & mortgaged jewellery	Savings & loan at 10% interest	Loan	Savings	Savings & mortgaged jewellery	Savings & loan	Mortgaged motorbike (at 500% per annum interest) which they paid off by taking loan from family member	Loan at 10% interest
Catastrophic Expenditure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Patient /family judgement of acceptability	Anger at having to spend more and at hospital not adhering to initial discussions/contract	Anger at having to spend more. Suspicions of hospital's behaviour and anger about humiliation and their own helplessness	They had expected to pay from the beginning and the hospital took the amount that had been stated at admission	Anger at having to spend more money than initially expected and discussed	Anger at having to spend more. Fought with the hospital and doctor and managed to reduce amount	Suspicions of hospital's behaviour. Was angry at having to pay much more than initially expected and discussed	Anger at not adhering to initial discussions. They felt helpless as the hospital refused to give them discharge when they asked	Anger at having to spend money despite using smart card

extra amount that had to be paid for treatment in addition to using the insurance card, as well as the length of treatment.

We discussed at admission that we have a card. They said that the smart card will work and we will have to pay some more money. We had money with us so we agreed and admitted him. The doctor said that treatment will go on for 5 days. Only once all things had been discussed, did we admit our child. (Meena)

Malti went to the hospital a few days before her expected delivery date and discussed with them about having health insurance and wanting to get sterilisation done too. On asking the doctor about free services under the smart card, the doctor said that an additional Rs. 10,000 [USD 142] had to be paid as they had to call a doctor from outside the hospital for doing tubal ligation. Malti says: 'We said ok. We wanted to do the delivery here and that's why we had gone there.' (Malti)

Escalating payments during hospitalisation

Despite the prior negotiations, families were confronted with escalating, unanticipated charges at each stage of hospitalisation.

Patients were asked to make 'deposits' alongside the smart card and pay for investigations. In Rita's case, the hospital questioned whether the card had money left and asked the family to deposit money. Once admitted, hospitals made further demands for deposits of money, in several instances without providing a rationale. The families struggled to make the mounting payments and tried to negotiate with the hospital.

Devanti had to deposit Rs. 5000 [USD 70] when she reached the hospital where her son was admitted after an accident. A few days later when the hospital asked Devanti to deposit Rs. 35,000 [USD 500] for her son's operation, she asked them why. The doctor responded that the card amount covered only bed charges and that medicines were not included in the package and had to be bought separately by the patient. (Devanti)

The doctor would write prescriptions daily and we had to buy all the medicine from the hospital medical shop ... The hospital also kept asking us to deposit money. In total we spent Rs. 12,000 [USD 170] and the hospital booked Rs. 7000 [USD 100] in the card. They only took the bed charges from the card. (Sita's mother)

Securing a discharge

The process of discharge, when the accounts had to be finally settled, was a fraught one. Patients and their families reported facing abuse if they expressed inability to pay the amount of money the hospital had asked of them. Those who tried to argue and negotiate, faced humiliation and threats. In more than one case the hospital told the family that they should not have chosen a private hospital, and should have gone to a government facility instead.

After the initial five days, Meena's child was admitted for another week. But by then they had exhausted all the money. Meena narrates: 'We told the doctor that we could not continue as we have run out of money and asked for discharge'. The senior doctor said: 'if your [economic] condition was not ok then why did you bring the child here? You should have taken him to Mekahara [government tertiary hospital] ...' and then later, 'If you did not have money, why did you get the child here? You should have let him die'. (Meena)

Hospitals stalled attempts to get the patient discharged through various tactics such as refusing to hand back the smart card deposited or asking them to pay a hefty amount for discharge. Despite repeated attempts, most families were unable to negotiate lower payments and were forced to pay whatever the hospital asked.

When the hospital asked the family to deposit Rs. 20,000 [USD 285] for Kanta's operation, her sons thought of getting her discharged and taking her to the government tertiary hospital. But when they asked for her x-ray reports, the hospital refused to give them. The hospital also said that they would have to pay Rs. 10,000 [USD 142] for Kanta's discharge. As her daughter in law said: 'We were helpless ... We were forced to get the operation done there as there was no other way. What else could we do? My husband mortgaged his motorcycle for Rs. 18,000 [USD 257] and paid the hospital' (Kanta's daughter in law).

Kiran's family members told the hospital to take the whole money from card but they did not agree. The family had Rs. 9000 [USD 130] with them and requested a discount of Rs.1000 [USD 14]. The hospital refused and they had to pay the full Rs. 10,000 [USD 142] (Kiran).

Of the eight patients, only one (*Kanta*) received the Rs. 100 for transport and medicines for 5 days on discharge mandated under the scheme.

Most families had to take loans (*Kiran, Sita, Meena, Malti*) or mortgage their assets such as a vehicle (*Kanta*) and jewellery (*Devanti, Kiran*) to make payments ([Table 1](#)).

Regulatory failures

This section examines the extent to which the rules and regulatory mechanisms of the state insurance scheme – the smart card, grievance processes and access to information – functioned as intended.

Biometric smart card

Although the smart card played a very important role in the hospitalisation process, it failed to protect patients from OOP payments, and instead appeared to patients to simply offer an additional source of monetary extraction on the part of hospitals. Hospitals kept the smart card on admission, even though the guidelines state that the card should be swiped and immediately returned back to the patient. In some cases, patients were also made to deposit their *Aadhaar* (identification) card.

Hospitals kept the cards with them to prevent patients discharging themselves and going elsewhere for care.

When the hospital refused to discharge *Devanti's* son or give her back the smart card unless she deposited Rs. 35,000 [USD 500], she left him at the hospital and went home. She went back the next day with Rs. 3000 [USD 42], which she had arranged by mortgaging her jewellery. She fought with the doctor and he finally took Rs. 2500 [USD 35], discharged her son and gave her back her insurance smart card. (*Devanti*)

Hospitals also kept the smart card as a bond, until their claim got settled from the insurance company. This meant that if the family needed to use it again during that period, they could not.

In *Rita's* case, the hospital did not return the card to them at discharge because they were not sure if the money [claim] would be paid. *Rita's* mother in law went after one month to get back the card in case they needed it again. They were willing to forego the deposited Rs. 13,000 [USD 185]. By then the insurance claim amount had reached the hospital and the hospital returned the card and the deposit. (*Rita*)

Grievance redressal

Only two patients tried to access the grievance redressal system. When others were asked why they did not complain, interviewees said that they feared repercussions if they complained or did not pay the amount asked from them. They were worried that complaining might affect the quality of treatment for the family member admitted or future care at the facility.

One person cannot do anything [complain] alone. It's the question of the doctor. If we don't give, he may give the wrong medicine. We have to do whatever he tells us. The child is ours. We can raise our voices once we are out, but in front of them we have to sit quietly. (*Meena*)

On someone's suggestion, *Kanta's* family called the 104 helpline number and complained that the hospital was asking for extra money. The helpline people informed the doctor. The doctor got to know about this and got very angry. He shouted at them that now he will not reduce the payment 'even a bit'. *Kanta's* son asked me repeatedly if their names would be kept confidential. He said: 'we may need to go to that hospital again and so we don't want to anger them'. (*Kanta's* son)

Transparency and information

One of the purposes of the smart card is to enable transparency in financial transactions. At discharge, the hospital is supposed to provide a receipt of the amount claimed from the scheme.

However, only in Kanta's case was the RSBY receipt given. In other cases, receipts were not given even when families and patients specifically asked for them.

When Devanti asked them for the receipt and other documents, the hospital told her that they had to send the bills and reports to higher officials. Devanti was not fooled. She said: 'He was admitted for so many days, they should have given the bill, isn't it? They were refusing to give even the smart card back to me'.

Making sense of experiences

While patients and their families were far from passive players in the healthcare encounters, a general sense of helplessness and powerlessness prevailed. Hospitals and doctors were seen as preying on patients at their most vulnerable, extorting extra payments, while systems such as the smart card and the helpline that were supposed to protect them, broke down.

Families were not surprised at being asked to make extra payments and entered negotiations with this understanding. However, there was also an expectation that the hospital would not and should not take money beyond a threshold and that they would be treated properly. Instead, they became trapped and felt they were treated with little respect.

He should not have spoken like that. We are throwing money [at them] and getting treatment, we are not getting treated for free. We did not use our brain, we followed everything that the doctor told us, from beginning to end. (Meena)

Kanta's daughter in law described it as follows: 'now that the goat [*bakra*] has been trapped, they will not rest unless they sacrifice [hallal] him. This is how they operate'.

Some expressed a complete loss of faith in the insurance card.

Of what use was the card? It was of no use! Anyways money had to be given. (Kiran)

We did not get any benefit from smart card. They cut from the card and they also took money from us. (Sita's mother)

When told that the government mandates cashless services through the smart card, Rita's mother in law said, '*Sarkar hamanla chutiya banathe*' [government is making fools of us].

Discussion

The stated purpose of the state-funded universal health insurance scheme in Chhattisgarh State is to provide financial protection and choice, facilitate access and empower the poor (Government of Chhattisgarh, 2018). Through the narratives of participants purposefully selected as having adverse experiences with regards to financial protection, the research revealed the dynamics underlying failures in promoting affordability and specifically on the interactions between new forms of perceived availability (enabling choice), ongoing experiences of financial risk and the impacts of these on acceptability.

Agency and choice

Patients and their family members exercised agency to the extent that they could, engaging in constant negotiation and efforts to navigate the system. Patients as active participants in health care encounters have been described in other settings (Schneider et al., 2010; Tibandebage & Mackintosh, 2005), and closer to home by Sen and Gupta (2017).

Patient agency, however, was not able to influence the process in any significant manner. This became particularly apparent when families were no longer able mobilise the additional money required, and in the subsequent encounters with providers. The families had no way of knowing whether the medical procedures advised by the hospital were actually needed or provider-induced

demand to extract more, and in most cases ended up paying what the hospital asked of them. The families knew that the government rules mandated free care, however, from their own and others' previous experiences they were also aware that in practice, these rules were often not followed. Similarly, they knew of the helpline, but lack of faith in its effectiveness and the fear of repercussions prevented them from using it. In a context where illegal informal payments form part of culturally accepted practices, patients and families expected to pay something (Tibandebage & Mackintosh, 2005). However, the extent of exploitation and abuse was seen as crossing a threshold of acceptability.

While healthcare encounters are inherently unequal, power and information asymmetry are 'peculiarly' pronounced in healthcare market transactions characteristic of private healthcare (Tibandebage & Mackintosh, 2005). The dominant mode of interaction between patients and providers was thus experienced more as a market transaction, than as a professional healthcare encounter. The genesis of RSBY and its design was based on a belief in market-based healthcare provisioning and scepticism of public provisioning of health services, and a 'productivist' rather than a 'rights' or 'needs' based orientation (Virk & Atun, 2015, p. 815).

One way the healthcare market is supposed to enable agency is through choice. The aim of giving people the choice of provider has been central to the universal health insurance scheme (Government of Chhattisgarh, 2018; Virk & Atun, 2015). Individual 'choice' is premised on the idea of the rational economic actor (Gabe, Harley, & Calnan, 2015) and is closely related to the notion of exit. The cases showed that neither choice nor exit was present in any meaningful way. The initial choice of hospital was dependent on a number of socially determined factors, including the considerable uncertainty and vulnerability surrounding the moment of decision-making, which may have led to 'forced options' (Brown & Meyer, 2015). Exit (discharge) was possible only on the terms set by the hospital. As was evident in the study, the exercise of 'rational' choice is shaped by a variety of immediate and more distal factors, including illness vulnerabilities and the social dynamics surrounding these, system understandings, socio-economic structure and cultural-educational capital (Gabe et al., 2015). People's actions and decisions were based on their and others' lived experiences (Sen & Gupta, 2017) and a set of larger institutional and contextual factors beyond individual or 'consumer' awareness as is often assumed (Forgia & Nagpal, 2012; Nagpal, 2013; Rao et al., 2016).

Trust and technology

The patients' decision to use private sector was premised on a degree of institutional trust (Gilson, 2006), based on the expectations of better quality care in the private (compared to public) sector, and the financial guarantees set up by the insurance scheme represented by the biometric smart card. Exalted as a 'disruptive technology' and 'game changer', the smart card is seen as enabling the system to be 'cashless, paperless, and portable' (GIZ, 2015; Jain, 2017). It is also supposed to help in identifying fraud, through real time data tracking. However, as the case studies show, the smart card prompted new choices, but also exposed patients to considerable financial risk. It brought people to private hospitals with the expectation of free or affordable services, but in doing so, paved the way for the hospitals to extract additional payments while providing little room for exit. Technological innovations such as the biometric smart card used as a 'surrogate end-point' and a stand-alone mechanism often fail to consider the regulatory and normative environments in which they are implemented, and do not achieve what they intended (Pai, Schumacher, & Abimbola, 2018), in this case, greater financial protection and access to services.

The state-funded health insurance scheme was introduced within the larger context of the Indian health system where effective systems of regulation and accountability are lacking both with respect to the health insurance schemes and the private sector as a whole (Balarajan, Selvaraj, & Subramanian, 2011; Prasad & Raghavendra, 2012; Selvaraj & Karan, 2012; Sen, Roy, Kumar, Narayana, & Priyadarshi, 2018). The private sector has also been described as exploitative and unethical in its practices (Gadre & Shukla, 2016). State-funded health insurance schemes are seen as a strategy to

better regulate the private sector (Jain, 2017). However, if government's overall regulatory framework and organisational capacity are weak, then systems of 'purchasing' of services on their own may not be sufficient to ensure the desired provider behaviour (Klasa, Greer, & van Ginneken, 2018; Munge et al., 2018).

The short-lived trust in the smart card and overall negative experiences of RSBY also had the unintended consequences of deepening mistrust of both the private sector and government. While it is implicit within the design of an insurance scheme that people should trust the providers, in the private hospitals used by the patients, the rules and mechanisms of the RSBY were not enforced. Urging people to trust private providers without implementing adequate regulatory and governance mechanisms, may place the poor and more disadvantaged in a very vulnerable situation, as evidenced from the narratives in the study (Gilson, 2006).

Implications for the future of state-funded health insurance schemes

The insights gained from this study have relevance for other states in India and for LMICs with mixed health systems that have introduced publicly-funded health insurance programmes. It fills a gap in the existing literature on state-funded health insurance schemes, both in terms of methodology (qualitative study) and in-depth exploration into the interaction between the provider and patient. It shows that mere utilisation does not necessarily mean real access or financial protection. It helps to illuminate the processes and factors resulting in the failure of state health insurance schemes to provide financial risk protection.

The study has lessons for the PMJAY and other insurance schemes in India and other LMICs. In terms of immediate steps, monitoring of the state-funded health insurance schemes needs to be strengthened and the grievance redressal system made more effective. Shifting current practices and the normative environment of healthcare will take time. However, in the short and medium terms, concerted efforts are required to strengthen regulation, oversight and public accountability of facilities funded by state health insurance schemes. The study also shows the need for policy makers to take into account the extent and nature of power asymmetries between different stakeholders while designing and implementing a programme (Gore & Parker, 2019). Caution needs to be exercised in rapidly scaling up programmes when regulation is weak and healthcare providers hold disproportionate power, ensuring that the health system and its programmes do not reinforce societal inequities and power and economic disparities (Freedman, 2005; Gilson, 2003).

Further research is needed on the relationships between different stakeholders in the insurance scheme, especially between the government and the private provider and the experiences of patients both in the public and private sectors. This would help to understand the overall effectiveness of the new policy interventions (Sen & Gupta, 2017). There is a need for more in-depth studies, using qualitative or mixed methods and ethnographic research in order to understand the access barriers, perceptions of beneficiaries and their experiences in utilising healthcare (Ahlin et al., 2016; Dao & Nichter, 2015; Ergler, Sakdapolrak, Bohle, & Kearns, 2011; O'Connell, Bedford, Thiede, & McIntyre, 2015; Sen & Gupta, 2017).

The conceptual framing adopted in the study, summarised in [Figure 1](#) below, provides a starting point for appraising access and the factors influencing this in state-funded schemes. Healthcare utilisation (in this case hospitalisation) is the event within which the three dimensions of access – availability, affordability and acceptability interact with and influence each other. The availability dimension has implications for choice and exit. Payment mechanisms influence the levels of trust that patients have of providers (Gilson, 2005) as they may enable extractive behaviour on the part of providers. Conversely, elements of acceptability such as provider-patient dialogue, information, patient's voice and agency have implications for affordability. Acceptability barriers impact health service equity (Gilson & Schneider, 2007). These factors are played out in the process of negotiation and navigation, behaviour and interactions between the patient and provider, along with the 'purchaser' (government). The process of negotiation and navigation is influenced by the interactions

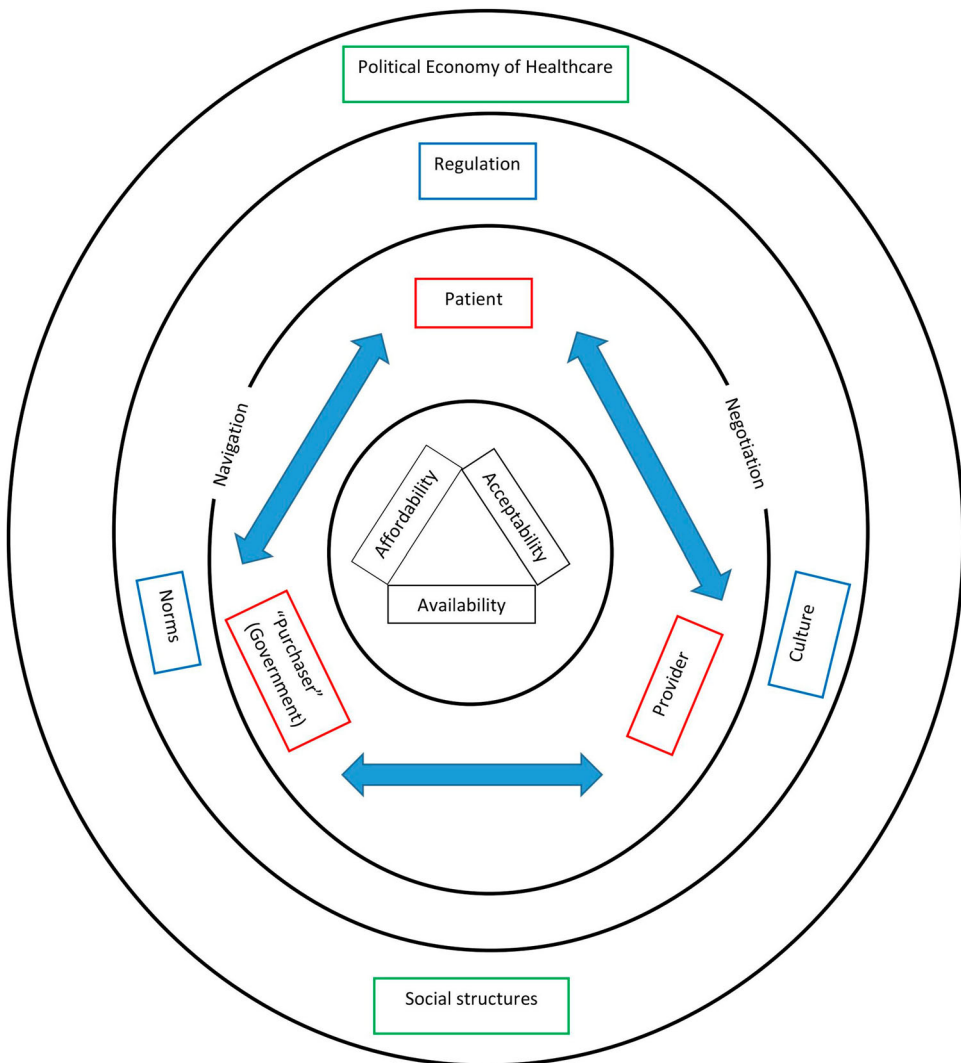


Figure 1. Conceptual framework of access and factors influencing this under state-funded health insurance schemes.

between formal regulatory mechanisms, social and professional norms and culturally accepted modes of interaction, which form the foundations of institutions (Palthe, 2014; Scott, 1995, 2014). Institutions exist within social structures that establish power differentials such as gender, caste and class; political economy of healthcare that determine the parameters of decision-making on health systems; and the nature of healthcare markets, including the extent to which there is a commodification of health.

Limitations and generalisability

The patient experiences studied were purposefully selected as extreme examples, and were not meant to be representative of all interactions in the private sector under RSBY. However, considering the evidence of continuing OOP expenditure under state-funded health insurance schemes in India, the fact that these patients and their families had to undergo such experiences, is a cause for concern. Moreover, as a 'revelatory' case study, it is possible to draw conclusions from these experiences

on the underlying dynamics of the state health insurance scheme in Chhattisgarh. These may be analytically generalisable to the rest of the state and other parts of India. Indeed, the fact that all transactions may not reach the catastrophic proportions of the cases examined in this paper, does not alter the fact of the dynamic. Where market transactions in healthcare dominate, milder versions of the dynamic expressed in this paper may, in fact, entrench practices as culturally 'normal' and constrain the ability to address more extreme versions.

Conclusion

Access is the freedom to use healthcare but as the study shows, there are multiple barriers to this in the context of publicly-funded health insurance schemes. The functioning of such schemes, however well designed technically, cannot be divorced from the institutions and social structures in which they are embedded. The government's failure to recognise the unfavourable normative and cultural context of private sector provisioning may explain the inability of RSBY and other publicly-funded health insurance schemes in India to secure real financial risk protection and promote the acceptability of healthcare for the poor.

Note

1. The proportion of Below Poverty Line (BPL) households in the population is calculated state-wise by the government based on per capita consumption expenditure survey data. The identification of BPL families is done through a socio-economic census by government. At the time RSBY was launched, around one-third of households in India were categorised as BPL.

Acknowledgements

The Authors are grateful to the respondents and Mitans for sharing their stories.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This paper is part of the PhD of the first author for which a part fellowship was provided by the Belgian Development Cooperation (Belgisch Ontwikkelingsagentschap) (DGD) through the Institute of Tropical Medicine, Antwerp.

Data availability statement

The authors confirm that the data supporting the findings of this study are available within the article.

ORCID

Sulakshana Nandi  <http://orcid.org/0000-0002-4366-4566>

References

- Acharya, A., Vellakkal, S., Masset, E., Satija, A., Burke, M., & Ebrahim, S. (2012). *Systematic review impact of national health insurance for the poor and the informal sector in low- and middle-income countries*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- Ahlin, T., Nichter, M., & Pillai, G. (2016). Health insurance in India: What do we know and why is ethnographic research needed. *Anthropology & Medicine*, 23(1), 102–124. doi:10.1080/13648470.2015.1135787

- Ahmed, S., Szabo, S., & Nilsen, K. (2018). Catastrophic healthcare expenditure and impoverishment in tropical deltas: Evidence from the Mekong Delta region. *International Journal for Equity in Health*, 17(1), 1–13. doi:10.1186/s12939-018-0757-5
- Balarajan, Y., Selvaraj, S., & Subramanian, S. V. (2011). India: Towards universal health coverage 4 health care and equity in India. *The Lancet*, 377(9764), 505–515. doi:10.1016/S0140-6736(10)61894-6
- Barraza-Lloréns, M., Panopoulou, G., & Díaz, B. Y. (2013). Income-related inequalities and inequities in health and health care utilization in Mexico, 2000–2006. *Revista Panamericana de Salud Pública*, 33(2), 122–130. doi:10.1590/S1020-49892013000200007
- Brendenkamp, C., & Buisman, L. R. (2016). Financial protection from health spending in the Philippines: Policies and progress. *Health Policy and Planning*, 31(7), 919–927. doi:10.1093/heapol/czw011
- Brown, P. R., & Meyer, S. B. (2015). Dependency, trust and choice? Examining agency and ‘forced options’ within secondary-healthcare contexts. *Current Sociology*, 63(5), 729–745. doi:10.1177/0011392115590091
- Chatterjee, P. (2018). National health protection scheme revealed in India. *The Lancet*, 391(10120), 523–524. doi:10.1016/S0140-6736(18)30241-1
- Dao, A., & Nichter, M. (2015). The social life of health insurance in low- to middle-income countries: An anthropological research agenda. *Medical Anthropology Quarterly*, 30(1), 122–143. doi:10.1111/maq.12191
- Ergler, C. R., Sakdapolrak, P., Bohle, H. G., & Kearns, R. A. (2011). Entitlements to health care: Why is there a preference for private facilities among poorer residents of Chennai, India? *Social Science and Medicine*, 72(3), 327–337. doi:10.1016/j.socscimed.2010.09.042
- Forgia, G. L., & Nagpal, S. (2012). *Government-sponsored health insurance in India: Are you covered?* Washington, DC: The World Bank.
- Freedman, L. P. (2005). Achieving the MDGs: Health systems as core social institutions. *Development*, 48(1), 19–24. doi:10.1057/palgrave.development.1100107
- Freeman, H. P. (2012). The origin, evolution, and principles of patient navigation. *Cancer Epidemiology Biomarkers and Prevention*, 21(10), 1614–1617. doi:10.1158/1055-9965.EPI-12-0982
- Frenz, P., & Vega, J. (2010). *Universal health coverage with equity: What we know, don’t know and need to know*. Background paper for the Global Symposium on Health Systems Research.
- Gabe, J., Harley, K., & Calnan, M. (2015). Healthcare choice: Discourses, perceptions, experiences and practices. *Current Sociology*, 63(5), 623–635. doi:10.1177/0011392115590061
- Gadre, A., & Shukla, A. (2016). *Dissenting diagnosis*. Gurgaon: Random House.
- Galárraga, O., Sosa-Rubí, S. G., Salinas-Rodríguez, A., & Sesma-Vázquez, S. (2010). Health insurance for the poor: Impact on catastrophic and out-of-pocket health expenditures in Mexico. *The European Journal of Health Economics*, 11(5), 437–447. doi:10.1007/s10198-009-0180-3
- Gilson, L. (2003). Trust and the development of health care as a social institution. *Social Science & Medicine*, 56, 1453–1468. Retrieved from <https://pdfs.semanticscholar.org/636e/c50b4d065d15631ff5c31c5f2bea23775d6.pdf>
- Gilson, L. (2005). Editorial: Building trust and value in health systems in low- and middle-income countries. *Social Science & Medicine*, 61(7), 1381–1384. doi:10.1016/j.socscimed.2004.11.059
- Gilson, L. (2006). Trust in health care: Theoretical perspectives and research needs. *Journal of Health Organization and Management*, 20(5), 359–375. doi:10.1108/14777260610701768
- Gilson, L., & Schneider, H. (2007). Understanding health service access: Concepts and experience. *Global Forum Update on Research for Health*, 4, 28–32.
- GIZ. (2015). *Health insurance for India’s poor: Meeting the challenge with information technology*. Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- Gore, R., & Parker, R. (2019). *Analysing power and politics in health policies and systems*, 1692. doi:10.1080/17441692.2019.1575446
- Government of Chhattisgarh. (2018). *Website of RSBY and MSBY*. Health and Family Welfare Department Government of Chhattisgarh. Retrieved from <http://cg.nic.in/healthrsby/>
- Government of Chhattisgarh. (n.d.). *Draft MoU between Insurance Company and the Hospital. It may get modify at the time of MoU signing between State Government & Insurance company*. Retrieved from http://rsbycg.nic.in/healthrsby/RSBY_Documents/hospital_MOU.pdf
- Grogger, J., Arnold, T., Leon, A. S., & Ome, A. (2014). Heterogeneity in the effect of public health insurance on catastrophic out-of-pocket health expenditures: The case of Mexico. *Health Policy and Planning*, 1–7. Retrieved from <http://heapol.oxfordjournals.org/content/early/2014/06/12/heapol.czu037.full.pdf>
- Hooda, S. K. (2015). Health insurance, health access and financial risk protection. *Economic and Political Weekly*, 50(50), 63–72.
- International Institute for Population Sciences (IIPS), & ICF. (2017). *National Family Health Survey (NFHS-4), 2015–16*. Mumbai: IIPS. doi:10.13040/IJPSR.0975-8232.4(12).4597-02
- Jain, N. (2017). *Role of government-funded and community-based health insurance schemes in moving toward universal health coverage in India*. Bethesda, MD: Health Finance & Governance Project, Abt Associates.

- Karan, A., Yip, W., & Mahal, A. (2017). Extending health insurance to the poor in India: An impact evaluation of Rashtriya Swasthya Bima Yojana on out of pocket spending for healthcare. *Social Science & Medicine*, 181, 83–92. doi:10.1016/j.socscimed.2017.03.053
- King, G., Gakidou, E., Imai, K., Lakin, J., Moore, R. T., Nall, C., ... Llamas, H. H. (2009). Public policy for the poor? A randomised assessment of the Mexican universal health insurance programme. *The Lancet*, 373(9673), 1447–1454. doi:10.1016/S0140-6736(09)60239-7
- Klasa, K., Greer, S. L., & van Ginneken, E. (2018). Strategic purchasing in practice: Comparing ten European countries. *Health Policy*. doi:10.1016/j.healthpol.2018.01.014
- Knaul, F. M., González-Pier, E., Gómez-Dantés, O., García-Junco, D., Arreola-Ornelas, H., Barraza-Lloréns, M., ... Frenk, J. (2012). The quest for universal health coverage: Achieving social protection for all in Mexico. *The Lancet*, 380(9849), 1259–1279. doi:10.1016/S0140-6736(12)61068-X
- Lagomarsino, G., Garabrant, A., Aday, A., Muga, R., & Otoo, N. (2012). Moving towards universal health coverage: Health insurance reforms in nine developing countries in Africa and Asia. *The Lancet*, 380(9845), 933–943. doi:10.1016/S0140-6736(12)61147-7
- Mackintosh, M., Channon, A., Karan, A., Selvaraj, S., Zhao, H., Cavagnero, E., & Keynes, M. (2016). What is the private sector? Understanding private provision in the health systems of low-income and middle-income. *The Lancet*, 6736(16), 1–10. doi:10.1016/S0140-6736(16)00342-1
- Malterud, K. (2001). Qualitative research: Standards, challenges, and guidelines. *The Lancet*, 358(9280), 483–488. doi:10.1016/S0140-6736(01)05627-6
- Marten, R., McIntyre, D., Travassos, C., Shishkin, S., Longde, W., Reddy, S., & Vega, J. (2014). An assessment of progress towards universal health coverage in Brazil, Russia, India, China, and South Africa (BRICS). *The Lancet*, 384(9960), 2164–2171. doi:10.1016/S0140-6736(14)60075-1
- Maurya, D., & Ramesh, M. (2018). Program design, implementation and performance: The case of social health insurance in India. *Health Economics, Policy and Law*, 1–22. doi:10.1017/S1744133118000257
- McIntyre, D., Thiede, M., & Birch, S. (2009). Access as a policy-relevant concept in low- and middle-income countries. *Health Economics, Policy, and Law*, 4(Pt 2), 179–193. doi:10.1017/S1744133109004836
- Ministry of Health and Family Welfare. (2016). *Health insurance*. Retrieved May 17, 2019, from <http://pib.nic.in/newsite/PrintRelease.aspx?relid=144960>
- Ministry of Labour & Employment. (2014). *Rashtriya Swasthya Bima Yojana (RSBY) operational manual*. New Delhi: Government of India.
- Mishler, E. G., & Steinitz, V. (2001). Solidarity work: Researchers in the Struggle for social Justice. In *Paper presented at the annual qualitative interest group conference on interdisciplinary qualitative studies (14th, Athens, GA, January 12-14, 2001)*. Maryland: Educational Resources Information Center. Retrieved from <https://files.eric.ed.gov/fulltext/ED457206.pdf>
- Munge, K., Mulupi, S., Barasa, E. W., & Chuma, J. (2018). A critical analysis of purchasing arrangements in Kenya: The case of the national hospital insurance fund. *International Journal of Health Policy and Management*, 7(3), 244–254. doi:10.15171/ijhpm.2017.81
- Nagpal, S. (2013). *Expanding health coverage for vulnerable groups in India* (Universal Health Coverage Studies Series (UNICO) No. 13). Washington, DC.
- Nandi, S., Schneider, H., & Dixit, P. (2017). Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage. *Plos One*, 12(11), e0187904. doi:10.1371/journal.pone.0187904
- Nandi, S., Schneider, H., & Garg, S. (2018). Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index. *Global Health Action*, 11(1), 1541220. doi:10.1080/16549716.2018.1541220
- Narasimhan, H., Boddu, V., Singh, P. V., Katyal, A., Bergkvist, S., & Rao, M. (2014). The best laid plans: Access to the Rajiv Aarogyasri community health insurance scheme of Andhra Pradesh. *Health, Culture and Society*, 6(1), 85–97. doi:10.5195/hcs.2014.163
- NHSRC. (2018). *National health accounts: Estimates for India FY 2015-16*. New Delhi. doi:1088/1/153[pii]r10.1196/annals.1366.006.
- NHSRC. (n.d.). *Household healthcare utilization & expenditure in India : State fact sheets*. New Delhi. Retrieved from http://nhsrccindia.org/sites/default/files/State_Fact_Sheets_Health_care_Utilization_and_Expenditure_in_India.pdf
- O'Connell, T. S., Bedford, K. J. A., Thiede, M., & McIntyre, D. (2015). Synthesizing qualitative and quantitative evidence on non-financial access barriers: Implications for assessment at the district level. *International Journal for Equity in Health*, 14(1), 1–13. doi:10.1186/s12939-015-0181-z
- Pai, M., Schumacher, S. G., & Abimbola, S. (2018). Surrogate endpoints in global health research: Still searching for killer apps and silver bullets? *BMJ Global Health*, 3(2), e000755. doi:10.1136/bmjgh-2018-000755
- Palthe, J. (2014). Regulative, normative, and cognitive elements of organizations: Implications for managing change. *Management and Organizational Studies*, 1(2), 59–66. doi:10.5430/mos.v1n2p59
- Prasad, P. N., & Raghavendra, P. (2012). Healthcare models in the era of medical neo-liberalism a study of Aarogyasri in Andhra Pradesh. *Economic & Political Weekly*, 47(43), 118–126.

- Prinja, S., Bahuguna, P., Gupta, I., Chowdhury, S., & Trivedi, M. (2019). Role of insurance in determining utilization of healthcare and financial risk protection in India. *PLOS ONE*, *14*(2), e0211793. doi:10.1371/journal.pone.0211793
- Prinja, S., Chauhan, A. S., Karan, A., Kaur, G., & Kumar, R. (2017). Impact of publicly financed health insurance schemes on healthcare utilization and financial risk protection in India: A systematic review. *Plos One*, *12*(2), e0170996. doi:10.1371/journal.pone.0170996
- Ranjan, A., Dixit, P., Mukhopadhyay, I., & Thiagarajan, S. (2018). Effectiveness of government strategies for financial protection against costs of hospitalization care in India. *BMC Public Health*, *18*. doi:10.1186/s12889-018-5431-8
- Rao, M., Singh, V., Katyay, A., Samarth, A., Bergkvist, S., Renton, A., & Netuveli, G. (2016). Has the Rajiv Aarogyasri community health insurance scheme of Andhra Pradesh addressed the educational divide in accessing health care? *Plos One*, *11*(1). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4718536/pdf/pone.0145707.pdf>
- Rent, P., & Ghosh, S. (2015). Understanding the 'cash-less' nature of government-sponsored health insurance schemes: Evidence from Rajiv Gandhi Jeevandayee Aarogya Yojana in Mumbai. *SAGE Open*, *1*(10). doi:10.1177/2158244015614607
- Schneider, H., Le Marcis, F. L., Grard, J., Penn-Kekana, L., Blaauw, D., & Fassin, D. (2010). Negotiating care: Patient tactics at an urban South African hospital. *Journal of Health Services Research and Policy*, *15*(3), 137–142. doi:10.1258/jhsrp.2010.008174
- Scott, W. R. (1995). *Institutions and organizations*. doi:10.1109/MPER.2002.4312460
- Scott, W. R. (2014). W. Richard SCOTT (1995), institutions and organizations. Ideas, interests and identities. *M@n@Gement*, *17*(2), 136–140. doi:10.3917/mana.172.0136
- Selvaraj, S., & Karan, A. (2012). Why publicly-financed health insurance schemes are ineffective in providing financial risk protection. *Economic and Political Weekly*, *47*(11), 60–68.
- Sen, K., & Gupta, S. (2017). Masking poverty and entitlement: RSBY in selected districts of West Bengal. *Social Change*, *47*(3), 339–358. doi:10.1177/0049085717715557
- Sen, K., Roy, S. G., Kumar, S., Narayana, K., & Priyadarshi, A. (2018). Health reforms and utilization of health care in three states of India: Public health prospects. *Social Medicine*, *12*(1), 108–121. Retrieved from <http://socialmedicine.info/index.php/socialmedicine/article/viewFile/1008/1840>
- Sengupta, A. (2013). *Universal health coverage: Beyond rhetoric* (OCCASIONAL PAPER No. 20). Retrieved from https://www.municipalservicesproject.org/sites/municipalservicesproject.org/files/publications/OccasionalPaper20_Sengupta_Universal_Health_Coverage_Beyond_Rhetoric_Nov2013_0.pdf
- Shroff, Z. C., Roberts, M. J., & Reich, M. R. (2015). Agenda setting and policy adoption of India's national health insurance scheme: *Rashtriya Swasthya Bima Yojana*. *Health Systems & Reform*, *1*(2), 107–118. doi:10.1080/23288604.2015.1034310
- Spaan, E., Mathijssen, J., Tromp, N., McBain, F., ten Have, A., & Baltussen, R. (2012). The impact of health insurance in Africa and Asia: A systematic review. *Bulletin of the World Health Organization*, *90*(9), 685–692. doi:10.2471/BLT.12.102301
- Thiede, M., Akweongo, P., & McIntyre, D. (2007). Exploring the dimensions of access. In D. McIntyre, & G. Mooney (Eds.), *The economics of health equity* (pp. 103–123). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511544460.007
- Tibandebage, P., & Mackintosh, M. (2005). The market shaping of charges, trust and abuse: Health care transactions in Tanzania. *Social Science and Medicine*, *61*(7), 1385–1395. doi:10.1016/j.socscimed.2004.11.072
- Vasan, A., Karpagam, S., Seethappa, V., Chakravarthi, R., & Mahila Sanghatan, J. (2014). Design, implementation, and patient experiences of the Rashtriya Swasthya Bima Yojana and Vajpayee Arogyashree scheme: A qualitative study from Bangalore District, Karnataka*. In *India social development Report 2014* (pp. 173–184). Retrieved from <https://drsylviakarpagam.files.wordpress.com/2015/11/oup.pdf>
- Virk, A. K., & Atun, R. (2015). Towards universal health coverage in India: A historical examination of the genesis of Rashtriya Swasthya Bima Yojana – The health insurance scheme for low-income groups. *Public Health*, *129*(6), 810–817. doi:10.1016/j.puhe.2015.02.002
- WHO. (2010). *The world health report: Health systems financing. The path to universal coverage*.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

Paper 4: Using an equity-based framework for evaluating publicly-funded health insurance programmes as an instrument of UHC in Chhattisgarh State, India (submitted to Health Research Policy and Systems)

Introduction: This paper presents a framework for assessing pathways of impact on equity of access in PFHI schemes that could be used to drive inquiry in India and other LMICs with similar a health system context. The framework was developed by the candidate at the beginning of the PhD and has been constructed using concepts and frameworks from the Health Policy and Systems (HPSR) literature on UHC, access, health system building blocks, health care provisioning in mixed health systems, and policy analysis, and is underpinned by the values of human rights, including the right to health and equity. In the paper the framework is applied to studying the PFHI scheme in Chhattisgarh.

