Forms and Functioning of Local Accountability Mechanisms for Maternal, Newborn and Child Health: A Case Study of Gert Sibande District, South Africa

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A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in the School of Public Health, Faculty of Community and Health Sciences,

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KEYWORDS

Accountability

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District health systems

Frontline health professionals

Health systems governance

Maternal, newborn and child health

Micro-systems

Quality improvement

Reciprocity

Social Network Analysis

ABSTRACT

The value of accountability as a key feature of strengthening health systems and reducing maternal, newborn and child mortality is increasingly emphasised globally, nationally and locally. Frontline health professionals and managers play a crucial role in promoting maternal, newborn and child health (MNCH) services in an equitable and accountable manner. They are at the interface between higher-level health system management and communities, facing demands from both sides and often expected to perform beyond their available means. Although accountability is a central topic in the governance of MNCH literature, it has mostly been approached at global and national levels, with little understanding of how accountability is integrated into the routine functioning of local health systems.

This PhD explores the forms and functioning of accountability at the district level focusing on MNCH as a programmatic area with long-established institutional mechanisms (structures and processes) in South Africa (SA). The thesis is presented in the form of four empirical papers (published or submitted), exploring different dimensions of accountability, which are embedded in a series of narrative chapters.

In this thesis, accountability is understood as a set of relations between an account-holder and 'accountor' (or duty bearer), in which the latter provides information or justification for actions or decisions taken, and faces the resulting consequences of his/her actions (reward or sanction). Accountability mechanisms are the means to regulate accountability relationships and include broad strategies, interventions or instruments. These mechanisms can take various forms including performance, financial and public accountability, and operate both vertically (accountability inside bureaucratic hierarchies, or towards external stakeholders and/or the community), or

horizontally (between peers, 'neighbour' units, departments or ministries in a national health system).

Drawing conceptually on the field of governance and considering the complexity of the accountability phenomenon, I adopted a case study approach to the PhD research, using a combination of policy document review, interviews (with managers, providers, community representatives and members of labour unions) and field observations, conducted iteratively over 16 months. The study was conducted in Gert Sibande District, one of the three South African health districts in Mpumalanga Province, with an in-depth focus on two of the seven sub-districts in the District.

The research found that frontline health professionals have a clear understanding and conceptualisation of accountability in the SA health policy context, despite the reported inability to define accountability by health professionals described in the literature. Respondents referred to accountability as responsibility, answerability and virtue, and also argued for strengthening accountability mechanisms as critical to addressing maternal and child mortality. While deeming accountability as important, frontline professionals experienced the existing accountability mechanisms as 'too much' and indicated the desire for the streamlining of existing mechanisms. In this regard, the study documented numerous mechanisms at district level, almost all related to performance accountability in MNCH. These included a performance management system, quality assessment and accreditation processes, quarterly reviews, and death surveillance and response processes. The existence of multiple and overlapping accountability mechanisms engenders operational confusion and 'accountability overload' for frontline providers, encouraging empty bureaucratic compliance, while critical gaps – notably in community accountability – remain. In

practice, at their best, some mechanisms operate following a reciprocal[1] pathway of capacity building with resource provision (from management) and expectation for better performance (from providers). There were, however, contextual variations in the implementation and practice of the mechanisms between sub-district settings.

The fieldwork observations and interviews were also able to document how formal institutionalised mechanisms are embedded within a complex system of informal accountability relationships and social norms ('accountability ecosystem') that enables or constrains the ability of frontline professionals to fulfil their tasks. In addition, using a Social Network Analysis approach, the research identified key actors and their involved network, which form the relational backdrop to the functioning of accountability mechanisms for MNCH. By revealing complex relationships and collaboration patterns among frontline health professionals, the study was able to show the multi-level action and multiple actors required to achieve MNCH goals.

The thesis concludes by proposing an accountability framework which integrates professional learning, continuous improvement, multidisciplinary teams and multi-level processes within the Gert Sibande District with representation and participation of the community. In this way, the thesis contributes to the understanding of health system governance and accountability at the local level.

[1] Reciprocity implies that *'for every unit of performance I require of you, I owe you a unit of capacity to produce that result'* (Elmore, 2006).

DECLARATION

I declare that *Forms and Functioning of Local Accountability Mechanisms for Maternal, Newborn and Child Health: A Case Study of Gert Sibande District, South Africa* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Fidele Kanyimbu Mukinda

February 2021

Signed: 

DEDICATION

To my mother Berthe Tshisola, my wife Francine Mukinda, my sisters and all the women who have shaped my life.

To all the women and children who died from avoidable conditions while no one was held accountable.

To my younger brother Jimmy Mukind and my dad Dominic Tshipoy Mukind who passed away during my PhD journey.

ACKNOWLEDGEMENTS

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Finally, I am grateful for the support and facilitation received from the South African National Department of Health, Mpumalanga Department of Health, the managers and staff of Gert Sibande District, Pixley Ka Seme and Govan Mbeki sub-districts, particularly Dr Joey Cupido, Kholekile, Mr Mkhaliphi, Mr Ka Mabuza, Mr Janky, Dr Ilunga, Susan and Octavia. To God be the Glory.

ABBREVIATIONS

CEMD	Confidential Enquiry into Maternal Deaths
CoMMIC	Committee on Morbidity and Mortality in Children under-5 years
CHIP	Child under-5 Healthcare Problem Identification Programme
CHW	Community Health Worker
DCST	District Clinical Specialist Team
DSR	Death Surveillance and Response
LDC	Least Developed Countries
LMIC	Low- and Middle-Income Countries
MDG	Millennium Development Goal
MNCH	Maternal, Newborn and Child Health
MRU	Monitoring and Response Unit
NAPEMMCo	National Perinatal Morbidity and Mortality Committee
NCCEMD	National Committee for Confidential Enquiry into Maternal Deaths
NCOP	National Council of Provinces
PAC	Public Accounts Committees
PHC	Primary Health Care
PPIP	Perinatal Problem Identification Programme
SCOPA	Standing Committee on Public Accounts
SDG	Sustainable Development Goal
SNA	Social Network Analysis
SRHR	Sexual and Reproductive Health Rights
UHC	Universal Health Coverage
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

Introduction

This chapter presents an overview of the thesis, highlighting the background context that informed the undertaking of this PhD research on accountability for maternal, newborn and child health (MNCH). Starting from the problem of lagging progress in the Millennium Development Goals (MDGs) 4, 5 and 6, i.e. maternal and child health and mortality, I then describe the role of health system strengthening interventions to address maternal and child mortality in low- and middle-income countries (LMIC) during the pre-and post-MDG period. The next section presents an overview of policy initiatives in South Africa to address MNCH and to reduce deaths, leading to the problem statement of the thesis. A section on the study setting provides the background to the selection of the district in which the study took place, and is followed by the aim and specific objectives of the thesis, and concludes by outlining the structure of the remaining sections of the study, including the four papers embedded in the thesis.

Maternal, newborn and child health (MNCH) as a global and South African priority

Maternal, newborn and child health (MNCH) re-emerged as a global priority in the MDGs (United Nations Secretary-General, 2014) and remained a key theme in the Sustainable Development Goals (SDGs) (United Nations General Assembly, 2015).

Despite substantial global declines, maternal and child mortality rates have remained unacceptably high (World Health Organization (WHO), 2019). In the least developed countries (LDCs), maternal deaths were estimated at 415 per 100 000 live births in 2017. The two regions reporting the highest number and proportion of estimated

global maternal deaths in 2017 were Sub-Saharan Africa (196 000 [66%]) and Southern Asia (58 000 [20%]) (WHO, 2019). Neonatal mortality has declined globally but remains significantly high in Sub-Saharan Africa and Southern Asia (Hug et al., 2019). While a 60% decline in under-5 mortality was observed over the first two decades of the twenty-first century (from 93 deaths per 1 000 live births in 1990 to 38 in 2019), 7.4 million children, adolescents and youth (0–14 years) died in 2019, the majority from preventable causes (United Nations Children's Fund (UNICEF), 2020).

Pneumonia, diarrhoea, malaria and severe acute malnutrition are still the leading causes of under-five child death, in addition to prematurity and intrapartum complications in the newborn period (UNICEF, 2020). Pregnancy-related causes (hypertensive disorders, antepartum haemorrhage, abortion) account for about 73% of all maternal deaths, with the remainder caused by communicable and non-communicable diseases (sepsis, tuberculosis (TB), HIV/AIDS, cervical and breast cancer) (Say et al., 2014; Knaul et al., 2016). These direct causes are the avoidable result of health systems factors, such as delay in referral processes, delay in seeking care, inadequate or inexperienced human resources (staff), and the shortage or lack of equipment and ambulances and emergency transport (Sageer et al., 2019).

In South Africa, despite not achieving the MDGs 4, 5 and 6 targets, a significant decline in maternal and child mortality was observed in the MDG period National Department of Health (2016b), even if neonatal mortality stagnated (12 deaths per 1 000 live births) (Goga et al., 2019). According to the (National Department of Health, 2019), maternal and child mortality rates remain unacceptably high (Table 1.1).

Table 1.1 Maternal, neonatal and child mortality in South Africa[1]

	Number of deaths per 1 000 live births		
	Baseline 2014	**2017 Figures**	**2019 Targets**
Neonatal	14	12	8
Infant	28	23	23
Child under-5	39	32	33
Maternal (by March 2019)	269	134	<100

As with global patterns, the most common causes of under-5 deaths in South Africa are neonatal, pneumonia, diarrhoea and severe acute malnutrition. The five leading causes of maternal deaths in 2008–10 in South Africa were: non-pregnancy-related infections such as HIV/AIDS and TB co-infection (40.5%), obstetric haemorrhage (14.1%), hypertensive disorders (14.0%), medical and surgical problems (8.8%), and sepsis in pregnancy (5.3%) (Moodley et al., 2014). Improvements in maternal mortality were observed recently but without variation in the leading causes of deaths (Moodley et al., 2018).

Most of these deaths are either preventable or avoidable using well-established, evidence-based interventions (Hanif, 2007; Azad and Mathews, 2016; Buchmann et al., 2016). The SDGs aim to end preventable deaths by 2030 (WHO, 2015). However, the difficulty is how to ensure implementation and universal access to effective MNCH interventions through health systems. Good, evidence-based policies exist on paper, but despite the technical know-how, they suffer from implementation gaps (Davids et al., 2020). Therefore, the *Global Strategy for Women's, Children's and Adolescents' Health (2016–2030)*, (hereafter referred to as the Global Strategy) suggests the need

[1] National Department of Health 2019. Annual report 2018/19. Pretoria: NDOH.

for strengthening the building blocks of the health system in order to deliver universal health coverage (UHC), and central to this is building leadership and governance capabilities (Every Woman Every Child, 2015). The strategy identified accountability as one of nine key action areas that focus on ensuring answerability for the SDGs and for promoting multi-stakeholder engagement (Every Woman Every Child, 2015).

The emergence of accountability and governance in MNCH

Governance is one of the key health system 'building blocks' (De Savigny and Adam, 2009) and has a central role in the functionality of the overall health system (Mikkelsen-Lopez et al., 2011). The WHO (2007) defines governance as, "*ensuring that a strategic policy framework exists and is combined with effective oversight, coalition-building, regulation, attention to system-design and accountability*". According to Mikkelsen-Lopez et al. (2011), this definition encompasses elements that can affect the functionality of the health system (Figure 1.1). These elements include: a strategic vision that is translated into a policy; an inclusive system that encourages multi-stakeholder participation and seeks consensus in the decision-making process; and a system that tackles corruption and fosters transparency and accountability at all levels (WHO, 2007; Mikkelsen-Lopez et al., 2011).

Accountability is, therefore, an essential and intrinsic component of governance arrangements, consisting of relationships between numerous actors involved in health (individuals, households, communities, NGOs, governments) (WHO, 2010:86).

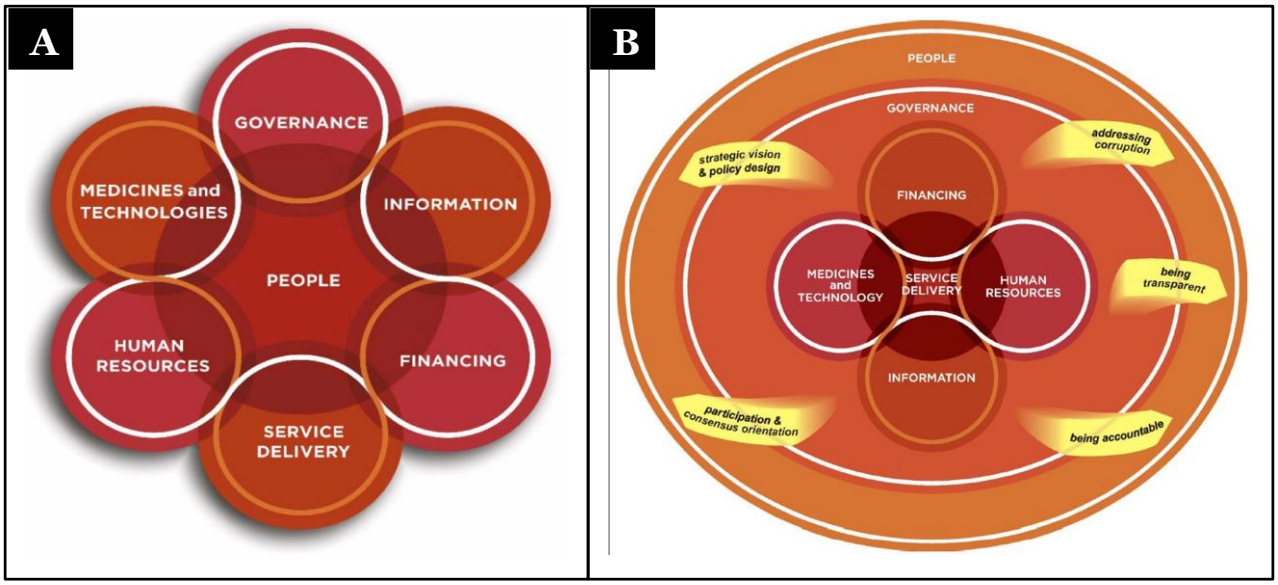

Figure 1.1 The cross-cutting nature and the central role of governance from a health system perspective[1]

In recent years, the need for greater health system accountability and governance has emerged as critical to addressing the ongoing problem of maternal, neonatal and child mortality and morbidity, at global (Every Woman Every Child, 2015), national and local levels (Freedman and Schaaf, 2013; Lodenstein et al., 2017; Schneider et al., 2020).

Accountability has been portrayed, amongst others, as an essential process of learning and continuous improvement (Every Woman Every Child, 2015:70), and, in public administration literature, as both a professional virtue and a bureaucratic mechanism (Bovens, 2010). Accountability for MNCH also encompasses the notion of social responsibility to users and citizens, and further needs to be contextualised within local micro-practices (e.g. decision-making, information-sharing, complaints mechanisms,

[1] (A) De Savigny, D. and Adam, T. 2009. Systems thinking for health systems strengthening. Geneva, Switzerland: Alliance for Health Policy and Systems Research - World Health Organization.; and (B) Mikkelsen-Lopez, I., Wyss, K. and de Savigny, D. 2011. An approach to addressing governance from a health system framework perspective. *BMC International Health and Human Rights,* 11(13).

and multiple demands for compliance), in order to strengthen MNCH services (Freedman and Schaaf, 2013; Hilber et al., 2016).

Commenting on the emergence of accountability in international public administration, Boven and Schillemans (2014:674) state that most studies focus on *"the negative effects of accountability"* and tend to bypass other "*public values such as effectiveness, efficiency, trust and learning"*. In their work, *Meaningful Accountability*, Boven and Schillemans (2014:674) suggest that accountability studies should strive to "*identify the mechanisms that are relevant, and explore the 'conditions and contexts"* that make these accountability mechanisms effective.

Finally, in a review mapping the studies on accountability for MNCH in Sub-Saharan Africa, Hilber et al. (2016) recommend that, for accountability mechanisms to be effective at local level, they must engage local actors, be supported by evidence based on the local context and engage stakeholders with various background and levels of expertise.

The role of health systems strengthening interventions

It has been estimated that about 95% of maternal deaths are related to health system failures – including accountability and governance challenges – rather than unavoidable natural causes, and can occur before or during pregnancy, delivery or postpartum (Eftekhar-Vaghefi et al., 2013; Hamal et al., 2018). Likewise, for child deaths, most are due to the failure to translate evidence effectively into practice (Ross and Mukumbuta, 2009). For instance, diarrhoeal diseases, respiratory infections and malnutrition are reported among the common causes of deaths in children; yet evidence from systematic reviews have shown that correct and safe disposal of human

excreta can reduce diarrhoeal diseases and morbidity by 36% (Esrey et al., 1991); washing hands with soap can reduce the risk of respiratory infections by 24% (Curtis and Cairncross, 2003), or half of the cases of malnutrition were attributable to repeated diarrhoea or intestinal nematode infections caused by unsafe water, inadequate sanitation or insufficient hygiene (Prüss-Üstün et al., 2008).

These observations highlight the urgent need to strengthen health systems, including governance and accountability, to ensure universal access to maternal and child health services. The strengthening of health systems should target provision of sufficient resources, both human and equipment, in addition to financial resources; and ensure adequate infrastructure for service delivery, provision of medical products and technologies, use of information for planning and decision-making, as well as 'good' governance, accountability and sound leadership.

Key elements of an effective response to MNCH include referral processes and continuity of care, as well as strategies targeting communities (The Partnership, 2011). The Global Strategy (Every Woman Every Child, 2015) aligns these interventions by setting up the following three objectives: 'Survive', 'Thrive' and 'Transform' (Box 1). They are implemented through a series of technical and health system interventions. However, successful implementation of these interventions is highly dependent on political commitment, power dynamics, economics and financial resources, religion, social norms, as well as health care-seeking behaviours of women, children and adolescents (Every Woman Every Child, 2015).

Box 1. 1 'Survive', 'Thrive' and 'Transform'[1]

'Survive' implies ending preventable deaths by reducing global maternal mortality to less than 70 per 100 000 live births; reducing country newborn mortality to less than 12 per 100 live births; and country under-5 mortality rate to less than 25 per 1 000 live births.

'Thrive' implies ensuring health and well-being by ending any form of malnutrition and addressing nutritional needs for children, adolescent girls, pregnant and lactating women.

'**Transform'** is about providing enabling environments that eradicate extreme poverty and enhance partnerships.

Maternal, newborn and child health (MNCH) policies in South Africa

South Africa has long-standing accountability processes for MNCH that can be traced back to the mid-1990s when health care was declared free for pregnant women and children under 6 years of age, maternal deaths became a notifiable condition by law, and the Termination of Pregnancy Act was promulgated (Moodley et al., 2014). During this period MNCH was prioritised into the routine functioning of frontline health services. Central to this process were the three ministerial committees established in 1998, namely the National Committee for Confidential Enquiry into Maternal Deaths (NCCEMD) (National Department of Health, 1999), the National Perinatal and Neonatal Morbidity and Mortality Committee (NaPeMMCo) (National Department of Health, 2010), and the Committee on Morbidity and Mortality in Children under-5 years (CoMMiC) (National Department of Health, 2011a). These committees were established at the national level, but exercise their mandates at local (district) level

[1] Every Woman Every Child 2015. The Global Strategy for Women's, Children's and Adolescents' Health (2016-2030). New York: United Nations.

through three accountability processes, namely, the Confidential Enquiry into Maternal Death (CEMD), the Perinatal Problem Identification Programme (PPIP), and the Child Healthcare Problem Identification Programme (CHIP). The PPIP was developed as an audit tool for perinatal deaths in hospitals and was expanded (in 1996) to all health facilities providing care to pregnant women and newborns (Rhoda et al., 2014). Its purpose is to provide data on the causes of perinatal death, the avoidable factors and to propose solutions (Pattinson, 2000).

In 2010, recognising that it was unlikely to achieve the MDGs 4 and 5 related to the reduction in child and maternal mortality, South Africa embarked on interventions to 're-engineer' the Primary Health Care (PHC) system into 'three streams of PHC' (National Department of Health, 2011b) including: (i) Ward-Based PHC Outreach Teams (WBOTs); (ii) Integrated School Health Programme (ISHP) (National Department of Health, 2012); and (iii) District Clinical Specialist Teams (DCSTs), for mentoring and supervision, and to ensure clinical governance specifically of MNCH services (National Department of Health, 2014). This process was followed by the implementation of the 'Ideal Clinic' initiative (in 2013) aiming to systematically improve and correct deficiencies in the public PHC system by reinforcing compliance to health standards (National Department of Health, 2016a).

These PHC initiatives for strengthening MNCH operate in a complex ecosystem of accountability mechanisms detailed in the papers included in this thesis.

Problem statement

Globally and locally, both health system strengthening and accountability are increasingly regarded as key contributing factors to the reduction of maternal,

newborn and child mortality, and to the improvement of the overall quality of MNCH services (Hilber et al., 2016; Squires et al., 2020). However, published literature addresses accountability with a global and national view (Freedman and Schaaf, 2013). The importance of focusing accountability at a local level (in the community) is acknowledged, but not grounded in sound case study examples. The existing empirical evidence on accountability efforts and practices in LMIC also does not address the dynamics of collaborative (including power) relationships at local frontlines, nor the potential lack of power (Freedman and Schaaf, 2013). Scott et al. (2014) argue that too little attention is given to the micro-practices of governance, which consider the roles of various frontline actors in the system.

Finally, accountability mechanisms engage a range of actors with varying perceptions and individual experiences regarding accountability. There is a need to explore how these local actors perceive being at the receiving end of accountability interventions. According to Hilber et al. (2016), "*increasing accountability depends not only on how mechanisms are enforced but also, on how providers and managers understand accountability"*. A better understanding of these processes will inform what can be done to strengthen and build a sustainable accountability culture at local level.

Study setting – Gert Sibande District

South Africa is a middle-income country with a quasi-federal political system consisting of the national level, nine provincial governments, and 52 health districts. The competence for organising and delivering health services is with the provincial government.

Data collection for this PhD research was conducted in Gert Sibande District, one of three districts of Mpumalanga Province, situated in the north-east of South Africa (Figure 1.2). The district has a population of about 1.2 million, with the vast majority (61%) living in rural areas (Massyn et al., 2020).

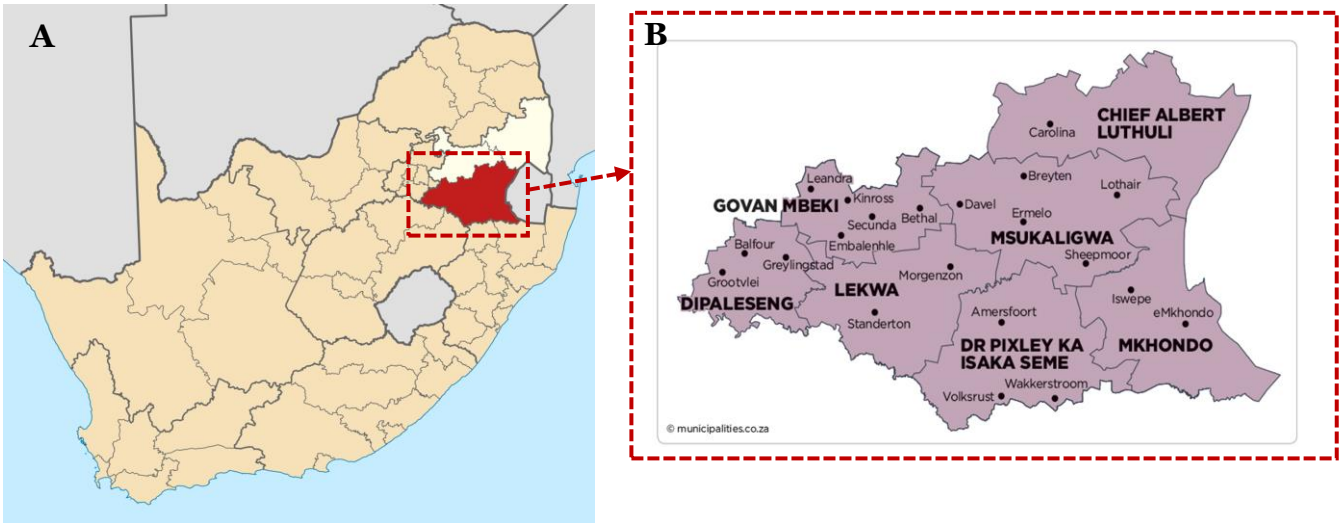

Figure 1.2 Gert Sibande District Municipality[1]

The Gert Sibande District was ranked and targeted by the National Department of Health as one of the districts with high maternal and child mortality (328.0 per 100 000 live births in 2010), hampering the achievement of the country's MDG targets (Bac et al., 2019). In 2012, the district was among the 11 selected sites to pilot the new National Health Insurance (NHI) Strategy; and in 2014, was selected as one of four districts to receive a health system strengthening and quality improvement intervention to reduce maternal and child mortality in that year. This involved a new decision-making and accountability structure (the Monitoring and Response Unit—

[1] (A) https://upload.wikimedia.org/wikipedia/commons/2/22/Map_of_South_Africa_with_Gert_Sibande_highlighted_%282011%29.svg; and (B) https://municipalities.co.za/map/132/gert-sibande-district-municipality

MRU) and other processes of 'real-time' death surveillance (Schneider et al., 2020). Subsequent studies in the district documented declines in maternal and child deaths that could have been attributable to the intervention (Schneider et al., 2020). Figure 1.3 below shows the trends in maternal mortality ratio over-5 years, comparing the Gert Sibande District to other districts within the same province.

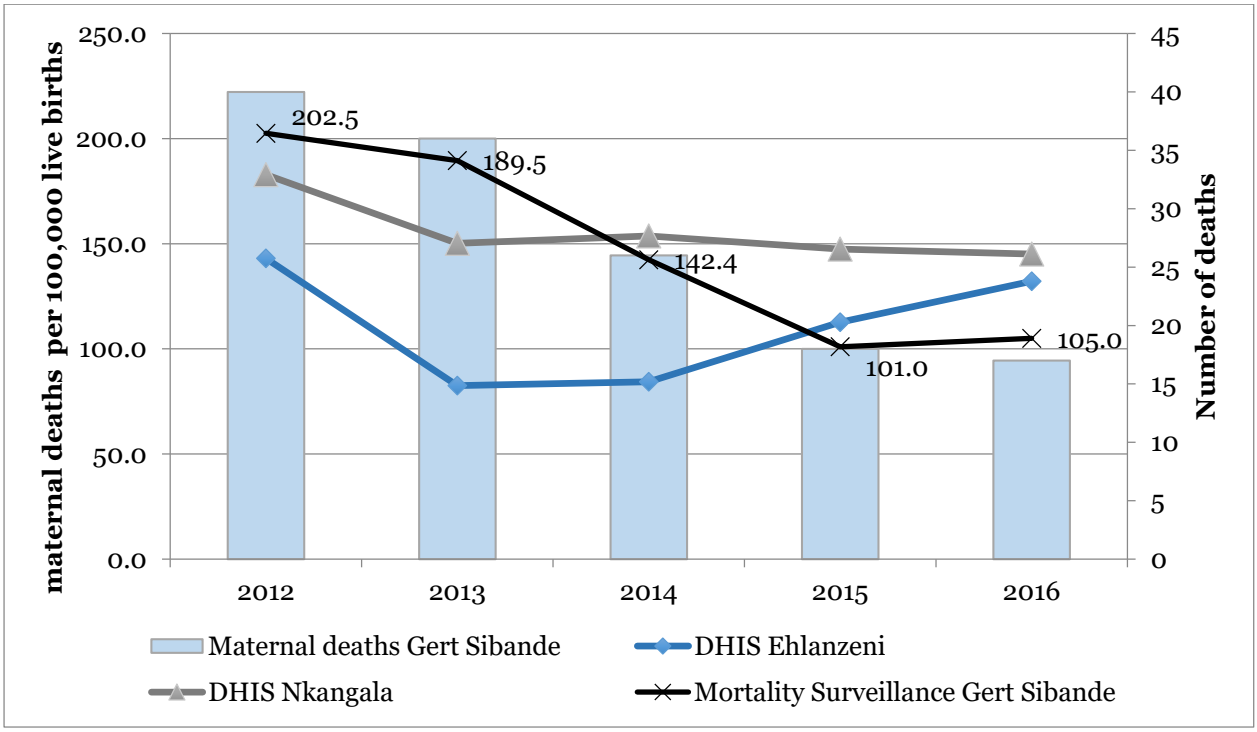

Figure 1.3 In-facility maternal mortality ratio and number of maternal deaths 2012–2016[1]

The district consists of one regional hospital, eight district hospitals, and 76 primary health care facilities, distributed among seven sub-districts (Figure 1.2).

[1] Schneider, H., McKenzie, A., Tabana, H., Mukinda, F. and George, A. 2017. Evaluation of health system strengthening initiatives for improving the quality and outcomes of maternal, neonatal and child health care in four South African districts. South Africa: School of Public Health, SAMRC Health Services to Systems Research Unit, University of the Western Cape.

Aims and objectives

This thesis aims to explore, describe and evaluate the forms and functioning of accountability mechanisms for maternal, newborn and child health (MNCH) in a South African health district.

The specific objectives of this thesis are to:

1. Map accountability mechanisms and describe local accountability practices for MNCH at the district level.
2. Investigate how frontline health managers and providers perceive and experience accountability for MNCH in their everyday practices and how they facilitate expanding access to health care and promoting equity in a South African health district.
3. Evaluate the functioning of selected accountability mechanisms with respect to their design and the outcomes they produce.
4. Develop a framework of key recommendations for strengthening and sustaining accountability for MNCH at the district level.

Papers included in the thesis

This thesis is presented as four papers embedded in a narrative. The four papers (three published, one under review) are as follows:

- Paper 1: Mukinda, F. K., Van Belle, S., George, A. and Schneider, H. 2020a. The crowded space of local accountability for maternal, newborn and child health: A case study of the South African health system. *Health Policy and Planning,* 35(3), pp. 279–90. doi: doi: 10.1093/heapol/czz162.

- Paper 2: Mukinda, F. K., Van Belle, S. and Schneider, H. 2020b. Perceptions and experiences of frontline health managers and providers on accountability in a South African health district. *International Journal for Equity in Health,* 19(1), pp. 1-11. doi: 10.1186/s12939-020-01229-w.
- Paper 3: Mukinda, F.K., George,. A, Van Belle, S. and Schneider, H. 2021. Practice of death surveillance and response for maternal, newborn and child health: a framework and application to a South African health district. *BMJ Open*, 11(5), pp. 1-13. doi: 10.1136/bmjopen-2020-043783.
- Paper 4: Mukinda, F.K., Van Belle, S. and Schneider, H. 2021 Local dynamics of collaboration for Maternal, Newborn and Child Health: A Social Network Analysis of health care providers and their managers in Gert Sibande District, South Africa. (Under review – *International Journal of Health Policy and Management*). The contribution of the four papers to the four objectives of this thesis is presented in Table 1.1.

Table 1. 2 Contribution of papers to thesis objectives

	Objective 1	Objective 2	Objective 3	Objective 4
Paper 1	✓			✓
Paper 2		✓		✓
Paper 3	✓		✓	✓
Paper 4			✓	✓

The remaining sections of the thesis are structured as follows:

Chapter 2: Literature review –Introduces the following overarching themes:

- Presentation of a theoretical background defining and situating accountability in the governance literature.
- Description of the nature of accountability at the district level.
- A conceptual approach to accountability in MNCH, accountability ecosystem and frameworks.
- Accountability in the South African health system.

Chapter 3: Methods – Begins by stating the positionality of the candidate. The overall study framework is then presented, followed by a description of the case study methodology (as the main research strategy), as well as the four phases of the data generation process.

Chapter 4: Findings – Presents the four included papers, their respective contribution to the thesis and the contribution of the candidate to each paper. The full papers are then added to this introduction.

Chapter 5: Discussion – Summarises the contribution of the thesis to knowledge on governance and accountability at the frontline of the health system. A systemic framework of accountability for MNCH at local level is proposed. The chapter discusses the limitations of the thesis and concludes by making recommendations for policy and future research.

CHAPTER 2: LITERATURE REVIEW

Introduction

In this thesis, local accountability for MNCH is approached in various ways, addressing a number of different themes and perspectives. This chapter seeks to locate these themes and perspectives in the literature. In order to do so, the chapter firstly situates and defines accountability as an overarching concept in the governance literature. Secondly, an understanding of how accountability is being approached and operationalised in local health systems is needed. The district health system is the 'harbour' for policy implementation and it is crucial to understand the nature of accountability at this level upon which depends the success or failure of any accountability policy. Thirdly, strengthening MNCH requires an ecosystemic approach to accountability as maternal, neonatal and child deaths frequently point to system-wide problems and structural (social) determinants of health. Fourthly, South Africa has a particular history of implementation of accountability mechanisms for strengthening the health system and for improving the quality of care; understanding how these mechanisms operate at the local level is imperative to addressing MNCH.

The intention of this chapter is not to reproduce the conceptual and empirical literature already reviewed in the papers (in Chapter 4), but to present the above themes as essential in understanding the approaches used in the thesis. The first section presents a theoretical background, situating accountability within the governance literature. The second section highlights the nature of accountability at the local (district) level. The third section outlines how accountability has been approached conceptually in the fields of MNCH and the related area of sexual and reproductive health, highlighting the idea of a complex accountability ecosystem. These various ideas together formed the basis of the conceptual framework that guided the empirical research. Finally, the fourth part presents accountability in the South

African health system based on empirical evidence from a document review of policy implementation from 1994 through to the era of the Sustainable Development Goals (SDGs).

Health system governance and accountability

The governance function in health systems is increasingly being considered as essential for strengthening system performance, quality, Universal Health Coverage (UHC) and achieving the SDGs (Siddiqi et al., 2009; Pyone et al., 2017; Kruk et al., 2018). Because UHC is a 'political choice' (UN News, 2019), increasing attention is also placed on the political determinants of health to understand how politics impact on population health and to depict the root causes of health inequity (Mackenbach, 2014; Ottersen et al., 2014).

Governance is understood as "*the process through which state and non-state actors interact to design and implement policies within a given set of formal and informal rules that shape and are shaped by power"* (World Bank, 2017:41). According to the WHO (2007:3), governance should promote the co-existence of "*strategic policy frameworks and effective oversight, coalition building, regulation, attention to system-design and accountability"*. Furthermore, governance in health includes both governance of health and health systems (WHO, 2007), and governance for health (health in all or intersectoral governance) (Kickbusch and Gleicher, 2012).

The complex and multidimensional nature of governance is acknowledged; progress is being made to understand its role in and beyond health systems justified by the high demand for performance and accountability directed to both providers and policymakers (Siddiqi et al., 2009; Schneider et al., 2020). A common approach to

governance should include systems of representation, people engagement, distributed accountability and the notion of power among actors in governance (Barbazza and Tello, 2014).

A triangular analytical framework to facilitate the understanding of governance arrangements for service delivery and accountability was suggested by the World Bank (2004). This framework (Figure 2.1A) identifies three sets of actors (people, policymakers and service providers) and the linear relationships between them. This linear model was recently adapted by Bigdeli et al. (2020) to display the dynamic and interconnected nature of relationships between the three categories of stakeholders involved in health systems governance (Figure 2.1B). They identify the following six spaces of the functioning of health governance that also determine accountability arrangements:

- Three spaces between the spheres: these are formal or informal relationships between the three categories of stakeholders in governance.
- Three spaces within the spheres: these are formal or informal networks and relationships between stakeholders within a specific sphere.

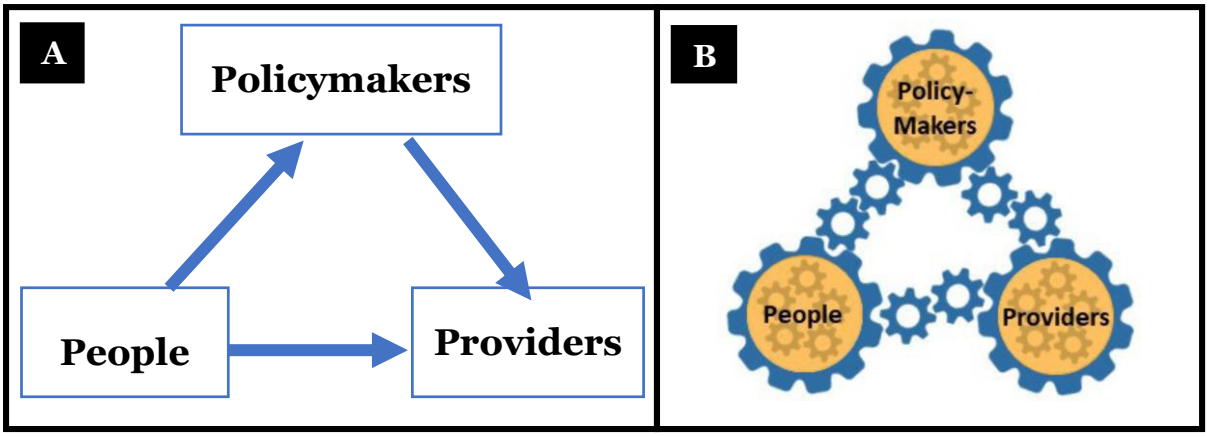

Figure 2.1 Health Systems Governance Framework[1]

[1] (A) World Bank (2004); (B) Adapted by Bigdeli et al. (2020)

To be effective, governance arrangements in health systems should consider a set of 'missing links'[1] that portrait formal accountability relationships (horizontal, vertical), power relations, expression of people's voice and collaborative action among multiple stakeholders (Bigdeli et al., 2020).

At it essence, governance involves participation and relationships between policymakers, health service providers and citizens, through formal and informal accountability mechanisms, relations of power, expression of people's voice and collective action (Barbazza and Tello, 2014; Bigdeli et al., 2020). Governance should thus be appraised by its ability to enable relationships between actors (Barbazza and Tello, 2014). It is also important to recognise and understand the 'multi-level' and distributed nature of governance relationships, encompassing not just strategic but also routine decision-making processes (Gilson et al., 2017). In governance arrangements, the emphasis is increasingly placed on collaboration and participation, (Kickbusch and Gleicher, 2012), where participation results in co-production[2] and networking, enabling systemic collaboration and performance (Vennik et al., 2016; Cinquini et al., 2017). However, for meaningful participation of people in decision-making, governance arrangements need to redress imbalanced and asymmetric power relationships and information exchange within health systems (Kruk et al., 2018).

Accountability, previously associated mainly with service delivery and quality of care in the health literature of the 1970s/1980s (Borrero et al., 1979), is now re-emerging as a critical element of governance (Brinkerhoff, 2004; Cleary et al., 2013). Through policies, rules and laws, governance functions to distribute accountability 'roles'

[1] Missing links refer to the gaps in formal (and informal) accountability relations and gaps in the exercise of population voice or collective action in health systems (Bigdeli, 2020)
[2] Co-production implies collaboration, partnership between health professionals and service users in the designing, delivering and assessing of public services (Vennik, 2016; Cinquini, 2017)

among actors within a health system. The challenge arises when the gap is deepening between the intent of policies and what is happening in actual practice, particularly at local levels (George, 2009; Brinkerhoff and Bossert, 2014).

Accountability is also the people's expression and ability to hold governments accountable for their obligation to human rights, expressed through protests, advocacy, activism or the courts (litigation) (Gloppen, 2008). This is 'voice' – the capacity of people to express and exercise their views with a potential to influence governance processes (Menocal, 2014). However, voice can be possible only if the government allows people to express their views. This becomes complex when people are involved in policymaking (co-production), blurring accountability boundaries.

In summary, governance literature presents accountability as a 'missing link' that regulates relationships between key actors who have various interests and unequal power relationships (Bigdeli et al., 2020). Accountability is also portrayed as one of the fundamental principles and values of governance beside participation, transparency, ethics, responsiveness and equity (Siddiqi et al., 2009). For Barbazza and Tello (2014), accountability is featured as the first of many key sub-functions and the most cited dimension of governance.

However, as with the multiple perspectives of governance, there is a lack of common definition and understanding of accountability; authors refer to accountability processes (instruments or mechanisms), arrangements (vertical, horizontal, networked), or typologies (financial, performance and political/democratic) (Brinkerhoff, 2004; Barbazza and Tello, 2014).

There is no single definition of accountability in the literature. For Brinkerhoff (2004: 372) accountability is defined as, "*the obligation and willingness of individuals or*

agencies to provide information about, and/or justification for, their actions to other actors, along with the imposition of sanctions for failure to comply and/or to engage in inappropriate action". Arguing further, Boydell et al. (2019: 65) describe accountability as, "*the processes by which government actors are responsible and answerable for the provision of high-quality and non-discriminatory goods and services and the enforcement of sanctions and remedies for failures to meet these obligations"*.

From the above definitions, accountability encompasses the following two dimensions: answerability (obligation to inform and justify actions or decisions taken); and enforceability (capacity to impose sanctions or apply remedial action in case of inappropriate conduct) (Schedler, 1999).

Components of accountability in health systems

The components of accountability include, who is accountable (actors), accountable for what (domains) and accountable how (processes). They are described in what follows below.

Accountability in health care involves many actors that can hold others to account or that can be held accountable. Actors in accountability consist of (and are not limited to) citizens (clients, patients, non-users or migrants), providers, professional associations (labour unions), employers or companies (health and non-health sectors, public or private), government, funders, lawyers and courts (Emmanuel and Emmanuel, 1996; Bigdeli et al., 2020).

The domains of accountability consist of any issue, practice, decision or outcome for which one can be called to explain, take responsibility, or face remedial or redress

action. There are many domains of accountability for which actors in health systems can hold accountability or be held accountable. The domains include, the professional capability of providers (quality of care or performance); financial performance and health care management ethical and legal conduct; provision and access to care by the community; and community engagement and responsibility (Emmanuel and Emmanuel, 1996; Brinkerhoff, 2004).

Accountability (processes) can be expressed using various instruments, both formal and informal. From a managerial perspective, formal accountability procedures include measures, such as audits and inspection of facilities, practices or medical records; accreditation, quality control and quality of care certification standards; performance assessment; budget reviews; and mortality audits reviews and responses (Emmanuel and Emmanuel, 1996; World Health Organization (WHO), 2013; Van Belle and Mayhew, 2014).

Informal accountability arrangements and procedures are norms and unofficial behaviours, such as comments and feedback by peers during meetings (Romzek et al., 2011), information sharing, and patient feedback, including patient complaint mechanisms.

Other processes of accountability include: (i) the use of litigation following errors in clinical care procedures and outcomes; (ii) political accountability processes expressed through elections, in part informed by citizens' expectations of public services; and (iii) health rights claims (possibly as a constitutional obligation of the State) involving activism or protest on issues such as access to health services and treatment, or the social determinants of health (e.g. healthy environment, housing, food, water and

sanitation); or health worker strikes for better pay or resources (Gloppen, 2008; Van Belle and Mayhew, 2016).

In some instances when communities experience poor service delivery in spaces where formal rules or formal mechanisms of accountability are lacking, communities can revert to unorganised and informal forms of accountability (protest, resistance) to exercise pressure on government officials to sanction performance. This is approach known as "rude accountability" (Hossain, 2010).

Accountability directions and relations

Accountability relationships can take various forms and directions: vertical, horizontal or mixed (Hupe and Hill, 2007; Schillemans, 2008; Schillemans, 2010); and internal or external (Fullan et al., 2015). Vertical or bureaucratic accountability functions to promote answerability within the hierarchy of the health system (Cleary et al., 2013; Van Belle and Mayhew, 2014). It refers to frontline providers' accountability to their superior to whom they report (Topp et al., 2018). Vertical accountability may also imply direct interaction by individuals or communities with government actors or service providers through advocacy, oversight channels, health promotion, council meetings, board meetings, or public hearings.

In LMIC contexts, the concept of 'social accountability' has been used to denote a rights-based approach to the enforcement of accountability, when citizens, aware of their entitlements (to quality public service delivery), engage and use their voice through information, dialogue and negotiation, protest or litigation (Schedler, 1999). These processes can be mediated by community health workers (CHWs), health committees or other community-based organisations (Papp et al., 2013; Mafuta et al., 2015).

Usually, vertical accountability coexists with horizontal accountability relationships. Horizontal relationships function at the same level in the health system (Topp et al., 2018), for instance, when the District Management Team is reporting to a district assembly (Van Belle and Mayhew, 2014), or the interactions between peers (Hupe and Hill, 2007). Horizontal accountability also exists outside the traditional hierarchical bureaucracy, when actors or agencies account for their actions or decisions to independent evaluators, stakeholders, boards of commissioners, or journalists (Schillemans, 2008). Contemporary forms of horizontal accountability include the accountability of partnerships (formal and informal), referring to the increasing collaboration between state and non-state stakeholders, public-private partnerships (PPPs), or between independent health care organisations (Acar et al., 2011; Sørensen, 2012; Lewis et al., 2017; Reich, 2018).

Internal accountability mechanisms refer to bureaucratic processes (vertical or horizontal) of oversight and internal control mechanisms (for instance, between peers, managers and providers), ensuring that policies or guidelines are implemented and followed (Cleary et al., 2013).

External accountability refers to pressures, demands and expectations from stakeholders outside the system (Poole, 2011). It relates to public or political accountability, referring to the relations between state actors and the citizen, and how to support citizen engagement, improve equity, and build trust in government structures (Brinkerhoff, 2004). Citizens apply pressure on service providers (or bureaucracies) for them to perform; they do this through hospital boards, clinic committees, complaints boxes, report cards for rating health services, and protest (social accountability) (Cleary et al., 2013; Nxumalo et al., 2018a). Elected leaders and administrators account through public hearings during council meetings (Paul, 1991).

Health system managers and local government actors can build on people's expectations to develop accountable practices that may result in high-quality health systems, shaped by both the ability of health system managers to be accountable to the communities, and the communities' ability to demand accountability (Boydell et al., 2019).

Accountability mechanisms are always relational and context-dependent (Moncrieffe, 2011). In health systems, accountability mechanisms are naturally multi-directional: actors are accountable to their peers (colleagues), their direct hierarchical supervisors (employers), to service users and communities (non-users), and to those affected by any action or decision taken within a network of multiple actors working together for service delivery (Topp et al., 2018).

The complex and interdependent nature of these relationships is referred to as the 'accountability ecosystem', and consists of multiple actors with a range of roles, responsibilities and interactions across levels of the system, and embedded in and influenced by social and political contexts (Halloran, 2016; Van Belle et al., 2018). This systemic approach to accountability is crucial given that, in most cases, the causes of accountability failures are systemic and consequently require strategies oriented toward the long term (Fox and Aceron, 2016).

Sustained and meaningful change also requires consideration of the role of power and the diversity of viewpoints, culture and context (Green, 2016). In systems characterised by social inequalities, fulfilling the promise of maternal, newborn and child health (MNCH) service coverage and access can only happen "*when accountability meets power"* (Sen et al., 2020).

