Community health workers for maternal and newborn health: case studies from Africa and Asia

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Philosophy

By

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Declaration

This thesis is the result of my work. The material contained in the thesis has not been presented nor is it currently being presented, either wholly or as part of any other degree or other qualification.

Dedication

To my loving and supportive wife, Grace Oloruntobi Olaniran, thank you for your remarkable patience and unwavering love for me throughout my course of study. You were a source of motivation and you strengthened me during moments of despair and discouragement. I am truly thankful for having you in my life.

To my children, Israel and David, you made me proud with your level of understanding.

To my parents, Professor Olajire and late (Mrs) Florence Olaniran, you have always loved me unconditionally and your good examples have taught me to work hard to achieve my dreams.

To all community health workers, keep being the health champions of your communities.

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Most importantly, my gratitude to the almighty God for the gift of life, the strength and zeal for the next phase. This thesis marks the end of one academic era but the beginning of many exciting academic journeys into health system strengthening.

Abstract

Abimbola Olaniran

Community health workers for maternal and newborn health: case studies from Africa and Asia

Introduction: Evidence suggests that Community Health Workers (CHWs) can play key roles in the achievement of health-related Sustainable Development Goals and Universal Health Coverage; particularly, provision of Maternal and Newborn Health (MNH) services in low-and middle-income countries. However, to harness the potential of CHWs in MNH, it is important to have a clear definition, a well-defined scope of practice and an enabling work environment.

Aim: This study explored the characteristics and scope of practice of CHWs providing MNH services in sub-Saharan Africa and South Asia and documents the factors influencing CHWs' service delivery.

Methods: This qualitative study used a multiple-case study design to explore the characteristics, scope of practice and factors affecting CHWs providing MNH services in Bangladesh, India, Kenya, Malawi and Nigeria. It entailed a review of policy documents, 36 focus group discussions and 131 key informant interviews with stakeholders within the formal health system and the community. A thematic analysis approach was used to synthesise the data from policy documents, focus group discussions and key informant interviews.

Findings: The working definition and multiple cases describe CHWs as paraprofessionals or lay individuals with an in-depth understanding of a community's culture and language. They have shorter training than health professionals and their primary goal is to provide culturally-appropriate health services to the community. All CHWs in the study countries provide health education in relation to MNH care but therapeutic care, skilled antenatal care and birth attendance are exclusively within the remit of CHWs with longer training. Challenges of CHWs in the study countries include issues relating to trust when male CHWs provide services to female service recipients and the lack of clarity in the criteria used for inviting CHWs for in-service training. In contrast, mentoring and supervision by health professionals reinforce CHWs' knowledge and skills while the

availability of supplies enables their application. Furthermore, CHWs in study countries are motivated by altruistic goals and prompt, regular, sustainable remuneration that is commensurate with effort.

Implications for policy, practice and research: To the best of our knowledge, this is first multi-country case study exploring characteristics and scope of practice of CHWs providing MNH services. Stakeholders seeking to harness CHWs' potential in multidisciplinary health teams may consider the CHW characteristics described in this study to guide selection of CHWs that are fit-for-purpose. They may also use these characteristics to differentiate between CHWs and other health workers when mapping health workforce data. This study highlights the inadequacy of guidelines recommending a common scope of practice for all CHWs without segmenting this common scope of practice to reflect the varied levels of education and duration of pre-service training. It notes a research opportunity in exploring the ideal gender mix of CHWs to address issues relating to trust between male CHWs and female recipients, encourage male involvement in MNH care and preserve the woman's autonomy in making decisions relating to her health.

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List of acronyms

ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
BEmONC	Basic Emergency Obstetric and Newborn Care
CBDA	Community Based Distribution Agent
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CG	Community Group
CHC	Community Health Committee
CHCP	Community Health Care Practitioner
CHEW	Community Health Extension Worker
CHPRBN	Community Health Practitioners Registration Board of Nigeria
CHV	Community Health Volunteer
CHW	Community Health Worker
CMNH	Centre for Maternal and Newborn Health
CSBA	Community Skilled Birth Attendant
DFID	Department for International Development
EHO	Environmental Health Officer
FGD	Focus Group Discussion
FWA	Family Welfare Assistant
GHWA	Global Health Workforce Alliance
GoB	Government of Bangladesh
GoI	Government of India
GoK	Government of Kenya
GoM	Government of Malawi
GoN	Government of Nigeria
HA	Health Assistant

HrH	Human resources for Health
HSA	Health Surveillance Assistant
HIV	Human Immunodeficiency Virus
HSA	Health Surveillance Assistant
ILO	International Labour Organisation
JCHEW	Junior Community Health Extension Worker
JLI	Joint Learning Initiative
KII	Key Informant Interview
LHV	Lady Health Visitor
LMIC	Low-and Middle-Income Country
LSTM	Liverpool School of Tropical Medicine
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MNH	Maternal and Newborn Health
MoH	Ministry of Health
NGO	Non-Governmental Organisation
NHM	National Health Mission
NPHCDA	National Primary Health Care Development Agency
PHC	Primary Health Care
PNC	Postnatal Care
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SBA	Skilled Birth Attendant
SDG	Sustainable Development Goal
TBA	Traditional Birth Attendant
UHC	Universal Health Coverage
UN	United Nations
UNDP	United Nations Development Programme

UNICEF	United Nations International Children's Emergency Fund
VHC	Village Health Committee
VHSNC	Village Health Sanitation and Nutrition committee
WDC	Ward Development Committee
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

1.0 Overview of chapter

Overall, this study lends itself to the global discussions on how best to harness Community Health Workers' (CHWs) potential in improving coverage of Maternal and Newborn Health (MNH) services in low-and middle-income countries (LMICs). This chapter provides a background for the study by highlighting the shortage of health workers and underscoring the historical and potential relevance of CHWs in health service delivery.

1.1 Background

Lessons learnt from the Millennium Development Goals (MDG) era illustrate how the shortage of health workers affected the achievement of health-related development goals (WHO 2006), especially goals relating to MNH (UN 2014). During this period, the shortage of skilled birth attendants contributed to many preventable maternal and newborn deaths in low resource settings (WHO 2013).

The shortage of health professionals was first reported by the Joint Learning Initiative in 2004 (JLI 2004) and this culminated in the World Health Organisation (WHO) declaring a "health workforce crisis" in 2006. This declaration was premised on an estimated global shortage of 4.3 million doctors, midwives, nurses and support workers, with the poorest countries being the worst affected (WHO 2006). There are, however, concerns that the global shortage of health professionals will further increase to 12.9 million by 2035 (WHO 2013). Figure 1.1 maps out the countries currently experiencing health workforce crises in which the density of health professionals is less than 22.8 health professionals per 10,000 population and skilled birth attendance coverage of less than 80% (WHO & GHWA 2014). Many of the affected countries (the majority of which are located in sub-Saharan Africa and South Asia) have the multi-pronged challenge of increasing the number of qualified health professionals, preventing emigration and ensuring equitable distribution to rural or deprived parts of the country (WHO 2006; Kwansah et al. 2012; Frenk et al. 2010). Furthermore, many of the countries with a shortage of health professionals constitute the 75 "countdown

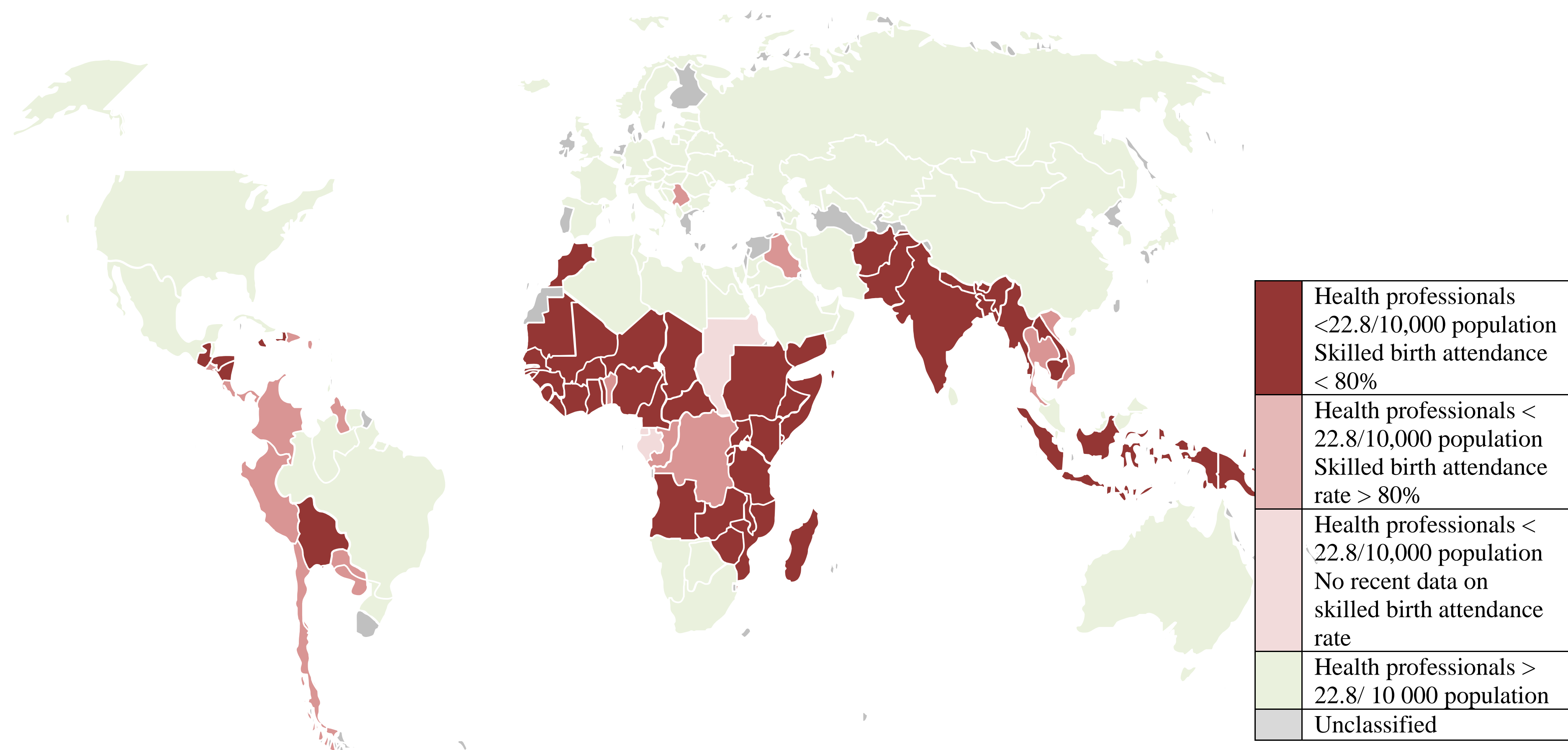
countries" which account for more than 95% of global maternal and child deaths (WHO 2014).

The continued shortage of health professionals remains a huge threat to achieving the health-related Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC) (Scheffler et al. 2016; WHO 2013). There are recommendations to revise current health policies and practice in order to ensure a sustainable and responsive skills mix of available health professionals with CHWs in multidisciplinary primary health care teams. Optimising the skills mix may be key to addressing inequalities in access to essential health services (WHO 2016a; Maher & Cometto 2016). Moreover, evidence suggests that CHWs can play key roles in increasing the availability, accessibility and coverage of these essential health services to the community (Celletti et al. 2010) including maternal and child health (Crigler et al. 2013; Lewin et al. 2010; Haines et al. 2007).

1.2 Maternal and Newborn Health in low-and middle-income countries

Many LMICs, mostly in sub-Saharan Africa and South Asia did not achieve MDGs 4 and 5 which relate to maternal and child health (UN 2014). Reduction in child mortality is closely linked to an improvement in maternal health but the lack of continuity between maternal and child health programmes has meant that the opportunity for the provision of newborn care is often missed between maternal care delivery and care of the older child (WHO 2011b). Furthermore, it has been shown that neonatal mortality has had the slowest decline of all the under-5 subsets with up to 45% of under-5 deaths occurring within the first month of life (WHO 2016c). Therefore, providing care to mothers during pregnancy, as well as during and after birth, will greatly contribute to child survival. CHWs who are generally female, are well suited for delivering MNH services as they are of the same gender with the recipients of these services which make them the preferred choice of the recipients (Kok et al. 2015).

Figure 1.1: Health worker density and coverage of skilled birth attendance in 186 countries



Source: A universal truth: No health without a workforce. http://www.who.int

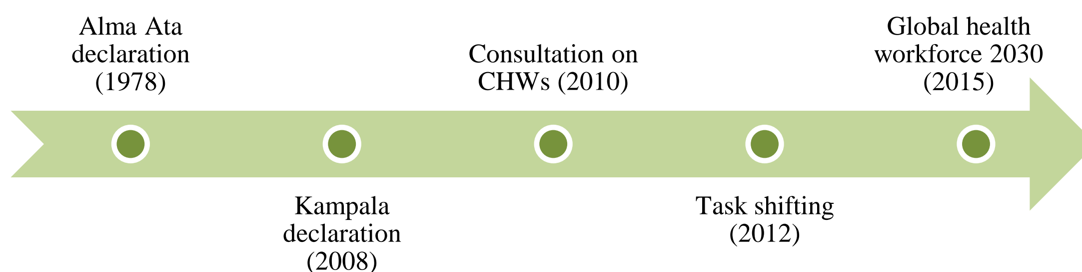
1.3 Global declarations recognising CHWs as key stakeholders in health

The history of CHWs dates to farmer scholars in China (precursors of barefoot doctors) in the 1920s. In 1978, following the Alma Ata declaration, lessons learnt from CHW programmes before and during the 1970s inspired larger CHW programmes in LMICs in the 1980s (Crigler et al. 2013). CHWs were identified as one of the cornerstones of Primary Health Care (PHC) because of their ability to reduce sociocultural barriers to health care (Bhattacharyya et al. 2001). However, many of these programmes failed due to poor programme implementation. Consequently, these programmes increasingly declined during the mid and latter part of the 1980s despite the continued need for CHW services especially in poor underserved rural communities (Kahssay et al. 1998).

Ten years (2008) after the Alma Ata declaration, the Kampala Declaration and Agenda for Global Action acknowledged the role of health worker shortage in preventing achievement of the health-related MDGs. Accordingly, the forum recommended that governments consider their respective local contexts in identifying the appropriate health workforce and skills mix. Furthermore, the forum suggested a scale-up of community and mid-level health worker programmes to mitigate health worker shortage while training more health professionals (Witter et al. 2013; WHO & GHWA 2008).

The global consultations on CHWs (in 2010), optimisation of health workers roles in MNH (in 2012) and the thematic working group on health workforce 2030 (2015) equally emphasise the importance of integrating CHWs into national health plans and use of multi-disciplinary PHC teams. It is anticipated that this approach may be more responsive to the cultural values and norms of the populations and facilitate task sharing between health professionals and CHWs (Global Health Workforce Alliance 2010; WHO 2012; Global Health Workforce Alliance 2015). Figure 1.2 illustrates some of the global declarations recognising the role of CHWs in achieving health goals.

Figure 1.2: Global declarations recognising CHWs as key stakeholders in health



1.4 Study rationale

Almost four decades after the Alma Ata declaration, the vision of universal access to motivated, competent and supported health workers, within a robust health system (WHO & UNICEF 1978) is still contemporarily relevant but yet to be achieved. Many countries have continued to channel huge resources into CHW programme implementation (including MNH) with the aim of increasing equity in the coverage of key health interventions to hard-to-reach and underserved populations (Naimoli et al. 2012; Frenk et al. 2010; Lewin et al. 2010). It is, however, important to avoid the mistakes of the past whereby there was a renewed focus on CHWs following the Alma Ata declaration but many of the CHW programmes failed due to poor programme implementation (Kahssay et al. 1998). Key challenges to the success of these large-scale CHW programmes included: failure to select CHWs that are fit for the role, inadequate training and supervision and insufficient remuneration (Rifkin 2012; Crigler et al. 2013; WHO 2012). Other challenges were lack of clarity in and comparability of the role's definition, categories and scope of practice. Consequently, these challenges have prevented objective comparison of CHW data and activities from informing decision making (WHO 2010c).

To harness CHWs' potential in achieving health-related development goals, there is an urgent need for research to identify a shared definition and descriptions of CHWs and a common understanding of their scope of practice (Jaskiewicz & Tulenko 2012; WHO 2010b). Furthermore, there is a need to clearly understand the factors influencing their service delivery.

1.5 Study aim and objectives

Aim

This study explored the characteristics and scope of practice of CHWs providing MNH services in Africa and Asia and documents the factors influencing CHWs' service delivery.

Objectives

1. To explore and describe the characteristics of CHWs providing MNH services in sub-Saharan Africa and South Asia.
2. To explore the scope of practice of CHWs providing MNH care in sub-Saharan Africa and South Asia.
3. To explore and document the factors influencing CHWs' service delivery.

1.6 Structure of the thesis

Overall, this PhD thesis comprises five chapters described below. Figure 1.3 builds on the description of the chapters to illustrate the process of generating the study findings while the study timeline is shown in Annexe 1.1.

Chapter 1 highlights the health worker shortage and notes the historical and potential relevance of CHWs in achieving health-related goals. It draws on lessons learnt from the historical use of CHWs and describes the factors that led to the previous decline in the use of CHWs to provide a background and rationale for the study. The chapter ends by presenting the study aim and objectives. Additionally, this chapter includes a glossary of terms used in the thesis. Where necessary, these terms were adapted to describe CHWs.

Chapter 2 outlines the steps involved in developing a working definition of CHWs from a systematic review of the common themes in the definitions and descriptions of CHWs in global literature. This section identifies the different stakeholders who affect or are affected by CHWs' service delivery. The chapter summarises common themes relating to CHW scope of practice and the factors influencing their service delivery. It concludes by identifying the gaps in the body of knowledge relating to CHWs.

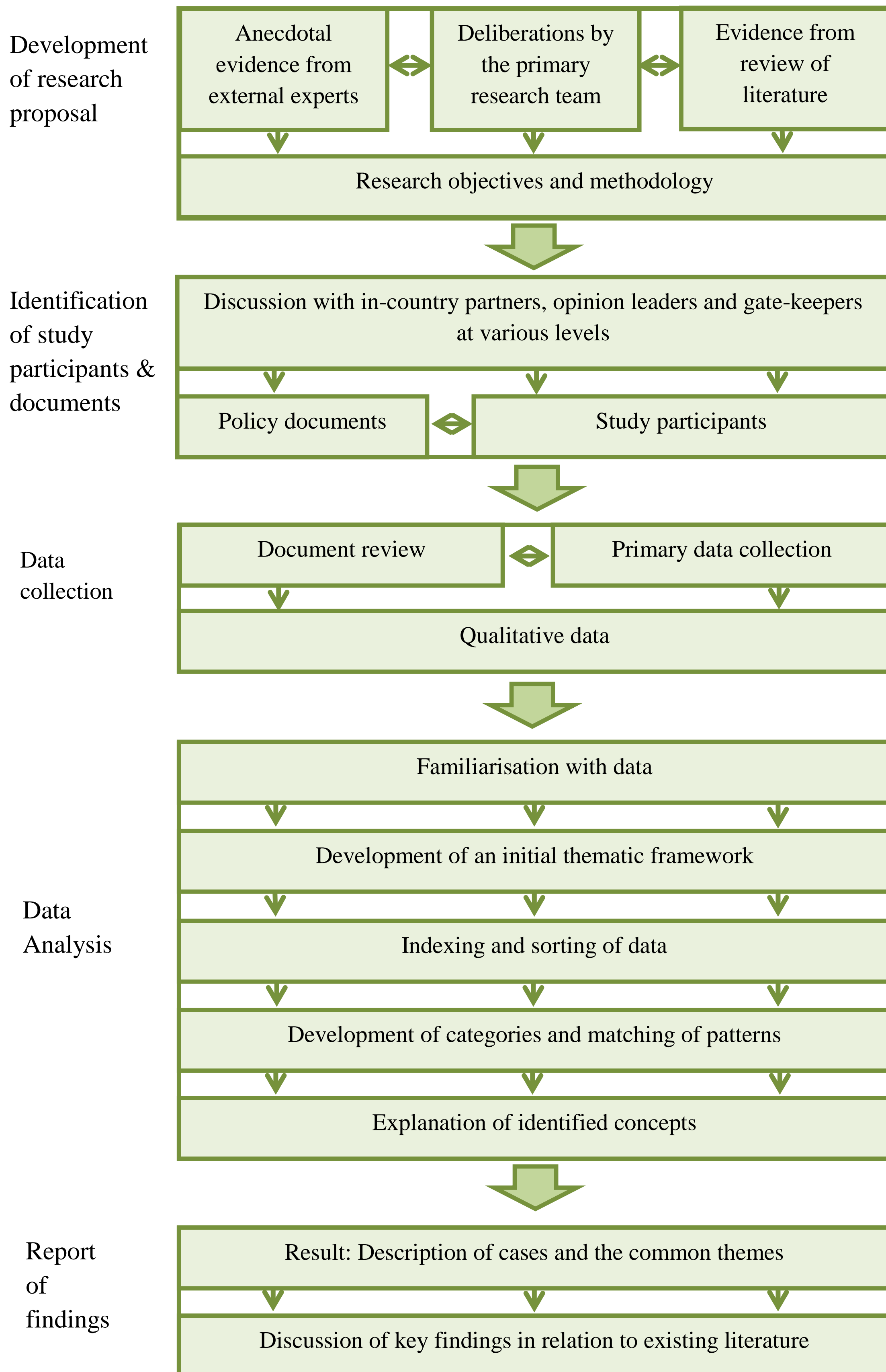
Chapter 3 provides a description of the study design, research questions and the rationale for the data collection methods. Additionally, it details how the study location and participants were selected and describes the data management and analysis. The chapter concludes by describing the ethical considerations and steps taken towards ensuring quality assurance.

Chapter 4 is divided into five sub-chapters with each sub-chapter detailing the findings from each of the study countries. The chapter triangulates findings from policy documents and primary data from key informant interviews and focus group discussions. The findings in this chapter are presented in relation to the study research questions. The chapter concludes by documenting the common themes across the five study countries.

Chapter 5 discusses the study's key findings in relation to existing literature. It highlights the study's contributions to the existing body of knowledge and

acknowledges the strengths and limitations of the study. It draws key conclusions from the study findings underscoring their implications for community health policy, practice and research. Subsequently, it details recommendations for community health policy formulation, programme planning and implementation, and future research.

Figure 1.3: Process of generating the study findings



Adapted from Qualitative research practice: a guide for social science students and researchers by Jane Lewis et al. 2014

1.7 Glossary of terms

Access is a measure of an individual's or populations' physical, economic, sociocultural and psychological abilities to make use of health services (WHO 2010c).

Availability relates to the physical presence of service(s) that meet the minimum requirements or may be referred to as the delivery of services (WHO 2010c).

Community-based services refer to health services provided to community members at their place of residence with the aim of enhancing the health of the community (WHO 2004).

Competence depicts a CHW's level of knowledge and skills in relation to the services they are expected to provide (Scheffler et al. 2016; Armstrong & Taylor 2014).

Coordination refers to harmonisation of health services or stakeholders across health areas, levels of care and sectors (WHO 2010c).

Countdown countries comprise 75 priority countries with the highest burden of maternal and child mortality accounting for more than 95% of global maternal, newborn and child mortality (UNICEF & WHO 2015).

Coverage refers to the proportion of individuals who have received a health service or benefitted from an intervention among the total number of individuals who require the services (WHO 2010c).

Health equity entails fair treatment of a population irrespective of their socioeconomic status, demography or geographical location such that they have a fair opportunity of achieving their full health potential (WHO 2017a; Armstrong & Taylor 2014).

Health services include all activities whose primary aim is to diagnose a clinical condition or promote, restore or maintain the health of the community members (WHO 2017a).

Health worker refers to an individual who participates in activities whose primary aim is to enhance the health of a population or health of another individual (WHO 2017a).

Health worker density refers to the number of health workers per 10,000 population and often disaggregated by cadre of health worker (WHO 2010c).

High-income country (2017): A country with a Gross National Income per capita of $12,476 or more in 2016 (World Bank 2017a).

Job analysis is a systematic process of collecting, analysing and providing information on CHW services and the expected characteristics of the CHW. The information gathered will often inform their job description, future recruitment and training (Armstrong & Taylor 2014).

Job description refers to the services that CHWs are expected to provide for the health programme or organisation that recruited them (Armstrong & Taylor 2014).

Low-income country (2017) is a country with a Gross National Income per capita of $1,005 or less in 2016 (World Bank 2017a).

Lower middle-income country (2017) is a country with a Gross National Income per capita between $1,006 and $3,955 in 2016 (World Bank 2017a).

Maternal health refers to the health of women during pregnancy, labour and delivery and within 42 completed days of delivery (WHO 2017a).

Millennium Development Goals are a global declaration by governments, the international community, civil society and the private sector to accomplish tangible goals for development and poverty eradication between years 2000 and 2015 (UN 2014).

Motivation refers to the intrinsic factors that promote service delivery and the extrinsic factors that induce or compel CHWs to provide services (Armstrong & Taylor 2014).

Neonatal mortality rate is the number of deaths that occur in the first 28 (completed) days of life per 1,000 live births in a given year or period (WHO 2005).

Psychological contract is a system of implied mutual expectations between CHWs and the community they serve in which CHWs perceive that certain obligations are expected of them by the community they serve while the CHWs expect reciprocal recognition and trust from the community (Armstrong & Taylor 2014).

Quality (of health care) is the extent to which the provided health services increases the likelihood of positive health outcomes in line with professional knowledge and standard. It considers adherence to documented standards and responsiveness to recipients needs (Lohr & Schroeder 1990).

Recruitment refers to the process of identifying and engaging eligible CHWs for service delivery to the community (Armstrong & Taylor 2014).

Scope of practice comprises the services that a CHW is permitted to provide in line with the terms of their professional license and backed by law based on their level of knowledge, skills and job-related experience.

Selection is a part of the recruitment process in which pre-specified criteria are used to make decisions on the eligibility of CHW candidates for the position (Armstrong & Taylor 2014).

Sustainable Development Goals are a set of 17 goals adopted by the United Nations in 2015 which aim to build on the Millennium Development Goals to sustain economic, social and environmental development. They seek to achieve human rights for all individuals, empowerment of women and girls, and gender equality (UN 2015).

Triangulation is the use of multiple sources and perspectives in data collection and analysis to validate a research finding (Ritchie et al. 2014).

Upper-income country (2017) is a country with a Gross National Income per capita greater than $12,235 in 2016 (World Bank 2017a).

Upper-middle-income country (2017) is a country with a Gross National Income per capita between $3,956 and $12,235 in 2016 (World Bank 2017a).

Utilisation is a quantitative measure of health service used by a population (WHO 2010c).

Workload refers to a number of tasks to be completed by a CHW within a defined period of time (Jaskiewicz & Tulenko 2012).

CHAPTER 2: LITERATURE REVIEW

2.0 Overview of the chapter

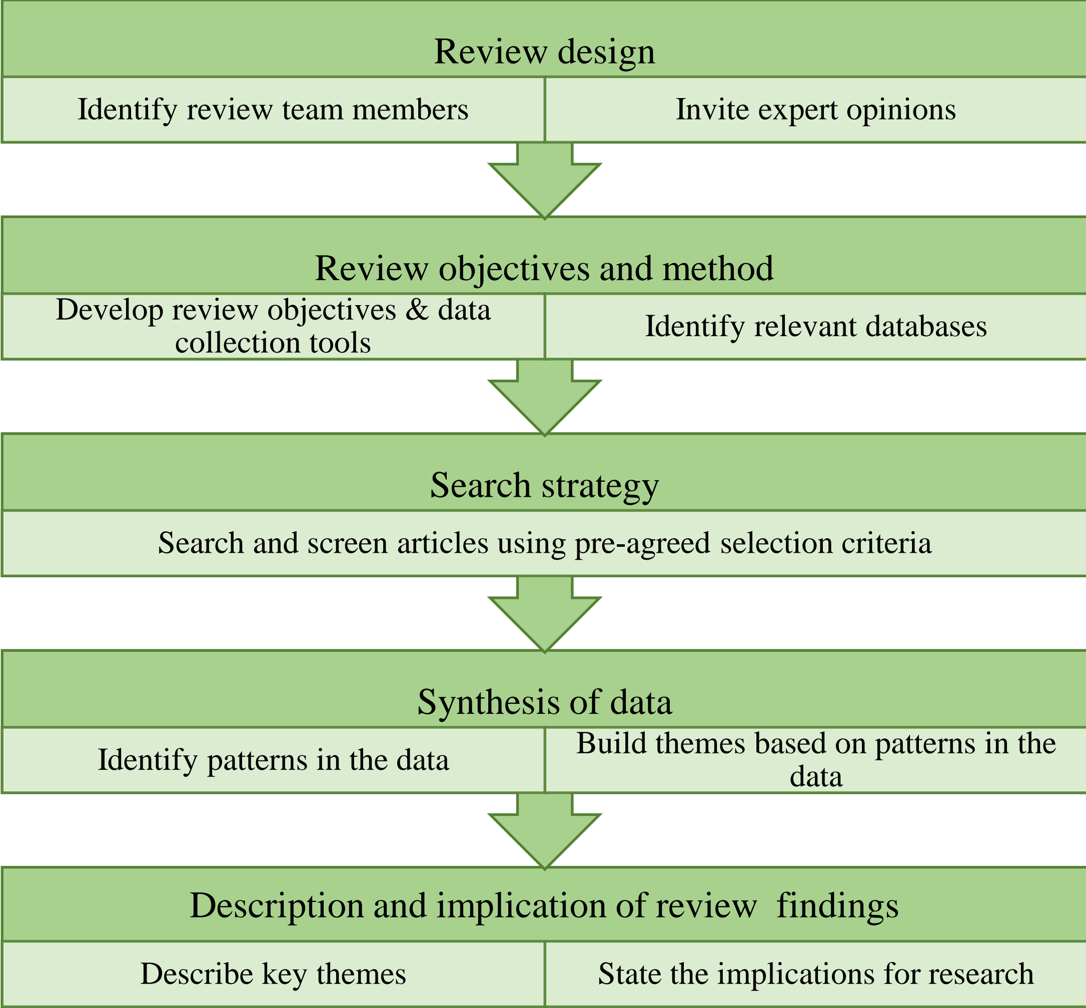
This chapter explored the existing body of knowledge relating to CHW characteristics, the scope of practice of CHWs providing MNH services and factors influencing their service delivery. Subsequently, it provides the premise for the methodology of the primary research. Overall, this chapter:

- Identifies the common themes that describe CHWs.
- Provides a working definition and categories of CHWs.
- Identifies key stakeholders that influence or are influenced by CHWs' activities.
- Documents the scope of practice of CHWs providing MNH services.
- Identifies and documents the factors influencing service delivery of CHWs providing MNH services.
- Highlights the gaps in the body of knowledge relating to CHW scope of practice and factors influencing service delivery.
- Identifies areas for primary research.