Conclusion: In order to assess the impact of PFHI schemes in India and elsewhere, a multidisciplinary approach is required, using multiple methods. Studies on PFHI schemes have mostly assessed one or more aspects of the impact of the schemes. This framework incorporates the many facets of PFHI schemes, and aims to inform a comprehensive approach to thinking and research on such schemes in India and other countries. This framework hopes to aid researchers, policy makers, journalists, civil society and others in asking the relevant questions about PFHI schemes

Contribution of candidate: The candidate developed the framework and the initial draft of the paper. HS reviewed and edited the article and provided intellectual content.

Manuscript under Review.

Manuscript submitted to Health Research Policy and Systems (under review)

Using an equity-based framework for evaluating publicly-funded health insurance programmes as an instrument of UHC in Chhattisgarh State, India

Authors

1. Sulakshana Nandi (Corresponding Author)

Affiliation: School of Public Health, University of the Western Cape, Bellville, South Africa and Public Health Resource Network, Raipur, India

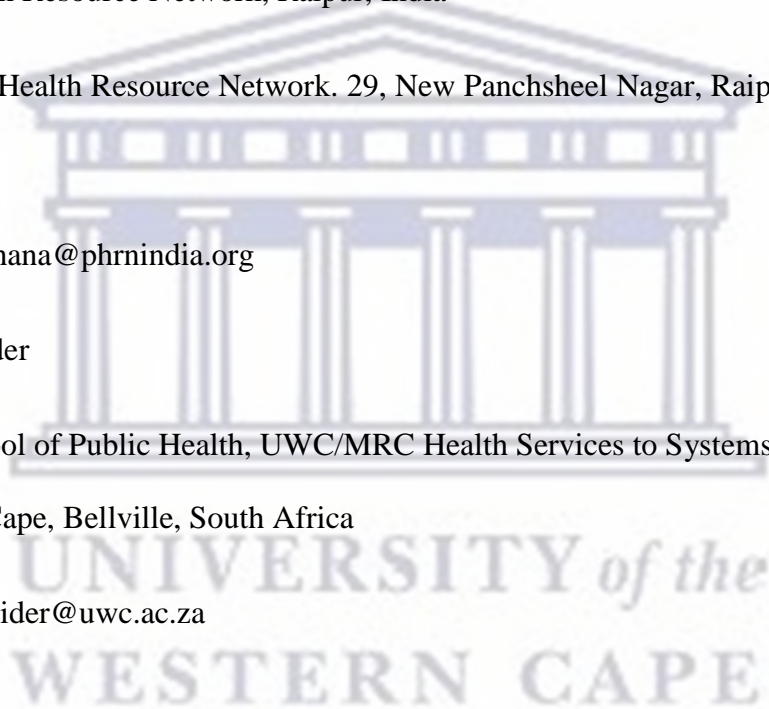
Address: Public Health Resource Network. 29, New Panchsheel Nagar, Raipur. Chhattisgarh-492001 India

Email id: sulakshana@phrnindia.org

2. Helen Schneider

Affiliation: School of Public Health, UWC/MRC Health Services to Systems Unit, University of the Western Cape, Bellville, South Africa

Email id: hschneider@uwc.ac.za



Abstract

Background: Universal Health Coverage (UHC) has provided the impetus for the introduction of publicly-funded health insurance (PFHI) schemes in the mixed health systems of India and many other low- and middle-income countries. There is a need for a holistic understanding of the pathways of impact of PFHI schemes, including their role in promoting equity of access.

Methods: This paper applies an equity-oriented evaluation framework to assess the impacts of PFHI schemes in Chhattisgarh State, by synthesising literature from various sources and highlighting knowledge gaps. Data were collected from an extensive review of publications on PFHI schemes in Chhattisgarh since 2009, including empirical studies from the first author's PhD; and grey literature such as programme evaluation reports, media articles and civil society campaign documents. The framework was constructed using concepts and frameworks from the Health Policy and Systems Research (HPSR) literature on UHC, access and health system building blocks, and is underpinned by the values of equity, human rights, and the right to health.

Results: The analysis finds that evidence of equitable enrolment in Chhattisgarh's PFHI scheme may mask many other inequities. Firstly, equitable enrolment does not automatically lead to the acceptability of the scheme for the poor or to equity in utilisation. Utilisation, especially in the private sector, is skewed towards the areas that have the least health and social need. Secondly, related to this, resource allocation patterns under PFHI deepen the 'infrastructure inequality trap' with resources being effectively transferred from tribal and vulnerable to 'better-off' areas, and from the public to the private sector. Thirdly, PFHI fails in its fundamental objective of effective financial protection. Technological innovations, such

as the biometric smart card and billing systems have not provided the necessary safeguards nor led to greater accountability.

Conclusion: The study shows that development of PFHI schemes, within the context of wider neo-liberal policies promoting private sector provisioning, has negative consequences for health equity and access. More research is needed on key knowledge gaps related to the impact of PFHI schemes on health systems. An over-reliance on and rapid expansion of PFHI schemes in India is unlikely to achieve UHC.

Keywords

Universal Health Coverage, publicly-funded health insurance, equity, access, HPSR, India

Introduction

India has a mixed health system, with a large public sector which is underfunded and fraught with numerous challenges, and a rapidly growing, unregulated and heterogeneous private sector (1,2). Over the last decade and a half, there have been two major strands of health sector reform in India's mixed health system. The first, the National Rural Health Mission (NRHM) (since re-named National Health Mission or NHM) was launched in 2005 and emphasizes strengthening public health systems to provide effective healthcare and improve "access, equity, quality, accountability and effectiveness of public health services" (3). The second strand, initiated a few years after NRHM was launched, targets catastrophic health expenditure by the poor in a variety of state-level publicly-funded health insurance (hereafter referred to as PFHI) schemes in states such as Karnataka, Andhra Pradesh and Tamil Nadu (4). The Rashtriya Swasthya Bima Yojana (RSBY) or the National Health Insurance Scheme, launched by the Ministry of Labour in 2007, was the first national-level PFHI scheme for the unorganized sector, providing insurance cover of INR 30,000 (USD 424) to Below Poverty Line (BPL) households for hospitalisation. RSBY sought to draw extensively on private

health sector providers. In 2018, the PFHI scheme was further expanded through the Prime Minister Jan Arogya Yojana (PMJAY) under Ayushman Bharat, to an annual coverage of INR 500,000 (USD 7072) per family (5). This scheme is expected to cover 100 million families and 500 million people for hospitalisation costs, corresponding to around 37% of India's population (5).

One of the core rationales advanced for the introduction of PFHI schemes in India has been the achievement of Universal Health Coverage (UHC) (6,7). UHC is a globally advocated concept that aims to ensure “that everyone within a country can access the health services they need, which should be of sufficient quality to be effective, and providing all with financial protection from the costs of using health services” (8). Initially, apart from financial barriers to access, equity and access were not explicitly part of the discourse on UHC (9–12). Equity emerged more strongly in subsequent articulations, and there is now global consensus that any country moving towards Universal Health Coverage has to ensure equity as a primary goal (12–15).

In India, inequity is related to socio-economic and political status, caste, class, geography, and gender differences, amongst others, resulting in inequitable health outcomes, health service utilization and access to health care, (16–18). These dimensions also converge and intersect, exacerbating individual inequities (19,20). Health systems play an important role in either deepening or addressing wider social inequity (21–23).

As a major current reform in India, it is important to evaluate PFHI schemes and in particular, their impacts on equity of access. So far, studies on PFHI schemes in India and in other LMICs have focused more on enrolment, utilisation and financial protection (24,25) and less on understanding the perceptions and experiences of people who have tried to use such schemes (26,27), or on the pathways of impact of PFHI through the overall health system and

their relationship to equity. There have been some attempts to analyse the policy making process (28,29).

Studies of PFHI schemes in other LMICs (Indonesia, Ghana, Nigeria, Vietnam, Philippines, Rwanda, Kenya and Mexico) have commonly found lower enrolment among the poor, with differences based on rural-urban divide and education (30–34). However, where schemes are specifically designed to enrol the more vulnerable, better coverage of the poor and of rural populations is achieved (25,32)

The evidence on utilisation under PFHI schemes is mixed (34). Some studies show increases in financial protection and healthcare utilisation with enrolment (35,36), in some instances with pro-poor patterns (37). Others have found that the expansion of health insurance did not necessarily lead to increased financial protection indicators or a decrease in OOP expenditure (38,39). The poor and people in remote areas with poorly staffed facilities tend to have less utilisation and financial protection (34,40–43).

In India, lower enrolments have been reported in remote rural areas, and poorer districts, among socio-economically vulnerable communities such as tribal communities, female-headed households and in the poorer quintiles (44–48). While the overall enrolment of women in RSBY has been increasing and is equal to that of men (49), enrolment seems to have become an additional barrier for women to access health services (50).

Similar to the international experience, the impact of PFHI schemes on hospitalisation has been mixed in India. Exclusion during enrolment subsequently translated to lower utilisation by the excluded groups (47). Studies highlight the inequitable distribution of empanelled hospitals, especially of hospitals in the private sector, leading to inequitable access (51,52). The utilisation of the public sector is higher for the poor and more vulnerable groups even with insurance (46). The proportion of women being hospitalised under the PFHI schemes is

higher than men but they have also been more vulnerable to provider-induced demand (50,53–55).

The majority of the studies in India have found that significant levels of OOP expenditure continue despite insurance coverage, and that PFHI schemes have failed to protect against catastrophic health expenditure (24,46,56–58), especially the poor (59). OOP expenditure is higher when utilising private facilities, due to impermissible co-payments (44,59,60). Practices by the private sector, of converting outpatient to inpatient care, ‘cherry picking’ of more profitable packages and provision of a selective and narrow set of services, have been documented (61,62). Lack of transparency and access to data, information and grievance redress mechanism have also been highlighted as problems under PFHI schemes in India (48,51,63).

With the Indian government expanding health insurance through the PMJAY, stepping up research on PFHI is of high priority. This is especially important in the light of concerns related to the impact on financial protection, dynamics of the private and public provisioning, impact on health priorities, health budgets and health equity and ultimately, the ethical basis of such policies (5,56,64,65). In this context, there is need for a holistic understanding of the pathways of impact of such schemes that take into account equity and access. Such an analysis is vital to understanding whether the policy push towards publicly-funded health insurance schemes is achieving the stated policy goal of achieving universal healthcare.

Aims

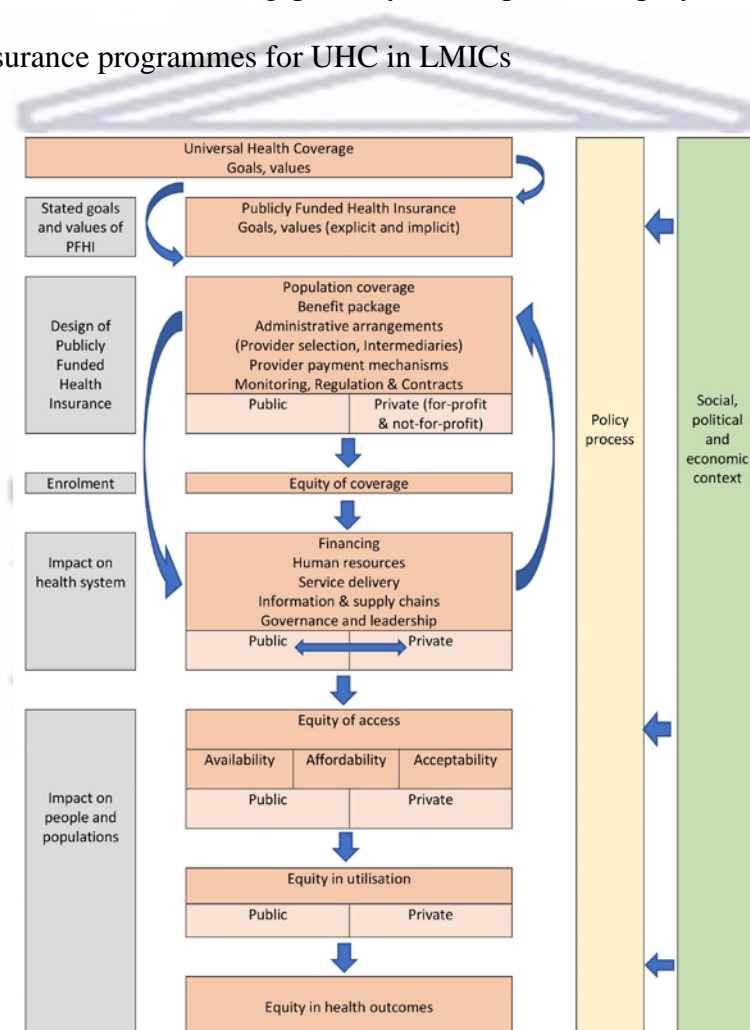
This paper applies an equity-based framework to holistically assess the pathways of impact of PFHI schemes in Chhattisgarh State, starting from values and objectives, to design, enrolment, health system effects, equity of access, and ultimately, people and populations. It proposes a conceptual framework for evaluating India’s PFHI schemes as instruments of

UHC reform and then, using the framework, synthesizes available evidence on the design, implementation and equity impacts of the PFHI schemes from Chhattisgarh, highlighting the current state of and gaps in knowledge.

Conceptual framework

The conceptual framework for assessing pathways of impact on equity of access in PFHI schemes for UHC in LMICs is presented diagrammatically in Figure 1.

Figure 1: A framework for assessing pathways of impact on equity of access in publicly funded health insurance programmes for UHC in LMICs



The framework has been constructed using concepts and frameworks from the Health Policy and Systems (HPSR) literature on UHC, access, health system building blocks, health care provisioning in mixed health systems, and policy analysis, and is underpinned by the values

of human rights, including the right to health and equity. The specific inputs into the framework are summarised in Table 1, along with the research questions that may be explored under each concept. The framework seeks to be relevant to researchers, policy makers, journalists and anyone interested in studying or understanding PFHI schemes and their implications for the health system, people and populations.



Table 1: Inputs into the framework and research questions

Category	Key concepts, frameworks and principles	Research Questions	References
<p>UHC and its critiques and alignment of the PFHI scheme with UHC objectives</p>	<p>- Three core UHC goals of financial protection, coverage of population and of services.</p> <p>In addition:</p> <ul style="list-style-type: none"> - Importance of equity within the above - Focus on appropriateness and quality of services - Acknowledgement of: <ul style="list-style-type: none"> • The right to health for all • Social determinants of health • Strengthening of public health systems • Promotion of health as a social good and not a commodity - Emphasis on universal health systems rather than universal health coverage <p>Value base:</p> <ul style="list-style-type: none"> - Right to health - Human rights - Equity of access - Equity of outcome 	<p>Do the objectives of the PFHI scheme take into account financial protection, coverage of population and of services and have equity considerations?</p> <p>Do the objectives refer to the health system as a whole?</p> <p>Is there foregrounding of equity in monitoring and evaluation of the PFHI scheme?</p> <p>Does it cover a limited package of health services or does it talk about universal health care and systems?</p> <p>Are appropriateness and quality of services made explicit and addressed?</p> <p>Is the scheme aligned with the idea of health being a fundamental right?</p> <p>Does the scheme promote health as a social good and a right or as a commodity?</p> <p>Are the social determinants of health and structural drivers of health inequity acknowledged and addressed within the scheme?</p> <p>Has the scheme led to equitable access?</p> <p>Has the scheme led to equitable outcomes?</p>	<p>(9,10,73–77,12,66–72)</p>

Design of PFHI	<p>Key design issues include:</p> <ul style="list-style-type: none"> - Population coverage - Benefit package - Administrative arrangements (Provider selection, Intermediaries) - Provider payment mechanisms - Monitoring, Regulation & Contracts - Transparency, access to information and accountability 	<p>Who is covered under the PFHI scheme and what does it mean in terms of equity of coverage?</p> <p>What kinds of services are covered?</p> <p>What are the administrative and implementation arrangements?</p> <p>Who pays? How is the payment of premiums organised? How will the provider be paid?</p> <p>How is the provider selected?</p> <p>Are both the private and the public sectors to provide services under the scheme?</p> <p>What are the systems for monitoring, regulation and contracts?</p> <p>To what extent are equity considerations central to the design?</p> <p>Is information on all aspects of the scheme publicly available?</p> <p>What systems of public accountability are in place?</p>	(78)
Impact on health system	<p>Building Blocks:</p> <ul style="list-style-type: none"> - Financing - Human resources - Service delivery arrangements - Information - Equipment and supply chains - Governance and leadership <p>Importance of studying:</p> <ul style="list-style-type: none"> - Interactions between the building blocks - Both hardware (building blocks) and software (values, relationships) - Health systems as complex adaptive 	<p>What has been the impact of the PFHI scheme on financing, service delivery, human resource and supply chains? Has it been different for the private and public sectors?</p> <p>Have there been any equity implications of the above, especially with regards to changing resource allocations and use of earmarked funds for vulnerable groups?</p> <p>What have been the interactions among the building blocks of health systems, both among the system's hardware (organisational, policy, legal and financing frameworks) and software (norms, traditions, values, roles and relationships)?</p> <p>How effective are the systems for monitoring, transparency and accountability?</p>	(79–83)

	systems		
Impact on people and populations	<ul style="list-style-type: none"> - Dimensions of access: availability, affordability and acceptability - Three dimensions of access interact with each other to create the opportunity for utilization and the possibility of improved health outcomes - Access needs to be defined in relation to health needs - Acceptability as under-studied, including empowerment, agency, capacities to “navigate and negotiate” and understanding interactions, perspectives and contexts. 	<p>Is the availability of health facilities and health services, which includes quality (‘effective coverage’) and appropriateness of services, equitable?</p> <p>What has been the out of pocket expenditure, including catastrophic expenditure incurred by the patient/family for healthcare or while utilising insurance? Is it higher or lower for vulnerable people/groups?</p> <p>Is a conducive service delivery environment being provided under the PFHI scheme with mechanisms for negotiating and navigating the system, and providing information, transparency, accountability and agency to patients?</p> <p>What is the nature of the grievance redressal system? Is it effective, especially for the poor and more vulnerable groups?</p> <p>How do the three dimensions create the opportunity for utilization and what is the implication for equity?</p>	(13,88–92)
Public/private sector interactions	<ul style="list-style-type: none"> - In health systems and schemes that have a public-private mix in provision of health services, it is critical to examine role of each sector separately in ensuring access and equity and furthering the objectives of UHC 	<p>Has the impact of PFHI scheme been different on the private and public sectors?</p> <p>Has the introduction of a PFHI scheme altered the health care provision practice of private and public sector providers?</p> <p>What have been the implications for equity in access?</p>	(2,84–87)
Policy Process	<ul style="list-style-type: none"> - Policy change as a political process - Process of agenda setting, decision making, formulation, implementation and evaluation - Role of context, actors, interests, ideas, power relations and institutions - Located within the political economy of development 	<p>Who are the key actors in the policy process?</p> <p>How does power play out amongst these actors?</p> <p>What is the impact of social structures and power differentials on the functioning of the scheme?</p> <p>What is the nature of political economy of healthcare within which this scheme has been introduced and how does that influence equity?</p>	(93–95)

Methods

As a multi-disciplinary field, HPSR draws on a wide variety of research designs, data collection methods (both qualitative and quantitative) and sources of data, pragmatically identifying the research methodologies best able to answer questions generated by real-world problems (93). In doing so, HPSR frequently adopts research approaches outside mainstream biomedical approaches in order to better understand interaction, perspectives and contexts (13) or issues of power and politics (96).

This paper similarly draws on a range of data sources in applying the above conceptual framework to an analysis of PFHI schemes in Chhattisgarh state. The sources of data included an extensive review of publications on PFHI schemes in Chhattisgarh after 2009, including research and media articles by the first author and empirical studies from her PhD, and grey literature such as programme evaluation reports, media reports and civil society campaign and advocacy documents.

The first author has, since 2010, kept a database on publications related to PFHI schemes in Chhattisgarh. This database was re-checked and updated through additional searches of published (Medline database) and grey literature. For the grey literature, website searches were conducted of state and central government, media houses, agencies such World Bank, World Health Organization (WHO) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The search terms were a combination of Chhattisgarh, health insurance, UHC, RSBY, MSBY and PMJAY. The time period for the search was from 2009, the year RSBY was launched. All the articles, reports and other publications in the updated database were included in the analysis. Using a framework analysis approach, SN read the available sources and identified relevant data for each element of the conceptual framework.

As this study is based on secondary data analysis, consent procedures were not required. Ethics approval for the overall PhD research of which this study forms one component, was obtained from the University of the Western Cape, South Africa where the first author (SN) is registered.

Results

Applying the framework to Chhattisgarh state

Chhattisgarh was carved out as a separate state from Madhya Pradesh in 2000, and has a population of about 25 million people, with 77% of families living in rural areas (97). Scheduled Tribes constitute 31% of the population while 13% are from the Scheduled Caste category (97). Forested areas cover 41% of the State's total geographical area (98). Although Chhattisgarh has seen a significant improvement in health indicators since 2000 (18,99), it still lags behind national averages (100).

One of the first states to launch RSBY in 2009, Chhattisgarh expanded PFHI scheme to all families of the state in 2012 through the Mukhyamantri Swasthya Bima Yojana (MSBY). RSBY covered people living below poverty line (BPL) and MSBY those above the poverty line (APL). These two schemes together made up a universal scheme. Since September 2018, RSBY has been subsumed under PMJAY.

In the following section, the equity-based framework is applied to the case of the universal PFHI scheme (RSBY/MSBY) in Chhattisgarh, presenting the pathways of impact from values and objectives, to design, implementation, and impact. The results relating to the impact of PFHI schemes on the health system and people and populations are disaggregated by private and public sector. Further, results are presented taking into account the overarching dimensions of the policy process and social, political and economic context (See Figure 1). It must be recognised that elements of the framework are overlapping. For

instance, a study of financing and affordability can speak to both the impact on health system and on people. For clarity and understanding of the framework, the same data are sometimes reported more than once.

Alignment of goals of PFHI in Chhattisgarh with UHC

The overall framing of the PFHI scheme in Chhattisgarh has followed that of the national scheme that has alignment with globally articulated UHC goals (28,29), though it has not been studied separately as an instance of UHC. While RSBY covered the poor, the stated objectives of both RSBY and MSBY are similar and reflect the UHC principles and goals, bringing together ideas of universal insurance coverage, financial protection, equity, access and private sector involvement. This is seen in the articulation by government on its website that states: “Health insurance protects against the cost of illness, mobilizes funds for health services, increases the efficiency of mobilization of funds and provision for health services, and achieves certain equity objectives” (101). The website also calls for “involvement of community in rural health care for increasing accountability”, ensuring “choice to patients among multiple service providers”, encouraging public-private partnerships and improving mortality and morbidity rates (101). The equity dimension is operationalized through universalisation of the PFHI scheme. However, while the dimensions of financial protection and equity are clearly visible in the stated objectives, it lacks considerations regarding the health system as a whole. There is much emphasis on engaging the private sector and engaging in public-private partnerships (101). Analyses of the genesis of RSBY nationally have highlighted that the PFHI scheme was seen as an ‘investment’ in worker productivity and influenced by considerations of human capital development, efficiency and productivity rather than ‘needs’ or ‘rights’ and this led to a narrow and selective scheme design (28, 29). Moreover, PFHI schemes have been promoted as a ‘business’ and market-oriented model prioritising a for-profit motive (28).

Design of PFHI in Chhattisgarh

All families living in the state are eligible for enrolling in the scheme, creating a single risk pool. Both MSBY and RSBY cover a maximum of five family members and require an annual enrolment process, following which an annual premium is paid by the government on behalf of all families to the insurance company. There is active enrolment through enrolment camps in villages and health facilities, during which the family is issued a biometric smart card (102). The smart card is intended to be used for 'cashless' hospitalisation at empanelled private and public hospitals. In addition, as part of regular government policy, people are able to utilise health services, including hospitalisation, at all public facilities free of cost or at a low cost without using the insurance smart card. In 2017 the state expanded the annual insurance cover from INR 30,000 (USD 424) to INR 50,000 (USD 707).

As elsewhere in India and in many LMICs, PFHI schemes in Chhattisgarh cover a limited package of services, mostly provided by the private sector. The benefit package under PFHI schemes in Chhattisgarh includes hospitalisation and a few non-hospitalised packages such as dentistry and ante-natal care. PFHI schemes in India have been critiqued for mostly covering hospitalisation services, and some have argued for its expansion to include out-patient services (56). However, others have highlighted the greater potential risk of fraud in out-patient care (103).

In India there are two models of purchaser organisation in the PFHI schemes. One kind of purchaser organisation is a trust which is an autonomous organisation set up by the state government to empanel hospitals and pay the claims. The second involves hiring an insurance company to handle third party payments based on the premium paid. In Chhattisgarh the purchasing arrangement is through an insurance company, selected by government in a

bidding process. The insurance company, in turn, appoints a Third Party Agency (TPA) to process the claims. The TPA is also responsible for enrolling all households.

The provider payment mechanism is a mix of per case, per procedure and per day rates. Contracts between the state, the insurance company and the hospitals lay down the guidelines and conditions for providing services under the scheme. The providers are required to provide 'cashless' treatment on the basis of the pre-determined package rates and are prohibited from taking any other charges from patients. The use of biometric smart cards and a helpline number are seen as the tools for monitoring transactions and ensuring grievance redressal. Oversight of the scheme is with the State Nodal Agency (SNA), under the Department of Health and Family Welfare.

While in the initial few years, utilisation of the scheme was low leading to profits for the insurance company (104), subsequently the claim amounts exceeded the total premium paid. As a consequence of increasing claim amounts every year, the insurance premiums in Chhattisgarh have also increased above inflation rates. For instance, premiums more than doubled from INR 314 (USD 4.4) in 2012-13 to INR 732 (USD 10) per family in 2016-17 for an annual cover of INR 30,000 (USD 424) per family (60). Currently for a cover of INR 50,000 (USD 707) under PMJAY in Chhattisgarh, the annual premium is INR 1100 (USD 15.6) per family (60).

Chhattisgarh has one of the highest enrolment rates in the country (18). Recent programme data shows enrolment to be 80% of families and 60% of individuals (60). In terms of equity of coverage, enrolment has been found to be equitable across gender, social groups and economic categories (105,106) and highest in the most vulnerable districts (106). However smaller primary studies show that enrolment percentages among some of the most vulnerable communities are much lower. For instance, among the Baiga Particularly Vulnerable Tribal

Group, 38% of families were found to be enrolled in a 2016 survey (107). An earlier study documented instances of the TPA bypassing ‘remote’ and inaccessible villages in enrolment drives (61).

Impact on health system Research is lacking on the impact of PFHI schemes on the health system. The section below describes ways to assess the impact of PFHI schemes on the health system, using available literature from Chhattisgarh.

Financing - Increases in insurance premiums have impacted on resource allocation in health sector budgets. The share of RSBY/MSBY in the health budget has doubled in the last three years, from 6.6% in 2015-16 to 13% of the total health budget in 2018-19, while the budgets for many other health programmes have been stagnant or reduced (108).

Programme data on claims and their amounts by region, social group (ST and SC), income and gender shows that the most vulnerable districts (mainly areas with higher ST and SC population) receive the least funds (104,106). Yet a significant proportion of the PFHI scheme funds are sourced from the Tribal sub-plan (39% in 2018-19) and other budgets meant for the welfare of STs and SCs (60).

Analysis of flows of funding to public and private sectors show that the private sector receives a much higher proportion of the claims amount than the public sector. In 2015-16, the private sector made 75% of the claims and received 83% of the claims funds (106), a pattern that has remained the same since the beginning of the scheme (104).

Service delivery - Currently 609 government hospitals and 588 private hospitals are empanelled (101). Patterns of utilisation of PFHI in the state show that 87% of the claim amount goes for only top 5% of the listed procedures, among which dental, deliveries, cataract and medical management of diarrhoea/fever are used most commonly (109). Media reports suggest that this pattern has continued under PMJAY as well (110). On the other

hand, when conditions like MDR-TB were introduced under PFHI, the participation of the private sector was reported to be extremely low (111). This reflects the practice of ‘cherry picking’ and the provision of narrow and selective services in the private sector documented in formal research (61,109).

Instances of moral hazard and provider induced demand, typically associated with insurance schemes, have also been documented, such as cases of unnecessary hysterectomies by the private sector under RSBY (52,112,113). One media report indicated that over a period of just 8 months in 2012 private hospitals submitted claims for 1800 hysterectomies in Chhattisgarh, many of which were later deemed unnecessary (113).

Human resource (HR) - Research analysing the impact of PFHI schemes on human resource dynamics and labour markets in the private and public sectors along with their implications for equity has yet to be conducted. Observations and anecdotal evidence suggest that PFHI schemes have increased opportunities for dual practice by public sector providers and collusive behaviour in terms of referrals from public to the private sector (114).

Equipment and Supply chains - Similarly, there have not been any studies on the impact of PFHI schemes on pharmaceutical and medical device markets, and the effects on their supply and availability in the public sector. Specific research questions that could guide such an enquiry are listed in Table 1.

Practices of governance and leadership– The oversight and guidance functions of the health system have also not been explicitly examined in Chhattisgarh’s PFHI schemes. A qualitative study by the authors revealed a breakdown of mechanisms for regulation and monitoring, specifically in the private sector, that is reflective of the overall lack of regulation of healthcare in the state and country (115). The biometric smart card did not function as a guarantee of ‘cashless’ transactions as intended, and instead, at times served to extract

additional payments from the patients. Grievance redressal mechanisms, when used, failed to provide relief (115) . Another study documented conflicts of interest of public officials who were in charge of decisions related to PFHI policy (for instance, what services to include and their pricing) and monitoring of the private sector, who were part-time private providers themselves (60).

Media reports, documentation by civil society and participant observation by the first author, have provided insights into the consequences of persistent governance failures under the PFHI schemes. These include lack of action on co-payments in the for-profit private sector or forcing patients to buy medicines even though they are covered by the insurance packages (114,116–118).

Information – Advances in information technology (IT) have been seen as the mainstay of information systems under PFHI schemes. Mechanisms such as the biometric smart card and IT based billing systems are supposed to enable real-time data, patient access to information and transparency. However, studies have found that patients are often not told about the amounts deducted from their insurance smart card, nor given receipts (104,115,119). Some rural areas facilities faced problems in utilising the scheme due to the lack of regular internet connectivity (61). Private hospitals have reported being more able to handle the technological requirements while government hospitals faced problems, resulting in higher rejection of claims in these facilities (61).

Impact on people and populations

As proposed in the framework, the impact of PFHI on people and populations can be assessed through constructs of access (availability, affordability and acceptability), resulting utilisation and ultimately health outcomes. Each of these dimensions is approached from an equity

perspective, and public and private sectors are considered separately. These elements and dimensions have been studied extensively by the authors themselves.

Analysis of equity in availability of hospital services under PFHI schemes in Chhattisgarh showed that while government hospitals are relatively evenly distributed, most of the private hospitals are concentrated in only a few cities and their distribution skewed towards the districts having least vulnerability (106,119). Another study showed that the more vulnerable groups, such as women, people living in rural areas, Scheduled Tribes and poorer groups, were more likely to utilize the public than the private sector for hospitalisation (105).

Availability of hospital services also includes the quality and appropriateness of care (the concept of effective coverage) though this aspect has been less studied (120). As highlighted in the previous section, there are indications that the PFHI schemes have enabled new forms of provider-induced demand and promoted patterns of selective provisioning (61,109).

The authors' study of affordability based on household survey data revealed that of the insured that used private hospitals, only 5% received free services, while, of those insured using public hospitals, 34% did not incur any OOP expenditure (105). Of the insured who incurred OOP expenditure, the median expenditure in the private sector (INR 10,000 or USD 141) was eight times more than that in the public sector (INR 1, 200 or USD 17) (105). While those covered with insurance were less likely to incur OOP expenditure, women and those going to private hospitals were significantly more likely to incur OOP expenditure (105). Of households with at least one case of hospitalisation, 35.5% incurred catastrophic health expenditure (>10% monthly household consumption expenditure) (105). The main reason for continuing OOP expenditure has been impermissible co-payments that are charged by the hospitals from patients who use PFHI schemes (109,115).

Primary studies have complemented the analysis of routine household surveys, finding OOP expenditure continuing among the urban poor and extremely low utilisation of the scheme by Particularly Vulnerable Tribal Groups (104,107,115,119).

Studies assessing the level and nature of information provided to the beneficiaries have found that families were not provided the list of empanelled hospitals to choose from (104,119,121). The qualitative study by the authors among families who had incurred high OOP expenditure while utilising the PFHI scheme in the private sector found that patients and their families exercised their agency to the extent they could but were rendered helpless and powerless when hospitals demanded extra payments (115). The smart card, instead of being a vehicle to 'empower' the patient and enable 'cashless' services, was perceived as opportunity to extract additional money (115). The inability of the PFHI schemes to ensure financial protection in these instances arose from a combination of prevailing social norms, such as care as a market transaction rather than a right, wider cultural acceptance of illegal informal healthcare payments, power asymmetries between patients and providers and the failures of regulatory mechanisms and oversight (115).

Utilisation of health services flows from the three dimensions of access and their interaction. In Chhattisgarh, utilisation of PFHI schemes follows the pattern of inequitable availability of hospital services across districts (106). The most vulnerable districts had 3.5 times lower claims (per 100,000 enrolled) than low-vulnerability districts, with claim amounts following similar patterns (106). No studies have been done as yet on the impact of PFHI schemes on health outcomes in Chhattisgarh.

Policy process

This section deals with the policy context, actors and processes under PFHI schemes. Studies have analysed the evolution of PFHI in India (28,29), but not specifically in Chhattisgarh.

These studies have given rise to a number of interpretations of the policy process, which in Chhattisgarh and elsewhere is still unfolding.

Chhattisgarh implemented RSBY as part of the national scheme, but expanded it to universal coverage with its own funds through the Chief Minister's Health Insurance Scheme or MSBY, that included the non-poor. Chhattisgarh is known for leading innovations in healthcare and in other areas of public policy such as initiating a large Community Health Worker Programme (122), a three year medical diploma course to address the shortages of health practitioners in rural areas (123) and a near-universal public distribution system (PDS) providing subsidised grain (124).

The policy direction of a universal PFHI scheme was possibly prompted by the ruling party's previous political success with the much applauded near-universal public distribution system (PDS). In the case of the PDS, the state had similarly elected to expand coverage to families not covered by the national food scheme, through a new scheme called the Chief Minister's Food Relief Scheme or MKSY (124). The expansion of PFHI scheme in the state occurred in 2012, just before the state elections in 2013.

The actors involved in policy making and in advocating for PFHI at the national level have also influenced developments in Chhattisgarh State to an extent. The strong proponents of PFHI include the NITI Aayog (a policy think tank of the Indian government), the National Health Authority, international agencies such as the World Bank, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and the Asian Development Bank, UN agencies (WHO, ILO) and philanthropic foundations such as Bill & Melinda Gates Foundation (BMGF).. While the Health Ministry remains involved both at the national and the state levels, an autonomous institution, the National Health Authority, has been formed to implement PMJAY. Groups representing private healthcare providers such as the Indian

Medical Association (IMA) have been vocal in demanding higher package rates, and lesser regulation. In 2013 the IMA staged a strike for close to three months in the main cities of Chhattisgarh, suspending all services under PFHI, to pressurise the government to increase the package rate (52). PFHI schemes remain heavily contested in Chhattisgarh and therefore the newly elected state government has decided to review the PFHI schemes in the state (125).

Discussion

Studies on PFHI schemes in India and elsewhere have been limited to one or other element, and have not studied impacts as a whole (24,34,126). There has been a dearth of studies on assessing the impact of such schemes for UHC, on the health system and the population (10). Studies on dimensions of access (availability, affordability and acceptability) in PFHI schemes have mostly studied financial protection or the affordability dimension, with less focus on the availability and acceptability dimensions (26,27,127). PFHI schemes as instruments of UHC also need to be assessed in terms of their contribution to equity, human rights, quality and appropriateness of health services, strengthening of public health systems and promotion of health as a social good (9,12,71–75,128). Most studies on PFHI schemes have failed to examine public and private sectors separately (34), although recent studies in India have started to examine financial protection by each sector (24,46).

By formulating an overall conceptual framework for PFHI schemes, this study has sought to evaluate the impacts of the PFHI scheme in Chhattisgarh holistically. Chhattisgarh, which has a universal PFHI scheme and traditions of universalism in public policy, provides the opportune context for a comprehensive sub-national analysis for assessing these impacts from an equity perspective.

The equity-based framework presented and applied in the study could be used for comprehensively assessing UHC and PFHI schemes elsewhere. This framework could also be used, as a heuristic device, by those interested in exploring other kinds of health programmes and schemes and evaluating UHC-based reforms holistically. This framework and its application contribute to the debate and discussions on PFHI schemes beyond enrolment, to the determinants of real equity of access under such schemes. It also brings out the gaps in data and contributes to future research agenda. From the available evidence in Chhattisgarh, it is possible to draw a number of conclusions on the equity impacts of PFHI schemes in India.

Firstly, high enrolment rates and evidence of equitable enrolment (gender, social groups, economic and geography) from household surveys (105,106) may mask specific pockets of inequity within households and among the most vulnerable communities (107,119). This highlights the need for routine population surveys to be complemented by in-depth, primary studies, examining experiences of specific vulnerable populations.