Reciprocity is one of the many aspects, and a key to the effectiveness, of accountability relations. It builds on the understanding that the responsibility for health outcomes is not solely attributable to frontline health providers' accountability for performance, both is also the responsibility of other players, such as the District Management Team, who must equip providers with the necessary skills and resources to perform better. According to Cruthirds (1976), accountability mechanisms should be designed to reflect the interdependence and reciprocity of responsibility between firstline providers and management. For Borrero et al. (1979:877) reciprocal accountability refers to "*a system wherein all persons involved hold one another accountable for specific commitments and activities to achieve the goals and objectives which bring them together*". Reciprocity, implies therefore that, "*for every unit of performance I require of you, I owe you a unit of capacity to produce that result"* (Elmore, 2006: 20).

This summary demonstrates that the functioning of accountability is not a linear or one-way process only, it can also be a two-way, sometimes circular (Sullivan, 2015), or reciprocal relationship (Cruthirds, 1976; Borrero et al., 1979; Elmore, 2000; Elmore, 2006; Sullivan, 2015), or take on multiple relationships in a complex system. Accountability relations exist in a societal context of inequalities, shaped by an imbalance of power structures, the difficulty of holding powerful players to account, and unfairness in the provision or redistribution of resources and access to opportunities. Systems of accountability thus should take into consideration structural injustices, where wrongdoers tend to escape accountability and victimise the powerless (Moncrieffe, 2011; Lu, 2018).

Organisational accountability outcomes

The underlying organisational rationales and outcomes of the accountability relations described above have been framed using a typology proposed by Hupe and Hill (2007), which consists of the following: (i) Accountability as '*enforcement',* which implies compliance to a set of rules or conformity to standard operating procedures (e.g. clinical guidelines, norms and standards for MNCH care). Poor or non-compliance with norms may result in financial risks and liability for the individual health professional and the health system as a whole (expressed in sub-standard health care, poor health outcomes, complaints or litigation). (ii) Accountability as '*performance'* refers to compliance to targets set up at different levels in the health system (e.g. targets for maternal or child mortality rate reduction and immunisation coverage targets). Poor or non-performance can result in poor quality, weak organisational culture, negative feedback, and budgetary reductions (Denis, 2014). (iii) Accountability as *'co-production'* refers to mutual (reciprocal) and collective accountability between health providers and managers. It implies teamwork, collective learning and collective self-management. Accountability can be horizontal, expressed in professional culture (Tuurnas et al., 2015), or it can also refer to the partnership between service beneficiaries (citizens) and services providers in the design and delivery of services (Bovaird, 2007; Voorberg et al., 2014). However, engaging communities as partners in mutual accountability for co-producing health services can be controversial and lead to obscure accountability lines (Batalden et al., 2016; Cinquini et al., 2017).

The nature of accountability at the district level

Local health systems, typically in the form of the district health system have joint responsibility for the performance of the health system, with frontline health managers and providers playing an important role in implementing and gearing up the implementation of policies at district and facility levels. These actors are situated at the interface where multiple accountability mechanisms and relationships interact, both vertically and horizontally (Van Belle and Mayhew, 2014; Nxumalo et al., 2018a).

When considering the health system at the district level as the entry point for exploring an accountability ecosystem, the following four mechanisms can be approached using the following integrated dimensions, proposed by Van Belle and Mayhew (2016): (i) Provider dimension: Accountability focuses on frontline health providers' relationships with potential service users and communities. Accountability mechanisms are tools for improving the quality of care. (ii) Organisational or system dimension: Accountability is about the responsiveness of a health facility as a unit, or the responsiveness of the district health management team to various stakeholders (for instance local government). It involves vertical and horizontal relationships within the health care organisation and externally, being accountable to the community and stakeholders. (iii) Political dimension: Accountability entails measures to protect the public interest, uphold their trust in the State's institutions and facilitate their participation in decision-making, or their expression of dissatisfaction regarding service delivery and their advocating for the investigation of misconduct. (iv) Social dimension: Accountability is about relationships that strengthen equity and social justice. Accountability encompasses the rights-based perspective embedded in the South African Constitution, most importantly, the human right to the highest attainable standard of health.

Accountability and maternal, newborn and child health (MNCH)

In this era of SDGs and UHC, particular emphasis is placed on accountability as essential for improving the quality of sexual and reproductive health (SRH) services and reducing maternal and child mortality and morbidity (United Nations Secretary-General, 2010; Kismodi et al., 2012). While additional global level accountability mechanisms are being designed, very little attention is being paid to addressing or removing the barriers of implementation, i.e. structurally transforming SRH (social) norms and rights, and power dynamics, at the local level (Schaaf et al., 2020). This process requires a comprehensive agenda for sexual and reproductive health rights (SRHR) that combines, not only rights-based accountability within local/district health systems (Boydell et al., 2019), but also performance-based accountability mechanisms embedding measurement and reporting tools that facilitate an understanding of the factors that drive MNCH service coverage and equity, approached through a service delivery, societal and systemic perspective (George et al., 2019). Otherwise, it will be impossible to achieve UHC without meeting the needs and rights of communities regarding SRHR (Ravindran and Govender, 2020).

Strong governance, coupled with good leadership can, therefore, drive effective and successful MNCH services on condition that priority for MNCH is backed up in comprehensive policies and strategies that include the provision of resources (human, material and financial), multi-stakeholder involvement and collaboration in planning, implementation and co-ordination of services, as well as strong accountability strategies (Haley et al., 2019).

Accountability can take different formats; from accurately reporting and registering pregnancies, birth and health outcomes (Labrique et al., 2012), mortality reporting,

review and response (WHO, 2013), to oversight mechanisms that are linked to the following three main functions: understanding health system performance; deciding on a time to intervene in the health system; and setting up strategies and implementing changes (Peters, 2002). This requires a strong political commitment (Seims and Khadduri, 2012; Melberg et al., 2019). Note however, that broader social transformation mostly happens – highly likely – from outside the system through protest, litigation, or activism (Gloppen, 2008).

Strengthening accountability becomes the core business in health system strengthening initiatives for improving SRHR (Freedman and Schaaf, 2013; Hilber et al., 2016). Empirical studies on accountability for SRHR are mostly shaped by a global and national governance lens and address accountability primarily as answerability (Brinkerhoff, 2004). However, beyond answerability, accountability should enforce both positive and negative sanctions and empower providers to nurture continuous improvement of outcomes for MNCH, with government support (Hilber et al., 2016). In this regard, UNICEF advocates for district health systems strengthening (DHSS) approaches that are based on the WHO's building blocks for health systems strengthening , emphasising the availability and use of quality data, recognising the role of governance and accountability, and stressing the importance of 'effective coverage' of interventions to achieve UHC and the rights of women, girls and children (O'Connell and Sharkey, 2013; UNICEF, 2016).

Given the complexity of health systems and the need for health systems to be responsive to SRH, accountability for MNCH services and outcomes requires the involvement of multiple actors from multiple sectors (public and private) including government, health, international non-governmental organisations (INGOs), civil society platforms, media and the community at large (Hilber et al., 2016). People are

key actors in the overall process, and their voice should be enhanced and represented through different platforms, such as health committees, hospital boards or district assemblies (Van Belle and Mayhew, 2014; Boydell et al., 2019).

The four papers included in this thesis provide a summary of empirical literature, showing the benefits and impact of accountability on MNCH services and outcomes, through improved perception and understanding of accountability by managers and providers, in addition to the enforcement of accountability mechanisms (Hilber et al., 2016).

Following the three-step accountability framework from the Independent Accountability Panel (IAP) that consists of 'monitor-review-act' (WHO, 2017), recent evidence by Hilber et al. (2020) suggests that for a successful accountability mechanism for MNCH, some stages shouldprecede the 'monitor' stage, while other events can occur after the 'action' phase. Combining this 'monitor-review-act' with the stages of change for implementation and sustainability of accountability mechanism (pre-implementation, implementation and institutionalisation) (Belizan et al., 2011), Hilber et al. (2020) suggested a framework (Figure 2.2) that moves accountability mechanisms beyond the stage of integration into practice ('institutionalisation') to result in a systemic change ('transformation') that will see not only improved health outcomes but also improvement of the whole health system and the services provided. For accountability mechanisms to be effective and successfully implemented, measurable 'markers' should take place at each stage. These markers include (among others): political will and multi-stakeholder engagement from various sectors; availability and accessibility to quality monitoring data; supportive champions who drive performance; a continuous cycle of monitoring, review and response (proactive

and reactive remedial actions to the identified modifiable factors); as well as national and local ownership of the processes (Hilber et al. (2020).

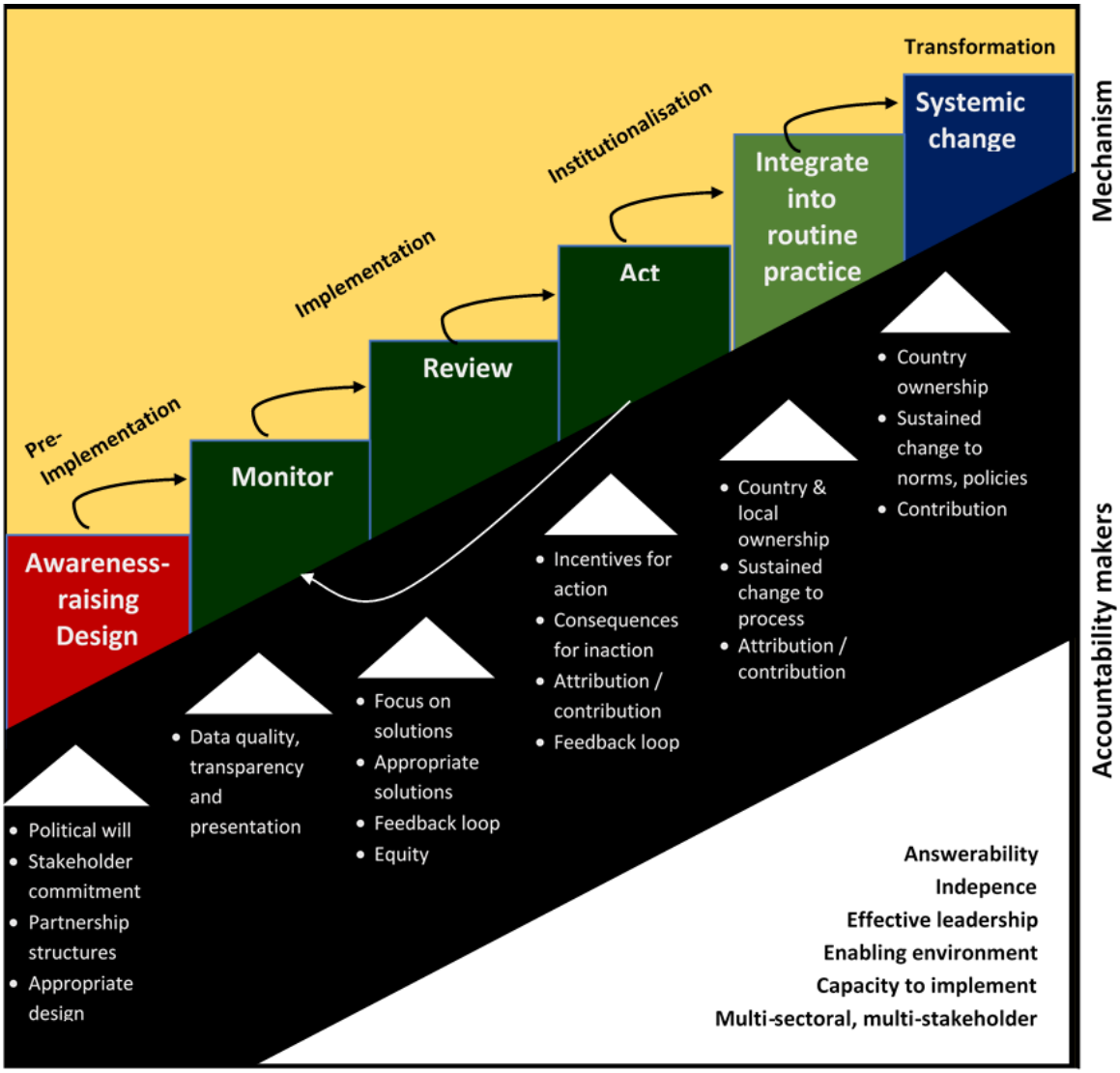

Figure 2.2 Accountability framework adapted from Hilber et al. (2020)

Accountability in the South African health system

Accountability in the South African context can be traced back to 1994 (instauration of democratic institutions in South Africa) and its origin in the South African Constitution of 1996 that offers mechanisms for promoting public accountability (Constitutional Assembly, 1996).

Public services are mostly rendered at the local level, but accountability for expenditures on public service provision include national, provincial and local administrations (Munzhedzi, 2016). The national parliament and its provincial branches (National Council of Provinces – NCOP) have established the Public Accounts Committees (PACs) referred to as the Standing Committee on Public Accounts (SCOPA) at national and provincial levels, and the Municipal Public Accounts Committees (MPAC) at the local (municipal) level. These committees are mandated to exercise oversight and hold the administration executive accountable for action and decisions taken concerning public service delivery, including health (Makhado, 2016; Munzhedzi, 2016).

The recent context of accountability in the South African health system relates to a rise in medical litigation associated with maternal, neonatal and child health care services attributed to a deficiency of accountability in settings which do not provide safe, respectful and effective health care services (South African Lancet National Commission, 2019).

Overall, accountability mechanisms in the South African health system and in maternal and child health are mostly shaped internally, by the following three ministerial committees, established from around 1998 to address the higher maternal and child mortality and morbidity rates: the National Committee for Confidential Enquiry into Maternal Deaths (NCCEMD) (National Department of Health, 1999); the National Perinatal and Neonatal Morbidity and Mortality Committee (NaPeMMCo); (National Department of Health, 2010); and the Committee on Morbidity and Mortality in Children under-5 years (CoMMiC) (National Department of Health, 2011a). These are national committees with mandates expended at local (district) level through three accountability processes, namely, the Confidential Enquiry into

Maternal Death (CEMD), the Perinatal Problem Identification Programme (PPIP), and the Child under-5 HealthCare Problem Identification Programme (CHIP). Externally (from outside the health system), accountability is expressed through the voice of civil society activism and protests that has been instrumental in campaigning for the right to health care. For instance, in the late 1990s, the Treatment Action Campaign (TAC) was set up to mobilise citizens to campaign for access to HIV/AIDS treatment, using various strategies including, education on human rights, HIV treatment literacy, protest and litigation (Heywood, 2009). It is important to mention the role of trade unions who are extremely influential in South Africa, advocating for accountability, transparency, and fairness in the allocation of resources to improve the performance of health professionals and the quality of health care provided to communities.

Maternal and child mortality were positively influenced by the launch of the District Clinical Specialist Teams (DCST), with a role in clinical governance, mentorship and oversight within the district health system. Furthermore, in 2013, the Department of Health in partnership with UNICEF, initiated the '3-Feet Approach' for strengthening the South African district health system, with the Monitoring and Response Unit (MRU) as the core structure for response to mortality. Its essence resides in the mobilisation of existing health care delivery and management processes, re-enforcing accountability mechanisms and the use of data for action towards MNCH results (UNICEF South Africa, 2013; Cupido, 2017).

Despite the growing number of accountability policies, strategies and/or mechanisms to tackle the high rates of maternal and child deaths, little is known about how these accountability mechanisms are received by frontline health professionals and

managers, and how these mechanisms are integrated into the routine functioning of local (district) health systems.

To address this gap, a conceptual framework was developed from the study protocol (see Figure 3.3) to allow an understanding of the accountability ecosystem at the district level. This framework incorporates the two interrelating dimensions of accountability, namely answerability and responsive actions (proactive or reactive), addressed at an individual and collective level. In this framework, formal accountability mechanisms (performance, financial and public accountability) are embedded in a system of informal accountability relationships that facilitate daily routines of frontline professionals.

CHAPTER 3: METHODS

Introduction

This chapter begins by stating upfront the positionality of the candidate, followed by the overall study framework developed for the study protocol as a result of an initial mapping exercise of accountability processes for MNCH. This chapter also presents the study design and data collection approaches, starting with a justification of the choice of the case study methodology and a mapping of data collection phases. The methods used in each of the four papers included in Chapter 4 are further described to show the iterative process in refining and applying the study framework. This chapter ends with the ethics statement and a section on the consideration of validity and reliability.

Positionality, reflexivity and rigour

I am originally a clinician, trained in the Democratic Republic of Congo (DRC), from where I relocated to Cape Town in South Africa in late 2008. Ten years ago I completed a masters degree in Clinical Epidemiology at Stellenbosch University, which was mostly oriented towards quantitative research approaches. My research work since then has involved mostly quantitative methodologies and thinking. In 2015, I was involved in a qualitative document review that provided me with a little taste of qualitative reasoning. My introduction to health systems research and approaches to quality improvement allowed me to start questioning the limitations of quantitative evidence and methods in answering questions related to the complexity of health systems.

In 2016, I joined the team at the School of Public Health (SOPH), at the University of the Western Cape (UWC) as a researcher to evaluate a quality improvement

intervention ('3-Feet') in four districts (including Gert Sibande District, selected later for my PhD), and my first role was to extract and analyse quantitative data from different databases. This was followed by qualitative fieldwork interviews and observations. I quickly realised that in qualitative case study research, respondents play a large part in guiding the research process, which also involves extensive data collection based on multiple sources. This requires a step-wise and iterative approach to data analysis to ensure rigour (Creswell and Poth, 2018), contrary to quantitative methods where the research is designed beforehand and carried out by the researcher, who follows pre-defined data collection and analysis procedures to ensure rigour.

Following my involvement in the '3-Feet' evaluation, I then became interested in exploring and understanding how frontline health professionals ascribe meaning to accountability as a social and complex phenomenon, which requires triangulation of different sources of information, to understand their daily practice.

My worldview is as follows. Firstly, I am not a pure positivist, I recognise that assumptions of our knowledge regarding the "*behaviour and actions of human beings cannot be studied with numbers alone"* (Creswell, 2014:3-23). A positivist assumes that reality exists 'out there', that *"phenomena and the social world exist naturally and independently of how people understand or see them"* (Gilson, 2012); there is, therefore, no need for interpretation. Positivists believe that there is a singular truth about social phenomena that is independent of the observer, and therefore, the researcher stance can be regarded as an objective one (Green and Thorogood, 2018:41).

The positivism paradigm does not devote attention to meaning-making of people, or to the interpretation of social constructs, such as accountability. In these respects it is

somewhat reductionist, tending to reduce complex ideas to causes and effects, and to exposures and outcomes, which can be challenging when investigating complex or social phenomena, such as accountability and governance in health systems.

Secondly, I have adopted a social constructivist (or constructionist) worldview combined with interpretivism in trying to understand the subjective meaning systems constructed of individuals' experiences of phenomena in their lives and work (phenomenology) (Creswell and Poth, 2018). The social constructivist assumes that reality is socially constructed through language and culture, while in phenomenology one explores and attempts to understand how people directly experience the 'lifeworld' (Green and Thorogood, 2018).

It was, therefore, important to explore the meanings of accountability underlying joint action in health systems as constructed by the respondents, based on in-depth interviews. This requires a certain level of negotiation and interaction between the researcher and the interviewees, bearing in mind the respondents' meaning systems. I therefore tried to be very reflexive and self-critical throughout the process of inductively developing the patterns of the meanings of accountability phenomenon. I recognised that my background could have influenced or shaped my interpretation of the phenomenon.

Health systems have the properties of a complex adaptive system (Paina and Peters, 2012), where multiple actors come together and are connected through distinct governance and accountability relationships. There are various possible meanings attributed to accountability phenomena that allowed the candidate to explore the complexity of the views instead of reducing the meanings to a few ideas (Creswell, 2014).

As a young man in high school in the DRC, I visited a relative in hospital with my mother, where I saw a body of a pregnant woman carried on a stretcher to the mortuary. Out of curiosity, I asked why she had died with her unborn child, and was told that her family could not afford to pay for the caesarean section and that intervention had been delayed. This event has remained, and will always remain, in my thoughts. It denotes the kind of health system I experienced in my country, the kind that can be seen in any other country, particularly in LMICs, where accountability does not matter and impunity is part of organisational and institutional culture.

Throughout this PhD, I realised the importance of qualitative reasoning incorporating meaning systems of the world around me, as equally valid, but different to numbers. By getting into the perspective of multiple players in the MNCH arena to gain an understanding of the accountability phenomenon, I understood that my positionality, which is partially linked to my background, could have shaped my research, but also could have influenced my interpretation, my understanding and my beliefs in what I judged as 'true'.

I was interested in how meaning was produced within a relational context, for example throughout the interview process. The interviews and observations provided me with an opportunity for sense-making. I tried to be reflexive by focusing on the research topic with an open mind that excluded all pre-conceived ideas.

The research process (interviews and observations) provided me with an opportunity to learn, to be humble and to cultivate the spirit of questioning, while proactively building an understanding of the meaning systems of the phenomenon of accountability in the study district. I also tried to interrogate and contrast what was

said and what was not said during the interviews, and adapt interviews that followed accordingly.

The nature of my research topic, focusing on accountability, had different connotations in the study sites, and my research respondents initially perceived it in different ways. For many, I was someone from 'outside', a foreigner coming to audit and hold them accountable, and some distanced themselves from me. Most foreign doctors (including Congolese) are posted to rural areas in South Africa, including in the study district. Although my familiarity with some of these doctors posed a barrier for a few (doctors), most were happy to see a fellow foreigner researching in this multicultural setting.

Despite having all approvals and permission to conduct the study, it is not surprising that I faced some resistance to accessing and conducting interviews or observations in some facilities. I had to learn the skills of negotiating entry in those settings. My introduction into the district was facilitated by my previous involvement with the evaluation of the '3-Feet' intervention, and through Dr Joey Cupido, from the National Department of Health and a facilitator of the '3-Feet' intervention, who introduced me to the potential study participants throughout the district.

Throughout my preparation to conduct this research – from the formulation of my research question, the drafting of the protocol, the presentation of the research process in the field, the conducting of interviews and observations, and through the analysis of data generated – I was thus aware of my positionality as an outsider, as a foreigner conducting research on accountability in a multicultural setting. For three initial field visits that lasted between one and three weeks, I spent time attending meetings, engaging with people, presenting the study protocol, explaining the content of the

research and distributing pamphlets containing the summary of the study. Two weeks later, when I was conducting interviews, those who were initially reluctant to talk to me and be interviewed, started sending me text messages about their willingness to talk about their experiences regarding accountability, a very 'sensitive' topic.

I had to pay special attention to the selection of words during my interviews and especially during my report writing, ensuring an ethical stance on sensitive issues and ensuring respondents were protected throughout the process.

Being aware that my positionality represents a *"space where objectivism and subjectivism meet"* (Bourke, 2014:3), I tried to promote objectivity while not completely refuting my subjectivity, by being critical of my approaches, and maintaining reflexivity and rigour throughout the research process.

During the fieldwork and data analysis, I regularly provided feedback and discussion of the findings with the district and sub-district actors in various follow-up meetings, to check the accuracy of my observations and findings. Ongoing feedback and communication with my supervisors provided me with their critical perspectives, through their continuous questioning of the understanding of the data and review of the study findings. Furthermore, the presentation of the study findings in conferences and other meetings, the discussion with colleagues who provided their critical views on the findings, and the peer review process for the publication of papers, constituted another layer of promoting and maintaining rigour.

Framework for assessing the forms and functioning of accountability

This thesis was based on a framework designed initially for mapping the forms and functioning of accountability mechanisms for MNCH at the district level (Figure 3.1), drawing on the literature outlined in Chapter 2. The assumption underlying the framework was that governance and accountability are considered as important 'software' (Sheikh et al., 2011) of a health system, which itself is understood as a complex adaptive system (CAS) in which the development and implementation of interventions should engage multiple actors, through continuous problem-solving and system adaptation that allows for the scaling-up of quality health services (WHO, 2010; Ellis and Herbert, 2011; Paina and Peters, 2012).

Health system actors co-operate through different forms of accountability mechanisms that vary in their functioning within a district health system. Accountability mechanisms can take various forms – vertical, horizontal or mixed (Hupe and Hill, 2007); internal or external (Fullan et al., 2015). Vertical accountability functions to promote answerability within the bureaucratic hierarchies of the health system (Cleary et al., 2013). It can also imply social accountability when the citizens become aware of their right for better services and engage and use their voice through information, dialogue and negotiations, sometimes mediated by community health workers (CHWs), health committees or other community-based organisations (Papp et al., 2013; Mafuta et al., 2015). Horizontal accountability relates, for instance, to the District Management Team reporting to a district assembly (Van Belle and Mayhew, 2014) or the interactions between peers (Hupe and Hill, 2007).

The study was also informed by the Hupe and Hill (2007) typology of the functioning of the accountability mechanisms, which identifies three different ways in which

accountability manifests organisationally, namely as *enforcement, performance* and *co-production,* (referred to as 'accountability outcomes' in the framework). This typology, which also refers to different types of governance, provides a clear description and understanding of the ultimate pathways through which the different forms and mechanisms of accountability possibly influence health outcomes.

Finally, the framework considers that accountability mechanisms, their functioning and the related outcomes, are context-dependent.

The elements of the framework were explored in different phases of the research and refined iteratively through the research process. In Paper 1, the framework was adapted to map accountability mechanisms and to show the 'ecosystem' aspect of these accountability mechanisms (Figure 3.3), classified as 'performance', 'financial' or 'public' accountability – categories that are linked to different types of governance (Brinkerhoff, 2003; Brinkerhoff, 2004). These mechanisms are considered by Hilber et al. (2016) as relevant for MNCH (Box 3.1), who also suggests that the understanding of accountability by providers and managers, as outlined in Paper 2, is key to the functioning of the whole process (Hilber et al., 2016). In Paper 3, the focus was specifically on the functioning of accountability mechanisms involved in death surveillance and response (DSR) for MNCH, drawing on the 'Three Delays Framework' to address modifiable factors linked to deaths (Thaddeus and Maine, 1994), the surveillance process (what, how, who) as outlined in the WHO's Continuous Action Framework to eliminate preventable deaths (WHO, 2013), and the types of responses (proactive or reactive) generated. Finally, in Paper 4, the functioning of accountability was explored through the lens of the Social Network Analysis (SNA), examining the actors, and their roles and relationships in district MNCH structures.

Box 3.1 Three categories of accountability mechanisms relevant for MNCH between policymakers, health providers and community (Hilber et al., 2016)

- *Performance accountability mechanisms* involve, for example, maternal and perinatal death reviews; professional norms, standards and bodies.
- *Political/democratic mechanisms* relate to citizen involvement in social accountability mechanisms (tracking of government commitments in MNCH and in health facility committees; use of social audits and complaint processes, petitions, campaigns and protests; and assessment of the quality of services by involving the community); and human rights mechanisms.
- *Financial accountability mechanisms* involve budget tracking and financial reporting.

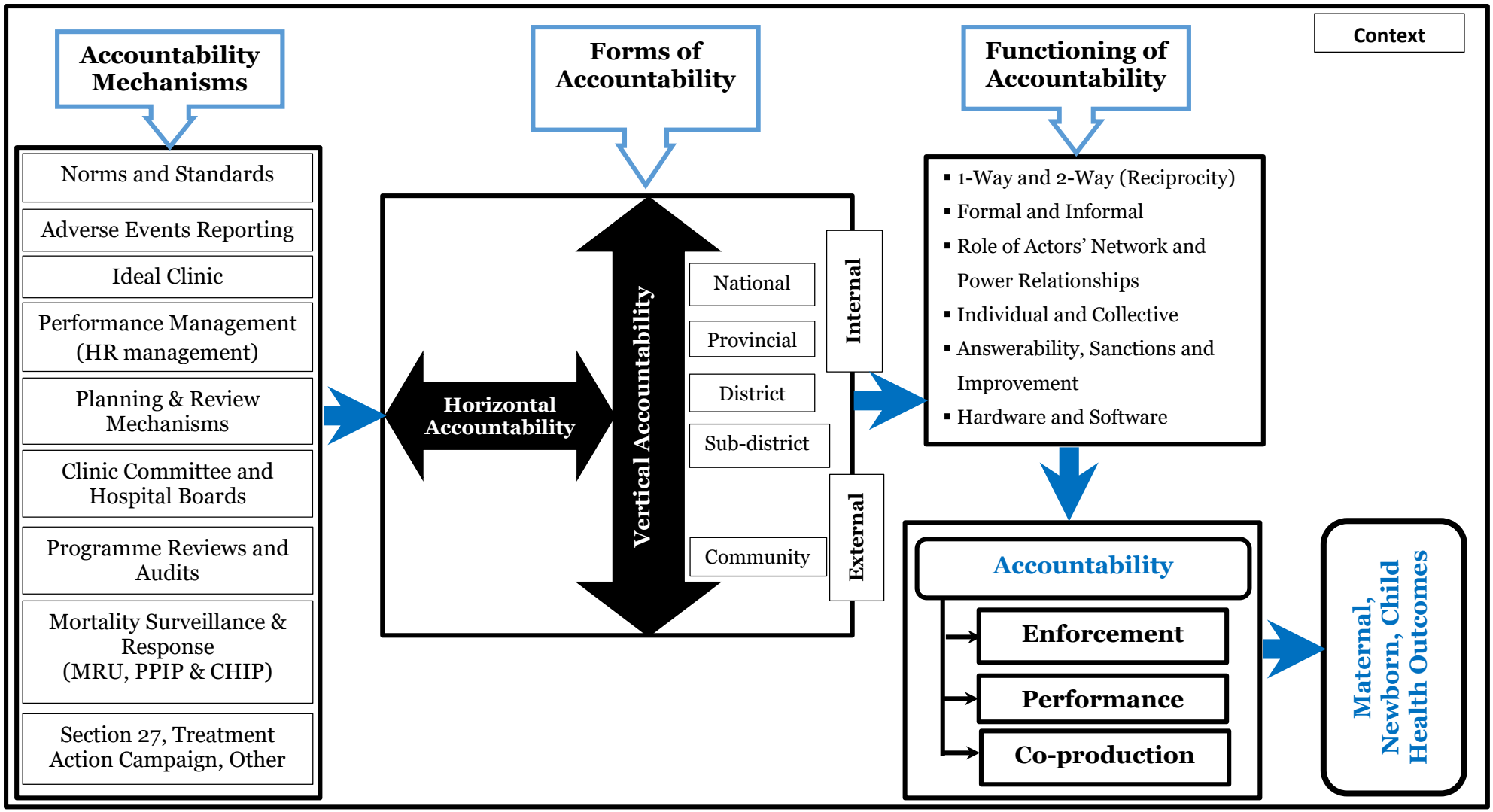

Figure 3.1 Framework for assessing the forms and functioning of accountability mechanisms for MNCH in a South African district health system

Study design and data collection: Case study methodology

This PhD study followed a case study methodology as the main approach to studying accountability. A case study consists of an *"empirical mode of inquiry that investigates a contemporary phenomenon (the 'case') in-depth and within its real-life context"* (Yin, 2018:15).

Case study methodology is particularly useful when there is no clear demarcation between the phenomenon being studied and the context; it requires, therefore, substantial access to data regarding the case through interviews, document review or field observations (Yin, 2018:15).

Case study methodology is commonly used in the field of Health Policy and Systems Research (Gilson and Raphaely, 2008; Gilson, 2012), and is one of the most popular research methods and the most applied research design in social sciences (Burton, 2000).

Cases are considered as the phenomenon around which data collection, processing and analysis revolve (Burton, 2000). A case study typically requires substantial triangulation of data regarding the case from multiple sources, which can be achieved through interviews, document review or direct field observations (Yin, 2018:122-79).

In this study, the 'case' was defined as accountability mechanisms for maternal, newborn and child health (MNCH) in Gert Sibande District. The study focused on exploring the 'what', 'how' and 'why' of accountability processes in a local context. The selection of accountability mechanisms in Gert Sibande District as the 'case' was informed by the candidate's knowledge and interest, developed from prior field

research involving this District (Schneider et al., 2017). This prior research highlighted the complexity and the number of accountability processes at play in the District. The complexity of accountability as a phenomenon was evident, as well as the necessity of gathering evidence from multiple sources (triangulation) using multiple designs (Yin, 2018).

The District has a population of about 1.1 million, with the vast majority (61%) living in rural areas (Massyn et al., 2017). Two sub-districts were purposefully selected for the study as embedded cases representing different levels of implementation of system strengthening interventions, as observed in the '3-Feet' evaluation which preceded the PhD research (Schneider et al., 2020). The District had been targeted for support because it was previously ranked among the districts with high maternal and child mortality (Bac et al., 2019).

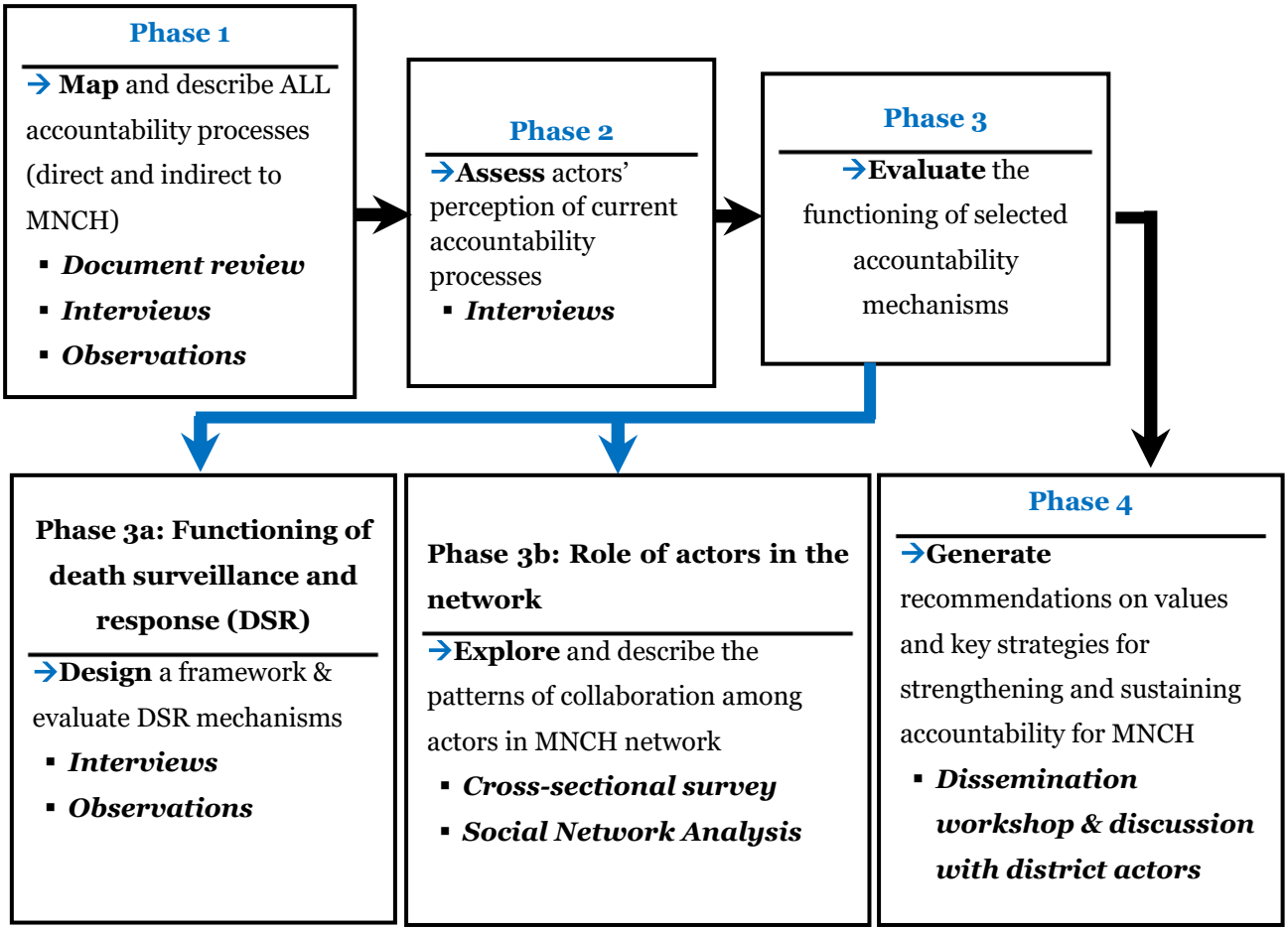

Figure 3.2 Data generation process

Data were generated following the phases outlined in Figure 3.2 above, which shows how the case study strived to establish the chain of evidence around the forms and functioning of accountability mechanisms.

These phases were achieved, except phase 4, which was planned as a dissemination workshop intended to give overall feedback in the District and discuss key recommendations and strategies for strengthening accountability for MNCH. Unfortunately, this workshop was cancelled due to the emergence of COVID-19.

The total number of respondents who participated in the interviews and in the cross-sectional survey, as well as the number of observations are summarised in Table 3.1.

The respondents were purposefully sampled among frontline managers and providers involved directly in MNCH, and among those indirectly associated with accountability for MNCH, using a snowballing approach. They were from facilities (hospitals and PHC) of the two selected sub-districts and the district office. Further details are presented in the included papers.

Table 3.1 Number of respondents and processes observed

Data collection	***District Office***	***Sub-district 1***	***Sub-district 2***	***Total***
Interviews[*]	14	20	19	53
Observations[**]	6	16	11	33
SNA Survey[*]	6	23	13	42

[*]*Number of respondents;* [**]*Number of mechanisms (meetings) observed (See also Appendix 9)*

The following section provides a summary of approaches included in the case study methodology as outlined in the four papers included in Chapter 4.

Study 1. The crowded space of local accountability for maternal, newborn and child health (MNCH): A case study of the South African health system

Aim: This study aimed to map formal accountability mechanisms directly or indirectly addressing MNCH and to describe local accountability practices for MNCH in one health district (Mpumalanga Province) of South Africa. Furthermore, the study described the accountability ecosystem of the study district, examining both the practices of formal accountability and the informal accountability relationships observed in one sub-district. The implications of a 'crowded' local accountability

ecosystem for strengthening local practices of accountability for MNCH were also explored.

Analytical framework: In this framework, formal accountability mechanisms are characterised as performance, financial or public accountability (Brinkerhoff, 2003; Brinkerhoff, 2004). They are embedded in, and interact with, a complex system of informal accountability relationships that enable or constrain the ability of frontline managers and health care providers to accomplish their daily duties. Answerability and responsive actions at an individual or collective level are two dimensions of accountability approached in this framework (Schedler, 1999). The final action can be either proactive (actions and planning for preventing the occurrence of an event), or reactive (actions in response to a situation that has already occurred) through remedial or redress strategies.

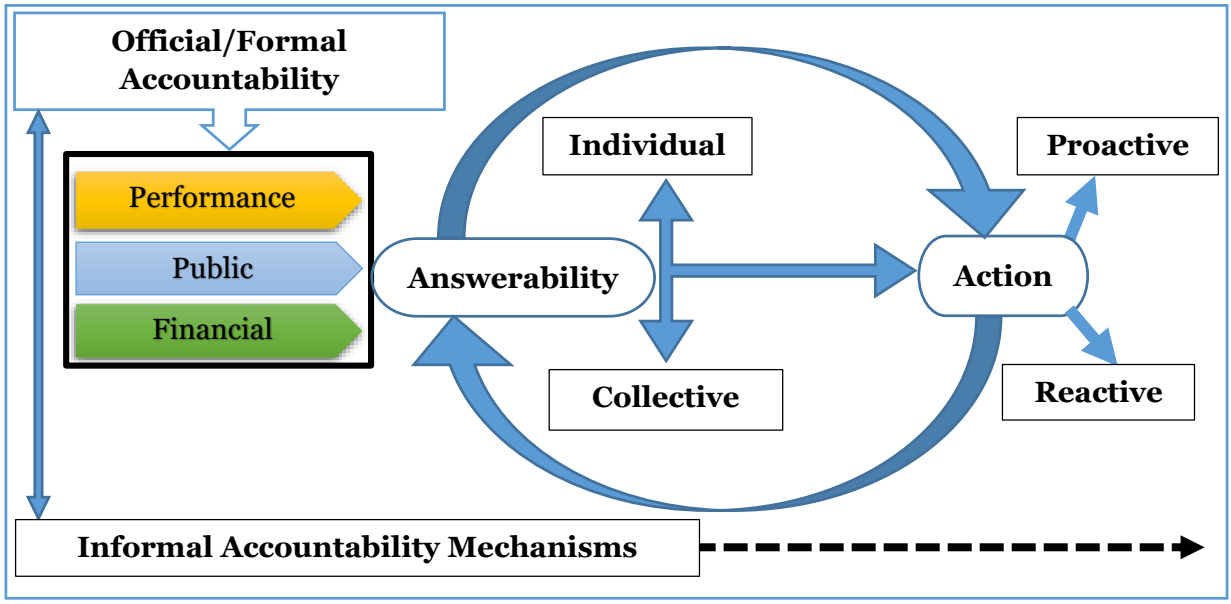

Figure 3.3 Accountability Framework for MNCH at district level

Study design: This was an exploratory case study, with the case defined as the accountability ecosystem for MNCH at the district level, which includes a range of direct and indirect formal accountability mechanisms.

Generating data and analysis: Three approaches were used to guide the data collection for this study: (i) document review of policy documents, reports, programme descriptions, and published literature on accountability mechanisms related to MNCH at the district level in South Africa; (ii) non-participant observations that allowed a deep understanding of the accountability ecosystem, particularly the informal dimension of accountability; and (iii) in-depth interviews with health managers and frontline health providers involved in MNCH activities, some of whom were actively involved in local trade union structures.

A thematic analysis was used to analyse the data. Data were coded in Atlas.ti version 8, following both deductive and inductive approaches. From the analysis of the document review, a policy timeline of formal accountability mechanisms was developed.

Study 2. Perceptions and experiences of frontline health managers and providers on accountability in a South African health district

Aim: This study aimed to explore and describe the perceptions and experiences of frontline health managers and providers involved in MNCH services regarding accountability; and how they contribute to expanding access to health care and promoting equity in a South African health district.

Study design: This was a qualitative study, exploring how frontline health managers and providers perceive and experience accountability using maternal, newborn and child health (MNCH) as a tracer. The overall methodology followed a phenomenological approach, seeking to examine and represent the meaning systems and lived experiences as expressed by the study respondents (Van Manen, 1990).

It involved in-depth interviews with a purposive sample of 58 frontline public sector health managers and providers in the district office and two sub-districts, examining the meanings of accountability and related lived experiences. A thematic analysis approach, grounded in descriptive phenomenology, was used to identify the main themes and organise the findings.

Generating data and analysis: Data were generated using semi-structured in-depth, individual interviews and one focus group discussion with Primary Health Care managers. The respondents were asked the following four open-ended, exploratory questions: What does accountability mean for you and how do you experience it in your daily practice? To whom are you accountable and for what? What are the barriers, facilitators and challenges to current accountability for MNCH in practice? What can be done to improve accountability?

An inductive coding of transcripts was done in Atlas.ti version 8, and a thematic approach was followed for the analysis of the data.

Study 3. Practice of death surveillance and response for maternal, newborn and child health: a framework and application to a South African health district

Aim: This study aimed to develop a framework and to assess the functioning of maternal, perinatal, neonatal and child death surveillance and response (DSR) mechanisms at a district level in South Africa, and to explore the context that makes these mechanisms effective, from the perspective of frontline managers and providers.

Conceptual framework: A tabular conceptual framework was developed that combined the WHO Continuous Action Framework to eliminate preventable deaths (WHO, 2013), the 'Three Delays' framework (Thaddeus and Maine, 1994) and other elements identified in the literature, were used to assess the DSR processes (World Health Organization (WHO), 2013; De Kok et al., 2017; Smith et al., 2017a; Smith et al., 2017b).

Study design: This was a descriptive, exploratory qualitative case study of the forms and functioning of maternal, neonatal and child DSR processes, applying the framework developed.

Generating data and analysis: Data were generated using a combination of semi-structured interviews, non-participant observation of meetings and a desk review of key documents.

A total of 45 semi-structured, in-depth, individual interviews were conducted with purposefully selected respondents involved with maternal, neonatal and child DSR from two of the seven sub-districts and the district office.

From May 2018 to September 2019, for a total 59 days distributed over one to three weeks in each of the two sub-districts, I conducted non-participant field observations and interviews by engaging in numerous activities and meetings related to maternal, neonatal and child DSR. A structured observation sheet was designed for this purpose (Appendix 6). The following DSR meetings were observed: Perinatal/Child Problem Identification Programme (PPIP/CHIP), Monitoring and Response Unit (MRU), and meetings on morbidity and mortality, clinical audit, clinical governance and the patient safety committee. The agendas and minutes of these meetings were also reviewed for additional information.

Study 4. Local dynamics of collaboration for maternal, newborn and child health: A Social Network Analysis of health care providers and their managers in Gert Sibande District, South Africa

Aim: This study aimed to explore and describe the dynamics of collaboration among frontline health professionals participating in two MNCH co-ordination structures in a rural South African district. It explored the role and position of actors, the nature of their relationships, and the overall structure of the collaborative network in two sub-districts.

Study design: This was a cross-sectional survey using a Social Network Analysis (SNA) methodology of 42 district and sub district actors involved in MNCH coordination structures (MRU, PPIP and CHIP). Different domains of collaboration (e.g. communication, professional support, innovation) were surveyed at key interfaces (district-sub-district, across service delivery levels, and within teams).

Generating data and analysis: Data were generated using a pre-tested questionnaire (See Paper 4 – Supplementary file 1). Based on our interaction with frontline health professionals, a number of domains representing and revealing collaboration in a network were identified and adapted from Cross and Parker (2004) (Table 3.2). The second part of the questionnaire explored the background characteristics of the respondents (such as sex, age group, their current position and duration in that position), as well as their perception of the importance of the MRU and PPIP/CHIP in strengthening accountability for MNCH.

Table 3.2 Typology of meaningful collaborative relations

	Pre-requisite	**Type of collaborative relations**				
Domains	Knowledge of other actors	Degree of communication	Professional support mechanisms			Innovation
			Informational	***Instrumental***	***Emotional***	Sharing new ideas
			Feedback/Advice	Problem-solving	On personal matter	
Questions	*I know this person*	*How often do you communicate with each person regarding MNCH issues*?	*I receive feedback from this person/I feel personally comfortable asking this person for advice on work-related matters*	*Who do you turn to for help in solving a problem in your work?*	*Who do you turn to for support on personal matters?*	*Who are you likely to turn to for discussing a new innovative idea?*

The analysis examined: (i) the structure of the network; (ii) the actors in the network; and (iii) the relationships between actors (Blanchet and James, 2012).

The key informants (n=42) were purposefully sampled among frontline managers and providers attending PPIP/CHIP and MRU meetings. The 42 respondents were from the district office (cluster 1, n=6), sub-district 1 (cluster 2, n=10 and cluster 3, n=13), and sub-district 2 (cluster 4, n=13). Key informants consisted of the following: district programme and other managers (n=4); members of the District Maternal and Child Health Clinical Specialist Team (DCST, n=2); hospital CEOs (n=3); nursing managers (n=3); operational managers from PHC facilities (n=2); hospital unit managers (2); professional nurses (n=12); medical officers (n=12); information managers (n=1); and allied health professionals (n=1).

Survey data were captured into and analysed (demographic and background) using Microsoft Excel® 2019. The Excel matrices of network data were imported into Gephi software version 0.9.2 for network visualisation (Grandjean, 2015) and analysis of network properties (degree centrality, betweenness and density) (Prell, 2012).