2.1 Background and rationale for the review

Figure 2.1 illustrates the approach to generating findings for this review. It shows the steps taken by the review team comprising the principal researcher (PhD student) and the supervisors.

Figure 2.1: Steps in conducting the systematic review



Adapted from an introduction to systematic reviews by David Gough et al. (2012)

In line with best practice (Saini & Shlonsky 2012), the review team considered it important to avoid duplication of recent systematic reviews. Therefore, the team conducted a limited literature search in relevant databases of published reviews. These databases were the Cochrane library, Prospero, Database of Promoting Health Effectiveness Reviews (DoPHER) and PubMed Health (Cochrane 2017; PROSPERO 2017; PubMed Health 2017; ePPI centre 2017). In addition, the WHO website was searched for published reviews and guidelines relating to the study objectives. The findings from the literature search were compared against the PhD study objectives described in the introduction chapter. Considerations made during the comparison include the approach used in generating review findings and the contemporaneousness of the findings as most reviews are expected to be updated after two years of publication (Garner et al. 2016).

Overall, a few systematic reviews defined CHWs, described their characteristics, categories, scope of practice in relation to MNH and the factors influencing their service delivery. There was a consensus among the review team to conduct a systematic review to develop a working definition and categories of CHWs. Previous reviews (Lehmann & Sanders 2007; Perry et al. 2014) relied significantly on expert opinions in defining and categorising CHWs rather than using a methodical and transparent approach in developing CHW definitions and categories. Furthermore, these reviews defined and categorised CHWs using blurred boundaries thereby limiting a common understanding among stakeholders working with CHWs in different settings. Therefore, there was a need to build on the previous efforts by using a narrative synthesis approach to develop a definition of CHWs and categories that are locally and globally comparable. The details of the systematic review are provided in the next section (Section 2.2).

However, due to time constraints, the review team did not repeat nor update reviews relating to the scope of practice and factors influencing service delivery. There were recent systematic reviews exploring these themes using methodical approaches. The findings from these reviews are summarised in Sections 2.3 and 2.4.

2.2 Definition and categories of CHWs (Systematic review)

This section describes the systematic review of the definitions and descriptions of CHWs and uses a methodical approach to identify the common themes that accommodate the diversities in these definitions. It aims to develop a working definition of CHWs and categories that aid delineation within this cadre and distinguish CHWs from other health workers.

The specific objectives of the review were:

- To identify definitions of CHWs reported in the literature.
- To determine key themes in how CHW definitions are reported.
- To develop CHW definitions and categories that are locally and globally comparable.

2.2.1 Methods

The principal researcher wrote the initial proposal while the supervisors provided review comments. The academic team of the Centre for Maternal and Newborn Health, LSTM provided recommendations and suggestions to shape the review's scope, objectives and questions. Engagement of this expert group improved the quality and relevance of the systematic review (O'Connor et al. 2008).

Drawing on suggestions from the academic team, the review team finalised the selection criteria and search strategy. The preliminary findings were also presented to the academic team who provided feedback to shape further analysis and the final report.

Selection criteria

This review includes papers that defined or described CHWs such as published peer-reviewed primary research as well as commentaries, editorials and review papers. For primary research, this review included studies from any discipline using any study design and methods. This review also included grey literature (unpublished reports and evaluations) if a definition or descriptions of CHWs were included. In addition, the review includes literatures that describe CHWs working in any aspect of primary or community health care and any disease or health area. Published and unpublished papers reported in English were included.

In contrast, this review excludes papers which did not focus on CHWs or papers focused on CHWs but lacked a definition or description. Furthermore, the review excluded papers not published in the English language due to the prohibitive cost of translating papers in another language into English. However, there was no geographical boundary to the search to ensure that the characteristics identified reflect CHWs across countries thereby making the findings globally relevant.

All the selection criteria were documented to inform consistency in the screening of articles by the review team members and these criteria provided a guide for updating the review between April 2016-July 2017.

Search Strategy

This section illustrates how keywords were identified and applied to the relevant electronic databases. Overall, the review team searched eight electronic databases for

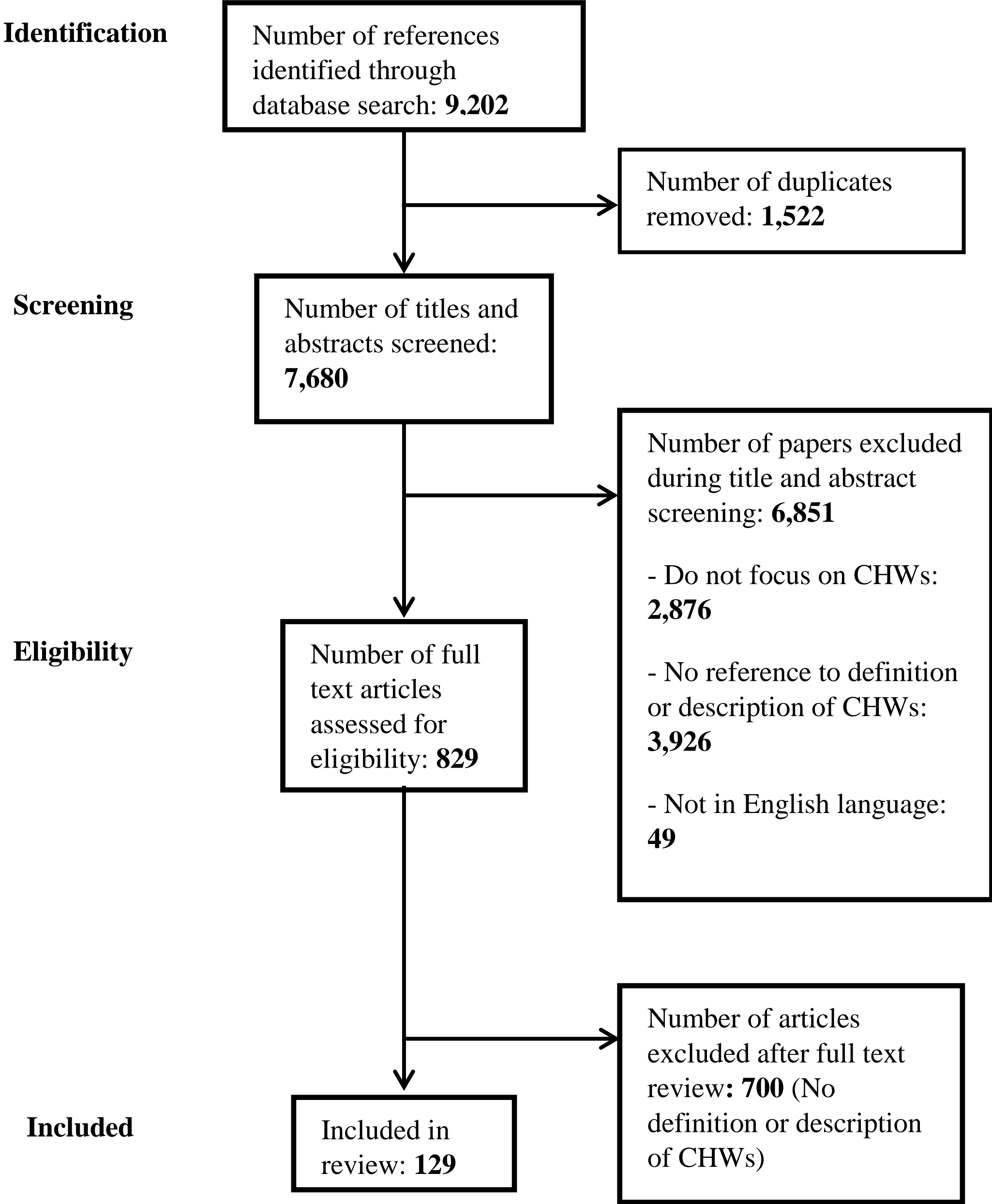
peer-reviewed literature (CHW Central, CINAHL Plus, ERIC, Global Health, LILACS, MEDLINE, Popline and Web of Science); two of these databases also contained grey literature (CHW Central and Popline). Keywords for the search included terms for CHW (e.g. “community health worker*” and alternate terms for “CHWs”) and a term for definition (e.g. “defin*”). A total of 66 alternate terms for CHWs were identified through a preliminary literature search and database subject headings (see Annexe 2.1 for an example of the search conducted in MEDLINE). The team excluded terms which can be classified as “health professionals” as defined by International Labour Organisation (ILO) and WHO’s mapping of occupations (WHO 2010a; ILO 2012). These definitions describe health professionals as individuals who have obtained a first degree or higher qualification following 3-6 years of health-related study in a higher educational institution (WHO 2010a; ILO 2012). Furthermore, the team limited the database searches to literature published in English between January 2004 and July 2017. The year 2004 was selected as the starting point as it was the year the first global report on the global health workforce crisis was published. This report emphasised the inclusion of CHWs in country health plans and resulted in a renewed interest in CHWs and subsequently additional research and publications on the topic (JLI 2004).

The review team also hand-searched the references of all identified papers to find additional relevant literature containing definitions or descriptions. When the full text was not available online (n=2 papers), the primary authors were contacted by email to request a copy. Both primary authors provided electronic copies of the papers that were not available online.

Study selection

Titles and abstracts (or executive summaries) of 9,202 sources identified in the various databases were reviewed independently by the principal researcher and one of the secondary supervisors to identify potentially relevant papers. The same review team members obtained and independently reviewed the full text of 829 potentially relevant papers. When there was no consensus on inclusion or exclusion of a paper (n=1), they sought the opinion of the primary supervisor. The two reviewers documented reasons for excluding articles and a summary of the reasons and the number of articles excluded are shown in the PRISMA flow diagram (Figure 2.2).

Figure 2.2: PRISMA flow diagram



Data synthesis

A narrative synthesis approach (Ryan 2013; Leamy et al. 2011; Snilstveit, Oliver and Vojtkova 2012) was used to summarise the definitions and descriptions of CHWs. This approach to systematic review relies on the use of words and text to synthesise, summarise and explain key findings in included papers. The narrative synthesis approach used in this review drew from thematic analysis approach (qualitative method) and consists of the following steps: (1) preliminary synthesis of extracted data; (2) data coding and (3) identification and description of themes.

Preliminary synthesis of extracted information: The review team used a standard table to extract information on the characteristics of the included papers and CHW definitions included in these papers. For each paper, the team tabulated its study country, income status of study country, publication type, nomenclature and definition of CHW.

Data coding: Each CHW definition was individually assessed for phrases that describe unique feature (s) of the CHW cadre defined in the paper. These words or phrases were documented as codes (Annexe 2.2).

Identification and description of themes: Using an inductive approach, the codes were reviewed for recurring patterns and concepts related in meaning. These constituted sub-themes. Sub-themes with similar connotations were grouped into themes: (a) selection criteria, (b) training, (c) remuneration, (d) supervision, (e) support and (f) roles and/or tasks. The themes and sub-themes and codes were compared for congruence in meaning.

Lastly, the principal researcher developed narratives to describe the various themes and sub-themes.

Quality of studies

The review team did not assess the quality of papers included in this review because the definitions were not developed from primary research.

2.2.2 Results

Description of included papers

Figure 2.2 illustrates the process of study selection. The database searches identified 9,202 references. From these, 1,522 duplicates were removed. From the remaining 7,680 titles and abstracts, 6,851 were excluded as they were not in English or did not focus on CHWs. Of the 829 full-text papers reviewed, 700 were excluded as they did not provide a definition or description of CHWs, leaving 129 included papers (Fig. 2.2). Of the 129 included papers, 119 are peer-reviewed publications and 10 are grey reports or non-peer-reviewed papers. Table 2.1 summarises the characteristics of the 129 included papers. A detailed list of the included papers and their characteristics are provided in Annexe 2.3.

The majority (n=110) of the papers documenting definitions of CHWs were published in the latter half of the review period (2010-2017) (Table 2.1). The included papers describe CHWs in 25 countries across seven regions and all income groups as defined by the World Bank (World Bank 2017b). Sixty-seven (52%) of the included papers described CHWs in high-income countries, 14 (11%) in upper middle-income countries, 15 (12%) lower middle-income countries and 17 (13%) in low-income countries. Sixteen papers (12%) described CHWs in more than one country.

Table 2.1: Key characteristics of included papers (n=129)

Region		Income group		Year of publication		Type of publication	
East Asia & Pacific	3	**High-income**	67	**2004-2009**	19	**Peer-reviewed**	119
Europe & Central Asia	3	**Upper middle-income**	14	**2010-2016**	110	**Grey literature**	10
Latin America & the Caribbean	7	**Lower middle-income**	15				
The Middle East& North Africa	1	**Low-income**	17				
North America	64	**Multiple: across all income groups**	16				
South Asia	14						
Sub-Saharan Africa	21						
Multiple countries	16						

Description of findings

Common themes identified in definitions or descriptions of CHWs are outlined in Annexe 2.2. The common themes in definitions of CHWs include:

i. selection
ii. training
iii. remuneration
iv. supervision
v. support
vi. roles and/or tasks

Selection of CHWs

Overall, more than half (n=88) of the included papers described CHWs in relation to how they are selected from the community. Papers generally reported the selection criteria and the organisations or institutions involved in CHW selection.

CHW selection criteria include community membership and knowledge of the community culture and languages spoken, personality traits that encourage trust and respect; gender, previous experience of providing healthcare and educational qualifications (Annexe 2.2):

- **Community members with an understanding of community culture and language**: Thirty-five of the included papers noted that CHWs are selected because they are community members without being precise on whether they should be indigenes or residents (Hinton et al. 2004; Anonymous 2005; Brownstein et al. 2005; de Heer et al. 2012; Farzadfar et al. 2012; Jarvis & Termini 2012; WestRasmus et al. 2012; Gallo et al. 2013; A. M. Koskan et al. 2013; A. Koskan et al. 2013; Ramsey et al. 2013; Thom et al. 2013; Zulu et al. 2013; Ahmad et al. 2014; Balcazar et al. 2014; Barogui et al. 2014; Condo et al. 2014; Gobezayehu et al. 2014; Kaufmann et al. 2014; Lopes et al. 2014; Kelkar & Mahapatro 2014; Redick et al. 2014; Sarmento 2014; Cherrington et al. 2015; Dye et al. 2015; Farah, Fathima et al. 2015; Fischer et al. 2015; Jimenez et al. 2015; Johnson & Gunn 2015; Kowitt et al. 2015; Moshabela et al. 2015; Gampa et al. 2017; Brunie et al. 2016; Loskutova et al. 2016).

  However, other (7/129) papers clarified that CHWs are also expected to be indigenes of the same community (Kennedy et al. 2008; Holt et al. 2012; Whop et al. 2012; Zanchetta et al. 2012; Das et al. 2014; Cook & Mueser 2015; Ramírez et al. 2015).

  Fifteen papers, however, stated that CHWs are only expected to be residents of the community without emphasising that they should be indigenes (Douthwaite & Ward 2005; Darmstadt et al. 2009; Houston et al. 2012; Crigler et al. 2013; Dynes et al. 2013; Elkins et al. 2013; Mangham-Jefferies et al. 2014; Sarfraz & Hamid 2014; Tran et al. 2014; Singh et al. 2015; Silva et al. 2016; do Valle Nascimento et al. 2017; Gomes et al. 2017; Hsien et al. 2017; Knuth et al. 2016).

  In addition to community membership, twenty of the included papers explained that CHWs are also expected to have a close understanding of the community culture or share the ethnicity, language and life experiences with the community they serve. It is often anticipated that this knowledge will promote cultural appropriateness of their services and consequently social acceptance of CHWs and their services (Hinton et al. 2005; Martin MY 2005;

Health Resources and Services Administration 2007; Vargas et al. 2008; APHA 2009; Catalani et al. 2009; De Jesus 2009; Granillo et al. 2010; Herce et al. 2010; Alvillar et al. 2011; Herman 2011; Larkey et al. 2012; Trejo et al. 2013; Pinto et al. 2014; Uriarte et al. 2014; Zulu et al. 2014; Abrahams-Gessel et al. 2015; Barbero et al. 2016; Tong et al. 2017; Zavadsky 2017).

- **Personality traits that foster trust and respect of community members:** Some papers specified that CHWs should be trusted and respected community members (Martin MY 2005; Johnson & Gunn 2015; Barbero et al. 2016; Brownstein et al. 2005; Herman 2011; Peacock et al. 2011; Trejo et al. 2013; A. M. Koskan et al. 2013; Catalani et al. 2009; Knuth et al. 2016), while in some contexts, CHWs are expected to possess leadership qualities (Ramírez et al. 2015; Bonilla et al. 2012; Allen et al. 2014).

  In addition to the above attributes, CHWs are expected to have other characteristics to better suit them for the role such as:
- **Gender similarity with service recipients:** Overall, CHWs providing health services to women and children tend to be females (Sarfraz & Hamid 2014; Gobezayehu et al. 2014; Allen et al. 2014; Nandi & Schneider 2014; Bill et al. 2009; Keating et al. 2014; Sikander et al. 2015; Shrestha et al. 2011; Houston et al. 2012; Farah et al. 2015; Mangham-Jefferies et al. 2014; Sarin et al. 2016).
- **Previous healthcare experience:** CHWs providing services in a health facility may be required to have some form of healthcare experience (De La Cruz et al. 2014; Gabitova & Burke 2014).
- **Educational qualifications:** Previous primary or secondary education is sometimes considered in the selection of CHWs (Farzadfar et al. 2012; De La Cruz et al. 2014).

There are various organisations or institutions involved in the selection of CHWs. The included papers suggest that CHWs are either selected by:

- **The community leaders and members**: They are selected by their leaders and fellow community members who they are expected to serve (Houston et al. 2012; Gobezayehu et al. 2014; Sarmento 2014; Farah et al. 2015; Kowitt et al. 2015; Jarvis & Termini 2012; Allen et al. 2014).

- **Relevant departments in the Ministry of Health on behalf of the government**: These CHWs are selected by the Ministry of Health often with the support of the local leaders (Silva et al. 2016; Zulu et al. 2014).
- **Non-governmental organisations (NGOs):** A paper showed that some community-based NGOs select CHWs to deliver services for the organisation (Moshabela et al. 2015).
- **Health centres:** Some health centres employ CHWs to deliver services (De La Cruz et al. 2014).

Variations in the selection criteria used by different stakeholders: The selection criteria, however, tend to vary across these stakeholder groups (Table 2.2). Being a resident of the community and having personality traits that engender trust and respect are often considered by the community and NGOs when selecting CHWs (Houston et al. 2012; Gobezayehu et al. 2014; Sarmento 2014; Farah et al. 2015; Kowitt et al. 2015; Jarvis & Termini 2012; Allen et al. 2014; Moshabela et al. 2015). The CHWs selected by the government (or in collaboration with the community) are often selected on the basis of residence in the community and having some form of secondary education (Dynes et al. 2013; Mangham-Jefferies et al. 2014; Ramsey et al. 2013; Silva et al. 2016; Zulu et al. 2014; Zulu et al. 2015). The representatives of health centres often select CHWs on the basis of their level of education and previous work experience in providing health care (De La Cruz et al. 2014; Gabitova & Burke 2014).

Table 2.2: Variation in the selection criteria used by stakeholders

Organisation or institution involved in the selection	Criteria used in the selection of CHWs			
	Reside in the community	Personality traits that engender trust and respect	Previous experience providing health care	Educational qualification
Community	(Farah, Fathima et al. 2015; Houston et al. 2012; Sarmento 2014; Gobezayehu et al. 2014; Kowitt et al. 2015; Jarvis & Termini 2012; Allen et al. 2014)	(Allen et al. 2014)		
NGOs	(Moshabela et al. 2015)			
Health facility management			(Gabitova & Burke 2014; De La Cruz et al. 2014)	(De La Cruz et al. 2014)
Community and government	(Ramsey et al. 2013)			(Ramsey et al. 2013)
Government	(Dynes et al. 2013)			(Dynes et al. 2013; Mangham-Jefferies et al. 2014)

Educational qualification and pre-service training of CHWs

Less than twenty percent (n=21) of the included papers documented the educational qualifications or pre-service training of CHWs in the definitions used (Annexe 2.2). The review team identified three main patterns in the educational qualifications and pre-service training of CHWs:

- **Individuals with little or no formal education** who have undergone a few days to a few weeks of job-related pre-service training outside a recognised training institution (e.g. training provided in a health facility by NGOs) (Lewin et al. 2005; Bill et al. 2009; Shrestha et al. 2011; Elkin et al. 2012;

Raphael et al. 2013; Allen et al. 2014; Uriarte et al. 2014; Kowitt et al. 2015; Elkins et al. 2013; Give et al. 2015).

- **Individuals with some form of secondary education and subsequent job-related pre-service training lasting a few days to few weeks.** The training usually takes place outside a recognised training institution (Johnston et al. 2016; Das et al. 2014; Sarin et al. 2016; do Valle Nascimento et al. 2017; Brunie et al. 2016).
- **Individuals with some form of secondary education and subsequent pre-service training lasting a few months to more than a year.** This training usually takes place in a recognised training institution (Mangham-Jefferies et al. 2014; Dynes et al. 2013; Gobezayehu et al. 2014; Johnston et al. 2016; Crigler et al. 2013; Farzadfar et al. 2012; Sarfraz & Hamid 2014; Mumtaz et al. 2015; Nkwo et al. 2015).

Remuneration of CHWs

The review showed that CHWs are remunerated in various ways:

- **Unpaid:** Some CHWs provide services to their communities as unpaid volunteers (Osawaa et al. 2010; Gau et al. 2013; Singh et al. 2013; Keating et al. 2014; Gobezayehu et al. 2014; Nandi & Schneider 2014; Kaufmann et al. 2014; Ranaghan et al. 2015; Moshabela et al. 2015; Hsien et al. 2017).
- **Allowance:** Some CHWs are paid an allowance by the health facilities or NGOs (Thom et al. 2013; Allen et al. 2014). One paper clarified that the allowance acts as a reimbursement for the costs incurred when providing health services to the community (Kowitt et al. 2015). In addition to an allowance, some papers noted that some CHWs are also entitled to free healthcare at the local health centre (Give et al. 2015).
- **Performance-based incentives:** Two papers noted that CHWs may be paid based on results using the performance-based incentives scheme. However, this scheme is unique to Accredited Social Health Activists (ASHAs) in India (Das et al. 2014; Sarin et al. 2016).
- **Formal salary:** Some CHWs are paid a fixed monthly salary. However, these CHWs are often employees of the government (Mangham-Jefferies et al.

2014; Nkwo et al. 2015; Farzadfar et al. 2012; Zulu et al. 2014; Silva et al. 2016; Zulu et al. 2015) (Table 2.3).

In general, the form of remuneration is often influenced by the level of educational qualification and form of CHW pre-service training (Table 2.3). CHWs with minimal or no education and subsequent informal pre-service training are likely to be unpaid or receive an allowance while CHWs with some form of secondary education with subsequent informal pre-service training are likely to receive some allowance or monetary incentive (Das et al. 2014; Sarin et al. 2016). On the contrary, CHWs with some secondary education and subsequent formal pre-service training are often salaried and paid by the government (Mangham-Jefferies et al. 2014; Nkwo et al. 2015; Farzadfar et al. 2012).

Table 2.3: Pattern of educational qualification, pre-service training and remuneration of CHW categories

Educational qualification and pre-service training	**Remuneration**			
	Unpaid	**Either unpaid or receive allowance/ incentives**	**Receive allowance/ incentives**	**Formal salary**
Individuals with minimal or no previous education and a few days to a few weeks of job-related pre-service training outside a recognised training institution	(Moshabela et al. 2015; Keating et al. 2014; Ranaghan et al. 2015)	(Uriarte et al. 2014; Health Resources and Services Administration 2007; Raphael et al. 2013)		
Individuals with some secondary education and subsequent pre-service training outside a recognised training institution lasting few months to more than a year			(Das et al. 2014; Sarin et al. 2016)	
Individuals with some secondary education and subsequent pre-service training in a recognised training institution lasting few months to more than a year				(Farzadfar et al. 2012; Mangham-Jefferies et al. 2014; Gerber et al. 2012)

Accountability and supervision of CHWs

Supervision of CHWs was poorly described in the included papers. These papers used terms such as "answerable for their activities"(Jarvis & Termini 2012; Zulu et al. 2013) or "accountable to" (Ramsey et al. 2013) the community they serve (Jarvis & Termini 2012). In papers where the term supervision was used, the paper referred to supervision provided by health professionals (Ahmad et al. 2014).

Support received by CHWs

This relates to support received from the formal health system even when the role has not been fully integrated into the formal health system (Jarvis & Termini 2012). Other papers added that CHWs receive support from health professionals working within formal health system (Ahmad et al. 2014).

The roles and tasks of CHWs

More than three-quarters (n=90) of the included papers described the roles and/or tasks of CHWs in the community or within the health facility (Annexe 2.2). CHWs' role includes health promotion and disease prevention, treatment of basic medical conditions and collection of health data:

- **Health promotion and disease prevention:** In the community, CHWs provide services to promote a healthy lifestyle and prevent diseases through health education, creating awareness on health issues and communicating health messages to community members for behavioural change (Condo et al. 2014; Dye et al. 2015; Zulu et al. 2013; Hinton et al. 2004; Bill et al. 2009; Zanchetta et al. 2012; Dynes et al. 2013; Sarmento 2014; Jimenez et al. 2015; Ramírez et al. 2015; Kowitt et al. 2015; Rosenthal et al. 2011; WestRasmus et al. 2012; Balcazar et al. 2014; Lopes et al. 2014; Hinton et al. 2005; Kennedy et al. 2008; Nandi & Schneider 2014; Keating et al. 2014; Anonymous 2005; Hill-Briggs 2007; Gau et al. 2013; Peu 2014; Give et al. 2015; Wholey et al. 2013; Wayne & Ritvo 2014; Naimoli et al. 2012; Singh et al. 2013; FHWC 2013; Houston et al. 2012; Thom et al. 2013; Gobezayehu et al. 2014; Cook & Mueser 2015; A. Koskan et al. 2013; Granillo et al. 2010; Alvillar et al. 2011; South et al. 2013; Pinto et al. 2014; Trejo et al. 2013; Larkey et al. 2012; A. M. Koskan et al. 2013; Bonilla et al. 2012; Gerber et al. 2012; Goff et al. 2013; Mash et al. 2014; Benskin 2012; Jandorf et al. 2005; Elkin et al. 2012; Charlot et al. 2015; Brenner et al. 2014; Zavadsky 2017).

- **Community mobilisation:** In general, CHWs mobilise and encourage community members to utilise available health services (Gobezayehu et al. 2014; Farah, Fathima et al. 2015; Anonymous 2005; Singh et al. 2013; FHWC 2013).

  They also facilitate access to facility-based health care by helping community members understand where to access care when needed (Keane et al. 2004; Bill et al. 2009; Shrestha et al. 2011; Filgueiras & Silva 2011; de Heer et al. 2012; Jacobson et al. 2012; Carver et al. 2012; Dynes et al. 2013; Sarmento 2014; Sarfraz & Hamid 2014; Kaufmann et al. 2014; Jimenez et al. 2015; Farah et al. 2015; Johnson & Gunn 2015; Barbero et al. 2016; Brownstein et al. 2005; APHA 2009; Alvillar et al. 2011; Herman 2011; South et al. 2013; Balcazar et al. 2014; Tran et al. 2014; Ramsey et al. 2013; Kelkar & Mahapatro 2014; FHWC 2013; Gampa et al. 2017).
- **Patient navigation:** Acting as "Patient Navigators", CHWs interpret health information and provide logistic support to patients accessing healthcare within a complex healthcare system (Keane et al. 2004; Jandorf et al. 2005; Petereit et al. 2008; Esparza & Calhoun 2011; Van Walleghem et al. 2011; Pierre et al. 2012; Goff et al. 2013; De La Cruz et al. 2014; Gabitova & Burke 2014; Ruben et al. 2015; Ranaghan et al. 2015; Charlot et al. 2015; Fischer et al. 2015; Raj et al. 2012; Brenner et al. 2014; Vargas et al. 2008).

  Patient navigators may also assist in linking patients referred by the health facility to community resources with respect to their specific needs (Loskutova et al. 2016).
- **Psychosocial support:** CHWs help patients to cope better with clinical conditions by providing psychosocial support (Hinton et al. 2005; Martin MY 2005; Hill-Briggs 2007; Bill et al. 2009; Alvillar et al. 2011; Carver et al. 2012; de Heer et al. 2012; Jacobson et al. 2012; A. M. Koskan et al. 2013; Thom et al. 2013; De La Cruz et al. 2014; Cherrington et al. 2015; Cook & Mueser 2015)
- **Community representative:** Some CHWs serve as community representatives, providing a link between the community and health system. Their role as community representatives entails conveying policy-related health messages to the community members and, in turn, reporting on

community health needs and priorities to the health facilities they are linked to (Anonymous 2005; Granillo et al. 2010; Hill-Briggs 2007; de Heer et al. 2012; Gerber et al. 2012; Trejo et al. 2013; Peu 2014; Nandi & Schneider 2014; Johnson & Gunn 2015; Darmstadt et al. 2009; Alvillar et al. 2011).

- **Collection of health data:** The included papers suggest that CHWs also have a role in collecting and reporting information on the health status of the community members (Zulu et al. 2015; Agrawal et al. 2012; Gau et al. 2013; Johnson & Gunn 2015; Knuth et al. 2016).
- **Treatment of minor ailments and management of basic obstetric cases:** Some CHWs have the additional role of providing treatment for basic clinical conditions and minor ailments such as malaria and diarrhoea (Zulu et al. 2013; Zulu et al. 2014; Anonymous 2005; Herce et al. 2010; Barogui et al. 2014; Farah et al. 2015; Give et al. 2015; Benskin 2012). Other CHWs provide basic obstetric case management, but the CHWs providing this service are expected to have some post-secondary formal training (Sarfraz & Hamid 2014; Mumtaz et al. 2015; Agrawal et al. 2012). Treatment of basic clinical conditions and management of basic obstetric cases appear to be part of a CHW's role in LMICs only; we did not find any evidence of CHWs providing these services in the papers from high-income countries.

CHWs' service recipients

CHWs' service recipients tend to vary with country income status (Annexe 2.2):

- **In high-income countries:** CHWs provide health services to ethnic minority and low-income populations within these countries (Gabitova & Burke 2014; Ruben et al. 2015; Dye et al. 2015; Jimenez et al. 2015; Cherrington et al. 2015; Cook & Mueser 2015; Martin MY 2005; Hill-Briggs 2007; Larkey et al. 2012; Raj et al. 2012; de Heer et al. 2012; Gerber et al. 2012; Whop et al. 2012; Pierre et al. 2012; Thom et al. 2013; Wayne & Ritvo 2014; Brownstein et al. 2005; Vargas et al. 2008; Ramírez et al. 2015; Johnson & Gunn 2015; Petereit et al. 2008; De Jesus 2009; Granillo et al. 2010; Peacock et al. 2011; Esparza & Calhoun 2011; Trejo et al. 2013; Zanchetta et al. 2012; Elkin et al. 2012; Carver et al. 2012; Holt et al. 2012; A. Koskan et al. 2013; A. M. Koskan et al. 2013; Elkins et al. 2013; Brenner et al. 2014; Allen et al. 2014;

Kaufmann et al. 2014; Fischer et al. 2015; Kennedy et al. 2008; Health Resources and Services Administration 2007).