Secondly, and most importantly, equitable enrolment does not automatically lead to financial protection (105), to the acceptability of the PFHI scheme for the poor (105,115) or to equity in utilisation (106). The unequal availability of hospitals under the scheme was a key factor in unequal health service utilisation and resource distribution (106).

Thirdly, the public health sector continues to cater to the most vulnerable in Chhattisgarh, a finding that corroborates other studies in India (129). Utilisation, especially in the private sector, was skewed towards the areas that had the least health and social need, exhibiting the ‘Inverse Care Law’ (130) with the resource allocation patterns deepening the ‘infrastructure inequality trap’ in the state (131). High enrolment levels among vulnerable groups and in the most vulnerable districts effectively aided in mobilising funds into the scheme which were

effectively transferred from tribal and vulnerable to ‘better-off’ areas and from the public to the private sector, thus deepening inequity (60,105,106). These findings raise questions regarding the effectiveness of private sector involvement in bringing about the equity goals of UHC, a concern that has also been raised by others (6,85,132–134)

Fourthly, technological innovations, such as the smart card and electronic information systems, do not on their own, resolve problems rooted in wider normative and institutional failures. In Chhattisgarh these include deeply entrenched practices of co-payment, dominant norms of health care as a market transaction rather than a right, poor governance, tolerance of conflicts of interests in decision-making and wider social inequalities (60,115). Mechanisms such as the biometric smart card, billing systems and data reporting and sharing have not delivered on their promises nor led to greater accountability. More recent studies have indicated that these problems continue under the PMJAY (135). Provider capture remains a central issue in the performance of PFHI-based policies to achieve UHC in the Indian context (136).

Finally, PFHI schemes exist within a political economy of health, which profoundly influences the implementation and everyday experience of these schemes. The development of PFHI schemes within the context of wider neo-liberal policies promoting private sector provisioning has grave consequences for health equity and access (72).

Key gaps in knowledge relates to the impact of PFHI schemes on the health system. While there is some evidence on increasing budgetary allocations to PFHI schemes and the crowding out of funds to the public sector and other public health programmes, (5), more research is needed on impacts of this on public sector provision of services (including primary health care), human resource dynamics and supply chains. Research is specifically needed on the equity implications of changing resource allocations. In addition, shifting

service delivery profiles through practices of 'cherry picking', provision of narrow and selective services and inducing demand (54,61,62) need to be better monitored.

The possibilities and constraints of technology and real-time data in improving transparency and accountability for the public merit further exploration. Research is needed into the systems and performance of government as regulator and 'steward' of PFHI schemes, in monitoring implementation, ensuring that hospitals adhere to the contractual conditions and promoting equity.

The study was of one state of India, Chhattisgarh and therefore the findings have limitations in their generalisability to rest of India. There are, however, significant commonalities across the country - all states have a similar healthcare system, with a private/public mix, and with PFHI schemes primarily relying on private providers and focused on hospitalisation care. The findings on the impact of PFHI schemes are thus likely to be relevant to other states. Although the equity-based framework was designed to be comprehensive, the availability of data for different dimensions was variable.

Conclusion

India has been championed as a prime example of advancing towards UHC through PFHI schemes. The stated intention of these PFHI schemes is to improve access to healthcare and provide financial protection to the vulnerable. However, as this study shows, the impact of RSBY/MSBY on equity of access and financial protection has been weak. Furthermore, to the extent that it has been studied, the implications for the public sector, of PFHI scheme funding predominantly channelled through the private sector, are significant. At the point of service provision, the dominant normative and cultural orientation of healthcare as a commodity to be sold rather than a right remains unchallenged.

The findings of this study have immediate relevance to the present policy context in India which is currently integrating existing PFHI schemes into a large expanded scheme, the PMJAY, for the whole country. The analysis has shown that an over-reliance on and rapid expansion of PFHI schemes in the Indian health system is unlikely to achieve UHC. Chhattisgarh is currently re-assessing the pitfalls of a private sector emphasis in its PFHI scheme and re-positioning the public health system at the core of service provision, while also espousing solidarity, equity and rights, as the basis of health policy for universal healthcare. India still has some way to go in charting the pathways towards universal healthcare.

Abbreviations

LMICs- Low and middle income countries

MSBY- Mukhyamantri Swasthya Bima Yojana

OOP- Out of Pocket

PFHI- Public funded health insurance

PMJAY- Pradhan Mantri Jan Arogya Yojana

RSBY- Rashtriya Swasthya Bima Yojana

TPA- Third Party Agency

UHC- Universal Health Coverage

Declarations

Ethics approval and consent to participate: Ethics approval for the PhD research programme, of which the research reported in this paper forms one component, was obtained from the University of the Western Cape, South Africa, where the first author (SN) is registered for a PhD.

Consent for publication: Not Applicable

Availability of data and material: The authors confirm that the data supporting the findings of this study are available within the article.

Competing interests: The Authors declare that they have no competing interests

Acknowledgements: The authors are grateful to Prof Di McIntyre for her insights and inputs into the article. The authors would like to thank the reviewers for their valuable comments on the article.

Funding: This paper is part of the PhD of the first author, for which a part fellowship was provided by the Belgian Development Cooperation (DGD) through the Institute of Tropical Medicine, Antwerp. The funders had no role in study design, data collection and analysis, decision to publish or preparation of the manuscript.

Authors' contributions: SN conceived the study. SN and HS made substantial contributions to design of the study and contributed to developing the framework. SN wrote the first draft of the manuscript. All authors reviewed drafts of the manuscript and provided intellectual content. All authors have approved this version of the manuscript.

References

1. Sengupta A, Mukhopadhyaya I, Weerasinghe MC, Karki A. The rise of private medicine in South Asia. *BMJ*. 2017;357(j1482).

2. Mackintosh M, Channon A, Karan A, Selvaraj S, Zhao H, Cavagnero E, et al. What is the private sector? Understanding private provision in the health systems of low-income and middle-income. *Lancet*. 2016;6736(16):1–10.
3. National Health Systems Resource Centre. NRHM in the Eleventh Five Year Plan (2007-2012): Strengthening Public Health Systems. New Delhi; 2012.
[http://nhsrindia.org/sites/default/files/NRHM in 11th five year plan.pdf](http://nhsrindia.org/sites/default/files/NRHM_in_11th_five_year_plan.pdf). Accessed 20 June 2018.
4. PHFI. A Critical Assessment of the Existing Health Insurance Models in India. New Delhi; 2011. http://planningcommission.nic.in/reports/sereport/ser/ser_heal1305.pdf. Accessed 20 June 2018.
5. Chatterjee P. National Health Protection Scheme revealed in India. *Lancet* (London, England). 2018;391(10120):523–4.
6. Sengupta A. Universal Health Coverage : Beyond rhetoric. 2013. (OCCASIONAL PAPER). Report No.: 20.
https://www.municipalservicesproject.org/sites/municipalservicesproject.org/files/publications/OccasionalPaper20_Sengupta_Universal_Health_Coverage_Beyond_Rhetoric_Nov2013_0.pdf. Accessed 17 June 2018.
7. Marten R, McIntyre D, Travassos C, Shishkin S, Longde W, Reddy S, et al. An assessment of progress towards universal health coverage in Brazil, Russia, India, China, and South Africa (BRICS). *Lancet*. 2014 Dec;384(9960):2164–71.
8. McIntyre D, Ranson MK, Aulakh BK, Honda A. Promoting universal financial protection : evidence from seven low- and middle-income countries on factors facilitating or hindering progress. *Health Research Policy and Systems*. 2013;11(1):1.

9. WHO. The World Health Report: Health Systems Financing. The path to universal coverage. 2010. <https://www.who.int/whr/2010/en/>. Accessed 15 July 2018.
10. Kutzin J. Health financing for universal coverage and health system performance: concepts and implications for policy. *Bull World Health Organ.* 2013;91:602–11.
11. Roberts MJ, Hsiao WC, Reich MR. Disaggregating the Universal Coverage Cube : Putting Equity in the Picture. *Heal Syst Reform.* 2015;1(1):22–7.
12. Kutzin J. Anything goes on the path to universal health coverage? No. *Bull World Health Organ.* 2012;90(11):867–8.
13. Frenz P, Vega J. Universal health coverage with equity : what we know, don't know and need to know. Background paper for the Global Symposium on Health Systems Research. 2010.
http://healthsystemsresearch.org/hsr2010/images/stories/9coverage_with_equity.pdf. Accessed 10 May 2018.
14. WHO. Making fair choices on the path to universal health coverage. Final report of the WHO Consultative Group on Equity and Universal Health Coverage. Geneva; 2014.
http://apps.who.int/iris/bitstream/10665/112671/1/9789241507158_eng.pdf?ua=1. 20 May 2017.
15. WHO. Tokyo Declaration on Universal Health Coverage: All Together to Accelerate Progress towards UHC. In: *Universal Health Coverage Forum 2017*. Tokyo: World Health Organisation; 2017. p. 1–4.
https://www.who.int/universal_health_coverage/tokyo-declaration-uhc.pdf?ua=1. Accessed 22 October 2018.
16. Balarajan Y, Selvaraj S, Subramanian S V. India : Towards Universal Health Coverage

- 4 Health care and equity in India. *Lancet*. 2011;377(9764):505–15.
17. Drèze J, Sen A. *An uncertain glory : India and its contradictions*. New Delhi: Penguin Books; 2013. 433 p.
 18. IIPS & ICF. *National Family Health Survey (NFHS-4), 2015-16*. Mumbai, India: International Institute for Population Sciences; 2017. 1–666 p.
 19. Larson E, George A, Morgan R, Poteat T. 10 Best resources on... intersectionality with an emphasis on low- and middle-income countries. *Health Policy Plan*. 2016;31(8):964–9.
 20. Hankivsky O. *An Intersectionality-Based Policy Analysis Framework* [Internet]. Hankivsky O, editor. Vancouver, BC: Institute for Intersectionality Research and Policy, Simon Fraser University; 2012. 1–212 p. www.sfu.ca/iirp/ibpa.html. Accessed 20 June 2018.
 21. Whitehead M, Dahlgren G. *Levelling up (part 1): a discussion paper on concepts and principles for tackling social inequities in health*. Copenhagen: WHO. Copenhagen; 2006. http://www.who.int/social_determinants/resources/leveling_up_part1.pdf. Accessed 22 October 2018.
 22. Gilson L, Doherty J, Loewenson R, Francis V. *Challenging Inequity Through Health Systems: Final Report of the Knowledge Network on Health Systems*. 2007. http://www.who.int/social_determinants/resources/csdh_media/hskn_final_2007_en.pdf. Accessed 20 June 2018.
 23. Sen A. *Universal healthcare: the affordable dream*. *Harvard Public Heal Rev*. 2015;4.
 24. Prinja S, Chauhan AS, Karan A, Kaur G, Kumar R. *Impact of Publicly Financed Health Insurance Schemes on Healthcare Utilization and Financial Risk Protection in*

- India: A Systematic Review. PLoS One. 2017;12(2):e0170996.
25. Meng Q, Yuan B, Jia L, Wang J, Yu B, Gao J, et al. Expanding health insurance coverage in vulnerable groups: a systematic review of options. Health Policy Plan. 2011 Mar;26(2):93–104.
 26. Ahlin T, Nichter M, Pillai G. Health insurance in India: what do we know and why is ethnographic research needed. Anthropol Med. 2016;23(1):102–24.
 27. Sen K, Gupta S. Masking Poverty and Entitlement: RSBY in Selected Districts of West Bengal. Soc Change. 2017;47(3):339–58.
 28. Virk AK, Atun R. Towards universal health coverage in India: a historical examination of the genesis of Rashtriya Swasthya Bima Yojana – The health insurance scheme for low-income groups. Public Health. 2015 Jun;129(6):810–7.
 29. Shroff ZC, Roberts MJ, Reich MR. Agenda Setting and Policy Adoption of India's National Health Insurance Scheme: *Rashtriya Swasthya Bima Yojana*. Heal Syst Reform. 2015;1(2):107–18.
 30. Jehu-Appiah C, Aryeetey G, Spaan E, de Hoop T, Agyepong I, Baltussen R. Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why? Soc Sci Med. 2011 Jan;72(2):157–65.
 31. Odeyemi IAO, Nixon J. Assessing equity in health care through the national health insurance schemes of Nigeria and Ghana: a review-based comparative analysis. Int J Equity Health. 2013;12:9.
 32. Kusi A, Enemark U, Hansen KS, Asante FA. Refusal to enrol in Ghana's National Health Insurance Scheme: is affordability the problem? Int J Equity Health. 2015 Jan;14:2.

33. Dake FAA. Examining equity in health insurance coverage: An analysis of Ghana's National Health Insurance Scheme. *Int J Equity Health*. 2018;17(1):1–10.
34. Acharya A, Vellakkal S, Masset E, Satija A, Burke M, Ebrahim S. Systematic review Impact of national health insurance for the poor and the informal sector in low- and middle-income countries. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London; 2012.
35. Galárraga O, Sosa-Rubí SG, Salinas-Rodríguez A, Sesma-Vázquez S. Health insurance for the poor: Impact on catastrophic and out-of-pocket health expenditures in Mexico. *Eur J Heal Econ*. 2010;11(5):437–47.
36. Knaul FM, González-Pier E, Gómez-Dantés O, García-Junco D, Arreola-Ornelas H, Barraza-Lloréns M, et al. The quest for universal health coverage: achieving social protection for all in Mexico. *Lancet*. 2012;380(9849):1259–79.
37. Liu X, Tang S, Yu B, Phuong N, Yan F, Thien D, et al. Can rural health insurance improve equity in health care utilization? a comparison between China and Vietnam. *Int J Equity Health*. 2012;11(1):1–16.
38. Bredenkamp C, Buisman LR. Financial protection from health spending in the Philippines: Policies and progress. *Health Policy Plan*. 2016;31(7):919–27.
39. Ahmed S, Szabo S, Nilsen K. Catastrophic healthcare expenditure and impoverishment in tropical deltas: Evidence from the Mekong Delta region. *Int J Equity Health*. 2018;17(1):1–13.
40. King G, Gakidou E, Imai K, Lakin J, Moore RT, Nall C, et al. Public policy for the poor? A randomised assessment of the Mexican universal health insurance programme. *Lancet*. 2009;373(9673):1447–54.

41. Barraza-Lloréns M, Panopoulou G, Díaz BY. Income-related inequalities and inequities in health and health care utilization in Mexico, 2000-2006. *Rev Panam Salud Pública.* 2013;33(2):122–30.
42. Munge K, Mulupi S, Barasa EW, Chuma J. A Critical Analysis of Purchasing Arrangements in Kenya: The Case of the National Hospital Insurance Fund. *Int J Heal policy Manag.* 2018;7(3):244–54.
43. Grogger J, Arnold T, Leon A. S OA. Heterogeneity in the effect of public health insurance on catastrophic out-of-pocket health expenditures: the case of Mexico. *Health Policy Plan.* 2014;1–7.
44. Devadasan N, Seshadri T, Trivedi M, Criel B. Promoting universal financial protection: evidence from the Rashtriya Swasthya Bima Yojana (RSBY) in Gujarat, India. *Health Res Policy Syst.* 2013 Jan;11:29.
45. Rao M, Katyal A, Singh P V, Samarth A, Bergkvist S, Kancharla M, et al. Changes in addressing inequalities in access to hospital care in Andhra Pradesh and Maharashtra states of India: a difference-in-differences study using repeated cross-sectional surveys. *BMJ Open.* 2014 Jan;4(6):e004471.
46. Ranjan A, Dixit P, Mukhopadhyay I, Thiagarajan S. Effectiveness of government strategies for financial protection against costs of hospitalization Care in India. *BMC Public Health.* 2018;18.
47. Health Inc. Towards equitable coverage and more inclusive social protection in health. Antwerp: ITGPress; 2014. 1–225 p.
48. Thakur H. Study of Awareness, Enrollment, and Utilization of Rashtriya Swasthya Bima Yojana (National Health Insurance Scheme) in Maharashtra, India. *Front public*

- Heal. 2015;3(January):282.
49. GIZ. Health insurance for India's poor: Meeting the challenge with information technology. Bonn and Eschborn; 2015. https://health.bmz.de/ghpc/case-studies/Health_Insurance_India_New/Health_insurance_for_India_s_poor_-_Long_version.pdf. Accessed 15 May 2019.
 50. Ramprakash R, Lingam L. Publicly Funded Health Insurance Schemes (PFHIS): A Systematic and Interpretive Review of Studies Does Gender Equity Matter? eSSH. 2018. http://www.esocialsciences.org/eSSH_Journal/Repository/6N_Publicly_Funded_Health_Insurance_Schemes_Rajalakshmi.pdf. Accessed 22 October 2018.
 51. Narayana D. Review of the Rashtriya Swasthya Bima Yojana. Econ Polit Wkly. 2010;45(29):13–8.
 52. Nundy M, Dasgupta R, Kanungo K, Nandi S, Murugan G. The Rashtriya Swasthya Bima Yojana (RSBY) Experience in Chhattisgarh What does it mean for Health for All ? The Rashtriya Swasthya Bima Yojana (RSBY) experience in Chhattisgarh : New Delhi; 2013.
 53. Prasad PN, Raghavendra P. Healthcare Models in the Era of Medical Neo-liberalism A Study of Aarogyasri in Andhra Pradesh. Econ Polit Wkly. 2012;47(43):118–26.
 54. Prusty RK, Choithani C, Dutt Gupta S. Predictors of hysterectomy among married women 15–49 years in India. Reprod Health. 2018;15.
 55. Chatterjee P. Hysterectomies in Beed district raise questions for India. Lancet. 2019 Jul;394(10194):202.
 56. Karan A, Yip W, Mahal A. Extending health insurance to the poor in India: An impact evaluation of Rashtriya Swasthya Bima Yojana on out of pocket spending for

- healthcare. *Soc Sci Med*. 2017;181:83–92.
57. Ravi S, Ahluwalia R, Bergkvist S. Health and Morbidity in India (2004-2014). 2016;1–2. https://www.brookings.edu/wp-content/uploads/2016/12/201612_health-and-morbidity.pdf. Accessed 20 June 2018.
58. Gupta I, Chowdhury S, Trivedi M, Prinja S. Do health coverage schemes ensure financial protection from hospitalization expenses? Evidence from eight districts in India. *J Soc Econ Dev*. 2017. doi 10.1007/s40847-017-0040-4.
59. Rent P, Ghosh S. Understanding the “Cash-Less” Nature of Government-Sponsored Health Insurance Schemes : Evidence From Rajiv Gandhi Jeevandayee Aarogya Yojana in Mumbai. *SAGE Open*. 2015;1(10).
60. Garg S. A Study of ‘Strategic Purchasing’ as a Policy Option for Public Health System in India; PhD Thesis. Mumbai: Tata Institute of Social Sciences; 2019.
61. Dasgupta R, Nandi S, Kanungo K, Nundy M, Neog R. What the Good Doctor Said: A Critical Examination of Design Issues of the RSBY Through Provider Perspectives in Chhattisgarh, India. *Soc Change*. 2013;43(2):227–43.
62. Maurya D, Ramesh M. Program design, implementation and performance: the case of social health insurance in India. *Heal Econ Policy Law*. 2018 Jul;1–22.
63. Rathi P. Evaluation of Rashtriya Swasthya Bima Yojana (RSBY): A Case Study of Amravati District. Bangalore; 2012.
http://www.iimb.ac.in/sites/default/files/u181/IIMB_PGPPM_Policy_Folio_Paper_Prateek_Rathi_March_2012.pdf. Accessed 15 May 2018.
64. Prasad V, Sengupta A. Perpetuating health inequities in India: global ethics in policy and practice. *J Glob Ethics*. 2019;15(1):67–75.

65. Brundtland GH. India's health reforms: the need for balance. *Lancet*. 2018 Oct;392(10154):1174–5.
66. Marmot M. Universal health coverage and social determinants of health. *Lancet*. 2013;382:1227–8.
67. Rodney AM, Hill PS. Achieving equity within universal health coverage: a narrative review of progress and resources for measuring success. *Int J Equity Health*. 2015;13(72):1–8.
68. WHO. Universal Health Coverage : Supporting Country Needs. http://www.who.int/contracting/UHC_Country_Support.pdf. Accessed 20 June 2018.
69. McIntyre D. A universal health system for South Africa: a few final words on NHI. Cape Town: Health Economics Unit, University of Cape Town; 2017. <https://phm-sa.org/wp/wp-content/uploads/2018/09/McIntyre-2017-A-universal-health-system-for-South-Africa-a-few-final-words-on-NHI.pdf>. Accessed 8 May 2019.
70. Hernández LO, Salgado DP. Chile and Costa Rica: Different roads to universal health in Latin America. 2014. (Occasional Paper). Report No.: 23. <https://www.municipalservicesproject.org/publication/chile-and-costa-rica-different-roads-universal-health-latin-america>. Accessed 8 May 2019.
71. O'Connell T, Rasanathan K, Chopra M. What does universal health coverage mean? *Lancet*. 2014;383(9913):277–9.
72. Clark J. Medicalization of global health 4: the universal health coverage campaign and the medicalization of global health. *Glob Health Action*. 2014;7.
73. Forman L, Beiersmann C, Brolan CE, Mckee M, Hammonds R, Ooms G. What Do Core Obligations under the Right to Health Bring to Universal Health Coverage?

- Health Hum Rights. 2016 Dec;18(2):23–34.
74. Sridhar D, McKee M, Ooms G, Beiersmann C, Friedman E, Gouda H, et al. Universal health coverage and the right to health: From legal principle to post-2015 indicators. *Int J Heal Serv*. 2015;45(3):495–506.
75. Paterno RPP. The Future of Universal Health Coverage: A Philippine Perspective. *Glob Heal Gov*. 2013;6(2).
76. Hosseinpoor AR, Bergen N, Koller T, Prasad A, Schlottheuber A, Valentine N, et al. Equity-Oriented Monitoring in the Context of Universal Health Coverage. *PLoS Med*. 2014 [cited 2018 Jul 1];11(9):e1001727.
77. Noronha JC De. Cobertura universal de saúde : como misturar conceitos , confundir objetivos , abandonar princípios Universal health coverage : how to mix concepts , confuse objectives , and abandon principles Cobertura universal de salud : cómo mezclar conceptos , confu. *Cad Saúde Pública*. 2013;29(5):847–9.
78. Preker AS, Lindner ME, Chernichovsky D, Schellekens OP. Scaling Up Affordable Health Insurance: Staying the Course. Washington DC: The World Bank; 2013. 1–781 p.
79. Mounier-Jack S, Griffiths UK, Closser S, Burchett H, Marchal B. Measuring the health systems impact of disease control programmes: a critical reflection on the WHO building blocks framework. *BMC Public Health*. 2014;14 (1): 278.
80. Paina L, Peters DH. Understanding pathways for scaling up health services through the lens of complex adaptive systems. *Health Policy Plan*. 2012 Aug;27(5):365–73.
81. Sheikh K, Gilson L, Agyepong IA, Hanson K, Ssenooba F. Building the Field of Health Policy and Systems Research : Framing the Questions. 2011;8(8):1–6.

82. de Savigny D, Adam T (Eds). Systems thinking for health systems strengthening. Alliance for Health Policy and Systems Research, WHO; 2009. 1–112 p.
83. WHO. Everybody business : strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: World Health Organization; 2007. 1–56 p. https://www.who.int/healthsystems/strategy/everybodys_business.pdf. Accessed 13 May 2019.
84. Montagu D, Goodman C. Prohibit, constrain, encourage, or purchase: how should we engage with the private health-care sector? *Lancet*. 2016;6736(16):1–9.
85. Basu S, Andrews J, Kishore S, Panjabi R, Stuckler D. Comparative performance of private and public healthcare systems in low- and middle-income countries: a systematic review. *PLoS Med*. 2012 Jan;9(6):e1001244.
86. Berendes S, Heywood P, Oliver S, Garner P. Quality of private and public ambulatory health care in low and middle income countries: systematic review of comparative studies. *PLoS Med*. 2011 Apr;8(4):e1000433.
87. Maarse H. The privatization of health care in Europe: an eight-country analysis. *J Health Polit Policy Law*. 2006 Oct;31(5):981–1014.
88. McIntyre D, Thiede M, Birch S. Access as a policy-relevant concept in low- and middle-income countries. *Health Econ Policy Law*. 2009 Apr;4(Pt 2):179–93.
89. Thiede M, Akweongo P, McIntyre D. Exploring the dimensions of access. In: McIntyre D, Mooney G, editors. *The Economics of Health Equity*. Cambridge: Cambridge University Press; 2007. p. 103–23.
90. Gilson L, Schneider H. Understanding health service access: concepts and experience. *Glob Forum Updat Res Heal*. 2007;4:28–32.

91. Abihiro GA, McIntyre D. Universal financial protection through National Health Insurance: a stakeholder analysis of the proposed one-time premium payment policy in Ghana. *Health Policy Plan*. 2013 May;28(3):263–78.
92. Giedion U, Alfonso EA, Diaz Y. *The Impact of Universal Coverage Schemes in the Developing World: A Review of the Existing Evidence*. Washington DC: The World Bank; 2013. 139 p.
93. Gilson L, Orgill M, Shroff ZC. *A health policy analysis reader: The politics of policy change in low- and middle-income countries*. 2018. 554 p.
<https://www.who.int/alliance-hpsr/resources/publications/Alliance-HPA-Reader-web.pdf>. Accessed 12 May 2019.
94. Palthe J. Regulative, Normative, and Cognitive Elements of Organizations: Implications for Managing Change. *Manag Organ Stud*. 2014;1(2):59–66.
95. Scott WR. W. Richard SCOTT (1995), *Institutions and Organizations. Ideas, Interests and Identities*. *M@n@gement*. 2014;17(2):136–40.
96. Gore R, Parker R. *Analysing power and politics in health policies and systems*. 2019;1692.
97. Office of the Registrar General & Census Commissioner I. *Census of India Website*. 2011. Available from: <http://censusindia.gov.in/2011-Common/CensusData2011.html>. Accessed 29 May 2018.
98. Forest Survey of India. *India State of Forest Report 2017*. New Delhi; 2017.
<http://fsi.nic.in/isfr2017/isfr-forest-cover-2017.pdf>. Accessed 29 May 2018.
99. IIPS & ICF. *National Family Health Survey, India, 2015-16: Chhattisgarh*. Mumbai; 2017. <http://rchiips.org/nfhs/chattis.shtml>. Accessed 29 May 2018.

100. RGI. Sample Registration System (SRS) Bulletin Volume 51, No. 1. 2017.
[http://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS Bulletin -Sep_2017-Rate-2016.pdf](http://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS_Bulletin_Sep_2017-Rate-2016.pdf). Accessed 29 May 2018.
101. Government of Chhattisgarh. Website of RSBY and MSBY. Health and Family Welfare Department Government of Chhattisgarh. 2018. <http://cg.nic.in/healthrsby/>. Accessed 29 May 2018.
102. CTRD. Independent assessment study on process of enrollment under Rashtriya Swasthya Bima Yojana and Mukhyamantri Swasthya Bima Yojana in Chhattisgarh. Bhubaneswar; 2013.
103. Jain N. Role of Government-funded and Community-based Health Insurance Schemes in Moving toward Universal Health Coverage in India. Bethesda, MD: Health Finance & Governance Project, Abt Associates Inc; 2017. <https://www.hfgproject.org/role-government-funded-community-based-health-insurance-schemes-moving-toward-universal-health-coverage-india/>. Accessed 15 May 2018.
104. Nandi S, Nundy M, Prasad V, Kanungo K, Khan H, Haripriya S, et al. The Implementation of RSBY in Chhattisgarh, India: A study of the Durg district. *Heal Cult Soc*. 2012 Mar;2(1):40–70.
105. Nandi S, Schneider H, Dixit P. Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage. *PLoS One*. 2017;12(11).
106. Nandi S, Schneider H, Garg S. Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index. *Glob Health Action*.

- 2018 Jan 14;11(1).
107. PHRN. Exploring Health Inequities amongst Particularly Vulnerable Tribal Groups : Case Studies of Baiga and Sabar in Chhattisgarh and Jharkhand States of India Report of a study by Public Health Resource Network. Trivandrum; 2017.
108. Department of Finance Government of Chhattisgarh. Budget Books of Public Health and Family Welfare Department. 2019.
http://finance.cg.gov.in/budget_doc/Budget.asp. Accessed 29 May 2018.
109. Garg S. Developing Health systems for coherent response to the NCD Challenge – Limitations of Financing through Health Insurance in India. Prince Mahidol Award Conference. Bangkok; 2019.
[http://pmac2019.com/site/conferenceprogram/detail/Abstract Session Complement to Sub-theme 2](http://pmac2019.com/site/conferenceprogram/detail/Abstract%20Session%20Complement%20to%20Sub-theme%202). Accessed 20 June 2019.
110. Merwin R. Inclusion of dental packages in Chhattisgarh challenges wisdom of universal health cover. The Hindu BusinessLine. 2019 Jan 30;1–9.
<https://www.thehindubusinessline.com/news/national/inclusion-of-dental-packages-in-chhattisgarh-challenges-wisdom-of-universal-health-cover/article26129708.ece>. Accessed 25 May 2019.
111. Kundu D, Sharma N, Chadha S, Laokri S, Awungafac G, Jiang L, et al. Analysis of multi drug resistant tuberculosis (MDR-TB) financial protection policy: MDR-TB health insurance schemes, in Chhattisgarh state, India. Health Econ Rev. 2018;8(1):3.
112. Rao A. Revisiting Chhattisgarh: The Indian state where a woman’s uterus is a way for doctors to get rich. Quartz India. 2015 Apr;1–13.
<https://qz.com/india/358452/revisiting-chhattisgarh-an-indian-state-where-a-womans-uterus-has-given-birth-to-a-horrific-medical-tragedy/>. Accessed 25 May 2019.

113. Mazumdar S. Forced hysterectomies, unscrupulous doctors. *OneWorld South Asia*. 2013. Available from: <http://southasia.oneworld.net/news/forced-hysterectomies-unscrupulous-doctors#.XPCOXYgzbIU>. Accessed 20 June 2018.
114. Nandi S, Joshi D., Sahu S. In Chhattisgarh , Public Funds for Health Insurance Are Being Diverted to the Private Sector. *The Wire*. 2018 Feb 28;1–11. <https://thewire.in/health/chhattisgarh-public-funds-health-insurance-diverted-private-sector>. Accessed 25 May 2018.
115. Nandi S, Schneider H. When state-funded health insurance schemes fail to provide financial protection: An indepth exploration of the experiences of patients from urban slums of Chhattisgarh, India. *Glob Public Health*. 2019;(10.1080/17441692.2019.1651369).
116. JSA Chhattisgarh. Press note on Chhattisgarh JSA Convention on Right to Health. Raipur; 2018. Available from: http://phmindia.org/wp-content/uploads/2018/04/JSA_chattisgarh_RTH.pdf. Accessed 11 April 2019.
117. Bagchi S. Public health, private tragedy. *The Hindu*. 2014 Nov 26. <https://www.thehindu.com/opinion/op-ed/public-health-private-tragedy/article6633520.ece>. Accessed 11 April 2019.
118. Nandi S. Is the National Health Insurance Scheme in Chhattisgarh Doing More Damage Than Good? *The Wire*. 2017 Nov 3;1–9. <https://thewire.in/193696/national-health-insurance-scheme-chhattisgarh-damage-good/>. Accessed 11 April 2019.
119. Nandi S, Dasgupta R, Garg S, Sinha D, Sahu S, Mahobe R. Uncovering Coverage: Utilisation of the Universal Health Insurance Scheme, Chhattisgarh by Women in Slums of Raipur. *Indian J Gend Stud*. 2016;23(1):43–68.

120. Habicht T, Habicht J, van Ginneken E. Strategic purchasing reform in Estonia: Reducing inequalities in access while improving care concentration and quality. *Health Policy (New York)*. 2015 Aug 1;119(8):1011–6.
121. CTRD. Final report on evaluation of Rashtriya Swasthya Bima Yojana scheme in Chhattisgarh. Raipur; 2012.
122. Sundararaman T. Community health-workers: scaling up programmes. *Lancet*. 2007 Jun 23;369(9579):2058–9.
123. Sundararaman T, Raha S, Gupta G, Jain K, Antony K, Rao K. Chhattisgarh Experience with 3-Year Course for Rural Health Care Practitioners - A Case Study. 2008. <http://cghealth.nic.in/cghealth17/Information/content/MediaPublication/ChhattisgarhExperience3-Year.pdf>. Accessed 11 April 2019.
124. Puri R. Reforming the Public Distribution System: Lessons from Chhattisgarh. *Econ Polit Wkly*. 2012;47(5):21–3.
125. Ghosh D. TS Singhdeo interview: ‘Ayushman scheme misleading... universal healthcare is a step ahead.’ *The Indian Express*. 2019 Mar 19. <https://indianexpress.com/elections/chhattisgarh-lok-sabha-elections-ts-singhdeo-interview-ayushman-scheme-misleading-universal-healthcare-is-a-step-ahead-5632859/>. Accessed 5 June 2019.
126. Spaan E, Mathijssen J, Tromp N, McBain F, ten Have A, Baltussen R. The impact of health insurance in Africa and Asia: a systematic review. *Bull World Health Organ*. 2012 Sep;90(9):685–92.
127. Dao A, Nichter M. The Social Life of Health Insurance in Low- to Middle-income Countries: An Anthropological Research Agenda. *Med Anthropol Q*. 2016

- Mar;30(1):122–43.
128. Ooms G, Latif LA, Waris A, Brolan CE, Hammonds R, Friedman EA, et al. Is universal health coverage the practical expression of the right to health care ? BMC Int Health Hum Rights. 2014;14(1):1–7.
 129. Prinja S, Pinto AD, Jan S, Kumar R, Kumar MI. Equity in Hospital Services Utilisation in India. Econ Polit Wkly. 2013;xlviI(12):52–8.
 130. Hart JT. The Inverse Care Law. Lancet. 1971. [https://doi.org/10.1016/S0140-6736\(71\)92410-X](https://doi.org/10.1016/S0140-6736(71)92410-X).
 131. Stuckler D, Basu S, McKee M. Health care capacity and allocations among South Africa’s provinces: infrastructure-inequality traps after the end of apartheid. Am J Public Health. 2011 Jan;101(1):165–72.
 132. Oxfam. Blind Optimism Challenging the myths about private health care in poor countries: Oxfam Briefing Paper. 2009. https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/bp125-blind-optimism-0902_14.pdf. Accessed 11 April 2019.
 133. Jacobs B, Ir P, Bigdeli M, Annear PL, Damme W Van. Addressing access barriers to health services : an analytical framework for selecting appropriate interventions in low-income Asian countries. Heal Policy Plannng. 2012;27:288–300.
 134. Das Gupta M, Muraleedharan VR. Universal Health Coverage. Econ Polit Wkly. 2014 Jun;49(35):7–8.
 135. Garg S, Bebarta K. K, Tripathi N. Performance of India’s national publicly funded health insurance scheme, Pradhan Mantri Jan Arogya Yojana (PMJAY), in improving access and financial protection for hospital care: findings from household surveys in

Chhattisgarh state (Preprint Version 1). Research Square. 2020 March 02.

<https://doi.org/10.21203/rs.3.rs-15599/v1>.

136. Sanders D, Nandi S, Labonté R, Vance C, Van Damme W. From primary health care to universal health coverage—one step forward and two steps back. *The Lancet*. 2019 Aug 24;394(10199):619-21.



CHAPTER 4: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter describes the contributions of the thesis and places them within the larger research and policy environment. It then presents assumptions underlying the thesis and the limitations of the PhD. The main conclusions are then listed, along with recommendations for research and policy.

Recapitulation of what the thesis does

The aim of this PhD was to study equity, access and utilisation in the state-funded universal insurance scheme (RSBY/MSBY) of Chhattisgarh State of India, in the context of a policy of Universal Health Coverage. The PhD explored the access dimensions (availability, acceptability and affordability), their inter-relationships and how they affected utilisation. The research also examined differences in access and utilisation across groups based on gender, social, income and geographical differences, and across private and public sectors, exploring the barriers to access faced by vulnerable groups.

There is much contestation and politics around PFHI schemes in India, now more than ever, since the much-publicised launch of PMJAY under Ayushman Bharat (Chatterjee, 2018, 2019a). Most of the initial research on RSBY and other PFHI schemes in India came from agencies and researchers who were involved in some way in their implementation and therefore protagonists of PFHI schemes. In recent years, independent studies by many others have begun to view these schemes more critically. This thesis aims to contribute to the growing literature on PFHI schemes in India, providing a critical perspective and seeking to assess their real impact on access, including financial protection and on the health system as a whole.

Though today equity is considered as being a core goal of UHC, a key question is whether commonly implemented policies and interventions in the name of UHC are making access more equitable or exacerbating existing inequities. The thesis is centrally concerned with this question, which is extremely relevant in the current context, both in India and globally.

Through three independent, but related studies, the thesis tries to explore the dimensions and objectives stated above. The studies are situated within a larger equity-based framework that has been proposed in the thesis, for evaluating the impact of PFHI programmes in India and used to illustrate the case of Chhattisgarh.

Paper 1 (Nandi, Schneider and Garg, 2018) compared the availability of public and private hospital services under PFHI schemes across districts of the state, ranked and grouped by socio-economic vulnerability and drew on the RSBY/MSBY programme data for the state. Paper 2 (Nandi, Schneider and Dixit, 2017) examined the relationships between enrolment, utilisation of public and private sector sectors and financial risk protection for the insured and uninsured in the state by analysing the government's National Sample Survey (71st round) data. Paper 3 (Nandi and Schneider, 2019a) examined the way patients and their families (from the slums of Raipur City) who had navigated and negotiated hospitalisation under the scheme. The cases were purposefully selected as incurring significant health expenditure despite using insurance. The paper also illustrated the interaction between the three access dimensions of affordability, availability and acceptability and the factors determining access. Paper 4 (Nandi and Schneider, 2019b) presented the broader equity-based framework for evaluating the impacts of PFHI schemes and applied it to assessing PFHI schemes in Chhattisgarh. It additionally outlined briefly the impact of PFHI schemes on the health system building blocks and the policy-making process. It combined the empirical findings of the three studies and other research undertaken by the PhD candidate, supplemented by review of a secondary literature.