Ethics statement

This study was approved by the Biomedical Science Research Ethics Committee of the University of the Western Cape (Appendix 1), as well as by the Mpumalanga Provincial Department of Health Research Committee (Appendix 2), and the Gert Sibande District Office (Appendix 3). Additional permission was sought and received from the District Office and the facilities. The study was explained in various meetings within the District and an information sheet was distributed to all participants (Appendix 4). All interviews and the survey proceeded with signed informed consent (Appendix 5).

In all reports, presentations and published papers, the data were presented anonymously. Potential ethical issues that could be encountered throughout the research process, and the way these issues were dealt with, are detailed in the papers included in this thesis.

Case study validity

The issues of rigour and positionality have been addressed at the start of this chapter. In addition, the candidate followed a number of steps to enhance the validity of the findings.

To ensure analytical or theoretical generalisability common in case study methodology (Gilson, 2012), Burton proposes the following three techniques to construct validity of the study findings: triangulation, reflexivity and member checks (Burton, 2000). These techniques are further elaborated in Box 3.2, according to Yin (2018:47-52)

Box 3.2 Tactics to construct validity

Tactic	Research stage
▪ Use of multiple sources of evidence that demonstrate convergent lines of inquiry	▪ Data collection
▪ Establish a chain of evidence	▪ Data collection
▪ Have the draft case study report reviewed by key informants	▪ Data analysis and reporting

Building on these principles, data for this PhD were generated using four sources of evidence, as stated earlier, i.e. document review, in-depth semi-structured interviews,

non-participant observation and cross-sectional survey combined with SNA. These are further elaborated in the four papers included in this thesis. Some of the interviews involved accounts of difficult events (e.g. maternal deaths) and complex local dynamics. To address interviewees' possible recall bias, or to corroborate reported information through interviews, we verified or clarified by interviewing either another source, or the same informant again.

The choice of these sources of evidence was motivated by the idea of doing an in-depth study of the accountability phenomenon in its real-world context (Yin, 2018), characterised by multiple policy interventions implemented over time, variation in the perception of accountability processes, and variation in the role and interactions between actors at different levels and places. By combining all these aspects, the study was able to establish a chain of evidence throughout the data collection process.

In addition, the findings and draft reports were presented to informants individually or during meetings (member checks), and respondents were allowed to critique, review or confirm whether those findings reflected their views (member validation). All published papers were also widely distributed within and beyond the District.

Finally, continuous discussions were held between the candidate and the supervisors, reviewing adherence to the study protocol, engaging in the coding of transcripts, the interpretation of the findings and the report writing. This process allowed for error minimisation and the control of biases throughout the case study process (Yin, 2018).

Limitations and bias

Theoretical generalisability from accountability relationships in the study district is limited by the fact that the selection of respondents did not include patients. Limiting the account of lived accountability experiences to those of the providers and managers introduced possible selection or information biases.

Furthermore, respondents' accounts of accountability may not fully represent the reality of their practices. These accounts could have reported what they thought to be the right answer, i.e. reflecting a social desirability bias in their responses. This can also be referred to as a 'common method bias', where respondents' self-reports and accounts could have led to an overstatement of accountability phenomena (Jakobsen and Jensen, 2015). This limitation was minimised by prolonged immersion in the field and supplementing formal interviews with informal conversations and observations. The study also included as many respondents as possible and ensured consistency in probing of answers throughout the interviews.

The subjectivity of the candidate (researcher bias) and possible interpretive bias were dealt with through the candidate's reflexivity and regular questioning from supervisors, and by trying to be as explicit as possible throughout the research process. Possible descriptive and interpretive biases were minimised through regular feedback and discussion on the findings presented to the respondents in various follow-up meetings, to ensure the accuracy of their accounts and accountability processes observed.

CHAPTER 4: FINDINGS –

Published or submitted papers

Paper 1

Mukinda, F.K., Van Belle, S., George, A. and Schneider, H. 2020. The crowded space of local accountability for maternal, newborn and child health: A case study of the South African health system. Health Policy and Planning, 35(3), pp. 279–90. doi: doi: 10.1093/heapol/czz162.

Paper summary

This first paper included in this PhD was based on a document review, interviews and observation. The paper shows that centrally designed accountability tools (mostly for audit or performance) and the focus on individual performance accountability, can result in a culture of (bureaucratic) compliance that is decoupled from the true purpose of accountability. The current over-burdened accountability ecosystem needs to be streamlined to incorporate the local context and practices.

Contribution to the thesis

This paper contributes to the first objective of the thesis: To map and describe current accountability processes for MNCH at the local (district) level. This mapping exercise enabled the candidate to frame the questions for understanding how frontline health professionals experience the space of accountability (Objective 2), and to interrogate the functioning of this web of accountability mechanisms at district level (Objective 3).

Contribution of candidate

The candidate designed the study, conducted a literature search for document review, data extraction, interviews and field observations, and engaged in data analysis, with input from the supervisors. The candidate wrote the first draft of the paper, all co-authors (supervisors) provided critical input on the different drafts, as well as on the

comments from the journal peer review. The paper was presented by the candidate at the Health Systems Global Symposium held in Liverpool, United Kingdom, in 2018.

The comments from the peer review process are available in Appendix 11.

Health Policy and Planning, 35, 2020, 279–290
doi: 10.1093/heapol/czz162
Advance Access Publication Date: 22 December 2019
Original Article

The crowded space of local accountability for maternal, newborn and child health: a case study of the South African health system

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Abstract

Global and national accountability for maternal, newborn and child health (MNCH) is increasingly invoked as central to addressing preventable mortality and morbidity. Strategies of accountability for MNCH include policy and budget tracking, maternal and perinatal death surveillance, performance targets and various forms of social accountability. However, little is known about how the growing number of accountability strategies for MNCH is received by frontline actors, and how they are integrated into the overall functioning of local health systems. We conducted a case study of mechanisms of local accountability for MNCH in South Africa, involving a document review of national policies, programme reports, and other literature directly or indirectly related to MNCH, and in-depth research in one district. The latter included observations of accountability practices (e.g. through routine meetings) and in-depth interviews with 37 purposely selected health managers and frontline health workers involved in MNCH. Data collection and analysis were guided by a framework that defined accountability as answerability and action (both individual and collective), addressing performance, financial and public accountability, and involving both formal and informal processes. Nineteen individual accountability mechanisms were identified, 10 directly and 9 indirectly related to MNCH, most of which addressed performance accountability. Frontline managers and providers at local level are targeted by a web of multiple, formal accountability mechanisms, which are sometimes synergistic but often duplicative, together giving rise to local contexts of 'accountability overloads'. These result in a tendency towards bureaucratic compliance, demotivation, reduced efficiency and effectiveness, and limited space for innovation. The functioning of formal accountability mechanisms is shaped by local cultures and relationships, creating an accountability ecosystem involving multiple actors and roles. There is a need to streamline formal accountability mechanisms and consider the kinds of actions that build positive cultures of local accountability.

Keywords: Maternal, newborn and child health, accountability, district health system, informal accountability

Introduction

Since the advent of the Millennium Development Goals (MDGs), there has been major global interest in furthering maternal, newborn and child health (MNCH; United Nations General Assembly, 2015), which is set to continue in the era of the Sustainable Development Goals (SDGs; United Nations Secretary-General, 2010). Despite significant achievements, preventable maternal, neonatal and child mortality remains unacceptably high, particularly in low- and

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Key Messages

- Frontline health managers and providers are subject to multiple accountability processes designed nationally and practiced locally, in addition to locally emerging accountability mechanisms.
- There may be duplication, overlap, conflict or synergy among these multiple accountability mechanisms at local level, which often involve the same groups of actors.
- Formal accountability mechanisms operate within local cultures of informal relationships, networks and underlying norms, some of which may become formalized over time.
- The informal dimensions of the accountability ecosystem provide a significant backdrop to formal mechanisms and may be key to understanding local variation in maternal, newborn and child health outcomes.
- A more holistic systems perspective to accountability is needed, rather than the current siloed approach of multiple individual accountability mechanisms.

middle-income countries (United Nations Secretary-General, 2014; WHO, 2018). The vast majority of deaths can be attributed to health system failures often in the context of severe resource constraints and poverty. These failures include, amongst others, insufficient or inadequate distribution of healthcare facilities to ensure coverage, the dearth of skilled health providers and 'know-how', drug stock-outs, lack of essential life-saving equipment, and inadequate referral, emergency transport, and monitoring and supervision systems (Sundari, 1992; UN Millennium Project, 2005; Ross and Mukumbuta, 2009; Mabaso *et al.*, 2014).

In response to these system failures, the need for greater health system 'accountability' is increasingly invoked as critical to addressing the ongoing problem of maternal, neonatal and child mortality and morbidity, not only at global level (United Nations Secretary-General, 2015), but also at national and local levels (Freedman and Schaaf, 2013; Mafuta *et al.*, 2015; Lodenstein *et al.*, 2017; Nxumalo *et al.*, 2018a).

In a review of studies on accountability for MNCH in Sub-Saharan Africa, Hilber *et al.* (2016) proposed that 'accountability exists when an individual or body, and the performance of tasks or functions by that individual or body, are subject to another's oversight, direction or request that they provide information or justification for their actions'. According to Brinkerhoff (2003), drawing from Schedler (1999), accountability encompasses two inter-related key processes: answerability and enforceability. Answerability refers to the obligation to inform about and explain actions or decisions taken; while enforceability relates to the capacity to impose sanctions (or apply remedial action) in case of violation of key mandates (Schedler, 1999). Answerability and enforceability can operate at the individual or the collective levels (Schedler, 1999). One common way in which answerability is operationalized in health bureaucracies is by setting targets for performance (Roberts, 2009). These targets are often associated with performance audits, and the use of incentives and sanctions when targets are met or not, respectively. Accountability in healthcare thus implies a contractual relationship between providers and organizations that entails a certain level of answerability and enforceability that would result in a certain level of performance (Schedler, 1999).

Brinkerhoff further distinguishes between the following three types of accountability in healthcare organizations: financial, performance and political/democratic accountability (Box 1; Brinkerhoff, 2003, 2004). Formal accountability relationships can thus be either internal, within the health management and bureaucracies (for instance, between peers, managers at various levels and health service providers and district health managers); or external, between health providers and the health beneficiaries or a community (Cleary *et al.*, 2013; Nxumalo *et al.*, 2018a).

In practice, however, there are challenges in applying the ideal type approaches to accountability described above. In the first instance, they do not take into account the complexities underlying the daily practices and the inherently relational nature of accountability (Moncrieffe, 2011; Halloran, 2015, 2016; Van Belle, 2016; Nxumalo *et al.*, 2018a). These complexities are referred to as an 'accountability ecosystem', consisting of multiple actors with a range of roles, responsibilities and interactions across levels of the system, and embedded in micro-social and political contexts (Halloran, 2015; Van Belle *et al.*, 2018). Accountability ecosystems include formal and informal pathways and forces together grounded in a local accountability 'culture' (Halloran, 2015).

Secondly, performance targets may become ends in themselves rather than a means to improve performance (Roberts, 2009). Poor performance may, in fact, emerge from a performance culture excessively focusing on targets and not on the processes to get there, continuously defining new intervention targets, ignoring the importance of human capital and relationships (Koppell, 2005).

Thirdly, in practice, multiple and often conflicting demands for accountability are often imposed on frontline managers (Messner, 2009). These accountability overloads, coupled with increased expectations from health system bureaucracies, often result in reduced efficiency and responsiveness for patient care (Halachmi, 2014; Erickson *et al.*, 2017; Nxumalo *et al.*, 2018a). This phenomenon has been described by organizational theorist Koppell (2005) as 'Multiple Accountabilities Disorder' (MAD). It can undermine the effectiveness of an organization resulting in accountability losing its significance and evolving into a culture of empty compliance (Koppell, 2005).

Fourthly, there is an assumption of a one-way direction in formal accountability mechanisms, upwards or outwards, whereas accountability is better framed as a two-way relationship, referred to as reciprocal accountability (Elmore, 2006; Moncrieffe, 2011). According to Elmore (2006), reciprocity implies that 'for every unit of performance I require of you, I owe you a unit of capacity to produce that result'. This infers that, in healthcare organizations, accountability for performance requires investing in improving the capacity of frontline professionals and in provision of resources and equipment as a prerequisite. Yet, typically, accountability relationships in healthcare organizations are experienced by frontline health professionals as a one-way answerability (Radin, 2011; Nxumalo *et al.*, 2018b), involving sanctioning and punitive responses to problems, rather than a range of instruments encompassing both proactive and reactive, positive and negative, and individual and collective approaches (Nxumalo *et al.*, 2018a).

Provoked in part by the MDGs (South African National Department of Health, 2016), a number of policies and strategies to

Box 1: Typology of accountability (*Source:* Brinkerhoff, 2004, 2003); Excerpts of reflective notes

- 'Financial accountability' refers to tracking and reporting on allocation, disbursement and utilization of financial resources using auditing, budgeting and accounting tools.
- 'Performance accountability' refers to demonstrating and accounting for performance in light of agreed-upon performance targets.
- 'Public accountability (political/democratic)' refers to procedures, and mechanisms that seek to ensure that government delivers on promises, fulfils the public trust, aggregates and represents citizens' interests, and responds to ongoing and emerging societal needs and concerns.

Excerpt of reflective note 1

The extended management meeting took place in a family-like atmosphere in which all participants were given an opportunity to add any item to the suggested agenda before its adoption. It was a platform where the executive management reported back to other (operational) managers on key strategic issues and information from the district and provincial offices. The extended management meeting observed was 2.5 hours in duration and had fruitful, work-related discussions that resulted in setting up key actions for the sub-district. Open discussion, distributed, collective accountability and delegation of decision-making were evident throughout the meeting as a variety of senior managers took charge of specific items and in the allocation of key actions. Despite the fact that all participants had equal opportunities for participation, some members (especially from PHC services) were observed to be quiet, suggesting the existence of implicit hierarchies in the district.

Excerpt of reflective note 2

The general staff meeting was a platform where all hospital staff, all disciplines and all levels came together to discuss mostly operational issues and challenges. The meeting observed was attended by approximately 40 people and lasted 5 hours. It was chaired by the CEO who introduced the purpose of the meeting as strengthening individual relationships and working together for the benefit of the community, invoking the slogan '. . .united we shall stand'. After presentation of the suggested meeting agenda, seven additional items were added by the staff before adoption.

At this meeting staff presented their issues of satisfaction and complaints, requesting their direct unit managers or supervisors to respond. The role and voice of the local trade union representatives was particularly notable in this meeting. On the one hand, they provided a strong voice for more accountability from managers to staff members, in terms of ensuring resources and skills for quality health service delivery, and from staff members to the community in terms of providing quality services. On the other hand, they acted to contain anger of staff towards managers, with a union shop steward actively mediating during an open discussion, when some managers/supervisors felt they were personally attacked, by saying 'intimidation is not allowed in the staff meeting'. The rules of participation were also regularly reiterated by the Chair (CEO), stating 'Everyone's opinion is accepted in this house'; 'we are discussing work-related matters, not personal issues'. Participants collectively acknowledged the District EMS manager who had 'come down' to a sub-district meeting to account and answer questions related to grading and uniforms of EMS staff.

address maternal, neonatal and child mortality have been introduced in South Africa, many of which rely upon greater local accountability. In this article, we review formal accountability mechanisms and describe local accountability practices for MNCH in one health district (Mpumalanga Province) of South Africa. We begin by mapping and categorizing all formal accountability mechanisms directly or indirectly addressing MNCH, locating these in an evolving policy context. We then describe the 'accountability ecosystem' of the study district, examining both the practices of formal accountability and the informal accountability relationships observed in one sub-district. Finally, we explore the implications of a 'crowded' local accountability ecosystem for strengthening local practices of accountability for MNCH.

Methodology

Study design and case definition

We undertook an exploratory case study, with the case defined as the accountability ecosystem for MNCH at local (district) level, consisting of a range of direct and indirect formal accountability mechanisms. The term 'accountability mechanism' refers generically to the range of broad and specific accountability strategies, interventions and instruments. Direct mechanisms are those whose prime target is MNCH care; mechanisms that are linked to MNCH through other processes are referred to as indirect accountability mechanisms. Informal accountability relationships consist of social norms, behaviours and local cultures that shape collective responsibility and actions towards MNCH outcomes, as well as the functioning of formal mechanisms.

Study setting

South Africa is a middle-income country with a quasi-federal political system consisting of the national sphere, 9 provincial governments and 52 health districts. South Africa has been regarded as a poor performer with respect to maternal and child health outcomes. On the eve of the MDGs, the maternal mortality ratio was 141 per 100 000 live births (Statistics South Africa, 2015b) and the under-five child mortality rate was 40 per 1000 live births (Statistics South Africa, 2015a). The organization and delivery of health services is a competence under the provincial government. The empirical component of this study was conducted in Gert Sibande District, one of three districts of Mpumalanga Province, situated in the north-east of South Africa. The district has a population of about 1.1 million, with the vast majority (61%) living in rural areas (Massyn *et al.*, 2017). Gert Sibande was targeted by the National Department of Health as one of the districts with high maternal and child mortality, holding back the achievement of the national MDG targets. The

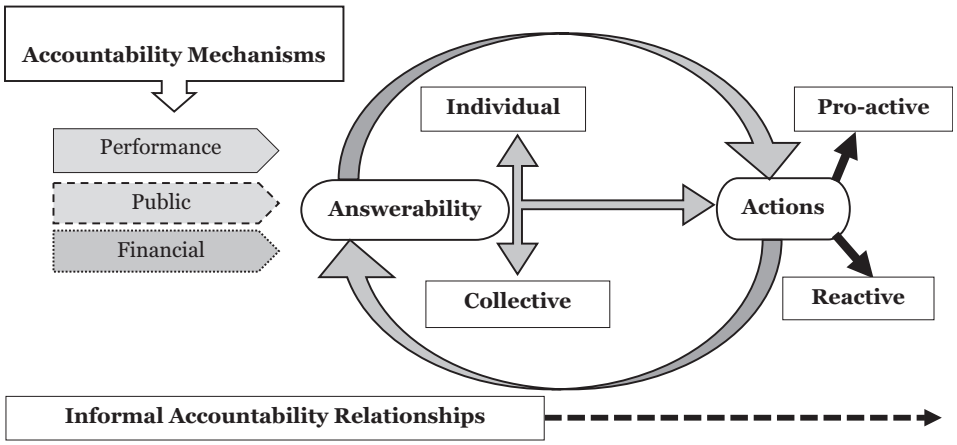


Figure 1 Accountability framework for MNCH at local DHS.

district was also 1 of the 11 selected sites to pilot the new National Health Insurance (NHI) Strategy in 2012; and one of the four districts to receive (in 2014) a health system strengthening and quality improvement intervention to reduce maternal and child mortality, involving a new accountability structure (referred to as the Monitoring and Response Unit—MRU) and processes (real-time death reporting). The district comprises 8 district hospitals, 1 regional hospital and 76 primary healthcare facilities, distributed among seven sub-districts.

Analytical framework

The health system is understood as a complex adaptive system (Paina and Peters, 2012) in which accountability, as part of overall health system governance, is identified as a key crosscutting property of the system as a whole (Mikkelsen-Lopez *et al.*, 2011). Within this system, multiple actors engage through various accountability relationships, which can be distinguished with respect to their intended purpose, their form and the way they operate.

Based on their main purpose, formal accountability mechanisms can be categorized into the following three main groups (Box 1): performance accountability, financial accountability and public accountability (Brinkerhoff, 2003, 2004). These formal mechanisms are embedded in, and interact with, a complex system of informal accountability relationships that enable or constrain the ability of frontline managers and healthcare providers to accomplish their daily tasks. The informal accountability processes are expressed through collective, spontaneous and unofficial action, peer support and communication in local health systems (Figure 1).

We approached accountability as encompassing the two interacting dimensions of answerability and responsive actions (widening the approach from a narrow focus on 'sanction'), that can be addressed at individual and/or collective levels (Schedler, 1999). The resulting actions can be either pro-active (i.e. actions and planning before and preventing the occurrence of an event), or reactive through remedial action or strategies for redress (i.e. actions in response to a situation that has already occurred).

Data collection

The study had two main components: a documentary review and an in-depth study of one district, in which two sub-districts were purposefully selected as embedded cases representing different levels of buy-in to the District MRU, identified in a previous evaluation by the authors (Schneider *et al.*, 2017). We used the following three methods of data collection: (1) document review of policy documents, reports, programme descriptions, and published literature addressing accountability mechanisms directly or indirectly related to MNCH at local (district) level in South Africa and the district under study; (2) non-participant observation, most intensively in one sub-district, in order to gain an understanding of the accountability ecosystem including its informal dimensions; and (3) in-depth interviews with 37 health managers and frontline health workers involved in MNCH activities, some of whom were also active in local trade union structures.

Document review

A variety of sources were searched, including Google search engine, the South African Government (www.gov.za) and the Department of Health (www.health.gov.za and www.idealhealthfacility.org.za/) websites, publications such as the annual South African Health Review (www.hst.org.za) and PubMed. We limited the search to South Africa and to health facility, sub-district, district and national strategies (as opposed to global mechanisms), including terms such as: mortality audit, clinic committee, Perinatal (or Child) Problem Identification Program (PPIP or CHIP), District Clinical Specialist Team (DCST), health facility norms and standards related to MNCH, adverse event reporting, Ideal Clinic, district (sub-district and health facility) planning and review. We also searched for peer-reviewed papers and grey literature from non-governmental organizations fostering accountability in South Africa. Additional relevant literature was identified through the reference lists of documents. Finally, we reviewed local documents and minutes of mortality surveillance and response structures such as the MRU.

Non-participant observation

The first author spent 3 weeks in one of the two sub-districts conducting field observation and interviews. During this period, the researcher engaged in the actors' daily activities (such as supervisory visits, ward rounds), attended meetings and held informal conversations in the district office, first-level community health clinics and district hospitals. The actors observed were senior district and hospital managers, facility and hospital operational managers, professional nurses, medical officers, allied health workers, facility data managers, trade union representatives, receptionists and security guards at the entrance gates. We observed both formal accountability processes (such as morbidity and mortality audits, staff meetings) and empirical expressions of informal accountability relationships, directly or indirectly related to MNCH (such as interactions between staff, and between management and trade

unions). Three clinics designated as 'Ideal Clinics' by a national accreditation system requiring compliance to various standards were visited, observing the organization of work and patient flow in order to grasp the reality of primary healthcare facilities in the sub-district. Finally, the researcher joined a home visit led by a social worker and a dietitian.

This period of intensive observation in the first sub-district was supplemented by observations of meetings in the second sub-district as well as the district office. All in all, from April to July 2018, we observed a total of 22 meetings in the district.

The observations were conducted mostly by the first author who is familiar with the South African health system. The observations were framed by the previous evaluation in the district, and by his understanding of accountability. The day-to-day operations of the local health system are conducted in English, and he was thus able to follow conversations. Observations were guided by a piloted field observation sheet (Supplementary Appendix SA1). Detailed notes were taken (where appropriate) during observations, followed by reflective notes after the fieldwork and in subsequent debriefing processes with the research team.

In-depth interviews

Using an interview guide based on the study framework (Supplementary Appendix SA2), we conducted 37 semi-structured, in-depth, face-to-face interviews and one focus group discussion of nine PHC facility managers. Key informants involved in MNCH care were purposely selected for interviews. They included district programme managers, members of the DCSTs, hospital CEOs, PHC and hospital mid-level 'operational' managers, clinicians, emergency service personnel, dietitians, members of community-based outreach teams, trade union representatives and hospital board chairpersons.

Analysis

Based on the study framework, a data extraction form was designed for the document review (Supplementary Appendix SA3), and a policy timeline of formal mechanisms was constructed. Interview recordings were transcribed, observation and reflection notes compiled, both were coded using Atlas.ti version 8, and a thematic analysis conducted. Codes were developed using both a deductive approach based on a preset list of themes and inductively where new ideas were identified. Finally, the network of formal mechanisms was mapped using Vensim® PLE software (Version 7.0).

Rigour, reflexivity and ethical considerations

Entry in the field was facilitated by our previous engagement in the study setting, evaluating an intervention to reduce maternal and child mortality. The topic of accountability emerged as a primary issue of concern from this evaluation, facilitating agreement on the study by the health authorities at various levels. We presented the study protocol and distributed pamphlets summarizing the project to a range of audiences during meetings and site visits at the district office, the sub-districts and at facilities. This process allowed us to establish clarity on our purpose, and trust and rapport with the potential informants (Li, 2008).

Participant observation can face ethical challenges given the sensitive nature of accountability as a research topic, potentially exposing hidden realities (Li, 2008). The first week of field observation was spent attending meetings and actively participating in different discussions without imposing any judgement. This process facilitated breaking the perception of the researcher as an outsider coming to 'hold people accountable', and reaffirming the purpose as seeking to develop an understanding (Maanen, 2011). As a result, some informants who seemed reluctant to talk during the first week were subsequently prepared to be interviewed during the following weeks.

Regular feedback and discussion on the findings were presented to district and sub-district actors at follow-up meetings, ensuring accuracy of processes observed. In these ways, the researchers sought to minimize descriptive and interpretive biases.

This article is part of the first author's PhD project that was approved by the Biomedical Science Research Ethics Committee and Provincial Health Research Committee. All interviews proceeded with signed informed consent.

Results

This section begins by describing the evolving policy context for MNCH in South Africa giving rise to local accountability mechanisms for MNCH. Guided by the analytical framework (Figure 1), we then describe the formal accountability mechanisms identified through the review of the official documents and how the mechanisms were reflected in local practices (or not). Furthermore, we provide a conceptual map depicting the various relationships between the accountability mechanisms as observed in local practices. We then report on what we were able to discern regarding the informal relationships and cultures of accountability at play in the 'accountability ecosystem'.

Policy context of accountability mechanisms for MNCH in South Africa

Figure 2 presents the timeline of implementation of various policies directly and indirectly impacting on MNCH. We delimited this timeline from 1994 (installation of democratic government in South Africa) through to the MDG endpoint (2015) and the subsequent start of the SDG era in 2016 (United Nations Secretary-General, 2010, 2015).

In the immediate post-1994 period, national mortality review committees and local audit tools and systems were established for maternal, neonatal and child health (National Department of Health, 1999, 2010, 2011a). This was followed by a relatively silent period (2000–2009) regarding new policies or interventions addressing MNCH as the preoccupation with the HIV/AIDS epidemic took centre stage. However, leading up to the end of the MDG period, a succession of policies, plans and strategies, and associated accountability mechanisms emerged to address both the ongoing high maternal and child mortality rates, as well as the local health system more generally. These policies and strategies include among others the Strategic Plan for Maternal, Newborn, Child and Women's Health (MNCWH) and Nutrition, and the appointment of DCST playing key roles in clinical governance, clinical mentorship and oversight.

Formal accountability mechanisms for MNCH

Table 1 provides a summary of the 19 formal accountability mechanisms identified through the document review. Nine of them were directly related to MNCH, mostly focusing on mortality auditing, including three mechanisms [Perinatal Problem Identification Programme (PPIP), Child Problem Identification Program (CHIP) and Confidential Enquiry Into Maternal Deaths] that have a special focus on continuously reviewing maternal, perinatal and childhood deaths in South Africa. An additional nationally designed mortality reporting and response mechanism, referred to as the MRU was also

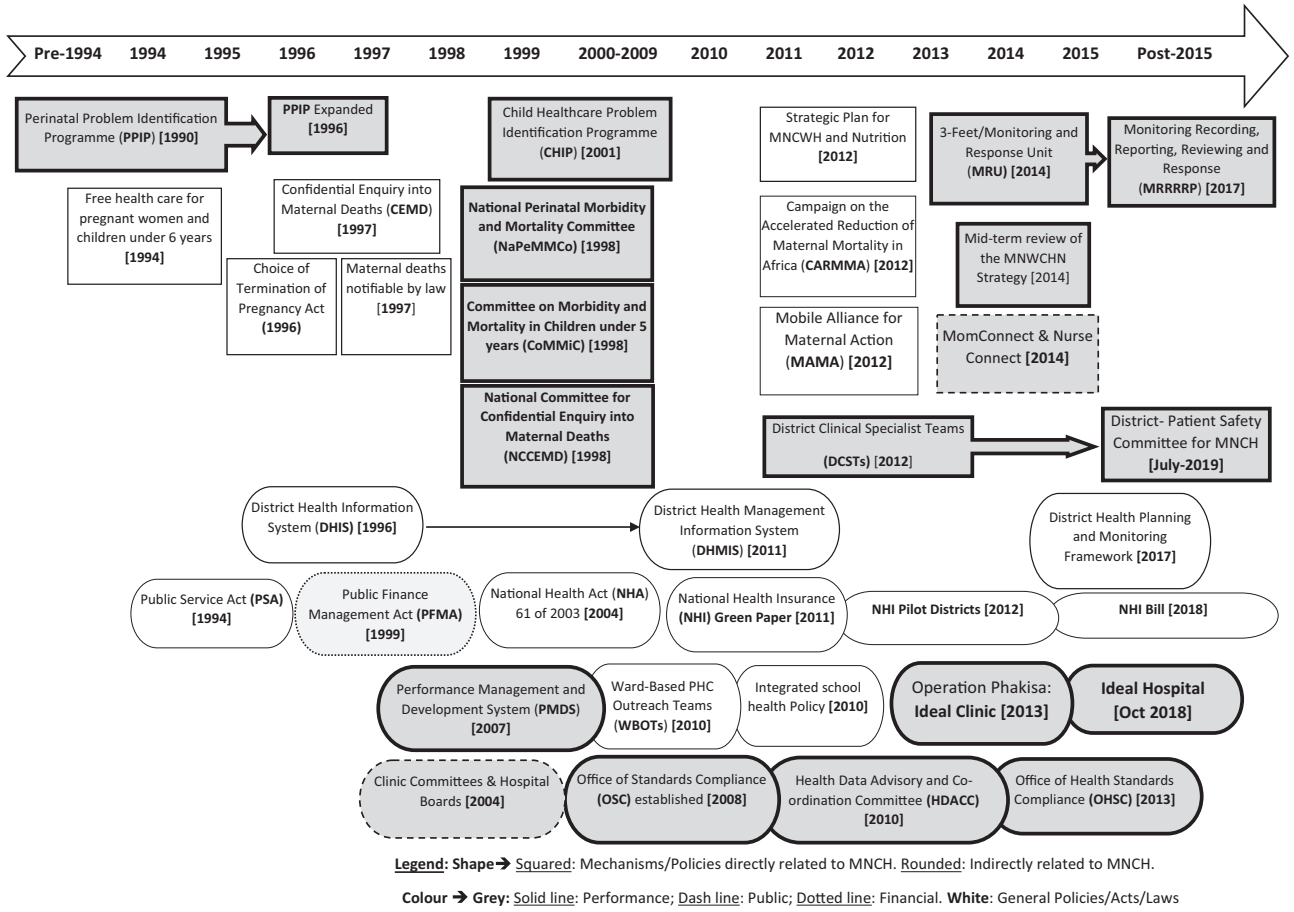


Figure 2 Timeline of national policies directly and indirectly related to MNCH.

being piloted in the study district. Seven indirect mechanisms fostered accountability for MNCH through their effects on overall health system functioning. They included quality auditing and improvement through periodic reviews and accreditation process, and a performance management system.

In practice, the following were the dominant mechanisms observed: the mortality and morbidity review meetings such as the perinatal (PPIP) and child mortality (CHIP), the MRU, the Confidential Enquiry into Maternal Death (CEMD), the Ideal Clinic process and the system of Periodic (quarterly) Reviews based on the data from the routine District Health Information System (DHIS).

Perinatal meetings typically took place monthly and brought together clinical stakeholders from hospitals and primary healthcare facilities. Monthly meetings for child mortality reviews (CHIP) took place concomitantly with the perinatal meetings but focused on under-five mortality and morbidity. These meetings allowed for the identification of gaps in clinical knowledge and skills, and response through in-service training such as the Essential Steps in the Management of Obstetric Emergencies (ESMOE) 'drills'.

The MRU convened at sub-district and at district level and brought together a multidisciplinary team of stakeholders, including managers (PHC, hospital, community), clinicians, information officers and other sectors (such as the Social Security Agency of South Africa), NGOs, partners and community representatives to address maternal and child health. The MRU followed the '4R's' approach i.e. 'Report, Review, Record, Respond' to an event of maternal or child death. The key feature of the MRU was the focus on responsiveness entailing pro-active actions to address the modifiable factors through teamwork and skills building, and preventive action through the primary healthcare system.

In the event of maternal death, a report was submitted to the district office within 24 hours with the provisional cause of death. Within 48 hours, the DCST together with the hospital stakeholders met to audit and review the patient file, and identify and record the causes of death with a final diagnosis, as well as any modifiable factors. The process ended with the setting up of an adverse event process (mandated by an additional mechanism, the Office of Health Standards Compliance) and a formulation of an improvement plan for skills upgrading, provision of extra resources, or community engagement as a response to the adverse event.

At the time of our fieldwork, following a rising concern with poor performance of the HIV/TB programmes, a new mechanism namely the 'Nerve Centre' was established to monitor and ensure compliance with guidelines and targets set for HIV and TB treatment. Attending the Nerve Centre were the primary healthcare managers, nursing managers from hospitals, and the district coordinators for MNCH, Prevention of Vertical Transmission (PVT) and Quality Assurance. The Nerve Centre met weekly at facility (Friday) and at sub-district levels (Monday), in addition to the established Comprehensive Care, Management and Treatment of HIV/AIDS and the Prevention of Vertical Transmission (CCMT/PVT) cluster meetings that were taking place monthly at sub-district level.

Some of the mechanisms identified were explicitly designed as strategies and tools to reinforce accountability with linkages to other accountability mechanisms. For instance, the information and data review meetings at facility and sub-district levels were linked to

Table 1 Description of formal MNCH accountability mechanisms identified

Accountability mechanism	Purpose	Direct		Indirect		Type	Mode
		National	Local	National	Local	Performance (Pe)/ Public (Pu)/ Financial (Fi)	
Committee on Morbidity and Mortality in Children under 5 years (CoMMiC)	Clinical governance, standards monitoring	x				Pe	Audit/oversight
National Perinatal Morbidity and Mortality Committee (NaPeMMCo)	Surveillance of perinatal health problems	x				Pe	Audit
National Committee for Confidential Enquiry into Maternal Deaths (NCCEMD)	Recording and analysis of maternal deaths	x				Pe	Audit
Perinatal Problem Identification Programme (PPIP)	Surveillance of perinatal health	x	x			Pe	Audit
Child Healthcare Problem Identification Programme (CHIP)	Surveillance of under-five child health	x	x			Pe	Audit
Comprehensive Care Management and Treatment of HIV/AIDS; Prevention of Vertical Transmission (CCMT/PVT)	Monitoring compliance with HIV/TB treatment guidelines and targets	x	x			Pe	Audit
District Clinical Specialist Team	Clinical governance, mentorship and oversight	x	x			Pe	Oversight
Monitoring and Response Unit	Monitoring and response	x	x			Pe	Audit/oversight
Office of Health Standards Compliance (OHSC)—Quality Assurance (QA)	Ensure compliance with health standards			x	x	Pe	Quality management
Performance Management Development System (PMDS)	Performance evaluation			x	x	Pe	Quality management
Periodic reviews (DHIS)	Monitoring and evaluation				x	Pe	Performance management
Budget Review Committee	Advise on and ensure a transparent budget process				x	Fi	Performance management
Ideal Clinic	Standards performance accreditation; QA; service rating			x	x	Pe/Pu	Complaints/compliance
Ideal Hospital	Standards performance accreditation; QA; service rating			x	x	Pe/Pu	Complaints/compliance
MomConnect	Mobile phone use for complaints and QA for MNCH	x	x			Pu	Complaints/feedback
District Health Council	Co-operative governance; co-ordination of planning, budgeting, monitoring health services			x		Pu	Public oversight
Clinic Committee	Community participation in planning, delivery and organization of care			x	x	Pu	Public oversight
Hospital Board				x	x	Pu	Public oversight
Health Professional and Nursing Councils of South Africa (HPCSA and SANC)	Set up and maintain standards for education, training and practice.			x	x	Pe	Performance management

many other mechanisms fostering compliance with performance targets. In particular, the DHIS formed the basis of many other meetings, as well as the system of performance targets and periodic performance reviews (National Department of Health, 2011b).

Another was the Office of Health Standards Compliance (OHSC), established to enforce compliance with health standards as well as to ensure necessary investigation and action regarding complaints related to healthcare. In addition to the OHSC was the 'Ideal Clinic', a primary healthcare accreditation strategy whose essence was to improve the quality of health services delivery at local level, integrating compliance with a range of health provision standards ('upward' accountability), with a process of complaints management for improved quality health service delivery to communities ('outward' accountability) (National Department of Health, 2017). For a clinic to reach the status of Ideal Clinic, it must comply with a certain number of core standards covering administration, clinical services management, pharmaceutical services, human resources, infrastructure, or health information and communication (National Department of Health, 2016). The Ideal Clinic accreditation process integrates data from a number of sources, including its own audit tools, the DHIS and complaints mechanisms.

Thirteen of the 19 accountability mechanisms identified (Table 1) were principally oriented towards performance accountability with a strong emphasis on a reactive approach through audits, accreditation and quality assurance. Proactive mechanisms included the MRU, which was oriented towards preventive action, clinical governance, training and improvement cycles. Only one mechanism targeted financial accountability (periodic budget reviews), possibly because of the narrow financial decision space at this level. Three mechanisms were specifically related to public participation and accountability mandated by the National Health Act (NHA). They included the District Health Councils involving political representatives across spheres of government and structures of community participation such as Clinic Committees and Hospital Boards.

Informal accountability relationships

In the sub-district observed more intensively, a number of instances of informal accountability were identified, often in parallel to the formal accountability mechanisms. For example, we observed a parent telephoning a Member of the Executive Council (MEC) for Health (Health Minister in the Provincial Government) to complain about the poor quality of child health services in relation to the treatment of his child. The open-door policy of a hospital CEO allowed trade union representatives to walk in unannounced to complain or get feedback regarding lack of equipment or resources, or discuss any issue pertaining to the union members in the staff. There were instances where the hospital board chairperson was stopped on the road by community members to complain or to get feedback on health-related issues.

In addition to these, we observed a number of instances involving both professional and administrative staff, which illustrated the nature of informal accountability relationships at play in the sub-district.

The first two examples relate to two meeting structures in the sub-district, convened by the hospital CEO to develop relationships and create a local culture of co-operation and trust between the executive management, the operational managers and the general staff within facilities and across levels of care. They were (1) an Extended Management Meeting involving 27 managers from hospital, PHC facilities and trade union representatives that met monthly (Box 1: Excerpt of reflective note 1) and (2) The General Staff Meeting, that met four times a year and where the trade union was a central player (Box 1: Excerpt of reflective note 2).

These participatory mechanisms were playing a key role in fostering a system of reciprocal accountability in this sub-district. In this instance, the trade union was an important broker, pushing their members to comply with the rules for delivering quality services, while continually engaging with the executive managers holding them accountable for the provision of resources and skills. The negotiations involving trade unions were related to operational and staffing issues, complex issues not necessarily under the immediate control of local managers. The interventions by trade unions counterbalanced the ongoing requests for more performance that providers were subjected to, despite a chronic shortage of staff and resources.

> *There is an impact… it's difficult to point at one another because we create a centre of accountability …And when we raise our issues, like issues of recruitment, the shortage of staff, like now they do replace [staff or equipment] in time when you [the trade union representative] hold the executive to be accountable. Replacement of posts, and in terms of the equipment the hospital must be well equipped* (KII, Trade Union Shop Steward).

However, the interactions were not necessarily always smooth:

> *…[As trade union] You must be ready to confront difficult questions. You know when you're confronted with difficult questions it's where you touch the heart of the person… You must be ready [for the risk] of being hated. I like a person when he's hating me based on the truth not based on lies. Because I make sure I hold the executive to be accountable for the interest of workers* (KII Trade Union Shop Steward).

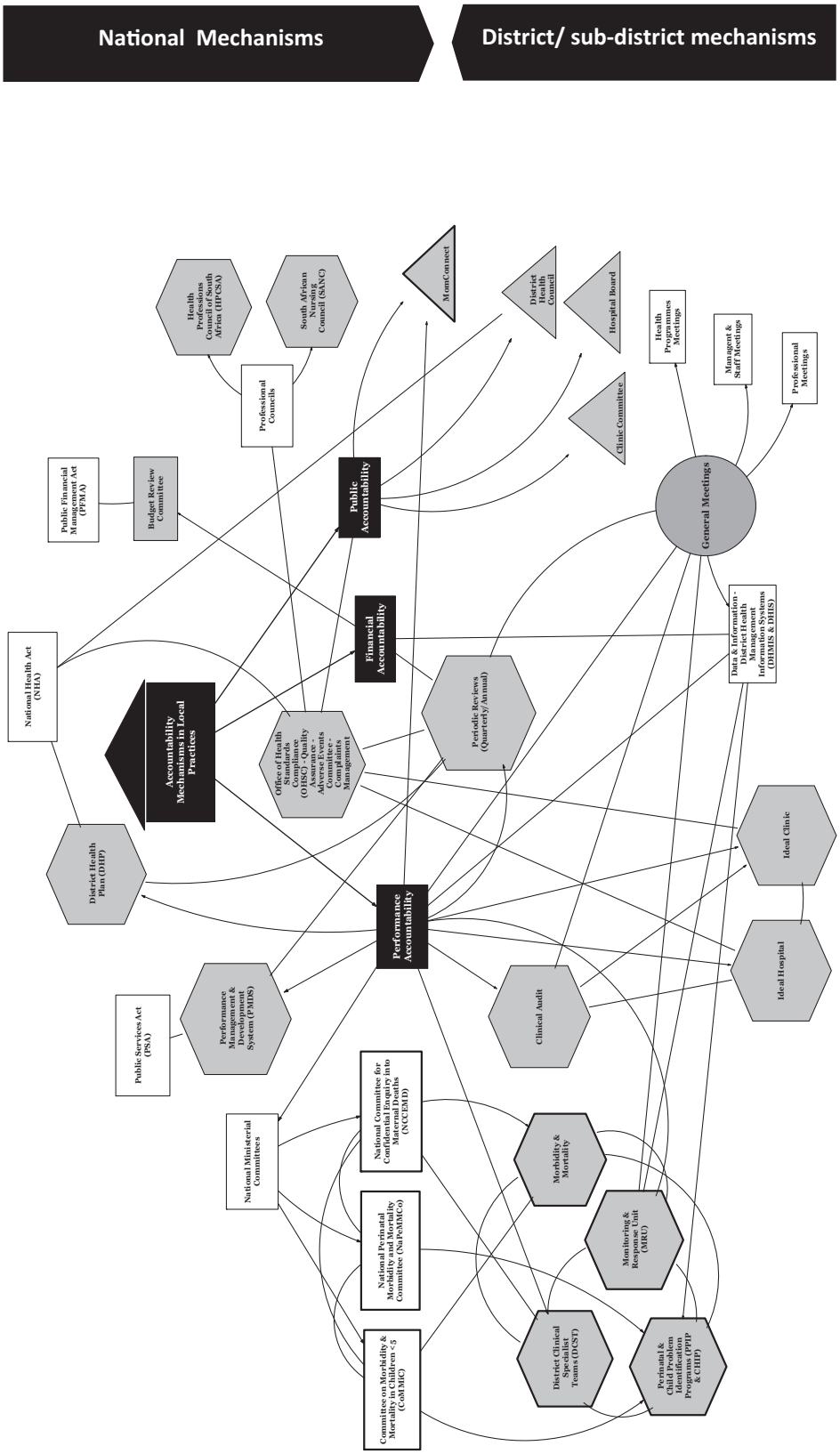
The third example illustrates the informal side of a formal accountability mechanism that was observed in the implementation of the Ideal Clinics where the mid-level operational managers had developed a set of informal collaborative arrangements for mutual support during accreditation processes. For instance, elements from the Ideal Clinic manual assessed the consistent availability of essential PHC medicines. If an essential medicine was missing in clinic A due to a delay with supply, it could be borrowed from clinic B or hospital C where it was available, not only to make sure that patients received their medications but also when assessors were visiting the clinic for auditing and rating.

According to (formal) regulations, any stockout must be declared to the district/province unit and the facility must then wait for the next delivery of supplies to issue medication again to patients. During the wait, patients may not receive medication in time, which means that the facility is in breach of service delivery guidelines regarding treatment continuity. Through informal systems of peer support and solidarity, providers thus prioritized clinical accountability to patients. It could also be seen as a form of compliance to conform to national priorities through a local coping mechanism.

All these cases illustrate how building informal relationships of trust can be influenced by reciprocal mechanisms, in turn shaping the informal environment within the accountability ecosystem.

The crowded space of local MNCH accountability

Figure 3 maps the direct and indirect formal MNCH accountability mechanisms and their relationships that we observed in local practice. This illustrates performance accountability (Hexagon shape) as the dominant mode of local accountability, while there



Legend → Grey Colour=Formal accountability mechanisms: Hexagon= Performance; Square= Financial; Triangle= Public; Circle=Formal meetings with mixed types of accountability → Boxes with thick line= Mechanisms direct to MNCH; others = Indirect to MNCH.

Figure 3 Forms and relationships between formal accountability mechanisms in practice at local level.

Table 2 Meeting and reporting demands of frontline managers and providers

Meetings	Frequency	Hospital	PHC facility
Adverse Events meeting	Monthly	x	x
All Nurses meeting	Bimonthly	x	x
Budget Review	Monthly	x	
CCMT/PCV, Health and Safety	Monthly	x	x
Clinic Committees	Monthly		x
Clinical Audit	Monthly	x	
Data/Information Review	Monthly	x	x
Disaster Management (Hospital/ Clinics/Police/Fire/Community)	On request	x	x
District and Province meetings	On request	x	
Doctors meeting	Weekly	x	
ESMOE Drills	Monthly	x	x
Executive Management	Monthly	x	
Extended Management	Monthly	x	x
General staff meeting	Quarterly	x	
Hospital Boards	Quarterly	x	
Medical and Allied Health	Monthly	x	x
Mortality and Morbidity	Monthly	x	x
MRU (District)	Monthly	x	
MRU (Sub-district)	Monthly	x	x
Nerve Centre	Weekly	x	x
Nursing and Health Professions Councils (SANCA/HPCSA)	On request	x	x
Operational Managers meeting	Monthly	x	x
Perinatal (PPIP/CHIP)	Monthly	x	x
PHC Meetings	Monthly	x	x
PMDS Quarterly Reviews	Quarterly	x	x
Quality Assurance	Monthly	x	x
Sub-district Information Team	Monthly	x	x

is a relatively little emphasis on public accountability (triangle shape) expressed mainly through Hospital Boards and Clinic Committees (where the chairperson was a community representative), and in the complaints mechanisms in which clients are encouraged to submit any complaint or compliment using SMS messaging system (MomConnect), or in writing through complaints boxes found in all health facilities. The different mechanisms are interconnected in their respective purposes. The resulting effect is that, in practice, the same actors are involved in multiple sets of accountability mechanisms. For instance, in one sub-district, there were 258 meetings scheduled in the annual calendar associated with accountability mechanisms at facility, sub-district, district and/or provincial level (average of 22 meetings per month). Table 2 shows the multiple meetings where frontline managers and providers have to account either in the form of submitting a report or receiving feedback. In our observations, it could happen that two or more important meetings were scheduled on the same day and time which involved the same managers (or providers). They, therefore, had to choose which one to attend. And because the manager was absent in one of the meetings, information related to her/his participation was not reported, nor was there any feedback given, with potential implications for the continuity and functioning of the system.