The service recipients in these settings are usually individuals with non-communicable diseases such as cancers, cardiovascular diseases, chronic respiratory diseases and diabetes (Gabitova & Burke 2014; Ruben et al. 2015; Dye et al. 2015; Jimenez et al. 2015; Cherrington et al. 2015; Cook & Mueser 2015; Martin MY 2005; Hill-Briggs 2007; Larkey et al. 2012; Raj et al. 2012; de Heer et al. 2012; Gerber et al. 2012; Whop et al. 2012; Pierre et al. 2012; Thom et al. 2013; Wayne & Ritvo 2014; Brownstein et al. 2005; Vargas et al. 2008; Abrahams-Gessel et al. 2015; Ranaghan et al. 2015; Charlot et al. 2015; Hinton et al. 2005; Jandorf et al. 2005; Van Walleghem et al. 2011; Jacobson et al. 2012; De La Cruz et al. 2014; Wholey et al. 2013).

Only one paper from a high-income country (United States) noted that CHWs provide health services related to communicable diseases (Teti et al. 2009) and four documented the provision of maternal and child health services to ethnic minority populations in the United States (Bill et al. 2009; De Jesus 2009; Bonilla et al. 2012; Goff et al. 2013).

- **Low-and middle-income countries:** CHWs tend to provide services related to communicable diseases (Condo et al. 2014; Moshabela et al. 2015; Give et al. 2015; Herce et al. 2010; Osawaa et al. 2010; Peu 2014; Das et al. 2014; Barogui et al. 2014; Kowitt et al. 2015) and maternal and child health services (Sarin et al. 2016; Farah et al. 2015; Johnston et al. 2016; Shrestha et al. 2011; Houston et al. 2012; Agrawal et al. 2012; Dynes et al. 2013; Sarmento 2014; Keating et al. 2014; Mangham-Jefferies et al. 2014; Gobezayehu et al. 2014; Ahmad et al. 2014; Sarfraz & Hamid 2014; Singh et al. 2015; Darmstadt et al. 2009; Nandi & Schneider 2014; George et al. 2012; Rasanathan et al. 2014; Mumtaz et al. 2015).

  Only two of the included papers from upper-middle-income countries (Iran and South Africa) stated that CHWs provide services related to non-communicable diseases (Farzadfar et al. 2012; Mash et al. 2014).

2.2.3 Conclusion of the systematic review

The systematic review explored the various definitions and descriptions of ‘community health workers’ and identified the common themes in these definitions.

Overall, the review described the essential characteristics of health workers classified as CHWs and provides a background for developing CHW working definition and categories. It identified the various stakeholders who either influence or are influenced by CHWs' activities.

a. Characteristics of CHWs: Common themes from the included papers illustrate the key characteristics that describe CHWs. These relate to: i, selection, ii. the level of education and duration of pre-service training, iii. remuneration iv. supervision, v. support and vi. the services they provide.

b. Categories and working definition of CHWs: Most of the included definitions of CHWs are based on the roles and tasks of CHWs. On the one hand, role-based categories have been used by some authors. This includes a review which categorises CHWs as specialists (have fewer health roles within a defined thematic area) and generalists (have more health roles across thematic areas) (Lehmann & Sanders 2007). On the other hand, some papers (Haq et al. 2008; Smith et al. 2014) show that many governmental organisations and NGOs continue to formally or informally add tasks to the job description of CHWs; thereby, blurring distinctions between CHWs who are generalists or specialists. Hence, there are suggestions that the definitions and categories of health workers should be based on competency or educational qualifications rather than on tasks or roles (Benton 2014).

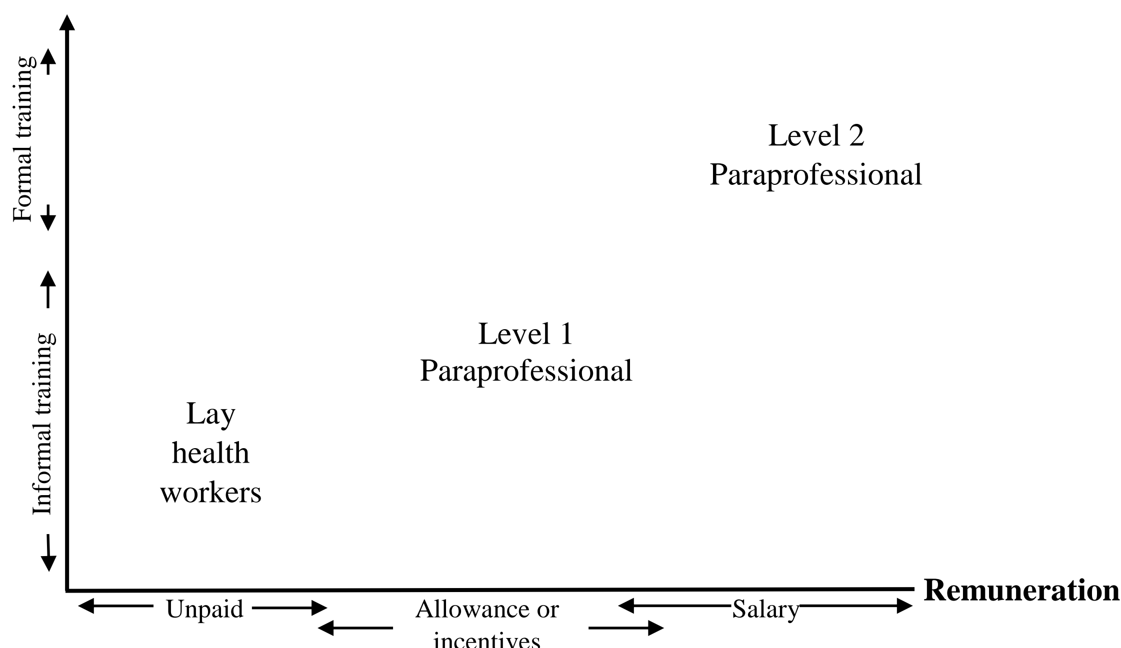
Moreover, categorisations of health professionals tend to be competency-based as the level of competency usually informs the type of tasks assigned to any group of health workers and their position within the health system. This competency-based categorisation may be key to developing frameworks to aid common understanding among stakeholders irrespective of context and comparison of different groups of health workers (WHO et al. 2009).

This review found that the level of competency or qualifications used for categorising health workers varies across settings as found in other research (Freund et al. 2015). The ILO suggests that lay health workers may or may not possess basic literacy skills while paraprofessionals are individuals who have had some form of formal long-duration post-secondary (non-tertiary) education and professionals usually have some form of tertiary education (ILO 2012). The review team modified the ILO definition of paraprofessionals to accommodate the two levels of competency of CHWs who may be classified as paraprofessionals. These are:

- **Level 2 paraprofessionals**, who are individuals with some level of secondary education and subsequent formal training of longer duration in a recognised training institution and
- **Level 1 paraprofessionals**, who are individuals with some level of secondary education and subsequent informal, short duration, pre-service training.
- The third and lowest level of competency among CHWs **are lay health workers** with little or no formal education but have received informal job-related training.

In addition, we noted that CHWs who could be classified as lay health workers are usually unpaid volunteers or receive an allowance while those that fit the definition of level 1 paraprofessionals often receive an allowance or incentives and the level 2 paraprofessionals are usually salaried. Figure 2.3 illustrates the link between CHW category, pre-service training and remuneration. It shows that the likelihood of having a salary increases with higher educational qualifications and longer duration of formal pre-service training.

Figure 2.3: The link between CHW category, pre-service training and remuneration type



Working definition of CHWs

To the best of our knowledge, this review is the first to use a methodical approach to understand the definition of CHWs. We identified common themes in how CHWs are defined in the global literature thereby attempting to develop a working definition which is globally relevant and comparable. Our study situated the common themes describing CHWs within definitions of similar cadres of health workers to determine the boundaries between each and make distinctions. These cadres include mid-level health workers (Lehmann 2008) and Traditional Birth Attendants (TBAs) (Sibley et al. 2007).

Mid-level health workers are defined as frontline health workers with up to three years post-secondary school training to perform specific health-related tasks such as clinical or diagnostic functions, which are otherwise conducted by health professionals with a higher educational qualification (Dovlo 2004; Global Health Workforce Alliance 2013). This is similar to our findings which refer to CHWs as frontline health workers providing information and performing health-related tasks. In contrast to mid-level health workers, CHWs receive training of fewer than three

years and their primary goal is the provision of culturally- appropriate health services to the community members.

Another similar cadre is the TBA. TBAs have been described as individuals who assist mothers during childbirth and have acquired skills by conducting deliveries of babies without formal training or through apprenticeship training received from other TBAs (Sibley et al. 2007). This definition of TBAs contrasts with our findings on CHWs which suggest that CHWs have received standardised job-related training in the context of the role they are expected to perform. However, trained TBAs who have received standardised job-related training in the context of an intervention could theoretically be considered as lay health workers as they often lack secondary education.

In order to differentiate CHWs from these similar cadres of health workers, definitions of CHWs should emphasise that they are individuals with an in-depth understanding of the community culture and language, have received standardised job-related training which is of shorter duration than health professionals. Additionally, the primary goal of CHWs is provision of culturally appropriate health services to the community.

Stakeholders involved with CHWs

This systematic review identified the various groups of stakeholders who either influence the activities of CHWs or are influenced by CHWs' activities. Table 2.4 describes the role of each of these stakeholders.

Table 2.4: The role of stakeholders in CHWs' activities

Stakeholder group	Roles
Relevant departments in the Ministry of Health	Involved in selecting CHWs with the support of local leaders Provide remuneration to CHWs
Non-governmental organisations	Involved in selecting CHWs with the support of local leaders Provide remuneration to CHWs
Health professionals	Involved in the supervision of CHWs
Community leaders	Involved in selecting and supporting CHWs
Community members	Involved in selecting CHWs Receive services from CHWs

2.2.4 Summary of the knowledge gap identified from the systematic review

Despite using 66 alternate terms of CHWs to ensure a global spread of the reviewed definitions, many of the definitions were from United States (60/129) and by extension high-income countries (67/129). This raises a concern of bias towards high-income countries especially as the highest density of CHWs occur in LMICs (Perry et al. 2014; WHO 2017b). Moreover, CHW density in the United States only ranks fourth after three LMICs: India, Indonesia and Brazil (Perry et al. 2014). Possible reasons for this bias relate to inclusion of only papers published in English language (language bias) which is not the national language of the three countries with the highest CHW density or that publications from these countries are not reaching mainstream literature. This knowledge gap in existing literature underscores the need for a primary research to explore the suitability of our working definition and categories to LMICs.

2.3 The scope of practice of CHWs in MNH care (summary of reviews)

This section summarises the key findings from seven reviews exploring the scope of practice of CHWs in MNH care. These reviews cut across country income status (upper, middle and low-income countries). Three of the studies were systematic reviews while the remaining four were WHO guidelines drawn from systematic

reviews and standard operating procedures. A summary highlighting the characteristics of the reviews is presented in Annexe 2.4.

Overall, the description of CHW scope of practice relates to Antenatal Care (ANC), labour and delivery, Postnatal Care (PNC), neonatal care services and family planning.

2.3.1 Antenatal care (ANC)

Antenatal services provided by CHWs include: health education, distribution of oral medication, facilitation of patient referral, initial management of preterm labour and birth companion for women in labour. CHWs visit pregnant women at home to discuss birth preparedness in which they agree on the preferred facility for delivery, transport arrangements, funds, supplies and materials for facility delivery (WHO 2015a). During these home visits, they also provide health education on how to recognise the clinical signs that signify the onset of labour and possible danger signs during the antenatal, labour and delivery, postnatal and neonatal periods (WHO 2015a; WHO 2010b).

Furthermore, they distribute oral supplements (such as iron and folate), Vitamin A and antimalarial for intermittent presumptive treatment for malaria (WHO 2015a; WHO 2016b; Lewin et al. 2010). CHWs may also refer pregnant women for skilled antenatal care and birth attendance and where necessary accompany them to the health facility (WHO 2015a).

Among women presenting between 24 and 34 weeks of gestation with a high risk of preterm birth, CHWs administer corticosteroids (Dexamethasone) to prevent Respiratory Distress Syndrome in the newborn (WHO 2015b).

2.3.2 Labour and delivery

CHWs accompany women during labour and provide physical and psychosocial support during and after childbirth to the pregnant woman in labour and her family (WHO 2015a; WHO 2012). A trained TBA may, however, conduct deliveries in the home of the service recipient (Darmstadt et al. 2009). In the event of home delivery, CHWs may administer misoprostol to prevent postpartum haemorrhage (WHO 2015a; WHO 2012).

2.3.3 Postnatal care

Reviews assessing the postnatal services of CHWs show that they can facilitate and promote exclusive breastfeeding (Lewin et al. 2010; WHO 2012).

2.3.4 Neonatal care

CHWs conduct resuscitation of newborns when required, screen for diseases in the newborn and provide pre-referral treatment. In the early neonatal period, CHWs may be required to resuscitate newborns using bag and masks before referring them to a Comprehensive Emergency Obstetric and Newborn Care (CEmONC) centre (Darmstadt et al. 2009). In addition, they are expected to screen for diseases using danger signs such as abnormal respiratory rate warranting referral to the nearest CEmONC centre (WHO 2010b). They may provide initial treatment of neonatal pneumonia using oral trimethoprim-sulphamethoxazole (WHO 2010b). For newborns with a clinical diagnosis of neonatal sepsis, they provide a pre-referral dose of antibiotics by injection (WHO 2012; Darmstadt et al. 2009). Other roles include vaccination of the newborns (WHO 2010b; Lewin et al. 2010) and facilitation of Kangaroo mother care for low-birthweight babies (WHO 2010b; Lewin et al. 2010; WHO 2012).

2.3.5 Family planning

The reviews showed that CHWs distribute condoms and provide oral contraceptive pills. They may also initiate and maintain contraceptive injections using standard syringes (WHO 2015a; WHO 2012; WHO 2010b).

2.3.6 Conclusion of the summary of reviews on the scope of practice and the gaps in literature

This summary of reviews showed that CHWs provide various services relating to ANC, labour and delivery, PNC, neonatal care and family planning. Most of the reviews had inadequate information on the educational qualifications and duration of pre-service training of the CHWs providing these services. A few reviews, however, describe educational qualifications and training of CHWs. These reviews highlight a significant variation in the educational qualifications and training of CHWs. This raises a fundamental question on whether the same scope of practice should apply to all CHWs irrespective of their level of education and duration of training. There is a need for a primary research to explore if (and how) CHW scope of practice varies

with their educational background and training. Findings from the primary research may be useful in characterising CHWs as lay health workers or paraprofessionals. Subsequently, the scope of practice of each CHW category may be reviewed and revised to reflect their educational qualifications and duration of pre-service training.

2.4 Factors influencing CHWs' service delivery in MNH care (Summary of reviews)

This section summarises the key findings from reviews exploring factors influencing CHWs' service delivery in MNH care. The review team identified two relevant systematic reviews. These systematic reviews included studies from upper-middle- and low-income countries. A description of the systematic reviews is presented in Annexe 2.5. Overall, the factors relate to training, link to the formal health system and community, motivation and community-related factors.

The included reviews showed that CHWs considered their training as inadequate especially when the content of training was not relevant to their current role (Glenton & Colvin 2013). Furthermore, some of the training courses were theory-based with limited or no time for practical sessions (WHO 2010b). Health professionals who work with CHWs also had concerns about the adequacy of CHW training especially as some of them are expected to provide therapeutic care (Glenton & Colvin 2013).

Service recipients view CHW services as inadequate if it focuses on health promotion without therapeutic aspects of care. Consequently, the CHWs may lose the respect and cooperation of their service recipient (Glenton & Colvin 2013).There are local norms and beliefs which can act as barriers to CHWs' service delivery. Despite health education sessions provided by CHWs, local norms and beliefs can still prevent the desired behavioural change towards a healthy lifestyle. Such local beliefs include but are not limited to discouraging nursing mothers from giving colostrum to their newborn (WHO 2010b).

In contrast, CHWs can earn credibility within the community when they are supported and have a visible link to respected health system and community leaders (WHO 2010b; Glenton & Colvin 2013). Overall, CHWs are motivated by altruism, social recognition, knowledge gain, regular salary and career development (Glenton & Colvin 2013).

2.4.1 Conclusion of the summary of reviews on the factors influencing CHWs' service delivery and the gaps in literature

This section illustrated how training, health system and community-related factors influence CHWs' service delivery. However, it may be difficult to generalise these factors across contexts as evidence suggests that factors influencing CHWs' service delivery vary with sociocultural, environmental and policy contexts (Kok et al. 2015). Hence, there is a need for primary research to explore how the factors influencing CHWs' service delivery may vary with contextual factors (and CHW level of education and duration of pre-service training). The findings from the primary research may guide policy makers and programme planners in providing context-relevant solutions to challenges of CHWs.

2.5 Summary of literature review chapter

This chapter provided a working definition and categories of CHWs. It notes that CHWs' activities are influenced by relevant departments in the ministry of health, NGOs, community leaders and members. Their scope of practice in MNH relates to ANC, labour and delivery, postnatal, neonatal and family planning services. Furthermore, their ability to deliver these services is influenced by their level of training, motivation and support from the formal health system and community.

However, this chapter underscores the importance of exploring how CHW scope of practice may vary with the level of education and duration of training, and how contextual factors may influence their service delivery.

CHAPTER 3: METHODOLOGY

3.0 Overview of the chapter

This study aimed to explore CHW characteristics, their scope of practice and the factors influencing CHWs' service delivery in five countries across sub-Saharan Africa and South Asia. The methodology chapter details the approach, steps and measures taken to provide valid findings to address the study aim. Overall, this chapter provides:

- A description of the research questions.
- A description of the research paradigm.
- A description and justifications for the study design.
- Considerations which informed the selection of the five study countries and participants.
- Contexts of the study countries.
- A documentation of the systematic approach used in the qualitative data collection, management and analysis.
- The propositions which informed data analysis.
- An explanation of the considerations given to quality assurance and research ethics.

3.1 Research questions

This study explored and clarified CHW characteristics and the MNH-related scope of practice to diverse groups of policymakers, programme planners and researchers working in various settings. This clarification is imperative, as the complexities relating to CHW definition and categories (noted in Chapter 2) continue to limit efforts seeking to formulate policies on CHW scope of practice and address factors influencing their service delivery (WHO 2016a). Furthermore, this study draws on the gaps in knowledge noted in Chapter 2 to explore how factors influencing CHWs' service delivery may vary with contexts. Table 3.1 builds on the study objectives and findings from the review chapter (Chapter 2) to develop the study research questions:

Table 3.1: The study objectives and research questions

Study objective	Research question
To explore and describe the characteristics of CHWs providing MNH services in sub-Saharan Africa and South Asia	How are CHWs who provide MNH services in sub-Saharan Africa and South Asia selected, trained, remunerated, and supervised?
	What forms of support and supplies do CHWs require to provide MNH services in sub-Saharan Africa and South Asia?
To explore the scope of practice of CHWs providing MNH care in sub-Saharan Africa and South Asia	What is the scope of practice of CHWs who provide MNH services in sub-Saharan Africa and South Asia?
	How does the scope of practice of CHWs vary with their level of education, duration of pre-service training and contextual factors?
To explore and document the factors influencing CHW health service delivery	What are the factors influencing CHWs' service delivery in sub-Saharan Africa and South Asia?
	How do factors influencing CHWs' service delivery vary with study context?

3.2 Research paradigm

This qualitative study aimed at answering the research questions using the theoretical viewpoint of social constructionism. This theoretical viewpoint suggests that "reality and knowledge are socially constructed" due to social and interpersonal influences (Gergen 1985; Berger & Luckmann 1991; Mallon & Mallon 2006; Owen 1995). In keeping with this viewpoint, this study acknowledges that CHW policies are not static but respond to subjective realities and experiences of different groups of stakeholders. These subjective realities and experiences are socially constructed among the different stakeholder groups and expressed through language (Merriam 1998; Lemer et al. 2015). Hence, this study made the assumption that health policy formulation relating to CHW characteristics and scope of practice would be shaped by perceptions and opinions of diverse groups of stakeholders and the contexts where they work and live (Magat 2007; Hedayati et al. 2014; Creswell 2009). In addition, the perception of factors influencing CHWs' service delivery are subjectively defined and socially constructed by individuals or groups within a particular

sociocultural or geographical context (Owen 1995; Mallon & Mallon 2006; Creswell 2009; Hedayati et al. 2014). Through interactions with diverse groups of stakeholders in different contexts, it was possible to develop a pattern of meaning using an inductive approach (Creswell 2009).

3.3 Research design

A case study design was used to address the aim of the study and the knowledge gaps noted in Chapter 2. This research design provided the needed strategy of inquiry for understanding the complexities relating to CHW characteristics, their scope of practice and factors influencing their service delivery (Stake 1995; Yin 2014; Yin 1994). Furthermore, it enabled the research team to focus on CHWs through exploration of holistic and real-world perspectives relating to the study objectives and subsequently generating new knowledge to inform CHW policy and practice (Yin 2014).

Overall, the aim of a study usually informs the type of case study (Yin 2009). While an explanatory type of case study aims to find causal links through "how" and "why" questions, a descriptive case study describes the sequence of events to discover a pattern relating to the object of interest. However, in situations where there are knowledge gaps and lack of clear guidance on an issue, it is beneficial to generate new empirical evidence using the "what" questions which are typical of the exploratory type of case studies (Yin 2009). Hence, this study seeks to answer "how" and "what" questions using explanatory and exploratory types of case study designs.

In summary, a case study is an empirical in-depth enquiry in which "a case" (e.g. a group of people) is explored within real-world situations using multiple data collection methods and perspectives from diverse groups of study participants (Yin 2014; Yin 1994; Ritchie et al. 2014). It entails creating a boundary around the entity. This boundary is expected to guide objective definition and selection of cases, especially where there are no clear distinctions between the case being studied and other similar entities (Stake 1995; Yin 2014; Yin 1994). The working definition developed from the systematic review of CHW definitions (Chapter 2) and country borders were used to create boundaries for each of the cases. This study defines a case as "all paraprofessional or lay health worker cadres in a study country who have

received job-related training of a shorter duration than health professionals and whose primary goal is to provide culturally appropriate MNH services to the community".

Case study design has been criticised because of the inability to generalise findings from a single case to population(s) (Yin 2014). However, the primary aim of using this study design is to generalise findings to theoretical proposition (Section 3.6.2) while generalisation to study populations was a secondary aim.

To achieve its secondary aim, this study used a multiple-case study approach (rather than a single case) to improve the generalisability of the study findings. The multiple-case study involved careful selection of a few cases which are symbolically representative of the countries where CHWs provide MNH services and are experiencing a health workforce crisis. Exploration of these case studies enabled generation of new knowledge which may be relevant and applicable within and across different countries. Overall, the varied and diverse empirical evidence from other cases may corroborate or negate assertions drawn from a single case (Yin 2014; Eisenhardt & Graebner 2007); thereby providing a holistic, comprehensive and contextualised understanding of the cases (Ritchie et al. 2014).

3.4 Selection of study countries and participants

Considering the diversity of countries in sub-Saharan Africa and South Asia, it was important to carefully select countries and participants to provide relevant information on the research questions. Accordingly, the study countries were selected by multi-stage sampling (Stewart, 2010) and the study participants by purposive sampling (Ritchie et al. 2014). The details of the sampling techniques are described in Sections 3.4.1 and 3.4.2.

Table 3.2 describes the criteria which informed selection of study location and participants.

Table 3.2: Criteria used for selecting study countries and participants

Location/participant	Selection criteria
Country	Countries in sub-Saharan Africa and South Asia experiencing a health workforce crisis: Health professional density of less than 22.8/10,000 population and coverage of skilled birth attendance of less than 80%
	Countries from the 75 "countdown" countries accounting for most of the global maternal and child deaths
	Countries with existing partnership with the "Making it Happen" programme of Liverpool School of Tropical Medicine (LSTM)
	Countries where CHWs provide MNH services
District/State/County	Country capital or location of the Federal Ministry of Health
	Office location of LSTM's in-country partners
	Location of facilities that are affiliated with in-country partners
Participants	Individuals or groups of individuals who influence or are influenced by the activities of CHWs (stakeholders)

3.4.1 Study countries

Study location included countries experiencing health workforce crises as described in Chapter 1, had an existing partnership with the "Making it Happen" programme and have CHW cadres who provide MNH services. These criteria guided the multi-stage sampling for selecting five study countries in sub-Saharan Africa and South Asia. Multi-stage sampling is a form of probability sampling technique involving several stages of sampling in which the sampling unit progressively gets smaller. This sampling method is often used when it may be unnecessary or prohibitively expensive to use all the elements in the initial sampling unit (Stewart, 2010). As this multiple-case study focuses on sub-Saharan Africa and South Asia, all the countries in these regions were identified using World Bank regional classification of countries (World Bank 2017b). The countries in each region constituted the first-stage sampling units. Subsequently, relevant WHO documents (WHO 2014; WHO & GHWA, 2014) were reviewed to identify the "countdown" countries with health workforce crisis within each region. These countries made up the second-stage sampling units and include 42 countries in sub-Saharan Africa and five in South Asia. The third stage entailed a comparison of the 47 countries in the second

sampling unit with LSTM's 11 "Making it Happen" countries. Interestingly, all the 11 programme countries were "countdown" countries with health workforce crisis and were used as the third stage sampling units. Eight of these countries were in sub-Saharan Africa (Ghana, Kenya, Malawi, Nigeria, Republic of South Africa, Sierra Leone, Tanzania and Zimbabwe) while the three remaining countries were in South Asia (India, Bangladesh and Pakistan). Lastly, the primary research team conducted a limited literature review to identify "Making it Happen" countries with a high density of CHWs providing MNH services. Additionally, the team consulted with in-country programme partners for adequacy of logistic support for data collection and reached a consensus that data collection should be in Kenya, Malawi and Nigeria (sub-Saharan Africa) and in Bangladesh and India (South Asia).

The "Making it Happen" programme (2008-2015) was a partnership programme between LSTM and governments of 11 countries in sub-Saharan Africa and South Asia. The programme aimed to reduce maternal and newborn mortalities in these countries. The programme approach entailed increasing the availability and improving the quality of skilled birth attendance and Emergency Obstetric and Newborn Care (EmONC) (LSTM 2017). Although the programme focused on doctors and nurse-midwives (not CHWs) in health facilities, most of these health facilities act as link or referral centres for CHWs. Hence, "Making it Happen-affiliated" facilities served as the entry point for accessing some of the study participants. The office location of the in-country partners informed the choice of study districts, states or counties as these offices provided logistic support for the study. Table 3.3 shows the study countries, study locations and the CHW cadres who provide MNH services in these countries.

Table 3.3: CHW cadres in the study countries

Africa		**Asia**	
Country and district/state/county	**CHW cadre**	**Country and district/state/county**	**CHW cadre**
Kenya: Nairobi and Kiambu	Community Health Volunteers (**CHVs**)	**Bangladesh:** Dhaka and Sirajganj	Community Health Care Providers (**CHCPs**) Community Skilled Birth Attendants (**CSBAs**) Family Welfare Assistants (**FWAs**) Health Assistants (**HAs**)
Malawi: Lilongwe	Health Surveillance Assistants (**HSAs**)		
Nigeria: Abuja	Community Health Extension Workers (**CHEWs**)	**India:** Delhi, Maharashtra	Accredited Social Health Activists (**ASHAs**) Auxiliary Nurse Midwives (**ANMs**)

An overview of the socio-economic, health, and demographic profiles of the study countries

Four (Bangladesh, India, Kenya, and Nigeria) of the five countries are lower middle-income countries, as classified by the World Bank. The fifth country (Malawi) is classified as a low-income country (World Bank 2017a). The details of each of the study country's gross national income per capita (the basis of income classification) is shown in Table 3.4. Additionally, Table 3.4 illuminates the study countries' contexts by illustrating the recent (2017) health, demographic and socioeconomic indicators. It benchmarks the indicators of the five study countries against each other. For each indicator, it notes the best two values (highlighted in green) and the worst two (highlighted in red). The median score for each indicator is highlighted in yellow.

Overall, it shows that Bangladesh has the best maternal, child and newborn health indicators. This is followed by Kenya, India, Malawi with the worst indicators being

from Nigeria. In contrast, Nigeria has the highest government spending on health followed by Kenya, India, Bangladesh and Malawi has the lowest level of government spending. In relation to the density of skilled health professionals, India has the highest density followed by Nigeria, Kenya, Bangladesh, the lowest density was found in Malawi.

Table 3.4: Socioeconomic, health and demographic profiles of the study countries

Indicator	Bangladesh	India	Kenya	Malawi	Nigeria
Gross National Income per capita (current US dollars)	1330	1,680	1,380	32	2,450
General government health expenditure as a % of general government expenditure (%)	5.7	5.0	12.8	16.8	8.2
Skilled health professional density (per 10,000 population)	6.0	27.5	10.7	3.5	18.3
% of pregnant women who delivered under skilled care	42	81	62	90	35
Women who have a need for family planning satisfied with modern methods (%)	72.5	63.9	75.4	73.6	28.8
Maternal mortality ratio/ 100,000 live births	176	174	510	634	814
Under five mortality rate (per 1,000 live births)	37.6	47.7	49.4	64.0	108.8
Neonatal mortality rate (per 1,000 live births)	23.3	27.7	22.2	21.8	34.3
Life expectancy at birth (years)	71.8	68.3	63.4	58.3	54.5
Population (millions)	161	1,311	46	17	182

Data sources: WHO: World health statistics 2017: Monitoring the world for SDGs,
World Bank: New country classifications by income level 2017

3.4.2 Study participants

This study explored the research questions through perspectives of diverse groups of stakeholders, in line with the approach of case study design (Yin 2014).

Overall, five groups of stakeholders were selected (Figure 3.1). These groups of stakeholders were identified through findings of the systematic review (Chapter 2), limited document review and discussions with in-country partners. They include stakeholders from the formal health system (health professionals, policymakers and programme staff from governmental and non-governmental organisations) and the community (CHWs, community health committees and service recipients).

Figure 3.1: The stakeholder groups selected for the study

Using purposive sampling technique, "information rich" participants were selected from each of the five stakeholder groups based on pre-specified criteria (Ritchie et al. 2014). A participant was considered "information rich" if they possessed extensive knowledge, experience or required status and are able to provide this information (Schneider et al. 2013). Moreover, the quality of a study depends to a great extent on the selection of appropriate participants (Kumar 1989).