Summary findings

The thesis findings report on indicators associated with access, such as enrolment, availability of health facilities, out-of-pocket (OOP) expenditure, patients' agency and regulatory mechanisms, and their implications for utilisation and for equity of access. It locates insights into the impact of PFHI schemes within a broader view of health policy and systems, the influence of the political economy and dominant discourses around UHC and PFHI schemes in policy-making and implementation.

Chhattisgarh has one of the highest health insurance enrolment percentages in the country, mainly due to the universal nature of the PFHI scheme. Enrolment was overall found to be equitable across gender, social groups and economic categories and highest in the most vulnerable districts (Paper 1 and Paper 2). However, other studies (including previous work by the candidate), identified within household inequities in enrolment and among the most vulnerable communities such as the Particularly Vulnerable Tribal Groups (reported in Paper 4).

One of the most important findings of this thesis is that equitable enrolment did not automatically lead to financial protection or the acceptability of the PFHI scheme for the poor (Paper 2 and Paper 3) or equity in utilisation (Paper 1).

Unequal availability of hospitals under the PFHI scheme led to unequal health service utilisation and resource distribution, skewed against the vulnerable areas that had the most health and social need, exhibiting the 'Inverse Care Law' (Hart, 1971). Resource reallocations under the PFHI scheme led to a widening of inequalities in healthcare availability and a deepening of the 'infrastructure inequality trap' in the state (Stuckler, Basu and McKee, 2011). Such reallocations also result in appropriation of finances for the better-off. For instance, enrolling Scheduled Tribes but not providing the conditions for them to actually be able to utilise the scheme, can result in shifting finances earmarked for them to non-tribal areas and better-off populations (Paper 1 and Paper 4).

The main objective of any PFHI scheme is to ensure financial protection, and in particular, protect families from OOP expenditure. The research found that the insured still had to incur high OOP expenditure for hospitalisation (Paper 2 and Paper 3). The private sector was many times more expensive than the public sector and a higher proportion of private sector users incurred OOP expenditure than those going to the public sector (Paper 2). Though the insured patients attempted to exercise their agency during hospitalisation, they and their families were rendered helpless and powerless when dealing with hospitals, mainly the private hospitals, experienced as extorting extra payments (Paper 3). The smart card, meant to act as a device that enables choice and ease of access, was instead used by the hospital to extract additional payments from patients (Paper 3). These findings raise questions regarding the effectiveness of PFHI schemes and the role of the private sector in bringing about the equity goals of UHC, a concern that has also been raised by others (Oxfam, 2009; Basu *et al.*, 2012; Jacobs *et al.*, 2012; Sengupta, 2013; Das Gupta and Muraleedharan, 2014).

Another key finding of the thesis was the difference in availability and utilisation of public and private sector care under Chhattisgarh's PFHI scheme. While empanelled public hospitals were spread out relatively evenly across the state, private hospitals were concentrated in the less vulnerable areas and urban areas (Paper 1). The public sector in the State catered for the most vulnerable (Paper 1 and Paper 2), with for instance, women, Scheduled Tribes and the poorest (Q1) significantly more likely to be hospitalised in the public than the private sector (Paper 2). There was higher utilisation of PFHI scheme in the

public sector than the private sector in the highest vulnerability districts, while the opposite was seen in the districts with middle and lowest vulnerability (Paper 1). The findings on the public sector catering to the more vulnerable groups corroborates with findings of studies in India (Prinja *et al.*, 2013).

There is also evidence that the PFHI scheme has impacted on inputs into the health system in both the public and private sectors, with evidence of increasing budgetary allocations to PFHI crowding out funds to public sector programmes (Paper 4). Empanelled public hospitals also receive a much smaller proportion of the PFHI funds through claims than the private sector. The implications of this for service provision, human resource and supply chains in the public sector are yet to be studied systematically, however they are an area of concern. While the private sector receives the bulk of the PFHI funds, it has been found to engage in 'cherry picking' and provision of narrow and selective services (Paper 4). Instances of moral hazard and provider induced demand in the private sector have also been documented (Paper 4) along with weak regulation and monitoring systems (Paper 3 and Paper 4).

Finally, the research documented how PFHI schemes are embedded within institutions with cultural, normative and regulatory elements that profoundly influence the implementation and everyday experience of these schemes. These institutions exist within social structures that establish power differentials within a political economy of health (Paper 3). The experiences of patients and their families in utilising the PFHI scheme are determined by this. As the evidence in thesis shows, the focus on the private sector for provisioning under PFHI schemes and the commodification of health have grave consequences for health equity and access.

Addressing the seemingly contradictory findings on use of private versus public hospitals

One dimension explored in the study in the context of PFHI schemes is that of the differing utilization of the public and private sectors and the implications of the scheme for the two sectors.

Paper 1 analyses PFHI scheme programme data for the financial 2015-16 which shows that 25% of the claims were made in the public sector. This pattern of the private sector making the bulk of the claims and receiving the larger share of claim amounts has been seen since the beginning of the scheme and continues till date (Paper 4). On the other hand, Paper 2 that analyses population based data, shows that of those who were enrolled and hospitalised,

67.2% went to the public sector for hospitalisation. This seemingly contradictory finding can be explained as follows:

The two studies analysed different kind of data. Paper 1 analysed PFHI scheme claims data and calculated the proportion of claims made by each sector at an aggregate and not individual level. Paper 2 analysed population-based survey data and calculated hospitalization of the insured in the public sector, irrespective of whether the insurance was actually used for the episode.

Paper 2 reports Scheduled Tribes and the poor are more likely to be insured and are also more likely to get hospitalized in the public sector. This is also reflected in Paper 1 which reports that the proportion of claim numbers per 100,000 enrolled in the public sector was higher at 61% in HVDs (areas that are mostly rural and with high ST population) in comparison to 18% in the LVDs (areas that are mostly urban) (Table 5, Paper 1). However, there is lower swiping of the insurance card during hospitalisations in the public sector compared to the private sector.

While this PhD did not specifically explore the reasons for lower swiping in the public sector, it has been explored in other studies (Dasgupta et al., 2013; Garg, 2019b). In Chhattisgarh financial incentives have been designed for staff of government hospitals in order to promote PFHI scheme utilization in their hospitals. Twenty five percent of the claims amounts are meant to be distributed among the staff of the public hospital. However, the incentives are poorly implemented (Dasgupta et al., 2013; Garg, 2019b). Another reason is related to the inadequate staffing in the public sector for facilitating insurance card use. There are fewer people in government hospitals to handle the intensive information technology-related tasks and paperwork that are required to use the insurance card. Such staff is also provided the lowest amounts in the above incentive scheme and therefore considers it as a burden (Garg, 2019b).

From the side of those who are enrolled, the biggest reason for not using the PFHI scheme is that they can access services free or at low cost from the public sector without using the insurance card (Garg, 2019b). As Paper 2 shows, the out of pocket expenditure in the public sector is many times lower than in the private sector regardless of insurance coverage. Therefore, often the insured keep the insurance cover for use in emergencies for which they may have to go to the private hospital (Garg, 2019b).

The implications of all this is that the private hospitals continue to receive a much higher proportion of the PFHI insurance claim amount, though more people may be going to the public sector for hospitalization. As the PhD shows, these private hospitals are concentrated in urban areas, and the high utilization of PFHI scheme in them raises concerns regarding equity in terms of utilization of the scheme and resource allocation, transfer of resources from the public healthcare sector to private and from the more vulnerable areas to the less vulnerable ones (Paper 4).

Contribution of the thesis

Studying PFHI schemes holistically vis-à-vis access and UHC

Studies on PFHI schemes in India and elsewhere have been limited to the study of one or other element, and have not studied impacts as a whole (Acharya *et al.*, 2012; Spaan *et al.*, 2012; Prinja *et al.*, 2017). There have been a few attempts to study the pathways of PFHI comprehensively, from enrolment to utilisation to financial protection (Rao *et al.*, 2011; Devadasan *et al.*, 2013; Ghosh, 2014b; Ranjan *et al.*, 2018). With regards to the dimensions of access (availability, affordability and acceptability), research on PFHI schemes has mostly studied financial protection or the affordability dimension, with less focus on the availability and acceptability dimensions (Kutzin, 2012; Ahlin, Nichter and Pillai, 2016; Dao and Nichter, 2015; Sen and Gupta, 2017). This reflects a more general gap in knowledge and an emphasis on financial protection within the UHC discourse (Frenz and Vega, 2010; Giedion, Alfonso and Diaz, 2013). Moreover, in assessing PFHI schemes as instruments of UHC, the various perspectives on what UHC should entail, such as equity, human rights, health for all, social determinants of health, quality and appropriateness of health services, strengthening of public health systems, promotion of health as a social good and an emphasis on universal health systems, also need to be taken into account (WHO, 2010; Kutzin, 2012, 2013a; Sachs, 2012; Paterno, 2013; Clark, 2014; O'Connell, Rasanathan and Chopra, 2014; Ooms *et al.*, 2014; Sridhar *et al.*, 2015; Forman *et al.*, 2016). Though the importance of assessing the impact of such schemes for UHC, on the health system and the population as a whole has been recognised (Kutzin, 2013), there has been a dearth of studies on this aspect.

The thesis has thus endeavoured to examine the dimensions of access and the elements of PFHI schemes holistically, locating them within a broader equity-based framework that also includes interactions and dynamics between individual dimensions/elements. It has studied

equity through all processes of the insurance scheme, namely enrolment, choice of provider (availability), utilisation and the experiences thereof, and financial protection. The context of Chhattisgarh, which has a universal PFHI scheme, supported such an analysis and also enabled a series of studies in one geographical area.

The thesis developed a conceptual framework that could be used for comprehensively assessing UHC and PFHI schemes (Paper 4). The broader framework contains within it specific conceptual elements for understanding access and processes in PFHI schemes. Using the Health Policy and Systems Research (HPSR) approach and values of the right to health and human rights, the framework unpacks UHC and access and offers pathways of analysis to assess the impact of PFHI schemes on equity of access. The conceptual framework for understanding utilisation and out-of-pocket (OOP) expenditure in public and private sectors under PFHI schemes has been presented in Paper 2. This framework represents the relationships between enrolment, utilisation (public and private sector hospitalisation) and financial risk protection (OOP and catastrophic household expenditures). It charts the pathways from enrolment to utilisation to financial protection, while incorporating equity into the analysis. Paper 3 presents a conceptual framework of access and factors influencing this under PFHI schemes and further explores the implications on financial protection when the urban poor utilises the PFHI scheme in a hospital. It is able to highlight the interactions between the patient and provider, and explore how the larger societal context affects the experiences in utilising the scheme and financial protection (Paper 3).

The thesis thus takes the debate and discussions on PFHI schemes beyond enrolment, to the determinants of real equity of access under such schemes. It illustrates the need for the UHC discourse to go beyond insurance coverage, reinforcing the concerns that led to the indicator for UHC in the sustainable development goals (SDGs) (3.8.2) being revised from 'proportion of population covered by an insurance scheme' to 'proportion of the population with large household expenditures on health as a share of total household expenditure or income' (McIntyre *et al.*, 2016; Oxfam, 2016). The research revealed the multiple barriers in the pathways from enrolment in PFHI schemes to achievement of access and equity.

Equity at the centre of analysis

The thesis sought to foreground equity as a core orientation. The Vulnerability index developed in the thesis is a new contribution to the literature on equity relevant to the Indian context, and relevant not only to insurance (Paper 1). The index reflects the multi-

dimensional nature of inequity, which is often clustered geographically. Though indices have been used widely to measure multidimensional vulnerability (UNDP, 2015; Hosseinpoor *et al.*, 2016; Alkire and Robles, 2017), social group or caste has not been included despite being one of the most important determinants of vulnerability and health equity (Baru *et al.*, 2010; Balarajan, Selvaraj and Subramanian, 2011). The categories used in the index have been dealt with individually in various studies, however this index brought these categories together, highlighting intersectionality and multi-dimensional aspect of vulnerability that results in health inequity in India and Chhattisgarh (Baru *et al.*, 2010; Balarajan, Selvaraj and Subramanian, 2011; Larson *et al.*, 2016). The index thus provides a new tool for assessing multi-dimensional vulnerability in the Indian context.

The other contribution has been in terms of studying geographical inequity with regards to PFHI schemes. Though the distribution of hospitals and the availability of hospital services is a major factor in access and utilisation, there are very few studies examining implications for PFHI schemes (Narayana, 2010; CEHAT, 2016). Although the literature does raise the distribution of private and public facilities (Randive, Chaturvedi and Mistry, 2012), studies on PFHI schemes have not explored this aspect in any depth. Moreover, it is also a highly neglected part of normative literature and theory on PFHI schemes. Paper 1 is one of the first studies that explores geographical equity under PFHI schemes and UHC in India.

Understanding the dynamics of public and private sector provisioning under PFHI schemes

The need for research on examining equity and access in public and private sectors has been highlighted by many (Maarse, 2006; Berendes *et al.*, 2011; Basu *et al.*, 2012). Within UHC and PFHI schemes, the role of the private sector is much debated (Hernández and Salgado, 2014; Horton and Clark, 2016; Sengupta *et al.*, 2017; Clarke *et al.*, 2019; Prasad and Sengupta, 2019). However, most studies on PFHI schemes have failed to examine public and private sectors separately (Acharya *et al.*, 2012). In case of PFHI schemes in India, few studies have disaggregated findings on utilisation by private and public sector, although recent studies have started to examine financial protection by each sector (Prinja *et al.*, 2017; Ranjan *et al.*, 2018). This thesis is one of the first in India to systematically disaggregate all findings by both public and private sector. The importance of such an analysis is seen in the significant differences that have been found with regards to the availability of hospitals, choice of provider, utilisation, and financial protection (Papers 1-4).

Use of qualitative methods in understanding the experiences of patients and their families

There has been a dearth of qualitative studies exploring the experiences of users under PFHI schemes (Dao and Nichter, 2015; Ahlin, Nichter and Pillai, 2016; Sen and Gupta, 2017). Paper 3 studied interaction between providers and users and under-explored dimensions of trust, agency and culture that affects these interactions and therefore fills a gap in the literature on PFHI schemes both in terms of its methodology and in terms of exploring elements of ‘acceptability’.

Contribution to international debates

The PhD adds to the international debates on UHC and PFHI schemes (Sanders *et al.*, 2019). It highlights the pathways of impact of PFHI schemes that could be used to assess PFHI schemes in other LMICs. It cautions against equating PFHI schemes with UHC and illustrates the need for a global policy push towards universal health care and universal health systems rather than simply scheme ‘coverage’.

Assumptions and limitations

The limitations of each study have been reported in their respective publication. In summary, the limitations were as follows:

- In Paper 1 the Vulnerability Index was not tested for statistical validity but has face validity and the selection of indicators was based on a careful examination of literature and theory.
- In Paper 2 the nature of data was cross-sectional. It therefore carries the usual limitations of such studies. However, a comparison was undertaken between the enrolled and non-enrolled. The potential selection bias in insurance enrolment was not addressed.
- The research was limited to one state of India, Chhattisgarh. The findings have limitations in terms of being generalisable to rest of India. There are, however, significant commonalities across the country. Because all states have a similar healthcare system, with a private/public mix, and with PFHI schemes primarily relying on private providers and focused on hospitalisation care, the findings on the impact of PFHI schemes may be relevant to other states too.
- Overall, although the framework guiding the PhD was comprehensive, the thesis explored only certain sections of it, and the availability of evidence for all the sections was variable. This was especially the case with the impact of PFHI schemes on the providers (public and

private) or the health system as a whole. There remains a significant knowledge gap on the wider health system implications of the PFHI scheme in India. The quality and appropriateness of care under PFHI schemes is also an important dimension but was beyond the scope of this research. The scope of the research also did not include examination of alternative models, such as a PFHI-based financing model relying purely on public provisioning.

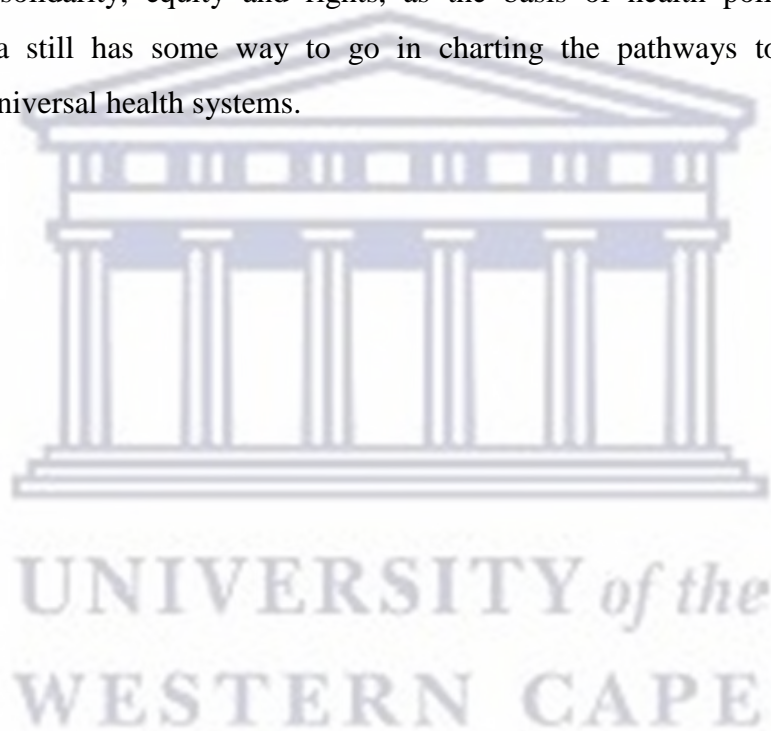
Conclusion

Universal Health Coverage is the dominant policy perspective on health systems globally. The planned September 2019 UN High Level Meeting on UHC signals the increasing influence of UHC as an idea in global health discourse. Though much critiqued, publicly-funded health insurance schemes remain one of the core instruments being advanced in the name of UHC. India has been championed as a prime example of advancing towards UHC through PFHI schemes, even if the neglect of primary level healthcare in the hospital focus of the current PFHI scheme is raised as a limitation. Nevertheless, as this thesis has shown, India's experience with PFHI schemes for more than a decade reveals significant shortcomings. The stated intention of PFHI schemes is to improve access to healthcare and provide financial protection to the vulnerable. However, the impact of RSBY/MSBY on equity of access and financial protection has been weak. Furthermore, to the extent that it has been studied, the implications for the public sector of PFHI scheme funding predominantly channelled through the private sector are significant. Dependence on the private sector can undermine the public sector which this thesis has shown was providing more equitable access and better financial protection than the private sector. Equitable enrolment in PFHI schemes does not automatically translate into equitable access to healthcare, and a health financing strategy based on PFHI schemes which is focused only on equitable enrolment is clearly inadequate to address healthcare inequity. Without appropriate policies for improving service availability in the more vulnerable areas, coverage with an insurance scheme is unlikely to achieve the equity goals of UHC.

Although the stated intentions of PFHI schemes are for greater financial protection, this is placed alongside the market-friendly goal of promoting and expanding the private healthcare industry. Values of solidarity and healthcare as a right are not placed at the centre of policy on PFHI schemes. Thus, at the point of service provision, the dominant normative and cultural orientation of healthcare as a commodity to be sold rather than a right, remains

unchallenged. Even the enrolled who utilise PFHI schemes, especially in the for-profit private sector, experience healthcare utilisation more as a market transaction than as a right or an entitlement.

The findings of the thesis have immediate relevance to the present policy context in India which is currently integrating existing PFHI schemes into a large expanded scheme, the PMJAY, for the whole country. The analysis has shown that an over-reliance and rapid expansion of PFHI schemes in the Indian health system is unlikely to achieve UHC. Chhattisgarh is currently re-assessing the pitfalls of a private sector emphasis in its PFHI scheme and re-positioning the public health system at the core of service provision, while also espousing solidarity, equity and rights, as the basis of health policy for universal healthcare. India still has some way to go in charting the pathways towards universal healthcare and universal health systems.



Recommendations

Key recommendations for further policy development in India

With respect to further policy development, the recommendations arising from the findings of this thesis suggest four key areas of intervention for achieving UHC in India:

1. In ensuring equity, quality and financial protection, the normative environment in healthcare needs to shift from a market-based commercialised provisioning of healthcare to a system based on solidarity, human rights and public accountability. These values need to form the foundation of PFHI schemes where a rights perspective should replace the current business-oriented ethos.
2. The policy push towards publicly-funded health insurance schemes in India needs to be reviewed in the context of emerging evidence on financial protection and equity in utilisation. There is a need to scrutinise the design elements, such as the private/public mix, in the new national PFHI scheme, PMJAY, in order to overcome the serious limitations of the earlier PFHI scheme (RSBY). Instead of taking PFHI schemes as given, national and state governments need to assess what are the better ways to provide healthcare that would ensure equity in access and financial protection.
3. There needs to be a greater investment in, and strengthening, of the public sector to provide secondary and tertiary health services. This would require increasing health budgets, recruiting adequate numbers of well-remunerated providers, strengthening systems for procurement and grievance redressal and the banning dual practice by government health staff, amongst other measures. Expanding the range of secondary and tertiary level services being provided by the government health system may be an advantageous way forward in the Indian context. This could also be relevant for other countries and areas with high inequity.
4. The regulation of healthcare providers, especially of the for-profit private sector, needs to be strengthened. PFHI schemes should not be considered as a substitute for government regulation of healthcare providers. Any government engagement with the for-profit private sector needs to have a clear public-interest and not market-oriented goals, illustrated through its design and implementation framework.

Recommendations for research on UHC and PFHI insurance

With respect to further research on UHC and PFHI schemes, the findings of this thesis call for investment in research and evaluation in the following key areas:

- Equity needs to be incorporated as an overarching point of inquiry into PFHI schemes and UHC. This should also include perspectives of human rights, health for all, social determinants of health, quality and appropriateness of health services, the strengthening of public health systems, the promotion of health as a social good and an emphasis on universal health systems.
- There is need for incorporating a more comprehensive perspective and a health systems approach in understanding the impact of PFHI schemes. This includes the impact of the schemes on the providers (private and public), on the implications for service provision, human resource, supply chains, information systems and leadership and governance. In countries with mixed health systems, the differing experiences and impacts of the private and public sectors under PFHI schemes need to be assessed. The effect of the socio-economic and political context on policy-making, design and implementation of PFHI schemes also needs to be understood. The equity-based framework for understanding the pathways of impact of PFHI schemes developed in this thesis could be used as a starting point for a comprehensive enquiry.
- All dimensions of access and how they interact with each other, in the context of any scheme that is implemented, need to be studied. In this, the dimension of ‘acceptability’ needs to be emphasised as there is a dearth of research on this aspect. Moreover, access needs to be studied, located within the larger socio-political context in order to understand the drivers and barriers better.
- There is need for more in-depth studies, using qualitative or mixed methods and ethnographic research in order to understand the access barriers, perceptions of beneficiaries and their experiences in utilising healthcare and PFHI schemes. Relationships between different stakeholders in PFHI schemes- patients, providers and government as a ‘purchaser’ –and their perspective and experiences in both the public and the private sectors need to be studied.
- A more critical enquiry is required into market-based healthcare provisioning, its market failures and its implications on the health system, and health equity. Research is required on

how to improve governance and provisioning of healthcare through the public health system and the regulation of the for-private private sector.

- Ultimately PFHI, or any other health scheme, has to improve health outcomes, and that equitably. Much research is needed on this aspect, including an examination of the moral hazard, quality and appropriateness of healthcare under PFHI schemes.



REFERENCES

Acharya, A., Vellakkal, S., Masset, E., Satija, A., Burke, M. and Ebrahim, S. (2012) *Systematic review: Impact of National Health Insurance for the poor and the informal sector in low- and middle-income countries*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Ahlin, T., Nichter, M. and Pillai, G. (2016) 'Health insurance in India: What do we know and why is ethnographic research needed', *Anthropology & Medicine*, 23(1), pp. 102–124. doi: 10.1080/13648470.2015.1135787.

Ahmed, S., Szabo, S. and Nilsen, K. (2018) 'Catastrophic healthcare expenditure and impoverishment in tropical deltas: Evidence from the Mekong Delta region', *International Journal for Equity in Health*, 17(1), pp. 1–13. doi: 10.1186/s12939-018-0757-5.

Alkire, S. and Robles, G. (2017) *Global Multidimensional Poverty Index 2017: OPHI Briefing 47*. Oxford: Oxford Poverty and Human Development Initiative (OPHI) Oxford. Available at: www.ophi.org.uk.

Anand, S. and Fan, V. (2016) *The Health Workforce in India: Human Resources for Health Observer Series No. 16*. Geneva: World Health Organization. Available at: http://www.who.int/hrh/resources/16058health_workforce_India.pdf.

Balarajan, Y., Selvaraj, S. and Subramanian, S. V (2011) 'India : Towards universal health coverage', *The Lancet*, 377(9764), pp. 505–515. doi: 10.1016/S0140-6736(10)61894-6.

Banerji, D. (2001) 'Landmarks in the development of health services in India', in Qadeer, I., Sen, K., and Nayar, K. R. (eds) *Public health and the poverty of reforms : The South Asian predicament*. Delhi: Sage Publications, p. 547.

Barraza-Lloréns, M., Panopoulou, G. and Díaz, B. Y. (2013) 'Income-related inequalities and inequities in health and health care utilization in Mexico, 2000–2006', *Revista Panamericana de Salud Pública*, 33(2), pp. 122–30. doi: 10.1590/S1020-49892013000200007.

Baru, R., Acharya, A., Acharya, S., Shiva Kumar, A.K. and Nagaraj, K. (2010) 'Inequities in access to health services in India', *Economic Political Weekly*, 45(38), pp. 49–58. Available at:

<http://www.indiaenvironmentportal.org.in/files/Inequities%20in%20access%20to%20health%20services.pdf>.

Basu, S., Andrews, J., Kishore, S., Panjabi, R. and Stuckler, D. (2012) 'Comparative performance of private and public healthcare systems in low- and middle-income countries: A systematic review.', *PLOS Medicine*, 9(6), p. e1001244. doi: 10.1371/journal.pmed.1001244.

Bearley, L., Marten, R. and O'Connell, T. (2013) *Universal Health Coverage: A commitment to close the gap*. London: Save The Children. Available at: <https://assets.rockefellerfoundation.org/app/uploads/20150530121203/uhc-close-the-gap-report.pdf>.

Bennett, S. and Gilson, L. (2001) *Health financing: designing and implementing pro-poor policies*. London: DFID Health Systems Resource Centre. Available at: <http://www.heart-resources.org/wp-content/uploads/2012/10/Health-financing.pdf>.

Berendes, S., Heywood, P., Oliver, S. and Garner, P. (2011) 'Quality of private and public ambulatory health care in low and middle income countries: Systematic review of comparative studies.', *PLOS Medicine*, 8(4), p. e1000433. doi: 10.1371/journal.pmed.1000433.

Boerma, T., Abouzahr, C., Evans, D. and Evans, T. (2014) 'Monitoring intervention coverage in the context of universal health coverage', *PLOS Medicine*, 11(9), p. e1001728. doi: 10.1371/journal.pmed.1001728.

Bredenkamp, C. and Buisman, L. R. (2016) 'Financial protection from health spending in the Philippines: Policies and progress', *Health Policy and Planning*, 31(7), pp. 919–927. doi: 10.1093/heapol/czw011.

Brundtland, G. H. (2018) 'India's health reforms: The need for balance', *The Lancet*, 392(10154), pp. 1174–1175. doi: 10.1016/S0140-6736(18)32387-0.

CEHAT (2016) *A study of RGJAY Scheme in Maharashtra*. Mumbai: CEHAT.

Chatterjee, P. (2018) 'National Health Protection Scheme revealed in India', *The Lancet*, 391(10120), pp. 523–524. doi: 10.1016/S0140-6736(18)30241-1.

Chatterjee, P. (2019a) 'Health debate rising around the upcoming Indian election', *The Lancet*, 393(10180), pp. 1490–1491. doi: 10.1016/S0140-6736(19)30848-7.

Chatterjee, P. (2019b) 'Hysterectomies in Beed district raise questions for India.', *The Lancet*, 394(10194), p. 202. doi: 10.1016/S0140-6736(19)31669-1.

CII and PWC (2018) *PMJAY: Creating a new ecosystem to provide Universal Health Coverage*. New Delhi: Confederation of Indian Industries and Pricewaterhouse Coopers.

Clark, J. (2014) 'Medicalization of global health 4: The universal health coverage campaign and the medicalization of global health', *Global Health Action*, 7, p. 24004. doi: 10.3402/gha.v7.24004.

Clarke, D., Doerr, S., Hunter, M., Schmets, G., Soucat, A. and Paviza, A.. (2019) 'The private sector and universal health coverage', *Bulletin of the World Health Organization*, 97(6), pp. 434–435. doi: 10.2471/BLT.18.225540.

Clift, C. (2013) 'Is Universal Health Coverage good for health? Universal Health Coverage and the post-2015 Development Agenda', January 2013, pp. 1–4. Submission to www.worldwewant.org. Available at: http://www.worldwewant2015.org/node/299641#_ftn3.

CTRD (2012) *Final report on evaluation of Rashtriya Swasthya Bima Yojana scheme in Chhattisgarh*. Raipur: CTRD. Available at: <http://rsbychhattisgarh.in/WebSite/UploadDoc/70.pdf>.

Dake, F. A. A. (2018) 'Examining equity in health insurance coverage: An analysis of Ghana's National Health Insurance Scheme', *International Journal for Equity in Health*. *International Journal for Equity in Health*, 17(1), pp. 1–10. doi: 10.1186/s12939-018-0793-1.

Dao, A. and Nichter, M. (2015) 'The social life of health insurance in low- to middle-income countries: An anthropological research agenda', *Medical Anthropology Quarterly*, 30(1), pp. 122–143. doi: 10.1111/maq.12191.

Das Gupta, M. and Muraleedharan, V. R. (2014) 'Universal Health Coverage: Reform of the government system better than quality health insurance', *Economic and Political Weekly*, 49(35), pp. 7–8. Available at: <https://www.epw.in/journal/2014/35/commentary/universal-health-coverage.html>.

Dasgupta, R., Nandi, S., Kanungo, K., Nundy, M., Murugan G. and Neog, R. (2013) 'What the good doctor said: A critical examination of design issues of the RSBY through provider perspectives in Chhattisgarh, India', *Social Change*, 43(2), pp. 227–243. doi: 10.1177/0049085713493043.

Department of Finance Government of Chhattisgarh (2019) *Budget Books of Public Health and Family Welfare Department*. Raipur: Government of Chhattisgarh. Available at:

http://finance.cg.gov.in/budget_doc/Budget.asp.

Devadasan, N., Seshadri, T., Trivedi, M. and Criel, B.(2013) 'Promoting universal financial protection: Evidence from the Rashtriya Swasthya Bima Yojana (RSBY) in Gujarat, India.', *Health Research Policy and Systems*, 11, p. 29. doi: 10.1186/1478-4505-11-29.

Dhanaraj, S. (2016) 'Economic vulnerability to health shocks and coping strategies: Evidence from Andhra Pradesh, India', *Health Policy and Planning*, 31(6), pp. 749–758. doi: 10.1093/heapol/czv127.

Dixon, J., Tenkorang, E. Y., Luginaah, I. N., Kuuire, V. Z. and Boateng, G. O. (2014) 'National health insurance scheme enrolment and antenatal care among women in Ghana: Is there any relationship?', *Tropical Medicine and International Health*, 19(1), pp. 98–106. doi: 10.1111/tmi.12223.

Drèze, J. and Sen, A. (2013) *An uncertain glory : India and its contradictions*. New Delhi: Penguin Books.

EGHA (2014) *Health Assurance for all Indians: Strategy document*. New Delhi: Government of India.

Etienne, C. F. (2013) *Universal Health Coverage: Building a path forward in the Region of the Americas*, Presentation on 3rd December 2013. Available at: <https://slideplayer.com/slide/10496702/>.

Fan, V. Y., Karan, A. and Mahal, A. (2012) 'State health insurance and out-of-pocket health expenditures in Andhra Pradesh, India.', *International Journal of Health Care Finance and Economics*, 12(3), pp. 189–215. doi: 10.1007/s10754-012-9110-5.

FICCI (2018) *Demystifying healthcare data governance*. New Delhi: FICCI. Available at: <https://www.healthcatalyst.com/demystifying-healthcare-data-governance>.

Forest Survey of India (2017) *India State of Forest Report 2017*. New Delhi: Ministry of Environment and Forests & Climate Change.

Forman, L., Beiersmann, C., Brolan, C. E., Mckee, M., Hammonds, R. and Ooms, G. (2016) 'What do core obligations under the right to health bring to universal health coverage?', *Health and Human Rights*, 18(2), pp. 23–34. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/28559674>.

- Frenz, P. and Vega, J. (2010) *Universal Health Coverage with equity: What we know, don't know and need to know*. Background paper for the First Global Symposium on Health Systems Research, 16–19 November 2010. Montreux, Switzerland: HSR Symposium. Available at: http://healthsystemsresearch.org/hsr2010/images/stories/9coverage_with_equity.pdf.
- Galárraga, O., Sosa-Rubí, S. G., Salinas-Rodríguez, A. and Sesma-Vázquez, S. (2010) 'Health insurance for the poor: Impact on catastrophic and out-of-pocket health expenditures in Mexico', *European Journal of Health Economics*, 11(5), pp. 437–447. doi: 10.1007/s10198-009-0180-3.
- Gangolli, L., Duggal, R. and Shukla, A. (2005) *Review of healthcare in India*. Mumbai: CEHAT. Available at: <http://www.cehat.org/go/uploads/Hhr/rhci.pdf>.
- Garg, S. (2019a) *Developing health systems for coherent response to the NCD Challenge – Limitations of financing through health insurance in India*. Presentation at Prince Mahidol Award Conference, 29 January- 3 February 2019. Bangkok: PMAC. Available at: [http://pmac2019.com/site/conferenceprogram/detail/Abstract Session Complement to Sub-theme 2](http://pmac2019.com/site/conferenceprogram/detail/Abstract%20Session%20Complement%20to%20Sub-theme%202).
- Garg S. (2019b). A Study of 'Strategic Purchasing' as a Policy Option for Public Health System in India; PhD Thesis. Mumbai: Tata Institute of Social Sciences.
- Ghosh, D. (2019) 'TS Singhdeo interview: "Ayushman scheme misleading... universal healthcare is a step ahead', *The Indian Express*, 19 March. Available at: <https://indianexpress.com/elections/chhattisgarh-lok-sabha-elections-ts-singhdeo-interview-ayushman-scheme-misleading-universal-healthcare-is-a-step-ahead-5632859>.
- Ghosh, J. (2015) 'Deep cuts to India's health spending will delay universal access to healthcare', *BMJ*, 350, p. h1632. doi: 10.1136/bmj.h1632.
- Ghosh, S. (2014a) 'Equity in the utilization of healthcare services in India: Evidence from National Sample Survey', *International Journal of Health Policy and Management*, 2(1), pp. 29–38. doi: 10.15171/ijhpm.2014.06.
- Ghosh, S. (2014b) 'Publicly-financed health insurance for the poor: Understanding RSBY in Maharashtra', *Economic and Political Weekly*, 49(43 & 44), pp. 93–99. Available at: <https://www.epw.in/journal/2014/43-44/special-articles/publicly-financed-health-insurance->

poor.html.

Giedion, U., Alfonso, E. A. and Diaz, Y. (2013) *The impact of universal coverage schemes in the developing world: A review of the existing evidence*. Washington DC: The World Bank. Available at: <http://documents.worldbank.org/curated/en/349621468158382497/The-impact-of-universal-coverage-schemes-in-the-developing-world-a-review-of-the-existing-evidence>.

Gifford, S. (1996) 'Qualitative research: The soft option?', *Health Promotion Journal of Australia*, 6(1), pp. 58–61. Available at: <https://search.informit.com.au/documentSummary;dn=461433568042220;res=IELAPA>.

Gilson, L., Doherty, J., Loewenson, R. and Francis, V. (2007) *Challenging inequity through health systems: Final report of the Knowledge Network on Health Systems*. Available at: http://www.who.int/social_determinants/resources/csdh_media/hskn_final_2007_en.pdf.

Gilson, L. and Schneider, H. (2007) 'Understanding health service access: Concepts and experience', *Global Forum Update on Research for Health*, 4, pp. 28–32.

GIZ (2016) *Health insurance for India's poor: Meeting the challenge with information technology*. Bonn and Eschborn: GIZ. Available at: http://health.bmz.de/ghpc/case-studies/Health_Insurance_India_New/index.html.

Government of Chhattisgarh (2008) *Minutes of the State Level Workshop on RSBY*, in State Level Workshop on RSBY, 15 October, Raipur. Raipur: Government of Chhattisgarh.

Government of Chhattisgarh (2018) *Website of RSBY and MSBY, Health and Family Welfare Department Government of Chhattisgarh*. Available at: <http://cg.nic.in/healthrsby>.

Grogger J, Arnold T, Leon A. S, O. A. (2014) 'Heterogeneity in the effect of public health insurance on catastrophic out-of-pocket health expenditures: the case of Mexico', *Health Policy and Planning*, pp. 1–7. doi:10.1093/heapol/czu037.

Gupta, I., Chowdhury, S., Trivedi, M. and Prinja, S. (2017) 'Do health coverage schemes ensure financial protection from hospitalization expenses? Evidence from eight districts in India', *Journal of Social and Economic Development*. doi: 10.1007/s40847-017-0040-4.

Gwatkin, D. R. and Ergo, A. (2011) 'Universal health coverage: Friend or foe of health equity?', *The Lancet*, 377(9784), pp. 2160–2161. doi: 10.1016/S0140-6736(10)62058-2.

Harrison, M. (1994) *Public health in British India : Anglo-Indian preventive medicine, 1859-*

1914. Cambridge: Cambridge University Press.

Hart, J. T. (1971) 'The inverse care law', *The Lancet*, 297(7696), pp. 405–412. doi: 10.1016/S0140-6736(71)92410-X.

Health Inc (2014) *Towards equitable coverage and more inclusive social protection in health*. Antwerp: ITGPress.

Hernández, L. O. and Salgado, D. P. (2014) *Chile and Costa Rica: Different roads to Universal Health in Latin America*, MSP Occasional Paper No. 23 – May 2014. Available at: <https://www.municipalservicesproject.org/publication/chile-and-costa-rica-different-roads-universal-health-latin-america>.

HLEG (2011) *High Level Expert Group Report on Universal Health Coverage for India*. New Delhi: Government of India.