> *Last week we saw the in-charge of all the PHCs, she was saying that there are a lot of meetings you know, sometimes they are coming here, in the clinics there is shortage [of staff], that's why in some of the meetings we are not going to release them, maybe one will come and after then the one who's attending will come and give feedback to the others. Sometimes feedback is fine but sometimes you need to listen by yourself, to ask questions so that you can improve. So that is really our problem* (KI, Medical Manager).

The density of the Figure 3 is an indication of the complex and crowded nature of accountability mechanisms related to MNCH at local level and its fragmented nature. At the operational level, this boils down to an abundance of meetings involving managers.

> *It is a lot of meetings… Even outside we have a lot of meetings also. There's a schedule of meetings, monthly. Twelve to fifteen meetings within the institution… So most of the time I'm outside and inside for the meetings* (KII, EMS Manager).

Interview data suggest that a shortage of frontline healthcare providers, coupled with higher demand for more accountability from a large number of vertical programme managers, can lead to frustration and a dysfunctional accountability system for MNCH:

> *…They will tell you that we are having a lot on our plate. Next time they want this from Ideal Clinic, next time they want this from National Core Standards, next time they want this from Nutrition; and who is the accounting officer… It will be the operational manager who has to be Jack of All Trades. So, we are having gaps because of staff shortage* (KII, Manager District Office)

Frontline managers also complained against the expectations of accountability from multiple higher-level managers (at the district or Provincial department of health).

> *…It's not good to have a lot of managers than the actual providers, because if we are having a line of managers of 10 or 20, …, but we are only having 5 people down there to work, I don't see it being working* (KII, Operational Manager).
>
> *…How can you hold a person accountable if he is… she is alone, looking after four units, admission, labour ward, antenatal and postnatal department* (KII, Operational Manager).

A branch of the national advocacy organization, the Treatment Action Campaign (TAC) was also active in the District, implementing a community monitoring and advocacy programme. The TAC aims to build capacity for local activism, participating in setting up local governance structures (clinic committees and hospital boards), engaging the public to take ownership of the health system, monitoring and raising concerns regarding the quality of health services provided, and ensuring accountability at local level. As they indicate, 'We believe that with well-informed and rights-based local activism we can create accountability at the frontline of healthcare service delivery which will, in turn, lead to better quality healthcare services' (https://tac.org.za/).

Discussion

Frontline health managers and providers are targeted by a plethora of accountability mechanisms addressing MNCH both directly and indirectly. While some mechanisms, such as perinatal audits have a long history, many of the direct MNCH mechanisms were designed and implemented during the MDG 'Countdown' period as a way of meeting targets related to the reduction of maternal and child mortality. The MNCH mechanisms exist alongside a range of indirect mechanisms involving district and frontline managers, resulting in the multiplication of accountability initiatives at the local level.

These multiple accountability mechanisms are not mutually exclusive in their mandates (Van Belle *et al.*, 2018) and are sometimes prone to conflicting demands especially in terms of the numbers of meetings. This process is described by Gilson and Daire (2011) as an

'inverted pyramid' where frontline managers and providers face a 'top heavy and rigid management hierarchy' reinforced by top-down vertical programmes. As pointed out by Nxumalo *et al.* (2018a), the conflicting demands for accountability may push frontline managers to prioritize and make selective choices with potentially negative implications for health service efficiency, effectiveness and responsiveness. Referring to 'Multiple Accountabilities Disorder (MAD)', Koppell (2005) argued that multiple demands for accountability with conflicting expectations imposed on the actors within an organization result in a dysfunctional system that tends to shift the core of accountability to performance compliance. Halachmi (2014) referred to 'accountability overloads' that result from unco-ordinated efforts to ensure accountability at all costs which end up undermining effectiveness and efficiency.

The emphasis of accountability initiatives was on performance rather than other forms of accountability, mostly conducted in the form of audit processes. These typically target individual level answerability and sanctioning rather than seeking to develop a pro-active and wider collective organizational or even, ecosystem response. This was most evident in the individual performance management development system, the quality assessment and accreditation processes, the quarterly reviews, and in the 'adverse event' responses. While there were exceptions (such as in some mortality audit processes and the MRU), the dominant mode of accountability was one of the seeking compliance with standards and progress towards achieving targets through multiple lines of answerability.

Typically autocratic managerial approaches to performance assessment do little to build the management skills of frontline managers (Nxumalo *et al.*, 2018b). The consequence of a culture of compliance is a disconnect with the real purposes of accountability. One such instance observed was that of the Ideal Clinic. As an example of its implementation in practice attests, audit systems can easily lead to a form of compliance, decoupled from their true purpose. This occurs when frontline workers are forced to meet multiple demands for answerability from above. As noted by Roberts (2009), this kind of 'transparency' can become a representation of performance that is manufactured for others, rather than actual performance.

In the plethora of accountability processes, we found relatively little space for public accountability. This was expressed mainly through Hospital Boards and Clinic Committees, and in the complaints mechanisms. Hospital Boards and Clinic Committees, which include community representatives as chairpersons, are mostly involved in complaints management and redress processes; they also hold public meetings to receive and share views regarding the health problems in the community. However, the governance role of clinic committees tends to be limited to conflict resolution between the community and the health facilities with few other oversight roles in health facilities (Padarath and Friedman, 2008).

In the sub-district studied, trades unions played an important role in advocating not only for more outward accountability, but also for fairness, transparency and provision of resources for quality health services. This generally positive role was made possible by structures of participation and dialogue introduced by the ward councillor and the sub-district leadership. This experience was in contrast to what was described in the earlier evaluation (Schneider *et al.*, 2017) regarding the role of trade unions, where they were perceived by some as disruptive and as expressing narrow interests.

While the formal accountability mechanisms are well described in the official documents, in practice these formal mechanisms are embedded in a context of local cultures of informal accountability that vary from one sub-district to another. These informal mechanisms are expressed through meeting processes and social interactions (spontaneous and reciprocal), informal relationships and emergent managerial strategies observed locally. The instances provided illustrate the functioning of accountability mechanisms, and the central role of relational capabilities in fostering accountability for MNCH.

It may be difficult to establish the causal effect of the informal dimensions of the accountability ecosystem. However, when formal mechanisms were embedded in informal norms, culture or relationships where providers and managers were able to engage fruitfully in negotiated spaces, these appeared to enable the success of the formal mechanism. This was achieved by creating the possibility of reciprocal accountability (Elmore, 2006) within vertical accountability relationships, and enabling horizontal forms of collaboration between managers. These phenomena may be key to understanding variation in MNCH outcomes between local areas.

Conclusion

In this article, we explored accountability mechanisms for MNCH at district level in South Africa. Frontline health managers and healthcare providers are subject to a plethora of accountability mechanisms. In some instances, there is duplication or overlap in these mechanisms, whereas in others there are potential synergies. In practice, formal accountability strategies are embedded in a web of informal relationships and norms that are rooted in daily routines. These informal mechanisms are operationalized in various ways depending on the managerial approach and local context in which accountability is exercised. In the growth of accountability strategies, emphasis has been on performance accountability and an auditing style of accountability. In order to improve maternal and child health outcomes and reduce mortality, a systematic understanding of local practices of accountability is required, seeking to enable context specificity, developing synergies in mechanisms while also actively engaging the informal accountability norms. This process should consider the multiple actors and relationships across various levels within the local health system with the formal accountability mechanisms being practiced in order to build a functioning accountability ecosystem.

Supplementary data

Supplementary data are available at *Health Policy and Planning* online

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Paper 2

Mukinda, F. K., Van Belle, S., and Schneider, H. 2020. Perceptions and experiences of frontline health managers and providers on accountability in a South African health district. International Journal for Equity in Health, 19(1), pp. 1-11. doi: 10.1186/s12939-020-01229-w.

Paper overview

This second paper followed a phenomenological stance in exploring frontline health managers and providers' experiences, understanding and interpretation of accountability mechanisms in their daily routines. Frontline health professionals have a clear understanding of accountability, but the practice of accountability mechanisms depends profoundly on team functioning and broader organisational culture. The variation in the expression of accountability, presented as professional responsibility, answerability or 'virtue', was influenced by the organisational environment, characterised by impunity and unfair punishment, backgrounded by a culture of 'naming and shaming'. Despite these micro-systems of accountability that vary between local settings, district health systems play a key role in strengthening equity of access, availability and quality of health care services.

Contribution to the thesis

This paper contributes to the second objective of the PhD thesis: To explore and describe frontline health professionals' perceptions and experiences of accountability, and their contribution to expanding access to health care and promoting equity in a South African health district. In addition, this paper contributes to further

understanding of the space of accountability (Objective 1) and provides an overall picture of the functioning of accountability mechanism (Objective 3).

Contribution of candidate

The candidate conceived the paper, collected and analysed the data, and wrote the first draft with contributions from all co-authors (supervisors) in all the steps. All co-authors edited the manuscript and approved the final version.

The comments from the peer review process are available in Appendix 11.

International Journal for Equity in Health

RESEARCH Open Access

Perceptions and experiences of frontline health managers and providers on accountability in a South African health district

Fidele Kanyimbu Mukinda[1*], Sara Van Belle[2] and Helen Schneider[1,3]

Abstract

Objective: Public primary health care and district health systems play important roles in expanding healthcare access and promoting equity. This study explored and described accountability for this mandate as perceived and experienced by frontline health managers and providers involved in delivering maternal, newborn and child health (MNCH) services in a rural South African health district.

Methods: This was a qualitative study involving in-depth interviews with a purposive sample of 58 frontline public sector health managers and providers in the district office and two sub-districts, examining the meanings of accountability and related lived experiences. A thematic analysis approach grounded in descriptive phenomenology was used to identify the main themes and organise the findings.

Results: Accountability was described by respondents as both an organisational mechanism of answerability and responsibility and an intrinsic professional virtue. Accountability relationships were understood to be multidirectional - upwards and downwards in hierarchies, outwards to patients and communities, and inwards to the 'self'. The practice of accountability was seen as constrained by organisational environments where impunity and unfair punishment existed alongside each other, where political connections limited the ability to sanction and by climates of fear and blame. Accountability was seen as enabled by open management styles, teamwork, good relationships between primary health care, hospital services and communities, investment in knowledge and skills development and responsive support systems. The interplay of these constraints and enablers varied across the facilities and sub-districts studied.

Conclusions: Providers and managers have well-established ideas about, and a language of, accountability. The lived reality of accountability by frontline managers and providers varies and is shaped by micro-configurations of enablers and constraints in local accountability ecosystems. A 'just culture', teamwork and collaboration between primary health care and hospitals and community participation were seen as promoting accountability, enabling collective responsibility, a culture of learning rather than blame, and ultimately, access to and quality of care.

Keywords: Accountability, Equity, Frontline health workers, Maternal, newborn and child health, Qualitative research

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Background

Accountability in health systems is perceived as key to improving health outcomes in low and middle-income countries (LMICs) [1, 2]. This was highlighted in the Millennium Development Goals (MDGs) and reiterated in the Sustainable Development Goals (SDGs), which not only advocate for more accountability to targets but also greater social accountability to communities and the public [3–5]. Increasingly, performance assessment systems and quality improvement initiatives are being implemented to improve the quality and efficiency of frontline health services provision through pathways of individual and collective accountability [6].

Accountability is an essential and intrinsic component of health system governance arrangements, concerned with the management of relationships between various actors [7]. In these relationships, meaningful accountability processes should address the systemic and structural drivers of inequity in health systems [8] in order to achieve universal health coverage (UHC). In this regard, UHC can only be achieved by fairness, accountability and transparency in the distribution of resources; by ensuring quality and access to healthcare, especially to marginalised communities; and by participation and building trust between health systems and the community. Through this pathway, accountability, understood as a driver and a 'galvanizing force', can thus improve health equity [8, 9].

Although accountability is emerging as a concept globally and nationally, its meaning is still unclear and complex [10, 11]. A review by Schillemans [10] describes the landscape of accountability definitions as a 'true tower of Babel', that is, confusing with contrasting meanings. There is consensus, however, on accountability as a set of institutional arrangements, organisational behaviours and accountability relationships [12]. Firstly, accountability is about the obligation to inform and explain actions or decisions taken to others, referred to 'answerability' [13]. Secondly, accountability is a relational concept, linking those who perform tasks (actors, agents) to those for whom the tasks are performed or who are affected by the tasks performed (principals). Accountability thus implies structures and processes (mechanisms) that mediate relationships and which are shaped by power [14]. These accountability relationships can be vertical within health system hierarchies [15], public/social mechanisms involving communities [16, 17] or horizontal accountability mechanisms between units or peers within the same system [18, 19].

Thirdly, processes of accountability can take many forms. Some focus on reporting requirements (answerability), others on sanctions, some on results or outcomes, others on organizational behaviour and processes [10]. A common approach to accountability is to assess how actors, programmes or policy are performing against agreed-upon targets or standards [20].

Writing from the perspective of maternal and newborn health, Hilber et al. [1] suggested the following broad definition, namely, that 'accountability exists when an individual or body, and the performance of tasks or functions by that individual or body, are subject to another's oversight, direction or request that they provide information or justification for their actions'.

In addition to accountability as an organisational mechanism as outlined above, Bovens [21] proposed viewing accountability as a 'virtue': a set of normative standards grounded in professional, ethical values for assessing the behaviour of public actors. As a virtue, accountability is positioned as a legal, ethical, and moral human attitude of obligation to communities that enables public trust and confidence [22]. It is associated with responsiveness and responsibility towards others, and a disposition towards transparency, fairness, and equity in actions and decisions [11].

Despite its importance and a growing number of accountability mechanisms in health services [23], very little empirical evidence exists on how frontline health managers and providers understand and experience accountability. Yet, '*increasing accountability of governments at national and facility level to ensure improvements in the quality of care by providers and managers depends not only on how mechanisms are enforced but also on how providers and managers understand accountability*' [1]. The available evidence suggests that notions of accountability will vary by profession (doctors versus nurses; clinicians versus support staff), within hierarchies (managers versus providers), and between health system and community actors. This variation also relates to the competing values and multiple internal and external loyalties typical of a service delivery environment [24].

As part of a PhD study exploring the forms and functioning of accountability mechanisms for maternal, newborn and child health (MNCH), this paper explores the perceptions and daily working experiences of frontline public sector managers and providers regarding accountability in a South African health district, serving a rural community with a higher level of poverty relative to the rest of the country. Perceptions relate to the mindsets and understandings, while experiences relate to practices (by the providers themselves or others). In contrast to the abstract formulations of accountability in the literature and in global and local policy, the paper examines the everyday, 'real world' understandings of accountability of health providers and managers at the receiving end of accountability strategies and how they relate to it as a practice to ensure the quality and performance of primary health care (PHC) and district health system (DHS), key to strengthening equity.

The paper focuses on maternal, newborn and child health (MNCH), as a programmatic area where accountability mechanisms were established in South Africa's health services over a number of years, especially in the period of the MDGs [25]. More recently, a dramatic rise in medical litigation linked to maternal and neonatal services has been attributed to the lack of accountability in environments which do not ensure the delivery of safe, respectful and effective health care [26].

Methods

Study design

We conducted a qualitative study of how frontline health managers and providers perceive and experience accountability using maternal, newborn and child health as a tracer. Our methodology followed a phenomenological approach that seeks to examine and represent the meaning systems and lived experiences as expressed by the respondents [27]. This implied that the research aimed to get into 'their worlds' to gain knowledge and new insights and to stay true to the words and forms of representation of the respondents themselves [28, 29]. This requires the researcher to be '*observant, attentive and sensitive to the expression of experiences*' and questioning their understanding of respondents' narratives [30].

Setting

South Africa is a middle-income country with a quasi-federal political system consisting of the national sphere, nine provincial governments and 52 health districts. South Africa has been regarded as a poor performer with respect to maternal and child health outcomes, and a number of accountability strategies were implemented in the health system to address this. They include the Confidential Enquiry into Maternal Deaths (CEMD), the Perinatal and Child under-five Problem Identification Programmes (PPIP and CHIP), and a range of other clinical governance and quality assurance measures. This study was conducted in Gert Sibande District, one of three districts of Mpumalanga Province, situated in the north-east of South Africa. The District has a population of about 1.1 million, with the majority (61%) living in rural areas (Massyn et al., 2017). The District comprises eight district hospitals, one regional hospital and 76 primary health care (PHC) facilities, distributed among seven sub-districts. These public health facilities serve poor rural communities, including migrants and farm-workers, and are for the most part free at the point of use.

Sample and data collection

We used a purposive sampling method to select key informants from two of the seven sub-districts and the district office. The sub-districts were selected in a prior study as representing the range of buy-in to one particular MNCH accountability strategy [31]. Informants were sampled among frontline managers and providers involved directly in MNCH, and among those indirectly associated with accountability for MNCH, using a snowballing approach. They consisted of the following: district programme managers and members of the district maternal and child health clinical specialist team (DCST), hospital CEOs, operational (unit) managers from PHC facilities and district hospitals, professional nurses, allied health professionals, emergency service personnel, community representatives (chairpersons of hospital boards), and trade union representatives (total 58 respondents).

Strategies for data collection were discussed and agreed by all authors. Data were collected using semi-structured in-depth, individual interviews and one focus group discussion with PHC operational managers. In addition to a few demographic details, interviewees were asked the following four open-ended, exploratory questions: What does accountability mean for you and how do you experience it in your daily practice? To whom are you accountable and for what? What are the barriers, facilitators and challenges to current accountability for MNCH in practice? What can be done to improve accountability?

Interviews were conducted by the first author as part of a wider study, which also involved repeated visits, immersion and observations of accountability processes over 16 months. The average time of each interview was 45 min (ranging from 22 to 89 min). The interviews and focus group discussion were audiotaped and, with respondents' permission, transcribed verbatim. During and after the interview the interviewer took notes and summarised the interview on a coversheet designed for that purpose. All audio files and transcripts were reviewed by the authors to ensure quality.

Data analysis

Data from the open-ended questions were organised, coded and analysed inductively using Atlas.ti (Version 8), and a thematic approach was used to analyse the data. In the first step, each respondent's transcript was read several times together with listening to the recording to form an initial understanding of the expressed sense of accountability. Codes were developed iteratively based on the content of the interview guide and emerging insights. An initial code list was identified by all authors and tested on selected transcripts from the three research sites. After discussion, consensus and validation of the code list, the remaining transcript coding was done by the first author. Next, all transcripts were coded and significant statements (quotations) representative of the perspective or experience extracted. Codes with

similar patterns were grouped into themes and similar themes were organized into categories. Finally, the findings were integrated into a comprehensive description of the concept of accountability that was presented to respondents in various meeting platforms for them to verify and validate the results.

Validity, truthfulness and ethical considerations

The researchers sought to apply the 'bracketing' principle of phenomenology by deliberately putting aside their pre-existing knowledge and adopting a 'not-knowing' attitude 'to maintain the curiosity in the participants' [32].

The periods of immersion and observation, which formed part of the wider study, not only built trust with participants but also enabled the authors to contextualise and interpret the material from the interviews. Apart from the regular feedback and discussion of the findings during follow-up meetings in the district, iterative processes between the first author (PhD student) and his co-authors (PhD supervisors) through ongoing communication and continuous questioning of the understanding of data and reviewing of findings, provided opportunities for minimising descriptive and interpretive biases.

Results

Table 1 summarizes the characteristics of key informants from the two sub-districts and the district office. Of a total of 58 participants, 36 (62%) were female, 43 (74%) were managers (senior and mid), and 3 (5%) were chairpersons of the hospital boards representing the community. Thirty (51.7%) respondents were nurses and 9 (15.5%) doctors; their experiences vary from less than 1 year to over 10 years at the time of this study.

In the following sections, we provide a detailed description of what the respondents understood or perceived as accountability, what they experienced as the barriers and enablers of accountability, and their recommendations for improving accountability. To maintain the credibility of our findings, identified themes are presented with a short descriptive text and illustrated with representative quotes [30].

Defining accountability

Frontline health managers and providers in the district had well-formulated views and definitions of accountability, following Hilber's [1] key attributes with words such as being 'responsible', 'answerable' and 'transparent' frequently invoked (Table 2). Formal, bureaucratic versions of accountability existed alongside ideas of accountability as a professional virtue and a product of intrinsic motivation (referred to by one respondent as 'passion'), as proposed by Bovens [21].

a. *Accountability as being responsible*

Table 1 Characteristics of key informants

	n (%)
Sex (*n* = 59)	
Female	37 (62.7)
Male	22 (37.3)
Category (*n* = 59)	
Doctors	10 (16.9)
Nurses	30 (50.8)
EMS	1 (1.7)
Allied, Dieticians, Social workers	7 (11.9)
Community representative	3 (5.1)
Information Officers	3 (5.1)
Pharmacist	1 (1.7)
Corporate (HRM, Asset, Laundry)	4 (6.8)
Function category (*n* = 59)	
Manager	44 (74.6)
Non-manager	12 (20.3)
Community representative	3 (5.1)
Duration in position (*N* = 44)	
Less than 1 Year	3 (6.8)
1–3 years	8 (18.2)
4–7 years	17 (38.6)
8–10 years	5 (11.4)
Over 10 years	11 (25.0)
Level of care (*n* = 59)	
District Office	13 (22.0)
District Hospital	33 (55.9)
Sub-District Office	2 (3.4)
Ideal Clinic	11 (18.6)
Interview types (*n* = 59)	
Individual	50
1 FGD of 9	9

Table 2 Frontline managers' and providers' definitions of accountability

Definition	n (%)
Responsibility	32 (39.0)
Answerability	19 (23.2)
Compliance (Norms, Guidelines, Targets)	9 (11.0)
Transparency/Reporting	7 (8.5)
Realise promise/Provision of Quality Care	5 (6.1)
Sanctions	4 (4.9)
Performance	3 (3.7)
Obligation to Update Knowledge	1 (1.2)
Provision of Strategic Leadership	1 (1.2)
Recognise hierarchy	1 (1.2)
Total	**82 (100)**

(Note: *n* = Number of times the term was mentioned from a total of 82)

Accountability was most often referred to as being responsible for any decision taken, and 'act or omission' in the line of duty. Being responsible took different forms, from general awareness and internal disposition to more specific notions linked to management in hierarchies.

A hospital Chief Executive Officer (CEO), as the main 'accounting officer' of the institution, indicated his awareness of his ultimate responsibility for all actions taken in the hospital.

For all the good things I am accountable and even for all the bad things and also for omissions of which our officials might have been involved in … [Hospital CEO].

Reflecting a similar understanding at an operational level, an information officer described accountability as taking responsibility for doing one's work without mistakes.

… Everything that you are doing you are ... we are responsible for it; you must make sure that there's no mistake there … accountability means you must take full responsibility [Information Manager].

A senior nursing manager, on the other hand, understood accountability as assigning responsibility to 'subordinates' in a management line, while retaining accountability.

'Accountability according to my understanding … is assigning responsibility to your immediate subordinates, but as the accounting person you don't assign accountability, accountability remains with you' [Nursing Manager].

Accountability was also referred to as a process of assigning responsibility (fault) to system actors in cases of wrongdoing or negative outcomes.

'*Whose fault is it that someone got malnourished or died or anything like that?' [Dietician].*

Such wrongdoing could invite sanction:

' … The Minister said where we are going there will be time if anything is really happening in the hospital, [an] investigation done [which] finds that there is something like negligence, so and so will be accountable; and when you are accountable, people they will even lose maybe a salary … ' [Manager].

b. *Accountability as being answerable*

Accountability was also perceived, alongside responsibility, as being able to answer or explain, referring to the obligation to justify any decision or action taken that resulted in the observed outcome for the patient or the system. As with responsibility, the notion of answerability was described both as a personal attribute and as compliance to external rules, as implied by the two contrasting accounts below:

'To be accountable is to be able to answer, to be answerable, to be able to answer for the actions that you have taken, to be able to give the reasons why you did what you did and the way you did it. So that to me that is accountability' [Operational Manager].

'Accountability means that you agree to abide by the protocols, the prescripts, the guidelines and whatever that you do, it is [judged] against what the protocols or guidelines are saying … ' [Manager].

c. *Accountability as a virtue*

Underpinning ideas of responsibility and answerability as a personal attribute, the narratives of respondents made frequent reference to accountability as driven by personal values, intrinsic motivation and professional commitment.

'To me, it's a sense of duty, accountability means a sense of duty, sense of urgency, effectiveness, sense of accountability itself and sense of responsibility as well. To me, all that forms part of accountability' [District Programme Manager].

As a moral value or virtue, accountability transcends professional knowledge and experience to embrace 'knowledge with passion', and collective commitment to the provision of quality care, as expressed in one sub-district.

'… one of the key things helping this sub-district is to have people with passion in those wards … like here in maternity ward Sister [name], paed's ward Sister [name], the operational manager; to have people with a passion at the same time experience, because they've been here for a long time. They have the experience, they have knowledge. If you have the knowledge it's good. But if you have knowledge and passion then you make a difference … '[Allied Health Manager].

Accountability is being sensitive to patient needs, particularly to the patients served in public health facilities within the district.

'You need to stand up and go to the waiting area and check; that also makes people more comfortable. If they know that she [nurse] has seen me, she knows about me, every time she comes out, she says I have noticed you, see you now, now, it makes people comfortable, they can relax, they know they will be helped' [PHC Manager].

Finally, as a virtue, accountability is perceived as a response to trust that the community placed in the health system.

'I'm accountable to the patient that I'm giving the service to. Because I'm accountable to her, that I know that when she left her home to come here, she trusts us and she is putting all her trust to me, so I must do justice to her, I'm accountable to her' [Operational Manager].

The multiple directions of accountability

When asked to whom they were accountable, respondents typically saw themselves as being accountable simultaneously to other health system actors, upwards and downwards in a hierarchy, horizontally to peers, and outwards to patients and communities. Their understandings thus encompassed notions of both internal and external accountability.

'Firstly, I'm accountable to the patient that I'm giving the service to. And also, I always tell myself I'm accountable to the colleagues that I'm supervising because whatever good and bad things that they are doing it will reflect back to me[…] And all in all, I'm accountable to the Department because they put me here as they've trusted me that I'm going to represent them in a good way' [Operational Manager].

For some, accountability involved a reciprocal relationship of 'giving hope' and responsiveness to staff downwards in a hierarchy:

'Administration-wise … apart from accounting to the District Manager, the head of the department and the MEC for Health, at the end of the day I account to the community […], as well as the staff, meaning here I must give hope to the staff because you see, there are lots of challenges and internal issues that need to be attended to, your shortage of staff, your lack of equipment, your shortage of skills, your need for training...' [Hospital CEO].

Accountability was expressed as a relationship, both to immediate line managers and patients and a wider system and 'citizens'.

'Workwise, I account to the District Manager in terms of meeting all the objectives that I have to meet according to the key performance … I am [also] accountable to the citizens of the country for one reason - they are the funders of the whole government project' [District Programme Manager].

Community representatives on Hospital Boards described a complex mix of accountability relationships involving communities, political principals (the Member of the Executive Council (MEC) - the Provincial Health Minister) and trade unions.

'My accountability, or our accountability, as board members I think, is in two ways. We account to the community, that's a very critical role. And the second one, we also account to the MEC and you would understand that because the MEC is directly elected by the community' [Hospital Board Chairperson].

' … the unions and also the community members, there is no way that you can disregard what they say' [Hospital Board Chairperson].

Finally, linked to the narratives of accountability as a professional virtue, frontline managers and providers often described a relationship of accountability to the self.

'First, I'm accountable to myself … because you know every time you save a life … I don't say it's happiness, it's something like it's a fulfilment, you go back home and you say I saved a life […] I think the first one is to myself, [then] to the community, to the management' [Medical Officer].

Enablers and barriers of accountability

While having clear ideas about definitions and directions of personal accountability, interviewees saw the everyday practice of accountability as embedded in a wider set of organisational relationships and processes, where leadership styles, communication, team-work and community engagement were key factors.

a. *Leadership and management styles and practices*

Respondents identified hands-on, accessible leadership styles as a key to accountability. One hospital CEO described his 'open door policy' as follows:

' … having this open-door policy I speak even with the cleaner down there, I am not saying no, no I won't speak to you I will only speak to your supervisor or whoever just to be in contact with everyone

…. when you are in touch with your people you know they can come to you at any time, phone you, talk to them, go to where they work, look at the area where they are working, you will understand the situation' [Hospital CEO].

Variation in the involvement and closeness of the leadership to staff within the district was described by another frontline provider as follows:

'The leadership is very important. For example, in Hospital A, I worked also in that hospital, the leaders are there somewhere, and you, you are your side. It is very different from Hospital B, the leaders are very involved starting by the CEO, you could see that every time he's got an occasion he attends the meetings; Dr [clinical manager], once I take the phone and say, 'mommy I am in a difficult situation' she will arrive. You see that the leadership is very involved' [Medical Officer].

Leadership styles and practices were most evident in the manner in which 'adverse events' such as maternal deaths were responded to at district and higher levels. While these events were infrequent, the attention brought to them, and the way responsibility was assigned and sanctions applied, was watched carefully by frontline actors, setting a wider tone for perceptions of accountability at sub-district and facility levels. Respondents described instances of both unfair, harsh punishment and impunity in response to adverse events.

'In this office yes... others were suspended for something that they did not do' [District Programme Manager].

' … but when it comes to sanctions, why these ones are punished this way, I can say it's a punishment, why those ones are not punished, you know this discrepancy … ' [Medical Officer].

Politically connected players could escape sanction:

' … politics is mixed with the administration … so, that compromises accountability a lot; if people are doing wrong it's difficult to reprimand them; because if you go to your external structure, that person is the secretary or the chairperson in your political branch' [District Programme Manager].

Practices of impunity created the conditions for malpractice suits, while unfair punishment engendered a climate of fear of reporting:

' … When they are suing the hospital, they are not suing you as an individual. That's where accountability is coming in because people are thinking that if something happens it's fine the government will resolve it for me, and they can continue doing the very same things' [Manager].

'Most of the time, people, they think that maybe when you report, the punishment is coming … ' [Manager].

b. *Strengthening provider motivation and skills*

A 'people-centred' approach was seen as a key enabler of accountability by a senior clinician in the district.

'The things in health are run by people; a machine can help but it's the people who are delivering the service … If we have the right people with the right training, the right updating [of knowledge] and everything, also with the right motivation that they are really attended to in proper way as human beings, then for me it's almost impossible not to reach the point' [DCST member].

Provider motivation could be strengthened in several ways, including responsiveness to needs, acknowledgement of good performance and respectful interactions:

'Motivation is a very wide word. I don't want to say we'll give you more salary, we'll give you a house. Motivation sometimes is to attend the people's needs, to have the proper equipment, to work in proper conditions, and to tell them 'thank you, you are doing well' when you are doing well; And when they are not doing well to call their attention in a respectful way. Motivation is not necessarily about spending money or to give more [material] things; motivation for a human being can be simple' [DCST member].

Of these, acknowledgement of good performance and achievement was particularly valued.

' … I spoke to him [HOD] and asked […] I would like you before you leave to go and say something nice to my nursing staff. He asked me why, I said you know since I've been here, we never had any maternal death, and those guys need at least to hear from you a 'thank you'. He came and spent some minutes with them, he thanked them and it was very good' [Medical Officer].

Alongside strengthening their motivation, improving accountability required equipping providers with the right knowledge and skills.

'So, I think knowledge is power … If we are given money to improve accountability, I think step number one will be to give people the information, knowledge. Because once people have knowledge on that particular programme or on that particular work that they are doing, they will be able to account better and even the superiors or the accounting officer would be able to hold them accountable because they'd be having knowledge' [Allied Health Manager].

c. *Communication and teamwork*

Respondents identified effective communication and collaborative teamwork and support systems between levels of care as an important element in strengthening collective responsibility and a 'no-blaming' environment.

'Because previously we were having that thing that PHC would point at the hospital, we, when we have done wrong, we will point it back to the PHC, and we have been pointing it back because they are not in our meetings; now we are together' [Operational Manager].

' … We need to have a support system; […] first we must have a good referral system in a way that when I have a problem I should have a backup. A good referral system includes first a very good team, a district hospital, very good communication, very good transport system. It's a holistic system that involves everybody, involve the community' [Medical Officer, SD2].

Conversely, the lack of communication was experienced as a barrier to accountability that affected the quality of care and created a culture of blaming and shifting of responsibility, as these two quotes from one facility illustrate.

'I have to be honest … I identified that there is no link, there is no communication in terms of the hospital as well as the PHC' [Hospital CEO].

'There is a culture of blaming within the hospital that brings the feeling of embarrassment; there is also a behaviour of policing behind your back, like people watching you report on any mistake' [Medical Officer].

Finally, unity and teamwork among key managers in hospitals (the 'Big Five') were important in consolidating accountability within the organisation.

'I think the key people are the 'Big Five' at the hospital level; the CEO, the nursing service manager, the corporate manager, then finance and the clinical manager […] even though I'm a nursing service manager, but when I go to a unit, I will make a doctor account the same way the clinical manager will make a nurse account for his/her action. So probably the teamwork between the Big Five is important to ensure that people are accountable' [District Programme Manager].

d. *Engaging communities and trade unions*

Openness to communities and representative structures such as trade unions was a recurring theme as shaping the accountability ecosystem.

'We normally conduct community dialogues, where different stakeholders come together […], an example regarding the late booking of the antenatal care; people are voicing out what can be done and they are voicing out why people are not booking early for the antenatal care. Then after the dialogue, we sit down and plan for the activities that can improve the situation together with the community' [District Programme Manager].

Respondents expressed various views on trade unions as a 'voice' for accountability.

' … organised labour formation, that for me is very key because it also contributes to the wellbeing of the entire operations within a hospital setup' [Hospital Board Chairperson].

On the other hand, trade unions were also described as powerful, but problematic players.

'No, their voices are not for pushing for improvement. Their voices are more for getting people angry; If they use that effort, you would see a different place, if they use that effort to try to improve and try to motivate and try to get people to do the right thing' [PHC Manager].

Discussion

This paper provides a descriptive account of how public sector frontline health managers and providers perceive and experience accountability in the context of a district health system serving a poor rural community.

The study found that these health system actors had well-established ideas about, and a language of, accountability, in contrast to the 'inability to define the concept of accountability' reported in a study of health workers in another South African Province [33]. However, as described by Baumann et al. [34] in the Canadian setting, respondents did not present a single or common understanding of accountability. On the one hand, they described accountability as responsibility, answerability or compliance, showing the internalization of accountability as an 'organizational mechanism' involving answerability for 'acts and omissions' within hierarchies. On the other hand, they also saw accountability as a moral value and intrinsic professional attribute, described by Bovens et al. [11] as a virtue. These authors suggest that making a distinction between accountability as 'mechanism' and as 'virtue' is the first step in addressing the conceptual confusion in studying accountability.

Accountability as a virtue is a reflection of public-interest values; it is linked to ideas of healthcare as a profession, involving public proclamations (through oaths) of commitment and dedication, and the suppression of self-interest for the wellbeing of the peer human beings as recipients of healthcare [35]. Similarly, even though study participants were very aware of their place in hierarchies, the majority simultaneously expressed strong accountability to patients and communities, to peers and the 'self' as a professional. Their narratives reflected their collective positioning in a classic professional accountability model described by Emmanuel and Emmanuel [36].

This wider understanding of accountability is an asset for better understanding of health inequities and social determinants of health, and for promoting the acceptability and quality and ultimately, equity, of health services. This notion is important to recognise and nurture in strategies to strengthen accountability and improve the quality of healthcare at the frontline [1]. The findings also suggest that frontline providers and managers are less in need of further training on accountability, values clarification or new accountability mechanisms given the crowded nature of the accountability space [23]. However, interviewees were all in agreement that they needed enabling local environments that better support their practices of accountability [26].

The respondents in the district recognized the following as enablers of accountability, shaped by the local context of each sub-district and facility: collaborative, multidisciplinary teamwork; good relationships between levels of care, community participation; and an open leadership style. Alongside these elements was paying attention to provider motivation, including recognition for good performance and words of encouragement, respectful interactions, sound human resources practices, investment in skills development and support systems that are responsive to needs. Such reciprocal processes of accountability between management and spheres of practice, described by Elmore et al. [37], are key to performance.

Respondents also described several challenges to accountability, including blaming and shaming cultures, and instances of perceived unfair sanction for some actions while others continued with impunity. As observed by Aveling et al [38], sanctioning individuals when systems are inadequately designed or poorly functioning may be masking deeper 'organisational pathologies'. Van Niekerk also alluded to healthcare workers being unfairly called to account daily on tasks that fell beyond their scope of practice [33]. Therefore, formal accountability procedures do not automatically lead to better health equity if socio-economic inequities and health system structural failures are not adequately addressed as root causes.

The respondents argued less for doing away with individual accountability so much as fair approaches to sanctioning, and more broadly, the development of environments that promote the 'opportunity to be good' [38]. Such an approach affirms ethical and moral responsibility for actions and behaviours of frontline health professionals while also creating conducive organisational environments and norms of fairness and collective responsibility in which individuals may be held accountable [38].

Interviewees readily provided examples and experiences where there had been a shift from a blame culture to one known in the health care safety literature as a 'just culture' [39]. Respondents were very aware of the elements of such a just culture, including the organisational and managerial practices which enabled accountability and strengthened performance, and how these were configured in the individual spaces of the district. This suggests considerable potential for improving accountability through lesson learning within the district. Moreover, an internal, just culture will promote equity in the provision of health care. However, local and provincial contexts where administrative and political decision-making processes are blurred, an excessive focus on compliance rather than relational approaches to accountability from higher levels of the system [23], and a growing fear of litigation may all constrain the expression of just cultures at a district and sub-district level.

Finally, any plan to improve accountability for better MNCH outcomes should include strengthening community participation which is recognized elsewhere as a key mechanism to increase provider accountability [40]. In this regard, the WHO's Partnership for maternal, newborn and child health (PMNCH) recommends that effective accountability mechanisms should ensure transparency and inclusiveness

Limitations

Accountability is a sensitive subject, and respondents' accounts may not fully represent the reality of their practices. The idealistic statements of accountability and ethics from respondents could have been what they

thought to be the right answer reflecting a social desirability bias in their responses. We sought to minimise this by prolonged immersion in the field and supplementing formal interviews with informal conversations and observations (reported more fully in [23]). Basing the research on respondents' self-reports and accounts could have led to an overstatement of phenomena and introduced a common method bias [41]. Effort was made to include as many respondents as possible and to consistently probe answers throughout the semi-structured interviews. Possible interpretive bias was dealt with through the lead researcher's reflexivity and questioning from the other authors. Furthermore, each author engaged separately with the data from own perspective and sought to identify key themes separately which were then discussed and agreed on collectively.

Conclusion

Frontline providers and managers in this rural district of South Africa had well-established definitions of and views on how to strengthen accountability for performance. While not negating the role of individual accountability, they pointed to system-related factors driving inequity and the need for promotion of a 'just culture' [39] of accountability, learning and improvement at the individual and organizational level. This has important implications for promoting equity in access and ensure that the system is leaving no one behind.

Significance and contributions

Problem in what is already known

Accountability is emerging as a key concept in health systems globally and nationally, and particularly in relation to Maternal, Neonatal and Child Health. How frontline providers perceive and experience the everyday practice of accountability is not well understood.

What this Paper Adds

- Frontline providers have varied understandings of accountability, but express strong professional notions of responsibility, answerability and accountability as a 'virtue'. Their everyday practice is deeply influenced by the organisational environment.
- Formal accountability procedures do not automatically lead to better health equity – On the contrary, it might lead to 'naming and shaming' among public workers, without adequately addressing structural determinants.
- District and primary health care systems play an important role in strengthening equity of access, availability and quality of healthcare services. Countries facing similar issues of disparities in access to quality health care need to revisit how frontline healthcare workers conceptualize formal and informal accountability as part of their job and professional identity.
- The micro-contexts of accountability are not uniform between various local settings, and this variation provides an opportunity to strengthen accountability and improve the quality of care provided through lesson learning.

Abbreviations

CEO: Chief Executive Officer; CEMD: Confidential Enquiry into Maternal Deaths; CHIP: Child under-five Problem Identification Programme; DCST: District Clinical Specialist Team; MNCH: Maternal, Newborn and Child Health; PPIP: Perinatal Problem Identification Programme

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Authors' contributions

HS conceived the overall project. FKM, HS, and SVB conceived the paper. FKM collected, analysed the data, and wrote the first draft with input from all authors. All authors edited the manuscript and approved the final version.

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Availability of data and materials

Not applicable.

Ethics approval and consent to participate

All interviews proceeded with signed informed consent and data are presented anonymously. The project was approved by the Biomedical Science Research Ethics Committee of the University of the Western Cape (Reference number: BM17/10/8) as well as by the Mpumalanga Provincial Health Research Committee (Reference number MP_201801_004).

Consent for publication

Yes, provided confidentiality is maintained.

Competing interests

The authors declare that they have no competing interests.

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Paper 3

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Paper overview

The third paper included in this PhD details a framework of elements covering an analysis of causes of death, and the processes of review and response that were developed and applied to evaluate the functioning of DSR processes in two sub-districts from the study district. The paper highlights variations in the forms and functioning of DSR mechanisms across sub-districts. While some of the mechanisms, particularly those involving maternal deaths, trigger individual blaming and sanctioning, the suggested framework allows DSR processes to systematically and holistically address and respond proactively to modifiable factors related to maternal or child death events.

Contribution to the thesis

This paper contributes to the thesis, particularly to Objective 3: To evaluate the functioning of selected accountability mechanisms with respect to their design and the outcomes they produce. The paper also contributes to Objective 1, by adding to the mapping exercise, in this case focusing on DSR.

Contribution of candidate

The candidate designed the study, collected and analysed the data, and wrote the first draft with input from the supervisors and co-authors. All authors critically edited the manuscript and approved the final version (submitted for publication).

The comments from the peer review process are available in Appendix 11.

BMJ Open

Practice of death surveillance and response for maternal, newborn and child health: a framework and application to a South African health district

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ABSTRACT

Objective To assess the functioning of maternal, perinatal, neonatal and child death surveillance and response (DSR) mechanisms at a health district level.

Design A framework of elements covering analysis of causes of death, and processes of review and response was developed and applied to the smallest unit of coordination (subdistrict) to evaluate DSR functioning. The evaluation design was a descriptive qualitative case study, based on observations of DSR practices and interviews.

Setting Rural South African health district (subdistricts and district office).

Participants A purposive sample of 45 front-line health managers and providers involved with maternal, perinatal, neonatal and child DSR. The DSR mechanisms reviewed included a system of real-time death reporting (24 hours) and review (48 hours), a nationally mandated confidential enquiry into maternal death and regular facility and subdistrict mortality audit and response processes.

Primary outcome measures Functioning of maternal, perinatal, neonatal and child DSR.

Results While DSR mechanisms were integrated into the organisational routines of the district, their functioning varied across subdistricts and between forms of DSR. Some forms of DSR, notably those involving maternal deaths, with external reporting and accounting, were more likely to trigger reactive fault-finding and sanctioning than other forms, which were more proactive in supporting evidence-based actions to prevent future deaths. These actions occurred at provider and system level, and to a limited extent, in communities.

Conclusions This study provides an empirical example of the everyday practice of DSR mechanisms at a district level. It assesses such practice based on a framework of elements and enabling organisational processes that may be of value in similar settings elsewhere.

Strengths and limitations of this study

- This paper puts forward a framework of elements for evaluating the functioning of maternal, newborn and child (MNC) death surveillance and response (DSR) at the district level.
- The functioning of DSR mechanisms in a South African district that had benefitted from DSR strengthening interventions was evaluated using the framework.
- Field observations of MNC DSR processes and interviews with front-line providers and managers were conducted.
- The framework was applied to one rural district that had developed functioning DSR practices; it needs to be further tested and validated in other contexts.
- The framework and appraisal methods may be of value in similar settings elsewhere.

INTRODUCTION

The United Nations (UN) put accountability for maternal, newborn and child health (MNCH) on the global agenda, placing three interrelated accountability processes at the centre of its 'Global Accountability Framework', namely, monitoring, reviewing and response.[1] Death surveillance and response (DSR) has become one of the means to operationalise these accountability processes in many health systems, with the view to improving the quality of maternal, neonatal and child healthcare, and eliminate preventable deaths.[2–5]

DSR entails a continuous cycle of identification, notification and review of deaths, followed by action to improve the quality of care and prevent future deaths.[6] Its essence is, therefore, the capacity to record, review and respond to each death using affordable, effective and evidence-based actions linked to the findings.[5]

There is now a well-established tradition of DSR in low-income and middle-income countries (LMICs), focusing primarily on maternal deaths.[2 4 6–10] In facilities and contexts where maternal deaths are relatively rare, maternal 'near-miss' cases may

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also be audited.[5] More recently, LMICs have begun including the review of perinatal and neonatal deaths into DSR systems, referred to as maternal and perinatal DSR (MPDSR)[11–13]; and in some settings, DSR extends to under-5 deaths.[14–16]

In addition to facility-based processes, community-based DSR is recommended where a high proportion of deliveries (and deaths) occur outside of health facilities, and where community participation is crucial to implementing identified key actions.[5 11] In this regard, verbal and social autopsies have been developed as a participatory tool for community-based DSR, exploring clinical and social causes of death from a community perspective.[17–19]

DSR processes are typically defined nationally but implemented at facility level with support from and coordination by local or district teams.[20 21] Although there are no globally standardised approaches,[4] the literature points to several elements underpinning effective DSR processes, encompassing analysis of modifiable factors involved, the tone of the review process and the range of participants involved.

The analysis of modifiable factors underlying maternal and child deaths has been codified into the 'three delays' model of care-seeking and utilisation: (1) the delay in deciding to seek care early; (2) the delay in reaching a health facility; (3) the delay in providing or receiving adequate care at the facility.[6 22–25]

In formulating a response, the literature on DSR recommends moving away from identifying and sanctioning individuals,[26] and towards the setting up of non-punitive 'no-blaming' approaches that foster collective and individual participation.[2 20] Such approaches are less likely to result in ignoring the incident or the temptation to defer responsibility onto others.[2 3 5]

DSR processes ideally involve a multidisciplinary team with the representation of a range of clinicians (nursing, medical and other professionals), managers and support staff (such as information officers). This brings together the array of provider knowledge and skills, together with commitments from managers to enhance ownership of the findings and turn recommendations into concrete actions.[2 5 6]

South Africa has a long-standing history, going back to the mid-1990s, of maternal, newborn and child DSR that has become integrated into the routine functioning of front-line health services. DSR processes are linked to three ministerial committees established in 1998, namely the National Committee for Confidential Enquiry into Maternal Deaths,[27] the National Perinatal and Neonatal Morbidity and Mortality Committee[28] and the Committee on Morbidity and Mortality in Children under 5 years (CoMMiC).[29] These committees function at national level with mandates exercised at local (health district) level through three of the DSR processes, namely, the Confidential Enquiry into Maternal Death (CEMD), the Perinatal Problem Identification Programmes (PPIP) and the Child under-5 Problem Identification Programmes (CHIP). These mechanisms are situated in a dense and complex accountability ecosystem at the front line of health provision.[30]

There have been significant reductions in maternal, neonatal and child mortality in South Africa over the last decade, attributed principally to the prevention and treatment of HIV.[31] However, despite a long history and institutionalised practice, there is little understanding of the role of DSR implementation and functioning in this mortality reduction. Clear guidance on how best to assess this functioning is also lacking; one study showed no association between consistent auditing and perinatal mortality rates.[32]

Given the lack of standardisation and consensus on elements for assessing the functioning of DSR, this paper proposes an assessment framework using criteria drawn from the literature and then applies the framework to evaluate existing maternal, peri/neonatal and child DSR mechanisms in one South African district.