Table 3.5 describes the pre-specified selection criteria used for purposive sampling (Ritchie et al. 2014; Schneider 2013).

Table 3.5: Criteria for selecting participants from the stakeholder groups

Stakeholder level	Stakeholder	Selection criteria
National/ sub-national (district/state/ county)	Policy makers and programme staff	Policy makers and programme staff involved in designing and/or implementing CHW MNH programmes
Facility	Health professionals	-Health professionals who provide MNH services at PHC units -Health professionals who supervise the CHWs providing MNH services
Community	Community health committee	Members who have experience working with CHWs providing MNH services
	CHWs	CHWs who provide all or some services in the MNH-related service package
	Recipients of CHW MNH services	Individuals who were receiving or recently received MNH services from CHWs

Identification and recruitment of study participants

While representatives of in-country partners obtained permission from relevant organisations and identified study participants, the principal researcher (PhD student) and local research assistants (described in Section 3.5.3) recruited participants for the study. The recruitment process entailed providing study participants with the information sheet (Annexe 3.2) and discussing the content with them. Participants were encouraged to review the consent form, consult with family and friends, seek clarifications, and ask questions relating to the study and implications for agreeing to participate in the study. They were allowed adequate time to consider their decision to participate in the study. The period between invitation and reaching a decision ranged from a few hours to a few weeks. The process of administering informed consent is described in Section 3.8.3 while the section below describes the study's approach to identifying and recruiting participants from each of the stakeholder groups:

Policy makers and programme staff: The policymakers included directors within the Ministries of Health at the national level who design policies relating to selection,

training, remuneration and supervision of CHWs. The programme staff comprised staff employed to implement the CHW programme (governmental or NGOs) with key roles in implementing policies relating to CHWs. They include coordinators (or designates) and officers of CHW programme, at the national and subnational levels. These policymakers and programme staff were selected based on their level of involvement in planning and implementing CHW programmes. They were identified after consultations with LSTM's in-country partners. The participants were invited through emails and phone calls when necessary. The principal researcher or in-country research assistants discussed with the consenting participants and agreed to a mutually convenient time and venue for data collection.

Health professionals at the PHC level: Health professionals such as doctors and nurse-midwives were selected from the PHC centres where CHWs provide services or their link (referral) health facility. These were health professionals involved in the supervision and clinical training of CHWs. Preference for participation was given to PHC centres affiliated with the "Making it Happen" programme. The institutions or agencies overseeing PHC centres were approached to identify health professionals that met the selection criteria as documented in Table 3.5. Invitation letters and an information sheet were sent to the selected staff members seeking their consent for participation in the study at a time and venue they considered convenient.

CHWs providing MNH services: The respective government agencies overseeing PHC services were approached to identify CHWs providing MNH care. The pre-specified selection criteria documented in Table 3.5 guided the government agencies in identifying the CHWs. The identified CHWs were invited through phone calls and where necessary, face-to-face discussions seeking their consent for participation. Subsequently, the identified CHWs were followed-up through phone calls.

Members of the community health committee/women support group: Community leaders including community health committees and support groups were invited after discussion with the community chiefs and opinion leaders. The involvement of community gatekeepers was important for getting community acceptance and support for the study.

Recipients of CHWs' MNH services: Working with suggestions from CHWs and PHC centre staff, this study considered the existing sociodemographic diversity

within the community to identify recipients of maternal and/or newborn health care. The sociodemographic characteristics relate to age and parity of the service recipients, income status and distance to the nearest health facility.

After obtaining approval from community leaders, the selected recipients were contacted by phone. During the phone discussions, the prospective participants received information on what participation entails. Subsequently, consent for participation was sought and obtained before inviting them to participate.

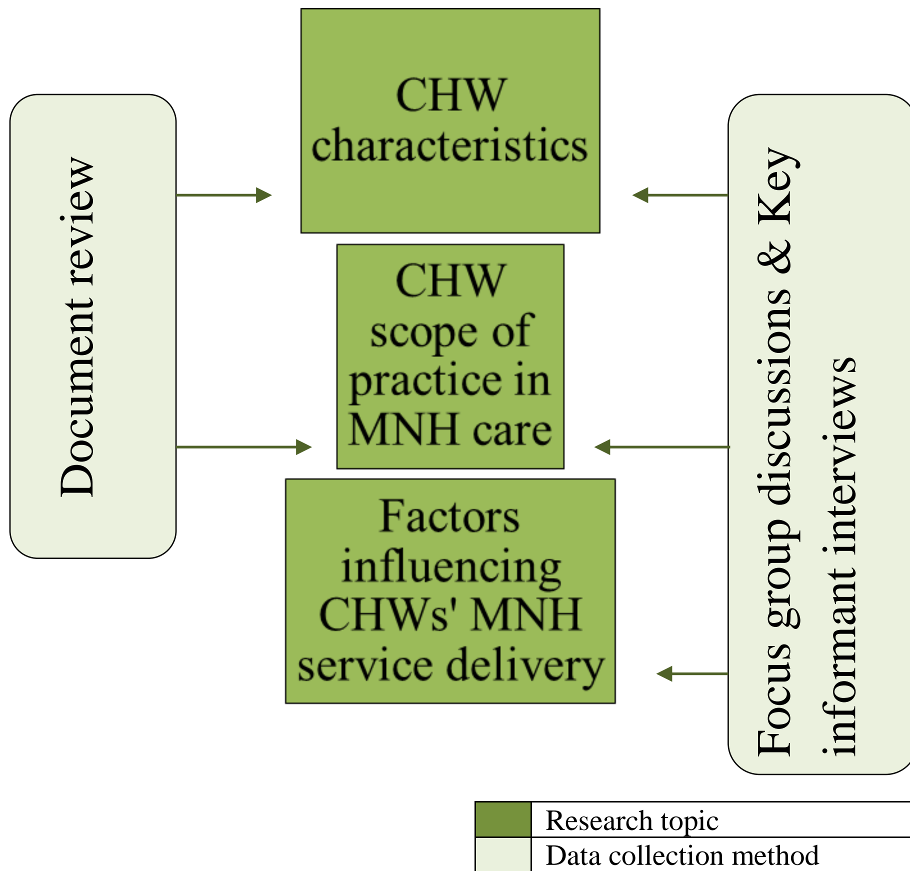
3.5 Data collection methods

In this study, qualitative data collection methods were used to explore the “what” and “how” questions relating to CHW characteristics, the scope of practice and factors influencing their service delivery. The data collection methods used in this study were document review, Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs). The primary data (FGDs and KIIs) and secondary data (policy documents) offered an opportunity for exploring and describing the health policies and participants’ perspectives in relation to the study objectives (Rubin & Rubin 2005; Barbour 2008).

The national policy documents provided information on CHW characteristics and scope of practice that are supported by policy. The FGDs and KIIs, on the other hand, described how the various policies translate to practice. Furthermore, perspectives of policymakers provided information on recent revisions to policies on CHWs that are yet to be published as documents. Consequently, findings from FGDs and KIIs either negated or validated or clarified findings from the policy documents (Neuman 2006). Furthermore, the FGDs and KIIs provided an opportunity to explore the perceptions of different stakeholder groups on the factors influencing CHWs’ service delivery. In contrast to other stakeholder groups, the perspectives of MNH service recipients was not sought on CHW characteristics. This decision was made after pre-test of the topic guide (Section 3.5.3) showed that questions relating to CHW characteristics may not be appropriate for the stakeholder group.

Figure 3.2 illustrates the data collection methods for each of the study objectives.

Figure 3.2: The data collection methods used in exploring the study objectives



Document review: Policy documents were reviewed to understand the policies underpinning the selection, training, remuneration, supervision and scope of practice of CHWs in relation to MNH care. Key criteria for selecting policy documents included relevance to the study objectives and endorsement of such documents by the in-country governments as shown by the presence of the national coat-of-arms on the documents. Typical of exploratory studies (Yin 2009), more documents became relevant as the principal researcher's understanding of the subject evolved through information from policy documents, FGDs and KIIs. Consequently, retrieval of policy documents started before and continued during and after primary data collection (April 2015-November 2016). Policy documents were sourced through online searches of government websites and through discussions with policymakers, programme staff, health facility staff and CHWs. The documents included government strategy and policy documents, reports, training manuals, brochures, press releases and bulletins describing design and implementation of CHW

programmes in the country. Where possible, the latest English versions of the policy documents reflecting current practice were used.

Focus Group Discussions: an FGD is an approach to qualitative data collection using group interaction to generate relevant data and insight on the research objectives (Ritchie et al. 2014). Participants were brought together at a time and venue that most of the participants considered convenient, with facilitation by trained local research assistants (Ritchie et al. 2014). Details of the local research assistants are provided in Section 3.5.3.

Using topic guides (Annexe 3.3), this study explored the various themes in order to identify "shared knowledge", group dynamics and norms, while the probing questions helped to clarify and elaborate on the subject of the discussion (Kitzinger 1995; Lewis 1992).

Each of the FGDs comprised six to ten participants with similar backgrounds and characteristics. However, where possible, the group composition reflected the age and gender diversity of the different stakeholder groups. The homogeneous and heterogeneous groups allowed the principal researcher to gain an understanding of the group norms and practices. As observed in the study, a key challenge with the sociodemographic heterogeneity of study participants was power play within the group especially relating to gender (with dominant male figures) (Ritchie et al. 2014). This was, however, more prominent in the study countries in South Asia and less in sub-Saharan Africa.

Shortcomings of FGDs can be the tendency for group members to align with the group's popular opinions rather than expressing their own individual perceptions and beliefs; thereby limiting the reliability of data generated. In addition, sensitive topics such as factors influencing service delivery (which may point blame at the government or certain individuals) were difficult to explore in a group environment due to the possibility of a breach of confidentiality by other group members (Lewis 1992).

Key informant interviews: Key informants are described as "information-rich" individuals whose insights are useful in illuminating the subject matter (Kumar 1989). KIIs provided an opportunity for viewing and understanding people's social

world and lived experience through one-on-one discussion (Ritchie et al. 2014). However, an advantage of a KII over the FGD as experienced during this study was the relative ease of planning interview sessions into the busy schedules of high-level participants (Heary & Hennessy 2006). Furthermore, the privacy during one-on-one interaction fostered openness in the interviews (Lewis 1992). In general, the study used KIIs to explore more sensitive questions, especially questions relating to challenges influencing service delivery. In contrast to FGDs, participants volunteered more information relating to weak health systems during KIIs as there was less concern with breach of confidentiality (Ritchie et al. 2014).

3.5.1 Topic guides

Annexe 3.3 shows a sample of the topic guide used during the FGDs and KIIs. Overall, the guide consists of open-ended questions and prompts developed from the key topics in the research questions:

a. CHW characteristics: The topics covered in the guide included CHW selection, training, remuneration, supervision and support provided by the formal health system and the community.

b. CHW scope of practice in MNH care: The questions and prompts relate to CHWs' roles in MNH care including ANC, labour and delivery, PNC, neonatal care and family planning.

c. Factors influencing CHWs' service delivery: Questions and prompts sought to explore how CHW characteristics and work environment influence their ability to provide services in MNH care.

The topic guides were developed and revised with inputs from the in-country partners. Subsequently, the topic guides were pretested in each study country for clarity, relevance, cultural appropriateness, and to establish a time estimate using mock interviews and discussions. Relevant revisions were made without compromising the key topics. The principal researcher, however, was flexible in applying the topic guide during FGDs and KIIs. Certain questions in the guide were re-worded spontaneously to respond to unanticipated but useful lines of discussion that encouraged new findings (Patton 2001).

3.5.2 Sample size

In each of the study countries, the research questions were explored until data saturation, when additional data did not provide new information (Krueger & Casey 2009; Morgan 1997). However, while it was easy to reach data saturation for questions relating to CHW characteristics and scope of practice, questions relating to the factors influencing CHWs' service delivery required more FGDs and KIIs to reach data saturation. Especially as responses tended to vary in relation to CHW category being discussed and with stakeholder group providing information. The data required to reach data saturation also varied with study country. Table 3.6 shows the total number of FGDs and KIIs conducted with each of the stakeholder groups and study countries.

Table 3.6: Summary of data collection in the study countries

Stakeholder group	**Country**					**TOTAL**
	Bangladesh	**India**	**Kenya**	**Malawi**	**Nigeria**	
Policy makers and Programme staff	7 KIIs	12 KIIs	7 KIIs	5 KIIs	9 KIIs	40 KIIs
Health professionals	4 KIIs	6 KIIs	13 KIIs	7 KIIs	5 KIIs	35 KIIs
Community health committees	3 FGDs	2 KIIs 2 FGDs	1 KII 4 FGDs	5 FGDs	1 KII 2 FGDs	4 KIIs 16 FGDs
Community health workers	8 KIIs	16 KIIs 4 FGDs	1 KII 7 FGDs	3 KIIs 4 FGDs	9 KII 1 FGD	37 KIIs 16 FGDs
Service recipients	2 FGDs	3 KIIs 1 FGD	4 KIIs	5 KIIs	3 KIIs 1 FGD	15 KIIs 4 FGDs
TOTAL	19 KIIs 5 FGDs	39 KIIs 7 FGDs	26 KIIs 11 FGDs	20 KIIs 9 FGDs	27 KIIs 4 FGDs	**131 KIIs** **36 FGDs**

3.5.3 The research team and the process of data collection

The collection of primary data took place in the five study countries between August 2015 and March 2016. The principal researcher spent an average of four weeks in each of the study countries. In each of the study countries, local research assistants were recruited to conduct FGDs and KIIs in the local language and take field notes when necessary. These research assistants had tertiary level education, experience conducting FGDs and KIIs, were fluent in the local language and possessed an in-depth understanding of the culture. Their knowledge of local culture improved the cultural sensitivity of the study, success at recruiting participants and encouraging participation during FGDs and KIIs. Especially as these local research assistants provided guidance on cultural processes which might have been overlooked (Kwan et al. 2011; True et al. 2011). An example of such a cultural process was having a short prayer before commencing an FGD in the African study countries. The local research assistants explained that having a short prayer before an FGD made participants to feel at ease after “committing the FGD to God”.

The in-country research assistants were briefed on their expected roles and financial rewards for facilitating data collection and transcription (Whiteside et al. 2007) and agreements were reached before the research assistants commenced training and data collection. These steps minimised the physical, psychological and social risks (relating to the roles in the study) to the local research assistants (Naufel & Beike 2013). The training entailed practical sessions using the data collection tools, ethical considerations including informed consent. Details of the ethical considerations are presented in Section 3.8. They were also involved in pre-testing the topic guide as this provided further practical experience apart from the initial mock practical sessions. However, training and retraining were continuous and took place throughout the duration of data collection. The principal researcher had daily debrief meetings with the research assistants during which they sought clarifications and asked questions on issues relating to their field experience. This approach addressed challenges relating to data collection and the research assistants had the needed support and competence to execute their roles (Naufel & Beike 2013).

3.6 Data management and analysis

This section describes the steps taken while processing the primary and secondary data and in synthesising the study findings.

3.6.1 Summarising finding from policy documents

The principal researcher compiled all the policy documents that fit the criteria for document selection (described in Section 3.5). Each of the policy documents was read to identify meaningful and relevant passages in relation to the CHW characteristics and scope of practice (Bowen A. 2009). Using a data collection form for each policy document, relevant findings from the documents were summarised. The data collection form had various sections relating to topics within the topic guide such that the sections within the form and transcripts were comparable during analysis. In addition, each data collection form was labelled using the study country, document title and year.

3.6.2 Transcription and translation of FGD and KII data

Trained research assistants produced verbatim transcripts for all audio recordings of FGDs and KIIs. However, audio recordings in local languages were first transcribed in the local language before translation into English. This approach helped to reduce the risk of mistranslation that may occur from translating the audio recording into English (Santos et al. 2014). Additionally, the research assistants documented non-verbal communications (such as smiles) in brackets against the relevant portions of the transcript. To ensure that transcripts reflect participants' perspectives with minimal bias from the research assistants, selected transcripts were proofread and back-translated to local language by another member of the research team to assess consistency between the content of the transcript and audio recording. The research assistants were encouraged to document figurative or cultural meanings (as different from literal meanings of statements) while translating the transcripts (Temple & Young 2004). These cultural meanings were documented in brackets to inform the interpretation of the relevant portions of the transcripts.

3.6.3 Data analysis

Data analysis entailed case descriptions from each of the study countries followed by a comparison of the common themes from the five study countries. These descriptions are presented in the results chapter (Chapter 4). This study used thematic

analysis approach in which the perspectives and words of research participants and policy documents served as the foundation for describing the study findings (Lett 1990; Bradley et al. 2007). Thematic analysis has been described as an approach for identifying, analysing and reporting patterns (themes) within the study data in order to provide explanations to the research questions (Boyatzis 1998). Furthermore, this approach's flexibility and inductive reasoning allowed new themes (aside from the *a priori* themes) and concepts to emerge from existing data (Ritchie et al. 2014).

To document CHW scope of practice in MNH care, the principal researcher extracted relevant data using a standard table. This table was developed from a global policy document which lists MNH services that can be provided by CHWs (UNAIDS et al. 2015). To ensure local relevance of this list of MNH services, it was revised based on additional information in the policy documents from the study countries. As noted in Section 3.5, the description of CHW scope of practice in MNH was largely drawn from policy documents while the FGDs and KIIs validated or clarified findings from the policy documents.

Overall, the data analysis entailed a series of distinct but interrelated steps using a systematic but flexible and iterative approach to ensure that the data has been thoroughly explored for patterns within and across the cases:

Familiarisation with the data: A preliminary thematic map (developed from the topic guide) guided the principal researcher's familiarisation with the study data. The principal researcher identified constructs within the data that relate to the research questions and familiarised himself with the data by reading and rereading the policy documents and transcripts, listening to the audio recordings (in English) and by reviewing field notes. The basic ideas from segments of the transcripts which related to the research questions were documented as codes (Braun & Clarke 2006). The recurring patterns across these codes informed the initial thematic map. After several iterations of observing recurring patterns within the data, the final thematic map was developed and this guided subsequent steps in data analysis (Ritchie et al. 2014). This final thematic map informed the initial codes that were entered into the Computer Assisted Qualitative Data Analysis Software (CAQDAS), NVivo 10 (QSR 2014) software and used for the indexing and sorting of the data.

Indexing and sorting: The principal researcher entered the coding framework into the CAQDAS software which aided digital indexing and sorting of the data. The coding entailed reading the transcripts for specific data extracts (phrases, clauses, or sentences) that illuminated specific codes and subsequently assigning these extracts to the relevant codes. Some data extracts, however, were relevant to more than one code and these extracts were applied to multiple codes (Patton 2001). The principal researcher reviewed all the data extracts within each code to assess the congruence in the key messages of these data extracts. Where relevant, existing codes were reworded to reflect the common message of the extracts. The coding and identification of patterns across the codes informed further abstraction and interpretation of the data.

Abstraction and interpretation: Unlike other inductive study designs such as grounded theory, propositions often guide data analysis in case study design (Yin 2014). These propositions are often developed from existing theories, systematic reviews, personal or professional experience. Furthermore, they often inform the focus of data analysis and shape the boundary of the report. Overall, they increase the likelihood of completing the data analysis within a desirable time period (Baxter & Jack 2008; Yin 2014). The proposition for data analysis is based on the findings from the literature review. This study proposes that "CHW characteristics, the scope of practice in MNH and factors influencing MNH service delivery would vary with contexts and depend on whether the CHW is a lay health worker, level 1 or level 2 paraprofessional CHW.

This study used pattern matching, explanation building and cross-case synthesis as analytic techniques for exploring the above study proposition. For pattern matching, the range and diversity of perspectives were mapped and this informed abstraction into themes (Ritchie et al. 2014). Overall, it entailed an iterative process of reviewing and refining the emerging themes. For each of the themes, the coded data extracts were reviewed to identify coherence and consistency. In situations where coherence and consistency were lacking, the themes were either re-worked into separate sub-themes to reflect the key messages in each sub-theme or a new theme was developed. In other situations when divergent perspectives challenged the common themes, the principal researcher repeatedly reviewed study data to either validate or negate the common theme (Bazeley 2009).

Explanation of themes involved using verbatim quotes from participants to explain and illuminate the themes (Corden & Sainsbury 2006). A detailed description of the themes is presented per case (sub-chapter) in the results chapter (Chapter 4).

Cross-case synthesis: The concluding section of the results chapter compares the five cases used for the study. Unlike preceding sub-chapters which describe the cases, this section provides an analysis of findings from all the cases and documents the themes that are common to all (or some) CHWs. Furthermore, the concluding section of the results chapter illustrates patterns (within the data) which negated or validated the study proposition.

The study identified CHW characteristics and scope of practice in MNH care that are either common to all CHWs or unique to a CHW category or CHWs in a study country. Additionally, this section shows how the factors influencing their service delivery varied with study context.

The principal researcher prepared initial drafts of reports describing cases from the five study countries. The two supervisors reviewed the drafts to provide recommendations and raised concerns when necessary. To address these concerns, the principal researcher sourced additional policy documents, reviewed the transcripts and when necessary, listened to the audio recordings.

3.7 Quality considerations: Ensuring trustworthiness of the study

The term trustworthiness has been used in qualitative research to assess data collection for credibility, transferability, dependability and confirmability (Lincoln & Guba 1985). To ensure trustworthiness of the data collection, analysis and report of findings, this study also considered these criteria:

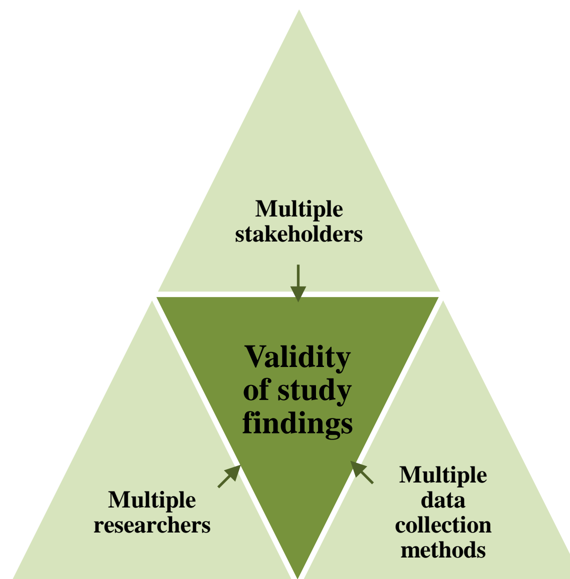
3.7.1 Credibility

This refers to measures taken to foster readers' confidence that the study results are valid in relation to the research questions. These measures include triangulation and member checking (Lincoln & Guba 1985).

Triangulation: This study's data and findings were validated by triangulating inputs from multiple data collection methods (document analysis, FGDs and KII), multiple stakeholders and multiple researchers. The multiple data collection methods ensured

holistic perspectives on the research questions and corroboration or negation of findings from the different sources. Additionally, multiple researchers (principal researcher and supervisors) guided the data collection and analysis to ensure that data collection methods and analysis will produce valid findings (Patton 2001). Figure 3.3 illustrates the different approaches to validating the study findings through triangulation.

Figure 3.3: Triangulation to improve the validity of study findings



Member checking: The principal researcher or local research assistants validated key messages during FGDs and KIIs through formal and informal discussions with participants. This approach ensured coherence in the understanding of the researcher and the researched (Lincoln & Guba 1985). When necessary, facilitators of FGDs and KIIs sought clarifications on key messages during the FGDs and KII sessions. Additionally, the facilitators held debriefing sessions with study participants in which the facilitators provided a summary of the key messages and sought clarification or confirmation from the study participants.

3.7.2 Transferability

This measure refers to the extent to which the study findings may be applicable to other contexts with similar characteristics (Lincoln & Guba 1985). The principal researcher provided a detailed description of the characteristics of the study countries

and participants and was explicit in describing the selection criteria. The selection criteria for the study countries and their profiles highlighted in Table 3.3 also provide a context for which the study findings are to be interpreted and the extent to which these findings would be transferable to other contexts.

By using pre-defined criteria to identify information-rich participants from different stakeholder groups, it was assumed that the perceptions of the selected participants would be symbolically representative of their stakeholder group.

3.7.3 Dependability

This relates to detailed documentation of the research process such that the study can be replicated. Furthermore, it considers the quality measures put in place during data collection, analysis and reporting that ensured consistency of the study findings (Lincoln & Guba 1985). The preceding sections of this methodology chapter detailed data sources, activities involved in data collection, management and analysis. This description provides an audit trail of the steps used in generating the study findings. Furthermore, future studies seeking to replicate this study or explore similar research questions in similar contexts may draw guidance from these descriptions.

To ensure the consistency of the findings, the principal researcher reviewed all the transcripts in line with the coding framework (Silverman 2001). Additionally, the topic guides were translated into the local languages of the study countries and adapted to suit the local context without compromising the key topics in the topic guide.

For all the study countries, the principal researcher and local research assistants explored the range and diversity of views and perceptions until data saturation when new data did not add new information to the study findings. Equally, all the facilitators were trained to identify and create culturally appropriate and physically conducive environments for social interaction and this informed the choice of venues and enabled study participants to feel at ease in expressing themselves. Interview and discussion guides and transcripts translated to or from the local dialect were back-translated to ensure that key contents were not lost in translation.

3.7.4 Confirmability

This step interrogates how the study findings are supported by the data and seeks to assure readers of the researchers' neutrality during the research process (Lincoln & Guba 1985). To preserve participants' key messages, all audio recordings were transcribed verbatim using the words of the participants. For FGDs and KIIs in the local language, the audio recordings were first transcribed into text in the local language before translation into English text. This approach preserved key messages that may have been lost from a direct translation of the content of audio recording (in local language) to English text.

In situations where new themes were identified, the principal researcher re-read transcripts from all the study countries before including the new themes, thereby ensuring that these new themes are supported by the study data (Silverman 2001).

To minimise researcher's bias, the study triangulated inputs from multiple researchers (principal researcher and supervisors) which ensured that data collection and analysis did not reflect the bias of the principal researcher. Furthermore, the principal researcher engaged himself reflexively throughout the study to minimise the influence of his professional experience and values on how the research questions are explored and interpretation of the data (Malterud 2001).

Reflexivity is very important to ensuring trustworthiness in qualitative research as it improves transparency of the principal researcher's unintentional influence on the collection, analysis and interpretation of the study data (Malterud 2001). The principal researcher's interest in CHWs stems from working with CHWs in Nigeria as a clinician and as a programme staff of an NGO. He noted that CHWs are well-positioned culturally and geographically to improve UHC but their potentials in achieving UHC has been largely unharnessed.

Between 2006 and 2007, the principal researcher worked as a medical officer in a secondary-level health facility in Northern Nigeria. Due to a shortage of health workers, the facility was staffed with three medical officers (including the principal researcher), three nurse-midwives and more than 20 CHWs. This experience provided him with personal knowledge of CHW characteristics, the scope of practice in MNH and factors influencing service delivery in this context. To a large extent,

these characteristics, scope of practice and factors influencing service delivery are unique to Nigeria; Northern Nigeria in particular. As the most experienced medical officer, the principal researcher had to supervise the clinical activities of CHWs. Furthermore, he trained CHW candidates from the school of health technology who were on clinical attachment at the secondary-level health facility.

Recently (between 2013-2014), he worked as a Programme Officer with an NGO in Southern Nigeria in which he was involved in designing quality assurance tools for PHC centres in Nigeria. He participated in adapting national training curriculum on prevention of HIV to meet the educational needs of CHWs, delivered in-service training based on the curriculum and subsequent supportive supervision of trained CHWs. Through his experience in Northern and Southern Nigeria, he was able to find how their scope of practice in MNH and factors influencing their service delivery varied with location.

However, his experience, knowledge, values and beliefs were ‘bracketed’ as much as possible to ensure they did not create a bias during the research process (Fischer 2009). Sensitivity and respect for study participants’ views were given key considerations during data collection, analysis and reporting.

3.8 Ethical considerations

This study considered ethical principles relating to research involving human subjects. The research team maintained the highest standards of integrity, transparency, honesty and professionalism during the research planning, conduct and report of findings. In addition, the team minimised harms and risks and maximised benefits to participants; respected human dignity; privacy and autonomy and maintained the confidentiality of participants (Medical Research Council 2012). This section documents the ethical considerations made before and during the data collection, analysis and report writing.

3.8.1 Approval from the ethics committees

Provisional ethics approval was obtained from the ethics committees of LSTM (institution of the principal researcher), dependent on securing approval in each study country. Subsequently, ethics approvals were obtained from in-country ethics

committees in all the study countries. A list of the in-country ethics committees is presented in Table 3.7 while the LSTM ethics approval is included in Annexe 3.1.

Table 3.7: A list of in-country ethics committees that granted ethics approval

Country	Ethics committee
Bangladesh	Ethical Review Committee, Centre for Injury Prevention and Research, Bangladesh
India	Institutional Research Ethics Committee (IREC) of The Foundation for Research in Community Health (FRCH)
Kenya	Research and Ethics Committee, Kenyatta National Hospital, Nairobi
Malawi	College of Medicine Research and Ethics Committee (COMREC), University of Malawi, Blantyre
Nigeria	Federal Capital Territory Health Research Ethics Committee, Abuja

3.8.2 Obtaining informed consent

Members of the research team comprising the principal researcher and/or the research assistants provided information on the study and administered the informed consent using an information leaflet and a consent form (Annexe 3.2) approved by the LSTM ethics committee and the in-country ethics committees of the study countries. The information sheet detailed the purpose of the study, emphasised voluntary participation, explained the duration and benefits of participation, addressed issues relating to confidentiality and anonymity and sought consent to use tape-recorders. Where necessary, informed consent was sought in the local language. Consenting participants signed the attached consent form and for illiterate participants, thumbprints were used to obtain informed consent.

3.8.3 Ensuring anonymity

Anonymity was ensured throughout data collection and analysis such that the information shared with the research team was not traceable to any of the participants. Except for the informed consent forms which bore the names of participants, all other documents including transcripts were coded using numbers. Numerical identifiers were used to label each transcript to ensure anonymity of the participants and these numerical identifiers created an audit trail when case reference was made to the participants' quotes. Where possible, participants were allocated name tags with pseudonyms before group discussions and encouraged to use these pseudonyms during group discussions rather than real names.

3.8.4 Privacy and Confidentiality

The principal researcher and local research assistants maintained the privacy of participants by soliciting their suggestions in choosing a time and location that would protect the privacy of the participants as much as possible. For example, some service recipients preferred having interviews or discussions in their homes rather than in the health facility as they did not want other community members to know of their participation. These considerations were important to prevent social stigma or rejection by other community members.