Horton, R. and Clark, S. (2016) 'The perils and possibilities of the private health sector', *The Lancet*, 6736(16), pp. 2–3. doi: 10.1016/S0140-6736(16)30774-7.

Hosseinpour, A. R., Bergen, N., Koller, T., Prasad, A., Schlotheuber, A., Valentine, N., Lynch, J. and Vega, J. (2014) 'Equity-Oriented Monitoring in the Context of Universal Health Coverage', *PLOS Medicine*, 11(9), p. e1001727. doi: 10.1371/journal.pmed.1001727.

Hosseinpour, A. R., Bergen, N., Barros, A. J. D., Wong, K. L. M., Boerma, T. and Victora, C. G. (2016) 'Monitoring subnational regional inequalities in health: Measurement approaches and challenges', *International Journal for Equity in Health*, 15(1), p. 18. doi: 10.1186/s12939-016-0307-y.

IIPS and ICF (2017a) *National Family Health Survey (NFHS-4), India, 2015-16: Chhattisgarh*. Mumbai: IIPS.

IIPS and ICF (2017b) *National Family Health Survey (NFHS-4), 2015-16: India*. Mumbai: IIPS.

IIPS and Macro International (2007) *National Family Health Survey (NFHS-3), 2005-06: India: Volume 2*. Mumbai: IIPS.

Jacobs, B., Ir, P., Bigdeli, M., Annear, P. L. and Damme, W. V. (2012) 'Addressing access barriers to health services: An analytical framework for selecting appropriate interventions in low-income Asian countries', *Health Policy and Planning*, 27, pp. 288–300. doi:

10.1093/heapol/czr038.

Jain, N. (2014) *Ch. 10: Rashtriya Swasthya Bima Yojana: A step towards Universal Health Coverage in India, India Infrastructure Report 2013/14: The Road to Universal Health Coverage*. New Delhi: IDFC. Available at: <http://www.idfc.com/pdf/report/2013-14/Chapter-10.pdf>.

Jain, Y. and Kataria, R. (2012) 'Diagnosis of a prolapse', *The Hindu*, 16 July, pp. 1–4. Available at: <https://www.thehindu.com/opinion/op-ed/diagnosis-of-a-prolapse/article3643110.ece>.

Jan Swasthya Abhiyan (2018) 'Abandon Ayushman Bharat', *Economic and Political Weekly*, 53(39), pp. 7–8. Available at: <https://www.epw.in/journal/2018/39/letters/abandon-ayushman-bharat.html>.

Jan Swasthya Abhiyan (2019) 'Healthcare before profits', *Economic and Political Weekly*, 50(23), pp. 7–8. Available at: <https://www.epw.in/journal/2019/13/letters/healthcare-profits.html>.

Jeffery, R. (1988) *The politics of health in India*. Berkeley: University of California Press.

Jehu-Appiah, C., Aryeetey, G., Spaan, E., de Hoop, T., Agyepong, I. and Baltussen, R. (2011) 'Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why?', *Social Science & Medicine*, 72(2), pp. 157–165. doi: 10.1016/j.socscimed.2010.10.025.

Joe, W., Mishra, U. S. and Navaneetham, K. (2008) 'Health inequality in India: Evidence from NFHS 3', *Economic & Political Weekly*, 43(31), pp. 41–48. Available at: <http://www.epw.in/special-articles/health-inequality-india-evidence-nfhs-3.html>.

Kapilashrami, A. and Venkatachalam, D. (2013) *Health Insurance: Evaluating the impact on the right to health*, Working Paper. New Delhi: SAMA.

Karan, A., Yip, W. and Mahal, A. (2017) 'Extending health insurance to the poor in India: An impact evaluation of Rashtriya Swasthya Bima Yojana on out of pocket spending for healthcare', *Social Science & Medicine*, 181, pp. 83–92. doi: 10.1016/j.socscimed.2017.03.053.

Katyal, A., Singh, P. V., Samarth, A., Bergkvist, S. and Rao, M. (2013) 'Using the Indian National Sample Survey data in public health research', *The National Medical Journal of*

India, 26(5), pp. 291-294.

King, G., Gakidou, E., Imai, K., Lakin, J., Moore, R. T., Nall, C. *et al.* (2009) 'Public policy for the poor? A randomised assessment of the Mexican universal health insurance programme', *The Lancet*, 373(9673), pp. 1447–1454. doi: 10.1016/S0140-6736(09)60239-7.

Knaul, F. M., González-Pier, E., Gómez-Dantés, O., García-Junco, D., Arreola-Ornelas, H., Barraza-Lloréns, M. *et al.* (2012) 'The quest for Universal Health Coverage: Achieving social protection for all in Mexico', *The Lancet*, 380(9849), pp. 1259–1279. doi: 10.1016/S0140-6736(12)61068-X.

Kusi, A., Enemark, U., Hansen, K. S. and Asante, F. A. (2015) 'Refusal to enrol in Ghana's National Health Insurance Scheme: Is affordability the problem?', *International Journal for Equity in Health*, 14, p. 2. doi: 10.1186/s12939-014-0130-2.

Kutzin, J. (2012) 'Anything goes on the path to universal health coverage? No.', *Bulletin of the World Health Organization*, 90(11), pp. 867–8. doi: 10.2471/BLT.12.113654.

Kutzin, J. (2013) 'Health financing for universal coverage and health system performance: concepts and implications for policy', *Bulletin of the World Health Organization*, 91(8), pp. 602–11. doi: 10.2471/BLT.12.113985.

La Forgia, G. and Nagpal, S. (2012) *Government-sponsored Health Insurance in India: Are You Covered?* Washington DC: The World Bank. Available at: <https://www.worldbank.org/en/news/feature/2012/10/11/government-sponsored-health-insurance-in-india-are-you-covered>.

Lagomarsino, G., Garabrant, A., Adyas, A., Muga, R. and Otoo, N. (2012) 'Moving towards universal health coverage: Health insurance reforms in nine developing countries in Africa and Asia.', *Lancet*, 380 (9845), pp. 933–943. doi: 10.1016/S0140-6736(12)61147-7.

Larson, E., George, A., Morgan, R. and Poteat, T. (2016) '10 Best resources on... intersectionality with an emphasis on low- and middle-income countries', *Health Policy and Planning*, 31(8), pp. 964–969. doi: 10.1093/heapol/czw020.

Lawn, J. E., Rohde, J., Rifkin, S., Were, M., Paul, V. K. and Chopra, M. (2008) 'Alma-Ata 30 years on: Revolutionary, relevant, and time to revitalise', *The Lancet*, 372(9642), pp. 917–927. doi: 10.1016/S0140-6736(08)61402-6.

Liu, X., Tang, S., Yu, B., Phuong, N., Yan, F., Thien, D. and Tolhurst, R. (2012) 'Can rural

health insurance improve equity in health care utilization? A comparison between China and Vietnam', *International Journal for Equity in Health*, 11(1), pp. 1–16. doi: 10.1186/1475-9276-11-10.

Maarse, H. (2006) 'The privatization of health care in Europe: an eight-country analysis', *Journal of Health Politics, Policy and Law*, 31(5), pp. 981–1014. doi: 10.1215/03616878-2006-014.

Macha, J., Harris, B., Garshong, B., Ataguba, J. E., Akazili, J., Kuwawenaruwa, A. and Borghi, J. (2012) 'Factors influencing the burden of health care financing and the distribution of health care benefits in Ghana, Tanzania and South Africa', *Health Policy and Planning*, 27(suppl 1), pp. i46–i54. doi: 10.1093/heapol/czs024.

Mackintosh, M., Channon, A., Karan, A., Selvaraj, S., Zhao, H., Cavagnero, E. and Keynes, M. (2016) 'What is the private sector? Understanding private provision in the health systems of low-income and middle-income', *The Lancet*, 6736(16), pp. 1–10. doi: 10.1016/S0140-6736(16)00342-1.

Mairembam, D. S. (2018) *Organogram of Indian health system*. Presentation to delegates from Japan by WHO India Office, October 2018. Delhi: WHO India

Presentation at Prince Mahidol Award Conference, 29 January- 3 February 2019. Bangkok: PMAC.

Malterud, K. (2001) 'Qualitative research: Standards, challenges, and guidelines', *The Lancet*, 358(9280), pp. 483–8. doi: 10.1016/S0140-6736(01)05627-6.

Marmot, M. (2013) 'Universal health coverage and social determinants of health', *The Lancet*, 382, pp. 1227–1228. doi: 10.1016/S0140-6736(13)61791-2.

Marten, R., McIntyre, D., Travassos, C., Shishkin, S., Longde, W., Reddy, S. and Vega, J. (2014) 'An assessment of progress towards universal health coverage in Brazil, Russia, India, China, and South Africa (BRICS)', *The Lancet*, 6736(14). doi: 10.1016/S0140-6736(14)60075-1.

Maurya, D. and Ramesh, M. (2018) 'Program design, implementation and performance: The case of social health insurance in India', *Health Economics, Policy and Law*, pp. 1–22. doi: 10.1017/S1744133118000257.

McIntyre, D., Ranson, M. K., Aulakh, B. K. and Honda, A. (2013) 'Promoting universal

financial protection: Evidence from seven low- and middle-income countries on factors facilitating or hindering progress', *Health Research Policy and Systems*, 11, p. 36. doi: 10.1186/1478-4505-11-36.

McIntyre, D., McKee, M., Balabanova, D., Atim, C., Reddy, K. S. and Patcharanarumol, W. (2016) 'Open letter on the SDGs: A robust measure for universal health coverage is essential', *The Lancet*, 6736(16), p. 32189. doi: 10.1016/S0140-6736(16)32189-4.

McIntyre, D. (2017) *A Universal Health System for South Africa: A few final words on NHI*. Cape Town: Health Economics Unit, University of Cape Town.

Mcintyre, D. and Kutzin, J. (2016) *Health financing country diagnostic: A foundation for national strategy development*. Geneva: World Health Organization. Available at: http://apps.who.int/iris/bitstream/handle/10665/204283/9789241510110_eng.pdf;jsessionid=34150943047ADC9E7BF7095B10D64EC1?sequence=1.

McIntyre, D., Thiede, M. and Birch, S. (2009) 'Access as a policy-relevant concept in low- and middle-income countries', *Health Economics, Policy, and Law*, 4, pp. 179–193. doi: 10.1017/S1744133109004836.

Meng, Q., Yuan, B., Jia, L., Wang, J., Yu, B., Gao, J. and Garner, P. (2011) 'Expanding health insurance coverage in vulnerable groups: A systematic review of options', *Health Policy and Planning*, 26(2), pp. 93–104. doi: 10.1093/heapol/czq038.

Mishler, E. G. and Steinitz, V. (2001) *Solidarity Work: Researchers in the Struggle for Social Justice*, Paper presented at the *Annual Qualitative Interest Group Conference on Interdisciplinary Qualitative Studies* (January 12–14, 2001, Athens). Maryland: Educational Resources Information Center. Available at: <https://files.eric.ed.gov/fulltext/ED457206.pdf>.

Munge, K., Mulupi, S., Barasa, E. W. and Chuma, J. (2018) 'A critical analysis of purchasing arrangements in Kenya: The case of the National Hospital Insurance Fund', *International Journal of Health Policy and Management*, 7(3), pp. 244–254. doi: 10.15171/ijhpm.2017.81.

Nagpal, S. (2013) *Expanding Health Coverage for Vulnerable Groups in India*, UNICO Studies Series 13. Washington DC: The World Bank. Available at: <http://documents.worldbank.org/curated/en/230791468269108171/Expanding-health-coverage-for-vulnerable-groups-in-India>.

Nandi, S., Mishra, J. P., Kanungo, K., Manikpuri, H., Yadav, C., Paikra, G. *et al.* (2012)

‘Public health advocacy to reinstate reproductive rights of Particularly Vulnerable Tribal Groups (PTGs) in Chhattisgarh’, *BMC Proceedings*, 6(Suppl5). doi: 10.1186/1753-6561-6-S5-P1.

Nandi, S., Nundy, M., Prasad, V., Kanungo, K., Khan, H., Haripriya, S. *et al.* (2012) ‘The implementation of RSBY in Chhattisgarh, India: A study of the Durg district’, *Health, Culture and Society*, 2(1), pp. 40–70. doi: 10.5195/HCS.2012.61.

Nandi, S., Dasgupta, R., Garg, S., Sinha, D., Sahu, S. and Mahobe, R. (2016) ‘Uncovering coverage: Utilisation of the Universal Health Insurance Scheme, Chhattisgarh by women in slums of Raipur’, *Indian Journal of Gender Studies*, 23(1), pp. 43–68. doi: 10.1177/0971521515612863.

Nandi, S., Schneider, H. and Dixit, P. (2017) ‘Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage’, *PLOS One*, 12(11). doi: 10.1371/journal.pone.0187904.

Nandi, S., Schneider, H. and Garg, S. (2018) ‘Assessing geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index’, *Global Health Action*, 11(1). doi: 10.1080/16549716.2018.1541220.

Nandi, S. and Schneider, H. (2019a) ‘When state-funded health insurance schemes fail to provide financial protection: An indepth exploration of the experiences of patients from urban slums of Chhattisgarh, India’, *Global Public Health*. doi: 10.1080/17441692.2019.1651369.

Nandi, S. and Schneider, H. (2019b) ‘An equity-based framework for evaluating publicly-funded health insurance programmes as an instrument of UHC in India, with application to Chhattisgarh State’. (Manuscript submitted to Health Research Policy and Systems).

Narayana, D. (2010) ‘Review of the Rashtriya Swasthya Bima Yojana’, *Economic & Political Weekly*, 45(29), pp. 13–18. Available at: <https://www.epw.in/journal/2010/29/commentary/review-rashtriya-swasthya-bima-yojana.html>.

National Health Mission Chhattisgarh (2014) *Programme Implementation Plan Chhattisgarh 2014–15*. Raipur: Department of Health and Family Welfare, Chhattisgarh.

National Health Systems Resource Centre (2012) *NRHM in the Eleventh Five Year Plan (2007-2012): Strengthening public health systems*. New Delhi: NHSRC. Available at: [http://nhsrccindia.org/sites/default/files/NRHM in 11th five year plan.pdf](http://nhsrccindia.org/sites/default/files/NRHM%20in%2011th%20five%20year%20plan.pdf).

NHSRC (2018) *National Health Accounts: Estimates for India FY 2015-16*. New Delhi: NHSRC. Available at: https://mohfw.gov.in/sites/default/files/NHA_Estimates_Report_2015-16.pdf.

NHSRC (undated) *Household healthcare utilization & expenditure in India: State fact sheets*. New Delhi: NHSRC. Available at: [http://nhsrccindia.org/sites/default/files/State Fact Sheets_Health care Utilization and Expenditure in India.pdf](http://nhsrccindia.org/sites/default/files/State%20Fact%20Sheets_Health%20care%20Utilization%20and%20Expenditure%20in%20India.pdf).

Noronha, J. C. De (2013) 'Universal Health Coverage: How to mix concepts, confuse objectives, and abandon principles', *Cad. Saúde Pública*, 29(5), pp. 847–849. doi: 10.1590/S0102-311X2013000500003.

NSSO (2015) *NSS 71st Round: Key indicators of social consumption in India, Health*. New Delhi: NSSO. Available at: http://mospi.nic.in/sites/default/files/publication_reports/nss_rep574.pdf.

Nundy, M., Dasgupta, R., Kanungo, K., Nandi, S. and Murugan, G. (2013) *The Rashtriya Swasthya Bima Yojana (RSBY) experience in Chhattisgarh: What does it mean for Health for All?* New Delhi: SAMA.

O'Connell, T., Rasanathan, K. and Chopra, M. (2014) 'What does Universal Health Coverage mean?', *The Lancet*, 383(9913), pp. 277–279. doi: 10.1016/S0140-6736(13)60955-1.

Odeyemi, I. A. O. and Nixon, J. (2013) 'Assessing equity in health care through the national health insurance schemes of Nigeria and Ghana: A review-based comparative analysis.', *International Journal for Equity in Health*, 12, p. 9. doi: 10.1186/1475-9276-12-9.

Ooms, G., Latif, L. A., Waris, A., Brolan, C. E., Hammonds, R., Friedman, E. A. *et al.* (2014) 'Is universal health coverage the practical expression of the right to health care?', *BMC International Health and Human Rights*, 14(1), pp. 1–7. doi: 10.1186/1472-698X-14-3.

Oxfam (2009) *Blind Optimism Challenging the myths about private health care in poor countries*. Oxford: Oxfam International. Available at: [http://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp125_Blind optimism paper_SUMMARY FINAL ENGLISH_3.pdf](http://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp125_Blind%20optimism%20paper_SUMMARY_FINAL_ENGLISH_3.pdf).

Oxfam (2016) A victory today for Universal Health Coverage: Statement from Oxfam, *Global Health Check*. Available at: <http://www.globalhealthcheck.org/?p=1943>.

Palacios, Robert, Das, Jishnu and Sun, C. (eds) (2011) *India's Health Insurance Scheme for the Poor: Evidence from the early experience of the Rashtriya Swasthya Bima Yojana*. New Delhi: CPR. Available at: <https://www.cprindia.org/research/books/indias-health-insurance-scheme-poor-evidence-early-experience-rashtriya-swasthya-bima>.

Paterno, R. P. P. (2013) 'The future of Universal Health Coverage: A Philippine perspective', *Global Health Governance*, 6(2). Available at: http://blogs.shu.edu/wp-content/blogs.dir/109/files/2014/02/GHGJ_62_32-52_PATERNO.pdf.

Prasad, P. N. and Raghavendra, P. (2012) 'Healthcare models in the era of medical neo-liberalism: A study of Aarogyasri in Andhra Pradesh', *Economic & Political Weekly*, 47(43), pp. 118–126. Available at: <https://www.epw.in/journal/2012/43/special-articles/healthcare-models-era-medical-neo-liberalism.html>.

Prasad, V. and Sengupta, A. (2019) 'Perpetuating health inequities in India: Global ethics in policy and practice', *Journal of Global Ethics*, 15(1), pp. 67–75. doi: 10.1080/17449626.2019.1582553.

Prinja, S., Pinto, A. D., Jan, S., Kumar, R. and Kumar, M. I. (2013) 'Equity in hospital services utilisation in India', *Economic & Political Weekly*, 48(12), pp. 52–58. Available at: http://hsrii.org/wp-content/uploads/2014/04/Equity_in_Hospital_Services_Utilisation_in_India.pdf

Prinja, Shankar, Chauhan, A. S., Karan, A., Kaur, G. and Kumar, R. (2017) 'Impact of publicly financed health insurance schemes on healthcare utilization and financial risk protection in India: A systematic review', *PLOS One*, 12(2), p. e0170996. doi: 10.1371/journal.pone.0170996.

Priya, R. (2005) 'Public health services in India: A historical perspective', in V., G. L., Duggal, R., and Shukla, A. (eds) *Review of Healthcare in India*. Mumbai: CEHAT, pp. 41–74. Available at: <http://www.cehat.org/cehat/uploads/files/rhci.pdf>.

Prusty, R. K., Choithani, C. and Dutt Gupta, S. (2018) 'Predictors of hysterectomy among married women 15–49 years in India', *Reproductive Health*, 15 (1), p. 3. doi: 10.1186/s12978-017-0445-8.

Public Health Foundation of India (PHFI) (2011) *A critical assessment of the existing Health insurance models in India*. New Delhi: Public Health Foundation of India. Available at: http://planningcommission.nic.in/reports/sereport/ser/ser_heal1305.pdf.

Public Health Resource Network (PHRN) (2017) *Exploring Health Inequities amongst Particularly Vulnerable Tribal Groups : Case studies of Baiga and Sabar in Chhattisgarh and Jharkhand states of India*. Trivandrum: AMCHSS.

Raj, A. (2011) 'Gender equity and universal health coverage in India', *The Lancet*, 377, pp. 618–619. doi: 10.1016/S0140-6736(10)62112-5.

Ramprakash, R. and Lingam, L. (2018) 'Publicly Funded Health Insurance Schemes (PFHIS): A systematic and interpretive review of studies does gender equity matter?', *eSSH*. Available at: http://www.esocialsciences.org/eSSH_Journal/Repository/6N_Publicly_Funded_Health_Insurance_Schemes_Rajalakshmi.pdf.

Randive, B., Chaturvedi, S. and Mistry, N. (2012) 'Contracting in specialists for emergency obstetric care- does it work in rural India?', *BMC Health Services Research*, 12, p. 485. doi: 10.1186/1472-6963-12-485.

Ranjan, A., Dixit, P., Mukhopadhyay, I. and Thiagarajan, S. (2018) 'Effectiveness of government strategies for financial protection against costs of hospitalization care in India', *BMC Public Health*, 18(1), p. 501. doi: 10.1186/s12889-018-5431-8.

Rannan-Eliya, R. and Somanathan, A. (2006) 'Equity in health and health care systems in Asia', in A. M. Jones (ed.) *The Elgar Companion to Health Economics*. Available at: <http://www.equitap.org/publications/docs/Edward2006.pdf>.

Rao, M. (2009) 'Health for All' and neoliberal globalisation: An Indian rope trick', in Leo Panitch and Colin Leys (ed.) *Socialist Register 2010: Morbid Symptoms*. London: Merlin Press, pp. 262–278. Available at: <https://socialistregister.com/index.php/srv/article/view/6774>.

Rao, M., Katyal, A., Singh, P. V., Samarth, A., Bergkvist, S., Kancharla, M. (2014) 'Changes in addressing inequalities in access to hospital care in Andhra Pradesh and Maharashtra states of India: A difference-in-differences study using repeated cross-sectional surveys', *BMJ Open*, 4(6), p. e004471. doi: 10.1136/bmjopen-2013-004471.

Rao, M., Ramachandra, S. S., Bandyopadhyay, S., Chandran, A., Shidhaye, R.,

Tamisettynarayana, S. *et al* (2011) 'Addressing healthcare needs of people living below the poverty line: A rapid assessment of the Andhra Pradesh Health Insurance Scheme', *The National Medical Journal of India*, 24(6), pp. 335–341. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/22680257>.

Rao, M., Singh, V., Katyal, A., Samarth, A., Bergkvist, S., Renton, A. and Netuveli, G. (2016) 'Has the Rajiv Aarogyasri Community Health Insurance Scheme of Andhra Pradesh addressed the educational divide in accessing health care?', *PLOS One*, 11(1). doi:10.1371/journal.pone.0145707.

Rathi, P. (2012) *Evaluation of Rashtriya Swasthya Bima Yojana (RSBY): A case study of Amravati District*. Bangalore: IIMB. Available at: http://www.iimb.ac.in/sites/default/files/u181/IIMB_PGPPM_Policy_Folio_Paper_Prateek_Rathi_March_2012.pdf.

Ravi, S., Ahluwalia, R. and Bergkvist, S. (2016) *Health and Morbidity in India (2004–2014): Brookings India Research Paper No. 092016*. New Delhi: Brookings India. Available at: https://www.brookings.edu/wp-content/uploads/2016/12/201612_health-and-morbidity.pdf.

REACH (2012) *Researching equity in access to health care (REACH): Final Technical Report*. Johannesburg: University of the Witwatersrand, Centre for Health Policy, Wits School of Public Health.

Registrar General of India (RGI) (2012) *SRS Bulletin*. New Delhi: Government of India. Available at: http://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS_Bulletin-October_2012.pdf.

Registrar General of India (RGI) (2014) *Maternal Mortality Ratio Bulletin 2011-13*. New Delhi: Government of India. Available at: http://www.censusindia.gov.in/vital_statistics/mmr_bulletin_2011-13.pdf.

Registrar General of India (RGI) (2017) *Sample Registration System (SRS) Bulletin Volume 51, No. 1*. New delhi: Government of India. Available at: http://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS_Bulletin-Sep_2017-Rate-2016.pdf.

Registrar General of India (RGI) (2018) *Special Bulletin on Maternal Mortality in India 2014-16, SRS Bulletin*. New Delhi: Government of India. Available at:

http://www.censusindia.gov.in/vital_statistics/SRS_Bulletins/MMR_Bulletin-2014-16.pdf.

Registrar General of India (RGI) (2019) *SRS Bulletin*. New Delhi: Government of India. Available at: http://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS_Bulletin-Rate-2017-_May_2019.pdf.

Registrar General (RGI) and Census Commissioner. (2011) *Census of India Website*. Delhi: Government of India. Available at: <http://censusindia.gov.in/2011-Common/CensusData2011.html>.

Registrar General of India (RGI) and Census Commissioner (2016) *Annual Health Survey Report: A report on core and vital health indicators- Part 1, Annual Health Survey Report*. Delhi: Government of India. Available at: http://www.censusindia.gov.in/vital_statistics/AHS/AHS_report_part1.pdf.

Rent, P. and Ghosh, S. (2015) 'Understanding the "cash-less" nature of government-sponsored health insurance schemes: Evidence from Rajiv Gandhi Jeevandayee Aarogya Yojana in Mumbai', *SAGE Open*, 1(10). doi: 10.1177/2158244015614607.

Roberts, M. J., Hsiao, W. C. and Reich, M. R. (2015) 'Disaggregating the universal coverage cube: Putting equity in the picture', *Health Systems & Reform*, 1(1), pp. 22–27. doi: 10.1080/23288604.2014.995981.

Rodney, A. M. and Hill, P. S. (2015) 'Achieving equity within universal health coverage: A narrative review of progress and resources for measuring success', *International Journal for Equity in Health*, 13(72), pp. 1–8. doi: 10.1186/s12939-014-0072-8.

Sachs, J. D. (2012) 'Achieving universal health coverage in low-income settings', *The Lancet*, 380(9845), pp. 944–947. doi: 10.1016/S0140-6736(12)61149-0.

Sanders, D., Nandi, S., Labonté, R., Vance, C. and Van Damme, W. (2019) 'From primary health care to universal health coverage—one step forward and two steps back', *The Lancet*, 394(10199), pp. 619–621. doi: [https://doi.org/10.1016/S0140-6736\(19\)31831-8](https://doi.org/10.1016/S0140-6736(19)31831-8).

Selvaraj, S. and Karan, A. (2012) 'Why publicly-financed health insurance schemes are ineffective in providing financial risk protection', *Economic and Political Weekly*, 47(11), pp. 60–68. Available at: <http://re.indiaenvironmentportal.org.in/files/file/Publicly-Financed%20Health%20Insurance%20Schemes.pdf>.

Sen, A. (2015) 'Universal healthcare: The affordable dream', *Harvard Public Health Review*,

4. Available at: <http://harvardpublichealthreview.org/universal-health-care-the-affordable-dream/>.

Sen, Kasturi, Roy, S. G., Kumar, S., Narayana, K. and Priyadarshi, A. (2018) 'Health reforms and utilization of health care in three states of India: Public health prospects', *Social Medicine*, 12(1), pp. 108–121. Available at: <http://socialmedicine.info/index.php/socialmedicine/article/viewFile/1008/1840>.

Sen, K. and Gupta, S. (2017) 'Masking poverty and entitlement: RSBY in selected districts of West Bengal', *Social Change*, 47(3), pp. 339–358. doi: 10.1177/0049085717715557.

Sengupta, A. (2013) *Universal Health Coverage : Beyond rhetoric*. MSP Occasional Paper No. 20 – November 2013. Available at: https://www.municipalservicesproject.org/sites/municipalservicesproject.org/files/publications/OccasionalPaper20_Sengupta_Universal_Health_Coverage_Beyond_Rhetoric_Nov2013_0.pdf.

Sengupta, A., Mukhopadhyaya, I., Weerasinghe, M. C. and Karki, A. (2017) 'The rise of private medicine in South Asia', *BMJ*, 357(j1482). doi: 10.1136/bmj.j1482.

Shroff, Z. C., Roberts, M. J. and Reich, M. R. (2015) 'Agenda setting and policy adoption of India's National Health Insurance Scheme: Rashtriya Swasthya Bima Yojana', *Health Systems & Reform*, 1(2), pp. 107–118. doi: 10.1080/23288604.2015.1034310.

Shukla, R., Shatrugna, V. and Srivatsan, R. (2011) 'Aarogyasri Healthcare Model: Advantage private sector', *Economic & Political Weekly*, 48(49), pp. 38–42. Available at: <https://www.epw.in/journal/2011/49/insight/aarogyasri-healthcare-model-advantage-private-sector.html>.

Singh, P. K. and Travis, P. (2018) 'Can the region make faster progress on universal health coverage?', *WHO South-East Asia Journal of Public Health*, 7(1). Available at: http://www.who-seajph.org/temp/WHOSouth-EastAsiaJPublicHealth711-2544473_070404.pdf.

Sood, N., Bendavid, E., Mukherji, A., Wagner, Z., Nagpal, S. and Mullen, P. *et al.* (2014) 'Government health insurance for people below poverty line in India: quasi-experimental evaluation of insurance and health outcomes', *BMJ*, 349, p. g5114. doi: 10.1136/bmj.g5114.

Spaan, E., Mathijssen, J., Tromp, N., McBain, F., Ten Have, A. and Baltussen, R. (2012)

‘The impact of health insurance in Africa and Asia: Asystematic review’, *Bulletin of the World Health Organization*, 90(9), pp. 685–692. doi: 10.2471/BLT.12.102301.

Sridhar, D., McKee, M., Ooms, G., Beiersmann, C., Friedman, E., Gouda, H. *et al* (2015) ‘Universal health coverage and the right to health: From legal principle to post-2015 indicators’, *International Journal of Health Services*, 45(3), pp. 495–506. doi: 10.1177/0020731415584554.

Stuckler, D., Basu, S. and McKee, M. (2011) ‘Health care capacity and allocations among South Africa’s provinces: Infrastructure-inequality traps after the end of apartheid.’, *American Journal of Public Health*, 101(1), pp. 165–72. doi: 10.2105/AJPH.2009.184895.

Suchman, L. (2018) ‘Accrediting private providers with National Health Insurance to better serve low- income populations in Kenya and Ghana: A qualitative study’, *International Journal for Equity in Health*, pp. 1–18. doi: 10.1186/s12939-018-0893-y.

Sundararaman, T., Mukhopadhyay, I. and Muraleedharan, V. R. (2016) ‘No respite for public health’, *Economic & Political Weekly*, 51(16), pp. 39–42. Available at: <https://www.epw.in/journal/2016/16/budget-2016%E2%80%939317/no-respite-public-health.html>.

Tangcharoensathien, V., Mills, A. and Palu, T. (2015) ‘Accelerating health equity: The key role of universal health coverage in the Sustainable Development Goals’, *BMC Medicine*, 13. doi: 10.1186/s12916-015-0342-3.

Thakur, H. (2015) ‘Study of awareness, enrollment, and utilization of Rashtriya Swasthya Bima Yojana (National Health Insurance Scheme) in Maharashtra, India’, *Frontiers in Public Health*, 3(January), p. 282. doi: 10.3389/fpubh.2015.00282.

Thiede, M., Akweongo, P. and McIntyre, D. (2007) ‘Exploring the dimensions of access’, in McIntyre, D. and Mooney, G. (eds) *The Economics of Health Equity*. Cambridge: Cambridge University Press, pp. 103–123. doi: 10.1017/CBO9780511544460.007.

Thiede, M. and McIntyre, D. (2008) ‘Information, communication and equitable access to health care: a conceptual note’, *Cadernos de Saúde Pública*, 24(5), pp. 1168–1173. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2008000500025.

UNDP (2015) *Human Development Report 2015: Work for Human Development*. New York: UNDP. Available at: www.undp.org.

Virk, A. K. and Atun, R. (2015) 'Towards universal health coverage in India: A historical examination of the genesis of Rashtriya Swasthya Bima Yojana: The health insurance scheme for low-income groups', *Public Health*, 129(6), pp. 810–817. doi: 10.1016/j.puhe.2015.02.002.

Whitehead, M. and Dahlgren, G. (2006) *Levelling Up (Part 1): A discussion paper on concepts and principles for tackling social inequities in health*. Copenhagen: World Health Organisation. Available at: http://www.who.int/social_determinants/resources/leveling_up_part1.pdf.

WHO (2005) *Resolution of World Health Assembly: Sustainable health financing, Universal Coverage and Social Health Insurance*. Available at: https://www.who.int/health_financing/HF_Resolution_en.pdf.

WHO (2010) *The World Health Report: Health Systems Financing. The path to universal Universal Coverage*. Geneva: World Health Organisation. Available at: <https://www.who.int/whr/2010/en>.

WHO (2013a) *Arguing for Universal Health Coverage*. Geneva: World Health Organisation. Available at: http://www.who.int/health_financing/UHC_ENvs_BD.PDF.

WHO (2013b) *Handbook on health inequality monitoring: with a special focus on low- and middle-income countries*. Geneva: World Health Organisation. Available at: http://apps.who.int/iris/bitstream/handle/10665/85345/9789241548632_eng.pdf;jsessionid=D5C1A0B9B1E296D03894744619557D1B?sequence=1.

WHO (2014) *Making fair choices on the path to Universal Health Coverage: Final report of the WHO Consultative Group on Equity and Universal Health Coverage*. Geneva: World Health Organisation. Available at: http://apps.who.int/iris/bitstream/10665/112671/1/9789241507158_eng.pdf?ua=1.

WHO (2019) *SDG 3: Ensure healthy lives and promote well-being for all at all ages*. Geneva: World Health Organisation. doi: 10.18356/3bfe3cfa-en.

WHO (undated) *Universal Health Coverage: Supporting country needs*. Geneva: World Health Organisation. Available at: http://www.who.int/contracting/UHC_Country_Support.pdf.

WHO and World Bank Group (2014) *Monitoring progress towards universal health*

coverage at country and global levels: Framework, measures and targets. Geneva: World Health Organisation. Available at: https://www.who.int/healthinfo/universal_health_coverage/report/2014/en.

Yin, R. K. (2009) *Case study Research: Design and methods* (Fourth edition). Thousand Oaks, CA: Sage Publications.



APPENDICES 1 to 5



UNIVERSITY *of the*
WESTERN CAPE

APPENDIX 1: PARTICIPANT INFORMATION SHEET AND CONSENT FORM

(English version)



UNIVERSITY OF THE WESTERN CAPE

School of Public Health

Private Bag X17 • Bellville • 7535 • South Africa. Tel: 021- 959 2809, Fax: 021-959 2872

PARTICIPANT INFORMATION SHEET

Equity, access and utilisation in the state-funded universal insurance scheme (RSBY/MSBY) in Chhattisgarh State, India: What are the implications for Universal Health Coverage?

What is this study about?

This is a research project being conducted by me, Sulakshana Nandi, a student at the University of the Western Cape. I am registered for a Doctorate in Public Health in the School of Public Health (SOPH), University of the Western Cape. This research will form my doctoral thesis. I am inviting you to participate in this research project because of your/your family's experiences during utilising RSBY/MSBY. I am accountable to my supervisor, Professor Helen Schneider (hschneider@uwc.ac.za; +27-21-9593563) whom you are welcome to contact should you have any questions, concerns or complaints.

The purpose of this research project is to understand whether vulnerable groups are able to access the Rashtriya Swasthya Bima Yojana (RSBY) and Mukhyamantri Swasthya Bima Yojana (MSBY) and what are the barriers that they face.

What will I be asked to do if I agree to participate?

For this I would like to ask you questions about the particular health event, such as, details about the illness, utilisation of health services and RSBY/MSBY, the problems faced, the amount of money incurred. It will take around two hours. During the course of discussions, certain issues may be touched upon, which you may not prefer to discuss. I will not be offended and there will be no negative consequences if you would prefer not to answer a question. I would also like to request your permission to audio record our interview. After completing the study, the findings will be published in peer reviewed journals.

Would my participation in this study be kept confidential?

If you agree to participate, your identity will be kept anonymous and confidential, but the information you share may be used in the study and any further publications. I will refer to you by pseudonym or invented name, which you could choose now. Interview transcripts and observations will be coded to anonymise the data.

What are the risks of this research?

All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is not designed to help you personally, and your participation in the study will not lead to redressal of your grievance or compensation of any kind. We hope that, in the future, other people might benefit from this study through improved understanding of the barriers in utilising the insurance scheme. Participants will be treated with respect and dignity, anonymity will be protected, your contribution to the research will be valued and you will be acknowledged in the dissemination of findings, as appropriate and negotiated with you.

Can I withdraw from the study?

Participation in this survey is voluntary, you can choose not to answer any individual question or all of the questions. However, we hope that you will participate in this study since your views are important.

What if I have questions?

This research is being conducted by Sulakshana Nandi at the University of the Western Cape. If you have any questions about the research study itself, please contact her at 9406090595. More

information may be obtained from Prof. Helen Schneider who is contactable at
hschneider@uwc.ac.za.

She is accountable to Dean of the Faculty of Community and Health Sciences:

Prof José Frantz

University of the Western Cape

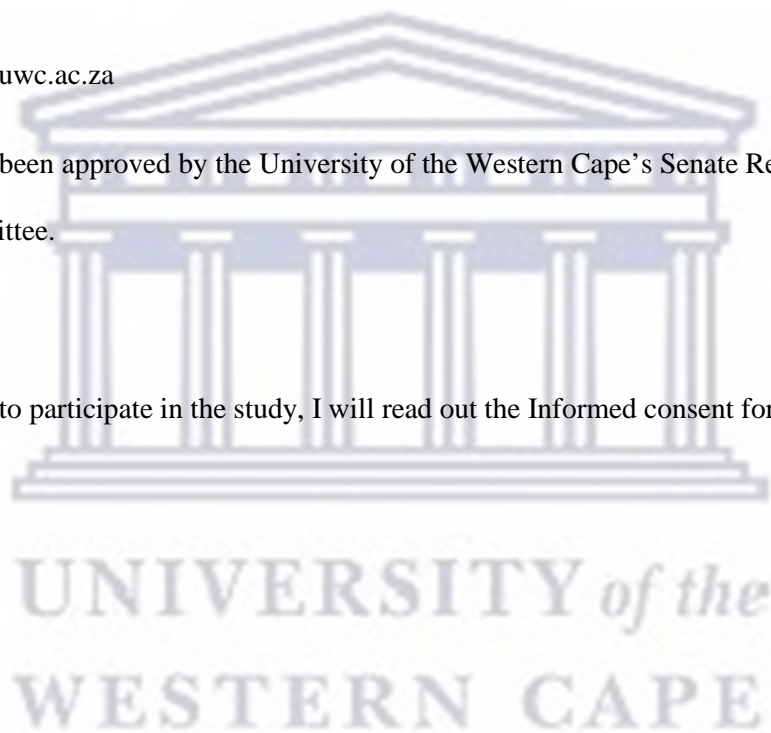
Private Bag X17

Bellville 7535

chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Senate Research Committee
and Ethics Committee.