This paper thus seeks to answer the following question: Based on a comprehensive assessment framework, how functional are the district's DSR mechanisms?

METHODOLOGY

Definitions

In this paper, the term DSR refers to all death reporting and review processes related to maternal and child health, even if they do not have all the ideal components of DSR. They include phenomena commonly reported in the literature such as maternal death review (MDR) or audit, maternal death surveillance and response, MPDSR, or surveillance and review of child deaths.

Conceptual framework

A framework to assess the functioning of DSR mechanisms was developed using criteria drawn from the literature and supplemented by field observations and interviews with front-line providers and managers.

We conducted a search of the literature using the above terms and consulted with experts in the field to identify the elements of well-functioning DSR. On the basis of these, a conceptual framework was developed. We combined the WHO Continuous Action Framework to eliminate preventable deaths,[6] the 'Three Delays' framework,[22] and other elements identified in the literature[2 4 6 20] to assess the DSR processes. These are outlined in tables 1 and 2. The framework distinguishes between (1) the surveillance process (what, how, who); (2) the identification of modifiable causes of death and investigation as per the three delays model and (3) the types of responses (actions) triggered, whether proactive or reactive. These elements provide a holistic and comprehensive assessment of the various steps and processes involved in DSR. Given that mortality reductions require coordination across levels,[33] the framework adopts an area-based approach, using the most decentralised structures of in health systems coordination, notably the subdistrict, as its unit of analysis.

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Table 1 WHO's four components of continuous action in maternal death surveillance and response system

Identify and notify deaths	Identification and notification on an ongoing basis: Identification of suspected maternal deaths in facilities (maternity and other wards), followed by immediate notification (within 24 and 48 hours, respectively) to the appropriate authorities.
Review maternal deaths	Review of maternal deaths by local maternal death review committees: Examination of medical and non-medical contributing factors that led to the death, assessment of avoidability and development of recommendations for preventing future deaths, and immediate implementation of pertinent recommendations.
Analyse and make recommendations	Analysis and interpretation of aggregated findings from reviews: Reviews are made at the district level and reported to the national level; priority recommendations for national action are made based on the aggregated data.
Respond and monitor response	Respond and monitor response: Implement recommendations made by the review committee and those based on aggregated data analyses. Actions can address problems at the community, facility or multisectoral level. Monitor and ensure that the recommended actions are being adequately implemented.

Study design

We conducted a descriptive, exploratory qualitative case study of the forms and functioning of maternal, neonatal and child DSR processes applying the framework (table 2).

Study setting

The study was conducted in one of the three health districts in Mpumalanga Province situated in the North-east of South Africa. The district has a population of about 1.1 million, with the vast majority (61%) living in rural areas.[34] It contains 1 regional hospital, 8 district hospitals and 76 primary healthcare facilities, distributed among 7 subdistricts.

The study district was targeted for health systems strengthening support because of high maternal and child mortality.[35] Intensified efforts were specifically made to strengthen DSR in the district over several years, building on long-standing processes (24-hour reporting, CEMD and PPIP, CHIP). Besides these, DSR processes were accompanied by improved district clinical support with the introduction of district clinical specialist teams (DCST) and a new mechanism of coordination, referred to as the monitoring and response unit (MRU). These initiatives were widely regarded as having impacted positively on maternal and child mortality in the district.[36] In these respects, therefore, the district could be regarded as

Table 2 Framework for the functioning of maternal, neonatal and child death surveillance and response (DSR)

I. Surveillance process (What and How?)[2 4–6]			
Elements of effective maternal, neonatal and child death surveillance and response[2 4–6]	1. Continuous surveillance (full cycle) integrating death auditing, review, communication and feedback mechanism (identify and notify; review, analyse and make recommendations; respond and monitor response)		
	2. Recommending cost-effective and evidence-based practices		
	3. 'No naming, no blaming' (confidentiality, non-punitive tone of the process)		
	4. Integrating learning and response from DSR into continuing professional development, quality improvement, health system strengthening and community education		
	5. Institutional support culture at all levels of the health system (management)		
	Actor participation (Who?)[6 55]		
	6. Driven by multidisciplinary teams (clinical, support, managerial)		
	7. Integration across levels from PHC facilities to hospitals, districts and higher levels		
	8. Involvement and commitment of the managers to act on the findings		
	9. Community participation in review and response (social and verbal autopsy)		
II. Following a holistic approach to identifying modifiable causes			
'Three delays[23]'	First delay in deciding and seeking Care	Second delay in identifying and reaching a health facility	Third delay in receiving adequate appropriate care
III. Actions (proactive and reactive)			
Provider level		Capacity building, in-service training	
System level		Health system improvement, provision of resources	
Community level		Community education	

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Table 3 Death surveillance and response mechanisms—purpose, frequency and target

Observed mechanisms	Purpose	Frequency	Target				Participants
			Maternal	Perinatal	Neonatal	Child <5	
24-hour reporting, 48-hour review	Specific to MNCH; compulsory Death notification	Linked to death event	✓	✓	✓	✓	Facility; Patient Safety committee (subdistrict and district)
Confidential enquiry into maternal death	Specific to MNCH; quality assurance; Compliance	Linked to death event	✓				National, province, district, hospital
Perinatal problem identification programme	Specific to MNCH; clinical; includes perinatal and maternal death audit; quality assurance	Monthly	✓	✓	✓		District, hospital, PHC facilities
Child under-5 problem identification programme	Specific to MNCH; clinical; audit; quality assurance	Monthly				✓	District, hospital, PHC facilities
Monitoring and response unit	Specific to MNCH; managerial; multidisciplinary	Monthly/ bimonthly	✓	✓	✓	✓	District, hospital, PHC facilities
Morbidity and mortality	General (not specific to MNCH)	Monthly	✓	✓	✓	✓	Hospital
Clinical audit/clinical governance	General (not specific to MNCH)	Monthly	✓	✓	✓	✓	District, hospital, PHC facilities

MNCH, maternal, newborn and child health.

having relatively well-functioning DSR at the time of the research. Although not nationally representative, it was nevertheless well suited for the qualitative exploration of functioning using a DSR assessment framework.

The framework was applied to maternal, peri/neonatal and child DSR mechanisms observed in the district, summarised in table 3 and described in the next section. Five mechanisms were specific to MNCH (24-hour Reporting and 48-hour Review, CEMD, PPIP, CHIP, MRU). An additional two, which also dealt with maternal, neonatal and child deaths, the morbidity and mortality, and clinical audit/clinical governance meetings, were general facility-based morbidity and mortality and clinical audit/governance mechanisms.

Maternal, neonatal and child DSR mechanisms in the study setting

This section briefly describes DSR mechanisms that are specific to MNCH.

Compulsory 24-hour reporting, 48-hour review

Any maternal, perinatal, neonatal or child death is mandatorily recorded at the facility where the death occurred and reported within 24 hours internally to the district office, and externally to the Department of Home Affairs for issuing of a death certificate. This is the standard operating procedure applied in all facilities in South Africa. In the study district, following the introduction of the MRU and the DCST, a district-level system was also established to review all maternal and under-5 child deaths within 48 hours, independent of other processes. This process of 24-hour recording and reporting and 48-hour case review was referred to as 'real-time death reporting'[37]; and its purpose was to enable actions to be taken as quickly as possible to address modifiable factors, such as correcting a skills or staffing gap, provision of resources or community education.

Confidential enquiry into maternal death

The CEMD was introduced in South Africa in 1997 and involves a standardised process of reporting and auditing. Maternal deaths, in addition to being reported to the district and Home Affairs, are also reported to the provincial MNCH coordinator within 24 hours, who allocates a unique number. A copy of the patient folder and a completed Maternal Death Notification Form are included in the report and submitted to a team of provincial assessors (obstetrician, medical officer, midwife and anaesthetist). Assessors will go to the facility to enquire about the causes of death, as well as any avoidable or modifiable factors. The resulting annual and triennial reports and recommendations (without details on individual cases) are disseminated to provincial and district

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structures and academic institutions for collation with general recommendations for action, such as training on the Essential Steps in the Management of Obstetric Emergencies.[38–40]

Ongoing review and response structures

As indicated, several routine meeting structures are established for auditing and responding to maternal, perinatal/neonatal and child deaths (table 3).

Perinatal/child problem identification programme

The PPIP/CHIP review meetings take place monthly at facility level. The meeting consists of systematically auditing the patient file related to death, comparing the management of the case against standard treatment protocols and guidelines. Through discussion, participants identify gaps in clinical management and modifiable factors related to the caregiver, provider or system and set up improvement plans, including capacity-building needs for the provider team. Data are entered into a specifically designed software package. The meetings observed were chaired by the clinical manager or the medical officer in charge of obstetrics and gynaecology, or by a nurse operational manager of the maternity ward.

Monitoring and response unit

The MRU brings together a team of actors, including managers (PHC, hospital), clinicians, information officers at subdistrict and district levels, associated with the system of local, real-time death reporting referred to above. The aim is to enhance the governance of MNCH and to improve area-based coordination between the various actors and levels of care. MRU meetings are intended to be convened monthly at subdistrict and bimonthly at district level. At district level, the meetings observed were chaired by the district manager or a representative, usually, the MNCH coordinator or the district quality assurance manager, while at subdistrict level, the MRU meeting was chaired by the chief executive officer (CEO) of the district hospital or a representative.

Study sample and data collection

The subdistricts were purposefully selected in a prior study as representing the range of buy-in to one particular DSR strategy (MRU)[33]; the implementation of DSR mechanisms in these subdistricts was also perceived by district managers as representative of what was happening in the district as a whole. We combined semistructured interviews, non-participant observation of meetings with a desk review of key documents as data sources for this study.

Semistructured interviews

We conducted 45 semistructured, individual interviews with purposefully selected respondents among those involved with maternal, neonatal and child DSR from two of the seven subdistricts and the district office. Respondents were either members of the enquiry or audit team or participants in one of the DSR meetings (MRU, PPIP, CHIP). Participants consisted of district programme managers (N=10) and members of the DCST (N=3), hospital hospital CEOs (N=2), hospital nursing managers (N=4), facility and hospital operational managers (professional nurses heading a ward in a hospital or managing a primary healthcare facility (N=5), medical officers (N=7), professional nurses (N=3), allied health professionals (N=5), emergency service manager (N=1) and facility information managers (N=2). A semistructured interview guide was developed and pretested (online supplemental appendix 1).

Interviews were conducted by the first author as part of a wider study. To ensure privacy and confidentiality, interviews were held in the respondent's office or in the boardroom outside the meeting time. With respondents' signed consent and permission, the interviews were audiotaped and transcribed verbatim. The interviewer took notes during and after the interview and summarised the interview on a predesigned coversheet.[30] All audio files and transcripts were reviewed by the authors to ensure quality.

Non-participant observation

From May 2018 to September 2019, for a total 59 days distributed over 1–3weeks in each of the two subdistricts, we conducted non-participant field observations by engaging in various activities and meetings related to maternal, peri/neonatal and child DSR in which health system actors were actively engaged. A structured observation sheet was designed for this purpose.[30] We observed the following meetings: PPIP and CHIP, MRU, morbidity and mortality, clinical audit, clinical governance and patient safety committee. During a meeting, apart from the general observation schedule, we specifically observed the structure of the meeting, standard agenda, actors involved, presentation and discussion of cases, decision processand related actions (capacity building, provision of resources or community engagement). We also reviewed the agendas and minutes of these meetings.

During this fieldwork, three maternal deaths occurred in the district and we were able to observe one formal district meeting and engage in informal discussions with district actors on the unfolding maternal death enquiry process linked to these three deaths.

Data management and analysis

Interview recordings were transcribed verbatim, and observation and reflection notes compiled by the first author (PhD student). All data were coded using Atlas.ti version 8, and a thematic analysis was used to analyse the data.[41] Key themes were identified following both a deductive approach based on a preset list of themes from the criteria of DSR functioning and inductively wherever new insights were identified.[42] Details of the analysis process are reported elsewhere.[43] The themes were grouped into two main categories, namely, (1) the forms and (2) the functioning of DSR. Finally, the findings were presented to respondents in various meetings or individual meetings to verify and validate the results.

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Table 4 Summary of the functioning of DSR mechanism in practice

	DSR mechanisms					
	24-hour reporting, 48-hour review	Confidential enquiry into maternal death	Perinatal/child under-5 problem identification programme	Monitoring and response unit	Morbidity and mortality	Clinical audit/clinical governance
Functioning in practice (What/How?)	Reporting and Auditing	Naming; obligation to inform and explain actions and decision taken;	'No naming, no blaming'	'No naming, no blaming'	'No naming, no blaming', auditing and quality assurance	'No naming, no blaming', auditing and quality assurance
Actors involved (Who?)	National, province, district, hospital	Facility (PHC, hospital)	Clinical (district, hospital, PHC)	Managers, clinical and non-clinical (district, hospital, PHC)	Clinical (hospital)	Clinical (district, hospital, PHC)
Actions (proactive and reactive)		Reactive; possibility of imposing sanction; targeting individual; institutional training	Proactive; taking collective responsibility; capacity building; system improvement	Proactive; taking collective responsibility, in-service training; system improvement and community education	Proactive; in-service training	Proactive, in-service training

DSR, death surveillance and response.

Positionality, reflexivity and ethics considerations

Interviews and participant observation can face ethical challenges given the sensitive nature of a research topic that can potentially expose hidden realities.[44] The conduct of this study was facilitated by our previous engagements in the study setting, and subsequently as part of the first author's PhD study. These involved a period of immersion and observation, which allowed for the building of trust with participants, and to be able to contextualise and interpret the interviews and observations. To minimise descriptive and interpretive biases, regular feedback and discussion of the findings were conducted during the follow-up meetings in the district; and iterative processes engaged between the first author (PhD student) and the coauthors (PhD supervisors) involving continuous questioning of the understanding of data and reviewing of findings.

ll interviews proceeded with signed informed consent.

Patient and public involvement

Patients or the public were not involved in the design, conduct, reporting or dissemination plans of this study.

RESULTS

Functioning of maternal, neonatal and child DSR mechanisms

Tables 4 and 5 present an application of the framework and a descriptive summary of the functioning of each of the DSR mechanisms observed in practice. We report on the overall functioning of DSR, drawing across all the forms of DSR observed and the views expressed by the respondents about them. We present key themes that emerged as critical from the elements outlined in table 2.

Surveillance and reporting process

Continuous surveillance cycle and evidence-based practices

All DSR mechanisms followed a structured approach to DSR, integrating recording and reporting of death, reviewing and classifying causes and making recommendations for actions based on established guidelines for MNCH. The MRU was most explicit in emphasising the completion of the surveillance cycle in its '4R's' approach that is, 'Report, Review, Record, Respond' to a maternal or child death.

The 'no-name, no-blame' approach

From our observations and the respondents' views, the perinatal and child (PPIP/CHIP) and the MRU meetings were the most likely to promote the 'no-name, no-blame' approach. The chairperson of the meeting ensured that confidentiality was maintained throughout and that no one was blamed for the occurrence of the adverse event. Otherwise, respondents noted that the meeting could be transformed into a 'punishment exercise' that would discourage actors' participation:

> …The perinatal meeting itself is not making anybody accountable. The meeting itself is about discussing things, it is not to point to individuals, because it's going to be discouraging for the people [to attend] if it's a punishment exercise… (DCST).

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Table 5 Functioning of DSR mechanism compared with elements from the literature

		DSR mechanisms					
		24-hour reporting, 48-hour review	**Confidential enquiry into maternal death**	**Perinatal/child under-5 problem identification programme**	**Monitoring and response unit**	**Morbidity and mortality**	**Clinical audit/clinical governance**
	I. Surveillance process (What and How?)						
Matching to the elements for the functioning of DSR mechanisms	1. Continuous surveillance (Death auditing, review, communication and feedback)	✓	✓	✓	✓	✓	✓
	2. Using cost-effective and evidence-based practices	✓		✓	✓	✓	✓
	3. No naming, no-blaming (confidentiality, non-punitive tone of the process)	✓		✓	✓	✓	✓
	4. Integrating learning and response, quality improvement, health system strengthening, and community education			✓	✓		
	5. Institutional support culture at all levels of the health system	✓	✓	✓	✓	✓	✓
	Actors (Who?)						
	6. Multidisciplinary teams			✓	✓		
	7. Integration across levels of care			✓	✓		✓
	8. Involvement and commitment of the managers to act on the findings			✓	✓		
	9. Community participation in review and response						
	II. Following a holistic approach to identifying modifiable causes						
	Following a holistic approach to identifying modifiable causes	✓		✓	✓		
	III. Actions (proactive and reactive)						
	-Provider level	✓	✓	✓	✓	✓	✓
	-System level		✓	✓	✓		
	-Community level				✓		

The tick (✓) implies that the element of the functioning was observed for the selected mechanism.
DSR, death surveillance and response.

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This 'no-name, no-blame' approach fostered a high level of commitment to the review meetings that resulted in a common understanding of individual and system challenges faced. It also fostered mutual support when people were proactively working as a team.

> Before there was blaming, blaming, blaming […] No-one is blaming anyone anymore because we do understand the challenges, we are part of the system, we are in the [same] basket [EMS manager].

Even though the meetings were never used to point fingers, or name or blame providers involved in the management of the case, the respondents raised the possibility of sanction if at any stage gross negligence was documented.

> …We are taking every death very seriously. One death is too many deaths, we have to make sure that we follow up on our kids and also on our health care workers [at PHC] the entry point where the neonatal was first attended so that we can check on whether the child was attended according to protocol and if not then consequential management needs to be applied [Hospital CEO].

Policy documents formally claim that the CEMD also follows a 'no-name, no-blame' approach. However, based on interviews and observations in practice, the CEMD process in the study district was conducted and experienced very differently to the other DSR mechanisms. The CEMD process typically resulted in intense scrutiny of maternal death from higher-level management within the district and beyond, seeking to assign individual responsibility and frequently triggering reactive sanction and punitive action. Respondents reported suspensions, referrals to the labour office, litigations and court cases involving front-line professionals. This was one of the constraining factors of DSR functioning. These CEMD processes were managed through quality assurance structures (eg, adverse event committees) and were associated with a particular language of sanction—such as 'consequence management'.

> So the meetings that we usually have with the quality assurance and the maternity doctors and the sisters in charge […] those [meetings] push us to be more accountable […] it's not like the perinatal meeting, [where] we don't mention the doctors who did what, we just present the case. With those ones [quality assurance], it pushes you to be more accountable because the file is there, we all discuss what's in the file. So, whoever was the attending doctor is more accountable, feels more accountable [Medical officer].

Integrating learning and institutional support from higher-level management

The DCST played a key role in providing clinical guidance, mentorship and in-service training related to modifiable factors identified in the DSR. The involvement of a facilitator from the National Department of Health was also observed as one of the enabling factors in mobilising higher level management support, a factor unique to the study setting. By bringing together district and subdistrict actors, DSR meetings acted as a lever for more transparency between levels, in sharing frustrations and most especially the sharing of good practices.

> I can say that [DSR meeting] is strengthening the communication between the sub-districts and the district and because of that I don't see any problem that might hinder us to progress, because that is where we are sharing our frustrations and sharing our best practices [District programme manager].

Also important was the presence and commitment of key champions among middle managers and medical and nursing clinicians who created and nurtured a community of practice for sharing knowledge and learning.

In one subdistrict, participants expressed excitement at attending meetings, and the venues were sometimes overflowing with participants.

> [I]: So why do you think that meeting is taken seriously?
>
> *[R]: It's the commitment of the medical managers, the commitment of the managers and also the operational managers in maternity wards and the doctors* [Manager, DO].

At these meetings, each step taken in the care pathway (from PHC to the referral hospital) was carefully scrutinised and improvement plans with timelines, monitoring and a responsible person were developed, facilitated by the involvement and commitment of the managers in the meeting:

> Because when you put those quality [measures] you start from your ward, …you put as well the responsible people because when you put some measures you need to monitor, to come and see if it's working. And you need to give the timeline… you monitor if it's going well, you sustain, if there is something you need to review or if it's not going well [Clinical manager].

One of the key moments of the review meetings was to identify the modifiable causes of death and translating them into training and learning opportunities for front-line managers and providers, as well as system improvement and community education. The regular presence of DCST and programme managers in the review meetings created a sense of trust and space for empowering providers with knowledge and tools for better performance. Nurses were able to present cases and engage in discussions with doctors. In one instance, where a doctor was trying to dismiss a nurse's opinion and impose his view during discussions, the DCST intervened and emphasised that everyone's opinion counted.

> The meeting is to highlight things, training, educational issues and to bring the people, the team together [DCST].

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Another perceived core value of the DSR process was learning from the death events to come up with quality improvement strategies to prevent similar events in the future.

> After we discuss we all come up with … if I can say, opinions of what actually transpired or what could have happened for this baby to demise and what we could have done differently to help the baby. Maybe for the other babies who are coming in the near future who present the same way, what can we change to be able to help them [Medical Officer].

The learning and training were extended to primary healthcare facilities; minutes of the meetings and reminders of the guidelines were circulated; and regular visits to facilities were conducted by the district team, reinforcing what was shared in the meetings and allowing those who were absent from the meeting to be capacitated with needed skills.

DSR process institutionalised

DSR processes in this district were anchored into routines in all facilities, with standardised agendas and supportive supervision from the DCST and the MNCH district programme coordinators. The DSR processes were perceived not only to contribute to improving the quality of care and outcomes in facilities…

> I think the perinatal meetings are there and they are there forever. It's like an auditing process, it's impossible to run maternity service without this [perinatal meeting] (DCST).

…but also to facilitate the integration of people and services

> When we started MRU […] we were blaming each other, but the more we discussed and saw how it fits, we feel now the problem is not within us, [but] with our resources […] Now we feel we are part of the institution; before [MRU] we felt that EMS was not part of the hospital [EMS].

The perceived benefit and value of DSR processes, particularly the review and response meetings, were repeatedly emphasised by the respondents as a motivation to continue with and integrate them into the core activities of maternal and child in the district.

However, institutionalising appropriate DSR processes across all levels of the District was not an easy or completed task. DSR processes faced challenges at an individual level (blaming, sanctioning), institutional or service level (shortage of skilled personnel), or system levels (ineffective referral system). We also observed variations in the level of support and involvement of local leadership and primary healthcare facilities in DSR processes.

Actors: bringing together a multidisciplinary team of actors across levels

As indicated, DSR mechanisms were intended to be driven by a multidisciplinary team of actors including medical, nursing and other professionals, and across levels (community, PHC and hospital). Indeed, a wide variety of actors participated in DSR processes, most prominently in the case of the CEMD, where in addition to the provincial assessors, the following actors from district and facility levels were involved: the district manager (or a representative), quality assurance manager, primary healthcare and hospital services manager, labour relations and corporate services, a member of the DCST, the hospital CEO, the nursing service and clinical managers, as well as the specific health providers directly involved in the maternal death.

Participants in the PPIP/CHIP review meetings tended to be hospital based clinicians with the support of district clinicians and, at times, primary healthcare managers; while the MRU meeting sought to expand participation to other stakeholders such as academic partners, non-governmental organisations, other government departments (notably the South African Social Security Agency) and community representatives.

In one particular subdistrict, the organisational culture and the leadership style of senior managers promoted collaboration between primary healthcare facilities and hospitals in DSR.

> …we only receive the mother during the process of giving birth, and when the woman is now complicated with pre-eclampsia of which I think that this would have been prevented at the first place; so we are involving the primary health care level to come to the perinatal meetings so that they can hear exactly about the progress of the woman because, for us, as a hospital, we do not have the liberty of starting the woman on antenatal care, whereas the PHC are the ones who might have been able to pick up on some problems during the antenatal period. So, for them being involved in these perinatal meetings is quite vital […] not coming is also is a transgression on its own [Hospital CEO].

In this subdistrict, where identified modifiable factors were related to the patient or community, hospital board chairpersons were contacted to facilitate the dialogues within the community and identify key actions together with the community leaders to address the identified problem. However, the community was not usually implicated directly in DSR processes.

It is important to note that this degree of functioning was not universal, and there was variation across facilities and subdistricts in the levels of team involvement, particularly of staff from PHC facilities and hospital actors. In instances where doctors and nurses, managers and providers, or PHC facilities and hospitals were not working as a solidified team, accountability mechanisms were flawed resulting in poor referral systems, 'blame games' and the deferring of responsibility in case of death events.

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Excerpt 1 (From death surveillance and response meeting and discussion with respondents)*

Case 1: A pregnant patient who had never attended antenatal care presented to thehospital with severe complications and subsequently died. The main modifiablefactor identified was the delay in deciding and seeking care.

Case 2: A young primigravida who was followed up since the early stage of thepregnancy, but died because of a failure to treat her high blood pressure. The modifiable factor identified was the delay in receiving adequate care.

Case 3: The patient was referred to a higher level hospital for a complication during labour, but the ambulance was delayed resulting in the death of the patient while still at the first level hospital. The modifiable factors identified were the lack of aneffective referral system, adequate equipment and trained human resources.

Case 4: In a 'backstreet abortion', a patient was given misoprostol, used for medicaltermination of pregnancy. She developed complications and sought care at thehospital but could not be saved. One of the modifiable factors was that safetermination of pregnancy services were not sufficiently accessible.

* The 'three delays' approach was applied in the discussion of death cases to identify themodifiable factors associated with death events including patient or community factors (case 1), the provider (case 2) or the system (cases 3 and 4).

Following a holistic (three delays) approach to identifying and acting on modifiable factors

Review meetings were observed to follow the 'three delays' approach to identifying factors (especially modifiable factors—excerpt 1) associated with the occurrence of death events and to take collective responsibility and proactively setup key actions to prevent further events (tables 4 and 5). This was enabled by the presence of stakeholders across levels—from primary healthcare facilities to DCST and programme managers. Because of the managerial orientation of MRU, the three delays mostly focused on the system factors for action, while PPIP/CHIP meetings were clinically oriented towards provider and, to some extent, patient factors. In both cases, any matters related to community engagement were discussed with the board chairpersons to liaise with the community leadership.

Implementation of actions

Following the three delays model, the identified actions targeted the community (community education facilitated by the hospital board chairpersons and community leaders); the system (provision of resources); or the providers (skills building). Actions toward community were limited and only addressed by one DSR mechanism (MRU). We observed evidence of implementation of actions recommended from DSR processes which were perceived to result in improved MNCH outcomes. For instance, during the study period outreach training in surgical skills (caesarean section and anaesthesia) was organised by a provincial team of specialists; DCST members were actively involved in organising training and mentoring programmes; and the district paediatrician supported facilities to set up and ensure availability and functioning of the continuous positive airway pressure therapy machines for neonatal care.

DISCUSSION

While WHO guidelines outline the necessary steps in conducting DSR,[6] there is little holistic guidance on how this is to be achieved in health systems. By collating elements from the literature into a conceptual framework it was possible to explore the factors enabling or constraining DSR functioning in one district. This framework may be of value in other similar settings. It can be used by researchers or health service managers to explore the functioning of the DSR system, diagnose challenges and promote an inclusive organisational culture of holistic scrutiny into the causes of death.

Maternal, neonatal and child DSR is well established in the South African district health system. Across the five forms of DSR directly related to maternal and child deaths in the study district, we found a range of practices. The surveillance process routinely emphasised on the '4R's'. In most instances, the process followed the 'no name, no blame' approach as stipulated in the guiding documents. There were also holistic approaches to identifying causes of death, efforts to integrate training and support from higher levels, facilitation of multidisciplinary teams and elements of institutionalisation of DSR in the district. The latter requires a systemic supportive environment and organisational culture at all levels that are linked to annual planning and budgeting to support the implementation of evidence-based actions.[45] In this regard, the study District had clearly benefitted from the DSR system strengthening interventions implemented over a number of years.

In certain instances, however, the 'no name, no blame' approach was contradicted by an organisational culture of blame and punishment, particularly following maternal deaths. Here the emphasis was on identifying and sanctioning the persons responsible for death incidents and on curbing the institutional ramifications of the incident, instead of using it as an organisational learning event to prevent further incidents.[46] However, this level of scrutiny was not observed in instances of perinatal deaths, showing the difference between MPDSR processes. Such blame cultures in a healthcare organisation can be a source of an increased number of medical errors.[47]

Death events, particularly maternal deaths, are considered to be a barometer of a health system's performance. In this regard, DSR processes can be constrained by the fear of revealing malpractice and poor health system performance, and DSR processes can become politicised and maternal deaths under-reported by bureaucrats unwilling to disclose system failures.[48] In our study

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setting, DSR processes were facilitated by a high-level political commitment from the national government to compulsory and transparent reporting and reviewing of all cases of maternal or child deaths and implementation of measures to avoid future deaths from identified modifiable factors.

In this study, 'no name, no blame' approaches were observed to facilitate the active participation of various actors, especially those directly linked to death incidents and the possibility of embracing responsibility for the incident.[49] Thus, DSR processes can create a sense of interpersonal trust and trust in the healthcare organisation, key for generating learning and improvement. In contrast, as noted in Kenya, the lack of trust, the fear of blame or individualised disciplinary action conditioned front-line professionals to be reluctant in disclosing data on maternal death.[17]

As proposed by Deis *et al*,[50] DSR meetings can be transformed into instruments of system improvement using a systematic approach that incorporates the 'three delays' model for action including the providers, the health system and the communities in identifying and addressing modifiable factors related to death events. This means that DSR processes should not only seek to identify and correct front-line providers' and managers' practices but also health system and structural factors at the community level.[20] A holistic approach was made possible through the use of standardised protocols and guidelines for DSR that integrated reporting and feedback mechanisms.[46]

Another important element of successful DSR observed was the inclusion and engagement of a multidisciplinary team of actors from various professional backgrounds and managers. This created a space to address not only health system-related problems[50] but also problems related to social structural factors (eg, social exclusion, poverty). Where these functioned effectively, DSR platforms intersected individual and collective competency and responsibility for MNCH, enabling a community of practice that recognised the contribution and value of all levels, from PHC facilities to district hospitals actors. Furthermore, the inclusion of various stakeholders into DSR processes can also facilitate social autopsies given that some maternal and child deaths occur outside of health facilities. Similarly, a study in four sub-Saharan African countries reported interdisciplinary teamwork with good communication among staff and active participation of staff as enablers of the DSR process.[51] In contrast, where actors from PHC facilities and hospitals, or when doctors and nurses, managers and providers were disconnected, it resulted in a poor referral process, blame games and deferring of responsibility or avoidance of accountability. Melberg *et al*[48] referred to a 'defensive referral' as a result of fear of being blamed for maternal death incident.

When encouraged by leadership support, DSR processes can become a platform for common learning, knowledge sharing and quality improvement.[45] Effective DSR system, according to Kerber *et al*[52] needs engaged leadership and use of guidelines and protocols that ensure the complete cycle of the audit system.[53]

Finally, DSR processes were able to systematically and proactively identify and plan actions based on the framework. Though tracking implementation of these actions can be limited in scope, this study nevertheless presented evidence of responsive action implemented as part of DSR.

Limitations

The statements of lived experiences of DSR processes by the respondents could have been what they thought to be the right answer reflecting a social desirability bias in their responses. Being observed, respondents could have behaved differently ('Hawthorne effect'). We did indeed observe instances of where the absence of the national facilitator led to a slackening of meeting processes. Furthermore, respondents' self-reports and accounts could have led to an overstatement of phenomena. We sought to minimise these biases by prolonged immersion in the field and supplementing formal interviews with observations and informal conversations.[30 54]

This study was conducted in one district at a particular moment in time. While the forms of DSR are likely to be repeated elsewhere, the study findings related to the functioning of DSR are not generalisable given the management investments made. However, the findings have analytical relevance in illuminating DSR in best-case scenarios and the triangulated nature of the data provide confidence in the data collected.

CONCLUSION

The success of DSR processes resides in the intersection of many contextual factors such as the commitment of a multidisciplinary team of actors and support from district managers, the integration of primary healthcare and district hospitals, and the establishment of a space for mutual trust and learning anchored within the organisational culture of health facilities. A holistic approach is essential to address the modifiable factors identified, translate them into long-term organisational learning opportunities, and set up evidence-based, 'real-time' responses.

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Contributors FKM designed the study, collected, analysed the data and wrote the first draft with input from AG, HS and SVB. All authors edited the manuscript and approved the final version.

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Paper 4

Mukinda, F. K., Van Belle, S., and Schneider, H. 2021. Local Dynamics of Collaboration for Maternal, Newborn and Child Health: A Social Network Analysis of Health Care Providers and their Managers in Gert Sibande District, South Africa (Under review - IJHPM)

Paper overview

This cross-sectional survey used a Social Network Analysis (SNA) to explore and describe the dynamics of collaboration (network structure, position and role of actors) among frontline health professionals. The structure of the network presents a clustering around critical interfaces (inter-professional and across levels). The clusters were linked through district programmes and line managers identified as central connectors or spanners.

Contribution to the thesis

This paper contributes to the third objective of the thesis, that of evaluating the functioning of selected accountability mechanisms, looking specifically to the role of actors' network.

Contribution of candidate

The candidate designed the study, conducted fieldwork, acquired and analysed the data and interpreted the findings with input from the supervisors. The candidate drafted the manuscript, the supervisors (co-authors) made critical revisions of the manuscript and approved the final version to be submitted for publication.

Type: Original Article

Mukinda, F. K., Van Belle, S., and Schneider, H. 2021 (Under review - IJHPM)

Local Dynamics of Collaboration for Maternal, Newborn and Child Health: A Social Network Analysis of Health Care Providers and their Managers in Gert Sibande District, South Africa

Abstract

Background: Accountability for maternal, newborn and child health (MNCH) is a collaborative endeavour and documenting collaboration dynamics may be key to understanding variations in the performance of MNCH services. This study explored the dynamics of collaboration among frontline health professionals participating in two MNCH coordination structures in a rural South African district. It examined the role and position of actors, the nature of their relationships, and the overall structure of the collaborative network in two sub-districts.

Methods: Cross-sectional survey using a Social Network Analysis (SNA) methodology of 42 district and sub district actors involved in MNCH coordination structures. Different domains of collaboration (e.g. communication, professional support, innovation) were surveyed at key interfaces (district-sub-district, across service delivery levels, and within teams).

Results: The overall network structure reflected a predominantly hierarchical mode of clustering of organisational relationships around hospitals and their referring primary health care (PHC) facilities. Clusters were linked through (and dependent on) a combination of district MNCH programme and line managers, identified as central connectors or boundary spanners. Overall network density remained low suggesting potential for strengthening collaborative relationships. Within cluster collaborative patterns (inter-professional and across levels) varied, highlighting the significance of small units in district functioning.

Conclusions: SNA provides a mechanism to uncover the nature of relationships and key actors in collaborative dynamics which could point to system strengths and weaknesses. It offers insights on the level of fragmentation and the need to strengthen cohesion and improve collaborative relationships and ultimately the delivery of health services.

Keywords: Collaboration; Maternal, Newborn and Child Health; Accountability; District Health System; Social Network Analysis; Quality Improvement.

Key Messages:

1. Implications for Policy Makers

- Governance and accountability mechanisms for MNCH need to recognise the value of collaborative relationships (and informal interactions) between frontline providers and managers, and across levels of care.
- Effective collaborative relationships involve participation and collective decision-making by senior and middle level managers representing both clinical and non-clinical staff.
- Effective collaboration is driven by a multidisciplinary team of actors, with complementary skills and capabilities including doctors, nurses, emergency medical services, allied health workers, health information and administrative staff.
- Referral processes for MNCH depend on effective collaboration between PHC facilities and hospitals.

2. Implications for Public

Effective maternal, newborn and child health (MNCH) requires collaboration and networking between hospitals, primary health care facilities and the community. In these collaborative networks, community voices may be represented through the hospital board, the community-based organisations or other similar mechanisms. Once consolidated, collaborative networks will facilitate knowledge transfer, improve referral systems, continuity of care and patient outcomes.

Introduction

Health systems are social systems that are determined by people who interact through various forms of collaboration or conflict expressed through the sharing of ideas, interests, values, norms, affinities and power. This can be considered the 'software' of the health system, a guiding force underpinning the relationships among health system actors and performance.[1]

The multi-level collaboration and coordination of care between actors in health systems are frequently invoked as key for achieving the Sustainable Development Goals (SDGs) particularly for maternal, neonatal and child health on reducing mortality by ending preventable deaths.[2]

Collaboration can be viewed as a key attribute of effective governance, enabling knowledge sharing, service coordination and joint problem-solving.[3] Successful collaboration is built on the recognition of all actors being part of the solution to problems identified, and requires the following: communication skills, trust-building, capabilities for coaching and mentoring, promotion of collective and inclusive decision-making processes that sustain accountability, and equitable practices.[3,4]

The essence of collaborative networks resides in bringing '*disparate groups together so that they can work effectively and synergistically*'.[5] Collaborative relationships are enabled by or embedded in formal and informal social networks in the work setting[6,7] and can be affected by differences in professional power, level of expertise and professional and organizational culture.[8]

A recent systematic review shows that quality improvement collaboratives among frontline providers and managers improve their knowledge, problem-solving skills and collaborative attitude, teamwork and shared leadership.[9] By enabling synergies among actors involved,[10] collaboration facilitates collective learning, sharing of experiences and implementation of changes for improved quality of maternal and child healthcare.[11-13] Through collaboration, a common purpose can be developed and shared in a safe and open environment where actors can freely express their opinions and where diverse viewpoints are encouraged and fairly protected.[14]

Collaboration is particularly important for frontline providers and managers who are required to coordinate their activities across a variety of interfaces, which include the following interfaces: *(i) a professional interface*: within or across group collaboration between doctors, nurses and other professionals in health; *(ii) a levels interface*: collaboration across levels of care in a health system including district hospitals, PHC facilities and community based services iii) a *patient, family and community* interface: between health professionals and communities.[10,12,14]

Collaborative relationships can be assessed in different ways, from whether actors simply know other relevant people in the network (a pre-requisite for other forms of collaboration), to varying degrees of communication among actors, to particular domains of collaboration, such as professional support mechanisms and opportunities to innovate (sharing new ideas).[15,16] By

enhancing relational ties, professional support mechanisms allow health workers to cope with personal or work-related challenges, and improve the outcomes of health service delivery.[16,17]

One of the ways to study collaborative interactions between health system actors is through social network analysis (SNA), which provides an understanding of the behaviour of actors involved in a network, and points to gaps in relationships that are required to strengthen the health system for collective action.[18-20] For example, SNA has been used to explore health system functioning,[18,21] to assess the extent of communication between providers involved in a HIV care programme in South Africa[22] and to describe collaboration among organizations providing HIV treatment, maternal service delivery and workforce strengthening in Uganda[6]. Mundt et al. [23] used SNA to evaluate the association between team communication and quality of care or costs for patients with cardiovascular disease.

The South African district health system provides the oversight and coordinating mechanism for community-based services, primary health care facilities and district hospitals. Collaboration between these levels is through referral processes upwards and downwards.[24] However, the public health system in South Africa is challenged by fragmentation at the point of implementation, lack of coordination and inadequate referral systems that affect the quality and outcomes of care.[24,25]

This study aimed to assess the dynamics of collaboration on MNCH within a rural South African district, by exploring and quantifying the structure of the collaborative network as well as the role and position of actors involved in two key district MNCH coordination mechanisms. Different domains of collaborative interactions were considered, namely, the knowledge of other actors in the network, the degree of communication, and relationships of professional support and innovation. Prior qualitative research in the study district had identified collaborative relationships as key to MNCH outcomes and to effective accountability mechanisms.[12,26,27] However, fragmentation, lack of coordination and inter-professional collaboration within clinical teams (medical, nursing) and with managers from various levels of care were also identified as impeding the quality of service provision.[27]

Methodology

Study setting

This study was conducted in Gert Sibande District, one of three districts of Mpumalanga Province, located in the north-east of South Africa. The district has a population of about 1.1 million, with the vast majority (61%) living in rural areas (Massyn et al., 2017). The District health system consists of a network of eight district hospitals, one regional hospital and 76 primary health care (PHC) facilities, distributed among seven sub-districts. Two sub-districts containing three hospitals and associated PHC facilities were purposefully selected for this study.

A number of evidence-based intervention strategies were implemented in the study district during the 2010-2017 period to address the problem of maternal and child mortality (maternal mortality ratio of 328 per 100 000 births).[28] A new coordinating and accountability structure, the Monitoring and Response Unit (MRU) was established to complement the existing audit mechanisms, the Perinatal and Child under-five Problem Identification Programmes (PPIP and CHIP, respectively). Collectively these structures brought together managers, clinicians, allied health professionals and information officers from various levels of the health care system.[12]

Study design

We conducted a cross-sectional study of the collaboration networks of frontline providers and managers involved in the three coordination structures – MRU, PPIP and CHIP, considered as a proxy for the MNCH community in Gert Sibande District, Mpumalanga Province.

The following properties are measured in a SNA[19]: (i) network structure, which relates firstly to the cohesion or connectedness of the network (density or fragmentation); and secondly, to the shape of the network, including distribution of ties between nodes (actors); and (ii) actors' role and position in the network categorized as central highly connected actors and peripheral actors with loose ties.[29] Granovetter's 'the strength of weak ties' theory was used to explain the dynamics of collaboration.[30]

Based on their position and level of influence in the network connectivity, actors can be either bridges (*facilitate information to reach isolated actors*), boundary spanners (*linking two groups*

of people defined by functional affiliation, physical location, or hierarchical levels) or 'brokers' (*facilitate the transfer of specialized knowledge between groups).*[5,15]

Study population and sampling

The key informants (n=42) were purposefully sampled among frontline managers and providers involved with maternal, neonatal and child health and attending the key coordination structures, namely the PPIP/CHIP and MRU meetings. The 42 respondents were from the district office (cluster 1, n=6), sub-district 1 (cluster 2, n=10 and cluster 3, n=13) and sub-district 2, (cluster 4, n=13). Key informants consisted of the following: district programme and other managers (n=4), members of the district maternal and child health clinical specialist team (DCST; n=2), hospital CEOs (n=3), nursing managers (n=3), operational managers from PHC facilities (n=2) and hospital unit managers (2), professional nurses (n=12), medical officers (n=12), information managers (n=1) and allied health professionals (n=1).

Data collection and analysis

Data were collected using a pre-tested closed-ended questionnaire (Online supplementary file 1) completed by the 42 respondents. Data collection and analysis followed the sequence of steps suggested by Blanchet and James[19] and Cross and Parker. [15]

Identifying and describing a set of actors strategically important for the network (Step 1)

The first step was to identify all key actors involved in the MRU and the PPIP/CHIP meetings following a 'roster' approach (to identifying alters).[31] We collated the attendance registers of the meetings during our fieldwork (over 16 months) and presented the respondents (egos) with an accumulated list of names (alters) from which they could select. These lists consisted of the names of those occupying the positions listed above with the addition of emergency services personnel and community representatives. During the survey, respondents were allowed to add any missing name to the list.

Define meaningful relationships between actors (Step 2)

Meaningful network relationships are those that facilitate action or decision making among actors. Based on our interaction with frontline health professionals, we identified and adapted a number of domains as representing and revealing collaboration in a network from Cross,

Parker [15] (Table 1). A relationship was reported if the respondent (ego) stated it; the reporting of the relationship did not rely on both the ego and alter indicating its existence. Knowledge of other actors was regarded as a pre-requisite for, and degree of communication as an indication of, a relationship. The types of collaborative relationships were then further defined as professional support and innovation. The domains of professional support, according to Mikkola et al.[16] and Button[32], drew on the general social support typology of informational, instrumental and emotional support.

Table 1 - Typology of meaningful collaborative interactions

	Pre-requisite	**Type of collaborative relations**				
Domains	Knowledge of other actors	Degree of Communication	Professional support mechanisms[16,32]			Innovation
			Informational	***Instrumental***	***Emotional***	Sharing new ideas
			Feedback/Advice	Problem-solving	On personal matters	
Questions	*I know this person*	*How often do you communicate with each person regarding MNCH issues*?	*I receive feedback from this person/I feel personally comfortable asking this person for advice on work-related matters*	*Who do you turn to for help in solving a problem in your work?*	*Who do you turn to for support on personal matters?*	*Who are you likely to turn to for discussing a new innovative idea?*

For the question on frequency of communication, the respondents had to choose the corresponding number as follows (*0=never, 1=once a quarter, 2=monthly, 3 =weekly, 4=daily)* to state how often they communicate regarding MNCH. For other non-frequency questions, the respondents had to select by placing a cross on the relevant collaborators with whom they shared a link.

The second part of the questionnaire explored the background characteristics of the respondents (such as sex, age group, their current position and duration in that position) as well as their perception of the importance of the MRU and PPIP/CHIP programmes in strengthening accountability for MNCH.

An information sheet with consent form was emailed or shared as a hard copy to help respondents familiarize themselves with the content. During fieldwork, the content of the questionnaire and the ethical considerations were explained to participants by the first author. The questionnaire was not anonymised to allow for coding and analysis, but all respondents were assigned a unique code to protect their confidentiality. The list containing the names and coded nodes are only accessible to the first author. The questionnaire was piloted on selected actors from the three settings and corrected following suggestions by respondents to the pilot.

The survey took place either in the facility boardroom or in the respondent's own office. The questionnaire was completed individually with no interference from peers or the researcher. Respondents were allowed to ask questions for clarification if something was not clear.

Visually analyze the structure of the network and the position of the actors (Step 3)

The analysis examined (i) the structure of the system, (ii) the actors in the network and (iii) the relationships between actors.[19]

Survey data were captured into and analysed (demographic and background) using Microsoft Excel® 2019. The Excel matrices of network data saved as comma-delimited values (.csv) were imported into Gephi software version 0.9.2 for network visualisation and analysis.[33] The graphs (sociograms) were generated for the district as a whole and each of the three clusters (corresponding to a hospital and its networks of referring PHC facilities). Network graphs were generated for different forms of collaboration (communication, professional support, innovation) within clusters – across levels of the health service and between professional groups – and in the district as a whole.