As much as possible, data confidentiality was maintained by ensuring that the information shared with the research team was not divulged without the participant's permission or in ways that do not conform with permission granted in the informed consent. However, absolute confidentiality was not guaranteed for the FGDs due to the possibility of accidental breaches of confidentiality by FGD participants. The concern that some participants might share content of FGDs outside the group discussion despite being encouraged not to do so was explained to the participants (Ritchie et al. 2014; Tolich 2008). At the commencement of each FGD, the facilitator and participants agreed on norms to boost confidentiality and participants were encouraged to disclose only what they were comfortable sharing with others.

3.8.5 Data storage

The electronic versions of transcripts and audio recordings were saved in desktop folders that are password-protected and the transcripts are only accessible to the primary research team. The data will be destroyed after five years from the date of interview/discussion.

3.8.6 Reimbursement for inconvenience and travel cost of participants

Participants for the FGDs were offered refreshments and their travel costs reimbursed where applicable. The refreshments incentivised participation but were not significant enough to create unrealistic expectations in future research activities or induce other individuals to compromise their sense of judgement in order to participate in the study. It was viewed that such compensations may not be harmful in research provided other ethical considerations were made (Grant & Sugarman 2004; WHO 2011a).

3.8.7 Good clinical practice training

The principal researcher availed himself of the "Good Clinical Practice" training organised by LSTM to refresh his knowledge on the set of internationally recognised ethical and scientific quality requirement for designing, conducting, recording and reporting studies that involve human subjects (MHRA 2014). The relevant content of this training informed the training of research assistants and this was respected throughout all the stages of the research.

CHAPTER 4: RESULTS

4.0 Overview of the chapter

This chapter describes cases (Sub-chapters 4.1-4.5) of CHWs providing MNH services in sub-Saharan Africa and South Asia. It describes the cases using policy documents and where necessary, the primary data (FGDs and KIIs) elaborate, substantiate and provide clarifications on the information from the policy documents.

Each case is described using the study objectives and themes that emerged from data analysis. It entails:

- A profile of the study participants.
- A description of CHW characteristics which relate to their selection, training, remuneration, supplies and supervision.
- A detailed description of their scope of practice in MNH care: ANC, labour and delivery, PNC, neonatal care and family planning.
- Factors influencing CHWs' service delivery in relation to MNH care.
- A concluding section describing the convergent and divergent themes within and across CHW cadres, countries and regions.

Using the theoretical viewpoint of social constructionism, each case is described to reflect information drawn from the policy documents and perspectives of the various stakeholder groups. These various stakeholder groups provided perspectives to negate, corroborate or clarify policies relating to CHW characteristics and scope of practice in MNH care. Additionally, they shared perspectives relating to the various factors influencing CHWs' service delivery in relation to MNH care. Illustrative quotes (to reflect the perspectives of the stakeholders) are placed in boxes at the end of each theme. The boxes are partitioned by sub-themes while the supplementary quotes are shown in the annexe. In addition, excerpts (in italics and within inverted commas) from quotes are included within the narrative to improve validity and reliability of the results.

4.1: Community Health Care Practitioners (CHCPs), Community Skilled Birth Attendants (CSBAs), Family Welfare Assistants (FWAs) and Health Assistants (HAs) in Bangladesh

4.1.0 Study participants in Bangladesh

The study participants were identified through a limited review of policy documents (Directorate of General Health 2014; Government of Bangladesh 2015; Government of Bangladesh 2016) and consultations with in-country partners. The stakeholder groups comprised:

i) Policymakers and programme staff of the national and subnational Ministry of Health and Family Welfare.

ii) Health professionals including doctors and nurse-midwives who review referred MNH cases at the sub-district health centres.

iii) Government-employed CHWs providing MNH services in community clinics and through home visits.

iv) Community group comprising respected community members that support and supervise community clinic activities.

v) Women who have received MNH services from CHWs.

Table 4.1.1 describes the characteristics of the study participants. It shows that all community group members and most of the programme staff were males. In contrast, all the health professionals and CHWs were females. The programme staff had the longest median duration working with CHWs. This was followed by health professionals and the community group. The CHWs had the shortest median duration of work experience as CHWs. Among stakeholder groups whose median ages were assessed, service recipients had the lowest median age, followed by CHWs. Members of community group had the highest median age.

Table 4.1.1: Characteristics of the study participants in Bangladesh

Stakeholder group	Total number of participants	Male: female ratio	Median duration working with/as CHWs (years)	Median age (years)
Policy makers & programme staff	7	5:2	21	N/D
Health professional	4	0:4	15	N/D
CHWs	8	0:8	5.5	28
Community group	16	16:0	7	60
MNH Service recipients	11	0:11	N/D	21

N/D: Not documented

4.1.1 Characteristics of CHCPs, CSBAs, FWAs and HAs

The policy documents describe the characteristics of CHWs in relation to their selection, training, remuneration, supplies and supervision. The various stakeholders provided additional information to clarify policies relating to these characteristics. In comparison to health professionals whose descriptions focused on CSBA training, other stakeholder groups provided information that cut across all the sub-themes. As documented in Section 3.5 of the methodology chapter and reflected in other cases (Sub-chapters 4.2-4.5), perspectives of MNH service recipients were not sought in relation to CHW characteristics.

Selection of CHCPs, CSBAs, FWAs and HAs

As a policy, CHCPs are employed under the time-bound community clinic project while other cadres are employed as regular government employees. Overall, all the cadres are employed by the government using similar selection criteria and recruitment process (Directorate of General Health 2014; Government of Bangladesh 2015). In contrast to policy documents which focused on educational requirements

for CHWs, programme staff and CHWs described other selection criteria which relate to candidate's demographic attributes.

CHWs are selected based on educational qualifications and demographic attributes

As described in a policy document, the government recruits the various CHW cadres based on ten years of schooling as evidenced by the Senior Secondary Certificate (Government of Bangladesh 2015). Programme staff and CHWs clarified that other factors are put into consideration during CHW selection. These factors relate to attitude and demographic attributes of the candidates. A programme staff stated that CHWs are expected to be community members and should have *'motivation to serve the people'* (Box 4.1.1: 1 below; box 4.1.1: 12 appendix). The programme staff and CHWs explained that FWAs are expected to be females with preference given to married women. They clarified that candidate's gender is not an absolute criterion for selecting CHCPs and HAs even though most of the CHCPs and HAs are females (Box 4.1.1: 13-15 appendix). Furthermore, they explained the special considerations given to candidates who reside within the community and are familiar with community members. Especially as these factors tend to foster social acceptance by the community members because these CHWs would be viewed as *'family members'*. They added that *'wives'* or daughters of community members are likely to stay within the community as CHWs are not expected to transfer their service to another community (Box 4.1.1: 16, 17 appendix).

CHW candidates undergo a pre-employment examination

A programme staff explained that candidates that meet these selection criteria (for the cadre) undergo written and oral examinations and must be successful before being employed to their roles (Box 4.1.1: 2).

Box 4.1.1 (Selection)	
1	*"They are people who have the intention to serve, motivation to serve the people."* KII 007, Programme staff
2	*"To recruit, a government circular is published and CHWs need to attend written examination and viva to be selected."* KII 002, Programme staff

Training received by CHCPs, CSBAs, FWAs and HAs

The CHWs undergo pre-service training after selection but the duration and focus of training tend to vary across the different cadres. While the reviewed documents described policies relating to the duration of pre-service training, programme staff explained the criteria for selecting candidates for CSBA training. In addition, a nurse-midwife described the CSBA training, focusing on the training content and assessment.

CHWs with therapeutic role have longer training

As a policy, FWAs and HAs receive 3-week pre-service training to build their capacity for health promotion and disease prevention. Conversely, the CHCPs undergo a practical intensive (half of the training duration) pre-service training spanning 3 months. This training equips them with relevant clinical skills for therapeutic services in the community clinics in addition to health promotion and disease prevention services (Government of Bangladesh 2016).

Additional training is required for skilled birth attendance

Policies suggest that any of the CHW cadres may undergo additional 6-month "community skilled birth attendant" training at an accredited nursing & midwifery institute to become a CSBA (Government of Bangladesh 2016). Programme staff explained that asides prior CHW training, additional selection criteria for CSBA candidates include being a woman less than 45 years old; having a last child who is more than a year old, and being a person who is interested in conducting normal deliveries (Box 4.1.1: 3 below; box 4.1.1: 18, 19 appendix). They clarified that these additional criteria are flexible to ensure that motivated candidates are not disqualified (Box 4.1.1: 3 below).

A programme staff and a nurse-midwife explained that CSBA training entails theory and practical sessions. During these sessions, the trainers build the capacity of the trainees on ANC, management of labour and delivery, PNC and neonatal care. Subsequently, the trainees are assessed for knowledge and skills retention before being certified as CSBAs (Box 4.1.1: 20, 21 appendix).

In-service training varies in duration and focuses on diverse areas

A programme staff described the various forms of in-service technical training explaining that most of the training sessions last a few days to a week. Additionally, CHWs are expected to learn from clinical presentations during health facility meetings where the medical officers make presentations on different health areas which may be relevant to their service delivery (Box 4.1.1: 4 below).

	Box 4.1.1 (Training)
3	*"They have to be less than 45 years of age, the last child is more than a year old and is interested in performing normal deliveries. You cannot be too tough on the criteria, or you will not find any CSBA."* KII 007, Programme staff
4	*"There are training of various durations, for example, one day, two days or 1 week...in monthly meetings, our medical officers conduct the technical session. This is how our family welfare assistants get trained."* KII 004, Programme staff

Remuneration of CHCPs, CSBAs, FWAs and HAs

While it is not explicitly stated in the reviewed policy documents that CHWs are salaried, the different cadres of CHWs and the programme staff explained that all CHWs receive monthly salaries and training allowances. Additionally, they receive monetary incentives when they refer service recipients for permanent methods of contraception (Box 4.1.1: 5, 6 below). In contrast to other CHWs who are permanent employees of the government, CHCPs pointed out that they are contract staff and their job *'is not permanent'* but *'project-based'* (Box 4.1.1: 7 below).

	Box 4.1.1 (Remuneration)
5	*"My salary is 10,000 takas per month and there is no other benefit. For attending training, we get government fixed honorarium."* KII 004, CHCP
6	*"...but in the family planning side, we have good monetary involvement. If you bring a client for ligation, female sterilisation or male sterilisation, there is involvement of money and who will get how much money."* KII 007, Programme staff
7	*"Our job is not permanent; it is project based. The community clinic project was up to 2014, but I heard it was extended to 2016."* KII 004, CHCP

Supplies used by CHCPs, CSBAs, FWAs and HAs

Overall, supplies used by CHWs relate to their scope of practice (described in Section 4.1.2) and CHWs replenish their stock from the link sub-district health complex. The reviewed policy document itemised the drugs, equipment and commodities while the community group members emphasised their role in preventing misappropriation of the items.

CHW supplies include drugs, diagnostic equipment and data entry tools

A policy document shows that CHWs receive supplies of commodities for first aid, drugs for treating minor ailments and nutritional supplements. Furthermore, they receive vaccines for disease prevention, diagnostic equipment such as blood pressure machines, laptops and an internet stick for data entry (Government of Bangladesh 2016).

Community group members prevent misappropriation of drugs

A CHW explained that they replenish their drug stock from the sub-district health complex. The community group added that CHWs have to open the box of new supplies in their presence such that the community group can also take stock of the drugs before they are dispensed to service recipients. Subsequently, the community group track the stock in relation to the patient load to prevent misappropriation of the drugs (Box 4.1.1: 8, 9 below).

Box 4.1.1 (Supplies)	
8	*"We collect our supplies from the Upazila Health Complex, we get a date and we go to the facility and collect the medicine."* KII 005, CSBA
9	*"CHWs open the box of supplied drugs in our presence."* FGD 003, Community group

Supervision of CHCPs, CSBAs, FWAs and HAs

As a policy, the CHW cadres have different supervisors from the two directorates at the Ministry of Health and Family Welfare. The community group also provides additional oversight on CHWs' service delivery and community clinic activities (Directorate of General Health 2014; Government of Bangladesh 2015; Government of Bangladesh 2016).

Supervision by the formal health system tend to focus on meeting performance-related targets

As a policy, the Family Planning Inspectors (Directorate of family planning) provide direct supervision to FWAs while the Health Inspectors and Assistant Health Inspectors (Directorate of General Health) supervise HAs and CHCPs. They oversee their service delivery in the community clinics and within the community (Directorate of General Health 2014; Government of Bangladesh 2015; Government of Bangladesh 2016). The CHWs and programme staff explained that supervision is done through visits, phone calls to CHWs, review of CHW attendance and activity registers, periodic reports and holding review meetings (Box 4.1.1: 10 below; box 4.1.1: 22-24 appendix). A district-level programme staff explained how periodic performance reports guide supervisory visits to focus on poor-performing areas (Box 4.1.1: 25 appendix).

Community group addresses CHW challenges and verifies service delivery

The community group members explained that they *'organise meetings'* every month to *'discuss problems related to clinics and services'* and raise *'funds for the poor'* to access health services (Box 4.1.1: 11 below; box 4.1.1: 26, 27 appendix). The community group members verify the information provided by CHWs through informal discussions with service recipients by asking them about *'the services they are getting'* (Box 4.1.1: 26 appendix).

Box 4.1.1 (Supervision)	
10	*"We check register and attendance of the CHWs and the number of patients they are attending to. We also take monthly reports from the CHWs and share them with the statistician to compile. We need to report to district level on the number of deliveries conducted, the number of EPI [Expanded Programme on Immunisation] performed, the number of maternal and neonatal deaths and the number of patients who took ANC and PNC. Every day we need to report online."* KII 003, Programme staff
11	*"We meet once in a month and discuss problems of the clinic, share the services of CHWs, check logistics, and we update them about the fund we have created for the poor who live in this community. We also try to solve some of the problems related to clinics and services."* FGD 001, Community group

4.1.2 The scope of practice of CHCPs, CSBAs, FWAs and HAs in MNH care

This section draws on policy documents to describe CHW scope of practice in relation to MNH care. It notes that many of the policies are generic without being specific about the role of each cadre. Some of the policies were, however, clarified through perspectives of programme staff, CHWs and to a limited extent, service recipients. As a policy, CHCPs provide MNH services in the community clinic for six days a week. In contrast, the FWAs and HAs take turns of three days each to provide services in the community clinic and the other three days within the community (Government of Bangladesh 2016).

Table 4.1.2 shows the type of services provided by the different CHW cadres and highlights that all CHW cadres provide health promotion and disease prevention services relating to ANC, labour and delivery, PNC, neonatal care and family planning.

ANC services provided by CHCPs, CSBAs, FWAs and HAs

A policy document described how ANC roles vary with cadre and receipt of CSBA training. These roles relate to health education, birth plan and emergency preparedness, obstetric examination of pregnant women, TT vaccination and micronutrient supplementation (Government of Bangladesh 2016). As a policy, FWAs and HAs are expected to identify pregnant women, provide health education through home visits and administer TT vaccination in the community clinic. The role of treating minor ailments and dispensing micronutrient supplements rests primarily with CHCPs (Government of Bangladesh 2016). While the policy document suggests that obstetric examination of pregnant women should take place at the community clinic, the document did not explicitly state the CHW cadre responsible for the role (Government of Bangladesh 2016). Programme staff and CHWs explained that detailed obstetric assessments of pregnant women are within the exclusive remit of CHWs with CSBA training. Other CHWs are often limited to checking the weight, height and blood pressure of the pregnant women. They described the role of CSBAs in assessing high-risk pregnancies through obstetric examination of pregnant women and reviewing results of laboratory investigations (Box 4.1.2: 1 below; box 4.1.2: 6 appendix).

Services provided by CSBAs during labour and delivery

As a policy, the type of services provided during labour and delivery depends on receipt of CSBA training. Similar to ANC, the role of CHWs in labour and delivery depends on receipt of CSBA training as only CHWs with CSBA training can manage labour and conduct normal deliveries. CSBAs manage labour using a partograph and conduct deliveries in community clinics or in houses of service recipients that refused facility-based delivery (Government of Bangladesh 2014; Government of Bangladesh 2016). A programme staff explained that CSBAs provide oral misoprostol for home delivery to prevent postpartum haemorrhage (Box 4.1.2: 2 below). CSBAs added that they facilitate early breastfeeding as a way of preventing postpartum haemorrhage in the immediate post-delivery period (Box 4.1.2: 7 appendix).

PNC services provided by CHCPs, CSBAs, FWAs and HAs

As a policy, postnatal care services provided by CHWs depend on the stage in the postnatal period. While the CSBAs play key roles during the immediate postnatal period at the community clinic, the FWAs and HAs (irrespective of prior CSBA training) provide postnatal services in the community (Government of Bangladesh 2016). A policy document shows that CSBAs are to identify postnatal danger signs or complications of childbirth such as obstetric fistula and facilitate referral (Government of Bangladesh 2016). A programme staff described the role of FWAs and HAs in conducting follow-up home visits to assess nursing mothers for danger signs that may occur after their discharge from the community clinic (Box 4.1.2: 3 below).

Neonatal care services provided by CHCPs, CSBAs, FWAs and HAs

The neonatal care services provided by CHWs depends on the stage in the neonatal period. Similar to postnatal care, a policy document illustrates how the role of early neonatal care rests with CHWs with CSBA training while any CHW cadre (irrespective of additional training) may provide subsequent care (Government of Bangladesh 2016). The CSBAs ensure thermal care in the early neonatal period and refer low birth weight babies for Kangaroo-mother-care. Additionally, they are expected to provide cord care with a single application of chlorhexidine gel to the umbilical cord during home or facility-based deliveries (Government of Bangladesh

2016). A CSBA added that they (CSBAs) conduct resuscitation of the newborn in the facility when required (Box 4.1.2: 4 below).

A policy document illustrates the roles of FWAs and HAs in conducting home visits to assess the newborns for danger signs and facilitating referrals when required. In addition, FWAs and HAs are expected to identify newborns requiring age-appropriate vaccination while conducting home visits and encourage them to visit the community clinic where they will administer the vaccination to these recipients (Government of Bangladesh 2016).

Family planning services provided by CHCPs, CSBAs, FWAs and HAs

As a policy, all CHWs provide health education on the various contraceptive methods (Government of Bangladesh 2016). Programme staff pointed out that the role of family planning rests primarily with the FWAs. They added that the FWAs are expected to provide condoms, oral contraceptive pills and contraceptive injections at the facility and within the community. They, however, clarified that FWAs are to provide the second dose (and other doses) of contraceptive injection after the initial review and the first dose would have been administered by the female welfare visitor at a more comprehensive health facility (Box 4.1.2: 5 below; box 4.1.2: 8 appendix). In the absence of the FWA, the CHCPs are trained to provide condoms and oral contraceptive pills in the community clinic (Box 4.1.2: 9 appendix).

Box 4.1.2 (Scope of practice in MNH care)	
1	*"CSBAs work at field level to identify pregnant mothers in the community. After identification, they do ANC and follow up and send for lab tests at the Upazila Health Complex (UHC). They are instructed to refer the complicated cases to the UHC"* KII 006, Programme staff
2	*"If the mother does not want to go to the hospital at all, then CSBA will provide misoprostol tablet to her to avoid PPH (Postpartum Haemorrhage), do follow up and conduct the delivery at home."* KII 006, Programme staff
3	*"They are giving PNC in the community; they monitor the nursing mothers for danger signs."* KII 008, Programme staff
4	*"We specially take care of newborn babies though we do not have any paediatrician, but we are trained in newborn care. We use Ambu bag and sucker machine when needed."* KII 002, FWA
5	*"FWVs (Female Welfare Visitors) give the first dose of the injection, and from the second dose our FWAs, those at the field level. Basically, those who go from*

Box 4.1.2 (Scope of practice in MNH care)
door-to-door, visit the home, visit the mother, they can provide the contraceptive injection, second dose and others." KII 007, Programme staff

Table 4.1.2: The scope of practice of CHCPs, CSBAs, FWAs and HAs in MNH care

Scope of practice	CHCP	FWA	HA	CSBA
Identification of pregnant women in the community				
Screening for danger signs				
Clinical assessment for high-risk pregnancies				
Provision of iron and folic acid to prevent maternal anaemia				
Calcium supplementation where needed				
Tetanus vaccination				
HIV Counselling and Testing				
Provision of long-lasting insecticidal nets (LLINs) to prevent malaria				
Provision of Intermittent preventive treatment in pregnancy (IpTP) to prevent malaria				
Facilitation of birth and emergency preparedness				
Labour and delivery				
Skilled birth attendance				
Accompany women (pregnant women in labour) to the health facility				
Provision of transport support to and from the health facility				
Administration of prophylactic uterotonics to prevent postpartum haemorrhage				
Initial management of postpartum haemorrhage (e.g. uterotonics, uterine massage)				
Facilitation of early breastfeeding initiation (within 30 minutes post-delivery)				
Postnatal care				
Facilitation of sustained breastfeeding				
Counselling on birth spacing and post-delivery family planning				
Identification of danger signs and subsequent referral to a health facility				
Provision of ART support to women living with HIV				
Neonatal care				
Immediate thermal care				
Neonatal resuscitation when required				
Administration of Vitamin K				
Assessment for danger signs				
Facilitation of hygienic cord and skin care				
Facilitation of Kangaroo mother care (KMC) for preterm babies and				

Scope of practice	**CHCP**	**FWA**	**HA**	**CSBA**
babies with birth weight less than 2500g				
Childhood vaccination: BCG and oral polio				
Promotion and support of timely ARV prophylaxis in HIV-exposed newborns				
Family planning				
Barrier methods (male and female condoms)				
Oral contraceptives (progestin-only and combined)				
Hormonal contraceptive injection				
Intra-uterine devices				
Implant				
Permanent (Irreversible) birth control				

Data sources :
1.Policy documents :Government of Bangladesh, 2016. *Bangladesh Essential Health Service Package*.
Health bulletin, 2014
http://www.dghs.gov.bd/images/docs/Publicaations/HB_2014_2nd_Edition_060115.pdf
2. Key informant interviews and focus group discussions

Key	
(green)	Provide
(yellow)	Refer
(red)	Do not provide

CHW scope of practice template, adapted from *Strengthening the capacity of community health workers to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health* by UNAIDS et al., 2015

4.1.3 Factors influencing MNH service delivery of CHCP, CSBA, FWA and HAs

There was a consensus among the various stakeholders that CHWs' service delivery is influenced by the CHW's attribute, acquisition and retention of knowledge and skills, motivation, formal health system and community-related factors. While perspectives of programme staff cut across all the sub-themes, other groups of stakeholders provided perspectives relating to only a few of the sub-themes.

Attributes that suit CHWs for their role

Programme staff noted that CHWs are familiar faces in the community thereby making them approachable and accessible. In addition, CHWs are considered *'family members'* thus strengthening the trust that community members have in them (Box 4.1.3: 1, 2 below).

Box 4.1.3 (Attributes)	
1	*"These people are from the community, CHCP [Community Health Care Provider] is from the community. He or she is very much known to them."* KII 008, Programme staff
2	*"...the people consider her to be reliable as she is some kind of family member like them."* KII 007, Programme staff

Factors influencing acquisition and retention of knowledge and skills

These factors relate to the regularity of in-service training and the need for health professionals to provide on-the-job training to CHWs in the community clinics. Programme staff and CHWs emphasised that CHWs require more training sessions to build their knowledge and skills. In line with this assertion, a nurse-midwife pointed out that CSBAs lack the needed competency for managing labour and conducting deliveries.

Training builds CHW capacity to deliver quality health service

Programme staff and CHWs emphasised the need for regular in-service training of CHWs. A programme staff stated that training equips CHWs with the requisite knowledge and skills for health service delivery. However, a CHW pointed out that

they *'do not get enough training'* as training was often infrequent (Box 4.1.3: 3 below; box 4.1.3: 21 appendix).

CSBAs require in-depth training to provide skilled birth attendance

A nurse-midwife stated that CHWs lacked the required proficiency for some of the services they provide. The nurse-midwife stated that CSBAs require in-depth training that will strengthen their competence and confidence in birth attendance. She emphasised the '*gaps in their education'* such that if their recipient *'needs episiotomy'* the CSBA *'cannot do it'* or *'she is not confident to do it'* (Box 4.1.3: 4 below).

Lack of health professionals to provide technical guidance and offer on-the-job skill training

CHWs and community group members stressed the need to have health professionals at the community clinic. A CHW and a community group member explained that absence of health professionals like doctors and nurse-midwives at the community clinic often means that the CHWs lack technical supervision and support when they are delivering health services especially with their limited competency in making a diagnosis and managing cases. As such, these CHWs make clinical errors which lead to dissatisfaction of service recipients and sometimes deaths (Box 4.1.3: 5 below; box 4.1.3: 22 appendix).

Box 4.1.3 (Knowledge and skills)	
3	*They did capacity building, and it was good. Now, they are trained, they are giving quality services. CHW` service is better now after being trained"* KII 007, Programme staff
4	*"CHWs need to know more details about maternal health. There are gaps in their education. If someone needs an episiotomy, they cannot do it. Sometimes if any CHW knows it, she is not confident to do it. If CHWs can perform episiotomy then maternal and neonatal death would be reduced"* KII 004, Nurse-midwife
5	*"We have a shortage of doctors here. Sometimes we make mistakes that cause newborn deaths. More doctors in every shift would be very effective to provide maternal services"* KII 002, FWA

Factors motivating CHWs

A nurse-midwife and CHWs noted that CHWs' intrinsic motivation relates to altruistic goals while a programme staff and CHWs described CHWs' extrinsic motivators in relation to monetary rewards and job security. The intrinsic factor:

Job satisfaction from achievement of altruistic goals

A nurse-midwife agreed with CHWs that CHWs experience job satisfaction from working for their community's well-being and seeing positive outcomes from their health service delivery. A CHW described how *'people's happiness and well-being'* serve as an adequate reward (Box 4.1.3: 6 below; box 4.1.3: 23 appendix). She narrated how some of the CHWs driven by altruistic goals go the extra mile to provide financial assistance to service recipients (especially those from very low economic backgrounds) because *'life is more important than money'* (Box 4.1.3: 24 appendix).

The CHWs are also driven by extrinsic factors such as:

Regular and timely payment of salary and allowances

A CHW described how their monthly salaries help to improve their financial status and assist their families to *'maintain family cost'* (Box 4.1.3: 7 below). She explained that motivation from remuneration depends on regularity and timeliness in the payment of salary and allowances (e.g. periodic bonuses). She emphasised the need to reimburse costs incurred due to job-related activities such as *'transport cost for collecting medicine'* from sub-district health complex (Box 4.1.3: 25, 26 appendix).

Job security

CHCPs, who are salaried by time-bound projects expressed concerns about job security with approaching completion of the project. One of the CHCPs lamented that *'only government and God knows'* what the future holds for them (Box 4.1.3: 8, below; box 4.1.3: 27 appendix).

Certificate award without monetary reward

A CHW complained of an absence of financial reward for high-performing CHWs, stressing that award of a certificate was not adequate compensation for meritorious

performance. Especially as certificates cannot be used *'to buy food in the market'* (Box 4.1.3: 9 appendix).

Box 4.1.3 (Motivating factors)	
6	*"I am working for my community, saving mothers and babies and making them happy. Community people`s happiness and well-being are my encouragement."* KII 007, CHCP
7	"*I am earning from it and can help my husband to maintain family costs."* KII 006, CSBA
8	*"Project was up to June 2014, but I heard that it was extended till 2016. After that, only government knows, and God knows."* KII 004, CHCP
9	*"Previously, it was 500 or 1,000 taka and a certificate. Now, only certificate is given. You can't use the certificate to buy food in the market."* KII 008, HA

Health system factors influencing CHWs' MNH service delivery

Overall, programme staff emphasised the need for clear policies on CHW scope of practice and job demand (human resources) while programme staff and CHWs complained about inadequate supplies and poor logistic support for supervision.

Issues relating to human resources are:

Frequent changes in CHW scope of practice

A programme staff explained how the government and NGOs continually expand CHW scope of practice to include '*whatever new health area that is coming to the community'* forcing them to *'know everything'*. Consequently, CHWs are forced to multitask rather than becoming proficient at the skills related to their initial job description (Box 4.1.3: 10 below).

Inter-cadre conflicts from lack of clarity in work schedule

Even though policy suggests that HAs and FWAs are supposed to take turns to stay in the community clinic, a CHCP complained of FWAs and HAs spending less than the stipulated working hours at the community clinic. FWAs and HAs are said to hide under the excuse of providing services in the community; thereby staying away from the community clinic (Box 4.1.3: 11 below).

Competing demand for CHWs at the community clinic limits their community activities: A programme staff explained the challenge with the recent requirements in which FWAs and HAs are expected to spend half of their working week in the community clinic thereby limiting the community coverage and work-related targets through community activities such as home visits (Box 4.1.3: 12 below; box 4.1.3: 28 appendix).

Box 4.1.3 (Health system-human resources)	
10	*"Whatever new thing that is coming to our community, this will be given first to the family welfare assistants. She is given IMCH [Integrated Maternal and Child Health] training; she is given nutrition training. They have to know everything because they are the door worker. They have to know EPI [Expanded Programme on Immunisation] ...And I have told you from the very beginning that they are only involved with our family planning services. One person cannot do many people's job. It is a challenge for them and a challenge for us because we cannot monitor them properly"* KII 007, Programme staff
11	*"The health assistant is not regular here. So, I need to manage everything and prepare a monthly report."* KII 007, CHCP
12	*"Lack of human resources is the main obstacle. They are doing clinic service, domestic health service and EPI [Expanded Programme on Immunisation]. For one person, doing these work is really hard."* KII 006, Programme staff

Programme staff and CHWs emphasised the need for an adequate supply of infrastructure and logistics that will aid service delivery:

Inadequate infrastructure and amenities

A CHW lamented the poor or non-functional infrastructure and amenities at the community clinics. She mentioned irregular power supply which makes it difficult to power the fan during very warm weather and poor internet connectivity that makes it difficult for them to send their online reports (Box 4.1.3: 13 below; box 4.1.3: 29 appendix).

Inadequate logistic support for supervision and service delivery

Programme staff and CHWs explained that CHWs lack access to transport facilities for conducting home visits and community outreaches. Programme staff added that CHW supervisors equally find it difficult to accompany CHWs on home visits as part of their

field supervision because of inadequate transport facilities. A CHW complained of poor road networks leading to hard-to-reach communities stating that *'in many communities, there is no road to reach them'*. She explained that CHWs resort to walking long distances to deliver services to a few households in these communities with consequent low coverage (Box 4.1.3: 14 below; box 4.1.3: 30, 31 appendix).

Box 4.1.3 (Health system-supplies)	
13	*"For sending the report online we need to wait for long because here, internet connection is very weak"* KII 001, CHCP
14	*"We face problems carrying logistics. We do not have any vehicle and in many communities, there is no road to reach them, so we need to carry the logistics and medicine on our own"* KII 005, CSBA

Programme staff and CHWs explained how supervision influences CHWs' service delivery and how policy and availability of infrastructure affect CHW supervision.

Supervision focuses on reports and targets rather than being supportive

A CHW complained that supervisory visits by supervisors tend to focus solely on achievement of targets without being supportive in a way that identifies and resolves challenges to service delivery (Box 4.1.3: 15 below).