If you are willing to participate in the study, I will read out the Informed consent form.



Consent Form

Equity, access and utilisation in the state-funded universal insurance scheme (RSBY/MSBY) in Chhattisgarh State, India: What are the implications for Universal Health Coverage?

Participant’s agreement

I have been informed about the purpose of the study, and what my participation involves. I am aware that voice recording of my interview is being done. I also understand that I can withdraw from the study at any time, without having to give a reason and that the study is voluntary. I also understand that confidentiality will be maintained, that I have a duty to respect the confidentiality of my peers and that the findings of the study will be used for research purposes and service development.

Researcher’s agreement

I, the interviewer shall keep all the information collected during the research confidential and use a pseudonym of your choice in all documents. The contents of this research will be used for my doctoral thesis, and will be published in peer review journals. Any change from this agreement will be renegotiated with you.

Participant is willing to participate _____ Date: _____

Participant is not willing to participate _____ Date: _____

Participant is willing to be audio recorded _____ Date: _____

Participant is not willing to be audio recorded _____ Date: _____

Researcher’s Signature: _____ Date: _____

Witness Signature: _____ Date: _____

APPENDIX 2: PARTICIPANT INFORMATION SHEET AND CONSENT FORM

(Hindi version)



UNIVERSITY OF THE WESTERN CAPE

School of Public Health

Private Bag X17 • BELLVILLE • 7535 • South Africa.

Tel: 021- 959 2809, Fax: 021- 959 2872

प्रतिभागी के लिए जानकारी

छत्तीसगढ़ में चल रही राश्ट्रीय स्वास्थ्य बीमा एवं मुख्यमंत्री स्वास्थ्य बीमा योजना तक पहुंच एवं उसकी उपलब्धता

प्रिय

मेरा नाम सुलक्षणा नंदी है एवं मैं यूनिवर्सिटी ऑफ वेस्टर्न केप की छात्रा हूँ। मैं शोध कर रही हूँ यह पता करने के लिए कि क्या कमजोर समूहों की पहुंच बीमा योजनाओं तक है एवं अगर नहीं है तो उसके क्या कारण हैं।

मैं यह क्यों कर रही हूँ?

मैं डॉक्टरेट कर रही हूँ सामुदायिक स्वास्थ्य में एवं यह शोध मेरी डॉक्टरेट प्राप्त करने के लिए जरूरी है। मेरी सुपरवाइजर, प्रोफसर हेलेन शनाईडर (hschneider@uwc.ac.za; +27-21-9593563) हैं जिनको आप कभी भी संपर्क कर सकते हैं।

प्रतिभागी कौन हैं?

प्रतिभागी ऐसे मरीज या उनके परिवार हैं जिनको बीमा योजना उपयोग करते समय किसी नकारात्मक परिणाम का सामना करना जैसे कि अधिक व्यय।

प्रतिभागियों से इस शोध में क्या अपेक्षित हैं?

इस शोध के लिए मैं आपसे बीमारी एवं ईलाज संबंधित कुछ प्रश्न पूछूंगी। यह साक्षात्कार करीब दो घंटे चलेगी। अगर आप इसमें भाग लेना चाहते हैं तो आपकी पहचान गुप्त रखा जाएगा लेकिन जो

जानकारी देंगे इस शोध में या किसी प्रकाशन में इस्तेमाल किया जा सकता है। मैं आपको उपनाम से बुलाऊंगी जो आप अभी चयन कर सकते हैं। साक्षात्कार के समय अगर ऐसे कुछ मुद्दों पे बात होती है जिसके बारे में आप चर्चा नहीं करना चाहते हैं तो मुझे बुरा नहीं लगेगा। अगर किसी प्रश्न का उत्तर नहीं देना चाहेंगे तो उसका कोई नकारात्मक परिणाम नहीं होगा।

प्रतिभागी क्या अपेक्षा कर सकते हैं?

इस शोध के बाद निष्कर्ष प्रकाशित किए जाएंगे। लेकिन मैं यह स्पष्ट करना चाहती हूँ कि इससे आपकी कोई भी शिकायत का निराकरण नहीं हो पाएगा एवं किसी तरह का मुआवजा आपको नहीं मिलेगा। सभी प्रतिभागियों से इज्जत एवं गौरवपूर्ण तरीके से व्यवहार किया जाएगा। गोपनीयता के बारे में चर्चा की जाएगी। इस शोध में आपकी भागीदारी का महत्व पहचाना जाएगा एवं प्रकाशन के समय आपकी भागीदारी को स्वीकारा जाएगा, जिस तरीके से आप चाहें हैं।

क्या आप इस शोध से इच्छानुसार निकल सकते हैं?

इस शोध में भागीदारी पूर्ण तरह से स्वेच्छित हैं एवं आप किसी खास प्रश्न या सभी प्रश्नों का उत्तर देने से मना कर सकते हैं। परंतु हम यह आशा करते हैं कि आप इस शोध में भाग लेंगे क्योंकि आपके विचार महत्वपूर्ण हैं।

इस समय क्या आप मुझसे कोई प्रश्न पहुंचना चाहते हैं?

मेरा फोन नम्बर है 9406090595। अधिक जानकारी प्रोफसर हेलेन शनाईडर से मिल सकती है hschneider@uwc.ac.za पे पत्र लिखकर।

अगर आप इस शोध में भाग लेने में इच्छुक हैं तो मैं अभी सूचित सहमति प्रपत्र पढ़के बताऊंगी।

सहमति प्रपत्र

छत्तीसगढ़ में चल रही राश्ट्रीय स्वास्थ्य बीमा एवं मुख्यमंत्री स्वास्थ्य बीमा योजना तक पहुँच एवं उसकी उपलब्धता

प्रतिभागी का अनुबंध

मुझे इस शोध के उद्देश्यों के बारे में एवं मेरी भागीदारी के बारे में बताया गया है। मैं यह भी समझती/समझता हूँ कि मैं इस शोध से कभी भी निकल सकती हूँ कोई भी कारण बताए बिना एवं मेरी भागीदारी पूर्ण रूप से स्वेच्छिक है।

शोधकर्ता का अनुबंध

मैं, शोधकर्ता, सभी जानकारी को, जो इस शोध के द्वारा इकट्ठा करूँगी, गोपनीय रखूँगी आपके द्वारा चुना गया उपनाम सभी दस्तावेजों में इस्तेमाल करूँगी। इकट्ठा की गयी जानकारी मेरे डॉक्टरेट थीसिस के लिए उपयोग किया जाएगा एवं पत्रिका में प्रकाशित किया जाएगा। इस अनुबंध में अगर कोई बदलाव किया जाना है तो वह आपसे पुनः चर्चा करके ही किया जाएगा।

प्रतिभागी भाग लेने के लिए तैयार है.....दिनांक

प्रतिभागी भाग लेने के लिए तैयार नहीं है.....दिनांक

शोधकर्ता के हस्ताक्षर.....दिनांक

गवाह के हस्ताक्षरदिनांक

APPENDIX 3: UWC SENATE RESEARCH COMMITTEE APPROVAL LETTER



OFFICE OF THE DEAN DEPARTMENT OF RESEARCH DEVELOPMENT

08 June 2015

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:
Ms S Nandi (School of Public Health)

Research Project: Equity, access and utilization in the state funded universal insurance scheme (RSBY/MBSY) in Chattisgarh State, India: What are the implications for Universal Health Coverage?

Registration no: 15/4/32

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*

Private Bag X17, Bellville 7535, South Africa
T: +27 21 959 2988/2948 . F: +27 21 959 3170
E: pjosias@uwc.ac.za
www.uwc.ac.za

A place of quality,
a place to grow, from hope
to action through knowledge

APPENDIX 4: REVIEW COMMENTS

Paper 1

Submission to Global Health Action: Submitted on 12 June 2018, accepted on 23 October 2018. Peer Review comments below:

Stig Wall <em@editorialmanager.com> Tue, Sep 25, 2018 at 12:53 PM

Reply-To: Stig Wall <stig.wall@umu.se>

To: Sulakshana Nandi <sulakshana@phrnindia.org> CC: "Helen Schneider" hschneider@uwc.ac.za, "Samir Garg" koriya@gmail.com

Sep 25, 2018

Ref.: Ms. No. ZGHA-2018-0187R1 - "Assessing geographical inequity in availability of hospital services under the state funded universal health insurance scheme in Chhattisgarh state, India, using a composite vulnerability index"

Global Health Action

Dear Sulakshana Nandi,

We have consulted reviewers about your paper, and we are pleased to say that we would like to accept your manuscript subject to your making some further changes as suggested by one of the reviewers. In addition, we ask you to confirm that the manuscript has been thoroughly checked and proof-read by a native English speaker with excellent written communication skills. This is most important. If you undertake these tasks and submit a timely revision that meets our satisfaction, we may recommend your paper for publication in Global Health Action. For your guidance, reviewers' comments are appended below.

To proceed please upload two versions of the manuscript, i.e. a clean version and a version with track changes. The document with track changes should indicate those sections within which changes have been made (in Ms Word track change mode or underlined or highlighted). Please also include a rebuttal letter, which contains point-by-point responses to editor's or reviewers' comments. Please arrange these files in the following order within your submission's PDF: response to reviewers > tracked version > clean version. Incomplete re-submission will delay the editorial process. Your revision is due by Oct 23, 2018.

To submit a revision, go to <https://zgha.editorialmanager.com/> and log in as an Author. You will see a menu item called 'Submission Needing Revision'. You will find your submission record there.

Yours sincerely,

Stig Wall, Professor

Senior and founding editor

Global Health Action

Reviewer #4: The authors have done a good job responding quickly to so many reviewers' comments. I am pleased to see many of my suggestions implemented and together with the other suggestions and corrections, the manuscript is much improved. I have only minor remaining comments/suggestions.

1) I am still not convinced about giving equal weight to all indicators in the VI. I wonder most about the variable age of district. The rationale you have provided (Reviewer 4, question 3e) seems anecdotal. However the addition of Table 3 is an improvement to understanding the index. It shows that there is quite significant clustering at 5 years and at 19 years, and a few districts are much much older. Doesn't this produce odd results even after normalisation? And since it is young age that is your concern, perhaps the meaning of the variable would be better captured if you made it categorical, e.g. "young" (<5years), "established (10-20 years)", "old (>20years)", or even binary.

2) To allow deeper understanding of the VI, you could report the average value of each component of the indicator for each of the tertiles, e.g. as part of Additional file 1.

3) Additional file 1: You could order the districts by VI as in Table 3 instead of alphabetically.

4) There is a poor "flow" in the Results section now with many very short sections.

5) Figures 2a and 2b could be combined. Please explain in text to the figure that the black dot in the middle is the state capital.

In compliance with data protection regulations, please contact the publication office if you would like to have your personal information removed from the database.

Stig Wall <em@editorialmanager.com> Wed, Aug 1, 2018 at 3:35 PM

Reply-To: Stig Wall <stig.wall@umu.se>

To: Sulakshana Nandi <sulakshana@phrindia.org>

CC: "Helen Schneider" hschneider@uwc.ac.za, "Samir Garg" koriya@gmail.com

Aug 01, 2018

Ref.: Ms. No. ZGHA-2018-0187 - Assessing geographical inequity in availability of hospital services under the state funded universal health insurance scheme in Chhattisgarh State, India, using a composite vulnerability index

Global Health Action

Dear Sulakshana Nandi,

Reviewers have now commented on your paper.

For your guidance, reviewers' comments are appended below.

Taking their opinions into account, we would like to invite you to revise your manuscript for our further consideration.

If you decide to do so, please upload two versions of the manuscript, i.e. a clean version and a version with track changes. The document with track changes should indicate those sections within which changes have been made (in Ms Word track change mode or underlined or highlighted). Please also include a rebuttal letter, which contains point-by-point responses to editor's or reviewers' comments. Please arrange these files in the following order within your submission's PDF: response to reviewers > tracked version > clean version. Incomplete re-submission will delay the editorial process.

Your revision is due by Aug 29, 2018.

To submit a revision, go to <https://zgha.editorialmanager.com/> and log in as an Author. You will see a menu item called 'Submission Needing Revision'. You will find your submission record there.

Please note that the offer to revise and resubmit does not guarantee final acceptance.

Yours sincerely,

Stig Wall, Professor

Senior and founding editor

Global Health Action

Reviewers' comments:

Reviewer #1: The authors studied about geographical inequity in availability of hospital services under the state-funded universal health insurance scheme in Chhattisgard State, India. The authors stated that they used a composite vulnerability index in this study. It is very interesting study that would help to develop appropriate health policies to improve human health in India. I hope that my following comments and suggestion would help the authors to improve the manuscript:

Background:

- * I suggest that the authors should shorten the background and focus more on the topic of "geographical inequity".
- * Please also provide a clear definition of "geographical inequity" and explain why it would be important to study.
- * Line 81: the section title was "Health inequity in India", but line 82, the authors mentioned "inequalities". So, they are the same or different?
- * Since the authors study the geographical inequity in the availability of hospital services, I suggest that the authors should provide information about this issue in India as well as in other relevant countries.

* Line 149-152: I was a bit confused with the aim. The authors stated that "The aim of this paper is to compare the availability of public and private hospital services under the state-funded universal health insurance scheme across districts of Chhattisgarh State, ranked and grouped by socio-economic vulnerability.", so the authors would like to compare the availability of public and private hospital services or to assess the geographical equity in the availability of hospital services (line 43-44)?

* Line 153-158: I suggest that this paragraph should move to the method section since they provide several definitions in the study.

Method

* Line 164-165: What is the geographical cluster of inequity? And, so did the authors study "geographical inequity" or "geographical cluster of inequity"?

* Line 167-168: The authors stated that "Other dimensions of access such as affordability, although recognized as important have been extensively examined elsewhere by the authors.", so please provide specific information about that or provide a reference to that.

* Line 172-181: Please check this "study design" section because, in the "Ethical approval" section (line 273), the authors state that this study was based on secondary data. So please revise this section to make consistent throughout the manuscript.

* Line 183: Please specify sources of data that the authors used in this study. And where is the "Additional File 1"?

* I suggest that the author should provide some justifications for why the authors would like to select Chhattisgarh and to include all 27 districts in this study.

* Line 189-207: I suggest that the authors should put those indicators into a table. And please explain why those indicators were selected for this study?

* Line 218-222: I suggest that the authors should explain why the authors used the method of Human Development Index to calculate the vulnerability index. And, how the authors validated the index based on this method. If the authors could not have validated it, please explain how the authors make sure that it could reflect what the authors would like to study.

* Line 241-243: I think the authors should specify in more detail how the authors estimate the indicators of hospital services availability. And, moreover, please provide detail on how the author validated the indicator to reflex the situation of hospital service availability.

* In general, I suggest that the author should provide a "variables" section that includes all outcome variables as well as independent variables in this study.

* Line 270-271: Please specify in detail how the authors mapped out the 27 districts. How GIS was used in this study?

Result

* I suggest that the authors should improve the method, and then update the results based on the changes.

* At the beginning of this section, I think the author should provide a table the describe the distribution of vulnerability index, and hospital availability indicators.

Discussion

* Please focus on the main topic of the study.

Reviewer #3: In general the Authors have presented the reporting of this study in a clear and concise manner. The language is straight forward and the results and conclusions are realistic. However the methodology can be improved upon with regards to background information that may be available to Readers. For example being a descriptive cross sectional study on implementation of an insurance scheme though with a focus on healthcare access iniquity, it may be worthwhile for the authors to provide more information on the structure and operation of the State funded Health Insurance program in a few paragraphs if such information can be accessed from the appropriate quarters. Details like performance and progress of the insurance program, enrollment and re-enrollment rates year in, year out, drop out rates, benefits package/plans, quality of healthcare available in the provider public relative to private hospitals, patient satisfaction issues, provider hospitals reimbursement system (fee-for-service vs. capitation) and other operational concerns raised in the past by providers, premium rates (and any increases) if enrollee contributions are required etc, etc. These are issues that may also contribute to differential utilization rates at the provider hospitals, districts and regions and so may silently contribute as confounding factors to the obvious geographical iniquity in healthcare access. Where there are space constraints a Box or Add File can be used. In specific terms, the following information if available will help improve the paper:

(1) The insurance scheme is said to be funded by the State or "publicly financed". However Authors need to be more explicit as readers need to know if this meant that Government pays 100% premium on behalf of each enrolled individual or family or partly pays the premiums. If fully paid, this virtually free healthcare and this may explain why the insurance coverage or enrollments are high in the HVDs (with greater number of poorer people) compared to the LVDs. Yet perhaps it can be reasoned further that because people pay very little or nothing to enroll to access care then it is possible that a 'sense of belonging' may be lacking and valuation or appreciation of the Insurance scheme may be low or poor. In words the enrollees perception may be that 'what cost me nothing is not well appreciated or appreciated at all' despite being poor and so majority in the HVDs may still patronize alternative medical care or facilities even where there are orthodox public/private hospitals captured in this study. Therefore utilization in the HVDs may be low thus explaining the low number and amounts of claims in the HVDs compared to the LVDs and not necessarily as a result of fewer hospitals (public and private) availability and coverage.

(2) Similarly, to better understand why the Insurance coverage and enrollments are high in the HVDs compared to LVDs readers need to know whether enrollments cover both formal and informal sectors or just either as majority of families in the HVDs (likely the poorer outer rural regions) are likely to come from the informal sector compared the formal sector with much more private and public employers and employees which are likely to be more concentrated in the LVDs (likely the richer more central urban regions).

(3) Readers would also benefit from having insight into the 'quality of healthcare' services including patient satisfaction, personnel attitude, necessary equipment and infrastructure as well as needed human resources in the public facilities (HVDs) as compared to the private facilities (LVDs) which available data showed to be much more and better patronized. This is because although insurance coverage and availability of hospitals may be even and be expected to drive access, but not necessarily utilization or 'willingness to use' as such quality issues and other healthcare delivery factors as well as potential administrative/bureaucratic bottle necks which enrollees may encounter or experience in getting necessary approval to utilize care at the numerous public hospitals in the HVDs may effectively limit access and discourage utilization more so in the public hospitals compared to private hospitals (mostly in LVDs) where these factors are likely to be less influential or less prominent due to expected preexisting and ongoing quality inputs of the (profit-driven) private facilities.

(4) Also from available data from the districts, insurance program or even at the health facilities, do you have information regarding potential possibility that may suggest that enrollees who reside in HVDs may be streaming or traveling into the LVDs to access 'perceived' better care because of experienced better quality of care and patient-friendly attitude that may be a feature of the private hospitals mostly concentrated in the LVDs compared to the HVDs?

(5) Similarly, if different or not uniform one or two sentences summarizing contents of the benefits package and plans available to different categories or status of enrollees in HVDs vs. LVDs, rural region vs. urban region, and public hospitals vs. private hospitals will enable readers get an insight into potential hidden factors that might be driving or discouraging utilization in some areas compared to others. Ideally the packages and plans are expected to be uniform across board, regions, districts and hospitals and even across socioeconomic status since this is supposedly a State financed insurance scheme. However if enrollees are likely to get access to better or higher plans/packages in the LVDs compared to the HVDs for example, then utilization and therefore claims and amounts would be expected to be comparatively higher in the LVDs than HVDs, and so on.

(6) Also from available and quoted statistics readers may benefit from getting an idea of the population density in the regions, HVDs compared to the LVDs as well as rural compared to urban regions. If much more families reside in the LVDs compared to the HVDs or urban compared to the rural regions then utilization may expectedly be much higher in the LVDs and urban regions comparatively and therefore the accompanying claims and amounts.

(7) Do the program data on empanelled hospitals give any indication on the quality and accreditation of the selected hospitals including availability and capacity for all necessary support investigations? This information may be necessary if the quality of services in the public hospitals and therefore patronage will be reasonably compared to those of the private hospitals. These factors have potential to affect real 'access to care' in the various districts and tertiles.

Generally also please adjust the following few observations / typos:

Line 133 - Include USD equivalent amount of the Rupees currency

Line 168 - Reference the other places/articles where the authors examined 'Affordability'

Line 200 - Do you mean 'Gender inequality'

Line 269 - Subtracting the value of one group from another

Abbreviations list - The abbreviations should be arranged in alphabetical order

Line 601 - There is apparent repetition of the quoted 'reference' in lines

Line 627 - Volume number of the quoted reference missing

In general, review the Reference list to remove any typos and include possible missing items like volume numbers, page numbers etc. and make the URLs workable

Reviewer #4: 1. The article does many interesting things and it is somewhat difficult to understand what the authors propose to be their main contribution. If it's about finding effective ways to demonstrate geographical inequities in the availability of hospitals, as the title suggests, then the most relevant result is Figure 2b, which unfortunately is not very clear and took quite some time for me to understand. However, if so, I would propose limiting the reporting of results to only the three vulnerability tertiles, and that the authors add information to support their claim (rows 235-237) that this is acceptable and appealing to local policy-makers and other stakeholders. That said, the paper does much more than this, and it would be a shame to limit it to the above.

2. There is a mismatch between the stated focus on availability and the reporting of results also for scheme enrolment and the number and value of claims.

a) This makes for a lot of figures in the Results (and many of these you do not really explain in the text, e.g. row 286-287 referring to Table 2).

b) At times you imply enrolment and claims are merely dimensions of "availability", which I don't think they are, while at other times, you present them separately. To me they fit very neatly in Figure 1 as indicators of coverage and utilisation rather than availability, and I would propose you change the title and stated aim (row 150) correspondingly.

c) Claims, especially their value, seem to serve little purpose for the argument here, which centres around enrolment and availability. I find the results nevertheless valuable and interesting. To appreciate them would however require some more basic information about how claims are made in this system. You provide some explanation on rows 244-249 but I am left unsure of what you mean by "claims made by hospitals". How do claims work in practice in this scheme - do both hospitals and patients submit claims for the same hospitalisation episode?

3. The district-level index of vulnerability is itself a new methodological contribution. I find it difficult to be persuaded by the results about availability/enrolment/utilisation without first better understanding the composition, distribution, and meaning of the vulnerability index. For this purpose, Additional File 2 provides some insight, but I was left with many questions.

a) If the authors have presented and discussed this index in some other publication, it would be necessary to refer to that here. If instead the index is entirely new and constructed for this study, as is currently implied, the results can therefore not be compared with any other studies. This is a limitation that should be countered with a strong rationale for constructing such a new index. Please make that purpose/rationale explicit.

b) How do you justify not including an indicator of health status in the index? This is puzzling especially as you interpret the index in the Discussion as an indicator of the need for health care (page 19). References to other literature on vulnerability indices would be useful here, as well as a theoretical explanation, and perhaps practical reasons to do with data availability.

c) The equal weight given to the five indicators included in the index is currently merely stated, but is in fact a significant methodological choice that should be justified and discussed as such. I am left unconvinced that it is the correct choice; simple, yes, but aren't the implications quite dramatic?

d) You refer to "accepted practice in the literature" to justify choice of indicators, but I am not sure what "literature" you actually mean here? (row 191) A related point is that you refer to the HDI as a reference, but this is quite old and you only really use it in a technical sense to construct the index. Some statement of what literature you draw on would help readers who might be aware say of work on multidimensional poverty measurement but perhaps you mean instead to refer to quite different literature.

e) The last indicator (age of district) requires further explanation, both regarding what kind of (relevant) infrastructure is meant here (row 204), and how you have technically dealt with the fact that higher values indicate lower vulnerability while the relationship is the opposite for the other indicators included in the index? This explains opposite signs in Additional File 2.

4. Contrasting between low inequity in coverage, and high inequity in availability, is a main argument in the Discussion. This raises two thoughts:

a) I don't think the empirical results in this small sample really support the conclusion that "insurance coverage is positively skewed towards the more vulnerable districts" (row 64-65). Indeed, the mean enrolment as proportion of households (or individuals?) by vulnerability tertile (rows 305-306) is significantly lower for the low-vulnerability tertile. But the means are very similar for the high- and medium-vulnerability tertiles. Furthermore, before grouping districts into tertiles, you report a contrasting result, namely that there is no correlation (rows 280-282). That the conclusion nevertheless here is a "positive skew" reflects the limitations of assessing inequity using a difference-measure instead of considering the full distribution of outcomes.

b) On page 19 you mention supply-side interventions and improving government facilities instead of expanding health insurance. This is a very indirect response to the question raised early on, to "examine the respective roles of the private and public sectors". An alternative that would equally be supported by your results might be to provide subsidies to private facilities for opening new hospitals in more vulnerable districts?

Paper 2

PLOS ONE <em@editorialmanager.com>

Sat, Sep 2, 2017 at 1:31 PM

Reply-To: PLOS ONE <plosone@plos.org>

To: Sulakshana Nandi <sulakshana@phrnindia.org>

PONE-D-17-13097

Financial protection and public and private sector utilization under the universal government health insurance scheme in Chhattisgarh state of India: Lessons for universal health coverage

PLOS ONE

Dear Ms. Sulakshana Nandi,

Thank you for submitting your manuscript to PLOS ONE. After careful consideration, we feel that it has merit but does not fully meet PLOS ONE's publication criteria as it currently stands. Therefore, we invite you to submit a revised version of the manuscript that addresses the points raised during the review process.

You will see that the reviewers have raised specific questions on the methods and findings of the study. In addition, I would like to point out the following things for you to consider while revising:

There is a need to carefully consider the scope of the paper, which essentially has to be more descriptive than causal, especially given the limitations of methods used. This needs to be borne in mind. Secondly, an important finding of the paper is high use of public sector facilities by insured persons, which is the highlight of your paper. Accordingly, this needs to be expanded and discussed in more details to understand reasons and implications. Thirdly, the comparison between the insured and non-insured also needs to be adjusted for type of illness, and the level of health care delivery accessed. Both these have a bearing on OOP expenditures and CHE. Finally, a recent systematic review published in PLOS One on the impact of publicly financed health insurance schemes in India could be useful for your discussion.

We would appreciate receiving your revised manuscript by Oct 17 2017 11:59PM. When you are ready to submit your revision, log on to <http://pone.edmgr.com/> and select the 'Submissions Needing Revision' folder to locate your manuscript file.

If you would like to make changes to your financial disclosure, please include your updated statement in your cover letter.

To enhance the reproducibility of your results, we recommend that if applicable you deposit your laboratory protocols in protocols.io, where a protocol can be assigned its own identifier (DOI) such that it can be cited independently in the future. For instructions see: <http://journals.plos.org/plosone/s/submission-guidelines#loc-laboratory-protocols>

Please include the following items when submitting your revised manuscript:

A rebuttal letter that responds to each point raised by the academic editor and reviewer(s). This letter should be uploaded as separate file and labeled 'Response to Reviewers'.

A marked-up copy of your manuscript that highlights changes made to the original version. This file should be uploaded as separate file and labeled 'Revised Manuscript with Track Changes'.

An unmarked version of your revised paper without tracked changes. This file should be uploaded as separate file and labeled 'Manuscript'.

We look forward to receiving your revised manuscript.

Kind regards,

Shankar Prinja

Academic Editor

PLOS ONE

Journal Requirements:

When submitting your revision, we need you to address these additional requirements.

1. Please ensure that your manuscript meets PLOS ONE's style requirements, including those for file naming. The PLOS ONE style templates can be found at

http://www.journals.plos.org/plosone/s/file?id=wjVg/PLOOne_formatting_sample_main_body.pdf and

http://www.journals.plos.org/plosone/s/file?id=ba62/PLOOne_formatting_sample_title_authors_affiliations.pdf

2. We note that you have indicated that data from this study are available upon request. PLOS only allows data to be available upon request if there are legal or ethical restrictions on sharing data publicly. For more information on unacceptable data access restrictions, please see <http://journals.plos.org/plosone/s/data-availability#loc-unacceptable-data-access-restrictions>.

In your revised cover letter, please address the following prompts:

a) If there are ethical or legal restrictions on sharing a de-identified data set, please explain them in detail (e.g., data contain potentially sensitive information, data are owned by a third-party organization, etc.) and who has imposed them (e.g., an ethics committee). Please also provide contact information for a data access committee, ethics committee, or other institutional body to which data requests may be sent.

b) If there are no restrictions, please upload the minimal anonymized data set necessary to replicate your study findings as either Supporting Information files or to a stable, public repository and provide us with the relevant URLs, DOIs, or accession numbers. For a list of acceptable repositories, please see <http://journals.plos.org/plosone/s/data-availability#loc-recommended-repositories>.

We will update your Data Availability statement on your behalf to reflect the information you provide.

[Note: HTML markup is below. Please do not edit.]

Reviewers' comments:

Reviewer's Responses to Questions

Comments to the Author

1. Is the manuscript technically sound, and do the data support the conclusions?

The manuscript must describe a technically sound piece of scientific research with data that supports the conclusions. Experiments must have been conducted rigorously, with appropriate controls, replication, and sample sizes. The conclusions must be drawn appropriately based on the data presented.

Reviewer #1: Partly

Reviewer #2: No

2. Has the statistical analysis been performed appropriately and rigorously?

Reviewer #1: No

Reviewer #2: No

3. Have the authors made all data underlying the findings in their manuscript fully available?

The PLOS Data policy requires authors to make all data underlying the findings described in their manuscript fully available without restriction, with rare exception (please refer to the Data Availability Statement in the manuscript PDF file). The data should be provided as part of the manuscript or its supporting information, or deposited to a public repository. For example, in addition to summary statistics, the data points behind means, medians and variance measures should be available. If there are restrictions on publicly sharing data—e.g. participant privacy or use of data from a third party—those must be specified.

Reviewer #1: Yes

Reviewer #2: Yes

4. Is the manuscript presented in an intelligible fashion and written in standard English?

PLOS ONE does not copyedit accepted manuscripts, so the language in submitted articles must be clear, correct, and unambiguous. Any typographical or grammatical errors should be corrected at revision, so please note any specific errors here.

Reviewer #1: Yes

Reviewer #2: Yes

5. Review Comments to the Author

Please use the space provided to explain your answers to the questions above. You may also include additional comments for the author, including concerns about dual publication, research ethics, or publication ethics. (Please upload your review as an attachment if it exceeds 20,000 characters)

Reviewer #1: Overall a good effort and study on Chattisgarh's State insurance Scheme. The study does offer some insights on the current level of enrollments into the scheme and

characteristics of the enrollment population and pattern of service utilization and OOP expenditures. The study would benefit by including information on population which has not enrolled for the scheme.

Further, since one of the outcome measure is OOP, it would be worthwhile to consider a control arm to the study design, if the scheme implementation and data availability allows. In current design and analysis approach the study seems to suffer from significant selection bias problem in terms of analysis and interpretation of results. Two points worth noting are 1) the coverage/enrolment rates/utilisation pattern are very poor in spite of being a universal scheme and 2) the insured and uninsured population may differ fundamentally in terms of the measurable characteristics of interest and hence outcomes. Hence, the comparison of insured and uninsured and inference on utilization and OOP seems misleading.

It is essential to have a control group to comment on impact of the scheme. A better approach would have been a pre-post comparison (before and after the scheme) for some of the outcome indicators with a control arm. It is hard to control for confounders (both known and unknown). Hence, the study design has to be improved, if author wishes to comment on impact of the scheme.

Some minor comments,

in section on out of pocket expenditure (page 14) it is mentioned that "34.0% of hospitalization episodes in the public sector were 'cashless', that is, no OOP expenditure was incurred whereas only 16.1% of public sector users without insurance got cashless services. For those going to the private sector, 5.0% of the insured and 5.7% of those not insured coverage received cashless services." The study would benefit if reason and interpretation on free of cost hospitalization of un-insured 5.7% receiving care in private sector could be explained.

Reviewer #2: Substantive Comments:

1. The title of the paper gives an impression that the author would be looking at the impact of universal health insurance scheme (RSBY plus the state govt run scheme) in Chhatisgarh. However the data that they have selected is contaminated with intended beneficiaries of other government schemes like CGHS (e.g. pensioners who are reimbursed), ESIS and any state government scheme for its employees. While the authors acknowledge this as a limitation, this is a serious issue which affects the empirical foundations of this work, to begin with. For example, there were about 5 lakh state government employees in Chhattisgarh during 2015-16, who are likely to be covered under a group insurance scheme like other states. The number of beneficiaries under such a scheme would therefore be higher. NSS 71st round unfortunately does not allow a further disaggregation of "government funded insurance schemes".

2. The author mentions in the conclusion that "Financial protection through Chhattisgarh state health insurance scheme is limited". Unfortunately, this conclusion is not supported by the analysis. The paper has tried to show some associations but certainly not causality.

3. In page 8 they mention that currently 12.5 million people in Chhattisgarh are enrolled under RSBY/MSBY. The state has a population of 25 million. Thus almost 50% of the population are covered under RSBY/MSBY. The authors have then used the state level data

from the NSS 71st round and then applied available weights to generate population estimates. From their analysis based on NSS data they find that 38.8% were covered by any government insurance scheme (RSBY/MSBY being a component of these). How would they reconcile these two observations?

4. Average out of pocket (OOP) health expenditure across groups (rural-urban, social group and within them insurance, no-insurance), has nowhere been reported in the paper. In fact, it is conspicuous by its absence, especially since the authors go on to compute catastrophic burden of these expenses.

5. While the authors have run logistic regressions to identify causality between (a) hospitalization and (b) hospitalization in the public sector with a host of independent variables, it is not clear why they have not tested a similar model with OOP expenditure as the dependent variable. This is particularly so, since their basic hypothesis is related to financial protection.

Specific Comments

1. The authors need to construct separate quintiles for rural and urban sample. From the characteristics of the study sample presented in Table 1, it does not seem that they have done so. This is because the rural is disproportionately represented in the lower quintiles while the urban has a higher share of the top two quintiles.

2. Table 2 supposedly reports the result of a logistic regression (line 8, page 13). It is not clear what the dependent variable is, in this case.

3. Table 1 should have a row named “Total” in the end.

4. In table 1, what is the purpose of displaying a percentage distribution of each gender across expenditure quintiles?

5. In page 14, line 18-20, authors have stated that “For those going to the private sector, 5.0% of the insured and 5.7% of those not insured coverage received cashless services”. What are the possible explanations of such a finding? Who are these 5.7% who are not insured, yet receive cashless services and how is the percentage higher than the insured ones? One could look into the morbidity profile, type of health service provider visited, socio-economic profile of the patients etc. to make an informed discussion on such a result. The numbers in itself are confusing and therefore anything but self-explanatory.

6. If you would like your identity to be revealed to the authors, please include your name here (optional).

Your name and review will not be published with the manuscript.

Reviewer #1: (No Response)

Reviewer #2: (No Response)

Paper 3

Submission to Global Public Health: Submitted on 19 December 2018, Accepted on 13 July 2019. Peer Review comments below:

Global Public Health <onbehalf@manuscriptcentral.com> Sat, Jun 8, 2019 at 5:50 PM

Reply-To: info.globalpublichealth@gmail.com

To: sulakshana@phrnindia.org

Cc: ms2778@cumc.columbia.edu, lmurray.gph@gmail.com

08-Jun-2019

Dear Ms Nandi:

Your manuscript entitled "When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India" which you submitted to Global Public Health, has been reviewed. Only one of the original reviewers was available to re-review, and the reviewer comments are included at the bottom of this message. The reviewer still has a number of important concerns, and would like to see some revisions made to your manuscript. We request that you make these suggested revisions before we can make a final decision on the revised manuscript.

Please note that submitting revisions for your manuscript does not guarantee eventual acceptance, and that your revisions will be subject to re-review before a decision is rendered.

When you revise your manuscript please highlight the changes you make in the manuscript by using the track changes mode in MS Word or by using bold or colored text. To submit the revision, log into <https://mc.manuscriptcentral.com/rgph> and enter your Author Centre, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision. Please enter your responses to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you made to the original manuscript. Please be as specific as possible in your response to the reviewer(s) but do not include any author contact information and/or names as this will be shared with the reviewers and it is important to keep the review process blinded.

Alternatively, once you have revised your paper, it can be resubmitted to Global Public Health by way of the following link:

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc.manuscriptcentral.com/rgph?URL_MASK=8c9f2a0a3eda43ff9d52601cc8c0ad33

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to Global Public Health, your revised manuscript should be uploaded as soon as possible. Once again, thank you for submitting your manuscript to Global Public Health and we look forward to receiving your revision.

Sincerely,

Richard Parker

--

Richard Parker, PhD

Editor-in-Chief

Global Public Health

email: info.globalpublichealth@gmail.com

www.globalpublichealthjournal.net

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

I thank the authors for their responses to all comments. The flow of the introduction and other sections is improved.

1. Page 6, lines 5-6. Please spell out LMIC before its first use
2. Page 6, lines 19-20. Maybe rephrase for a wider audience outside India: "... to families with household income below the official poverty line..."
3. Page 7, lines 39-40. Please explain what you mean by the RSBY "covered" 41 million families. Does covered mean enrolled? Or does it mean that 41 million families used the RSBY in that year? And that 1.6 million hospitalizations were paid for through the RSBY? The figure of 57.8% of "target" families is somewhat confusing here.
4. Figure 1. I appreciate the authors' efforts to visually depict their framework. However, Figure 1 is not clarifying. In one of the circular bands, we see 'norms', 'culture' and 'regulation' – but culture could encompass 'norms,' hence it's not clear why they're both listed and what specific distinction between the two is intended here. In the outermost band we have 'social structures,' 'political economy,' and 'healthcare markets,' but markets are subsumed in the economy at least analytically. Moreover, 'political economy' when used on its own usually refers to the academic discipline or research area. We may refer to 'political economy of health care' as the set of political factors that interact with the supply, demand, and other economic features of health care; this is more along the lines of what the authors mean here, I think. In the figure, the constructs within any one band are not in the same register.

I do not think the figure is required. Please also see my next comment.

5. Page 9, lines 31-41. The authors state their aim here: “Taking the framework of access (Gilson & Schneider, 2007; Thiede, Akweongo, & McIntyre, 2007) as its organising idea, this study explores the dynamics of access within the state-funded universal health insurance scheme in Chhattisgarh, and specifically the relationship between choice, financial protection and patient experiences in Chhattisgarh’s state-funded health insurance scheme.”

This seems like a clear aim, and the discussion that follows on pages 9-10 is sufficient. I feel the visual framework (figure 1) is not necessary. What the reader will want to see in the paper from this point on is a definition of 'access' and then explorations of how 'choice' materializes, how 'patient experiences' of choice and access bear out, and what these findings suggest about the ways the RSBY insurance scheme does or does not engender financial protection.