Various algorithms are embedded in Gephi software version 0.9.2 [33] that allows visualisation and analysis of network properties. In this study, we report the following three measures: degree centrality, betweenness centrality and network density (Box 1).[34]

Box 1: Definition of Network Measures [34]	
Degree centrality	The number of immediate contacts (alters*) an actor (ego*) has in a network. It is measured by counting the number of alters adjacent to the ego. It emphasizes an actor's activity.[34] Central connectors will have higher degree centrality, while the peripheral actor will have the lowest degree centrality. In-degree refers to the number of edges which are coming into a node (vertex); Out-degree to the number of edges which are coming out of a node.
Betweenness centrality	Looks at how often an actor is nested between two other actors. It measures how many times an actor sits on the shortest path between two other actors. Emphasis is on the actor's control over information flow.[34] Boundary spanner and information broker will therefore have high betweenness centrality. Bridges, however, will reduce the distance between nodes (individuals) in a network enhancing the diffusion of information.[35]
Density	The extent to which all possible relations are actually present. It represents the completeness or connectedness of a network.[36]
*Ego=a focal node that represents a respondent; alter=the nodes to whom the respondent (ego) is directly connected	

Actors were represented by a coded node and relations between actors were denoted with an arrowed directed line (edges) for directed relationships. The size of the node depended on the number of connections (degree centrality) or the number of times an actor was sitting on the shortest path between two actors (betweenness). The visualisation allowed us to identify not only influential central actors that are the most connected but also peripheral actors with loose connections.[19]

Results

Characteristics of Study Respondents

The total network size consisted of 143 nodes distributed as follows: Cluster 1 (n=23), 18 names provided in the survey and 5 names added by respondents; Cluster 2 (n=26), all 26 names included with no additions from respondents; Cluster 3 (n=41), 37 included in the questionnaire, 4 names added by respondents; Cluster 4 (n=53), 51 names from attendance registers included in the survey and 2 names added by respondents. Of the 143 identified nodes, 42 (29.4%) completed the survey.

Table 2a presents the characteristics of respondents. Overall, 32 (76%) were female, the majority 30 (71%) aged between 41 and 60 years; 10 (23.8%) were doctors and 24 (57.1%) were nurses; and 19 (45.2%) were in a management position. Concerning participation in meetings, 28 (66.7%) had attended the MRU meetings, while 40 (95.2%) had attended PPIP and CHIP meetings; and the majority perceived that these meetings were important in strengthening accountability (Table 2b). Although sample sizes are small and possibly non-representative, respondents in Cluster 4 were more satisfied with current accountability mechanisms (and to report participation) than sub-district Clusters 2 and 3.

Table 2a: Characteristics of Key Informants (n=42)

Sex	**n(%)**
Female	32 (76.2)
Male	10 (23.8)
Age groups	
20 - 30	6 (14.3)
31 - 40	4 (9.5)
41 - 50	15 (35.7)
51 - 60	15 (35.7)
Above 60	2 (4.8)
Category	
Doctors	10 (23.8)
Nurses	24 (57.1)
ComServ doctors	4 (9.5)
Dieticians	2 (4.8)
Information Officers	2 (4.8)
Position	
District Programme managers*	6 (14.3)
Hospital 'Big five'**	7 (16.7)
Hospital ward managers	4 (9.5)
PHC managers	2 (4.8)
Other non-managers	23 (54.8)
Position type	
Permanent	35 (83.5)
Non-permanent	7 (16.7)

Duration in position	
Less than 6 months	3 (7.1)
6 months - <1year	3 (7.1)
1 – 3 years	7 (16.7)
4 - 7 years	8 (19.0)
8 – 10 years	5 (11.9)
Over 10 years	16 (38.1)
Level of care	
District Office	6 (14.3)
District Hospital	31 (73.8)
Sub-district Office	1 (2.4)
PHC	4 (9.5)
Location	
District Office	
Cluster 1	6 (14.3)
*Sub-district 1****	
Cluster 2	10 (23.8)
Cluster 3	13 (31.0)
Sub-district 2	
Cluster 4	13 (31.0)

* Two of them were DCST members based at a regional hospital; **CEO, Medical manager, Nursing manager, Allied health professionals manager; *** Sub-district 1 comprises two district hospitals

Table 2b: Perception of accountability mechanisms

	Cluster 1 (n=6) n(%)	Cluster 2 (n=10) n(%)	Cluster 3 (n=13) n(%)	Cluster 4 (n=13) n(%)
MRU				
Attending MRU meetings (Yes)	6 (100)	3 (30.0)	9 (69.2)	10 (76.9)
Important for accountability	6 (100)	9 (90.0)	12 (92.3)	12 (92.3)
Low importance	-	-	-	-
Neutral	-	-	-	1 (7.7)
Have not heard about MRU	-	1 (10.0)	1 (7.7)	-
PPIP/CHIP				
Attending PPIP/CHIP meetings (Yes)	5 (83.3)	10 (100)	13 (100)	12 (92.3)
Important for accountability	5 (83.3)	9 (90.0)	12 (92.3)	13 (100)
Low importance	-	1 (10.0)	-	-
Neutral	1 (16.7)	-	1 (7.7)	-
Don't know about	-	-	-	-
Satisfaction with current accountability				
Satisfied	2 (33.3)	5 (50.0)	10 (76.9)	12 (92.3)
Dissatisfied	2 (33.3)	5 (50.0)	2 (15.4)	1 (7.7)
Neutral	2 (33.3)	-	1 (7.7)	-

Network Structure, Key Actors and Collaboration Across Key Interfaces

A summary of network metrics is available (see online supplementary file 2 - Table S1). They related to the six domains explored in this study and are described in the sections below. For each domain, only the five actors with the highest metrics are reported.

The sections which follow report on the overall network structure and key actors involved in MNCH in the district, followed by examination of collaboration across the key interfaces at sub-district level (professional and service delivery levels). The patterns were very similar across all domains and only four of the six domains are reported in the results – namely, knowledge of other MNCH actors, degree of communication, problem solving and sharing of new ideas. The remainder are available as supplementary files.

Network Structure

Figure 1 shows the district network as a whole, colour coded by location (district and 3 sub-district clusters) and level (PHC, hospital, community, district), and labelled by actor position. The network structure shows the central cluster (1) of the district office and the three hospital clusters (2-4) around it, connected to other clusters principally through the district office. This clustering reflects the reporting hierarchy in the overall collaborative network. All domains of collaboration, namely, knowledge of other actors, degree of communication, problem-solving

or sharing a new idea, followed the same pattern. The degree of communication (how often actors communicate), is shown in the graph by the size of the node and the thickness of the ties (i.e. the thicker the tie, the more frequent the communication between actors). Similar patterns were seen in feedback/advice (informational) and emotional support networks (see online supplementary file 3 - Figure S1)

The overall density of the network in all the domains was very low (less than 10%) implying that less than 10% of all potential connections were actually present at district or sub-district levels, indicating a low level of horizontal and non-hierarchical interactions between and within clusters.

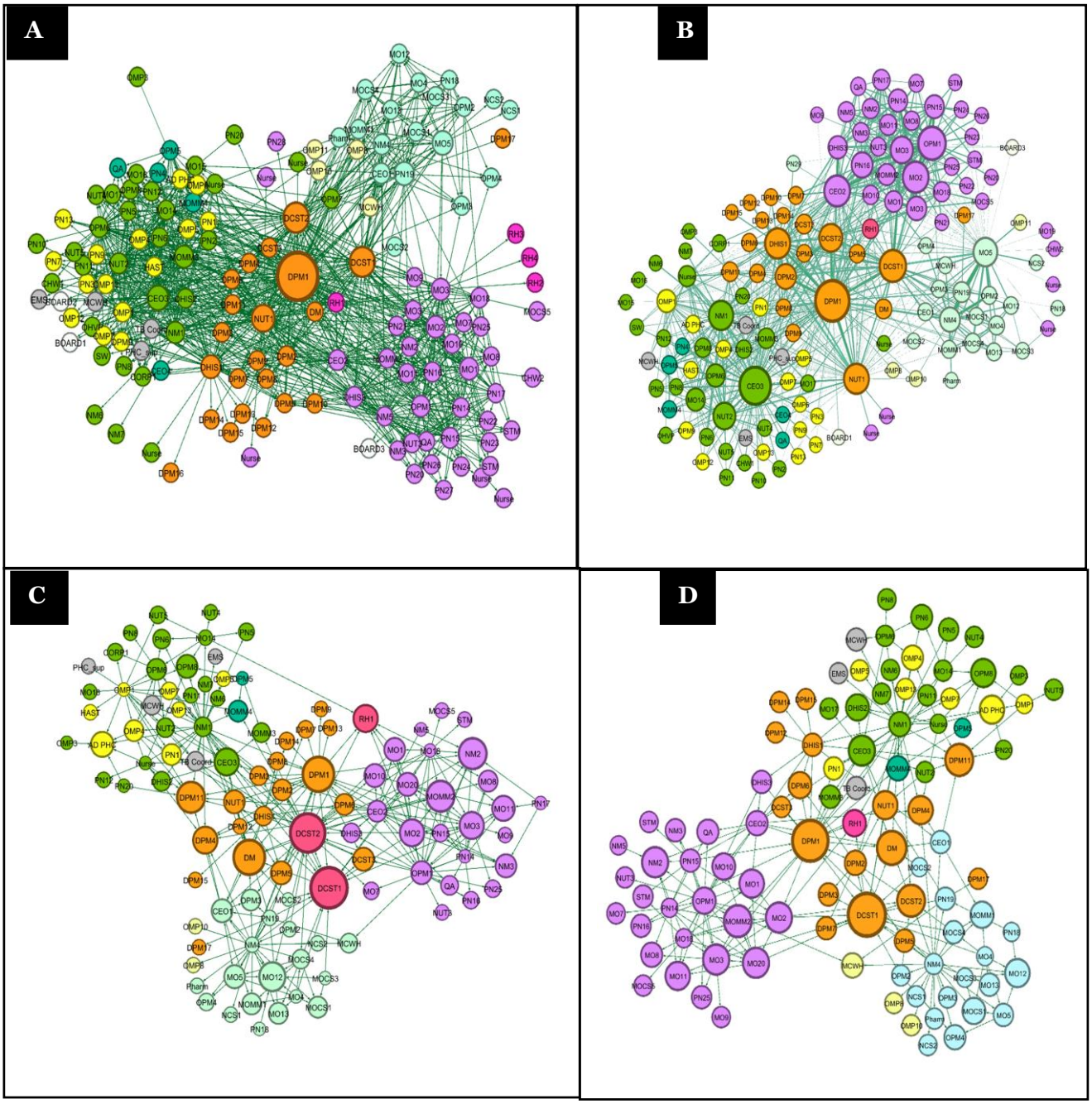

Figure 1: District level networks by location – I know this person' (A), Degree of Communication (B), Problem-solving (C) and Sharing new idea (D)

Legend 1 – By Location

- District Office
- Sub-district 1-C2
- Sub-district 1-C3
- Sub-district 2-C4
- PHC Sub-district 1-C2
- PHC Sub-district 2
- Regional hospital
- Sub-district Office
- Community

Key Actors

The role and position of actors are key to understanding collaborative relationships. The network structure (Figure 1) showed that the dominant actors in the network – with respect to central connectors and boundary spanners – remained fairly consistent across domains of collaboration. At the district office (cluster 1), the collaboration network revolved around the MNCH coordinator (DPM1), the district clinical specialist team (DCSTs), the nutrition programme coordinator (NUT1) and the information managers (DHIS1). These were the main drivers of MNCH services with the MNCH coordinator as the most influential and the central connector within cluster 1 and in the district as a whole (across all 4 clusters).

At sub-district cluster level (Figure 2), there were variations in the position and role of the main actors around whom spun the network, encompassing a mix of influential clinicians, unit nursing managers and members of the hospital management team (referred to as the 'big five' – hospital CEO, and medical, nursing, allied health and corporate managers). In cluster 2, the main actors were the medical officer (MO5) from the maternity ward, the professional nurse (PN19) and the nursing manager (NM4). The hospital CEO (CEO1) and the medical manager (MOMM1) also featured in some, although not all, domains (See also online supplementary file 3 - Figure S2). In cluster 3, five actors were central to the network, namely, the nurse operational manager of maternity ward (OPM1), the CEO (CEO2), the medical officers in maternity and neonatal wards (MO2 and MO3) and the professional nurse in the paediatric ward (PN16). The medical manager (MOMM4) was central in some domains.

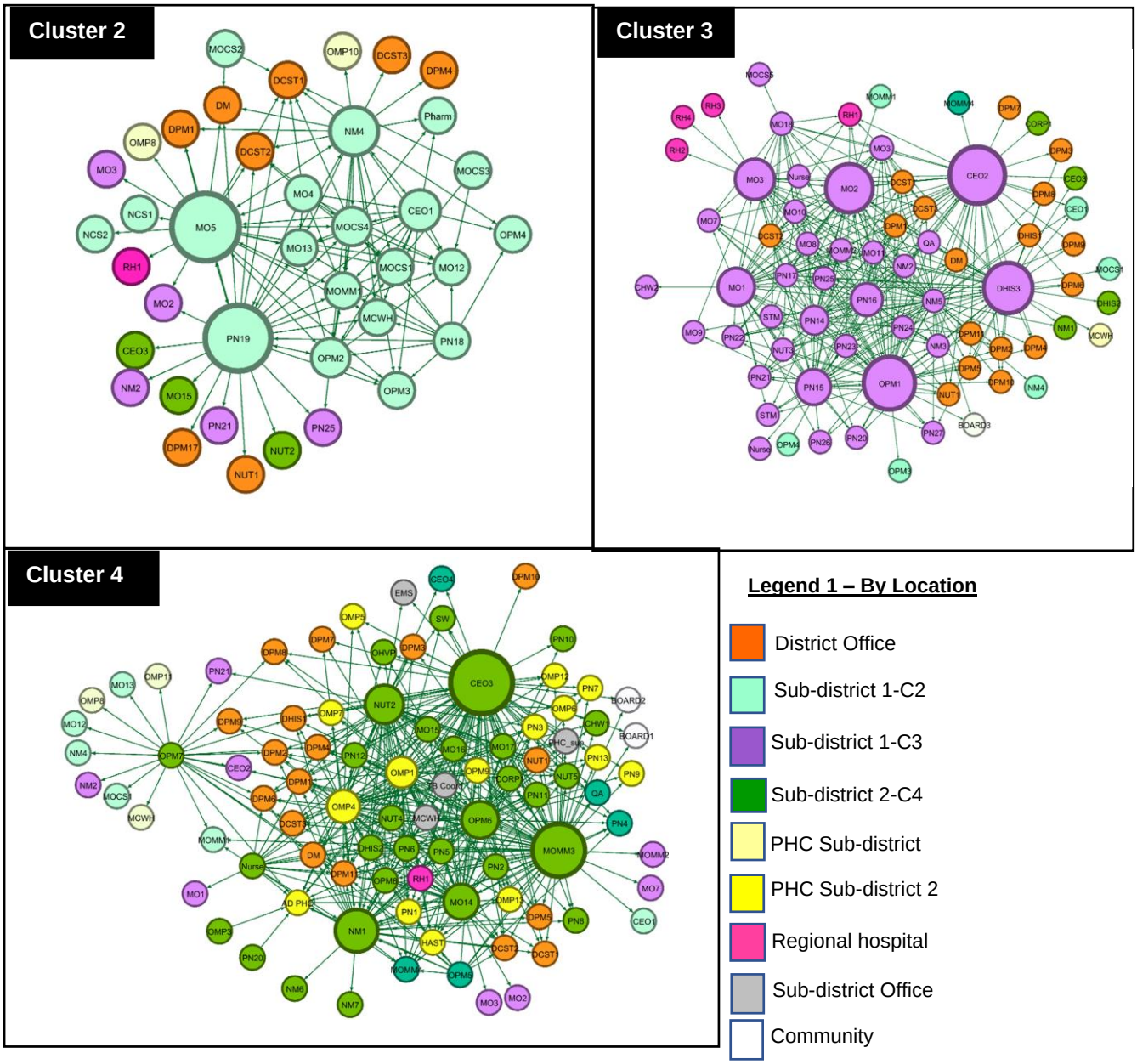

Figure 2: 'I know this person' network at sub-district/cluster level

The pattern in Cluster 4 (in sub-district 2) was quite different to that of the other two clusters. Here the network revolved most clearly around the designated leadership and in a fairly distributed fashion – the CEO (CEO2), with strong involvement of the nursing service manager (NM1), the allied-health manager (NUT2 and the medical manager (MOMM3). The operational manager paediatric ward (OPM6) also played an influential role (Figure 3).

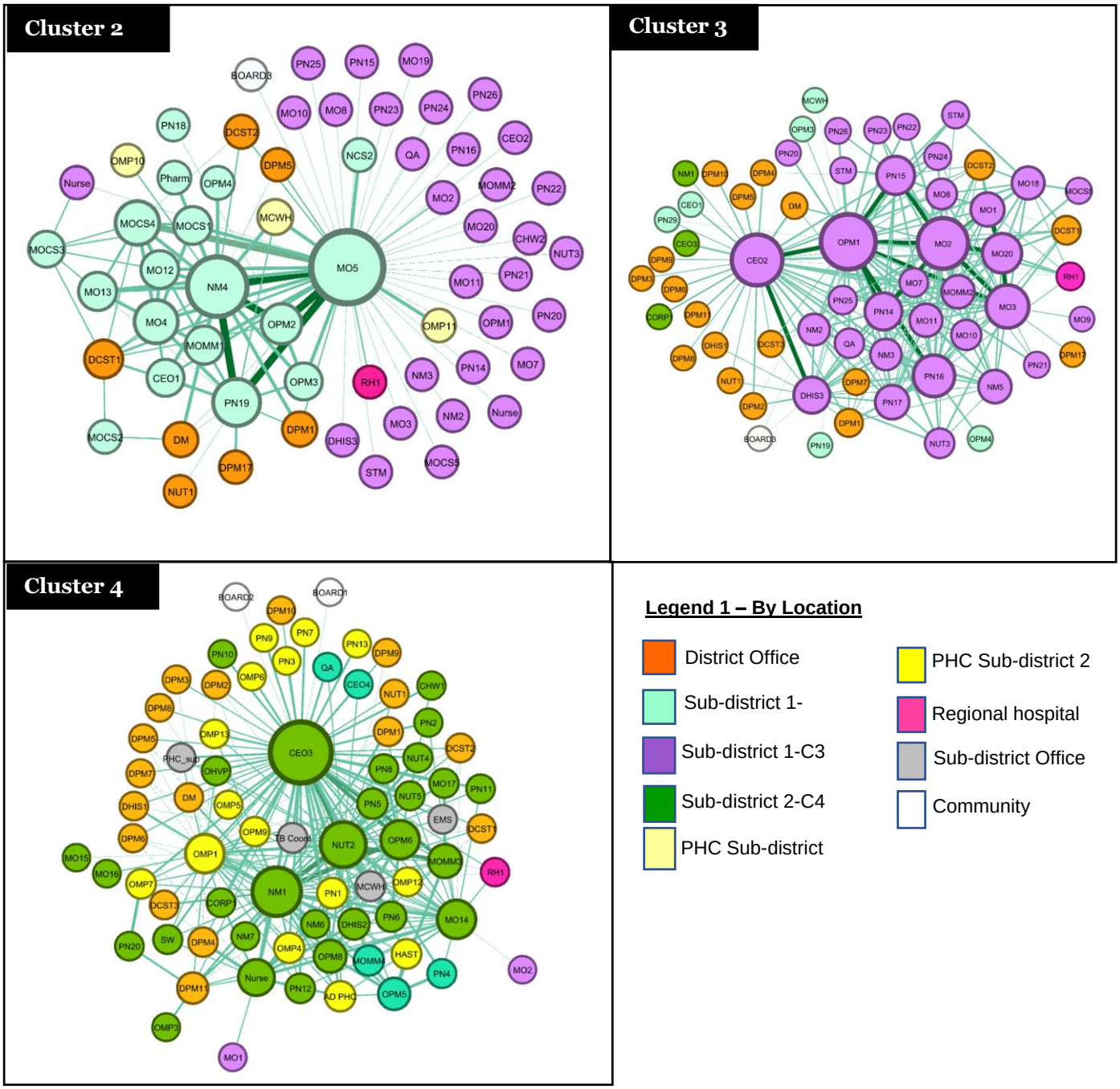

Figure 3: 'Degree of communication' network by location at sub-district/cluster level

The metrics (degree centrality and/or betweenness centrality) for most collaboration domain networks were higher for district actors (district programme managers and DCSTs) as compared to sub-district actors (see online supplementary file 2 - Table S1), illustrating clustering around hierarchies.

Some variations in the position and role of actors were observed across the domains of collaboration and between clusters. For instance, feedback/advice was provided mostly by the DCSTs and medical officer (cluster 2), the CEO and the maternity ward manager (OPM1) in

cluster 3; while in cluster 4, the feedback/advice network consisted of a range of central actors including mid-level nursing managers from both the hospital and PHC facilities.

The problem-solving network showed that district actors (DCSTs, district manager and the MNCH coordinator) had the highest in-degree values implying that they were the most consulted for problem-solving at district level. At the sub-district level, in addition to consulting actors from the district office, the medical and nursing managers, as well as other medical officers and ward managers, were central in the problem-solving network (clusters 2,3) (see online supplementary file 3 - Figure S3).

In cluster 4 (sub-district 2) the network showed the central role of the CEO (CEO3) who was also consulted in cluster 3 (sub-district 1) for problem-solving. Also, the involvement of primary health care managers who also tend to consult among themselves for solving work-related problems.

Collaboration Across Key Interfaces

This section presents further details regarding collaborative interaction between health care levels and professional categories.

Collaboration between hospitals, PHC facilities and community

There were variations in the patterns of collaboration between the three levels of care (hospital, PHC and community) (Figure 2). Most collaboration happened at the hospital level for all domains. In clusters 2 and 3 there was little or absent engagement of PHC facilities and community representatives. In contrast, in cluster 4, actors from PHC facilities were actively involved in the collaborative network. Communities were represented by the two hospital board chairpersons (BOARD1 and BOARD2) who were known by other actors and were involved in the communication network.

Inter-professional collaboration

A key feature of collaboration in the district was the clustering around professional categories particularly in the networks related to professional support domains (Figures 4).

Collaborative relationships for the domains of problem-solving and sharing new ideas (innovation) showed similar patterns between clusters 2 and 3. Doctors and nurses tend to collaborate with each other, the allied health professionals (denoted by ‘other’) collaborating mostly with nurses (See also online supplementary file 3 - Figure S2). The network also depicted the bridging or mediating role of the DCSTs and district (programme) managers.

Cluster 4 was again the outlier in the pattern of inter-professional collaboration, with greater evidence of a multi-disciplinary team functioning, with the middle-level nursing manager playing a central leadership role (See online supplementary file 1 – Table S2). In the innovation (sharing new ideas), for instance, the network showed involvement of the Emergency Medical Services (EMS) and primary health care managers.

Discussion

This paper highlights the value of examining organisational, professional and service delivery relationships and collaboration within a district.

The network analysis presented in this paper relates to MNCH as a programme that involves 'many hands', that is, an ecosystem of multidisciplinary actors and clusters that contribute to MNCH outcomes seen at system level. [37] The current organization of healthcare is characterized by vertical reporting lines from PHC and hospitals to the sub-district and district structures. These hierarchical reporting lines are not balanced by mechanisms for horizontal networking and lessons sharing between clusters. In this regard, informal relationships and coordination mechanisms (such as PPIP/CHIP and MRU) present an opportunity to overcome siloes, but require a particular type of local leadership to drive the process.[12,38]

The overall network revealed strong ties with a few central actors, embedded in a web of absent and weak ties between actors, particularly around the 'degree of communication' network. Within the same district, it was expected that there should be a certain level of horizontal collaboration, lesson learning and dissemination across sub-districts, yet the study depicted only limited networking between these clusters. There was thus a dependence on a few central actors who played the role of connectors, bridges or boundary spanners between actors. Because bridges occupy a strategic position in a network, Valente and Fujimoto (2010)[35] argue that any change in the ties from and to the bridging node will reflect on the whole network structure and cohesion.[35] Dependence on a few critical actors can also create overwhelming workloads for some, making it difficult to respond timeously to needs and demands from below. Referring to central connectors as 'bottlenecks', Cross, Parker [15] argue that they can hold back the whole network when their capacity to respond is unable to meet the need. Clusters that are highly dependent on central players would be significantly impacted by high turnover of staff and low capacity at central level. Conversely, system resilience could be built by strengthening networks of support and cohesion within and between clusters that do not rely

on central mediation. Even weak ties between sub-districts could mitigate the danger of reliance on a few central nodes in a district.

The significance of DCSTs, district programme managers and other support staff as central actors alongside line managers highlights the interplay of hierarchical and non-hierarchical collaborative relationships. The clinical governance and mentorship roles of programme staff ensured critical links between clusters that otherwise would have remained physically and functionally isolated. They acted as key boundary spanners or bridges with many ties. Some of the boundary spanning actors were formally recognised in their leadership position, while others were not in any formal management position, the so-called 'unsung heroes' who played key roles in the network without being officially acknowledged as such.[15] The roles played by these actors illustrate the vital significance of the informal network in service delivery.

The actors with the highest betweenness centrality were the district MNCH coordinator, DCSTs, the nutrition and health information managers, the hospital CEOs and some medical officers without any management position. They represented the brokers, sitting on the shortest path between actors, facilitating connections and information flow between levels of care, or translating and adapting higher-level policy initiatives to local needs through clinical leadership and oversight. Long et al.[5] argue that brokers can facilitate transfer of specialised knowledge between disparate groups. By removing the brokers from the network, Cross and Parker[15] found that the network became more fragmented with many isolated groups. The opposite holds true - increasing the density of ties between disconnected actors will improve efficiency of information diffusion between groups.[5]

In the study setting, collaboration around MNCH at sub-district level happened mostly within professional categories (doctors, nurses and other professionals including nutrition service and health information managers). There was also variability in the involvement of PHC facilities and community representatives in these clusters, contrary to the findings of a review by David et al.[39] that reported the relevance and participation of PHC professionals and family members in the Brazilian local health system context.

Overall, the low density or connectedness of the MNCH network suggests a low level of cohesion in the district as a whole and individually in the sub-districts. This was depicted by the high number of absent ties amongst the 42 respondents to the survey (even if a collaborative relationship was recorded when one person in the dyad reported it). Low cohesion between

actors within the district can affect the referral systems between actors and across levels of care. It can also explain the disconnect between PHC facilities and district hospitals identified in a previous qualitative phase in the same setting.[27] Consideration should, therefore, be given to these 'absent' and 'weak ties' as they represent an opportunity for innovation and strengthening cohesion in a system that is fragmented. Given that the overlap between two individuals' networks depends on the strength of their tie to one another, focusing only on strong ties, therefore, ignores the potential contribution of 'weak' or 'absent' ties to system performance.[30] Granovetter (1983)[40] refers to weak ties as acquaintances as compared to stronger ties of friendship or personal and professional support. Weak ties, when playing a role of local bridges between network segments, can be crucial in generating connectivity between structurally unconnected clusters of a network by facilitating the dissemination of innovative ideas, encouraging inter-cluster communication and collaboration, enhancing productivity and improving health outcomes. Arguing further, Granovetter (1983)[40] suggests that weak ties represent an opportunity for "microintegration" (allowing regular transmission of information) or "macrointegration" (that allows for episodic transmission of information) among disparate or distant clusters that characterise the current healthcare organisation.

Creating opportunities to strengthen weak ties and reduce absent ties between actors is crucial because when frontline health professionals teams are highly interconnected (higher network density), sharing a common vision with less dependence from the central office, they are more likely to deliver high-quality care.[23]

Dispite similarity of the baseline demographic characteristics across the four Clusters, the data presented in this paper shows that Cluster 4 appeared to provide a model of collaborative relationships for strengthening MNCH and building resilience. Such a model involves the following attributes:

- Firstly, distributed leadership among the 'big 5' that creates the space for inclusion, participation and collective decision-making by including senior and middle level managers representing both clinical and non-clinical staff.
- Secondly, effective collaboration driven by a multidisciplinary team of actors, bringing together complementary skills and capabilities including doctors, nurses, EMS, allied health workers, health information and administrative staff.

- Thirdly, PHC facilities are effectively linked to hospitals. Collaboration enables the establishment of effective referral processes and creation of formal and informal networking between hospitals and PHC facilities.
- Fourthly, communities are represented in the various domains of collaboration network. This includes the hospital board chairpersons as representatives of the communities as well as other community-based organisations that provide voice for users and citizens.
- Fifthly, there is less dependence on the central district players. Frontline professionals and managers display a certain independence from the central management office and are empowered with problem-solving capabilities. This requires both stronger cohesion between units and more integration of peripheral actors within and across clusters.
- Finally, innovation is driven by frontline managers. Collaboration aims to empower frontline professionals to bring forward and share new ideas, and new ways of doing things. This would avoid the dependency on the district players for things that require local solutions.

Findings from from previous phases of research showed that when encouraged, actors developed innovative informal collaborative relationships and new ways of doing things, such as the establishment of a high risk clinic within the hospital that did not require any additional resources.[26] These key features of a collaborative network were also described as drivers of the success in MNCH outcomes in the district through strengthened systems of governance.[12] Prior qualitative observations in the district identified enabling local contexts of accountability and collective responsibility for MNCH care as requiring an open leadership style, multidisciplinary teamwork, involvement of actors across levels of care and community participation.[12,27] The extended nature of informal accountability relationships developed by the leadership, particularly in Cluster 4, contributed to strengthening co-operation and trust among actors in the sub-district, promoted innovation, and motivated participation in meetings.[12,26] As pointed out by David et al.,[39] 'reaffirming the role of primary health care in the care network' is imperative, but also recognising the central role of the managers, particularly district programme managers in mediating collaborative networks.

Limitations

The PIPP/CHIP and the MRU were two examples of collaboration for MNCH that recognised the value of relationships between frontline providers and managers, and across levels of care. It is possible that this network with its strong central connectors, despite its overall low

cohesion, functioned better than other service delivery networks (e.g. for tuberculosis or non-communicable diseases). This exploratory study provides only limited explanation in the variations between included clusters. This aspect should be considered in future research that should also seek to explore the linkage between SNA analyses and system performance, as well as use SNA in prospectively evaluating quality improvement collaboratives at local level.

A methodology such as SNA is not able to capture the multiple daily interactions involved in the relationship between providers and patients and community as clients in the collaborative network. These may seem to be weak ties, but their role and contributions no doubt have an impact on MNCH outcomes. The limited representation of actors from PHC facilities can be considered as a methodological limitation. However, only one person had to report on the tie between two people in order for this to be presented in the SNA as an edge. In addition, because the SNA survey was conducted on a meeting day, efforts were made to contact and remind actors regarding the survey. Thus, if the PHC members had been significant players but absent on the day of the survey, then they could have been reported by others or captured in follow-up processes. The absence of PHC players in the study sample in all likelihood represents a weak or absent collaborative network. It is possible that informal collaborative mechanisms existed outside of the PPIP/CHIP or MRU study population, but the prior phases of research suggest that this is unlikely. Finally, a dissemination workshop was planned to give feedback in the district to validate the findings and explore ways to proactively improve collaboration and cohesion in the District. Unfortunately, this workshop was cancelled due to the Covid-19 pandemic.

Conclusion

Collaboration is a prime requirement in health systems and maternal and child health, particularly at the district level where frontline health professionals interface with health care users. Consolidated collaborative networks are crucial to facilitate knowledge transfer, improve referral systems, continuity of care and, ultimately, patient outcomes. There is a need to build more cohesion among disparate groups within the district health system by integrating primary health care, hospitals and communities. Strengthening collaborative networks among multidisciplinary groups of actors from different levels of care will bring isolated groups to work together as a team toward achieving a common goal of improving maternal, newborn and

child health outcomes and reducing avoidable deaths. By identifying and utilizing effectively the connectors, spanners and brokers, managers can use the opportunity to close the gaps in knowledge, skills and capabilities among frontline health professionals.

Governance structures such as the MRU, if well understood and implemented, can facilitate collaborative network and improve cohesion between a multidisciplinary team of actors and across levels of care [12] particularly by integrating the missing links between primary health care, hospital services and communities.[27] The design of health system reforms should nurture collaborative relationships, information sharing and strengthened teamwork between frontline providers and with clients.[8]

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CHAPTER 5: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This PhD has explored and described the forms and functioning of accountability mechanisms for MNCH in a South African district. Drawing on a range of methodologies, the thesis has mapped existing accountability mechanisms (Paper 1), explored perceptions and experiences of accountability amongst frontline providers and managers (Paper 2), evaluated the functioning of the key MNCH accountability mechanisms centred on death surveillance and response (Paper 3), and has explored the relational ecosystem underpinning accountability through Social Network Analysis (SNA) (Paper 4). This chapter presents the main contributions of the thesis to knowledge, locating these within the accountability and governance literature. It then proposes a set of ingredients and a framework for strengthening accountability for MNCH at the district level. The chapter ends with a conclusion and key recommendations for research and policy.

Contributions of the thesis

This PhD answers the call to examine accountability interventions at the frontlines, particularly in settings that are faced with poor maternal and child health outcomes; and to be aware of how accountability mechanisms generate different outcomes in specific contexts (Freedman and Schaaf, 2013). This implies exploring closely the local context (and existing accountability practices in that context) and the experiences of frontline providers, as these ultimately shape successful implementation supporting national and global accountability goals (Freedman and Schaaf, 2013).

In these regards the thesis contributes to knowledge in the following ways:

- It examines MNCH accountability from the perspectives and experiences of frontline providers, within local organisational environments and health system contexts.
- It documents a local environment saturated with accountability mechanisms, excessively focused on compliance and performance. The thesis identifies the need to streamline accountability mechanisms and adapt them to the local context.
- It highlights the importance of accountability relationships embedded within ecosystems of formal and informal collaborative relationships. The value of accountability relationships was presented in a recent study from Sub-Saharan Africa by Nxumalo et al. (2018a). They argue for the importance of local collaborative accountability relationships that strengthen daily 'micro-practices' of accountability processes (Nxumalo et al., 2018a). The thesis shows variations in the patterns of co-production that depict clustering in the dynamics of collaboration between frontline health professionals and across levels. This has a direct implication for the quality of collaborative relationships, the referral systems, as well as the quality of care provided.
- The thesis proposes key ingredients and a framework for accountability for local MNCH programmes. The framework integrates various domains built from identified accountability interfaces (professional, levels of service delivery, community and trade union interfaces), an ecosystem of relationships, professional learning, and continuous monitoring and improvement.

These various contributions are explored further in the sections which follow, presented as cross-cutting themes from the data.

The organisational environment and frontline providers' perceptions, experiences and reported practices of accountability

A key finding of the thesis is that the ideas and notions of accountability are well-established among frontline health professionals in the district (Paper 2). Health workers were cognisant of the benefits of putting accountability as a core mandate of health professionals and refer to accountability as a 'must-have' professional virtue. They further considered accountability as consisting of answerability as well as responsibility operating concurrently in multiple directions – vertically through hierarchies and to communities, and horizontally towards peers.

The thesis shows that the practices (and experiences) of accountability are influenced by the organisational environment, characterised by a mix of approaches that either constrain or enable accountability. On the one hand, the coexistence of impunity and unfair sanctions, with local political interference, impede the ability to call powerful people to account for wrongdoings (Paper 2). On the other hand, the thesis also presents key attributes that facilitate the exercise of accountability for MNCH, such as an open leadership style, teamwork, good collaboration between Primary Health Care (PHC), the hospital, community and labour representatives, investment in capacity building, and setting up of systems of responsiveness (Paper 2). These organisational attributes have been described as key to the implementation of performance accountability mechanisms in Kenya and other parts of South Africa (Nxumalo et al., 2018b).

Discussing African bureaucracies, Bierschenk and de Sardan (2014) ascribe the variation in organisational performance in public service delivery to resources and capacity to adhere to bureaucratic rules by frontline workers. They argue that street-level bureaucrats, particularly in Africa, face a chronic shortage of resources, a high

workload, employee dissatisfaction and burn-out, coupled with ambiguity and contradictory goals from the management, resulting in poor performance and lower accountability (Bierschenk and de Sardan, 2014:36). Therefore, according to Topp (2017), performance in organisational environments should be a *"product of a range of decisions and actions, networks and relationships"* that affect health service delivery (Paper 1).

Even though formal accountability procedures do not automatically lead to better health equity (Paper 2), accountability in the organisational environment can facilitate the promotion of health equity (and improve health outcomes) that is influenced by factors such as affordability, access, and diversity in the healthcare system; any deficiency in these factors, and the failure of health policies to continually provide 'non-discriminatory access' to maternal and child health care services, can only deepen the disparities towards achieving Universal Health Coverage (Williams et al., 2016; Hamal et al., 2018). Accountable and equitable health systems can be built by addressing the social determinants of health care (Lee and Sadana, 2011), promoting equity-oriented interventions at local and point of care level (Ford-Gilboe et al., 2018), and improving health care workforce diversity (Williams et al., 2016).

Saturation, imbalance and focus on targets and compliance

Zooming in on the organisational environment, the thesis has documented a saturation of MNCH accountability mechanisms in the district, with many duplications, overlaps and unexplored synergies. Most of these mechanisms were designed and implemented during the MDG 'Countdown' period in order to meet the targets related to the reduction of maternal and child mortality (Paper 1). Because death events, particularly maternal deaths, are considered a barometer of a system's

performance (Paper 3), the over-production of accountability mechanisms could also be interpreted as an over-reaction of the political system to missing the MDG targets and unfairly reverting on frontline actors to take responsibility for system failures (Eftekhar-Vaghefi et al., 2013). Based on Brinkerhoff (2003) typology of accountability mechanisms (performance, financial, and political/democratic), it was found that the primary focus was on performance, and very little attention was paid to ensuring public or community (social) accountability (Papers 1, 3 and 4). The dominance of bureaucratic accountability mechanisms was also reported in the Kenya/South Africa study reported above (Nxumalo et al., 2018a).

In these bureaucratic mechanisms, performance accountability is typically expressed through control and supervision mechanisms by higher-level management, and the development of guidelines and standard operating procedures to steer an individual's performance (Radin, 2011). Frontline health professionals are also frequently held accountable for performance based on a set of targets established in line with the MDGs or SDGs by the National Department of Health, implemented at the district level.

The over-emphasis on performance accountability as a measurement of outcomes against predetermined targets (goals), has been challenged over the years (Radin, 2006) for failing to acknowledge the complexity of accountability as a phenomenon (Radin, 2011:109). Dieleman et al. (2009) critique the focus on accountability centred on targets and measurement established in the MDGs and now the SDGs, proposing an imperative need for the adaptation of accountability interventions to the local context, the involvement of frontline providers in identifying and solving problems, as well as investing in knowledge and skills with the proper motivation of providers.

Performance can, however, also be strengthened by combining different mechanisms, such as social pressure and participation, trust-building and joint problem-solving (Topp, 2017). In this regard, Topp distinguishes three approaches to strengthening performance within the field of human resources for health (Topp, 2017:73-6): '*performance evaluation*' (focuses on adherence to clinical rules or standards, and assessment of competencies and productivity of health professionals); '*performance as practice*' (addresses governance, accountability, power dynamics and capacity for resilience in health organisation); and '*performance improvement*' (relates to collective and proactive action, open governance, continuous improvement, capacity-building and incentive for good performance).

The approach to performance forms described above, can also be related to the Hupe and Hill (2007) typology of accountability that considers the varied assumptions on how the different mechanisms influence health outcomes in local health systems. These can function through compliance to targets (referred to as performance); through compliance to rules, guidelines or standard operating procedures (referred to as enforcement); or through shared goals, co-operation or participation (referred to as co-production).

The thesis shows that too much focus on individual performance and compliance results in naming, blaming and shaming in the case of poor performance (Paper 2). The blaming culture does not work, it does not keep the patient or the health worker safe (Wolvaardt, 2019), and it does not change the multiple converging factors leading to an adverse event (Institute of Medicine (IOM) Committee on Quality of Health Care in America, 2000). On the contrary, blaming leads to frustration and fear of taking initiative and worsens poor performance, because it impedes creativity and learning from mistakes (Farokhzadian et al., 2018). Because adverse events affect individual

and institutional reputation, blaming an individual actor may result in problem-denial, shifting the blame to others, or even partially admitting responsibility while rejecting full involvement (Bovens et al., 2014). Besides, most causes of health problems are systemic and require systemic responsibility and actions (De Savigny and Adam, 2009; Bielecki and Nieszporska, 2019) instead of the sanctioning of frontline health professionals for systemic and managerial deficiencies (George, 2009).

There is a disproportionate effort to produce accountability tools and strategies to increase individual performance with little attention given to transforming organisational and social norms feeding into accountability for MNCH at meso- and macro-levels (Schaaf et al., 2020).

Importance of relationships and accountability ecosystems

The thesis describes the accountability ecosystem involving both formal and informal accountability relationships (Paper 1 and paper 4). This ecosystem perspective considers multiple actors playing various roles and having many responsibilities, and interacting through formal and informal relationships across levels in the health system that are shaped by the managerial style and local context of accountability (Van Belle et al., 2018).

This thesis further describes the variability in, and the importance of strengthening relationships among health professionals, across levels of care and involving communities and trade unions. As argued by Nxumalo et al. (2018a), strengthening relational capabilities at the frontline of the health system may facilitate the achievement of the purpose of bureaucratic accountability that combines compliance with core standards and reflective feedback.

In this ecosystem, the thesis highlights the value and role of networking between clusters or micro-social networks (Paper 4), which are relational micro-systems consisting of professional categories and levels of service delivery that facilitate the development of contextualised local solutions to improve the quality of services provided (Bazos et al., 2015). The relational structure and functioning of these micro-systems affect the performance of the local ecosystem (Mohr and Batalden, 2002).

The actors in these networks are connected through ties of various strengths (Paper 4). The connection between them should consider both strong and weak ties, given that innovative ideas are more likely to flow through weak ties facilitated by boundary spanners or information brokers (Granovetter, 1973).

The thesis identifies several key relational interfaces (Paper 4) as critically important for accountability relationships, particularly among frontline health workers:

- *Professional interface*: Relational accountability and collaboration on MNCH involves a range of health professionals with disciplinary boundaries, hierarchies and differences in power, across doctors, nurses and other health workers. The ability to flatten hierarchies and attenuate power imbalances is key to establishing collaborative relationships across professional boundaries. When effective, interpersonal collaboration and co-production between these professional categories will allow them to achieve both individual and system goals (Nxumalo et al., 2018a).
- *Levels interface*: The practice of accountability extends across levels of service delivery, following the vertical reporting lines in a health system. This interface includes district hospitals, PHC facilities and communities (patients, families), in addition to district management. We found that significant variations existed

between the two local sub-districts regarding the involvement of PHC facilities in accountability relationships. Across these levels, it is important to highlight the role of the national (and provincial) interfaces responsible for setting up accountability objectives and championing implementation at provincial and local levels.

Community interface: The thesis has identified community involvement as the least recognised interface, but key in the overall accountability ecosystem. The literature reports that community involvement in decision-making and defining health priorities positively influences MNCH outcomes (Boydell et al., 2019). In one sub-district, the community was represented by the hospital board chairperson, a community leader and a respected, influential person in the community who was also actively involved in collaborative relationships with the hospital and district health system (Paper 2 and Paper 4). The successful involvement of the community representative was attributed to the open and distributive leadership style of the hospital CEO, and the earned trust of the community in the chairperson, related to his background and leadership position in the community. In addition to being elected and representing the interests of the community in the health system, the chairperson also shared good relationships with the hospital leadership and the provincial minister of health (MEC) to whom he was directly accountable (Paper 2). This example illustrates the various pathways through which powerful community actors can influence local health services. To avoid creating obscure accountability lines, however, the boundaries of accountability should be clearly defined when engaging communities in co-productive relationships where communities (patients) and health professionals are expected to interact and communicate respectfully (Batalden et al., 2016). The reality however, is that in many

instances, internal hierarchies, power imbalances and structural limitations impede the ability of communities to demand any accountability (Boydell et al., 2019).

- *Labour-management interface:* Through their actions and voice, trade unions were identified as key players in shaping the accountability ecosystem (Paper 2). In one sub-district, trade unions played an important role in advocating for a system of reciprocal accountability and fairness. As a broker, trade unions interact with executive managers, holding them accountable for the provision of resources and opportunities for skills development, while also requesting their members to abide by the hospital and health system regulations. However, the role of the trade unions was also perceived as disruptive in some settings (Paper 1 and Paper 2), where their extreme exercise of power pressuring the management may result in a misallocation of resources (Addison, 2020).

To sum up, although the local space of accountability for MNCH is crowded (Paper 1), frontline health professionals experience accountability in various ways shaped by the local context including the organisational environment and managerial style (Paper 2) which, not only explains the observed variations in the functioning of accountability mechanisms between the two sub-districts (Papers 3), but also represents an opportunity for streamlining, strengthening relationships and improving the ways of implementing these mechanisms at local level. Paper 4 on SNA shows the differences in relations at sub-district level by specifically highlighting the variations in the role of leadership in promoting formal and informal accountability relationships, the role of central connectors, and the level of integration between PHC facilities and hospitals.

Ingredients and systemic (integrative) framework for strengthening accountability for maternal, newborn and child health at district level

Drawing together the various observations made in this PhD research, a number of factors and practices were identified as enablers of effective accountability for MNCH, contextualised at the local level in South Africa. These ingredients of accountability include:

- *An accountable and open leadership style* of frontline managers, particularly of the middle managers and hospital CEOs, expressed through meetings and other spontaneous social interactions and informal relationships.
- *Recognition of inter-professional teamwork and diversity,* bringing together doctors, nurses and other health professionals working at the frontline of MNCH care. In this way, individualised capabilities and skills strengthen teamwork to provide quality care to communities.
- *Engaging critical actors beyond core health professional teams*: Health system problems and MNCH care problems are multidimensional and require the engagement of a variety of actors and sectors from other disciplines. For instance, the Monitoring and Response Unit (MRU) brought together stakeholders from the South African Social Security Agency (SASSA), non-governmental organisations (NGOs) and community representatives to address MNCH (Paper 1).
- *Creating a collaborative culture across interfaces* that acknowledges civil society and community organisations (as part of the accountability ecosystem) in identifying and addressing community-related causes of accountability failures; and the importance of trade unions working together with frontline

health providers and managers from various levels of care, as well as policymakers.

- *Enabling a system of 'reciprocal accountability'*: The thesis shows that accountability is not one-way performance auditing where frontline providers are answerable to higher-level managers, or to the community receiving health care services. Accountability best thrives in a bi-directional system where each is accountable to the other, where higher-level management invests in building the trust and the capacity of frontline providers and communities, acknowledges the role of civil society and communities, and provides resources for system improvement and better performance. Whenever managers, providers and community share good relationships, it can facilitate reciprocity in accountability practices by paying attention to provider motivation, recognition and encouragement of good performance, respectful interactions, investment in skills development and support systems that are responsive to needs (Paper 2 - Mukinda et al., 2020b).
- *Practicing fairness and transparency* in sanctioning, and in the provision of resources and opportunities for capacity-building through open, collective and inclusive communication and decision-making (Paper 2 - Mukinda et al., 2020b).
- *Avoiding duplication/streamlining mechanisms*: The thesis has documented the crowded nature of accountability mechanisms for MNCH (Paper 1). In most cases, the design of new mechanisms was a duplication of existing ones, with different names and conflicting expectations. This was described by Koppell (2005) as 'Multiple Accountability Disorder' (MAD). A key need is to streamline existing formal mechanisms in order to build a sustainable culture of local

accountability that reduces the burden of answerability from the shoulders of frontline health providers and managers.