Expanding CHW scope of practice hinders effective monitoring and supervision

A programme staff complained about the challenge of monitoring activities of CHWs with their expanding scope of practice. Especially as it becomes difficult to know the limit of their scope of practice that will guide monitoring and supervision (Box 4.1.3: 10 above).

Electronic reporting system aids district level monitoring and supervision

A programme staff explained that electronic reporting system helps *'district level health managers to monitor and supervise'* the achievements of the various community clinics. Particularly, these electronic reports inform how their supervisory visits are prioritised (Box 4.1.3: 16 below).

	Box 4.1.3 (Health system-supervision)
15	*"No one supervises us. If someone supervises, that would be better. The health inspector just comes, sometimes to sign the attendance register. No one listens to us"* KII 007, CHCP
16	"*Another good point is the monthly reporting system that is helping district level health managers to monitor and supervise all the community clinics in every district.*" KII 005, Programme staff

Community-related factors influencing CHWs' MNH service delivery

All the stakeholder groups described the various community-related factors that influence CHWs' MNH service delivery. Overall, sociocultural factors influence how CHW services are perceived by community members while financial consideration tends to influence decisions to seek or comply with CHW services.

These factors include:

Cultural beliefs which often result in poor health-seeking behaviour

A programme staff, a doctor and a CSBA expressed concerns that many community members tend to refuse facility-based deliveries because of religious norms which discourage exposure of women in a public facility. This refusal was often at the instance of *'mothers-in-law'* who prefer home deliveries (Box 4.1.3: 17 below; box 4.1.3: 32, 33 appendix).

Advocacy and type of publicity given to health service

CHWs expressed satisfaction with the support provided by members of the community group. This support includes mobilising community members to access health services provided by CHWs. They explained how support from the community group members (comprising influential people in the community) fosters social acceptance of CHWs and they *'feel happy'* with it. Especially in situations when community members make *'bad comments'* about CHWs because they promote contraception. They added that advocacy and enlightenment by members of the community group has led to a shared understanding that *'taking contraceptive is good'*. Consequently, CHWs and their services are better accepted by community members. However, CHWs complained about poor commitment from some community group members due to busy schedules

with many of the CHWs not getting the needed support (Box 4.1.3: 18 below; box 4.1.3: 34-35 appendix).

Proximity, availability of services and commodities at the community clinic

Programme staff explained community members' preference for CHWs' MNH services because they provide services in the community clinics which are only a few minutes' walk from *'their doorstep'* (Box 4.1.3: 19 below). A service recipient, however, advocated that all essential health services should be made available at the community clinic to prevent unnecessary referral outside the community. She stated that referrals to health facilities that are far from the community may compromise the already poor health status of some service recipients who require urgent health care (Box 4.1.3: 36 appendix). A community group member emphasised the importance of having adequate stock of commodities to meet the needs of service recipients. The community group member explained that in situations where the community clinics experience stock out of drugs, the community members often accuse CHWs of drug misappropriation leading to confrontations from the community members (Box 4.1.3: 37, 38 appendix).

Financial constraints

A doctor and members of a community group explained that community members are *'very poor'* and may not be able to afford facility-based delivery. Hence, they resort to utilising services provided by unskilled birth attendants and may only seek CSBA services when *'complications'* occur, usually at a late stage. (Box 4.1.3: 20 below; box 4.1.3: 33 appendix).

Box 4.1.3 (Community-related factors)	
17	*"Cause of religious misunderstanding five years back, everybody wanted to do home delivery, but things are changing now."* KII 005, Programme staff
18	*"Nowadays, they [community members] listen to us. We are able to talk to them, and CG [Community Group] also help to change their views about us. We feel happy."* KII 006, CSBA
19	*"I told you earlier that community clinic is in the community. About 15 minutes or 20 minutes, maximum 30 minutes from the doorstep. Sometimes, the patients communicate with CHCP over the phone."* KII 008, Programme staff

	Box 4.1.3 (Community-related factors)
20	*"We are very poor people and cannot afford that much. A group has created a fund to help poor local people. If the government will help us to grow the fund, we will be able to help mothers and children."* FGD 001, Community group

4.2: Auxiliary Nurse Midwives (ANMs) and Accredited Social Health Activists (ASHAs) in India

4.2.0 Study participants in India

The principal researcher reviewed policy documents (Indian Nursing Council 2013; Ministry of Health and Family Welfare 2014a) and consulted with in-country partners to identify stakeholder groups for the study. The stakeholder groups included:

i) Programme staff of the national and subnational Ministry of Health and Family Welfare (MOHFW) and National Health Mission (NHM) including ASHA trainers.

ii) Doctors and lady health visitors who supervise ANMs and ASHAs.

iii) ANMs and ASHAs providing MNH services in the sub-centre and community.

iv) Members of the Village Health Sanitation and Nutrition Committee (VHSNC) and Women Group who support ANMs and ASHAs at the community level.

v) Women who have received MNH services from ANMs and/or ASHAs.

Table 4.2.1 illustrates the characteristics of the study participants. It shows that the stakeholder groups were largely or exclusively females except for the doctors. Lady health visitors and ANMs have the highest median duration working with/as CHWs while the doctors had the lowest median duration.

Among stakeholders whose median ages were assessed, service recipients had the lowest median age, followed by ANMs and ASHAs and lastly, members of VHSNC and women groups.

Table 4.2.1: Characteristics of the study participants in India

Stakeholder group	Total number of participants	Male: female ratio	Median duration working with/as CHWs (years)	Median age
Policy makers & programme staff	12	1:3	6.5	N/D
Doctors	2	2:0	3	N/D
Lady health visitors	4	0:4	15	N/D
ANMs	12	0:12	14.5	38
ASHAs	39	0:39	7	34
VHSNC members	12	1:3	6	45
Members of the Women group	8	0:8	8.5	43.5
Service recipients	13	0:13	N/D	26

N/D: Not documented

4.2.1 Characteristics of ANMs and ASHAs in India

The perspectives of the various stakeholder groups tended to align with policies on CHW characteristics. Where necessary, perspectives of the stakeholders clarified these policies on selection, training, remuneration, supplies used and supervision of ANMs and ASHAs.

Selection of ANMs and ASHAs

The policy documents provided detailed information on the educational requirements and considerations given to demographic characteristics when selecting ANMs and ASHAs. In addition, policies also describe ANM contract types while programme

staff and CHWs provided additional information to clarify the policies on CHW selection.

ANMs and ASHAs are selected based on educational qualifications and demographic attributes

As a policy, the NHM select ANMs based on certification from an accredited school of nursing and midwifery and success in the pre-employment examination. The ASHAs are selected by the local council, women groups and community members based on 10 years of formal education (Indian Nursing Council 2013; Ministry of Health and Family Welfare 2014a). Even though both cadres are expected to be females, less emphasis is placed on other demographic attributes of ANMs during the selection process (Indian Nursing Council 2013). Additional selection criteria for ASHAs relate to demographic criteria such as residence in the community, aged between 25-45 years, preferably married/widowed/divorced or separated (Ministry of Health and Family Welfare 2014a). A programme staff explained the preference given to divorced or widowed women and those from a relatively poor socioeconomic background. It is believed that the incentives these women earn by working as ASHAs, may help alleviate their financial challenges and create *'a sense of equity'* within the community (Box 4.2.1: 1 below). Another programme staff added that candidates with experience working with a health NGO are given preference during the selection of ASHAs (Box 4.2.1: 11 appendix). One of the ASHAs explained the importance of being confident and having *'good communication skills'* to be selected as an ASHA (Box 4.2.1: 12 appendix).

ANMs have different contract types

A policy document describes the two contract types of ANMs as regular and temporary contracts. Irrespective of contract type, however, all ANMs are employed using the same selection criteria (Ministry of Health and Family Welfare 2006). An ANM and a programme staff explained that ANMs on temporary contract are deployed to sub-centres in hard-to-reach and vulnerable communities classified by the government as non-tribal, tribal (remote) and satellite (terrorist-prone) communities. They augment the services provided by *'regular'* ANMs in these regions (Box 4.2.1: 2 below).

	Box 4.2.1 (Selection)
1	*"ASHAs are selected in the village by the villagers. She is supposed to be a resident of the village. She is basically a married woman who is between 25 and 45. There is also a criterion that you consider a divorced woman if you see that she is poor, you give preference so that you have that sense of equity."* KII 002, Programme staff
2	"*All ANMs usually hold the same qualification; it depends on where the vacancy lies at the time of recruitment, PHC, sub-centre or community level. I don't go to the field; all other ANM bring cases here and I do test them…"* KII 003, ANM

Training and career progression of ANMs and ASHAs

The reviewed policy documents provided details on training and career progression of ANMs and ASHA while a lady health visitor and an ASHA trainer provided additional information to clarify the policies. Both the policy documents and participants' perspectives provided similar information on the admission requirements, training duration and career progression of the two CHW cadres. In contrast to ANMs, who are selected based on prior pre-service training in a nursing and midwifery institute, ASHAs undergo pre-service training after selection. The training curriculum and duration also differ between these CHW cadres.

ANMs undergo a two-year structured training while ASHAs undergo spaced-out training of varied durations

As a policy, ANM candidates are expected to be aged 17-30 years and have 12 years of formal education to be considered for the two-year ANM training at an accredited school of nursing and midwifery (Indian Nursing Council 2013). ASHA training on the other hand, is accredited by the National Institute of Open Schooling and delivered by sub-district level ASHA trainers. The total duration of ASHA training is 28 days and consists of seven modules. An initial eight-day pre-service training provides an overview of health service delivery in the community and subsequently, they undergo a twenty-day technical training to be delivered in four sessions within 18 months of selection. ASHAs receive an additional 15-day training every year to strengthen their knowledge and skills from previous training sessions (Ministry of Health and Family Welfare 2014a). An ASHA trainer clarified that not all ASHAs

qualify for additional training as they are assessed few months after pre-service training for experiential knowledge and skills to know if they have *'been practising'* the skills gained from the previous training. She stated that this assessment qualifies them for the next round of training and ASHAs who have not performed well in the assessment may have to opt out of further training (Box 4.2.1: 3 below; box 4.2.1: 13 appendix).

Additional training or promotional exam is required for career progression

In line with policy, lady health visitors explained that ANMs who have had at least five years of work experience may qualify for a 6-month lady health visitor training which is a requirement for promotion to lady health visitors. Similarly, ASHAs who meet qualification requirement for ANM/GNM training schools are given preference for admission (Ministry of Health and Family Welfare 2014a; Indian Nursing Council 2013; National Rural Health Mission 2006) (Box 4.2.1: 4 below).

Box 4.2.1 (Training)	
3	*"We assess the knowledge level of ASHAs from the induction training. We identify ASHAs who have been practising the things, because they recall it and those who do not practise they can't recall it and may not continue for further training. For skills, we ask them, show me how you measure temperature, how do you wrap the baby…"* KII 005, ASHA trainer
4	*"After ANM, she will become a lady health visitor, then she will become block nursing officer at the block level and then public health nurse at the district level."* KII 002, Lady health visitor

Remuneration of ANMs and ASHAs

Policies on remuneration explicitly state that the government pays salaries and allowances to ANMs while ASHAs are paid performance-based incentives. Programme staff clarified that ANM allowance rates vary with contract type and location.

ANMs are paid salaries while ASHAs receive performance-based incentives

As a policy, the government pays ANMs monthly salaries while ASHAs receive performance-based incentives for specified tasks with a specific amount attached to each of these tasks. Either cadre, however, is eligible to receive incentives for

promoting a permanent method of contraception (Ministry of Health and Family Welfare 2014a) (Box 4.2.1: 5 below).

Type of allowance and amount vary by cadre and contract type

A policy document shows that ANMs receive allowances for communication with the PHC, transport to distant households and for conducting home deliveries in hard-to-reach households (Ministry of Health and Family Welfare 2014a). A programme staff clarified that ANM allowance rate varies with contract type. ANMs on regular contracts have higher allowance rates than those working on temporary contract basis. Among ANMs working on temporary contract basis, those working in satellite regions (areas with security challenges) have higher allowance rate than those in tribal (remote) areas and the lowest allowance rate applies to ANMs in non-tribal non-satellite regions (Box 4.2.1: 6 below).

ASHAs, on the other hand, collect allowance for participating in community-level meetings (Ministry of Health and Family Welfare 2014a). An ASHA and a medical officer added that the payment invoice documenting ASHAs' monthly deliverables are verified and countersigned by ASHA supervisors, ANMs and medical officers before payment of the performance-based incentives (Box 4.2.1: 14, 15 appendix).

Box 4.2.1 (Remuneration)	
5	*"Only one of us will get the incentive, if a woman says this case is with the ASHA then ASHA gets the incentive and if she says the case is of ANM, then the ANM would get it."* KII 001, ANM
6	*"Salary is the same for satellite, tribal or non-tribal area but allowances are different…satellite is terrorist belt and gets more than tribal and tribal gets more than non-tribal.*" KII 012, Programme staff

Supplies used by ANMs and ASHAs

A policy document shows that ANMs and ASHAs are provided with diagnostic kits, equipment, drugs and commodities to provide MNH services. Additionally, ASHAs are provided with means of identification such as ASHA uniforms and ID cards (Ministry of Health and Family Welfare 2014a).

ANMs and ASHAs explained how they replenish their stock of supplies at the link PHC after submission of monthly reports which account for the previous stock of supplies (Box 4.2.1: 7, 8 below; box 4.2.1: 16, 17, 18 appendix).

	Box 4.2.1(Supplies)
7	*"PHC has given us kits, so we have to give them a report which we have at the sub-centre level."* KII 002, ANM
8	*"We receive medicines from PHC, and we need to make a demand, and whenever PHC vehicle comes here it brings them, or we visit PHC and bring the material. We document these in the register and keep some stock with us and send some stock to ASHA."* KII 004, ANM

Supervision of ANMs and ASHAs

Policies and perspectives of the study participants describe the various stakeholders involved in direct supervision of ANMs and ASHAs and others with oversight role. While the forms of supervision tend to be similar, the focus and frequency of supervision tend to vary across these stakeholders.

Supervision entails direct observation, review of reports and review meetings

Overall, the frequency of supervision tends to vary with the position of the supervisor within the health system organogram. The direct supervisors, lady health visitors for ANMs and ASHA supervisor for ASHAs, provide regular technical supervision while the PHC medical officer, sub-district programme staff and VHSNC provide additional oversight through periodic review meetings (Ministry of Health and Family Welfare 2014a). The CHWs and their supervisors at various levels added that supervisors monitor and support clinical competence during home visits, review their reports and registers against the work plan and targets, and discuss challenges to service delivery (Box 4.2.1: 9 below; box 4.2.1: 19, 20 appendix). One lady health visitor explained that lady health visitors play the lead role in verifying and validating ANM and ASHA reports. She stated her role in comparing ANM and ASHA reports to ensure *'there is no discrepancy'* (Box 4.2.1: 21 appendix).

At the state level, programme staff described how they use the level of performance of each sub-district to prioritise supervisory visits. They explained that sub-district performance reports are also verified through phone calls to the service recipients.

The districts with relatively poor performance are identified based on analysis of the electronic reports and are prioritised for field visits during which the existing challenges preventing achievement of targets are identified and addressed (Box 4.2.1: 22-24 appendix).

Stakeholders' coordination platforms have an oversight role

ANMs' and ASHAs' supervisors described the various sub-district, facility and community-level coordination platforms where the achievements are reviewed, and stakeholders' feedback are provided. In contrast to sub-district and facility-level coordination platforms which focus on performance targets, those at the community level tend to focus on addressing CHWs' challenges and community needs and priorities.

At the PHC and block levels, there are weekly and monthly review meetings appraising ANM service delivery and the key achievements against the work-related targets. High performing ANMs are commended based on achievement of targets (Box 4.2.1: 10 below; box 4.2.1: 25 appendix). The ANMs and ASHAs participate in the VHSNC meeting, where feedback (such as poor treatment of service recipients) from the service recipients are conveyed to the CHWs and VHSNC members make suggestions on how to improve service delivery (Box 4.2.1: 26-30 appendix).

Box 4.2.1 (Supervision)	
9	*"ASHA is expected to make seven visits to the newborn's house from the day of birth to 42nd. We go with ASHA during one of these seven visits and see how she communicates with the mother."* KII 007, ASHA supervisor
10	*"Meetings are conducted every week in the PHC and monthly in the Taluka where they ask about our work."* KII 008, ANM.

4.2.2 The scope of practice of ANMs and ASHAs in MNH care

Table 4.2.2 illustrate ANM and ASHA scope of practice in MNH care. As a policy, both cadres have key roles in health promotion and disease prevention while ANMs have additional roles in providing obstetric care, treatment of neonatal infection and contraception.

Programme staff, lady health visitors, ANMs and ASHAs described how ANM scope of practice is influenced by their contract type. They explained that regular ANMs provide services only at the sub-centre and PHC while ANMs on temporary contracts provide services at the sub-centre and prioritise home visits in the community. These ANMs conduct home visits in the company of ASHAs who reside in the community. Both ANMs (on a temporary contract) and ASHAs give priority to households with pregnant women and nursing mothers while the non-priority households are followed-up through phone calls to discuss health challenges within such households (Box 4.2.2: 3-6 appendix).

ANC services provided by ANMs and ASHAs

Policy documents and stakeholders' perspectives show that ANMs and ASHAs provide services based on the stage of the pregnancy. While ANMs focus on obstetric management of recipients, ASHAs tend to focus on health education and track the services received by pregnant women.

ANMs and ASHAs identify pregnant women in the community

As a policy, ANMs and ASHAs are expected to identify community women who recently got pregnant (Ministry of Health and Family Welfare 2014a). ANMs and ASHAs explained that ASHAs identify pregnant women in the community through regular monitoring of women's menstrual cycle. This approach entails paying more attention to *'unsafe couples'* who are not on any form of contraception. In contrast, ANMs rely on service recipients to report their pregnancy when they visit the sub-centre. The ANMs confirm these pregnancies using the urine pregnancy test kit (Box 4.2.2: 1 below; box 4.2.2: 6-8 appendix).

ANMs focus on obstetric management while ASHAs provide health education

Service recipients, ASHAs and ASHA supervisors explained the role of ASHAs in health education and tracking receipt of ANC services. They stated that ASHAs provide health education on nutrition and hygiene and assess pregnant women for obstetric danger signs. Furthermore, they emphasise facility-based ANC services and review service recipients' ANC booklets to confirm that they are up-to-date with the essential ANC services (Box 4.2.2: 9-14 appendix).

Service recipients, ANMs and lady health visitors mentioned that ANMs assess recipients for features of high-risk pregnancies through clinical and obstetric examination. ANMs assess the pregnant women during sub-centre level health camps and they request for laboratory investigations to diagnose pre-existing or pregnancy-related health conditions (Box 4.2.2: 14-17 appendix). Patients identified as having features of high-risk pregnancies are referred to PHC-level health camps for further management by a medical officer (Box 4.2.2: 18 appendix).

ASHAs facilitate birth plan and emergency preparedness

A service recipient and an ASHA stated that ASHAs facilitate birth plan and emergency preparedness. They explained that ASHAs provide these services towards the expected date of delivery by educating the pregnant women and family members on the clinical signs of labour and materials they need to take to the health facility at the onset of labour (Box 4.2.2: 19, 20 appendix).

Labour and delivery services provided by ANMs and ASHAs

The CHW cadres have different roles during labour and delivery:

ASHAs act as birth companions

A service recipient narrated how ASHAs facilitate ambulance transport of women in labour and serve as birth companions, accompanying women in labour to the sub-centre (Box 4.2.2: 2 below).

The ANMs manage labour and conduct deliveries

As a policy, ANMs monitor labour and conduct deliveries of normal pregnancies in the sub-centre or conduct home deliveries on request (National Rural Health Mission 2009). For women with preterm labour, they provide an initial dose of corticosteroid (between 24 weeks and 34 weeks) before referring them to an emergency obstetrics and newborn centre. However, if a referral is not possible at that time or referral is refused, they are expected to provide the complete treatment course (Ministry of Health and Family Welfare 2014a).

ANMs and a programme staff explained ANMs' roles in monitoring the progress of labour using a partograph, conducting deliveries of low-risk pregnancies and

ensuring that nursing mothers breastfeed within the first 30 minutes of delivery (Box 4.2.2: 21-23 appendix). Periodically, ANMs join the General Nurse-Midwives (GNMs) to monitor labour and conduct deliveries of referred cases at the link PHC with supervision by the medical officers (Box 4.2.2: 24, 25 appendix). Depending on the indication for these referrals, ANMs may be required to augment labour and give episiotomy (surgical incision) to facilitate ease of delivery (Box 4.2.2: 26 appendix).

ASHAs provide psychosocial support during labour and delivery

ASHAs described their role in providing psychosocial support to the service recipients in labour. Especially as the service recipients tend to view them (ASHA) as the familiar face in the labour room since family members are not allowed into the labour room (Box 4.2.2:27 appendix). Furthermore, the ASHAs assist the health team with less technical tasks such as checking the birth weight of the baby or wrapping the newborn to prevent hypothermia (Box 4.2.2:28 appendix).

Postnatal care services provided by ANMs and ASHAs

While the ANMs provide facility-based care in the first three days post-delivery, ASHAs and ANMs (when available) provide community-based care during joint postnatal home visits (Ministry of Health and Family Welfare 2014a).

ANMs added that they monitor the nursing mothers for danger signs in the postnatal period such as excessive bleeding from the vagina. Following discharge from the health facility, they conduct home visits with ASHAs using a checklist to assess for danger signs in the postnatal period. During such visits, they check for vaginal bleeding and rule out postpartum infection by asking service recipients for the colour and odour of their vaginal discharge (lochia) and history of fever (Box 4.2.2: 3 below; box 4.2.2: 29 appendix).

Neonatal care services provided by ANMs and ASHAs

Similar to PNC, the roles of ANMs and ASHAs tend to vary with the age of the newborn:

ANMs provide early neonatal care in sub-centres while ASHAs provide home-based care

Policy documents illustrate the roles of ANMs in ensuring that the newborn is kept dry and warm to prevent hypothermia, weighing the newborn to identify low birth weight babies that may warrant referrals, facilitating breastfeeding to prevent hypoglycaemia and conducting newborn resuscitation when required. Within the first 48 hours after delivery (while nursing mother and newborn are still within the sub-centre or PHC), the ANMs are expected to administer a single dose of Vitamin K injection to the newborn (Ministry of Health and Family Welfare 2014b). ANMs added that they administer polio, BCG and hepatitis vaccination in the sub-centre while the ASHAs assist them with less technical roles such as checking the birth weight, cleaning the baby and ensuring thermal care by making sure that the baby is covered with clothing (Box 4.2.2: 4 below; box 4.2.2: 30 appendix).

As a policy, ASHAs (or in the company of an ANM) conduct home visits to identify danger signs in the newborn that require a referral. They also conduct additional home visits for home births, low birth weight, preterm and sick newborns. During such visits, they ensure the thermal care of the newborn, facilitate exclusive breastfeeding, cord care, eye care and monitor newborn (especially low birth weight babies) for weight gain. Furthermore, they provide health education on the importance of vaccination, encourage the nursing mother to take the newborn for vaccination and track newborn vaccination using vaccination cards. For cases of suspected infection, ANMs may provide a pre-referral dose of antibiotics to babies as per policy (Ministry of Health and Family Welfare 2014a; Ministry of Health and Family Welfare 2014b).

Family planning services provided by ANMs and ASHAs

The CHWs provide health education on all forms of family planning but the type of family planning provided depends on the level of education and additional training received.

ANMs and ASHAs provide health education on family planning services

The ANMs and ASHAs explained that they provide health education on family planning targeting community members at different stages of their reproductive lives. The ANMs target adolescent girls in secondary schools to raise awareness on family planning. It is perceived that married women who have no previous knowledge of

contraception *'don't easily open up to health care providers'* when family planning is discussed, and it is better to raise the awareness before they get married (Box 4.2.2: 5 below). Similarly, the ASHAs identify and educate newly married couples who may *'want some freedom'* (to attend to their educational pursuit) and do not desire immediate conception (Box 4.2.2: 31, 32 appendix). Furthermore, they encourage pregnant women and nursing mothers to access post-delivery contraception. However, the content of the health message and form of contraception (short-acting or long-acting and permanent methods) recommended to women depend on the number and gender mix of their children (Box 4.2.2: 33, 34 appendix).

ANMs and ASHAs provide barrier methods and short-acting reversible contraceptives

As a policy, ANMs are expected to provide condoms, oral contraceptive pills and intra-uterine contraceptive devices free-of-charge at the sub-centre while ASHAs deliver condoms and oral contraceptive pills (ASHAs trained on family planning) to recipients' home at a minimal charge (Ministry of Health and Family Welfare 2014a). ANMs and ASHAs explained that they neither encourage nor provide contraceptive injection. This is because service recipients sometimes complain of adverse effects such as irregular menstrual flow or excessive menstrual flow which may result in anaemia (Box 4.2.2: 35-38 appendix).

Box 4.2.2 (Scope of practice in MNH care)	
1	*"Among the eligible couples, the woman should be between 15 and 49 years of age. If she has done the operation, then we don't consider her in the list. We refer to them as safe couples. ASHA concentrates more on the'unsafe couple' and visits once a month to ask whether the woman had her menses?When a woman reports that she missed her period for two months, then ASHA informs the ANM. Each village conducts the camp and women are called and UPT [Urine Pregnancy Test] test is being done.*" KII 008, ASHA supervisor
2	*"…they [ASHA] gave us their mobile number and told us to call them when the pains start. When we call them, they come along with the vehicle [ambulance] and take us to the health facility."* FGD 001, Service recipient
3	*"…after the mother and baby are discharged we have a visit every week. Whether the mother has any bleeding after going home and if she has, is it smelly or anything? If she has a fever, if that is the case, then, we send her to the PHC."* KII 008, ANM
4	*"ANM gives BCG first, triple and hepatitis. We give polio in drop form. If it is premature, then we provide vitamin K before referral."* KII 002, ANM

5	*"...because women don't easily open up to health care providers, so we arrange camps in secondary school, example 10th standard girls. We inform them about the menstrual cycle, to raise awareness in adolescent groups."* KII 007, ANM

Table 4.2.2: The scope of practice of ANMs and ASHAs in MNH care

Scope of practice	ANM	ASHA
Antenatal care		
Identification of pregnant women in the community		
Screening for danger signs		
Clinical assessment for high-risk pregnancies		
Provision of iron and folic acid to prevent maternal anaemia		
Calcium supplementation where needed		
Tetanus vaccination		
HIV Counselling and Testing		
Provision of long-lasting insecticidal nets (LLINs) to prevent malaria		
Provision of Intermittent preventive treatment in pregnancy (IpTP) to prevent malaria		
Facilitation of birth and emergency preparedness		
Labour and delivery		
Skilled birth attendance		
Accompany women (pregnant women in labour) to the health facility		
Provision of transport support to and from a health facility		
Administration of prophylactic uterotonics to prevent postpartum haemorrhage		
Initial management of postpartum haemorrhage (e.g. uterotonics, uterine massage)		
Facilitation of early breastfeeding initiation (within 30 minutes post-delivery)		
Postnatal care		
Facilitation of sustained breastfeeding		
Counselling on birth spacing and post-delivery family planning		
Identification of danger signs and subsequent referral to a health facility		
Provision of ART support to women living with HIV		
Neonatal care		
Immediate thermal care		
Neonatal resuscitation when required		
Administration of Vitamin K		
Assessment for danger signs		
Facilitation of hygienic cord and skin care		
Facilitation of Kangaroo mother care (KMC) for preterm babies and babies with		

Scope of practice	**ANM**	**ASHA**
birth weight less than 2500g	[green]	[green]
Childhood vaccination: BCG and oral polio	[green]	[red]
Promotion and support of timely ARV prophylaxis in HIV-exposed newborns	[amber]	[amber]
Family planning		
Barrier methods (male and female condoms)	[green]	[green]
Oral contraceptives (progestin-only and combined)	[green]	[green]
Hormonal contraceptive injection	[red]	[red]
Intra-uterine devices	[green]	[red]
Implant	[amber]	[amber]
Permanent (Irreversible) birth control	[amber]	[amber]

Data sources :
1.Policy documents :www.indiannursingcouncil.org/pdf/amendments-anm-syllabus.pdf
http://www.mohfw.nic.in/WriteReadData/l892s/5658789632541236.pdf.

2. Key informant interviews and focus group discussions

Key	
[green]	Provide
[amber]	Refer
[red]	Do not provide

CHW scope of practice template, adapted from *Strengthening the capacity of community health workers to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health* by UNAIDS et al., 2015

4.2.3 Factors influencing ANMs' and ASHAs' MNH service delivery

Description of the factors influencing service delivery of ANMs and ASHAs were drawn from responses of the ANMs, ASHAs and lady health visitors. These descriptions cut across the various sub-themes to show that CHW's attributes, knowledge and skills, motivation, formal health system and community-related factors influence service delivery.

Attributes influencing the suitability of ANMs and ASHAs for health service delivery

These attributes relate to the residence and ability to communicate in the languages spoken by the people:

Residence within the community aids better access and health service coverage

One lady health visitor emphasised the need for ANMs to reside in the community. She explained that ANMs who reside in the community are better placed in delivering services to the community as they are more accessible to the population as opposed to providing health education through '*phone*' calls (Box 4.2.3:1 below).

Diversity of community dialects makes communication difficult

One lady health visitor pointed out that the diversity of language within the same community can be a challenge to ASHAs' communication despite being from the same community. She stated that *'every 12 km, the language differs in tone or meaning'*. Therefore, there may be individuals from nearby communities who speak slightly different dialects of the major language of the community thereby making communication difficult (without an interpreter). Particularly, when interacting with individuals *'with a low education background or illiterate community members'* who may not speak a popular language like Hindi which is the major language in the country (Box 4.2.3:2 below).

	Box 4.2.3 (Attributes)
1	*"If one wants to do a perfect work, she will have to stay in the village… even if she does not make visits, people will go to her on their own. Knowing things on the phone is a different thing. However, if she lives there, her contacts with people will increase, her work becomes easier."* KII 002, Lady health visitor

	Box 4.2.3 (Attributes)
2	*"Although ASHA is from the same community, but every 12 km, the language differs, maybe regarding tone or meanings. There are some words which differ in meanings, though they are commonly used. So, ASHA has to take care of all these things especially when interacting with people from the low educational background or illiterate community."* KII 001, Lady health visitor

Factors influencing knowledge and skill acquisition

These factors relate to the time that CHWs spend out of their daily routine to attend training.

Long-duration residential in-service training affects CHWs' routine

An ANM and an ASHA complained of the inconvenience caused by long-duration residential training. They described how it takes them away from their families. Consequently, they expressed preference for training courses delivered within or close to the community (Box 4.2.3: 3,4 below).