6. Page 12, line 30. This is 45% of the state population? – please clarify

7. A word on constructs and their use in this paper. On page 9, lines 50-55, the authors write: “As proposed by Thiede et al (2007), the framework adopts the core constructs of access as acceptability, affordability and availability that refer to cultural, financial and physical aspects respectively.” This seems fine. Where they introduce the study on page 13, they write: “A qualitative case study of choice, financial protection and patient experiences under RSBY in urban Chhattisgarh was conducted.” This statement accords with their stated aim on page 9 (lines 31-41 –see my comment number 5), though it does not include the term “access” or any of the constructs that the authors associate with it, i.e., acceptability, affordability, and availability. Later on page 23, lines 3-10, authors write: “... the research revealed the dynamics underlying failures in promoting affordability and specifically on the interactions between availability (choice), affordability and acceptability.” Here, they tell us that choice and availability are the same thing, though previously, on page 9, availability was about the physical aspects of access.

I understand that “access” is a multifaceted construct, but the use of constructs here could be better handled. The point would be made more simply, and more compellingly, if authors stayed primarily with their stated aim on page 9, lines 31-41. Their discussion on pages 26-27 on ‘interactions of access dimensions’ can be woven into the discussion/analysis, but the influence of the three dimensions on each other does not strike me as the major aim of the paper. It distracts from the main and stronger claim, which is to show how the RSBY scheme does not provide true financial protection for the poor, to document the trials that patients go through in using the RSBY, to present patient experiences as evidence to back that claim, as the authors have done.

8. Page 25. Discussion of the smart card. I thank the authors for clarifying that they are referring to the smart card technology where they cite Pai et al 2018. But later in this section the authors write variously about trust in the smart card, trust in government, and trust in providers. These are certainly linked, but if this section is about technology, it should be specifically about patient experiences with the smart card, trust in the smart card, and challenges of enforcing the smart card technology, not about the RSBY more broadly. The smart card is a tool to implement the RSBY. As such a tool, it can have independent effects (e.g., separately from the choices and cost savings enabled by the RSBY) on shaping patients’ experiences of health care-seeking or of “access.” That’s what this section could focus on more directly.

9. I thank the authors for responding to my comment on patients' previous experiences with the private sector and for pointing out the section on "selection of hospital". My comment was prompted by previous research that suggested that patients report negative experiences with both public and private sector providers, with or without insurance. I wondered if any ambivalence about the private sector came up in patients' narratives about choice/selection of hospitals. I realize that the private sector is seen as "better" in terms of both quality of care and social status, but some evidence also shows that poorer patients report being treated inequitably and less personably in private hospitals. This is not a major point for the paper, but I had wondered whether any patients had reported concerns about or negative experiences (their own or others') with the private sector prior to using the RSBY scheme.

10. Raipur City is mentioned in the abstract but not in the main manuscript text. Could authors adjust one or the other?

Global Public Health <onbehalfof@manuscriptcentral.com>Sun, May 12, 2019 at 4:12 AM

Reply-To: info.globalpublichealth@gmail.com

To: sulakshana@phrindia.org

Cc: ms2778@cumc.columbia.edu, lmurray.gph@gmail.com

11-May-2019

Dear Ms Nandi:

Your manuscript entitled "When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India" which you submitted to Global Public Health, has been reviewed. The reviewer comments are included at the bottom of this message.

As you will see, the reviewers important improvement in your revised manuscript, but would still like to see some revisions made before we can move forward to publication. We request that you make these suggested revisions before we can make a final decision on the revised manuscript.

Please note that submitting revisions for your manuscript does not guarantee eventual acceptance, and that your revisions will be subject to re-review before a decision is rendered.

When you revise your manuscript please highlight the changes you make in the manuscript by using the track changes mode in MS Word or by using bold or colored text. To submit the revision, log into <https://mc.manuscriptcentral.com/rgph> and enter your Author Centre, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision. Please enter your responses to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you made to the original manuscript. Please be as specific as possible in your response to the reviewer(s) but do not include any author contact information and/or names as this will be shared with the reviewers and it is important to keep the review process blinded.

Alternatively, once you have revised your paper, it can be resubmitted to Global Public Health by way of the following link:

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc.manuscriptcentral.com/rgph?URL_MASK=36fad4a8c71e4f55a734cd803b16fa56

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to Global Public Health, your revised manuscript should be uploaded as soon as possible. Once again, thank you for submitting your manuscript to Global Public Health and we look forward to receiving your revision.

Sincerely,

Richard Parker

--

Richard Parker, PhD

Editor-in-Chief

Global Public Health

email: info.globalpublichealth@gmail.com

www.globalpublichealthjournal.net

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

I would still urge that there must be some information on how many persons/women accessed RSBY during the period under review, in the region under review. We are listening to the voices of eight women, but how many were there in all? It is not enough to simply say [Page 34], "The patient experiences studied were purposefully selected as 'extreme example cases', and were not meant to be representative..."

Alternately, a statement saying that irrespective of how many people/women were able to negotiate RSBY successfully and without complaint, the fact that there are grievances of the type highlighted should cause concern.

Reviewer: 2

Comments to the Author

Review of revised manuscript,

“When state-funded health insurance schemes fail to provide financial protection: An in-depth exploration of the experiences of patients from urban slums of Chhattisgarh, India”.

I thank the authors for making revisions and responding to previous comments.

Page numbers below refer to pdf page numbers, i.e., I take the abstract to begin on page 6 of 46.

Page 8, lines 18-27: This information seems to require context – why are we shown comparisons for rural and urban areas -- Is this comparison relevant to the study? Could authors provide more details about the profile of those who report catastrophic out-of-pocket spending? Any information about trends in the RSBY, e.g., enrollment and use?

Page 8 – Chhattisgarh is introduced abruptly in the study. The reader does not know why Govt of Chhattisgarh documents are being referenced so early on. Could the authors focus on RSBY more broadly in the introduction? In lines 45-60, it may not be clear to the author whether this is the Chhattisgarh government’s framing/interpretation of the RSBY or whether this is also how the national scheme is structured. Please reference national documents here if possible.

Pages 9-10: Here the authors zoom out from state-level experience in India to the global experience with health insurance. The introduction could be sequenced better for flow and order, especially since the intro begins with the global picture.

Page 11, lines 7-15. Authors have defined ‘acceptability’ to include a number of quite different constructs: “... notions of empowerment,” agency or capacities to “navigate and negotiate” ... “patient-provider engagement and dialogue” and “the way in which healthcare organizational arrangements influence patient response to services....”

I understand that ‘acceptability’ is a complex, multifaceted construct. But it would be good to see, as noted in my previous review, a clearer and more succinct operationalization of it so the reader knows more precisely what authors are attending to in their study.

Also, ‘acceptability’ may be easier to articulate and distinguish when it is presented in relation to other defined measures by which we might gauge or assess how people perceive health care. For example, as Ergler et al (2011) discuss, five factors that influence how people experience health care services are: Availability (supply), accessibility (geographic location), accommodation (timings that facilities are open and other aspects of convenience), affordability (cost), and acceptability (the patient-provider relationship, conceived as users’ attitudes towards the providers and vice versa).

Page 11, lines 36-50: Authors say they will examine the ways patients and families “navigate and negotiate” hospitalization. This describes an experiential process, distinct from the notion of “acceptability” which suggests an affective dimension/subjective perception of an experience or a social relationship. The two are related but may appear somewhat confusing to the reader.

Page 30. Here authors discuss the patients’ experiences of exploitation in the private sector. In this regard, I think they can go further in underscoring the explicitly abusive and exploitative private sector that the poor often encounter. The RSBY does not quite strike me as a new health or medical technology, as Pai et al 2018 discuss. Authors rightly note that

lack of trust and lack of regulation are both key contextual factors that make poor patients especially vulnerable in this case and that the RSBY has been introduced without regard to this context. But the RSBY is a financial protection instrument that has not been “tested” in lab or field studies as are medical technologies, which is the focus of Pai et al’s paper. The argument that health insurance does not offer financial protection – i.e., that it is not proven to deliver on the basic premise that it will help allay the cost of medical care – has been raised by other researchers. The authors have cited some references – one relevant ref in this respect, drawing on qualitative evidence, is Dao & Nichter (2016), who note that the claim that health insurance “works” must be substantiated or proven, and so far it has not been proven to benefit the poor.
<https://anthrosource.onlinelibrary.wiley.com/doi/full/10.1111/maq.12191>

The value of the present study is to show the extreme vulnerability that patients face. Could authors cite more generally (maybe from outside the health literature?) to show how lack of regulation as well as people’s lack of knowledge/information about insurance have exacerbated this vulnerability? Private health care providers are liable to exploit patients outside of the RSBY scheme – can authors cite research showing that?

Could authors say more about patients’ expectations and knowledge about health insurance and private health care? Had the patients previously visited private hospitals or private providers? What had been their experiences with private providers in any previous encounters? Did they “choose” private care because they thought it would be “better” in some sense?

On page 32, the authors say they describe how “three dimensions of access -- availability, affordability and acceptability -- influence each other.” But what they have shown most pointedly is the social and financial vulnerability in health-care seeking experiences among the poor. Although private care is certainly unaffordable for the poor, what we see is not so much the influence of availability and affordability on acceptability, but rather how, under conditions of poverty, misinformation, and weak regulation, a scheme such as the RSBY creates new paths to financial and caregiving burdens for the poor. I’m wondering if the authors need all three themes “availability, affordability and acceptability” to make their argument.

Global Public Health <onbehalfof@manuscriptcentral.com>Sun, Feb 17, 2019 at 6:14 PM

Reply-To: info.globalpublichealth@gmail.com

To: sulakshana@phrindia.org

Cc: ms2778@cumc.columbia.edu, lmurray.gph@gmail.com, bzilli.gph@gmail.com

17-Feb-2019

Dear Ms Nandi:

Your manuscript entitled "Navigating and negotiating access under state-funded health insurance in private sector: Narratives of women from urban slums of Chhattisgarh, India" which you submitted to Global Public Health, has been reviewed. The reviewer comments

are included at the bottom of this message. I regret to inform you that the reviewers have raised a number of concerns, and therefore in its current form your paper cannot be accepted for publication in Global Public Health. However since the reviewers do find some merit in the paper, we would be willing to reconsider if you wish to undertake major revisions and re-submit, addressing the referees' and editor's (if applicable) concerns.

Please note that resubmitting your manuscript does not guarantee eventual acceptance, and that your resubmission will be subject to re-review before a decision is rendered.

If you chose to revise your manuscript, please highlight the changes you make in the manuscript by using the track changes mode in MS Word or by using bold or colored text. To submit the revision, log into <http://mc.manuscriptcentral.com/rgph> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number will be appended to denote a revision. Please also upload a file that details your responses to the comments made by the reviewer(s). Please be as specific as possible in your response to the reviewer(s) but do not include any author contact information and/or names as this will be shared with the reviewers and it is important to keep the review process anonymous.

Alternatively, once you have revised your paper, it can be resubmitted to Global Public Health by way of the following link:

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc.manuscriptcentral.com/rgph?URL_MASK=87f4849f97644910bbe8f90f0e42aca3

Because we are trying to facilitate timely publication of manuscripts submitted to Global Public Health, your revised manuscript should be uploaded as soon as possible. Once again, thank you for submitting your manuscript to Global Public Health and we look forward to receiving your resubmission.

Sincerely,

Richard Parker

--

Richard Parker, PhD

Editor-in-Chief

Global Public Health

email: info.globalpublichealth@gmail.com

www.globalpublichealthjournal.net

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

This is an interesting study. Narrative "revelatory" accounts of individual women must feed into programme changes and in framing better policy. However the study has restricted itself to women who have had bad experiences. This is not enough to condemn RSBY. How many cases of illness, etc. were treated under RSBY, in public and private hospitals over the period under review? How many of the patients were women? [The study does not actually say that the patient in the case of each of the nine respondents was a woman.] Would it not have been more useful to have selected a larger sample, and not necessarily only of those who had reported bad experiences? Even amongst women respondents, does religion or caste make a difference? It would also have been useful to hear the voice of women respondents who used government hospitals. The argument cannot be that only private hospitals are at fault.

Another question which could have been asked is was hospitalization necessary in all cases? A criticism of health insurance schemes, and particularly RSBY, is that they encourage useless hospitalization. Is this also the perception of the users of the scheme?

Lastly, if the argument is, and it is a correct argument, that there are multiple barriers to access to care, how would you suggest that RSBY change itself? Or Ayushman Bharat?

Reviewer: 2

Comments to the Author

Review of "Navigating and negotiating access under state-funded health insurance in private sector: Narratives of women from urban slums of Chhattisgarh, India"

This manuscript describes the experiences of 9 families with using the RSBY, a state-sponsored national health insurance scheme, in the state of Chattisgarh, India. Authors collect detailed narratives from participants and the research helps illuminate the grave financial and social challenges that people face in using this health insurance service. In-depth research into people's health care-seeking experiences and the cost of care is certainly needed.

However, this paper does not elaborate India's health care context in order to motivate and contextualize the study, does not adequately flesh out a theoretical or conceptual frame to drive inquiry, and does not sufficiently reference global literature on health insurance in low- and middle-income countries.

I provide some specific comments below:

The paper launches into a description of the RSBY without describing the landscape of health care services and providers in India. Please describe this, as well as the proportion of workers in the unorganized or informal sector who do not have access to health insurance. Please provide trends in RSBY enrollment and utilization. Although many low- to middle-income countries have mixed health systems, with public and private providers, India is a distinctive case in terms of the scale and recent growth of the private sector. This has to be described to situate the study as a case study in global health and to better motivate the aims of the study.

Define terms: 'acceptability' of health care – I see it's defined on page 3, but it should be clarified on page 2 where it first appears. The definition on page 3 is broad and overlaps with

other constructs, e.g., acceptability underlies people's capacity to negotiate and navigate, underlies people's agency and empowerment, refers to people's and provider's expectations, refers to patient-provider engagement and dialogue... Can authors provide a sharper delineation of the way they operationalize 'acceptability.'

Page 2: Authors say that the stated aim of the RSBY is to improve acceptability of health care through 'patient choice and empowerment' - is this language actually in the RSBY text? Please clarify, and especially explain these terms in the context of the RSBY, especially since the notion of 'empowerment' of people who are below-the-poverty-line through giving them 'choice' of private hospitals has been critiqued in the literature. Could authors bring in more of this critique to help lay out, at the outset, the ways in which RSBY has already been shown to be arguably failing the poor?

Authors should elaborate the mechanism that, as implied by the RSBY, purportedly will lead from patients' 'empowerment' (by giving them choice of hospitals and reducing cost of care) to 'acceptability' of health care (in the sense of better dialogue between providers and patients). These constructs refer to expected consumer behavior in a health care market – authors do take up this point in the Discussion, but it could form the starting point of the study.

There is a lot about the context of health care-seeking behavior, cultural understandings of health and illness, about popular ideas about public vs private services in India that authors could discuss in the introductory sections to motivate and contextualize this study. See, for example, Ergler et al (2011), on people's preference for private facilities in Chennai, in *Social Science & Medicine*. Article by Seeberg et al, 2014, entitled "Treatment seeking and health financing in selected poor urban neighbourhoods in India, Indonesia and Thailand" in *Social Science & Medicine*.

Page 4: "the health system is a social ... "This paragraph appears abruptly in the flow of the text. Since is this is part of the conceptual framework, please specify and appropriately place this paragraph in the manuscript text. Authors should elaborate the link between this conceptualization and their main themes of interest. That is, where they say "...broader social and institutional environments ... have a bearing on how care is produced ..." - could they be more specific about these environments. What aspects of these environments are relevant to this particular study?

Page 5: The case study approach: It seems that here the "case" is appropriately India's RSBY program in Chattisgarh (a second case could be, for example, RSBY as implemented in another state in India or another site within Chattisgarh). The interviewed families would then not be multiple "cases", as the authors term them, but rather participants in the study. The authors can count them as participants and yet compare their narratives as they currently do, and they don't need to use the language of "cross-case analysis." Authors say they aim to provide a "sophisticated understanding of all aspects of the phenomenon" -- the phenomenon here, it seems, is the RSBY in Chattisgarh. (To learn all aspects of it, we would examine families' experiences as well as, for example, the perceptions and experiences of other, differently situated actors.)

If there are precedents for “case studies” having been conducted in this way, where study participants are “cases” (outside of medical literature, in which it is common to document detailed individual patient case reports as case studies), please cite relevant references.

Page 6, line 30: “If offered,” should be “If offered to us, ...”?

Page 18, lines 12-18: The state’s failure to monitor private providers’ extortionist practices does not entirely equate to the state’s promotion of private/commercialized health. This sentence needs more nuance.

Page 18, lines 56-60: “A failure to recognize...” – please specify who has “failed to recognize ...” – which actor are authors referring to here? The public, health advocates, policymakers, researchers? And is it a failure to recognize the context or an inability to act upon it, to redress it?

In the discussion and conclusion sections:

Much of what authors describe about patients’ experiences sounds familiar — their experience of neglect and disrespect by providers, and feelings of helplessness and powerlessness when interacting with providers and the health system in general. How does health insurance, in particular, add to or alter these experiences and the meaning of the experiences for patients? Authors allude to distrust in the state ... could they elaborate this distrust in contrast to or compared to the difficult interactions poor people already expect to have when they seek public health care services?

In what ways are these experiences of RSBY in India distinct from or similar to disadvantaged patients’ experiences in other countries that have recently introduced health insurance programs? How have other countries overcome the challenges of monitoring and regulation of providers in low-resource contexts, or of introducing wider reform alongside a health insurance scheme?

UNIVERSITY *of the*
WESTERN CAPE

APPENDIX 5: OTHER RELEVANT PUBLICATIONS BY THE STUDENT

1. Nandi, S. et al. (2016) 'Uncovering Coverage: Utilisation of the Universal Health Insurance Scheme, Chhattisgarh by Women in Slums of Raipur', *Indian Journal of Gender Studies*, 23(1), pp. 43–68. doi: 10.1177/0971521515612863.
2. Sanders, D., Nandi, S., Labonté, R., Vance, C. and Van Damme, W. (2019) 'From primary health care to universal health coverage—one step forward and two steps back', *The Lancet*, 394(10199), pp. 619-621. doi: [https://doi.org/10.1016/S0140-6736\(19\)31831-8](https://doi.org/10.1016/S0140-6736(19)31831-8).



Uncovering Coverage: Utilisation of the Universal Health Insurance Scheme, Chhattisgarh by Women in Slums of Raipur

Indian Journal of Gender Studies
23(1) 43–68
© 2016 CWDS
SAGE Publications
sagepub.in/home.nav
DOI: 10.1177/0971521515612863
<http://ijg.sagepub.com>



Sulakshana Nandi¹

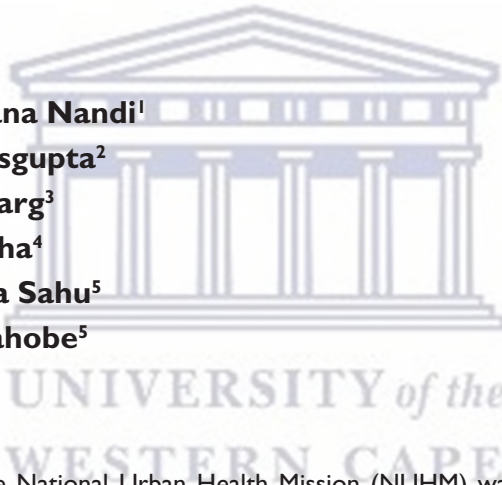
Rajib Dasgupta²

Samir Garg³

Dipa Sinha⁴

Sangeeta Sahu⁵

Reeti Mahobe⁵



Abstract

In 2013, the National Urban Health Mission (NUHM) was rolled out to effectively address health concerns of the urban poor population.

¹ State Convener, Public Health Resource Network and Chaupal Gramin Vikas Prashikshan Evum Shodh Sansthan, Chhattisgarh, India.

² Professor, Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi, India.

³ State Health Resource Centre, Chhattisgarh, India.

⁴ Public Health Resource Network, New Delhi, India.

⁵ Chaupal Gramin Vikas Prashikshan Evum Shodh Sansthan, Chhattisgarh, India.

Corresponding author:

Rajib Dasgupta, Centre of Social Medicine & Community Health, Room 231, School of Social Sciences II, Jawaharlal Nehru University, New Delhi 110 067, India.

E-mail: dasgupta.jnu@gmail.com

In the last decade, there has been a spate of publicly funded insurance schemes, prominent amongst them being the Rashtriya Swasthya Bima Yojana (RSBY). In 2012, the Government of Chhattisgarh expanded the RSBY into a new avatar, the Mukhyamantri Swasthya Bima Yojana (MSBY), thereby universalising health insurance coverage. This study was conducted in the slums of Raipur, the capital and largest city of Chhattisgarh, with the objective of assessing issues of coverage and utilisation in these areas. The specific focus was on issues of women's medical conditions and the experiences of women beneficiaries during enrolment in these schemes.

Keywords

Urban health, publicly funded insurance, universal health coverage, commercialisation, out-of-pocket expenditure

Introduction

A rapidly increasing Indian urban population, specifically the urban poor, struggles for and pays relatively high amounts for basic services, including housing, water, sanitation and health, a phenomenon termed as 'informal survivalism' (Davis, 2006). Public investments in health and other social sectors have not been proportionate to rapid urban growth (Technical Resource Group [TRG] for National Urban Health Mission [NUHM], 2014). While the 'urban advantage' is seen in better aggregate health indicators for these populations, they are often worse off than the rural poor (NUHM, 2013; TRG for NUHM, 2014). The urban poor and vulnerable groups pay the 'urban penalty' (Rice & Rice, 2009). They often incur a relatively higher health care expenditure or are pushed towards untrained and unlicensed providers (Das & Hammer, 2007). Further, women are more likely to consult private providers than public health care providers (Das & Hammer, 2007; TRG for NUHM, 2014). According to the National Sample Survey Organisation (NSSO) 60th Round, in 2004, 5 per cent of total urban households slipped into below the poverty line (henceforth BPL) status as a result of total health care expenditure—1.2 per cent and 3.8 per cent due to expenditure on inpatient care and outpatient care respectively. In terms of income quintiles, the second poorest quintile in urban areas is most affected by expenses on health care (TRG for NUHM, 2014).

The NUHM was launched as part of the National Health Mission (NHM) to effectively address health concerns of the urban poor, particularly slum dwellers, by making available to them essential primary health care services through various measures, of which insurance is one of the preferred and promoted strategies. A number of publicly funded insurance schemes have been introduced in the last decade, the most prominent amongst them being the Rashtriya Swasthya Bima Yojana (RSBY) or the National Health Insurance Scheme, specifically designed for BPL population.

A fair number of studies have examined issues related to implementation of the scheme, beneficiary experiences and gaps at the policy level. Earlier research on the RSBY in Chhattisgarh has focused on design issues, coverage challenges and beneficiary experiences (Chaupal Gramin Vikas Prashikshan Evum Shodh Sansthan [Chaupal], 2013a, 2013b; Dasgupta et al., 2013; Nandi et al., 2012). In the current study, we build upon our methodologies and grounded understanding to assess issues of coverage and utilisation in the urban slums of Raipur, with a specific focus on issues of women's medical conditions. Simultaneously, it seeks to understand claims of universal health coverage (UHC) through the insurance route. Chhattisgarh offers a 'natural experiment' scenario in this context. In addition to RSBY, the state government launched the Mukhyamantri Swasthya Bima Yojana (MSBY) or the Chief Minister's Health Insurance Scheme in 2012 for non-BPL families with identical provisions as the RSBY,¹ thereby universalising health insurance coverage.

Literature Review

A review of available literature on publicly funded insurance schemes in India was undertaken under the broad themes of enrolment, utilisation and out-of-pocket expenditure (OOPE). An attempt was made to understand these aspects through a gender lens. We found that there is a dearth of relevant literature other than that related to enrolment and inappropriate care (namely, the prominent issue of unnecessary hysterectomies) (Kapilashrami & Venkatachalam, 2013).

Enrolment

The gender bias in enrolment was found to be nuanced. Grover and Palacios (2011) in their study in Delhi found that, overall, females

were less likely to enrol than males; however, they also found that as age increases, so does the probability of women enrolling, with a reverse trend for men.

Analysing enrolment figures for Chhattisgarh, Sun (2011) did not find any gender bias in current figures. However, the daughter in a family had a higher likelihood to be included if there was no cap of five members for enrolment; with the cap, sons had a higher chance of being included. Other authors (Das & Leino, 2011; Rajasekhar, Berg, Ghatak, Manjula & Roy, 2011) noted that common reasons for non-enrolment under RSBY included: no prior information; inability to attend enrolment sessions; computer or power failure; disruption at enrolment camps; and problematic BPL lists (erroneous names of household members, head of household missing from the list and if the head of household was ill or deceased, whole households being prevented from enrolment). The official assessment of the enrolment process for RSBY and MSBY in four districts of Chhattisgarh observed that the main reasons for non-enrolment were: potential beneficiaries were not present in the village, did not apply or had long waiting periods (Centre for Tribal and Rural Development [CTRD], 2013). The majority of enrolled families were not given requisite documents with smart cards; only 13 per cent were provided with the list of empanelled facilities. Within the districts, about half the enrolled people received the card on the day of enrolment (as is the rule), while the rest received it later (CTRD, 2013).

Utilisation

In selecting a hospital, an evaluation of RSBY in Chhattisgarh (*Ibid.*) found that proximity to place of residence (38 per cent), referral by friends, relatives or doctor (37 per cent), familiarity with the facility (10 per cent), and lack of any other empanelled facility nearby (9 per cent) were the principal determinants of choice. Lack of information regarding empanelled hospitals emerged as a major reason for low utilisation (*Ibid.*).

La Forgia and Nagpal (2012) found a predominance of surgical procedures in inpatient packages (96 per cent). The highest number of packages (60 per cent) was for cardiology, neurosurgery, nephrology, orthopaedics, oncology and general surgery, with the least number of packages (9 per cent) for paediatrics and obstetrics and gynaecology. Significantly, Grover and Palacios (2011) found that in Delhi, where only private hospitals are participating in the RSBY scheme, patients

with 'complicated' conditions requiring expensive medicines were being 'actively discouraged'.

In terms of hospitalisation and utilisation of insurance in Chhattisgarh, Jain (2011) found that men had a higher hospitalisation rate (1.17 per cent) under RSBY than women (1.10 per cent). In contrast, Grover and Palacios (2011) noted that more women were hospitalised under RSBY than men in Delhi, an exception compared to most states.

There is emerging evidence showing the push towards hospitalisation for simple conditions and unnecessary surgical procedures, particularly in the private sector (Kapilashrami & Venkatachalam, 2013; La Forgia & Nagpal, 2012). Women are more vulnerable to these processes. La Forgia and Nagpal (2012) highlighted 'producer-induced demand' and documented examples of combining hernia with appendectomy or private facilities carrying out unnecessary hysterectomies (Nundy, Dasgupta, Kanungo, Nandi & Murugan, 2013). This trend points towards 'over-investment in tertiary care and expensive technologies at the expense of investments in ambulatory care, prevention, and coordinated networks' (La Forgia & Nagpal, 2012, p. 58). Under the Arogyasri scheme, a higher proportion of surgeries was being conducted in the private sector (83 per cent) than in the public sector (17 per cent) (Prasad & Raghavendra, 2012). Further, private hospitals preferentially treated the more 'financially remunerative' cases, while the high-risk cases were sent to public hospitals. They also got informal practitioners to refer hysterectomies for poor women who had gynaecological problems. Selvaraj and Karan (2012) cautioned that prevention was being undermined and simple ailments turned into hospitalisation episodes. Palacios (2011) reported non-payment of transportation allowance to the hospitalised RSBY beneficiaries. This highlights issues of transparency and information to the beneficiary; a large number of persons were not aware of the amount deducted from their insurance cards (Nandi et al., 2012).

Studies from Chhattisgarh showed that private facilities selectively admitted more profitable clinical cases under RSBY (Dasgupta et al., 2013). An evaluation of RSBY in Chhattisgarh, commissioned by the state government, noted that private hospitals did not follow mandatory procedures and have 'commercialized' the scheme (CTRD, 2012, p. 150).

Financial Risk Protection/Out-of-Pocket Expenditure

A core objective of publicly funded insurance schemes is to ensure cashless hospitalisation care, thereby promoting financial risk protection

and avoiding catastrophic OOPE;² there was little positive evidence emerging on this account. Grover and Palacios (2011) noted that a third of the beneficiaries incurred OOPE; about half of them incurred expenditure on medicines. Several studies have shown that beneficiaries incurred OOPE even while accessing these insurance schemes (Grover & Palacios, 2011; La Forgia & Nagpal, 2012; Palacios, 2011). In Karnataka, patients were asked to pay upfront in RSBY empanelled institutions and the hospital reimbursed them once the insurer credited the amount to the hospital (Rajasekhar et al., 2011). Under the Vajpayee Arogyasri insurance scheme in Karnataka, eligible families incurred a high average OOPE, though lower than non-eligible families (Sood et al., 2014). In Durg district, Chhattisgarh, Nandi et al. (2012) found that 58 per cent of the respondents in the private sector and 17 per cent in the public sector incurred OOPE at an average rate of ₹ 1,078 and ₹ 309 respectively. This was corroborated by the state's evaluation as well (CTRD, 2012). Selvaraj and Karan (2012) found that despite publicly sponsored insurance, expenditure on hospitalisations has increased in rural and urban areas with a rise in catastrophic headcount, confirming findings from other studies (Wagstaff & Lindelow, 2008; Wagstaff, Lindelow, Junc, Ling & Juncheng, 2009).

Study Site

Chhattisgarh ranks second amongst all Indian states in terms of the proportion of urban slum population (31.9 per cent) and Raipur ranks sixth among cities with the highest slum population (nearly 40 per cent) (Raipur Municipal Corporation [RMC], n.d.). There are 282 slums listed in Raipur city, with more than 80,000 households. This study was conducted in slums of 45 urban wards of Raipur, the capital and largest city of Chhattisgarh.

The total number of families enrolled under RSBY and MSBY in the state is 2.14 million and 1.67 million respectively (Department of Health and Family Welfare, Chhattisgarh, 2014a). In Raipur district, enrolment is 57 per cent, this data is not available for Raipur city separately. Raipur has the highest number (136) of empanelled facilities (private and public hospitals) of the total number of empanelled hospitals (628) in Chhattisgarh; 56 per cent of these are in the private sector. Significantly, 93 per cent of the empanelled facilities in Raipur city are in the private sector. According to the available data, private facilities made 62 per cent

of the total number of claims, amounting to an average claim amount of ₹ 7,532 (Department of Health and Family Welfare, Chhattisgarh, 2014b). On the other hand, public facilities made an average claim amount of ₹ 4,443. Private facilities in Raipur district accounted for 80 per cent of the claims, with an average claim amount of ₹ 7,291, and the average claim amount by public facilities was ₹ 4,662. Significantly, 72 per cent of the rejected claims in the district were from the public sector.

Study Objectives and Methodology

The aim of this study is to understand the extent to which women in urban slums are able to access the intended benefits of the Universal Health Insurance Scheme (UHS) for hospitalisation care in public and private health facilities. It includes the following objectives:

- assess coverage of women under UHS in terms of enrolment, medical conditions and utilisation;
- estimate the extent to which cashless treatment is available under UHS and OPE that is being incurred; and
- compare differences in various costs between the public and private health facilities.

Secondary data were collected from the websites of the state health department and national RSBY. Primary data were collected from a sample of individuals who were hospitalised in the last six months prior to the study (recall period). In order to select the sample, 50 (urban) Mitanins or community health workers (CHWs) were selected through simple random sampling out of 1,010 Mitanins in Raipur city. The sampled Mitanins were asked about all hospitalisations in the last six months in the respective populations that they serve and a line list was drawn up. The surveyors interviewed all the listed cases and additionally, the snowball technique was used to expand the sample size.

Under the Mukhyamantri Sheheri Swasthya Karyakram, one Mitanin covers approximately 500 members of a slum population. It was expected that as the rate of hospitalisation/population, as per NSSO 60th Round, is 2.4 per cent in 365 days, that is, 1.2 per cent in six months, the slum population covered by 50 Mitanins (that is, 25,000) would provide at least 300 respondents. The number of families finally sampled was 323. The total number of patients interviewed from these families was 367 (284 females and 83 males). This article documents the experience

of women patients. In the current analysis, data on two women patients were removed as they had accessed health facilities outside the state. A three-part structured interview schedule³ was used to capture the data.

Findings

Demographic and Socio-economic Characteristics of the Female Patients

The highest proportion of female patients belonged to the Other Backward Classes (OBCs) (65 per cent), followed by Scheduled Castes (SCs) (17 per cent), general category (13 per cent) and Scheduled Tribes (STs) (4 per cent). The highest percentage (85 per cent) of such patients was in the age group of 18–45 years. Eight per cent were below 18 years of age, while 7 per cent of the women were above 45 years of age. The main sources of income for the families of the women patients were: labour (47 per cent); service (30 per cent), generally in the informal sector; and small business/self-employment (19 per cent). More than half (56 per cent) of the families of the women patients were entitled to receive highly subsidised grain, while 19 per cent did not have a ration card.

Around 54 per cent resided in *pucca* houses, 26 per cent in semi-*kuchha* units and 21 per cent in *kuchha* units. The main source of drinking water was tap connections (85 per cent). While 34 per cent of the families had a private tap, 51 per cent had access to a public drinking water source. Nearly 99 per cent of the families had an electricity connection at home. For 20 per cent of families, there was no toilet facility; 64 per cent had access to a private toilet; and 16 per cent had to use a public toilet. Families mainly used gas (56 per cent) and wood (38 per cent) as cooking fuel. This profile corresponds well with census data and that of the slum population surveyed in the urban baseline survey on health by the State Health Resource Centre (SHRC), Chhattisgarh, thus confirming a fair degree of representativeness (SHRC, 2013).

Enrolment

Sixty-six per cent of the family members of the sampled (323) households were enrolled in the health insurance schemes. The overall enrolment

showed the marginal gender differential; a slightly higher percentage of women (68 per cent) was enrolled than men (65 per cent). Disaggregated by age, in the 6–18 years age group, more boys (81 per cent) were enrolled than girls (74 per cent). In the age group above 45 years, a slightly higher percentage of men (90 per cent) was enrolled than women (88 per cent) (Table 1).

Of the 282 women patients in the sample, 57 per cent reported that their families were enrolled. Disaggregated by social categories, enrolment patterns conformed to the expected social gradient: highest among the general category (63 per cent), followed by SCs (57 per cent) and OBCs (57 per cent). Lowest enrolment was reported among the STs (44 per cent). Of the families who were enrolled, enrolment under RSBY (42 per cent) and MSBY (43 per cent) was nearly the same; 15 per cent could not confirm under which particular scheme they had enrolled. They were included in the enrolled category and data on them was analysed, as they were able to answer all the other questions related to enrolment and benefits.

Reasons for non-enrolment were reported to be: not having information regarding the enrolment drive (35 per cent); name missing from the list (16 per cent); certain family members being unavailable at the time of the enrolment drive (13 per cent); and being unaware of the scheme (10 per cent). Eight per cent reported not receiving the card despite enrolment. Other reasons included being refused enrolment, not having an identity card and not interested in enrolling.

Year of Enrolment and Renewal

Among the enrolled families, 57 per cent had enrolled in 2013 for the first time, while 24 per cent had first enrolled in 2011. Of the families who had enrolled in 2013, 69 per cent were MSBY card holders, while 17 per cent were RSBY card holders and the rest were not aware of the type of card. Significantly, of the 65 families enrolled before 2013, only 46 per cent had renewed their card in 2013. Though reasons for non-renewal were not asked in this study, some other studies have investigated this aspect (CTRD, 2012, 2013).

Time Taken for the Smart Card to be Issued

Of those enrolled, 57 per cent received the insurance smart card on the day of enrolment (the norm), 31 per cent between one and five days and another 8 per cent within 15 days. For enrolment, families paid an amount of ₹ 30 and of the enrolled persons, 97 per cent reported paying

Table 1. Enrollment Status by Gender and Age Groups of the Respondents

Age Group of the Respondents (years)	Female Respondents		Male Respondents		Total	
	Enrolled in Family Card (per cent)	Not Enrolled in Family Card (per cent)	Enrolled in Family Card (per cent)	Not Enrolled in Family Card (per cent)	Enrolled in Family Card (per cent)	Not Enrolled in Family Card (per cent)
0-1	9	91	7	93	8	92
1-6	64	36	59	41	61	39
6-18	74	26	81	19	77	23
18-45	76	24	74	26	75	25
45 and above	88	12	90	10	89	11
Total	68	32	65	35	66	34

Source: Computed by authors on the basis of survey data.

the requisite amount. It is stipulated that the list of empanelled hospitals has to be given along with the smart card, though only 5 per cent reported receiving it.

Hospitalisation

Conditions for Which Women Were Hospitalised

Around 78 per cent of women were hospitalised for obstetrics and gynaecological conditions and 22 per cent for non-gynaecological conditions. Out of the total obstetrics and gynaecological conditions, 72 per cent of women were admitted for childbirth. Among men, respiratory conditions and water/food-borne diseases (including jaundice and typhoid) were the most common conditions for hospitalisation. Table 2 details the profile of conditions under which female and male respondents were hospitalised.

Which Facilities Did Women Use?

Around 57 per cent of women accessed public sector facilities for the conditions reported, 37 per cent accessed the private sector and 5 per cent accessed both. A higher proportion of women whose families were not enrolled went to the public sector for all conditions. While women accessed the public sector more for pregnancy (63 per cent) and other gynaecological conditions (76 per cent), the trend was the opposite for non-gynaecological conditions. Fifty-five per cent accessed the private sector.