- *Recognising informal accountability relationships*: The thesis has identified how informal relationships and norms constitute the backdrop of the accountability ecosystem in which all accountability relationships are embedded. This confirms the already-known literature (George, 2009; Hossain, 2009). For instance, referring to 'rude accountability', Hossain (2009) found that where formal accountability systems are absent or ineffective, informal mechanisms take precedence (Hossain, 2009). George (2009) further elaborates that *"the effectiveness of formal accountability mechanisms relies on the informal relationships that underlie them"*. It is therefore crucial to acknowledge the role of informal accountability relationships within and between the various accountability interfaces, as described in the thesis.

Based on these key ingredients, a systemic (integrative) accountability framework for local maternal, newborn and child health programmes is proposed in Figure 5.1 and Table 5.1 below. A set of five key accountability domains are proposed (key actors, relationships, levels of service delivery, proactive actions and reactive actions).

It is important to acknowledge the complex nature of accountability and the health system in implementing accountability mechanisms (Boydell et al., 2019). A systemic approach to accountability is justified by the nature of accountability failures, in most cases requiring strategies for systemic change (Fox and Aceron, 2016) that integrate diversity of viewpoints, and the features of local context and culture in order to make change happened (Green, 2016). As argued by Wolvaardt (2019), better to focus on systems and processes, rather than blaming and sanctioning individual actors.

Based on Paper 4 which identified key accountability interfaces (professional and interdisciplinary, levels of service delivery, community and trade union interfaces), and based on the WHO's Continuous Action Framework (WHO, 2013), Figure 5.1 below is proposed as an accountability framework for MNCH at the local level. It is systemic and integrative because of the consideration and inclusion of actors from multiple disciplines and sectors, from various levels in the district health system, both internal and external, called to work together for providing quality MNCH services. The suggested framework consists of 21 markers or attributes that characterise the five accountability domains (key actors, relationships, levels of service delivery, proactive and reactive domains) suggested in this framework (Table 5.1).

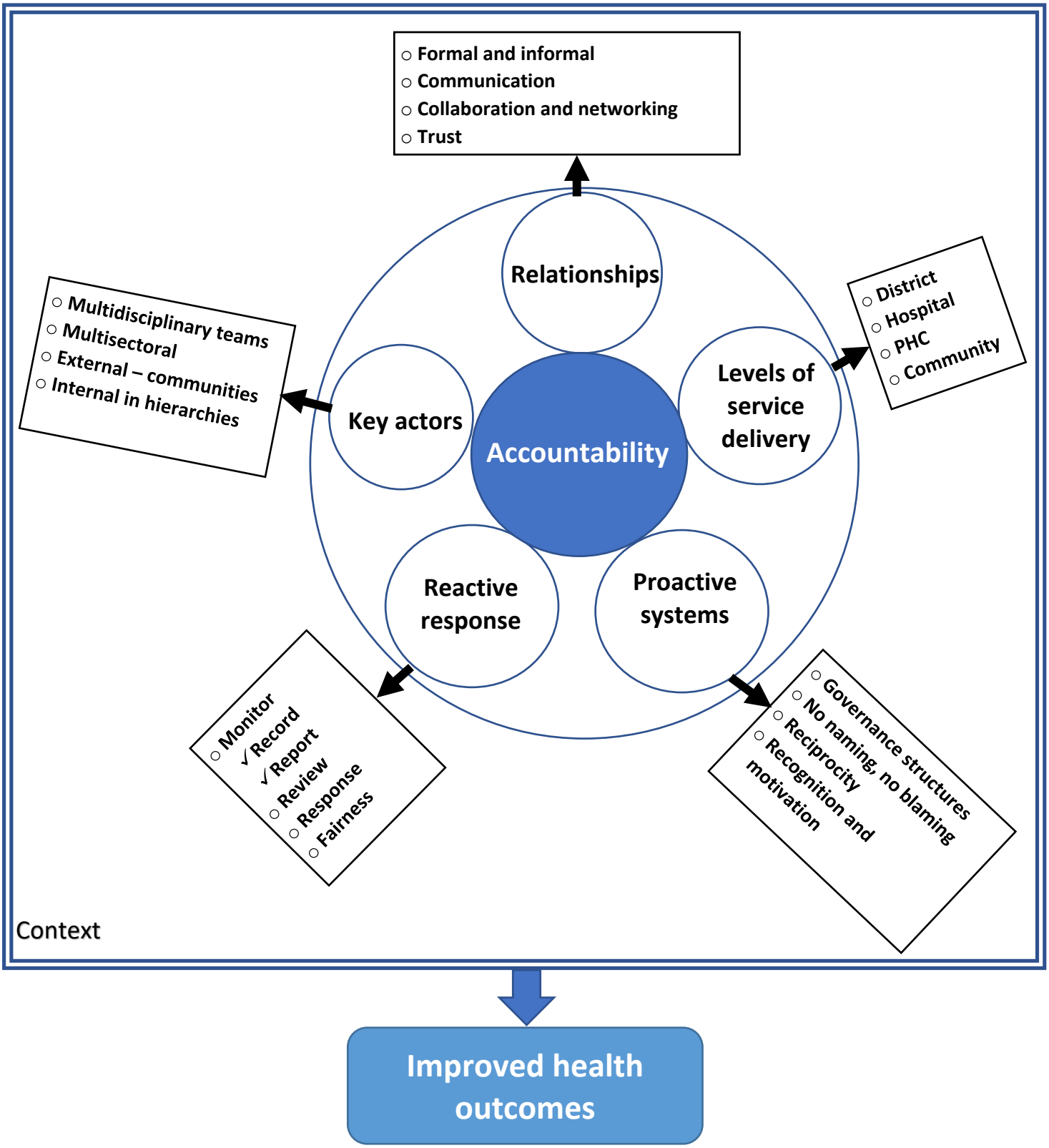

Figure 5.1 Systemic (integrative) framework for local accountability for maternal, newborn and child health

Table 5.1 Domains and attributes of a systemic accountability framework

DOMAIN[10]	MARKERS/ATTRIBUTES	
Key actors	1	Multidisciplinary teams
	2	Multisectoral
	3	External – communities
	4	Internal in hierarchies
Relationships	5	Formal and informal
	6	Communication
	7	Collaboration and networking
	8	Trust
Levels of service delivery	9	District
	10	Hospital
	11	Primary Health Care
	12	Community
Proactive systems	13	Structures of governance (mechanisms of co-ordination and processes)
	14	No naming, no blaming
	15	Reciprocal accountability
	16	Recognition and motivation
Reactive response	17	Monitor (Record, Report)
	18	Review
	19	Response
	20	Fairness

[10] These domains and attributes are recommendations intended for the micro-level context of the health system.

The first domain concerns key actors. Effective accountability mechanisms for MNCH involves the inclusion, participation and interaction between actors differentiated by their professional disciplines and levels of expertise in teams. Because MNCH requires a multisectoral engagement, ideally involved actors should also come from other sectors – outside the formal health sector – such as higher-level public service administration, social services and education. Empowered communities and community-based organisations (and civil society advocacy groups) are key external actors.

The second domain describes the nature and quality of relationships to consider in implementing accountability mechanisms. Accountability is relational by nature. As described in Paper 1 (Mukinda et al., 2020a), formal accountability mechanisms coexist and intertwine with informal accountability relationships and norms. To be effective, mechanisms of accountability should recognise both formal and informal relationships and concomitant norms (both official and unofficial), and strength collaboration and networking between the interfaces. All key actors are expected to nurture social interaction that involves meaningful and consistent communication that will prevent any miscommunication – collaboration and networking allow for sharing new ideas and collective problem-solving. In building relationships, actors build trust among themselves, which is the binding force of interpersonal collaboration to overcome challenges and enhance the performance of the team (Gregory and Austin, 2016). It is the combination of these elements (formal and informal relationships and norms) that makes up real governance relationships (De Herdt and de Sardan, 2015).

The third domain addresses the levels of service delivery. Central to this domain is the collaboration between hospitals and PHC facilities considered as the first point of

contact between the health system and the community (as the first level of service delivery). Effective accountability relationships (and collaboration) between these three entities (community, PHC and hospital) may facilitate the referral processes and continuity of care.

The fourth domain emphasises the proactive systems of accountability that prevent or identify adverse events before they occur. The domain includes setting up inclusive quality governance structures that encourage a culture of 'no naming' and 'no blaming', foster reciprocal accountability through capacity-building and resource-provision, and creating spaces where good performance is acknowledged, with proper motivation as an incentive for learning and improvement. These should be spaces where poor performance is positively adjusted and guidance for improvement provided. This way of 'doing accountability differently' will foster collective responsibility and collective action (Fox and Aceron, 2016).

The final domain complements the fourth by showing the reactive actions of accountability that consist of redress mechanisms or remedial action in response to an already occurred event. This is of particular interest in case of death events (especially maternal death) that initiate a chain of accountability reactions. Reactive actions include: continuous monitoring of actions and decision that are taken; 'real-time' (24-hour) recording and reporting of events to system hierarchies; and reviewing in order to identify modifiable factors that will inform a decision to be taken in response to the identified factors (Cupido, 2018). The principle of fairness should be applied in all resulting decisions or action. Alluding to fairness, Radin (2011) argues that accountability mechanisms should be associated with just and equitable treatment of involved actors, by making consistent use of rules and standard procedures and by

making provision of a certain level of institutional autonomy to facilitate the reallocation of resources (Kapiriri et al., 2009).

Learning, as part of this domain, is particularly important in case of death events or 'near misses' (De Brouwere et al., 2014; Kalhan et al., 2017). The thesis showed that a number of accountability mechanisms come into effect in case of maternal deaths. The best way of learning is to review and learn from death events, interrogate what could have been done differently and focus on evidence-based interventions to address mortality (Kalhan et al., 2017). In this regard, Leistikow et al. (2017) argue that *"learning from incidents in health care – the journey, not the arrival, matters",* to emphasise the importance of learning as a continuous process instead of solely focusing on (or stopping at) reactive action.

By integrating the various domains and their attributes as described above, the framework organises factors that are assumed to improve MNCH outcomes. We also assume that the level of achievement of outcomes will be context-dependent. It is assumed that by combining and operationalising the elements of this framework within the local health system, this may result in improving equity and advancing the Universal Health Coverage expectations and experiences of MNCH services for users and providers.

How would this framework be used?

This framework is proposed as a simplified explorative mapping tool that incorporates accountability mechanisms and micro-system governance arrangements of MNCH practices. It can be used to map accountability mechanisms, the actors involved and the relationships needed for MNCH programmes at the district level. It can also facilitate the identification of bottlenecks and opportunities for improvement. In this

way, the framework can also serve as a training tool to build accountability and governance structures for MNCH at a local level and to enhance connectivity between accountability interfaces and across levels.

The next phase would be to test the usefulness of this framework using a participatory action research approach and to develop it further as a tool for continuous monitoring and mapping of accountability relationships, as well as the resulting actions for MNCH programmes. The testing should also assess whether this framework can promote a continuous system of learning and curb the dependence on reactive actions alone.

Assumptions and limitations

Included in the thesis are four papers representing the phases of the research approach. The first paper is a review and mapping of the accountability policy documents, tracing the progress and implementation timeline of strategies related to accountability for MNCH in a South African district system. Paper 2 examines the meanings of accountability as a phenomenon and the related lived experiences by frontline health professionals. Descriptive and interpretive biases could have possibly been introduced; they were minimised through the ongoing communication, questioning and reviewing of findings that took place between the candidate and the supervisors. In Paper 3 the thesis presents a framework of elements for evaluating the functioning of death surveillance and response (DSR) at the district level. The findings from an evaluation of the functioning in one district are less likely to be generalised to other settings, but their analytical relevance and the triangulation of data can inform the practice of DSR in similar settings. Paper 4 is a cross-sectional survey that

is limited by the nature of its (cross-sectional) design and by not directly including respondents from the community as collaborative partners.

The final phase of this PhD was intended to be a summative feedback workshop in the district to collectively discuss the key recommendations and strategies to strengthen accountability for MNCH in the district. This dissemination workshop was cancelled due to the emergence of COVID-19, even though all the data to inform the recommendations were gathered prior to the lockdown. This also precluded the possibility of validating the ingredients of effective accountability and contributing to the design of the framework.

This study was conducted in two sub-districts from one district in South Africa. The findings are not generalisable in a narrow sense, but can be of value to countries facing similar challenges, including the need to understand the functioning and experiences of mechanisms of accountability at a local level. The findings from this thesis can serve as a tool for mapping, integrating and strengthening accountability relationships in settings such as that described by Mafuta in the DRC – characterised by high levels of variations in the local accountability for MNCH, limited collaborative relationships or networking between local entities, and where politics are extremely influential to the level of not welcoming community-based organisations advocating for health rights (Mafuta et al., 2016); or in settings where local informal practices emerge as more significant than formal policies (Bertone and Witter, 2015).

Conclusion and recommendations

The evidence generated in this thesis and the proposed framework, conclude that effective accountability for MNCH at the local level requires participation,

collaboration and building relationships within the district health systems and across levels of care. It is also assumed that the mechanisms related to the performance of frontline health professionals are driven by reciprocal accountability and combine both proactive and reactive actions.

Even though accountability mechanisms are mostly focused on the global and national levels, efforts to strengthen local accountability for MNCH are being made, particularly in LMIC, but the challenge remains that of making an "*intentional shift from global to local actions"* to promote and reflect local contexts and realities (Marchant et al., 2020).

Achieving accountability is an essential ingredient for governance and Universal Health Coverage (UHC). The quest for more performance to address maternal, newborn and child mortality in line with national imperatives or global goals and targets has resulted in a design and implementation of many accountability mechanisms in the South African district health system.

The space of local accountability is crowded by strong internal accountability initiatives; there is no need to generate more mechanisms for implementation at local levels, but to streamline the existing ones, aligning them with the complex micro-system context. There needs to be recognition that formal mechanisms are embedded in a complex network of informal relationships expressed in the micro-practices of accountability. Strengthening accountability requires a systems perspective that integrates professional learning, continuous improvement, multidisciplinary teams and multi-level processes within the district, with representation and participation of the community. To be effective and sustainable, accountability should be supported by

inclusive and strong governance structures that will shape and sustain accountability at the local level.

Recommendations for policy

In addition to the ingredients and the framework proposed above, this thesis makes the following recommendations for policy:

At the national or provincial level:

- Streamline accountability mechanisms, balance performance targets with mechanisms of co-production.
- Promote policies that favour the relational capabilities of frontline actors. This should take into consideration the different interfaces addressed in the thesis and align them within local micro-systems.

At sub-district level:

- Promote an organisational culture of teamwork between hospitals, PHC facilities and community. This requires integration and co-ordination of the clinical micro-systems (medical officers, nursing staff, allied health units, managers and provider units) across the service delivery levels (Mohr and Batalden, 2002).
- Facilitate community participation and voice from civil society organisations, which are recognised as key to increasing provider accountability, transparency and inclusiveness. This can be achieved through consensus-building. And, where traditional problem-solving approaches do not work, Roberts (2002) proposes dialogue as an alternative accountability mechanism. Civil society

organisation, such as the Treatment Action Campaign (TAC) can be an example to push for accountability from a community perspective.

- Create a 'just culture' of collective learning and continuous improvement.
- Implement governance structures such as the Monitoring and Response Unit (MRU) – if well understood and implemented, these structures can facilitate collaboration, collective accountability, inclusiveness, networking and improved cohesion between accountability interfaces.

Recommendations for research

The proposal of a systemic approach to local accountability opens up an opportunity to study various further aspects of accountability at the frontline, identified as gaps in the thesis. These propositions are informed by the assumption that "*real policy-makers are street-level bureaucrats"* at the frontline, who constitute the base for successful policy implementation (De Herdt and de Sardan, 2015). The propositions are as follows:

- Explore policy negotiation processes by frontline managers and providers to streamline and institutionalise accountability mechanisms at the local (district and sub-district) level.
- Understand the role of trade unions as a voice of frontline accountability.
- Explore the role (positive and negative) of medical litigation in local health system accountability relationships.
- Profile the facilitators and barriers to the vertical and horizontal integration of PHC facilities and hospitals in district health systems.

- Understand patient or community participation, perception and experiences regarding accountability – for MNCH – to enable a holistic account of the accountability phenomenon at a local level.
- Prospectively evaluate the plausible effectiveness (impact) of accountability mechanisms in improving the quality and outcomes of MNCH services at local level.
- Explore the operationalisation and inclusion of accountability as a professional virtue in health professional education curricula.
- Explore how are upstream policies and actions affect feasible responses at the provincial, district and sub-district levels

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APPENDICES

Appendix 1: Ethics approval from the University of the Western Cape

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION

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South Africa
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07 December 2017

Dr FK Mukinda and Prof H Schneider
School of Public Health
Faculty of Community and Health Sciences

Ethics Reference Number: BM17/10/8

Project Title: Forms and functioning of local accountability mechanisms for maternal, newborn and child health: A case study of Gert Sibanda District, South Africa.

Approval Period: 07 December 2017 – 07 December 2018

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal.

The permission from the Provincial Health Department must be submitted for record keeping purposes.

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

PROVISIONAL REC NUMBER -130416-050

Appendix 2: Approval from Mpumalanga Provincial Department of Health

health
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

No.3, Government Boulevard, Riverside Park, Ext. 2, Mbombela, 1200, Mpumalanga Province
Private Bag X11285, Mbombela, 1200, Mpumalanga Province
Tel I: +27 (13) 766 3429, Fax: +27 (13) 766 3458

Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Enquiries: Research (013) 766 3511/3757/3766

Dr Fidele Kanyimbu Mukinda
P O BOX 446,
Cape Town, 7499

Dear Dr Mukinda

APPLICATION FOR RESEARCH APPROVAL: FORMS AND FUNCTIONING OF LOCAL ACCOUNTABILITY MECHANISMS FOR MATERNAL, NEWBORN AND CHILD HEALTH: A CASE STUDY OF GERT SIBANDE DISTRICT, SOUTH AFRICA

The Provincial Health Research Committee has approved your research proposal in the latest format that you sent.

MP_201801_004
Approval valid for 1 Year
Data collection period: February 2018- December 2018
Approved facilities: * Gert Sibande District Offices

- ***Amajuba Memorial, Bethal & Evander Hospitals***
- ***Bethal Town, Evander & Volkrust Clinics***

Kindly ensure that the study is conducted with minimal disruption and impact on our staff, and also ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

MR J SIGUDLA
SECRETARIAT: MPUMALANGA PHRC

MPUMALANGA PROVINCE
DEPARTMENT OF HEALTH
PLANNING & INFORMATION
2018 -01- 30
DATE
PRIVATE BAG X 11285
NELSPRUIT 1200

MPUMALANGA
THE PLACE OF THE RISING SUN

Appendix 3: Approval from Gert Sibande District Office

health
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

MPUMALANGA
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No.3, Government Boulevard, Riverside Park, Ext. 2, Mbombela, 1200, Mpumalanga Province
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Litiko Letemphilo | Departement van Gesondheid | UmNyango WezeMaphilo

Letter of Support Signed by Chief Director (CD)/CEO/District Manager (DM)/Programme Manager (PM)

1. Name & contact no. of Applicant	Dr Fidele Mukinda (fmukinda@uwc.ac.za)		
2. Title of Study: Forms and functioning of local accountability mechanisms for maternal, newborn and child health: A case study of Gert Sibande District, South Africa			
3. Aim and population target: To explore, describe and evaluate the forms and functioning of accountability mechanisms for maternal, newborn and child health (MNCH) in Gert Sibande District			
4. Period to undertake the study	From: February 2018 to: December 2019		
5. Resources Required from Facility/Sub-district/Community			
5.1: Facility Staff Required to assist with the Study	Yes How many: Nurses: Doctors: Other, please specify:		NO ✓
5.2: Patient Records/Files	Yes		NO ✓
5.3: Interviewing Patients/ participants at Facilities	Yes		NO ✓
5.4: Interviewing Patients/ participants at Home	Yes		NO ✓
5.5: Resource Flow (Are there benefits to Patients/community)	Yes N/A Please list:		NO
5.6: Resource Flow (Are there benefits to Facility/District)	Yes Please list:		NO
6. Availability of Required Clearance			
6.1: Ethical Clearance	Yes ✓ Clearance Number: BM17/10/8	Pending	NO
6.2: Clinical Trial	Yes N/A Clearance Number:	Pending	NO
6.3: Vaccine Trial	Yes N/A Clearance Number:	Pending	NO
6.4: Budget	Yes Source of fund:		NO

Declaration by Applicant:
I Mr/Ms/Dr/Prof/Adv. Fidele Mukinda _____ agree to submit/present the result of this study back to the CEO/Institution/District.

Comment by CEO/DM/PM: **Supported / Not Supported**

Signature of CEO/CD/DM/PM: Maxwell
Name:

Stamp/Date:

Please email completed form to: JerryS@mpuhealth.gov.za or ThembaM@mpuhealth.gov.za

Please note that this letter is not an approval to undertake a study, but a support letter from identified facility/district, i.e. the CEO/District Manager acknowledges to have been consulted on the study

Appendix 4: Information sheet

INFORMATION SHEET

Project Title: Forms and functioning of local accountability mechanisms for maternal, newborn and child health: A case study of Gert Sibande District, South Africa

What is this study about?

This is a research project being conducted by Dr Fidele Mukinda and Professor Helen Schneider at the University of the Western Cape. We are inviting you to participate in this research project because you are involved with maternal, newborn, and child health care processes in Gert Sibande District. The purpose of this research project is to explore, describe and evaluate the forms and functioning of accountability mechanisms for maternal, newborn and child health in Gert Sibande District in order to develop key strategies for strengthening accountability for improved maternal, newborn and child health.

What will I be asked to do if I agree to participate?

You will be asked to participate in an interview (individually or as part of a group) and objectively provide information about your knowledge and experience regarding current accountability processes for maternal, newborn and child health. You will be asked about the limitations and enabling factors related to accountability outcomes and MNCH outcomes. The interview will take about 30 minutes of your time, and will be conducted in a location of your choice. We will ask your permission to tape record the interviews to allow us to correctly capture all information, and if agreed you will indicate this together with your willingness to be interviewed by signing the consent form, and the focus group confidentiality binding form should you be part of a group discussion.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity and confidentiality, your identity will never be mentioned

throughout the interview process, or in any transcribed document, written report or article, but will be assigned a code. All recorded audio file will be uploaded on a password protected computer accessible to the research team only. After transcription the recording will be deleted according to the University guideline. In case you are part of a group interview, we will ask that you keep the identity of other participants and the discussion content confidential; the extent to which your identity will remain confidential is dependent on participants' in the Focus Group maintaining confidentiality.

What are the risks of this research?

Although the study is with no anticipated direct risk to you, we are aware that all human interactions and talking about self or others carry some amount of risks, especially while discussing or reporting on your experience with accountability for maternal, newborn and child health. 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, but the results may help the investigator learn more about accountability mechanisms and outcomes for maternal, newborn and child health. We hope that, in the future, other people might benefit from this study through improved understanding of accountability processes for maternal, newborn and child health.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

Dr Fidele Mukinda, School of Public Health at the University of the Western Cape, is conducting this research. If you have any questions about the research study itself, please contact **Dr Fidele Mukinda at Cell number……., e-mail: fmukinda@uwc.ac.za.**

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof Helen Schneider (Supervisor)

hschneider@uwc.ac.za

Prof Utah Lehmann

School of Public Health (Head)

soph-comm@uwc.ac.za

Prof Anthea Rhoda

Dean of the Faculty of Community and Health Sciences

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 Research Ethics Committee. (REFERENCE NUMBER: BM17/10/8)

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research Office - New Arts Building/C-Block, Top Floor, Room 28

University of the Western Cape - Private Bag X17/Bellville 7535

Appendix 5: Informed consent for study participation

CONSENT FORM

Title of Research Project: Forms and functioning of local accountability mechanisms for maternal, newborn and child health: A case study of Gert Sibande District, South Africa

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

We are requesting your permission to tape record your interview. To ensure your anonymity the interview your name will not be mentioned in any transcribed document or written report or article, but we will assign you a code. Coded audio files will be saved on a password protected computer. Only the researchers will have access to the identification key for the pseudonyms or codes. All questionnaires will be kept in a locked storage.

□ I agree to be audiotaped during my participation in this study.

□ I do not agree to be audiotaped during my participation in this study.

Participant's name……

Participant's signature……

Date……

Appendix 6: Observation cover sheet and reflective notes

(for all interviews and participant observation)

1	**Interviewer**					
		1	Other (sp)	**2**		
2	**Level**					
	National/Provincial	**1**	Sub-District	**3**	PHC/Clinic	**5**
	District (GS)	**2**	Hospital	**4**	Other (sp)	**99**
3	**Sub-district**					
	SD1	**1**	SD2	**2**		
4	**Facility Name**					
5	**Accountability Mechanism observed**					
	MRU	**1**	PPIP & CHIP	**2**	Adverse event (sp)	**3**
	Clinic Committee	**4**	Ideal Clinic	**5**	Other (sp)	**99**
6	**Observation date**					
	Day		Month		Year 201__	
7	**Time**					
	Starting time:		Ending time:		Total time in minutes:	
8	**Consent to Record**					
	Yes	**1**	No	**2**	N/A	**3**
9	**Describe Location (e.g. Office, skype, telephone, boardroom)**					

Notes:

Provide rich description of:

Structuring observations (Adapted from Ann Bowling,(Bowling, 2014)	
1. Setting	What is the physical environment like? What is the context? What kinds of behaviour are promoted or prevented?
2. Participants	Describe who is in the setting, how many people and their roles. What brings them together and who is allowed there?
3. Activities and interactions	What is going on? Is there a definable sequence of activities? How do people relate to the activity and relate to, and interact with, each other?
4. Frequency and duration	When did the situation being observed begin? How long does it last? Is it recurring and, if so, how often, or is it unique?
5. Subtle factors	Informal and unplanned activities; symbolic and connotative meanings of words; non-verbal communication (e.g. dress, space); unreactive indicators such as physical clues; what does not happen but should?

Summary:

Describe the main points discussed in the interview or during the participant observation; and what you found most significant.

a) **What key points struck you about the interview or the observed accountability mechanism?**

b) **Where did you think there was resistance or reluctance manifested?**

c) **Was there anything that made me feel comfortable/ uncomfortable about the observations?**

Appendix 7: General interview guide and Hospital Board/Clinic Committee

Interview Guide: **Accountability – Death review meetings - Hospital Board/Clinic Committee**	
A. ACCOUNTABILITY	
Introduction	▪ Can you tell me about your current position/role in the (district) health system? *Probes: For how long have you been in that position?*
Accountability definition	▪ Could you describe to me what accountability means to you? *Probes: What does it make you think of accountability? What does it mean 'being accountable to?'* *How* would *you relate your definition of accountability to MNCH?*
Challenges	Can you share some of the challenges that you face while performing your tasks as a health professional (or mid-level manager) within your district? *Probes: Health Systems challenges/Challenges related to clients & Community/Personal challenges*
- **Line/forms,** - **Guidelines** - **Enablers** - **Barriers** - **Complaints**	▪ In your working area, to whom do you think you are accountable and why? *Probes:* - *Tell me about the reporting structure with regard to your role in the health systems?* - *To/from whom do you report/receive order/provide information/provide technical support/training/supervision*

	▪ Are there any accountability guidelines/framework from the DOH that you are using? [*If yes, please describe*] ▪ What are the enabling and limitation factors of the current accountability processes? ▪ Does the District/Sub-district/Hospital/PHC Management Team have a mechanism in place to handle clients' complaints? How does it work? ▪ Can you describe how voice of the vulnerable (and of the community) is being represented within the Health System/clinic committee/ Hospital Board?
Team	▪ What's your experience/perception regarding teamwork and accountability for MNCH? *Probes:* *- Can you tell me about the team members/actors involved in the accountability processes for MNCH (Probe: Level)* *- How will you characterise the attitude and commitment of teamwork regarding MNCH* *- What's your beliefs regarding MNCH and the value of accountability* ▪ How do you perceive the performance of the team with regard to MNCH? *Probes:* - *Do you share the same goals? How do you set up these goals [decision making process]* - *Can you comment on the level of participation and collaboration work environment?* - *How do you monitor group accountability for MNCH*

Adverse events	▪ How do you perceive a case of adverse event (e.g. maternal or child death) as a team and/or individual? *Probes:* - *Please elaborate* - *How is the climate within your team when it comes to adverse event?* ▪ When you have to justify/explain/answer on an adverse event, how do you perceive the role of team members (peers)?
	▪ How would you characterise the role of the investigation team regarding an adverse event? [Team: DCST, Province, or other] *Probes:* - *Does the investigation result in sanctions and/or learning? [Please elaborate]* - *If learning, how often does the training happen? By Whom?* - *How do you identify areas for improvement [beside when an adverse event occurs]?*
Improvement	▪ If you are given all the means to improve accountability, how would you go for it and what would you prioritize? ▪ In your view, what can be done regarding accountability to improve MNCH outcomes?
B. DEATH REVIEW MEETINGS	
Actors/Who?	▪ Can you please describe who attends the meeting? *Probe:* - *Who are the actors from district office, hospital, PHC? Doctors vs Nurses and/or others?*
Meeting	▪ How would you describe the structure of the meeting? *Probe:* - *Who chairs, the agenda, how long, frequency, participation/engagement?*

	- *What are the drivers/facilitators/barriers to this [name] meeting and related processes?* ▪ *What, from your perspective, is the difference between MRU, PPIP/CHIP and other review meetings [name]?*
Decision process	▪ How would you describe the decision process during the [name] meeting? *Probes:* ▪ *What happens? What do you discuss? How do the discussions of the meetings lead to decision or [positive] results (for actions)?*
Dealing with adverse events (deaths)	▪ How do you deal with adverse events e.g. maternal or child death? *Probes:* - *Can you describe the situation of maternal, neonatal and child death (mortality) in this area since you started in your position?* - *Can you share from your experience an example of an adverse event (maternal or child death) and how was the process of enquiry?* - *How do you see the problem of death in terms of accountability?* - *Do you have/know any policy/guideline for dealing with death event?*
	▪ How do you see the role of the [name] meeting as a structure that is facilitating/supporting accountability processes for MNCH? *Probes:*
	▪ How would you describe the role of communities in addressing MNCH problems? ▪ How would you describe the role and level of engagement of PHC facilities?

	Probes: - *Referral processes* - *Role of Provincial and National department of Health*
Actions/Outcomes	▪ What from your perspective are some of the key actions and outcomes on MNCH as a result of the [name] meeting? *Probes:* - *How sustainable are these actions? [Please elaborate]*
C. **CLINIC COMMITTEE/HOSPITAL BOARD**	
Background and experience	Can you tell me a about your <u>background</u> and how long you have been working with the Clinic Committee/Hospital Board?
	▪ What has been your <u>experience</u> working with the Clinic Committee/ Hospital Board?
Functioning and challenges	▪ What do you see as the <u>key characteristics</u> of a successful Clinic Committee/Hospital Board? ▪ What from your perspective are factors that influence the functioning of a Clinic Committee/ Hospital Board and why?
	▪ What are the <u>challenges</u> that affect the functioning of Clinic Committees/ Hospital Board?
	▪ How would you describe the meeting of the Clinic Committee/ Hospital Board? (Frequency, participation, decision process, funding)?
Effect on MNCH	▪ Do you think the Clinic Committee/Hospital Board is influencing MNCH services and outcome? Please explain how?

Improvement	What can be done to strengthen the performance of the Clinic Committees/Hospital Board that are facing challenges to function well?
Accountability	Refer to questions above (Section A)
Conclusion	- Remind Ethics and right to withdraw from the study at any time - Thanking the informant

Appendix 8: Document review – Data Extraction Form

	Mechanism name	Year start	Document title	Document type	Source/Date published	First Author	Other Authors	Keywords	Description (What? How?)	Level	Mode	Performance/Financial/Public	Actors	Comments
DR1														
DR2														
DR3														
DR4														
DR5														
DR6														
DR7														
DR8														
DR9														
DR10														

Appendix 9: Summary of fieldwork observations

Observation details										Notes			
Observer	**Name of process observed**	**Level**	**Sub-district**	**Facility - Venue**	**Attendees**	**Date**	**Start**	**End**	**Duration (in minutes)**	**Yes/ No**	**File name**	**Key messages**	**Context of meeting**
FM	MRU	D	DO	DO	District management, MNCH cluster; Sub-district, hospital CEO's and managers, PHC managers; DCST O&G; SASSA; Facilitator (NDOH)	20180416	09:40	12:50	190	Yes			
FM	MRU	SD	DO	Ermelo_H		20180416	14:00	15:30	90	Yes			
FM	MRU	SD	SD	Carolina_H	CEO Carolina hosp; CEO Embuleni Hosp; Med Manager Carolina, OPM, nurses; Nutritionists, WBOT; Social workers; District PMTCT, MNCH; Facilitator (NDOH)	20180417	09:00	12:15	195	Yes			
FM	MRU	SD	PK	Amajuba_H	CEO AMH, EMS Coordinator, OPM hospital and PHC facilities, TB Coordinator,	20180418	10:10	11:15	65	Yes			

					dieticians; CCMT Coordinator,								
FM	MRU	SD	GM	Bethal_H	CEO Bethal Hosp; 2OPM hosp; 2 dieticians hosp; Info manager, PHC manager, QA, Deputy Matron District Dietician, PMTCT Coordinator, MNCH Coordinator, Facilitator (NDOH);	20180419	09:35	11:20	105	Yes			
FM	SAM Workshop	D		DO	Dist Director PHC, Dist Dietician, CEO Bethal hosp, PHC DD, Dietician Embuleni hosp, Dietician Bethal hosp, MO Paeds Ermelo, PHC supervisor Lekwa, Dist M&E Coordinator, Dist MNCH Coordinator, Technical advisor NDOH, Facilitator (NDOH), Provincial Dietician Coordinator, UWC, Dist PMTCT	20180420	09:30	13:20	230	Yes			
FM	Ideal Clinic	PHC	PK	Perdekop_c	Ideal Clinic	20180522	10:00	10:30	30	Yes			
FM	Extended management meeting	SD	PK	Amajuba_H	Hospital & PHC managers	20180523	07:50	10:15	145	Yes			
FM	General staff meeting	Hosp	PK	Amajuba_H	All staffs	20180523	10:50	16:05	315	Yes			
FM	Medical/Allied meeting	SD	PK	Amajuba_H	Dieticians, radiographers, physiotherapist,	20180525	08:00	09:00	60	Yes			

					social works,								
FM	CCMT/PVT Cluster meeting + In- service training on "Oral Pre-exposure prophylaxis (PrEP)"	SD	PK	Amajuba_H	CEO, Medical and Nursing Managers, CHWs, Nurses (Hospital & PHCs)	20180528	07:45	10:30	165	Yes			
FM	Information meeting	SD	PK	Amajuba_H	Hospital & PHCS managers + data capturers, Info managers	20180530	08:20	10:35	135	Yes			
FM	Ideal Clinic	PHC	PK	Volksrust_c	Ideal Clinic	20180530	11:30	12:00	30	Yes			
FM	Ideal Clinic	PHC	PK	Wakkerstroom_c	Ideal Clinic	20180531	10:55	11:40	45	Yes			
FM	Clinical Audit meeting	Hosp	PK	Amajuba_H	Doctors & nurses (Hospitals, PHCs)	20180531	07:45	09:30	105	Yes			
FM	Morbidity/Mortality meeting	Hosp	PK	Amajuba_H	Doctors & nurses (Hospitals, PHCs)	20180531	09:30	10:25	55	Yes			
FM	Perinatal/CHIP meeting	SD	PK	Amajuba_H	Doctors & nurses (Hospitals, PHCs)	20180606	07:30	09:45	135	Yes			
FM	ESMOE drill on 'Abraptio placenta'	SD	PK	Amajuba_H	Doctors & nurses (Hospitals, PHCs)	20180606				Yes			
FM	Perinatal/CHIP meeting	SD	GM	Bethal_H	Bethal Nursing managers (matrons, OPM), Hospital Nurses, doctors,	20180710	08:30	10:20	110	Yes			

FM	Ideal Clinic	PHC	PK	Perdekop_c	Facilitator (NDOH); Dist MNCH Coordinator, Dist Dietician, SD PHC Coordinator, OPM Facility, PN,	20180711	09:00	13:00	240	Yes			
FM	Nerve Centre meeting	SD	GM	Evander_H	PHC OPM's; nursing managers from hospitals; District MNCH, District PMTCT, District QA	20181022	09:40	15:45	365	Yes			
FM	MRU	SD	PK	Amajuba_H	Hospital, PHCs, SASSA, District MNCH, Dietician, PMTCT	20181023	09:00	11:00	120	Yes			
FM	Perinatal/CHIP meeting	SD	GM	Bethal_H	DCST's, MNCH Coordinator, Doctors, Nurses	20190409	08:30	10:05	95	Yes			
FM	Morbidity/Mortality meeting	SD	GM	Bethal_H	13 Doctors, 3 Clinical associates	20190410	08:30	09:35	65	Yes			
FM	PMDS	SD	GM	Bethal_H	Doctors, Clinical Associates, Corporate service manager from Limpopo	20190410	09:40	10:40	60	Yes			
FM	Perinatal/CHIP meeting	D	DO	DO	Midwives, OPM PHCs, Chief PHC director, Clinical manager, O&G Ermelo hosp, MNCH	20190411	10:05	14:00	235	Yes			
FM	Perinatal/CHIP meeting	SD	GM	Evander_H	DCST's, MNCH Coordinator, Doctors, Nurses	20190412	08:00	10:30	150	Yes			
FM	Ideal Clinic	PHC	GM	Bethal_c	Bethal Allied health (Physio, OT, Audio, Occupational, OTT, Dietician)	20190417	09:30	11:00	90	Yes			
FM	Clinical Governance	SD	GM	Evander_H	N=25; Doctors, CSMO, Nurses	20190418	08:00	09:20	80	Yes			

	meeting												
FM, SVB	Perinatal/CHIP meeting	SD	GM	Bethal_H	DCSTs, MNCH Coordinator, Doctors, Nurses	20190709	08:25	10:30	125	Yes			
FM, SVB, HS	Patient safety committee for MNC	D	DO	DO	DCST O&G, DCST Paeds, DCST MW, MNCH Coordinator, Clinical manager Ermelo_H, NM, AMH,	20190710	10:45	16:00	315	Yes			
FM, SVB	Perinatal/CHIP meeting	SD	GM	Evander_H	Doctors & Nurses (Hospital, PHCs)	20190711	08:00	09:30	90	Yes			
FM	Perinatal/CHIP meeting	SD	PK	Amajuba_H	Doctors & Nurses (Hospital, PHCs)	20190905	07:30	09:35	125	Yes			

Abbreviations: c=Clinic; CSMO= Community service medical officer; D=District; DCST=District Clinical Specialist Team; DO=DO; SD=Sub-district; GM=GM; H=Hospital; MNCH= Maternal, newborn and child health; MRU= Monitoring and Response Unit; MW= Midwifery; PHC=Primary Health Care facility; NM= Nursing manager; PK=PK; PMDS= Performance Management Development System; O&G= Obstetrics and Gynecology; OPM= Operational manager; QA= Quality assurance; SASSA= South African Social Security Agency

Appendix 10: Social Network Analysis Survey

Introduction

The interviews and field observation we recently had in the district regarding "Accountability for Maternal, Newborn, and Child Health (MNCH)" indicated the need to communicate better and more effectively among actors involved in MNCH processes. We hope that doing some baseline analysis using Social Network Analysis will help us identify what we could do to improve communication, especially in regard to collaboration between all the actors involved in MNCH.

I'm requesting you take some time to provide your input on these questions and send the completed questionnaire to fmukinda@uwc.ac.za (**or hand it in directly**)for analysis (**preferably before 15 July, but sooner would be better**). This should take about 20 minutes of your valuable time to complete.

In this Social Network Analysis, we will try to map the networks for communication, information, problem solving, advice, and support among actors involved with MNCH through Perinatal (PPIP/CHIP) and the Monitoring and Response Unit (MRU) in the District. Social Network Analysis is useful in visually presenting the relationships between actors (by producing a graph similar to the one at the last page).

Consent

Participation in this study is voluntary, and you may choose not to participate or withdraw your participation in this study at any time. Please note that your answers are confidential. Results that identify you by name will be kept within the research team. In the network maps the names will be replaced with anonymous codes. **If you request**, we will provide you with direct, individualised feedback showing your position in the social network of your district/sub-district.

If you agree to participate in this study you will be asked to answer questions about the people you interact with as well as some background information about you. To map out who

communicates with whom, we will request you to give your name in completing this questionnaire.

I'm looking forward to see what we can learn.

Thank you

Dr Fidele Mukinda

Your Consent

I have read, and understood the introduction and the consent parts of this questionnaire. I understand the aim of the research project and what I will be asked to do. I understand that I may stop my participation in this study at any time and that I can refuse to answer any questions. I also understand that if I take part in the Social Network Analysis I will be required to provide my name which will be replaced with a code.

My Decision: I choose to:	
1	Participate in the study
2	Not to participate in the study

Part One: Social Network Analysis

Your answers to the questions in this first part will allow us to map the network of communication in your Sub-district/District.

Q1. What is your name?

Q2. Where do you work in the District?	*[x]*
□ District Office	
□ Sub-district 1	
□ Sub-district 2	
□ District Hospital (*Please specify*):	
□ Clinic (CHC) (*Please specify*):	
□ Other (*Please specify*)	

Q3. In this question, you are presented with a list of people involved in Perinatal or MRU meetings from the District Office, Sub-district 1 and Sub-district 2, and you are requested to please mark with [X] the person you know (Q3)?

*[**Note:** Could you please add names of any person you know that is missing on the list. You can use the next page if you need more space]*

Q3: I know this person *[Check all that apply]*

District Office		**Sub-district 1**			**Sub-district 2**	
Name 1		Name 1		Name 1	Name 1	
Name 2		Name 2		Name 2	Name 2	
Name 3		Name 3		Name 3	Name 3	
Name 4		Name 4		Name 4	Name 4	
Other (Specify)		Other (Specify)		Other (Specify)	Other (Specify)	
Other (Specify)		Other (Specify)		Other (Specify)	Other (Specify)	

In the next question (Q4) you are presented with the same list of names of people involved in Perinatal or MRU meetings in GS (**District Office/ Sub-district 1/ Sub-district 2**); you are asked to rate your interactions with each person.

[Note: Please add any other name (Name, title, facility) that is not listed]

	Q4: How often do you communicate with each person regarding MNCH issues?		
	0 = Never	1 = Once a quarter	2 = Monthly
	3 = Weekly	4 = Daily	99 = I don't know the person
	Your answers *[Please mark with the corresponding number in each cell]*		
	Name 1		
	Name 2		
	Name 3 …		
	Other (Name, title, role)		
	Other (Name, title, role)		

Sub-district 1	**Q4: How often do you communicate with each person regarding MNCH issues?**		
	0 = Never	1 = Once a quarter	2 = Monthly
	3 = Weekly	4 = Daily	99 = I don't know the person
	Your answers *[Please mark with the corresponding number in each cell]*		
	Name 1		
	Name 2		
	Name 3 …		
	Other (Name, title, role)		
	Other (Name, title, role)		

Sub-district 2

Q4: How often do you communicate with each person regarding MNCH issues?

0 = Never	1 = Once a quarter	2 =Monthly
3 = Weekly	4 = Daily	99 = I don't know the person

Your answers *[Please mark with the corresponding number in each cell]*

Name 1	
Name 2	
Name 3 …	
Other (Name, title, role)	
Other (Name, title, role)	

Please contact Dr Fidele Mukinda at fmukinda@uwc.ac.za (Cell: xxx-xxxx-xxx) or Prof. Helen Schneider at hschneider@uwc.ac.za for any questions regarding this project.

In the next questions (Q5-Q9) you are presented with the same list of names of people involved in Perinatal or MRU meetings from the **District,** and you are asked to mark with an [X] those related to each question. *[Please select ALL that apply]*

	List of people	Q5: I receive feedback from this person?	Q6: I feel personally comfortable asking this person for advice on work-related matters.	Q7: Whom do you turn to for help in solving a problem in your work?	Q8: Who do you turn to for support on personal matters?	Q9: Whom are you likely to turn to discuss a new innovative idea?
		(mark with X)	*(mark with X)*	*(mark with X)*	*(mark with X)*	*(mark with X)*
District Office	Name 1					
	Name 2					
	Name 3 …					
	Other					
	Other					
	Other					

In the next questions (Q5-Q9) you are presented with the same list of names of people involved in Perinatal or MRU meetings from **Sub-district 1,** and you are asked to mark with an [X] those related to each question. *[Please select ALL that apply]*

	List of people	Q5: I receive feedback from this person?	Q6: I feel personally comfortable asking this person for advice on work-related matters.	Q7: Whom do you turn to for help in solving a problem in your work?	Q8: Who do you turn to for support on personal matters?	Q9: Whom are you likely to turn to discuss a new innovative idea?
		(mark with X)	*(mark with X)*	*(mark with X)*	*(mark with X)*	*(mark with X)*
Sub-district 1	Name 1					
	Name 2					
	Name 3 …					
	Other					
	Other					
	Other					

In the next questions (Q5-Q9) you are presented with the same list of names of people involved in Perinatal or MRU meetings from **Sub-district 2,** and you are asked to mark with an [X] those related to each question. *[Please select ALL that apply]*

	List of people	Q5: I receive feedback from this person?	Q6: I feel personally comfortable asking this person for advice on work-related matters.	Q7: Whom do you turn to for help in solving a problem in your work?	Q8: Who do you turn to for support on personal matters?	Q9: Whom are you likely to turn to discuss a new innovative idea?
		(mark with X)	*(mark with X)*	*(mark with X)*	*(mark with X)*	*(mark with X)*
Sub-district 2						
	Name 1					
	Name 2					
	Name 3 …					
	Other					
	Other					
	Other					

Part Two: Background

1. What is your sex?

□ Female	1
□ Male	2

2. Which age group (in years) do you fit into?

□ Less than 20	1
□ 20 to 30	2
□ 31 to 40	3
□ 41 to 50	4
□ 51 to 60	5
□ More than 60	6

3. How long have you worked for the Department of Health?

   .....

4. What is your current position? (*Mark with X*) *[Choose all that apply]*

□ CEO		□ Social worker	
□ Nursing Manager		□ Hospital Board chairperson	
□ Medical Manager		□ DD MCWYH Coordinator	
□ Corporate manager		□ DD Nutrition services	
□ Sub-district PHC manager		□ PMTCT Coordinator	
□ Operational Manager Maternity		□ DCST (Midwife)	
□ Operational Manager Paediatrics		□ DCST (Paeds)	
□ Operational Manager Clinic/CHC		□ DCST (O&G)	

□ Professional Nurse		□ Quality assurance Manager	
□ Medical (Paeds)		□ Pharmacist (District)	
□ Medical (O&G)		□ Union Representative	
□ Medical (Comm Serv)		□ WBOT	
□ EMS (Sp)		□ Other (Please specify)	
□ Allied Health Manager		□ Other (Please specify)	
□ Dietician		□ Other (Please specify)	
□ Nutritionist		□ Other (Please specify)	

5. How long have you worked in this position (Q3)?

□ Less than 6 months	1
□ 6 months to less than 1 year	2
□ 1 – 3 years	3
□ 4 – 7 years	4
□ 8 – 10 years	5
□ Over 10 years	6

6. Please indicate whether this position is:

□ Permanent	1
□ Acting/delegated	2
□ Other (Specify):	3

7. Do you [actively] attend this meeting? [*Mark with X*]

	Yes	No
□ MRU		
□ Perinatal (CHIP/PPIP)		

8. Do you think the Monitoring and Response Unit (MRU) is important in strengthening accountability for maternal, newborn and child health?