	Box 4.2.3: (Knowledge and skills)
3	*"... it is a residential training, but women generally do not like to leave their houses and go so far. All of the training I attended were at PHC level only, considering the convenience"* KII 001, ASHA
4	*"...and again, lady health visitor training is for six months; six months you have to stay away from family to some other place. I cannot leave my family and go there; we have small kids. Still, we have several other things to be taken care of, so due to that, it's not feasible. So, I didn't take that training."* KII 008, ANM

Factors motivating ANMs and ASHAs

Description of factors motivating ANMs and ASHAs largely reflects the responses of ANMs, ASHAs and programme staff. While the ANMs and ASHAs complained about their challenges, programme staff provided explanations on the measures taken by the government in addressing these challenges. Overall, ANMs complained about job security and career progression in contrast to ASHAs who complained about the inadequacy of the performance-based incentive scheme. Factors motivating ANMs

and ASHAs are largely extrinsic factors such as recognition, monetary consideration and job security.

Awards for meritorious performance

A programme staff described how ASHAs are motivated by awards. The programme staff mentioned the annual monetary awards given to ASHAs with outstanding performance in attendance of health events (or meetings) and service coverage (Box 4.2.3: 5 below).

Time-consuming activities without additional incentives

ASHAs explained the discouragement they face from providing services that are time-consuming and prevent them from carrying out their daily chores but do not attract any incentive. Such tasks include home visits in which they are not paid incentive until the recipient access the promoted health service. Consequently, they feel discouraged when community members do not accept the health services especially as some of their performance-based incentives depend on acceptance and utilisation of health services by community members. They added that there should be additional incentives for additional tasks. The discouragement is aggravated when their family members complain that they abandoned their domestic chores, *'wandering here and there'* without earning any money. Consequently, ASHAs stressed the importance of having *'a fixed monthly salary'* regardless of the amount, even if it is *'2 rupees'* (Box 4.2.3: 6 below; box 4.2.3: 33-36 appendix).

Stakeholders differ on whether ASHAs should be paid salary or given performance-based incentives

There were arguments and counter-arguments within and across stakeholder groups on whether ASHAs should continue with performance-based incentives or be paid a monthly salary. ASHAs stated that being paid salary guarantees that they will earn some money every month. A programme staff and an ASHA, however, argued that ASHAs' achievement of their work-related targets will inadvertently suffer if ASHAs have regular salary rather than performance-based incentives (Box 4.2.3: 7 below; box 4.2.3: 37 appendix).

Difference in ASHAs' performance-based incentives

A programme staff stated that ASHAs in tribal regions earn less performance-based incentives than their colleagues in non-tribal regions. He explained that pay rate per task is the same irrespective of the location of an ASHA but the lower target population in tribal areas often means that ASHAs in these areas have fewer service recipients and consequently lesser incentive (Box 4.2.3: 8 below).

ASHAs may be pressured to provide services beyond their competency

ASHAs stated their displeasure when pressured to handle situations that they are not trained to manage (such as delivery of a woman in labour during transportation to the health facility). Especially as there may be no health professional within reach to provide technical assistance (Box 4.2.3: 9 below; box 4.2.3: 38 appendix).

Blaming ANMs and ASHAs for unpleasant health outcomes

ANMs and ASHAs stated that they get discouraged when family members of service recipients blame them for poor health outcome. These family members blame them, citing negligence on their part for the unpleasant outcome. Worst affected are the ASHAs who reside within the community with the family members of the affected recipients (Box 4.2.3: 10 below; box 4.2.3: 39, 40 appendix).

ANMs' unrealistic work-related targets and job security

ANMs working on a contract basis complained of unrealistic indicator-based targets which do not reflect the current realities, especially as their contract renewal depends on the achievement of these targets. They explained that even though the fertility rate has gone down because of the various family planning campaigns, the government still expects a high number of facility-based deliveries. ANMs working on contract basis complained of job insecurity as the continuity of their jobs depends on the achievement of targets and two ANMs narrated how they constantly exercise concerns about job security. A programme staff acknowledged that achieving targets in *'hilly areas with scattered populations'* may be difficult. Consequently, this challenge was preventing the ANMs from achieving target relating to coverage of essential services (Box 4.2.3: 11 below; box 4.2.3: 41, 42 appendix).

Age-limit for lady health visitor training may prevent career advancement

Career advancement of ANMs through the 6-month lady health visitor course serves as a source of motivation. However, an ANM complained that setting an age limit for lady health visitor training serves as a constraint for those seeking career advancement but have already exceeded the age limit for the training (Box 4.2.3: 12 below).

Box 4.2.3 (Motivating factors)	
5	*"There is a programme called ASHA award, we grant two types of awards, one to that ASHA who earned the maximum incentives during that year, …the second one goes to someone who has done a substantial work, has saved someone's life, has performed very well in the community, or conducted all the VHSNC, or was present for all the immunisation sessions. Such ASHAs are also selected and awarded…This is done annually. We give it in the form of cash."* KII 011, Programme staff
6	*"…we get orders from the authority that they want a list of handicapped people in the village, we keep aside all the work, but we do not receive any incentive or money for that work."* FGD 003, ASHA,
7	*"To tell you the truth, the more we work the more benefits we will receive. That is why we work hard."* FGD 001, ASHA
8	*"ASHA is there for 1,000 population. In tribal areas, there may be 800 or 700, others are having 1,500 population and we are all working for the same indicator. Among 1,500 population there may be 1,000 cases of an indicator, whereas among 800 population the cases may be 500 or 600, it affects the incentives by 50%. Some ASHAs receive more [incentives] and some receive less."* KII 011, Programme staff
9	*"… if the doctor is not available in the PHC and we have to take ANC case to the General hospital [secondary-level care] and in an emergency she delivers on the way. Other times, the ambulance is not available and the woman in labour is still with us in the community…"* FGD 003, ASHA.
10	*"…we feel guilty because we stay in the villages and the people see us daily."* FGD 003, ASHA
11	*"If there is a target of 10 ANC and after roaming the field if we find only 8 ANC then they [government] ask where are the remaining 2 ANCs? So, if they are not there, from where do we bring them? According to the government, if there is 1,000 population, there are at least 110,120 capable couples in a year who will give birth...but the population over there is 500, all old aged people, so hardly do we find 5 ANC in a year...and now, people stop after 2 or 3 children."* KII 010, ANM

Box 4.2.3 (Motivating factors)	
12	*"Now that I have crossed 45 years, I won't be able to study to become a lady health visitor."* KII 008, ANM

Health system factors influencing service delivery

The health system factors relate to policies, human resources and logistic issues that affect supplies and supervision of CHWs.

Policies influencing ASHA's service delivery reflect a consensus in the opinions of ASHAs and the programme staff:

Expanding scope of practice of ASHAs

A programme staff complained that various NGOs (supporting diverse health programmes) continue to add to the scope of practice of ASHAs thereby making it difficult for them to focus on a specific health area (Box 4.2.3: 13 below).

Fragmentation of community health programmes leads to increased workload and uncoordinated remuneration sources for ASHAs

Programme staff, ASHAs and ASHA trainers complained that ASHAs fill different reports for different programmes (to collect their incentives) and this tends to increase their workload. Also, payment of their incentives from multiple sources makes it difficult for them to track organisations that have paid and those that are defaulting (Box 4.2.3: 13, 14 below; box 4.2.3: 43, 44 appendix).

Diminished role of ASHAs as community activists

A programme staff noted that the role of ASHAs as health activist is limited because they require various supervisors such as ASHAs' supervisors, ANMs and medical officers to countersign their invoice before payment of their performance-based incentives. Consequently, they cannot demand accountability from them *'telling them, this is your duty and you should do it'* (Box 4.2.3: 15 below).

	Box 4.2.3 (Health system-policies)
13	"*We find that ASHAs are pulled in all direction today because she is so visible. Every other programme seems to put tasks on ASHA like you know, leprosy programme, they want ASHA to do this, then you have malaria programme... you know you can't overburden somebody because she is visible, and she is there.*" KII 001, Programme staff
14	*"According to them [ASHAs], they are maintaining a lot of records, because until they are documenting, only till then, they will receive the incentives."* KII 005, ASHA trainer
15	*"ASHA is expected to work as an activist, ASHA knows that she gets the incentives through ASHA supervisor, ANM and PHC MO [Medical Officer]. Even if she wants to, she can't tell them that this is your duty and you should do it. Hence, the ASHA's role as an activist is dying in this process. Currently, she considers them [ASHA supervisor, ANM, and PHC MO] as her owners…"* KII 010, Programme staff

Human resource-related factors include the need for additional health workers and cordial relationship between ANMs and ASHAs. A comparison of the different perspectives on these factors show a consensus on the impact of human resource-related challenges on CHWs' service delivery and consequently their service recipients:

Need for higher cadre health worker

ANMs expressed the need for medical officers during emergencies. Otherwise, they may be forced to manage these emergencies alone when ambulances are not immediately available to effect referrals.

Similarly, an ANM, some ASHAs and service recipients emphasised the importance of having medical officers at the time of delivery as their presence provides a psychological boost for service recipients which consequently fosters trust in the health facility. Furthermore, the service recipients and members of the women group suggested that ANC camps facilitated by the doctors should be taken to the sub-centre level rather than limiting them to the PHC alone (Box 4.2.3: 16 below; box 4.2.3: 45-48 appendix).

ASHA supervisors alluded to community preference for health education sessions delivered by ANMs. They explained that since ASHAs *'belong to that village'*

community members are of the perception that *'she won't know anything'*. They added that *'patients want a doctor to attend their deliveries'* and not ANM working alone (Box 4.2.3: 49-51 appendix).

An inadequate number of ANMs and ASHAs results in extended working hours for the CHWs

Some ANMs and ASHAs complained that *'there is no time limit'* for their work. ASHAs stressed that community members call on them at any time irrespective of whether it is day or night, especially during emergencies requiring urgent attention. ANMs also stated that with deliveries at the sub-centre, they are *'on call all the days'* as they have to be with the pregnant women throughout the period of labour and delivery. ANMs pointed out that the health facility is inadequately staffed and this becomes a challenge when there are tasks competing for their attention and there are no other ANMs at the facility (Box 4.2.3: 17 below; box 4.2.3: 52-55 appendix).

Competing demands for ASHAs' time

Some ASHAs narrated the competing demands for their time. Particularly, they are expected to do their domestic chores before leaving their homes in the morning. However, when they do not leave home early enough, most of the service recipients would have left home to their farms or income-generating activities (Box 4.2.3: 18 below).

Cordial working relationship and communication between ANMs and ASHAs

Some ASHAs stated that cordial working relationship and communication enhances their service delivery emphasising that *'ANM's feedback'* is always important to them (Box 4.2.3: 19 below). This working relationship between ANMs and ASHA can be threatened when it becomes difficult to identify who should receive an incentive for referring the same service recipient for a permanent method of contraception as only one CHW is paid per recipient, while the other becomes *'jealous of her'* (Box 4.2.3: 56 appendix).

Occasional conflicts between ANMs and ASHA often strain their relationship and consequently result in communication gap between them. Such gaps tend to affect their work especially in relation to reconciling community and sub-centre health

data. In addition, it may lead to delays in communicating forthcoming health events to the ASHAs who mobilise community members to health camps (Box 4.2.3: 57, 58 appendix).

Remuneration-related rivalry between CHWs

ANMs explained that the rivalry between ANMs on *'regular'* and *'temporary'* contracts is due to the differences in allowances received by each group. ANMs on temporary contract complained that their salary and incentives are not comparable to that paid to "permanent ANMs" even though they have the same job description and provide the same set of health services. The contract-based ANMs also stated that they have work targets like ASHAs but have fixed salaries and do not receive performance-based incentives like ASHAs. On the other hand, ASHAs countered that their performance-based incentives are not comparable to ANMs' salary even though their job descriptions are similar (Box 4.2.3:20 below; box 4.2.3:59-62 appendix).

Box 4.2.3 (Health system-human resources)	
16	*"If we reach the hospital and come to know that the delivery is not possible there, the doctor should be there to do the check-up such as BP [Blood Pressure]. Sisters are there, they provide all the services, but in such times, we are a little scared, so specialist doctor is needed."* FGD001, Service recipient
17	*There is no time limit for this work; sometimes we have to go with women in labour at 12 midnight."* FGD 003, ASHA
18	*"...if you visit the community before 11' o clock it is only then that you are able to meet people. If you go after that, then, you find all the houses locked because everybody goes to the agricultural farm. How can we go to visit them before 9'o clock because we have to look after our household chores also?"* FGD 002, ASHA
19	*"The most important person is the sister [ANM], her feedback and peoples' trust in us makes us work enthusiastically. All these things encourage us more."* FGD 002, ASHA
20	*"...permanent ANMs gets 2,000 rupees and we get 300 rupees as travel allowance, I get very angry. NRHM's [National Rural Health Mission] name is only big, they [NRHM] say we will provide services to everyone but what about those who provide services...there is no job security, we have to complete targets for delivery and record. When are we to study?"* KII 010, ANM

As expressed by the various stakeholder groups, **supply-related factors** include challenges relating to commodities for identification, diagnostics, funds, transport and communication logistics.

Means of identification improves community acceptance

The ASHAs emphasised the importance of having means of identification such as ASHAs' uniforms which promote their identification and social acceptance of ASHAs within the community (Box 4.2.3:21 below).

Lack of equipment and commodities limits CHWs' ability to deliver services and results in unnecessary referrals

A programme staff explained how ASHAs sometimes lacked the equipment needed to deliver services to the recipients. Such equipment includes weighing scale and thermometer for assessing the newborn's body temperature. Another programme staff explained how poor management of commodity procurement and supply at the state level usually filters down to the sub-centres where ASHA are supposed to replenish their commodity stock (Box 4.2.3: 22 below; box 4.2.3: 63 appendix). An ANM also pointed out that even though NHM provides a fixed amount of money to serve as village health funds, there are often exigencies such as major repairs and stock replenishment and the fund may not be adequate to address these needs (Box 4.2.3: 64 appendix).

The ANMs, ASHAs and service recipients noted the lack of equipment such as ultrasound machine or facilities for Caesarean section often results in unnecessary referral of recipients to secondary level health facilities with some of these recipients subsequently resorting to accessing care in private hospitals. They emphasised the need for essential equipment and services such as obstetric ultrasound within the link PHCs that will reduce the need for referral of recipients. Moreover, some of these referral centres are far from the community and recipients (during an obstetric emergency) may develop additional complications during the journey to the referral centre. Overall, they stressed the importance of services and equipment in obstetric emergencies as poor clinical outcomes influence recipients' perception and utilisation of public health services (Box 4.2.3: 65-67 appendix).

Poor telecommunication and transportation network in hilly regions

ANMs working in hilly regions complained of poor telecommunication connectivity which affects communication with PHCs to request for an ambulance during emergencies. Hence, they tend to refer all women in labour to the link PHC as a precaution especially as it may be difficult to communicate with the link PHC to request for an ambulance in case they observe danger signs while managing labour or conducting delivery.

Furthermore, they emphasised that despite having transport allowance, they are faced with non-availability of transportation facilities which increases their commuting time, especially when visiting hilly regions with dispersed households. ASHAs also complained of unfavourable topography and distance between houses with a consequent increase in travel time and inability to achieve their targets (Box 4.2.3:23 below; box 4.2.3: 68, 69 appendix).

Box 4.2.3 (Health system-supplies)	
21	*"When we received ASHA uniforms, people's attitude towards us changed. People started believing in us."* FGD 001, ASHA
22	*"...for example, HBNC [Home-Based Newborn Care], as per the government guidelines, ASHA is expected to weigh the baby, take baby's temperature but all ASHAs' don't have a weighing scale and thermometer. Nearly 1,600-1,700 ASHAs are working on HBNC at this moment, but the state has given only 500 HBNC [Home-Based Newborn Care] kits."* KII 004, Programme staff
23	"*In hilly areas, the rain is high and the number of vehicles are less and there is congestion in the mobile phone network. We face difficulty in calling 108 [ambulance]. We sometimes do not know the result of sonography for four days or so. Such delays occur due to these problems."* KII 004, ANM

Supervision-related factors: CHW supervisors and CHWs identified factors challenging supervision. Factors identified by CHW supervisors relate to the difficulty in conducting supervisory visit when supervisors have competing work-related demands. ASHAs underscored the difficulty with enforcing ASHAs' compliance with work-related targets especially as they provide their services on a voluntary basis.

Excessive workload of supervisors prevents them from conducting supervisory visits

Lady health visitors complained of excessive workload which prevents them from carrying out their supervisory roles. Consequently, they depend on ANMs and ASHAs to call them on phone in order to narrate their challenges. The supervisors usually address the challenges through phone discussions rather than undertaking supervisory visits (Box 4.2.3: 24 below).

Limitations in enforcing ASHA's compliance with work-related targets

ASHAs mentioned that they are not under pressure of work-related targets as they are like volunteers. Accordingly, they tend to provide services in the community based on perceived community needs rather than targets dictated by the formal health system (Box 4.2.3: 25 below).

Box 4.2.3 (Health system-supervision)	
24	*"I can rarely go. I am managing things alone. That is why I cannot pay much attention towards ASHAs. I am alone. I have to manage the PHC, my sub-centre. If my block facilitator and ASHA have any problem, I have to tell them over the phone"* KII 004, Lady health visitor
25	*"…because we are like volunteer workers. Our work is not supervised in terms of our visits in the community…So, we work in the community as per community needs"* KII 001, ASHA

Community-related factors influencing service delivery

The description of the community-related factors reflects the opinions of ANMs, ASHAs, VHSNC, women group and to a limited extent, lady health visitors and doctors. Largely, the stakeholder groups agreed that CHWs' service delivery is affected by sociocultural factors, timing of community activities and other factors that influence community's perception of public health services. These factors include:

Cultural beliefs and practices that influence health-seeking behaviour:

The ANMs described some tribes that perform religious rites and rituals before accepting health services and may not seek facility-based care until they have performed such rites (Box 4.2.3: 26 below; box 4.2.3: 70,71 appendix).

Perceived side-effects of family planning

An ANM lamented the refusal of sterilisation (vasectomy) by community men despite providing health education to them. Especially as community members perceive that the procedure will reduce the men's libido and '*even women don't feel their husbands should do the operation'* (Box 4.2.3: 27 below).

Community perception of CHWs and government-owned health centres

The ASHAs explained that community members have the notion that the quality of health services in government-owned health centres is sub-standard and the facilities are poorly equipped as compared to private hospitals. A service recipient corroborated this notion explaining that the poor quality of services within public clinics and hospitals makes them (service recipients) resort to private clinics. However, an ASHA clarified that this notion is more popular among community members belonging to higher socioeconomic class. Consequently, this negative publicity of services at the public clinics and hospitals affects the way the CHWs are perceived by the community members (Box 4.2.3: 28 below; box 4.2.3: 72, 73 appendix).

Conversely, ASHAs and their supervisors noted that ASHAs that can provide relevant clinical or diagnostic tests such as urine pregnancy tests are more respected in the community. This additional skill in service delivery removes the need for referral and these ASHAs earn respect from their recipients (Box 4.2.3: 74 appendix). Further, ASHAs that link service recipients to the government-funded free health scheme *'have some value in the village'* and referred to as *'doctors'* by the recipient's relatives. Especially as they are seen as the saving grace in navigating the bureaucracy involved in accessing the government-funded health scheme. They explained that recipients with *'positive experience'* will often *'tell 10 other people'* and subsequently refer potential recipients to the ASHA (Box 4.2.3: 75, 76 appendix).

Long waiting time at PHC and short contact time with health professionals:

ASHAs mentioned that service recipients who have experienced long waiting time before being attended to by a doctor often express their disappointment to them (ASHAs). Especially when the service recipients consider that their contact time with

the doctors may be inadequate for making a proper diagnosis of their health problem after the long wait to see the doctor (Box 4.2.3:29 below; box 4.2.3: 77 appendix).

ANMs and ASHAs that provide psychosocial support to recipients are better accepted

An ANMs noted that service recipients tend to return for other MNH services when they perceive that they were treated with courtesy during previous health visits (Box 4.2.3: 30 below).

Trust encourages openness in discussing with ANMs and ASHAs

An ASHA explained that the trust and respect that community members have for them enables them to discuss health conditions that they don't disclose to their *'close relatives'* (Box 4.2.3: 31 below).

The timing of community activities conflict with community members' daily routine

ASHAs complained that despite adequate publicity of community activities, community members are usually away on their daily routine (such as income-generating activities such as farming) during community health activities. The CHWs stated that many of the service recipients tend to be away in *'the field'* during home visits (Box 4.2.3: 32 below; box 4.2.3: 79-81 appendix). To ensure that service recipients are available at the time of home visits, the head of the women group suggested that home visits should be made early in the morning before community members embark on their daily routine. She argued against conducting home visits in the evening suggesting that it may not be effective as the service recipients may be too tired to listen to health messages after the day's work. Additionally, security of ASHAs is better guaranteed in the morning (Box 4.2.3: 82 appendix).

Box 4.2.3 (Community-related factors)	
26	*"Among some nomadic castes, like Nandiwale, they don't come forward to take injection unless they perform God's ritual. They come at a later stage such as in 7th or 8th month of pregnancy. So, we give them the injection…they used to deliver at home…it is because of institutional deliveries we can avoid child mortality and maternal mortality."* KII 002, ANM
27	*"They [men] don't listen to us, we talk to them [about surgical contraception] but they don't listen, they think that their performance will reduce if they do this operation. Even women don't feel that their husbands should do this*

	Box 4.2.3 (Community-related factors)
	operation." KII 010, ANM
28	*"At the time of my delivery, there were five sisters, still, I did not have a normal delivery, the required facilities were not there, so we had to go to private clinic. The entire day was wasted by going here and there."* FGD 001, Service recipient
29	*"…the gynaecologist does not come on time. He comes at 2 or 3 o'clock in the afternoon, so they get bored by waiting since morning. They don't eat all day, have to do household chores as well and take care of kids at home. They stay with their in-laws, so the family members try to avoid sending them to ANC camps and if they don't come, we won't get incentives."* FGD 001, ASHA
30	*"Patients panic at the time of delivery, so my [ANM] role becomes important at that time, we should not scold them, so patients cooperate with us. They build trust in us and they will come back for family planning."* KII 003, ANM
31	*"…people in the village…they tell us things they don't even share with their close relatives." FGD 004, ASHA*
32	*"…people complain that we didn't call them for the health camp. We visit locked houses two times, it is not our mistake. We write it on boards in a popular place in the village, announce it on TV, wherever we see beneficiary, even beneficiary's mother or mother-in-law. When we call beneficiaries, people give many reasons for non-attendance like the woman has work, she has to go to the field, she has household chores."* FGD 001, ASHA in VHSNC FGD.

4.3: Community health volunteers (CHVs) in Kenya

4.3.0 Profile of study participants

Following a review of policy documents (Government of Kenya 2013a) and consultations with in-country partners, the principal researcher identified the following stakeholder groups to participate in the study:

i) Programme staff of the Ministry of Health and NGOs involved in training and supporting CHVs.

ii) Health professionals including nurse-midwives and Community Health Extension Workers (CHEWs) who are facility-level supervisors of CHVs.

iii) CHVs providing MNH services.

iv) Community Health Committee (CHC) members.

v) MNH service recipients.

Table 4.3.1 describes the characteristics of the study participants in Kenya. It shows that members of the different stakeholder groups were largely or exclusively females except for the CHC members. Overall, programme staff had the longest median duration working with CHVs while the CHEWs and CHC members had the shortest median duration. Among stakeholder groups whose median ages were assessed, service recipients had the lowest median age, followed by CHVs while CHC members had the highest median age.

Table 4.3.1: Characteristics of the study participants in Kenya

Stakeholder group	Total number of participants	Male: female ratio	Median duration working with/as CHWs (years)	Median age
Policy makers & programme staff	7	3:4	9	N/D
Nurse-midwives	5	0:5	5	N/D
CHEWs	8	3:5	3.5	N/D
CHVs	54	2:7	5	40
CHC members	26	9:4	4	43
Service recipients	4	0:4	N/D	32

N/D: Not documented

4.3.1 Characteristics of CHVs

The perspectives of the various stakeholder groups tended to align with policies on CHW characteristics. Where necessary, perspectives of the various stakeholder groups clarified these policies on selection, training, remuneration, supplies and supervision of CHVs.

Selection of CHVs

Policy documents and participants' perspectives show that CHVs are jointly selected by community members and representatives from the link health facility. In comparison to policy documents, programme staff, CHEWs and CHC members provided a more detailed description of the CHV selection process and the additional selection criteria.

Selection is inclusive and based on literacy and social acceptance within the community

As a policy, CHVs must be a community resident with at least 10 years of formal education. Additionally, they should have leadership skills and be socially accepted by the community members. They are expected to be financially self-supported, willing and available to volunteer (Government of Kenya 2013a).

The CHC members, however, emphasised that they apply additional criteria to ensure *'everyone is represented'*. They explained that CHVs are expected to belong to one of the major community tribes and religions to ensure cultural competence in service delivery and seamless communication in the popular languages spoken within the community (Box 4.3.1: 1 below; box 4.3.1: 11 appendix). A programme staff corroborated CHC's commitment to ensuring that all the demographic groups are well-represented during the selection of CHVs. The staff explained that communities are mapped, and a representative is picked from each homestead (Box 4.3.1: 12 appendix). Other demographic considerations mentioned by programme staff and CHC members include candidate's age and gender, but they clarified that candidate's gender is not an absolute selection criterion (Box 4.3.1: 12-14 appendix). Furthermore, retirees within the community with previous work experience in healthcare are encouraged to volunteer as CHVs (Box 4.3.1: 15 appendix).

Programme staff, CHEWs and CHC members narrated how CHVs are selected during the Chief's village gathering (*'Barraza'*). They explained that CHEWs from the link health centre, the village leaders and community members identify CHV candidates using government-specified selection criteria and subsequently subject the eligible candidates to a voice vote to assess the level of community acceptance (Box 4.3.1: 2 below; box 4.3.1: 16-18 appendix). As the CHVs are expected to work without a salary, consent from the candidate's partner (for married persons) is crucial for making the final selection (Box 4.3.1: 14 appendix).

Box 4.3.1 (Selection)	
1	*"We do consider every tribe because in Kenya we have forty-two tribes, and we make sure everyone is represented and even the religions, we cannot take CHVs whose tribe is not represented here because there will be a barrier of language."* KII 001, Community health committee

	Box 4.3.1 (Selection)
2	*"The CHEWs formally call for a Barraza, but we have a government guideline of who is supposed to be selected."* KII 006, CHEW

Training of CHVs

The reviewed documents provided a generic description of policies relating to CHV training. Perspectives of the programme staff, CHEWs, CHVs by comparison, provided detailed descriptions and clarifications on how these policies are implemented. Overall, the participants and policy documents describe how the government collaborates with NGOs to train the selected CHVs.

CHVs undergo spaced-out training of varied durations

Policy documents suggest that counties and NGOs collaborate to provide a 13-module CHV training. The first six modules make up the pre-service basic training and last for 10 days (Ministry of Health 2013). However, a programme staff clarified that the 10-day pre-service training is often split into different sessions spread over a longer period. The programme staff added that pre-service training sessions are held in the *'nearest health facility or local school'* in order that the CHVs are not kept away from their daily routine for too long (Box 4.3.1: 3 below).

As a policy, the in-service technical training comprises seven modules focusing on specific health areas and offered based on local health needs of districts as informed by data. The training period for each of the technical module is usually between 2 to 5 days (Ministry of Health 2013).

Some CHEWs pointed out that the invitation to in-service training depends on how *'active'* CHVs have been (as informed by their reports) (Box 4.3.1: 4 below; box 4.3.1: 19 appendix). CHEWs also mentioned that they provide step-down training based on relevant training that they (CHEW) have received and considered useful to the CHVs (Box 4.3.1: 20 appendix).

	Box 4.3.1 (Training)
3	"*Normally, the basic module is ten days. However, we split it at times, into five days each…you know they are community members, and they are busy, and you don't want to keep them for long. We arrange for the training at the community. It is the CHEWs who come to the community, sometimes it could*

Box 4.3.1 (Training)	
	be at the nearest health facility, local school" KII 008, Programme staff, Government
4	*"We have got a reporting tool which we report to the government every month, so you find that if I am not active, you will not be taken to that training."* FGD 002, CHV

Remuneration of CHVs

The reviewed policy document shows that CHVs are not salaried but receive allowances and support for income-generating activities. Programme staff, CHEWs and CHVs corroborated the policies relating to remuneration and provided additional information:

CHVs receive allowances and are supported with income-generating activities

As a policy, CHVs receive an allowance for participating in training and meetings (Republic of Kenya 2014). Programme staff explained that government policy encourages the supporting NGOs to pay a monthly stipend of 2,000 Kenyan Shillings to CHVs. The CHEWs, however, clarified that payment of the monthly stipend depends on satisfactory performance of the CHVs (Box 4.3.1: 5 below; box 4.3.1: 21 appendix).

Policies documents show that government and NGOs support the establishment of income-generating activities (IGAs) (Republic of Kenya 2014). These schemes are jointly owned and run by the CHVs in the same community and the profit generated is shared among them. The CHVs, CHEWs and programme staff explained that CHVs consider the various income-generating activities that are profitable and sustainable within their communities before reaching a consensus on one of the income-generating activities (Box 4.3.1: 6 below; box 4.3.1: 22-24 appendix).

Box 4.3.1 (Remuneration)	
5	*"If you work with the help of a partner, they normally support the ones with very high marks on the indicators, they give them small stipends at the end of the month"* KII 004, CHEW
6	*"We are not paid but we pay ourselves by starting IGAs [Income-generating activities] like we have farms where we do farming. So, you pay yourselves*"

Box 4.3.1 (Remuneration)	
	FGD 007, CHV

Supplies used by CHVs

The review of policy documents shows clarity of policies relating to CHV supplies. These supplies include drugs, commodities for distribution such as condoms, means of identification such as T-shirts, equipment for anthropometric measurements, bicycles for transportation and registers for documentation (Republic of Kenya 2014). As a policy, the supporting NGOs provide CHV supplies through the link health centres and rely on CHEWs to distribute the commodities to the CHVs on a quarterly basis (Government of Kenya 2013b; Republic of Kenya 2014). A programme staff and a CHV added that CHVs use umbrellas and gumboots to protect themselves when they conduct home visits during adverse weather conditions (Box 4.3.1: 7, 8 below).

Box 4.3.1 (Supplies)	
7	*"For example, like that NGO, they support us with t-shirts, they give us some bags, umbrellas, they were good."* FGD 002, CHV
8	*"We have no control over the weather but what if they were provided with gumboots, raincoats, and an umbrella, how could it be."* KII 009, Programme staff, Government

Supervision of CHVs

As a policy, the CHEWs supervise CHVs on behalf of the formal health system while the CHC members provide oversight function on behalf of the community. These supervisors use similar approaches for supervising CHVs (Ministry of Health 2013).