Facility Type by Condition

A total of 325 visits were made by the sample of 282 women during the recall period. Of the total visits, 234 (72 per cent) visits were to a facility empanelled under UHIS. While most of the public facilities visited were empanelled (90 per cent), just about half (47 per cent) of the private facilities used were empanelled under UHIS. The main reasons for selection of facility were: familiarity with the facility (38 per cent); suggestion or referral by someone (46 per cent); and proximity to place of residence (6 per cent). More than half the women (58 per cent) went to the public sector because somebody had suggested that they should go there, or referred them, and 50 per cent of women going to the private sector reported that they usually accessed that particular facility. 'Choice' of

Table 2. Conditions under Which Female and Male Respondents Were Hospitalised

Conditions for Hospitalisation	Hospitalised Respondents				Total (n)	Total (per cent)
	Female (n)	Female (per cent)	Male (n)	Male (per cent)		
A. Pregnancy related	205	72	—	—	205	56
Delivery	202	71	—	—	202	55
Miscarriage/ANC	3	1	—	—	3	1
B. Other gynaecological	17	6	—	—	17	5
Uterus problem	3	1	—	—	3	1
Tubectomy	14	5	—	—	14	4
C. Non-gynaecological	62	22	83	100	145	40
Accident	1	0	2	2	3	1
Respiratory diseases	5	2	10	12	15	4
Weakness/anaemia/malnutrition	5	2	3	4	8	2
Cancer	3	1	0	0	3	1
Cataract	5	2	6	7	11	3
Diarrhoea and vomiting	7	2	5	6	12	3
Fever/malaria/dengue	3	1	3	4	6	2
Fracture	6	2	4	5	10	3
Heart related	3	1	5	6	8	2
Gastroenteritis	1	0	6	7	7	2
Mental illnesses	0	0	1	1	1	0
Paralysis/nerve/brain related	1	0	6	7	7	2

Sickle cell disease	3	1	1	1	1	1	4	1
Tuberculosis	1	0	0	4	5	1	5	1
Jaundice/typhoid	5	2	10	12	15	4	15	4
Leprosy	1	0	0	0	1	0	1	0
Appendicitis/Appendicectomy	1	0	2	2	3	1	3	1
Burns	2	1	0	0	2	1	2	1
Hernia	0	0	2	2	2	2	2	1
Hydrocele	0	0	2	2	2	2	2	1
Kidney problem	3	1	1	1	4	1	4	1
Pancreatitis	0	0	1	1	1	1	1	0
Others	6	2	9	11	15	4	15	4
Total (A + B + C)	284	100	83	100	367	100	367	100

Source: Computed by authors on the basis of survey data.

Note: ANC: antenatal care.

a provider,⁴ one of the hallmarks of the insurance schemes, seemed to be a determinant for only 8 per cent of women going to the public facility and for 5 per cent of women going to the private facility. A higher proportion of visits were made to empanelled public facilities than to private facilities. While 58 per cent of the visits to private facilities were to an empanelled one, 42 per cent of the visits were to a non-empanelled facility (Table 3). Out of 325 visits, empanelment status for 12 facilities could not be determined.

Utilisation of the UHS

About a fifth (21 per cent) of the sampled beneficiaries were able to use the insurance card at least once for treatment during the recall period. Of the women who had insurance cards (161), only about a third (36 per cent) used it for treatment. Of the men who had insurance cards (51), 41 per cent were able to use it for treatment at least once during this period. For women, the card was least used for pregnancy-related conditions (33 per cent) and most for non-gynaecological conditions (44 per cent). In terms of visits to facilities, 18 per cent (59 women) of the total 325 visits to facilities involved usage of insurance cards. On disaggregating the data into utilisation of public and private providers (Table 4), the usage of cards was found to be higher for the private sector (49 per cent) for all conditions when compared to the public sector (24 per cent).

One major reason for no card use was that families did not have cards. For women who had cards, the reasons for not using are given next. Among those who underwent hospitalisation, 50 per cent of them were not enrolled for either scheme and therefore did not have cards. This is significant considering that the 'universal' insurance scheme receives considerable commitment and support from the state. Of women accessing the public sector, 16 per cent reported that the hospital did not ask for the card and another 13 per cent reported that the card had not been renewed. The principal reason for non-utilisation of the card for those accessing private institutions was that the hospital was not empanelled. In 7 per cent of cases, the patient was not enrolled on her family's card. In 2 per cent of cases in public facilities and in 7 per cent of cases in private facilities, the hospital refused treatment under the insurance scheme; the reasons were not shared with the patient and the family (Table 5).

Table 3. Choice of Empanelled versus Non-empanelled Facilities*

Enrolment Status	Public Health Facilities		Private Health Facilities		Combined	
	Empanelled	Non-empanelled	Empanelled	Non-empanelled	Empanelled	Non-empanelled
Enrolled	97	3	58	42	78	22
Not enrolled	89	11	33	67	70	30

Source: Computed by authors on the basis of survey data.

Note: * Number of women patients.

Table 4. Utilisation of Insurance Cards in Public and Private Health Institutions*

Conditions for Utilising Health Insurance Cards	Type of Health Facilities											
	Public				Private				Went to Both			
	Card Used at least Once by Card Holder	Card Not Used by Card Holder	Card Used at least Once by Card Holder	Card Not Used by Card Holder	Card Used at least Once by Card Holder	Card Not Used by Card Holder	Card Used at least Once by Card Holder	Card Not Used by Card Holder	Card Used at least Once by Card Holder	Card Not Used by Card Holder	Card Used at least Once by Card Holder	Card Not Used by Card Holder
Pregnancy related	23	77	48	52	33	67	33	67	33	33	67	67
Other gynaecological	0	100	100	0	0	0	0	0	0	25	75	75
Non-gynaecological	35	65	48	52	50	50	50	50	44	44	56	56
Total	24	76	49	51	43	57	43	57	36	36	64	64

Source: Computed by authors on the basis of survey data.

Note: * Number of women patients.

Table 5. Reasons for Non-utilisation of the RSBY/MSBY Cards

Reasons for Not Using Card	Type of Health Facilities		
	Public (%)	Private (%)	Combined (%)
No smart card	55	42	50
Hospital staff did not ask for smart card	16	7	12
Card was not renewed	13	6	10
Services under RSBY/MSBY card not provided there	0	22	9
Patient not registered under smart card	7	7	7
Hospital authority refused to treat under RSBY/MSBY smart card	2	7	4
Others	6	7	6
Don't know	0	4	1
Total	100	100	100

Source: Computed by authors on the basis of survey data.

Utilisation of UHIS by Card Holders in Empanelled Facilities

Out of the total number of visits to empanelled facilities (234), 61 per cent had cards. Of these card holders who went to an empanelled facility, only 41 per cent could use the card for treatment. Card usage in empanelled private facilities (71 per cent) was higher than in empanelled public facilities (25 per cent). The reasons for non-utilisation of cards in empanelled facilities were that either the card was not renewed or the hospital did not ask for the card. The latter was more so in the case of public facilities. Nearly two-thirds of women with cards were not aware of the toll free number for complaints and grievance redressal; only one woman had filed a complaint. The usage was least for gynaecological conditions and highest for non-gynaecological conditions.

Amount Booked in Smart Card by Facility

Fifty-nine per cent of the women who used cards were informed of the amount booked from the card. For the 35 women who were informed about the booking amount, the average amount booked per hospitalisation for non-gynaecological conditions was the highest—around ₹ 10,500. The amount booked in the private facilities was more than double the amount booked in public facilities for these conditions. Of women who used the card, receipt of the booked amount was given

to only one-third (32 per cent). In the private sector, more women received the receipt (39 per cent) than in the public sector (22 per cent). The smart card was returned to 25 per cent of the women the same day, while another 53 per cent received it within five days. Only 10 per cent of the women were paid/reimbursed the entitled conveyance costs (₹ 100).

Out-of-Pocket Expenditure (OOPE)

Significantly, the study found that despite the rollout of UHIS, women were continuing to incur very high expenditure for hospitalisation, an average of ₹ 9,947 per hospitalisation case. Only 4 per cent of women did not incur OOPE, and the rest of the 271 women incurred OOPE. The average OOPE expenditure for non-gynaecological cases was much higher than for gynaecological cases. More than half of the OOPE (52 per cent) was on account of fees charged by the facility. Expenditure incurred on medicines contributed to 18 per cent and investigation and tests contributed to 15 per cent of the expenditure. Of the women who incurred OOPE, 90 per cent had to spend on transportation, followed by medicines (76 per cent). Nearly half the women reported paying money to the doctor/nurse, and also paid for fees charged by the hospital. Disaggregating by clinical conditions, the highest expenditure was incurred for heart-related conditions (₹ 1,22,800), followed by appendectomy (₹ 52,980), cancer (₹ 52,828), fracture (₹ 44,000) and kidney conditions (₹ 40,780) (Table 6).

When average OOPE is calculated for the total number of visits made ($n = 325$) to a facility, it works out to an average ₹ 8,624 per visit. The average OOPE for women in the private facility was more than six times higher than in the public facility. It is important that women incurred OOPE despite using the RSBY/MSBY card for treatment. For those who had used the card (for all conditions), average OOPE was ₹ 7,530 per visit. In case of deliveries, the average OOPE, in addition to card usage, was ₹ 5,626 per visit. The average OOPE incurred was much higher for women who used the card in private facilities (₹ 10,733) than in public facilities (₹ 2,518). More than one-third of the women (37 per cent) borrowed money in order to pay for treatment. It was found that around 61 per cent of them met their OOPE from their savings. Four women had to sell jewellery or some other valuable item, while three women had to mortgage valuables in order to pay for treatment.

Table 6. Average OOPE for Different Clinical Conditions*

Clinical Condition	Average OOPE (in ₹)	n
Pregnancy related	10,352	3
Respiratory diseases	26,794	5
Weakness/anaemia/malnutrition	9,770	5
Cancer	52,828	3
Cataract surgery	8,810	5
Delivery	6,646	200
Diarrhoea and vomiting	3,936	7
Fever/malaria/dengue	5,467	3
Fracture	44,000	6
Heart related	1,22,800	3
Sickle cell disease	15,433	3
Jaundice/typhoid	1,898	5
Burns	22,650	2
Kidney problem	40,780	3
Uterus problem	4,235	3
Tubectomy	480	14
Total	9,947	282

Source: Computed by authors on the basis of survey data.

Note: * The list is indicative and does not include all conditions.

Childbirth

The single-most important cause for hospitalisation of women was childbirth; 200 deliveries were reported from among 282 women users and of them, 145 were normal deliveries, while 55 women (28 per cent) had caesarean section (C-section). Public facilities were accessed by 63 per cent of women for childbirth, principally the District Hospital and Medical College in Raipur. Cards were used in 17 per cent of the total birthing cases; 28 per cent in the private sector and 10 per cent in the public sector. Of the card holders, 73 per cent used it in private empanelled facilities and 23 per cent in public facilities. Among those who had C-section, 42 per cent of women accessed private facilities compared to 19 per cent in public facilities. The utilisation of insurance was higher for C-section than for normal deliveries, with a higher proportion in private facilities (32 per cent) than in public ones (21 per cent). The average amount booked for normal births in private hospitals was twice that of the amount booked for the same in the public sector (₹ 7,607 versus ₹ 3,775). However, for C-section, the average amount booked in the

public sector was slightly higher than the average amount booked in the private sector (₹ 13,333 versus ₹ 12,388).

Discussion

Coverage of Women under UHIS in Terms of Enrolment, Medical Conditions and Utilisation

Enrolment Is Not Universal

While the current study finds that there has been an increase in enrolment since the introduction of the MSBY (57 per cent compared to 28 per cent, according to the SHRC baseline report of 2013), 43 per cent of the urban slum population in Raipur city continued to lack coverage under the UHIS. Government data show a similar trend in enrolment for both Raipur district (57 per cent) and for the entire state (59 per cent). Enrolment was not very different for men and women, as well as for different social groups. While 90 per cent of the families were aware of the scheme, many could not enrol due to problems in the enrolment process, as previously discussed in other studies (CTRD, 2013; Das & Leino, 2011; Grover & Palacios, 2011; Rajasekhar et al., 2011).

Low Utilisation of UHIS despite Large Numbers of Empanelled Hospitals

The overall usage of insurance was very low. Of women whose families had insurance, only one-third were able to use it. This is despite the fact that Raipur district has the highest number of empanelled facilities (136 facilities), with a concentration in Raipur city. Data on claims too show that Raipur makes the highest number of claims in the state, and also claims the highest amounts. Even if we consider only visits to empanelled facilities, less than half (41 per cent) of the women whose families had insurance actually used insurance for treatment. The main reasons for non-use included not being asked about the card on admission, facility not being empanelled and card not being renewed.

Determinants of Choice of Facility

One of the stated objectives of this scheme is to provide 'choice' to the patient in selection of facilities. We found that choice of the facility was rarely determined on considerations related to insurance. In only 2 per cent of the visits did the respondent report a particular hospital

being selected because it gave them the advantage of using UHIS. The critical determinants in choosing the facility were familiarity with the facility and being referred to or sent there by someone. Only 5 per cent of the beneficiaries reported receiving the list of empanelled facilities along with the insurance smart card despite it being mandated. These findings were also corroborated by the evaluation commissioned by the government (CTRD, 2013). There was no significant difference between the proportion of women patients with insurance cards (78 per cent) and those without (70 per cent) going to empanelled facilities. The study found that most of the accessed public facilities were empanelled and only half of the private facilities used were empanelled under UHIS. The pattern of choice of empanelled and non-empanelled providers implies that the patients may not be convinced about the utility or efficacy of UHIS and therefore, other considerations carry more weight. This begs the question: to what extent does UHIS determine choice of facility and thereby actually give a 'choice' to the beneficiaries?

UHIS Biased towards Certain Procedures and Conditions

The utilisation of UHIS was highest for non-gynaecological conditions (49 per cent). There seems to be a bias towards surgical procedures; the usage of the cards for C-section was more than twice than that for normal deliveries. This has been a very common finding in most studies (Grover & Palacios, 2011; Kapilashrami & Venkatachalam, 2013; La Forgia & Nagpal, 2012; Narayana, 2010; Selvaraj & Karan, 2012; Shukla, Shatrugna & Srivatsan, 2011). Another disturbing and consistent finding was that women incurred OPOE despite availing of insurance and they had to borrow money in order to pay for the hospitalisation expenses. This finding corroborates those of other studies (CTRD, 2012; Grover & Palacios, 2011; La Forgia & Nagpal, 2012; Nandi et al., 2012; Prasad & Raghavendra, 2012; Rajasekhar et al., 2011; Selvaraj & Karan, 2012; Sood et al., 2014).

Differences between Public and Private Providers

Higher Utilisation of Public Facilities with Higher UHIS Usage in Private Facilities

The study finds that nearly two-thirds of the women went to public facilities for delivery, while the SHRC baseline study had found that an

equal number of deliveries took place in public and private facilities (SHRC, 2013). This possible shift in delivery cases from private to public in the last year may have been a result of the urban health programme. However, for non-gynaecological conditions, women accessed private facilities more. This included conditions like respiratory diseases, fracture and heart-related conditions. Additionally, cases related to uterus problems went to the private sector. Though less number of women went to empanelled facilities, the utilisation of UHS is higher than in private facilities.

Private More Expensive, Irrespective of Card Usage or Medical Condition

The findings on OOPE show that the private sector is more expensive than the public in every situation. Moreover, the average amounts booked through UHS are also higher in the private sector. The average OOPE for women in the private facility was more than six times higher than in the public facility. This is more evident for C-sections, for which the OOPE in a private facility, when insurance was not used, is more than five times than in the public facility.

Conclusion

Globally, insurance schemes are being promoted as one of the main interventions for UHC. In India and especially in Chhattisgarh, the state-sponsored insurance schemes (RSBY and MSBY) are being equated with UHC and, in fact, the terms are often used interchangeably, even though coverage is not universal on all three dimensions (population, health care services or financial protection). Evidence is emerging, including from the current study, of barriers (in availability, affordability, acceptability and agency) to effective and equitable access to health care under these insurance schemes. Moreover, global evidence on the efficacy of these schemes on financial risk protection and health outcomes is far from encouraging. There is adequate evidence that health insurance schemes for the informal sector in low and middle income sections suffer from several drawbacks: low uptake, and no strong evidence of impact on utilisation, financial protection or health status. Undeniably, few insurance schemes provide protection for high level of OOPE, but this impact is weaker on the poor. The study on utilisation experiences of the RSBY/MSBY in the context of urban poor women is no departure from this trend. In principle, Chhattisgarh provides health

insurance to all; achieving 'universalisation' is the first challenge. In exploring the experiences of urban poor women, we found that the RSBY/MSBY is neither able to provide coverage to all nor accord sufficient protection, and singularly fails to protect beneficiaries from catastrophic expenditures. Moreover, there is evidence of commercialisation of health care and negative consequences for women, as seen in the cases of unnecessary hysterectomies. In the light of our evidence, serious doubts arise regarding the efficacy of universal insurance in providing financial protection; equitable and effective access to health care for the urban poor comes under question. Universal insurance is clearly no guarantor of and does not automatically translate into universal access. The policymakers should not suffer from this misplaced belief.

Acknowledgements

We are grateful to the respondents who shared their experiences with us. Thanks to the surveyors for undertaking the field survey and to the Mitanins and the Mitanin programme team for facilitating the survey. We thank the Paul Hamlyn Foundation for providing funds to undertake the survey. Thanks are due to Dr. T. Sundararaman, Dr. Vandana Prasad and Dr. Ganapathy Murugan for their inputs in developing the study methodology.

Notes

1. As per the scheme, each household (with a maximum of five family members) has an entitlement of ₹ 30,000 annually for hospitalisation. The state government enters into a memorandum of understanding (MOU) with the selected insurance companies and pays them the insurance premium on behalf of the enrolled households. The cost of the scheme is shared by the central and the state governments in the case of RSBY, and is wholly paid by the Chhattisgarh state government in the case of MSBY. Private and public hospitals have been empanelled for providing health services under both the schemes and are expected to provide 'cashless' services on the basis of a predetermined package. The enrolled household is provided with a biometric-enabled smart card that they can use in the hospitals to receive the cashless services. The scheme has been established as a 'business model' in which 'all the stakeholders such as the service provider, the insurance company, etc. have direct benefits, would take a proactive role in making this scheme successful' (Mr Anil Swarup, Director General [Labour Welfare], at the state-level workshop on RSBY, held at Hotel Tulip, Raipur, on 15 October 2008).
2. The OOPE refers to payments made by households for medicines, consultations and procedures and, sometimes, informal payments. It also includes cost sharing, as in the case of co-insurance and user fees (http://www.who.int/health_financing/strategy/risk_protection/en/). OOPE is considered as catastrophic when the household has to reduce its basic expenditure over a

period of time to cope with the expenditure on health. The threshold proportion of household expenditure has been estimated by various scholars to be between 10 and 40 per cent of total household income (Xu, Evans, Kawabata, Zeramdini, Klavus & Murray, 2003).

3. The three parts of the schedule were as follows:
 - Part A listed the number of family members, their enrolment under RSBY/MSBY and how many times each member was hospitalised in the last six months and checked with information provided by Mitansins.
 - Part B documented profile of the family, experience of enrolment in RSBY/MSBY and renewal of the insurance smart cards.
 - Part C documented specific events and experience of hospitalisations in the last six months.

Tools were pilot tested in two rounds. Informed consent was taken verbally from the respondents in the presence of an independent witness and noted. Confidentiality has been maintained during data analysis and report writing.

4. The official RSBY documents emphasise that empanelling both private and public health providers gives households the 'choice' of selecting the type of provider (private or public), thereby empowering the households (http://www.rsby.gov.in/about_rsby.aspx).

References

- Centre for Tribal and Rural Development (CTRD). (2012). *Final report on evaluation of the 'Rashtriya Swasthya Bima Yojana scheme' in Chhattisgarh*. Retrieved 7 July 2014, from <http://rsbychhattisgarh.in/WebSite/UploadDoc/70.pdf>
- . (2013). Independent assessment study on process of enrollment under Rashtriya Swasthya Bima Yojana and Mukhyamantri Swasthya Bima Yojana in Chhattisgarh. Retrieved 2 August 2012, from http://cg.nic.in/healthrsby/RSBY_Documents/Revised%20FINAL%20REPORT%20on%20RSBY%20Enrollment%20%2029-06-2013.pdf
- Chaupal Gramin Vikas Prashikshan Evum Shodh Sansthan (Chaupal). (2013a). Study on patient experiences in availing RSBY in private hospitals in Chhattisgarh. Unpublished study.
- . (2013b). Study on status of public health services at various levels in Chhattisgarh. Unpublished study.
- Das, J., & Hammer, J. (2007). Money for nothing: The dire straits of medical practice in Delhi, India. *Journal of Development Economics*, 83(1), 1–36.
- Das, J., & Leino, J. (2011). Evaluating the RSBY: Lessons from an experimental information campaign. *Economic and Political Weekly*, 46(32), 215–245.
- Dasgupta, R., Nandi, S., Kanungo, K., Nundy, M., Murugan, G., & Neog, R. (2013). What the good doctor said: A critical examination of design issues of the RSBY through provider perspectives in Chhattisgarh, India. *Social Change*, 43(2), 227–243.

- Davis, M. (2006). *Planet of slums*. New York: Verso.
- Department of Health and Family Welfare, Chhattisgarh. (2014a). Retrieved 14 September 2014, from <http://cg.nic.in/healthrsby/>
- . (2014b). Retrieved 9 September 2014, from <http://rsbycg.nic.in/healthrsby/reports/Distwiseclaims.aspx>
- Grover, S., & Palacios, R. (2011). The first two years of RSBY in Delhi. In R. Palacios, J. Das & C. Sun. C (Eds), *India's health insurance scheme for the poor: Evidence from the early experience of the Rashtriya Swasthya Bima Yojana* (pp. 153–188). New Delhi: Centre for Policy Research.
- Jain, N. (2011). A descriptive analysis of the RSBY data for the first phase. In R. Palacios, J. Das & C. Sun (Eds), *India's health insurance scheme for the poor: Evidence from the early experience of the Rashtriya Swasthya Bima Yojana* (pp. 38–64). New Delhi: Centre for Policy Research.
- Kapilashrami, A., & Venkatachalam, D. (2013). *Health insurance: Evaluating the impact on the right to health*. Working paper, Sama—Resource Group for Women and Health, New Delhi.
- La Forgia, G., & Nagpal, S. (2012). *Government-sponsored health insurance in India: Are you covered? Directions in Development*. Washington, DC: World Bank.
- Nandi, S., Nundy, M., Prasad, V., Kanungo, K., Khan, H., HariPriya, S., Mishra, T., & Garg, S. (2012). The implementation of RSBY in Chhattisgarh, India: A study of the Durg district. *Health, Culture and Society* (Health System Dynamics and Barriers), 2(1). Retrieved 1 July 2012, from <http://hcs.pitt.edu/ojs/index.php/hcs/article/view/61>
- Narayana, D. (2010). Review of the Rashtriya Swasthya Bima Yojana. *Economic and Political Weekly*, 45(29), 13–18.
- National Sample Survey Organisation (NSSO) (2006). *Morbidity, health care and the condition of the aged* (Report No. 507). New Delhi: Ministry of Statistics and Programme Implementation, Government of India.
- National Urban Health Mission (NUHM). (2013). *National Urban Health Mission: Framework for implementation*. New Delhi: Ministry of Health and Family Welfare, Government of India. Retrieved 12 October 2013, from http://www.pbhealth.gov.in/NUHM_Framework.pdf
- Nundy, M., Dasgupta, R., Kanungo, K., Nandi, S., & Murugan, G. (2013). *The Rashtriya Swasthya Bima Yojana (RSBY) experience in Chhattisgarh: What does it mean for health for all*. New Delhi: Sama.
- Palacios R. (2011). A new approach to providing health insurance to the poor in India: The early experience of Rashtriya Swasthya Bima Yojna. In R. Palacios, J. Das & C. Sun (Eds) *India's health insurance scheme for the poor: Evidence from the early experience of the Rashtriya Swasthya Bima Yojana*. New Delhi: Centre for Policy Research.
- Prasad, N.P., & Raghavendra, P. (2012). Healthcare models in the era of medical neo-liberalism: A study of Aarogyasri in Andhra Pradesh. *Economic and Political Weekly*, 47(43), 118–126.

- Raipur Municipal Corporation (RMC). (n.d.). *City Development Plan*. Raipur: RMC.
- Rajasekhar, D., Berg, E., Ghatak, M., Manjula, M., & Roy, S. (2011). Implementing health insurance: The rollout of Rashtriya Swasthya Bima Yojana in Karnataka. *Economic and Political Weekly*, 46(20), 56–63.
- Rice, J., & Rice, J.S. (2009). The concentration of disadvantage and the rise of an urban penalty urban slum prevalence and the social production of health inequalities in the developing countries. *International Journal of Health Services*, 39(4), 749–770.
- Selvaraj, S., & Karan, A.K. (2012). Why publicly-financed health insurance schemes are ineffective in providing financial risk protection. *Economic and Political Weekly*, 48(11), 60–68.
- Shukla, R., Shatrugna, V., & Srivatsan, R. (2011). Aarogyasri healthcare model: Advantage private sector. *Economic and Political Weekly*, 46(49), 38–42.
- Sood, N., Bendavid, E., Mukherji, A., Wagner, Z., Nagpal, S., & Mullen, P. (2014). Government health insurance for people below poverty line in India: Quasi-experimental evaluation of insurance and health outcomes. *British Medical Journal*, 349, 1–13. Retrieved from <http://www.bmj.com/content/bmj/349/bmj.g5114.full.pdf>
- State Health Resource Center (SHRC). (2013). *Baseline survey of health in urban slums of Chhattisgarh*. Raipur: SHRC.
- Sun, Changqing. (2011). An analysis of RSBY enrollment patterns: Preliminary evidence and lessons from the early experience. In R. Palacios, J. Das & C. Sun (Eds), *India's health insurance scheme for the poor: Evidence from the early experience of the Rashtriya Swasthya Bima Yojana* (pp. 84–116). New Delhi: Centre for Policy Research.
- Technical Resource Group (TRG) for the National Urban Health Mission (NUHM). (2014). *Report and recommendations of the Technical Resource Group for the National Urban Health Mission*. New Delhi: Ministry of Health and Family Welfare, Government of India. Retrieved 15 September 2014, from http://nhsreindia.org/index.php?option=com_content&view=article&id=333:report-recommendations-of-technical-resource-group-for-nuhm-executive-summary&catid=29:news&Itemid=728
- Wagstaff, A., & Lindelow, M. (2008). Can insurance increase financial risk? The curious case of health insurance in China. *Journal of Health Economics*, 27(4), 990–1005.
- Wagstaff, A., Lindelow, M., Junc, G., Ling, X., & Juncheng, Q. (2009). Extending health insurance to the rural population: An impact evaluation of China's new cooperative medical scheme. *Journal of Health Economics*, 28(1), 1–19.
- Xu, K., Evans, D.B., Kawabata, K., Zeramdini, R., Klavus, J., & Murray, C.J.L. (2003). Household catastrophic health expenditure: A multicountry analysis. *The Lancet*, 362, 111–117.

10 Praveen D, Peiris D, MacMahon S, et al. Cardiovascular disease risk and comparison of different strategies for blood pressure management in rural India. *BMC Public Health* 2018; **18**: 1264.

11 Huffman MD, Xavier D, Perel P. Uses of polypills for cardiovascular disease and evidence to date. *Lancet* 2017; **389**: 1055–65.

From primary health care to universal health coverage—one step forward and two steps back



Primary health care (PHC), codified at the historic 1978 Alma Ata Conference, was advocated as the means to achieve health for all by the year 2000.¹ The principles of PHC included universal access and equitable coverage; comprehensive care emphasising disease prevention and health promotion; community and individual participation in health policy, planning, and provision; intersectoral action on health determinants; and appropriate technology and cost-effective use of available resources.² These principles were to inform health-care provision at all levels of the health system and the programmatic elements of PHC that focused primarily on maternal and child health, communicable diseases, and local social and environmental issues. PHC emphasised community participation through a network of workers at all levels who would be trained both “socially and technically”.¹

Importantly, the Declaration of Alma Ata insisted that PHC was unlikely to succeed without the establishment of a New International Economic Order (NIEO) based on ensuring the rights of states and peoples under “colonial domination” to restitution and full compensation for their exploitation and that of their resources; regulation of transnational corporations; preferential treatment for low-income and middle-income countries (LMICs) in areas of international economic cooperation; transfer of new technologies; and an end to the waste of natural resources.³ With the 1980s rise of neoliberal economics, the UN-supported NIEO was abandoned.⁴

In September, 2019, there will be a UN High-Level Meeting on universal health coverage (UHC). UHC is concerned with improved access to quality health services and protection from financial risks associated with health care. However, UHC, unlike PHC, is silent on social determinants of health and community participation. With the global mobilisation behind UHC, the health sector will probably limit its role to Sustainable Development Goal (SDG) 3.8—to achieve UHC. This shift in policy emphasis for the health

sector threatens to minimise its role in promoting other health-related SDGs such as food and nutrition (SDG 2), gender equality (SDG 5), and water and sanitation (SDG 6); and, importantly, the reduction of inequality (SDG 10), promotion of environmentally responsible consumption/production patterns (SDG 12), and mitigation of climate change (SDG 4).

Moreover, the term coverage rather than care either suggests a limited scope of care or is being used to suggest enrolment in an insurance scheme. For many LMICs, this has meant operationalising UHC through government-funded health insurance schemes. The adverse implications are seen in countries such as India, where coverage by publicly funded health insurance has neither been equitable nor led to financial protection.⁵ Involving the for-profit private sector in providing health care has allowed for funding imbalances and provider capture, with more funds from these public schemes going into the private health sector, thereby reinforcing existing health inequities.⁶ Insurance-based models of UHC risk being promoted at the expense of funding PHC and other public health programmes.⁷



Tyngve Bolsaad/Panos Pictures

In 2018, the 40th anniversary of PHC was celebrated at Astana,⁸ where references were repeatedly made to “quality PHC” when it was clear that primary care was meant—ie, care at the first level of contact with the formal health sector. Formulations such as “primary health care is essential to achieving universal health coverage”⁸ portray PHC as a means to attain coverage of health services, whereas equitable access to basic health services has always been a component of PHC. As stated in the widely supported Alternative Civil Society Astana Statement,⁹ it inverts one of the means to achieving PHC whereby UHC becomes the goal. This signals the risk of further medicalisation and commercialisation of health care under the UHC model.¹⁰ This year a report of a Pan American Health Organization High-Level Commission raised concern that reform agendas exclusively focused on the health sector, centred on medical care services and the expansion of insurance coverage, have displaced public health and the social determination of health.¹¹

Although the Declaration of Astana invokes PHC frequently, it gives scant attention to the drivers of ill-health and inequity. There is no hint of the need for a new global economic order for the fullest attainment of health for all, despite the stark social inequalities and greater concentration of wealth than at the time a NIEO was proposed. Indeed, the Declaration of Astana avoids the challenge of what needs to happen from within the health sector to mitigate inequality: intersectoral action at local and policy levels, and strong advocacy from the health constituency for measures to reverse the processes leading to unsustainable inequalities and planetary destruction.¹² Instead, Astana calls for “partnership” with the private sector, notwithstanding the mounting evidence of the commercial determinants of ill-health such as alcohol, tobacco, ultra-processed foods, and industrial and automobile pollution.¹³ Calling for “private sector regulation” by national public authorities to manage conflicts of interest fails to recognise that such authorities, especially in LMICs, are often unable or unwilling to regulate the private sector. The power of transnational corporations, the main vectors of the commercial determinants of health, transcends national boundaries and requires strong and decisive global action both by global civil society and international institutions. In 2018, for example, of the 100 entities with the highest annual revenues, 69 were corporations and 31 were governments.¹⁴

The Declaration of Alma Ata and the movement it inspired was aspirational and ambitious. By reducing PHC to a cornerstone of UHC, as opposed to an umbrella under which UHC resides, the Declaration of Astana confines the health sector to a much more restricted role. With unprecedented threats to population and planetary health, the Declaration of Astana should have been more honest, bolder, and an inspirational guide for those working under increasingly difficult conditions to make health equity a reality. There are concerns that the upcoming UN High-Level Meeting on UHC will compound this policy retreat. Replacing the lodestar of PHC with UHC threatens to be one step forward and two steps back for health policy.

*David Sanders, Sulakshana Nandi, Ronald Labonté, Carina Vance, Wim Van Damme

School of Public Health, University of the Western Cape, Bellville 7535, South Africa (DS, SN); Public Health Resource Network Chhattisgarh, Raipur, Chhattisgarh, India (SN); People’s Health Movement Global (DS, SN); School of Epidemiology and Public Health, University of Ottawa, Ottawa, ON, Canada (RL); South American Institute of Government in Health, Rio de Janeiro, Brazil (CV); and Department of Public Health, Institute of Tropical Medicine, Antwerp, Belgium (WVD)
dsanders@phmovement.org

DS and SN are Co-Chairs of the People’s Health Movement Global. SN is State Convener, Public Health Resource Network Chhattisgarh. CV is Executive Director of the South American Institute of Government in Health. We declare no other competing interests.

- 1 WHO, UNICEF. Declaration of Alma-Ata. International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978. https://www.who.int/publications/almaata_declaration_en.pdf (accessed June 28, 2019).
- 2 Bryant JH, Richmond JB. Alma-Ata and primary health care: an evolving story. In: International encyclopedia of public health. Cambridge, MA: Academic Press/Elsevier, 2008: 152–74.
- 3 Mahiou A. Declaration on the Establishment of a New International Economic Order. 2011. http://legal.un.org/avl/pdf/ha/ga_3201/ga_3201_e.pdf (accessed June 28, 2019).
- 4 Labonte RN, Rückert A. Health equity in a globalizing era past challenges, future prospects. Oxford: Oxford University Press, 2019.
- 5 Ranjan A, Dixit P, Mukhopadhyay I, Thiagarajan S. Effectiveness of government strategies for financial protection against costs of hospitalization care in India. *BMC Public Health* 2018; **18**: 501.
- 6 Sengupta A. Universal health coverage: beyond rhetoric. 2013. https://www.municipalservicesproject.org/sites/municipalservicesproject.org/files/publications/OccasionalPaper20_Sengupta_Universal_Health_Coverage_Beyond_Rhetoric_Nov2013_0.pdf (accessed June 28, 2019).
- 7 Brundtland GH. India’s health reforms: the need for balance. *Lancet* 2018; **392**: 1174–75.
- 8 WHO, UNICEF. Declaration of Astana. Global Conference on Primary Health Care From Alma-Ata towards universal health coverage and the Sustainable Development Goals. Astana: WHO and UNICEF, 2018. <https://www.who.int/docs/default-source/primary-health/declaration/gcphc-declaration.pdf> (accessed June 28, 2019).
- 9 People’s Health Movement, Medicus Mundi International-Network Health for All, Centro Brasileiro de Estudos de Saúde, et al. Alternative Civil Society Astana Statement on Primary Health Care 2018. <https://phmovement.org/alternative-civil-society-astana-declaration-on-primary-health-care/> (accessed June 28, 2019).

- 10 Clark J. Medicalization of global health 4: the universal health coverage campaign and the medicalization of global health. *Glob Health Action* 2014; 7: 10.
- 11 Pan American Health Organization. Universal health in the 21st century: 40 years of Alma-Ata. Report of the High-Level Commission. Washington, D.C: Pan American Health Organization, 2019. http://iris.paho.org/xmlui/bitstream/handle/123456789/50742/9789275120682_eng.pdf?sequence=16 (accessed June 28, 2019).
- 12 Swinburn BA, Kraak VI, Allender S, et al. The global syndemic of obesity, undernutrition, and climate change: the *Lancet* commission report. *Lancet* 2019; **393**: 791–846.
- 13 Freudenberg N. Lethal but legal: corporations, consumption, and protecting public health. New York: Oxford University Press, 2014.
- 14 Global Justice Now. 69 of the richest 100 entities on the planet are corporations, not governments, figures show. *Global Justice Now*, Oct 17, 2018. <https://www.globaljustice.org.uk/news/2018/oct/17/69-richest-100-entities-planet-are-corporations-not-governments-figures-show#> (accessed June 28, 2019).

Defining primary palliative care for universal health coverage



Much has been achieved in advancing palliative care on the global health agenda, but there is more to do. The 2014 World Health Assembly (WHA) committed countries to integrating palliative care into their health systems and WHO was tasked with monitoring progress.¹ By 2017, WHO had updated the definition of universal health coverage (UHC)—Sustainable Development Goal 3.8—to include palliation along with promotion, prevention, treatment, and rehabilitation.² A *Lancet* Commission in 2017 highlighted the global need to take action when 61 million people are living with serious health-related suffering due to uncontrolled pain and without access to an affordable essential package for palliative care.³

The central role of primary care in delivering health for all has been widely accepted since the Alma Ata Declaration of 1978 and the Astana Declaration of 2018 endorsed it further.⁴ In 2019, the focus of the WHA in May and the UN High-Level Meeting in September is on primary care-led UHC and how this can be made a reality by 2030.

Changing population demographics and disease epidemiology mean people are increasingly dying from chronic non-communicable diseases (NCDs) in low-income and middle-income countries (LMICs).⁵ Primary care-led management of chronic diseases, including palliative care, is essential to deliver cost-effective UHC that does not impose financial hardship on people with NCDs.²

Palliative care for all is only achievable if all members of the health workforce who care for people with life-limiting illnesses deliver it—in all health systems, irrespective of a country's income status.⁶ People are mostly at home for their last years of life, so primary care teams provide much of their palliative care. The palliative care delivered by primary care teams is well developed and promoted in some higher-income countries,⁷ but much

less so in LMICs, although the 2018 WHO guidelines are an encouraging start.⁸ Efforts to achieve primary care-led UHC provide an opportunity to ensure that palliative care is being delivered at the primary care level in all parts of the world and to exploit synergies between disciplines.

Palliative care sits comfortably within primary care. Both deal with a wide spectrum of illnesses, not limited to a single disease process. At their best, both recognise the importance of a holistic approach, coordination of care, and person-centred care within a wider context. The clinical competencies and resources to achieve this care are often lacking among health workers, particularly in LMICs.⁹ Incorporating a palliative care approach into primary care addresses health-related suffering in advanced illness while facilitating development of core skills for primary care practitioners even in remote LMICs.¹⁰

Thus, the scope of palliative care within primary care is wide and its development vital to enable UHC, but it needs to be recognised and clearly defined. We propose primary palliative care (PPC) as the internationally adopted term. PPC was first coined in the UK by Roger Charlton.¹¹ The term was consolidated in 2004, when the case was made for the benefits of delivering palliative care within primary care and the need for research and an academic base.¹² In 2011, Weissman and Meier¹³ in the USA defined PPC as “the basic skills and competencies required

Panel: A new definition of primary palliative care

Primary palliative care is palliative care practised by primary health care workers, who are the principal providers of integrated health care for people in local communities throughout their life. It includes early identification and triggering of palliative care as part of integrated and holistic chronic disease management, collaborating with specialist palliative care services where they exist, and strengthening underlying professional capabilities in primary care.