□ Have not heard of the MRU	1
□ Not at all important	2
□ Low importance	3
□ Neutral	4
□ Moderately important	5
□ Very important	6

9. Do you think the perinatal meeting (PPIP & CHIP) is important in strengthening accountability for maternal, newborn and child health?

□ I Don't know	1
□ Not at all important	2
□ Low importance	3
□ Neutral	4
□ Moderately important	5
□ Very important	6

10. **INTERESTS**: What are you interested in the most within MNCH? *[Please choose all that apply]*

□ Perinatal health	1
□ Neonatal health	2
□ Child health	3
□ Nutrition/Malnutrition	4
□ Maternal health	5
□ Other (Specify)	6

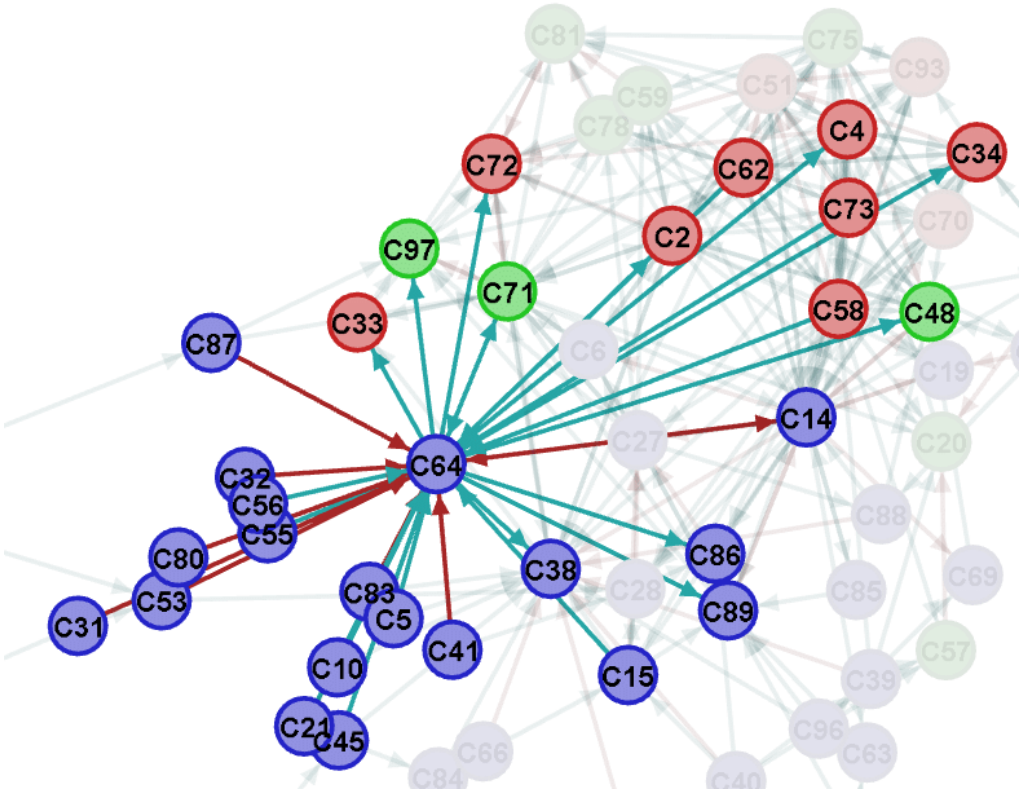
11. **SATISFACTION**: Overall, how satisfied or dissatisfied are you with your experience with accountability processes regarding MNCH

□ Very dissatisfied	1
□ Dissatisfied	2
□ Neither dissatisfied nor satisfied	3
□ Satisfied	4
□ Very satisfied	5

Conclusion & Thank You

Thank you for taking part in this research project and for answering the questions. Your contribution is very much appreciated. Please be assured that your answers will be treated with strict confidence. A feedback session will be held once all data are analyzed.

Example of Social Network Analysis Graph[11]



[11] Source: Clegg B, Sohal A, Koh C, Dey P, Bennett D. Manufacturing's Wicked Problems (partially) explained through Social Network Analysis2014. doi:10.13140/2.1.3660.6240

Appendix 11: Reviewer comments

Paper 1

Health Policy and Planning - Decision on Manuscript ID HEAPOL-2019-Jul-0408

from: Health Policy and Planning <onbehalfof@manuscriptcentral.com>

reply-to: hpp.editorialoffice@oup.com

to: fmukinda@uwc.ac.za

date: Sep 12, 2019, 12:50 AM

subject: Health Policy and Planning - Decision on Manuscript ID HEAPOL-2019-Jul-0408

11-Sep-2019

Dear Dr. Mukinda,

Your manuscript entitled "The crowded space of local accountability for maternal, newborn and child health: A case study of the South African health system." (HEAPOL-2019-Jul-0408), which you submitted to Health Policy and Planning, has been reviewed. The comments of the reviewers are included at the bottom of this letter.

The reviewers have recommended major revisions to your manuscript. We are therefore unable to accept it as it currently stands and invite you to respond to the reviewers' comments and revise your manuscript.

To revise your manuscript, log into https://mc.manuscriptcentral.com/heapol 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 has been appended to denote a revision.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within

the document by using the track changes mode in MS Word or by using bold or coloured text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, please respond to the comments made by the reviewers in the space provided. Use this space to document the changes you have made to the original manuscript, on a point-by-point basis. Please be as specific as possible in your response to the reviewers - this will help to expedite our processing of the revised manuscript.

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 Health Policy and Planning, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in a reasonable amount of time (preferably within 4 weeks), please contact the editorial office for an extension.

Once again, thank you for submitting your manuscript to Health Policy and Planning and I look forward to receiving your revision.

Yours sincerely,

Prof. Jeremy Shiffman

Section Editor: Health Policy

Health Policy and Planning

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

Title: The crowded space of local accountability for maternal, newborn and child health: a case study of the South African health system

Synopsis: This empirical paper reports findings from a case study of the accountability mechanisms and practices in a South African health sub-district, using mixed qualitative methods. The authors find multiple, overlapping and duplicative accountability mechanisms, which are largely concentrated on performance (relatively less in the public and financing accountability domains) and demonstrate their interaction with other so-called informal mechanisms in the accountability eco-system. The paper concludes that the MNCH accountability eco-system is crowded and, contextualizing these findings in the literature, flag the potential pitfalls of this situation.

Major comments

- I very much enjoyed reading this paper which is, overall, very well written and presented. The study focuses on an area that is in an emerging field of health policy and systems research, synthesizing current thinking and also helping advance previous work, through application of useful analytical tools.

- The paper is generally well written; the introduction is particularly strong and cogent. The study is robustly designed and clearly described. Inclusion of the study tools in the appendices is a welcome addition. Notwithstanding the above, I believe the paper could be strengthened with consideration of the following:

RESULTS

* The results are currently presented as follows:

1.Policy context of accountability mechanisms

2. Formal accountability mechanism

Formal accountability mechanisms in practice

The crowded space of local MNCH accountability mechanisms

3. Informal accountability mechanisms.

This approach makes the presentation of data somewhat clunky. I found myself keen to get past the 'listing' of policies and mechanisms curious to understand more about the 'accountability mechanisms in practice' and the 'informal accountability mechanisms' which often represent less visible forms of accountability. And perhaps more importantly, to understand what types/modes of accountability mechanism were 'primary' in each of the performance, financing and public domain.

Below represent some ways I think may improve the focus of the Results section to help highlight the most interesting data.

* I would suggest the 'policy context' to be substantially summarized (making better use of the Timeline figure to incorporate information) with less emphasis on just listing the individual policies in text, and more interpretation to help the reader understand the 'context' of those policies – e.g. the broader national (newly post-Apartheid?) and international (initial MDG and late-MDG eras) events and political trajectories that framed those policies?

* The formal accountability mechanisms are also described in text, and because there are so many, this also becomes somewhat cumbersome and very 'listy'. Table 1 could be enhanced to house more detail (full name, stated purpose of the mechanism, + existing direct/indirect, national/local, type, mode columns) freeing up words to use this section to more fully explain the patterns in TYPE (Pe,Pu,Fi) and MODE of accountability mechanisms identified. This is important because in the discussion, the authors emphasise the way individually oriented Performance mechanisms are dominant, but this is not particularly well brought out the Results

* The sub-title re. 'crowded space' seems to me to reflect an issue that may be better addressed after presenting the findings on the informal mechanisms. Having this section before discussing the informal mechanisms of accountability leads to a sense of backtracking, particularly in relation to the authors' conclusions. Overall I felt this section was very important, but underdeveloped – the quotes on page 17 needed better introduction, and more interpretation to provide a clearer basis for the points made later in the Discussion.

* While I can see some important points under the subtitle "Formal accountability mechanisms in practice" the purpose of this section is not very clear. Do the authors

wish to contrast 'policy and practice'; to highlight additional mechanisms not covered in the previous listing; or something else?

* Informal Mechanisms: this section also feels underdeveloped and needs better explanation in relation to the authors' definition of 'informal'. First, it wasn't clear to me why any of the examples listed were 'informal'; scheduled meetings among managers and with Trades Unions could be interpreted as highly formal – potentially one of the few formal 'public' mechanisms in which HCW/'labour' is holding the health system to account. The authors loosely define informal accountability (pg 6, lines 46-49) as "collective action, peer support and communication" – but closer explanation of why, for example, collective action is 'informal' is needed. Maybe not intentionally, but the implication is that anything not initiated in a top-down manner by the health system represented an informal accountability mechanism.

* Similarly – in the third example of informal accountability where the authors describe the sharing of commodities and informal collaborative arrangements among the Ideal Clinics – more explanation for why this type of solidarity and peer support is an *accountability* mechanism? Presumably it is in relation to the authors' definition of accountability as the interactive product of both answerability AND action – but this should be made more explicit.

* The two Trades Union Shop Steward quotes need better introduction and interpretation. What do they say about the nature of Trades Unions as an accountability mechanism? Which relationships are they constituted by? In what direction does accountability run? And how/do they interact, complement, or counterbalance all the other accountability mechanisms already listed?

* Related to the above – it would be useful for the authors to explain why and how they selected the three examples of informal mechanisms that they did; and whether other types of informal mechanisms (even less visible - like work norms among certain cadres or within the broader sub-district service) were not chosen (or not in evidence)?

Pg 18, lines 28/29 – where first mention of 'organised labour' is made, it is not clear that the authors are talking about Trade(s) Unions. Introduction of this/these entities and their relationship to the health sector somewhere (perhaps earlier in the paper) is important given this is selected as one of only three examples of informal mechanisms.

DISCUSSION

* While compelling, there were a number of points made in the Discussion which were not well supported by the Results as presented. Refinement of the Results section to highlight findings per the above suggestions should help. Key statements in the Discussion I felt needed more backing evidence included:

-pg 20, "As pointed out by Nxumalo, the conflicting demands for accountability may push frontline managers to priorities and make selective choices with potentially negative implications…" – Did the authors in fact find this in this study? If so it should be highlighted.

- pg 20, "Koppell argued that multiple demands for accountability with conflicting expectations impost on the actors within an organization results in a dysfunctional system" – Better highlighting of this in the 'crowded space' section of the Results is necessary.

- pg 20/21 – "One such instance observed was that of the Ideal Clinci" – this represents new data which should be relocated to the Results

- pg 21 – "This was expressed mainly through Hspital Boards and Clinic Committees and the complaints mechanisms" – this data should be better highlighted in the Results;

* Figure 3a – needs a key to interpret the different colours; and to explain what type of 'relationship' (per title) is being mapped. Are any of the relationships in this figure informal? Would consider adjusting colours to a clear grey-scale approach to ensure the figure is readable even when printed in black and white (similarly would consider for Figure 1 and Figure 2)

* Also on Figure 3a, while clearly illustrative of the crowded space, the reader must take much on faith, as many readers will not be familiar with the extensive use of acronyms. Could truncated titles/names be used along side the acronym to enable easier interpretation of this figure.

Minor Typos / Formatting

* Throughout the paper (and possibly the result of word-to-pdf conversion) there are random sections in bolded text (e.g. first three paragraphs of Results, pg 10).

* Please check formatting of references; several out of alignment

* pg 17 line 27 – should ‘national core standards’ be capitalized? And ‘nutrition’

* Figure 3b – check spelling of Web

Reviewer: 2

Comments to the Author

General Comments:

The paper adds to the recent discussion on an accountability ecosystems which is worthwhile and important. It was a pleasure to read and learn from the overview and analysis. As it is currently written however, I think the paper attempts to do too much for the space it has. The authors are suggested to focus the paper on a few points and then make that case through the case study more directly. While background and context of the policy environment, for example, are very interesting and useful, the discussion of them in this paper as provided is insufficient depth to be fully considered. I suggest this be the subject of a separate paper. Here a summary should do so that there is space to focus in detail on the case study.

The actual stated focus on the effect of numerous overlapping accountability mechanisms on frontline workers is a worthy discussion but in fact, we have little space to hear about how the burden was received, dealt with and managed by frontline workers and the ultimate effect on the efficacy of the mechanisms themselves. I look forward to reading the next iteration that details more of this specificity.

Below pleased find detailed comments. I hope they are helpful.

Abstract

Current the first paragraph as stated is not fully addressed in the paper – though it was the intention. I suggest to align the paper to this mandate of the effect of multiple accountability strategies on front line workers. (lines 11-17)

A sentence or two in the abstract should be on the effect of the multiple accountability mechanisms front line workers had to deal with and the effect on them (in terms of motivation, workload, etc.) I see these as the actual findings of the case study. (line 48)

Introduction

Line 19: Need to also mention that health system failures are often in a context of a lack of resources and poverty as well.

Welcomed the discussion of the definitions and ecosystem but note that some of the definitions, and analysis is being drawn from different fields, and significantly different time periods which makes one wonder if they are being taken out of context. For example the discussion by Koppell around MAD seems to come from organization theory and not the health sector. Perhaps contextualize the various theoretical constructs to recognize these difference. (Page 3: 57 – Page 4:26)

Methodology

Page 5: 29-37 Begin section with definition to be used in the paper including direct and indirect accountability.

Page 6: 44-51 More information on this point needed. Unclear.

Page 7: 39-57 The search was very purposeful and may have missed other efforts that were not directly related to these specific programs or approaches. Please comment or explain.

Page 8: 3-6 The case study appears to be about how the MRU interacts with the existing accountability ecosystem; or works within it, or has enabled it. It would be helpful if this was drawn out more specifically. I would also like to understand the relationship of the health worker to the MRU. Do they feel supported, observed, sanctioned etc.

Page 8: Non-participant observation More detail is needed here. Who are the actors being observed? Who are the observers (language, nationality, age, sex etc) and how does that impact on the observation? How is bias reduced? Etc.

Page 9: 14-22 How were the codes developed? Was a preset list or was ground theory used? More detail needed

Page 9: 41 Was ethical clearance received? Was informed consent received?

Results

Page 10 The policy context is rich but not sufficient to understand the backdrop of how the ecosystem was created. There is so much information that this perhaps needs either its own subsection (not really a finding but rather context or background) or even a paper. For the purposes of this paper, I think making this section shorter rather than more detailed would be sufficient. A clear sharp summary of how the policy context created the MRU and what that meant for frontline workers would be sufficient. There needs to be a clear thread between this policy discussion and the main theme of the paper – the effect of the overlapping accountability mechanisms on health workers.

For example on page 12 Line 3-10, the developments described need contextualization – who pushed them, who drives the policy changes, which actors were involved; what role did the community have in getting them done; what was the position of the professional associations, MOH etc in making the policy changes etc… Suggest the authors either go into greater detail or summarise how the policy context changes generally and what the effect was on the accountability ecosystem or provider perspectives about their job, their accountability and the future as heath care workers. The points are very important but may be better put in a separate paper and just summarised here.

Page 12: 32-46 It is unclear why PMDSRs are direct and the others are indirect since both have elements that target the system and elements that target individuals. Please define.

Page 16: 9-26 It is unclear to me how TAC social accountability efforts are a "formal accountability" mechanism. Should their efforts not be in the following section on "crowded spaces"?

Page 18:3-5 Definition of informal accountability needs to come much sooner in the methods section for example

Discussion

Page 19: Example 3 is an interesting example of informal accountability however, I don't quite see how examples 1 and 2 are informal. This needs clarification.

Page 20: 12-30 A lot of this was said in the introduction. It should be in only one place to avoid duplication

Page 20: 33-50 I don't see how this links to compliance with guidelines and targets and then presumably answerability around compliance … maybe unpack this a bit. A lot is left to the imagination.

Page 21: 47-51 Point maybe too speculative as context and character of the unions is critical here.

Page 22: 3-5 It would be helpful to get more information on the informal processes and how providers and managers engage positively to create accountability (or not)

Page 22: 5-20 Please unpack and make jargon free as you have lost me with this last paragraph. How has the informal mechanisms impacted on the formal was not at all clear. Please add examples of that before making this statement

Conclusions

Page22:32-36 This was not discussed but it would have been interesting to have done so as it would glue the formal with the informal and the relationship and impact of one on the other.

The table is helpful but please write out the acronyms.

The complex graphs and mappings are hard to follow. Perhaps simplify.

Health Policy and Planning - Decision on Manuscript ID HEAPOL-2019-Jul-0408.R1

from: Health Policy and Planning <onbehalfof@manuscriptcentral.com>

reply-to: hpp.editorialoffice@oup.com

to: fmukinda@uwc.ac.za

date: Nov 8, 2019, 6:21 PM

subject: Health Policy and Planning - Decision on Manuscript ID HEAPOL-2019-Jul-0408.R1

Dear Dr. Mukinda,

Your manuscript entitled "The crowded space of local accountability for maternal, newborn and child health: A case study of the South African health system." (HEAPOL-2019-Jul-0408.R1), which you resubmitted to Health Policy and Planning, has been reviewed. The comments of the reviewer are included at the bottom of this letter.

The reviewer has recommended publication, but also suggest some minor revisions to your manuscript. Therefore, I invite you to respond to the reviewer's comments and revise your manuscript accordingly.

To revise your manuscript, log into https://mc.manuscriptcentral.com/heapol 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 has been appended to denote a revision.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, please respond to the comments made by the reviewers in the space provided. Use this space to document the changes you have made to the original manuscript, on a point-by-point basis. Please be as specific as possible in your response to the reviewers - this will help to expedite our processing of the revised manuscript.

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 Health Policy and Planning, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision within 2-4 weeks please contact the editorial office.

Once again, thank you for submitting your manuscript to Health Policy and Planning and I look forward to receiving your revision.

Yours sincerely,

Prof. Jeremy Shiffman

Section Editor: Health Policy

Health Policy and Planning

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

Thanking the authors for the excellent job responding to the comments; I believe the paper is clear and stronger for these adjustments. Several recommendations for minor revisions and some more substantive revision to Figures 3a and 3b will ensure the messages of this important research are brought would be:

Substantive Edits

Figure 3a – This figure is easier to interpret with the now-included full names of all the mechanisms and units. However, despite these, I still find the figure confusing. It takes a lot of effort to draw something from this figure, when I suspect that with some adjustments it could much better illustrate a) the skewedness towards Pe accountability mechanisms; the different levels at which those mechanisms are initiated and formal/informal nature of each. Questions to guide re-design would be:

* can you make the size of all the boxes the same; different sizing gives the impression of more/less importance which is probably not intentional.

*The three black boxes (Pe, Fi, Pu Accountability) represent domains or types of accountability mechanisms not so? In which case would it not make more sense to have these as 'clouds' around groupings of the actual named mechanisms in the respective hexagonal, square and triangular boxes?

* Similarly I wonder if using solid/dashed lines for direct/indirect would make it clearer which of the different types of mechanisms are direct or indirect.

*Further – it's not clear what the 'general' 'quality management' boxes are – or how they fit in.

*Finally – I wonder if there is somewhat to extract from the 'relationships' but still include in the visual what exists at the facility, provincial, national level (perhaps by creating 3 layers bottom to top) into which the relevant

Figure 3b – While I understand the purpose of this figure is to show how the same staff have to attend multiple meetings, I don't think this is necessarily the best way to do it. The 'wagon wheel' style, makes it very difficult to process anything other than that there are lots of lines and lots of meetings. I wonder if a more effective, and less confusing approach might be a table, with all the meetings (and their frequency) down the left, and the PHC Facility and Hospital in columns across the top – with a 'X' marking which meetings each of the PHC/Hospital have to attend – showing both how many – and making it clearer which meetings they both have to attend?

Minor edits

Pg 12, line 22: check for caps on 'confidential enquiry into maternal deaths'

Pg 12, line 26/27: remove comma after 'An additional'

Pg 15, line 24: trade representative should be plural?

Pg 15, line 34: this sentence has several commas that break the flow of the text; suggest removing

Pg 16, line 23/24: suggest adding [staff or equipment] in the quotation to improve clarity so should read: "…like now they do replace [staff or equipment] in time when…"

Paper 2

Your submission to International Journal for Equity in Health - IJEH-D-20-00050

from: International Journal for Equity in Health Editorial Office <em@editorialmanager.com>

reply-to:International Journal for Equity in Health Editorial Office <johnaironne.clima@springernature.com>

to: Fidele Kanyimbu Mukinda <fmukinda@uwc.ac.za>

date: Mar 9, 2020, 2:34 AM

subject: Your submission to International Journal for Equity in Health - IJEH-D-20-00050

IJEH-D-20-00050

Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District

Fidele Kanyimbu Mukinda, MSc, MBChB; Sara Van Belle, PhD; Helen Schneider, PhD, MMED, MBChB

International Journal for Equity in Health

Dear Dr Mukinda,

Your manuscript "Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District" (IJEH-D-20-00050) has been assessed by our reviewers and although it is of interest, we are unable to consider it for publication in its current form. The reviewers have raised a number of points which we believe would improve the manuscript and may allow a revised version to be published in International Journal for Equity in Health.

Their reports, together with any other comments, are below. Please also take a moment to check our website at https://www.editorialmanager.com/ijeh/ for any additional comments that were saved as attachments.

If you are able to fully address these points, we would encourage you to submit a revised manuscript to International Journal for Equity in Health. Once you have made the necessary corrections, please submit online at: https://www.editorialmanager.com/ijeh/.

Please include a point-by-point response within the 'Response to Reviewers' box in the submission system and highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript. Please ensure you describe additional experiments that were carried out and include a detailed rebuttal of any criticisms or requested revisions that you disagreed with. Please also ensure that your revised manuscript conforms to the journal style, which can be found in the Submission Guidelines on the journal homepage.

The due date for submitting the revised version of your article is 07 Apr 2020.

Please note, if your manuscript is accepted you will not be able to make any changes to the authors, or order of authors, of your manuscript once the editor has accepted your manuscript for publication. If you wish to make any changes to authorship before you resubmit your revisions, please reply to this email and ask for a 'Request for change in authorship' form which should be completed by all authors (including those to be removed) and returned to this email address. Please ensure that any changes in authorship fulfil the criteria for authorship as outlined in BioMed Central's editorial policies (http://www.biomedcentral.com/about/editorialpolicies#authorship).

Once you have completed and returned the form, your request will be considered and you will be advised whether the requested changes will be allowed.

By resubmitting your manuscript you confirm that all author details on the revised version are correct, that all authors have agreed to authorship and order of authorship for this manuscript and that all authors have the appropriate permissions and rights to the reported data.

Please be aware that we may investigate, or ask your institute to investigate, any unauthorised attempts to change authorship or discrepancies in authorship between the submitted and revised versions of your manuscript.

I look forward to receiving your revised manuscript soon.

Best wishes,

Ana Lorena Ruano, PhD

Managing Editor

International Journal for Equity in Health

https://www.editorialmanager.com/ijeh/

Reviewer reports:

Reviewer #1:

The article is interesting, and I think the findings are important for those who have a closer interest to the topic. The language used in the article is also acceptable.

Some minor comments that the authors need to address before the article publication in the journal:

1. At the abstract, i would think it is also important to put one or two sentences about data analysis in this section.

2. at the consent for publication: I believe the participants agreed for their answers to be published in the journal, however, the authors wrote with 'not applicable'? Would you please clarify this sentence?

3. There are some minor grammatical errors in the article, for instance, background, first sentence, ...(a) key to improving.... A more careful language proof will be beneficial for the paper.

4. The paper's title is 'Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District' but the aim is 'This study explored and described accountability as perceived and experienced by frontline health managers and providers of maternal, newborn and child health (MNCH) services in a South African health district' Can the authors justify (a) their participants' selection in MNCH team rather than general health care providers? and (b)how are

the findings (their perceptions) compared to the perception of accountability as general (not only in MNCH team) or probably compared to the general literature?

Reviewer #2:

Thank you for the opportunity to review the manuscript entitled: Perceptions and experiences of front-line health managers and providers on accountability in a South African health district.

My main comments are listed below:

Overall comments

1. This article focuses on the perceptions and experiences of front-line health managers and providers on accountability in a health district, through the lens of maternal, newborn and child health. There is no explicit link between the manuscript, and the stated purpose of the International Journal for Equity in Health, which is listed as: "research which improves the understanding of issues that influence the distribution of health and healthcare within populations. This includes the discussion of political, policy-related, economic, social and health systems- and services-related influences, particularly with regard to identifying and understanding the systematic differences or the lived experiences of one or more aspects of health in population groups defined demographically, geographically, or socially". Although there is a link between accountability and equity, this link is not made explicit in the article.

2. The authors have not made it clear the theoretical framework that informs the design, execution and results of the study. I found the manuscript too descriptive devoid of any theoretical context. For example, although the authors state in the introduction that "accountability is health systems is perceived as key to improving health outcomes in low-and middle-income countries", the theory of change of how this happens or would happen is not clear. This

theoretical framework is important, as it would influence the analysis of results, and their interpretation.

3. Accountability is an essential component of governance, yet the authors do not mention this aspect, but present accountability as a self-standing concept.

4. It is unclear what "true tower of Babel" means in line 11 of the background.

5. The authors do not give sufficient information on why they focus on maternal, newborn and child health (lines 21-24 on page 4), rather on any other programmatic area.

6. There is a disjuncture between the first paragraph on page 6 (cf reference to litigations and the SA Lancet Commission report), and the key focus of the article. Are the authors suggesting that there is a link between medical litigations and accountability (or the lack thereof)? If so, this needs to be clarified to the reader.

Study design-lines 17 and 18-what does this sentence mean? "Our methodological approach was phenomenological, seeking to examine and represent the meaning systems and lived experiences as expressed by the respondents".

Setting

It seems that the authors use accountability in different ways. Nowhere do they define the notion of accountability. For example, at the bottom of page 6 and top of page 7, the authors note that: "South Africa has been regarded as……and a number of accountability strategies were implemented in the health system to do this". All these interventions listed are specific strategies to improve health outcomes, and quality of care. Although accountability might be implicit, the purpose of these policies or interventions is not stated as "accountability measures"

Data analysis (page 8)-it is unclear whether all the authors participated in the data analysis or only the first author. More details are needed on how the analysis was done so that no unconscious bias was introduced.

Results

Figure 1 is not clear.

In general, the results are presented as if there were no differences of opinion among the key informants, or their positions in the health hierarchy. Also it is unclear to the reader whether all these notions of "accountability" are correct? And how do the results link back to the MCNH programme? In addition, the authors do not clarify the nuances of "perceptions of accountability" and " experiences of accountability". And does the category of experiences include how they themselves "practise accountability"?

Discussion

In general, the discussion should highlight the key findings, what might explain these findings, how these findings compare with similar studies that have been conducted, whether in health or similar settings, what are the reasons for differences, if any. The discussion is weak, and summarises the findings, rather than discuss them.

On page 23, lines 16-18, the authors return to a recommendation on " a plan to improve accountability for better MNCH outcomes...."-this does not seem to be borne out by the findings of the study, and the preceding discussion.

Reviewer #3

Thank you for the opportunity to review this manuscript. The paper aims to explore the perceptions and daily working experiences of frontline managers regarding accountability in South Africa. The paper's discussion and intended contributions dwell on the conceptualization of accountability within the intersectionality of public management and public health and certainly fills the gap in the context of developing countries.

I've read the manuscript carefully and in general, I find it easy to follow. This is important for reaching a broader public audience, and I commend the authors for this.

The paper employs a qualitative research design and the research questions rest on the main open-ended questions on their perceptions about accountability among the health professionals.

My main concern is the paper's lack of discussion on how the paper links with the existing literature and how it aims to contribute to the research literature of accountability in the public sector, in a broad sense. Moreover, I find the conceptual and theoretical unfolding to be weak and the discussion on how accountability links to the results and findings to be sparse. I explain below the areas which the authors need to consider in their revision work.

1. Analysis of results. The manuscript's analysis seemed more of selective reportage of respondents' vignettes. I was expecting that the analyses will be more incisive and rigorous, and backed up by theories. As an example, in the section "The multiple directions of accountability," the vignettes already point out the relational features of accountability, the distinctions between internal and external accountability, etc. This should be pointed out (or contrasted). There is already a considerable number of empirical works on this field, and the field is not under-theorized, so I had the expectation that the manuscript would contribute this way.

2. Contributions to the literature. Concerning the previous comment, it is essential to link the manuscript's contribution to the field. Otherwise, it would be difficult for subsequent researchers to build on the work, not quickly knowing the theoretical anchoring of this work. Why does the conceptualization of accountability among public health workers in SA matter? Why does communication seem to bar effective accountability mechanisms? Etc. Moreover, there are also no limits section in the paper and no justification why other complementary methods are employed.

3. Robustness checks. As a qualitative paper that depends on vignettes, it is vital to employ a test of inter-rater validity. The analysis be should be conducted on at least 5 percent of the interview vignettes. A good starting point would be:

Armstrong, D., Gosling, A., Weinman, J., & Marteau, T. (1997). The place of inter-rater reliability in qualitative research: An empirical study. Sociology, 31(3), 597-606.

Other presentational issues: At the beginning of the paper, should the Millennium Development Goals be replaced SDGs?

Your submission to International Journal for Equity in Health - IJEH-D-20-00050R1

from: International Journal for Equity in Health Editorial Office <em@editorialmanager.com>

reply-to: International Journal for Equity in Health Editorial Office <johnaironne.clima@springernature.com>

to: Fidele Kanyimbu Mukinda <fmukinda@uwc.ac.za>

date: May 4, 2020, 7:55 PM

subject: Your submission to International Journal for Equity in Health - IJEH-D-20-00050R1

IJEH-D-20-00050R1

Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District

Fidele Kanyimbu Mukinda, MSc, MBChB; Sara Van Belle, PhD; Helen Schneider, PhD, MMED, MBChB

International Journal for Equity in Health

Dear Dr Mukinda,

Your manuscript "Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District" (IJEH-D-20-00050R1) has been assessed by our reviewers. Based on these reports, and my own assessment as Editor, I am pleased to inform you that it is potentially acceptable for publication in International Journal for Equity in Health, once you have carried out some essential revisions suggested by our reviewers.

Their reports, together with any other comments, are below. Please also take a moment to check our website at https://www.editorialmanager.com/ijeh/ for any additional comments that were saved as attachments. As you can see, the main comment from the remaining reviewer is that you more directly engage with equity. Accountability

has much to contribute in this regard. Once you have considered and responded to this last comment, I will be very happy to accept this manuscript for publication.

Once you have made the necessary corrections, please submit a revised manuscript online at: https://www.editorialmanager.com/ijeh/.

Please include a point-by-point response within the 'Response to Reviewers' box in the submission system and highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript. Please ensure you describe additional experiments that were carried out and include a detailed rebuttal of any criticisms or requested revisions that you disagreed with. Please also ensure that your revised manuscript conforms to the journal style, which can be found in the Submission Guidelines on the journal homepage.

The due date for submitting the revised version of your article is 03 Jun 2020.

Please note, if your manuscript is accepted you will not be able to make any changes to the authors, or order of authors, of your manuscript once the editor has accepted your manuscript for publication. If you wish to make any changes to authorship before you resubmit your revisions, please reply to this email and ask for a 'Request for change in authorship' form which should be completed by all authors (including those to be removed) and returned to this email address. Please ensure that any changes in authorship fulfil the criteria for authorship as outlined in BioMed Central's editorial policies (http://www.biomedcentral.com/about/editorialpolicies#authorship).

Once you have completed and returned the form, your request will be considered and you will be advised whether the requested changes will be allowed.

By resubmitting your manuscript you confirm that all author details on the revised version are correct, that all authors have agreed to authorship and order of authorship for this manuscript and that all authors have the appropriate permissions and rights to the reported data.

Please be aware that we may investigate, or ask your institute to investigate, any unauthorised attempts to change authorship or discrepancies in authorship between the submitted and revised versions of your manuscript.

We look forward to receiving your revised manuscript soon.

Best wishes,

Ana Lorena Ruano, PhD

Managing Editor

International Journal for Equity in Health

https://www.editorialmanager.com/ijeh/

Reviewer reports:

Reviewer #1: Thanks for the manuscript revision.

Reviewer #3

Thank you for the opportunity to review a revised version of this manuscript and I would like to sincerely thank the author(s) for the many revisions performed. While the manuscript is generally readable and easy to follow, I believe that the MS' contributions to the health equity literature remain unclear.

In this situation, I have doubts about whether IJEH is still the right journal for the revised manuscript. The fundamental and implicit question I have in mind after reading through the reviewers' comments is "How does accountability matter for addressing or framing issues of health equity in South Africa?", but there are still no clear leads for me to grasp where does equity stand in the manuscripts' arguments.

While I do understand the premise of an exploratory study and that the discussion in accountability is quite interesting and thoughtful, but the manuscript remains largely summative and misses an important opportunity. R2 has specifically advised about theoretically grounding the study within the equity literature, but the manuscript remains remiss. I do see that the qualitative approach is undoubtedly an excellent methodological vantage point of the study, but the revisions performed still do not inform the reader about how informants' conceptual unpacking of accountability aid our understanding of health equity in the slightest sense. Equity is mentioned three

times at the beginning of the manuscript, but not even once from the methods section to the discussion.

I would encourage the author(s) to consider these issues above if they would like to consider submitting a revised article. Any scholar interested in framing health equity from the perspective of public health personnel should deliver three critical touchpoints within the manuscript: (1) a clear theoretical and critical conceptualization of accountability in the public health sector, not just mere citations from health journals. (2) An explanation of why and how health equity is not framed using the accountability lens. Lastly, (3) an explicit emphasis and discussion why South Africa's empirical case on accountability informs us of the lessons about health equity in general.

In this situation of the CoViD-19, I wish the author(s) well in their work.

Your submission to International Journal for Equity in Health - IJEH-D-20-00050R2

from: International Journal for Equity in Health Editorial Office <em@editorialmanager.com>

reply-to: International Journal for Equity in Health Editorial Office <johnaironne.clima@springernature.com>

to: Fidele Kanyimbu Mukinda <fmukinda@uwc.ac.za>

date: Jun 20, 2020, 9:16 PM

subject: Your submission to International Journal for Equity in Health - IJEH-D-20-00050R2

IJEH-D-20-00050R2

Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District

Fidele Kanyimbu Mukinda, MSc, MBChB; Sara Van Belle, PhD; Helen Schneider, PhD, MMED, MBChB

International Journal for Equity in Health

Dear Dr Mukinda,

Your manuscript "Perceptions and Experiences of Frontline Health Managers and Providers on Accountability in a South African Health District" (IJEH-D-20-00050R2) has been assessed by our reviewers. Based on these reports, and my own assessment as Editor, I am pleased to inform you that it is potentially acceptable for publication in International Journal for Equity in Health, once you have carried out some essential revisions suggested by our reviewers.

Their reports, together with any other comments, are below. Please also take a moment to check our website at https://www.editorialmanager.com/ijeh/ for any additional comments that were saved as attachments.

Once you have made the necessary corrections, please submit a revised manuscript online at: https://www.editorialmanager.com/ijeh/.

Please include a point-by-point response within the 'Response to Reviewers' box in the submission system and highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript. Please ensure you describe additional experiments that were carried out and include a detailed rebuttal of any criticisms or requested revisions that you disagreed with. Please also ensure that your revised manuscript conforms to the journal style, which can be found in the Submission Guidelines on the journal homepage.

The due date for submitting the revised version of your article is 20 Jul 2020.

Please note, if your manuscript is accepted you will not be able to make any changes to the authors, or order of authors, of your manuscript once the editor has accepted your manuscript for publication. If you wish to make any changes to authorship before you resubmit your revisions, please reply to this email and ask for a 'Request for change in authorship' form which should be completed by all authors (including those to be removed) and returned to this email address. Please ensure that any changes in authorship fulfil the criteria for authorship as outlined in BioMed Central's editorial policies (http://www.biomedcentral.com/about/editorialpolicies#authorship).

Once you have completed and returned the form, your request will be considered and you will be advised whether the requested changes will be allowed.

By resubmitting your manuscript you confirm that all author details on the revised version are correct, that all authors have agreed to authorship and order of authorship for this manuscript and that all authors have the appropriate permissions and rights to the reported data.

Please be aware that we may investigate, or ask your institute to investigate, any unauthorised attempts to change authorship or discrepancies in authorship between the submitted and revised versions of your manuscript.

We look forward to receiving your revised manuscript soon.

Best wishes,

Ana Lorena Ruano, PhD

Managing Editor

International Journal for Equity in Health

https://www.editorialmanager.com/ijeh/

Reviewer reports:

Reviewer #1: This manuscript is acceptable for publication.

Reviewer #3:

Thank you for the opportunity to review a revised version of this article. First of all, I would like to thank the author(s) for their hard work during these challenging times. Please stay safe always.

I do not have further significant revision suggestions for the manuscript. However, upon closer reading of the revisions and responses made, the manuscript would significantly improve by mentioning at the respective sections of the document:

1. The general message that this work conveys: "Formal accountability procedures in our view does not automatically lead to better health equity - it might lead to 'naming and shaming' among public workers, without adequately addressing root causes" is important to mention explicitly. This response will be helpful in framing the message to the readers.

2. Another point made: "District and primary health care systems play an important role in strengthening equity for access, availability and quality of healthcare services" is quite essential. Please add and edit as needed: "developing countries facing similar issues of disparities in health care quality and quantity provision need to revisit how frontline healthcare workers conceptualize formal and informal accountability as part of their professional job and professional identity".

Lastly in the

3. Limitations section, common method bias does not seem to be taken into account in your qualitative approach. Please check and cite: Jakobsen, M., & Jensen, R. (2015). Common method bias in public management studies. International Public Management Journal, 18(1), 3-30.

Paper 3

BMJ Open - Decision on Manuscript ID bmjopen-2020-043783

from: BMJ Open <onbehalfof@manuscriptcentral.com>

reply-to: info.bmjopen@bmj.com

to: fmukinda@uwc.ac.za

date: Jan 15, 2021, 5:31 PM

subject: BMJ Open - Decision on Manuscript ID bmjopen-2020-043783

15-Jan-2021

Dear Dr. Mukinda:

Manuscript ID bmjopen-2020-043783 entitled "Assessing the practice of Death Surveillance and Response for Maternal, Newborn and Child Health: A framework and application to a South African Health District" which you submitted to BMJ Open, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter. The Editorial Office have also checked your manuscript for any minor formatting issues and these will be listed at the end of this email.

The reviewer(s) have recommended revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript. Please remember that the reviewers' comments and the previous drafts of your manuscript will be published as supplementary information alongside the final version.

To revise your manuscript, log into https://mc.manuscriptcentral.com/bmjopen 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 has been appended to denote a revision.

You may also click the below link to start the revision process (or continue the process if you have already started your revision) for your manuscript. If you use the below link you will not be required to login to ScholarOne Manuscripts.

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You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or coloured text. Once the revised manuscript with track or highlighted changes is prepared, you can upload it and submit it through your Author Center under file designation "Main Document - marked copy".

In addition to the "Main Document - marked copy", please provide a clean copy (without track or highlighted changes) of the revised manuscript. Please upload it through your Author Center under file designation "Main Document".

When submitting your revised manuscript, you will be able to respond to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

You will receive a proof if your article is accepted, but you will be unable to make substantial changes to your manuscript, please take this opportunity to check the revised submission carefully.

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 BMJ Open, your revised manuscript should be submitted within 28 days. If it is not possible for you to submit your revision by this date, we may have to consider your paper as a new submission.

Once again, thank you for submitting your manuscript to BMJ Open and I look forward to receiving your revision.

Sincerely,

Helen Howard

BMJ Open

hhoward@bmj.com

Editor Comments to Author:

- Please include the number of participants in your Abstract.
- Please revise the Strengths and Limitations section of your manuscript (after the Abstract). This section should contain five short bullet points, no longer than one sentence each, that relate specifically to the methods. The results of the study should not be discussed here.
- Please ensure that all acronyms are defined on first mention, including those in the abstract e.g The UN
- Please ensure that your Introduction ends with a clear research question.
- If possible, please include the interview guide used in this study as a supplementary file.
- Along with your revised manuscript, please include a copy of the SRQR checklist for reporting of qualitative research, indicating the page/line numbers of your manuscript where the relevant information can be found (http://journals.lww.com/academicmedicine/fulltext/2014/09000/Standards_for_Reporting_Qualitative_Research___A.21.aspx)

Reviewer: 1

Dr. Mats Målqvist, International Maternal and Child Health

Reviewer 1 - Competing interests of Reviewer: None declared

Comments to the Author:

Dear authors,

Thank you for letting me review this manuscript. It is an important work and it is of essence to evaluate quality improvement mechanisms in place within health systems. Even if the effort, with 45 IDIs and lengthy observations, is ambitious, I have some queries about the analysis process and interpretation of results. Either we can only congratulate the SA health systems for implementing a well-performing system, conducted by the book, or we might consider that there might be some systematic bias in the reporting and observations. The discussion is lacking reflection on potential biases, such as social desirability and Hawthorne effect. What is described is a DSR system that is performed according to intention. Were there no conflicts or flaws? It seems a bit odd that everything was conducted just like intended. It might be contextual, but we have just performed a similar qualitative study in Tanzania, and results that emerge show that everyone knows what is expected, but yet it all turns out in a most imperfect way, with a lot of unintended consequences. What are the chances of modified behaviour in your study? This needs to be addressed in the Discussion. The usefulness of a framework that only fulfils the expectations of the system can also be questioned.

In Discussion it is stated that it was possible to explore enabling and constraining factors, but I can not find any constraining factors in Results, how come?

You touch upon referability, but more discussion on the possible uniqueness of the study setting needs to be added. My experience of SA is that the governance is a lot of lip service and if this is not the case in this specific setting it needs to be highlighted and analysed more than just stating that the leadership was committed.

The difference between review of maternal and perinatal deaths could be highlighted and discussed more.

Analysis methods need to be described in more detail. Who did the analysis, what was the theoretical framework for the deductive analysis?

I also lack a section on reflexivity. Who has conducted the study, what is the relation to study participants, pre-understanding etc. ?

Minor revisions:

Excerpt 1, mixing letters and numbers for order number

Table1: ***-reference is missing

Reviewer: 2

Dr. Helen Smith, Bradford Institute for Health Research Yorkshire Quality and Safety Research Group

Competing interests of Reviewer: None declared

Comments to the Author:

Manuscript ID: BMJ Open – 2020-043783

Assessing the practice of Death Surveillance and Response for Maternal, Newborn and Child Health: A framework and application to a South African Health District

General comments

The paper tackles an important aspect of the continued effort towards reducing preventable maternal, newborn and child deaths. The extent to which death surveillance and response systems are functional, capable of initiating the right 'responses' and achieving impact on mortality and morbidity varies, and the framework introduced here is a good starting point for assessing functionality in practice. However, I think the results could be less descriptive and more analytical and the paper would be strengthened with a more detailed consideration of the 'action' component of the DSR process.

While it is evident that different forms of DSR are functional to varying degrees in the district you studied – the case study is missing a critical analysis of the 'action' or 'response' component. It is my experience, and evident in the existing literature, that despite having functioning systems for identifying and reviewing deaths, all the right actors and processes and systems to identify and disseminate actions, many countries (South Africa included) still struggle to implement actions. 'Actions' is a component in your framework, and it appears you collated some evidence on actions in table 3, yet the results and discussion do not touch on this important aspect. I recommend you include this to strengthen the paper.

Specific comments

1. How did you decide which existing frameworks and 'elements' from the literature to include in the proposed framework? What process did you follow, or what criteria did you use?

2. Selection of sub-districts is not clearly justified; the reason why districts chosen for a prior study would be relevant for this case study needs more explanation.

3. Page 7 line 57/58 states semi-structured interviews yet on page 8 'in-depth' interviews are described as the method used – please clarify this discrepancy.

4. What exactly did you observe during the meetings? What kinds of prompts were on the observation sheet? What topics did the in-depth interviews cover?

5. A detailed account of ethical implications is missing - particularly in relation to doing non-participant observation. Also an account of researcher positionality and potential impact of this on the research process, especially the observations. In addition, where were interviews held, was this after/during the meetings you attended? What were the implications for privacy and confidentiality?

6. The results relating to 'forms' or types of death surveillance and response are largely descriptive and seem to summarise mandated processes – so it's not clear what the new insights are here. If this section were to highlight where mandated processes are not followed or where there are deviations, then the reader would get a better sense of the authenticity and/or fidelity of these processes.

7. Table 3 contains a lot of information – its quite hard to grasp the main points or insights. The top half appears to summarise 'functioning' and could be separated from the detail on mechanisms in the bottom half. Does the x indicate that you observed the element, or that the element is expected to be present? Its not clear. The 10 mechanisms don't seem to exactly match the 9 elements in the original framework in table 1, and I wondered why.

8. For all the themes, a more apparent and consistent compare and contrast across the various types of DSR to highlight what worked well and in accordance to policy, what problems affected functioning and where there was deviation from policy would perhaps offer a deeper level of insight. The theme 'no blame, no blame' seems to achieve this to a greater extent than the other themes.

9. The theme on the three delays approach is very brief and doesn't really offer much insight into usefulness or otherwise, or participant views on this as an approach, or how this was differently applied in PIPP/CHIP versus MRU for example? You could

also elaborate on what is important to note from the excerpt – the reader is left to interpret this themselves.

10. Similarly, the theme on 'DSR process institutionalised' is brief and makes a bold statement about DSR processes being anchored in routines and contributing to improvement at facility level. The quote provided doesn't really offer enough convincing evidence. From my experience, institutionalising DSR processes at subnational level is rarely achieved and there are many individual, service and system level barriers. I think you should be cautious making this statement without direct supporting evidence from facilities.

11. It is not clear from the discussion what the implications of this work are – are you suggesting that the framework could be used by district teams to assess functioning or diagnose problems in different types of DSR? If so, what modifications might be needed, and how and when would the framework be used and by whom? There may be other possible implications for practice or policy and clear articulation of these would strengthen the paper.

12. Some minor grammatical errors throughout.