Supervision entails direct observation, review of reports and review meetings

The community health units, comprising a CHEW (facility representative) and CHC members (community representative) conduct joint supervision during monthly or bi-monthly unit meetings in which the CHVs discuss their challenges with these supervisors (Ministry of Health 2013). In addition to these meetings, the CHEWs and programme staff conduct monthly review meetings and provide supportive

supervision through joint home visits in the company of CHVs (Ministry of Health 2014; Government of Kenya 2015b).

In one of the FGDs, the CHC members explained their roles in verifying CHV reports and ensuring that the CHVs are conducting home visits to provide care. A programme staff added that community chiefs also conduct periodic supervisory visits to ensure that CHVs are delivering the stipulated health services to the community members (Box 4.3.1: 9,10 below; box 4.3.1: 25 appendix).

Box 4.3.1 (Supervision)	
9	*"Our role as CHC is to make sure that what CHVs are reporting is the truth. We make sure what they have reported is correct about that household,"* FGD 001, Community health committee
10	*"…the chiefs participate in the monitoring, like twice in a year, supervising the CHVs, maybe at one time they accompany them; they accompany them to the community to see what they are doing and to ensure that the CHVs provide services to the community."* KII 005, Programme staff, Government

4.3.2 The scope of practice of CHVs in MNH care

The description of CHV scope of practice in MNH care largely reflect data from policy documents while the perspectives of programme staff, CHVs, CHEWs and service recipients clarify the policies. The policies and perspectives show that CHV scope of practice is limited to health promotion and disease prevention. Table 4.3.2 illustrates CHV scope of practice in relation to ANC, labour and delivery, PNC, neonatal care and family planning.

ANC services provided by CHVs

As a policy, CHVs are expected to identify pregnant women and provide two targeted home visits during ANC in accordance with the stage of pregnancy (Ministry of Health 2014).

CHVs identify pregnant women through social networks in the community

Programme staff and CHVs pointed out that, *'from an African context'*, pregnancy is often considered a secret which should not be shared with others to avoid *'bad omen'*. They explained that CHVs often rely on social interactions with community members for early identification of pregnant women in the community.

Subsequently, identified pregnant women are referred for pregnancy confirmation and commencement of facility-based ANC (Box 4.3.2: 1 below; box 4.3.2: 6-8 appendix).

CHVs conduct home visits to track ANC services and provide health education

A policy document shows that the first visit aims to initiate discussion of the birth plan and emergency preparedness and promote facility-based skilled antenatal care and birth attendance. During the 7th or 8th month of gestation, CHVs review the services received during ANC, level of preparedness for facility delivery, educate the household on signs of labour and danger signs and promote healthy newborn care practices (Ministry of Health 2014).

Labour and delivery services provided by CHVs

Policy documents state that all CHVs are to act as birth companions to pregnant women in labour. In contrast, trained TBAs and CHEWs clarified that trained TBAs play other roles in addition to acting as birth companions.

‘Non-TBA’ CHVs act as birth companions while trained TBAs play a more active role in labour

As a policy, all CHVs including trained TBAs are expected to act as birth companions, accompanying the women to the health centre at the commencement of labour (Ministry of Health 2014). A service recipient corroborated this, saying that pregnant women call CHVs at the onset of labour and the CHV usually facilitates transport to the health facility or walks with them to the health facility (Box 4.3.2: 2 below).

In addition to their role as birth companions, a CHEW mentioned that trained TBAs may be allowed to assist nurse-midwives in managing labour and conducting deliveries on request of the service recipients. Particularly as some of the recipients *‘trust them [TBA] so much’* and value their presence in the delivery room (Box 4.3.2: 9 appendix). Contrary to policy, a trained TBA explained that they manage labour and conduct deliveries in the community as their *‘self-sacrifice’* to the community by *‘helping mothers in labour pain’* (Box 4.7.7: 10 appendix).

Postnatal care services provided by CHVs

As a policy, CHVs are expected to conduct three postnatal home visits on Day 1, 3 and 7 to facilitate breastfeeding, assess the mother for danger signs and teach the family members to assess for danger signs in the mother (Ministry of Health 2014). A programme staff and a CHEW explained that these danger signs include post-delivery bleeding, post-delivery depression, engorged breasts or cracked nipples. They added that CHVs are also expected to teach the mothers to assess themselves for these signs (Box 4.3.2: 3 below; box 4.3.2: 11, 12 appendix).

Neonatal care services provided by CHVs

As a policy, the postnatal visits on days 1, 3 and 7 should serve a dual purpose such that CHVs also assess newborn for danger signs and teach the family members to assess for danger signs in newborns. They are expected to pay two additional visits on days 2 and 10 to provide extra care to low birth weight babies (Ministry of Health 2014).

Programme staff, CHEWs and CHVs explained that these home visits entail teaching the mother how to maintain warmth and skin-to-skin care of low birth weight babies (Box 4.3.2: 4 below; box 4.3.2: 13 appendix). Furthermore, CHVs promote hygiene of the baby by encouraging mothers to wash their hands regularly, assess the umbilicus for clinical signs of infection and encourage nursing mothers to clean the umbilicus with chlorhexidine gel (Box 4.3.2: 14,15 appendix). They added that CHVs encourage nursing mothers to take newborns for age-appropriate vaccinations such as oral polio and BCG especially for children that were delivered at home and may not have accessed such services (Box 4.3.2: 16 appendix).

Family planning services provided by CHVs

The role of CHVs in family planning is described solely from study participants' perspectives. According to CHVs and CHEWs, this role depends on whether a CHV has received the technical training on family planning or not. CHVs and CHEWs mentioned that most CHVs provide condoms to the service recipients. They explained that CHVs provide health education on other forms of contraception and refer the service recipients when necessary. Conversely, CHVs who have received

technical training on family planning can assist in replenishing stock of oral contraceptive pills (Box 4.3.2: 5 below; box 4.3.2: 17-20).

Box 4.3.2 (Scope of practice in MNH care)	
1	*"… from an African context, I do not want people to know that I am pregnant, because it will be a bad omen, but the CHVs help with earlier identification and referral."* KII 007, Programme staff, NGO
2	"*…when I fell into labour at home, I communicated with her [CHV], she is the one who transferred me here. She called an ambulance."* KII 003, Service recipient
3	*"…the other danger signs that the mother could be having; excessive bleeding. We have had women dying from post-delivery haemorrhage, they can assess and then do the referral, there are those women who get depression or postnatal blues, and some of them get engorged breasts or cracked nipples."* KII 007, Programme staff, NGO
4	*"…they remind them of the special care of the newborn, and they are able to screen them for danger signs in the mother and the baby. They refer if there are danger signs, so they teach how to position and to attach for appropriate feeding. They encourage them to go back to the hospital for immunisation."* KII 003, Programme staff, NGO
5	*"We are doing family planning every month, we accommodate pills, we are the ones who are giving pills to every mother, she is our customer, we give for only just a month."* FGD 002, CHV

Table 4.3.2: The scope of practice of CHVs in MNH care

Scope of practice	CHV
Antenatal care	
Identification of pregnant women in the community	
Screening for danger signs	
Clinical assessment for high-risk pregnancy	
Provision of iron and folic acid to prevent maternal anaemia	
Calcium supplementation where needed	
Tetanus vaccination	
HIV Counselling and Testing	
Provision of long-lasting insecticidal nets (LLINs) to prevent malaria	
Provision of Intermittent preventive treatment in pregnancy (IpTP) to prevent malaria	
Facilitation of birth and emergency preparedness	
Labour and delivery	
Skilled birth attendance	
Accompany women (pregnant women in labour) to the health facility	
Provision of transport support to and from a health facility	
Administration of prophylactic uterotonics to prevent postpartum haemorrhage	
Initial management of postpartum haemorrhage (e.g. uterotonics, uterine massage)	
Facilitate initiation of breastfeeding (within 30 minutes post-delivery)	
Postnatal care	
Facilitation of sustained breastfeeding	
Counselling on birth spacing and post-delivery family planning	
Identification of danger signs and subsequent referral to a health facility	
Provision of ART support to women living with HIV	
Neonatal care	
Immediate thermal care	
Neonatal resuscitation when required	
Administer Vitamin K	
Assessment for danger signs	
Facilitation of hygienic cord and skin care	

Scope of practice	**CHV**
Kangaroo mother care (KMC) for preterm babies and babies with birth weight less than 2500g.	[green]
Childhood vaccination: BCG and oral polio	[amber]
Promotion and support timely ARV prophylaxis in HIV-exposed newborns	[red]
Family planning	
Barrier methods (male and female condoms)	[green]
Oral contraceptives (progestin-only and combined)	[green]
Hormonal contraceptive injection	[amber]
Intra-uterine devices	[amber]
Implant	[amber]
Permanent (Irreversible) birth control	[amber]

Data sources :
1.Policy documents :
- Community based maternal and Newborn care, 2014: A training course for community health workers
- Community Health Volunteers (CHV) 2013: Basic Modules Manual

2. Key informant interviews and focus group discussions

Key	
[green]	Provide
[amber]	Refer
[red]	Do not provide

CHW scope of practice template, adapted from *Strengthening the capacity of community health workers to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health* by UNAIDS et al., 2015

4.3.3 Factors influencing CHVs' MNH service delivery

The various factors influencing CHVs' service delivery include their unique attributes, their acquisition and retention of knowledge and skills, motivators, health system and community-related factors.

Attributes influencing the suitability of CHVs for health service delivery

These factors relate to demographic attributes of the CHVs.

Female CHVs are preferred and more acceptable for MNH service delivery

Programme staff pointed out that women and their husbands prefer female CHVs for one-on-one communication with women. Particularly, husbands may entertain concerns when male CHVs provide health messages to their wives with no chaperone (Box 4.3.3: 1 below; box 4.3.3: 25 appendix).

Age (dis) concordance between CHVs and service recipients affects communication

The CHC members noted that vocabulary and choice of words tend to vary across age groups and this can create a communication barrier when there is a remarkable age difference between a CHV and his/her service recipient (Box 4.3.3: 2 below).

Box 4.3.3 (Attributes)	
1	*"Even men were not very comfortable with male CHVs coming to talk to their women, sometimes in the houses…but prefer if it were women with a specialised cadre that focus on maternal and child health."* KII 003, Programme Officer, NGO
2	*"We have age barrier, for example, if they [CHVs] go to a young girl's house, sometimes, they want information from her. There are some words she uses that they don't understand, there is a small barrier."* FGD 003, Community health committee

Factors influencing acquisition and retention of knowledge and skills

These factors relate to educational qualification, training and the way the training courses are structured.

Limited pre-service literacy and numeracy skills and lack of in-depth training

CHEWs noted that even though the CHVs are well suited for mobilisation role which entails communication in the local language, their limited literacy and numeracy skills compromise the correctness of their health data. They explained that some CHVs may write *‘10 expectant mother’* when they mean *‘1 expectant mother’* (Box 4.3.3: 3 below).

Nurse-midwives also pointed out that the lack of depth in the technical training of CHVs often means that they are not able to answer technical questions about their services especially questions about side-effects of contraception. Consequently, their service recipients may change a method of contraception based on side effects which are supposed to be short-lived (Box 4.3.3: 3 below; box 4.3.3: 26 appendix).

Well-spaced technical training tends to aid knowledge retention and skill reinforcement

CHEWs explained that they provide on-the-job training to CHVs. These training sessions build CHVs’ capacity to deliver health services to meet the needs of community members. Additionally, the formal technical training also improves their level of knowledge and skills.

Some programme staff suggested a revision of the method of training such that rather than having training for five days at a stretch, it may be spaced at one-day training per week. They believe that a single training in which the CHVs are taught *‘many things’* at a time jeopardises the period for practice within the community. Especially as practice would reinforce knowledge as well as make it possible for CHVs to have a longer period of practice in the community before learning a new concept (Box 4.3.3: 4 below).

Box 4.3.3 (Knowledge and skills)	
3	“*The reason we say fair, there are some who are better in other activities like mobilisation and participating in meetings. But when it comes to reporting, they have a challenge because of their educational levels. So, somebody may write that they have ten expectant mothers, but when you come to the ground you find they are not ten, there is only one, there is a problem with their understanding; so, they need continuous training”* KII 004, CHEW

Box 4.3.3 (Knowledge and skills)	
4	"*…whatever you are to train them for, can be done in a day, a day each during the six weeks rather than you do it in three days or five days at a stretch. But the bad thing, the disadvantage with that is when you go for one week you are giving these CHVs so many things some of them will not practice them. But this one [one-day training], which is going for six weeks today, you come, you learn this for two hours, you go and practice, next time you get something extra,…it will be of help, it will be so good compared with this one of three months*" KII 004, Programme staff, Government

Factors motivating CHVs

Factors motivating CHVs include intrinsic factors that grant them self-satisfaction and external motivators that either reward or reprimand. Intrinsic factors relate to:

Altruistic goals

CHVs stated their self-determination to serve their community despite lack of salary. They emphasised that they are *'like pastors'* who may not expect financial rewards for services, that God who '*sees their hard work'* would reward them (Box 4.3.3: 5 below).

Job satisfaction from positive outcomes of health intervention

Programme staff suggested that CHVs view themselves as *'important partners'* and this motivates them, especially with reports of positive health outcomes from their intervention such as reduced maternal and child deaths within the community (Box 4.3.3: 6 below).

Extrinsic factors relate to:

Differences in allowance paid by supporting NGOs

The CHVs receiving a fixed NGO allowance stressed that the government policy which stipulates a fixed monthly stipend of 2,000 Kenyan Shillings is not being *'merciful'* to them. They explained that some supporting NGOs may wish to pay them more than the stipulated amount, but the government policy prevents them from making such payments. However, programme staff pointed out that despite the government policy, there is differential payment of the CHVs as some partners pay CHVs more money than others because of *'uncoordinated health intervention'*.

Hence, CHVs who are being paid less, are also discouraged based on the notion that the NGOs supporting them may be misappropriating the funds meant for their stipends. Payment of stipends also depends on the supporting NGO, with some CHVs receiving regular monthly stipends while others do not receive any monetary incentive (Box 4.3.3: 7 below; box 4.3.3: 27-38 appendix). Programme staff also recommended that CHVs should be reimbursed for communication costs incurred to support service delivery thereby improving their motivation and commitment (Box 4.3.3: 39 appendix).

Concerns about form and sustainability of CHV remuneration

Some programme staff argued for performance-based incentives as against fixed allowance for CHVs. They stated that work-related challenges and catchment area per CHV tend to vary across contexts. Hence, they favoured rewards that are commensurate with the work done by respective CHVs (Box 4.3.3: 8 below). They added that CHVs should have access to free health services. This is because they work as volunteers and are vulnerable to communicable diseases of contagious service recipients. However, they emphasised that such benefit should be reserved for CHVs that have served for a specified period and are still serving in the capacity of CHVs (Box 4.3.3: 40-42 appendix).

Other programme staff pointed out that various NGOs support CHV allowance through time-bound projects hence the allowance cannot be sustained beyond the end of such projects. CHVs explained the tendency for some of them to *'quit'*, once they notice there is *'no pay'* (Box 4.3.3: 33-35 appendix).

Programme staff emphasised the relative sustainability of having dedicated funds for income-generating schemes as against paying a monthly stipend to CHVs which may not be sustainable beyond the period of NGO's support. Furthermore, they emphasised that CHVs that are part of the jointly-owned income generating schemes are better motivated and committed to the CHV group and less likely to drop out as CHVs (Box 4.3.3: 36, 37 appendix).

Recognition by various stakeholder groups:

Programme staff and CHC members emphasised the importance of recognition and rewards of CHVs who have shown commitment and displayed exemplary

performance. They explained that this reward can be in the form of a trophy or a cash award to the best-performing CHV or community health unit thereby encouraging the awardees (Box 4.3.3: 9 below; box 4.3.3: 43 appendix).

The CHEWs suggested that when CHVs are invited for training, they consider this as a form of government recognition of their activities (Box 4.3.3: 44 appendix). Additionally, commendations from the various groups of stakeholders tend to motivate CHVs especially when these stakeholders acknowledge them as the necessary health system link to the community. At the community level, the CHVs are motivated when community members refer to them as *'doctors'* because they view them as *'skilled persons.'* CHVs added that they are *'recognised and accepted'* by the community such that they get special invitations to *'meetings in schools and churches'* (Box 4.3.3: 43-47 appendix).

Financial dependence by service recipients

CHVs expressed their dissatisfaction with service recipients who depend on them for financial assistance. They experience loss of morale when service recipients with financial challenges request materials such as food to implement the content of health education session on nutrition or expect the CHVs to present gifts to them especially when they have come to visit the newborn (ignoring the fact that the CHVs are unsalaried volunteers) (Box 4.3.3: 10 below; box 4.3.3: 49, 50 appendix).

In emergency situations, CHVs are pressured to provide services beyond their competency:

CHVs complained that service recipients may present at a late stage of labour requesting that trained TBAs and other CHVs conduct home deliveries especially as they lack transport money to the facility. Even though CHVs and TBAs are encouraged to refer such service recipients, they end up conducting such deliveries before referring these recipients (Box 4.3.3: 11 below).

Box 4.3.3 (Motivating factors)	
5	*"It makes us happy because we take it as a calling just like pastors without expecting any pay, but God is the one who sees our hard work."* FGD 007, CHV

	Box 4.3.3 (Motivating factors)
6	*"We need you [CHVs] because you know the issues within the community. We the medical people cannot do it on their own and therefore they are very key to handle some of those health issues that are happening in the community because patients go back to the community, that is where they are. So, I feel that with that understanding they realised they are important partners. So, that itself was an incentive to realise that they are important.*" KII 002, Programme staff, Government
7	*"The government is stressing that the donor should give us 2,000 KSh so a donor cannot go beyond that line, a donor might be willing to give us money like 4,000 KSh, but the government are not merciful to us as CHVs, so we feel stressed"* FGD 003, CHV.
8	*"…and it also differs with occasions, there are times where two hundred shillings will not reach you where you go, can we have a performance based?* KII 003, Programme staff, NGO
9	*"Those that are active, and even those who are very active sometimes are given recognition."* KII 005, Programme staff, Government
10	*"To me, I have many problems in that place of mine because when you go there, they ask you if you have money to help us if I want to go to the hospital will you help us.*" FGD 002, CHV
11	*"…but when a mother is due to give birth, and she knows you are a CHV, they tell others to come and call you, when you go there you find out she needs to be transferred yet she does not have a card, money or anything, and the distance to the hospital is also far. If she delivers at home you have to help, maybe you don't have razor blade or thread, so we are forced to use knives because there is nothing and the baby has come out. After helping her, you give her a referral, and you bring her to the hospital"* FGD 004, CHV

Health system factors influencing service delivery

This health system factors relate to policies, logistic issues that influence supplies and supervision of CHWs.

Policy issues include:

Delays in dissemination and distribution of government guidelines

Programme staff complained that guidelines that have been developed are not *'being rolled out'* and there is an urgent need to *'get them off the shelf in the ministry'* to the communities where the guidelines will be implemented (Box 4.3.3: 12 below).

Limitation in enforcing targets and timelines on CHVs

One programme staff complained of the difficulty in holding CHVs to account on deliverables and timelines as *'standards are not clear'* (Box 4.3.3: 13 below). The programme staff suggested a standard operating procedure for CHVs which clearly states their supervisory lines, the frequency of supervisions and assessment. In addition, they should be rewarded for service delivery and have periodic target-based work plans as against the current non-standardisation and flexibility. This is crucial to holding them to account on deliverables and timelines (Box 4.3.3: 51, 52 appendix).

However, the CHC members and CHVs explained that community health activities compete with CHVs' time for attending to their daily domestic chores or activities that provide their *'daily bread.'* They stated that even though CHVs are expected to submit an end-of-month report, there is no financial reward for such reports. Worse still, they usually travel without *'means of transport'* in the *'sun without umbrella'* for home visits to households that are far apart. Consequently, they struggle to combine their community health activities with their personal income-generating activities (Box 4.3.3: 51-57 appendix).

Box 4.3.3 (Health system-policies)	
12	*"We have guidelines that have been developed on supervision which are not being rolled out ... the tools have been developed and they have been rolled out in some areas but not all… that is another big gap. The guidelines are in place but now we need to get them off the shelf in the ministry to have them implemented"* KII 007, Programme staff, NGO
13	*"When you are talking of these volunteers, you have timelines for them, you have activities they should do, then they have to seek for livelihood, you can't take them to tasks because they are not on any payroll."* KII 001, Programme staff, Government

Human resource issues relate to inter-cadre relationship

Communication channel between CHVs and Nurse-midwives

Programme staff stressed the need to strengthen the communication channels between facility health professionals and CHVs in order to facilitate referral and

counter-referrals. They also stressed the importance of coordination platforms where the community and facility level stakeholders meet to cross-check and validate community health data (Box4.3.3: 14 below). They emphasised that coordination platforms will result in *'unity'* and the '*outcome will be so good'* (Box 4.3.3: 15 below; box 4.3.3: 58 appendix).

Box 4.3.3(Health system-human resources)	
14	"*There is that need for strong linkage…if they have a strong linkage in the facility, they are able to know that these are the number of mothers who are pregnant…"* KII 005, Programme staff, Government
15	*"In the public meetings, we have the community health volunteer being accompanied by the nursing health officer in charge of that clinic in that dispensary; there is unity and then the outcome is so good"* KII 007, Programme staff, NGO

Supply-related factors:

Inadequate supplies of means of identification, protective outfit and commodities

CHVs emphasised the importance of wearing an ID card as it helps the facility health professionals to identify them and give them priority attention without having to *'queue'* at the health facility (Box 4.3.3: 16 below; box 4.3.3: 59,60 appendix). They emphasised the need for protective outfits such as gumboots and umbrellas during unfavourable weather conditions as lack of these limits home visits during the rainy season. Additionally, inadequate supply of IEC (Information, Education, and Communication) materials for health education and registers for documenting activities hinders effective service delivery (Box 4.3.3: 62-66 appendix).

Programme staff underscored the need for coordination platforms for NGOs that will avoid duplication of efforts and ensure that all CHVs are supported financially and with commodities that will guarantee that they stay motivated while performing their activities (Box 4.3.3: 17 below).

Community-level stakeholders also added that there should be community funds for addressing emergency health needs within the community such as transportation of service recipients to the health facility (Box 4.3.3: 67 appendix).

Box 4.3.3 (Health system-supplies)	
16	*"For urgent referrals, CHVs accompanies the patients to the facility. Once at the facility, we have an identification badge that shows that they are from the ministry of health, they are CHVs, so they will be taken care of very quickly, they will not queue*" KII 006, CHEW
17	*"...if we can have all those partners coming for maternal and newborn, let them have a stakeholders meeting, they discuss and document one way of supporting community health volunteers so that this work is not duplicated. That NGO and another one is doing the same work in the same place or the same community health unit, so that they can discuss and see how they can assist the CHVs to do their work."* FGD 001, Community health committee

Supervision-related issues include

Supportive supervision and clarity of supervisory roles aid service delivery

CHVs and CHC members narrated how CHV supervisors (CHCs members and the CHEWs) accompany CHVs to households that they identify as challenging. These challenges relate to non-acceptance of services or non-compliance of service recipients. During such visits, the CHC members use their influence within the community to persuade service recipients to accept or comply with health services. In areas where security risk is anticipated, CHC members also accompany the CHVs to conduct home visits to these households (Box 4.3.3: 18 below; box 4.3.3: 69-72 appendix).

Programme staff, however, stressed the need for clarity in CHC's role and position in CHV supervision. Particularly, they pointed out how NGOs tend to bypass CHC (who are CHV supervisors within the community) when inviting CHVs for training, thereby, undermining the supervisory authority of the CHC. Additionally, they questioned how CHC members would supervise CHVs effectively if they are not paid any form of allowance or incentive to supervise the CHVs (Box 4.3.3: 19; box 4.3.3: 73, 74 appendix).

Box 4.3.3 (Health system-supervision)	
18	*"We have got the CHEWs with us from door to door. When I visit my households then I get some challenges, I normally report to the CHCs then the CHCs report to CHEWs and the CHEWs will take it seriously then they will*

	Box 4.3.3 (Health system-supervision)
	come." FGD 002, CHV
19	*"One of our weaknesses is the role of the community health committee, because in the books they are supposed to supervise the community health volunteers, but in practice there is a gap and in most of our community units there is a competition between community health committee and volunteers, because you might find transport allowance provided to the volunteer because at the end of the month they give a report, and the committee is left out. Then you will find that they [CHC] have become inactive."* KII 001, Programme staff, Government

Community-related factors

Overall, these factors tend to influence the health-seeking behaviour of the community members. These factors include sociocultural factors, trust and respect for CHVs and community's perception of CHW services and timing of community activities.

Religious beliefs hinder health-seeking behaviour

Some CHVs stated that traditional and religious beliefs prevent the service recipients from seeking healthcare even in emergency situations. The relatives of service recipients often resort to "traditional therapy" or prayers rather than seeking orthodox medical care. They narrated an occasion when a *'baby died'* following home delivery, the family refused to allow them (CHVs) take the mother to the hospital insisting they *'wanted to pray for her'* and *'eventually, the mother died'* (Box 4.3.3: 20 below).

Trust and respect for CHVs

Some CHVs complained of the difficulty in relaying health messages to community members who refuse to accept them or welcome them into their homes. They explained that some service recipients are of the notion that CHVs are receiving commodities on their behalf but are refusing to deliver such items to them (Box4.3.3: 21 below). Additionally, CHVs explained that because they are members of the community, undue familiarity with service recipients means that they may not respect and accept the health messages and services delivered by them (Box 4.3.3: 75 appendix).

Conversely, the various stakeholders noted that supervisory visits from programme staff and community level supervisors create trust and respect for CHVs. This supportive supervision by supervisors from the facility and sub-county reinforces the link that CHVs have to the formal health system as community *'doctors.'* Particularly, when *'they [community members] see five cars'* have come just to observe their (CHV) service delivery. Furthermore, supervisory visits by community leaders strengthen the trust the community members have in them. Especially as the visits are viewed as symbolic endorsements by the community leaders. Consequently, these supervisory visits promote acceptance of the health services (Box 4.3.3: 70, 72, 73 appendix). CHVs that are perceived to have requisite knowledge and skills (after training) are better respected by community members (Box 4.3.3: 45 appendix).

Health messages without complementary commodities are considered inadequate

The CHC members expressed concerns that CHV services are sometimes not responsive to their health needs because they *'work empty-handed'* and only *'help by word of mouth alone'*. Consequently, service recipients view CHVs' health messages as inadequate in situations of ill-health requiring first aid treatment to alleviate the recipient's clinical condition before referral. The CHVs equally lamented that they are *'like soldiers without guns'* making them feel incapacitated when they have patients that need care while they lack the means to provide first aid care (Box4.3.3: 22 below; box 4.3.3: 67, 77 appendix).

The attitude of CHVs and the health workers in the link facility

A service recipient pointed out that CHVs need to be more courteous when communicating with service recipients as this may affect how community members perceive their services. She complained about the preferential treatment given to service recipients from higher socioeconomic background while CHVs look down on those belonging to the lower socioeconomic class (Box 4.3.3: 78-80 appendix). She also emphasised the need for CHVs' dedication, commitment, punctuality and empathy in attending to women in labour. She explained that CHVs' promptness during labour is very important because *'the baby can come out at any time.'* Therefore, CHVs who *'delay'* in responding to women in labour, telling them *'to*

wait' while the *'labour won't wait'* may be contributing to the deaths of mothers and newborns (Box 4.3.3:23 below; box4.3.3: 81 appendix).

The service recipients also complained about impolite health professionals at the CHVs' link facilities. Subsequently, these recipients would often avoid future referrals to these link facilities making the CHVs feel discouraged (Box4.3.3: 82 appendix).

The timing of CHVs' home visit may conflict with community members' daily routine

The service recipients complained of the inconvenience of unscheduled home visits by CHVs because they may be engaged in personal activities and not be able to reschedule such activities to attend to the CHVs (Box 4.3.3:24 below).

Box 4.3.3 (Community-related factors)	
20	*"There is a woman who delivered at home and the baby died when we reached there, and we wanted to take the mother to the hospital they refused and wanted to pray for her. So, they started praying and eventually the mother died."* FGD 007, CHV
21	*"When we go to the community, and we want to educate, some people don't open up to us, and some community members have refused to recognise us. You cannot work where you are not recognised. Some people in the community don't trust us, they believe we are always given something to take to them but we don't deliver it to them"* FGD 007, CHV
22	*"…the challenges they experience are because they do the work empty-handed. It is like they are helping by word of mouth only"* FGD 002, Community health committee
23	*"I can say when people get labour, this is the biggest point that we need the CHW, because the baby can come out anytime, and sometimes you find they are delaying, you call someone [CHV] and she tells you to wait, while the labor can't wait and you are in need of the CHV, and that person [CHV] should be there at the right time. You can find that when you have said wait … the baby is already there, but either of them dies, because maybe the mum bled so much or the baby has just gone because there is no care."* KII 003, Service recipient
24	*"If maybe let us say someone [CHV] is coming, you find me I am doing my job, and you want to talk to me at that time, but this job I am doing I have to do it right now, you are not patient, and I can't delay this job, so they become annoyed, and I become absent, and they just leave"* KII 003, Service recipient

4.4: Health Surveillance Assistants (HSAs) in Malawi

4.4.0 Profile of study participants

The principal researcher reviewed policy documents (Government of Malawi 2012; Ministry of Health Malawi 2011) and consulted with in-country partners to identify stakeholder groups for the study. The stakeholder groups comprised:

i) Programme staff of the Ministry of Health.

ii) Health professionals including nurse-midwives and Environmental Health Officers who are facility-level supervisors of HSAs.

iii) HSAs providing MNH services.

iv) Village Health Committee (VHC) members.

v) Women who have received MNH services from HSAs.

Table 4.4.1 illustrates the profile of study participants. In contrast to nurse-midwives who were largely females, the Environmental Health Officers, HSAs and members of the VHC members were largely males. Programme staff had the longest median duration working with HSAs while members of the VHC had the shortest median duration. Among stakeholders whose median ages were assessed, service recipients had the lowest median age followed by VHC members. The HSAs had the highest median age.

Table 4.4.1: Characteristics of the study participants in Malawi

Stakeholder group	Total number of participants	Male: female ratio	Median duration working with/as CHWs (years)	Median age (years)
Policy makers & programme staff	5	2:3	11	N/D
Nurse-midwives	5	1:4	4	N/D
Environmental Health Officers (EHO)	2	2:0	4	N/D
Health Surveillance Assistants (HSA)	34	25:9	8	36
Village Health Committee (VHC) members	51	28:23	3	35
MNH Service recipients	5	0:5	N/D	29

N/D-Not documented

4.4.1 Characteristics of HSAs in Malawi

The perspectives of the various stakeholder groups tended to align with policies on CHW characteristics. Where necessary, perspectives of these stakeholders clarified the policies on selection, training, remuneration, supplies and supervision of HSAs.

Selection of HSAs

The study participants' perspectives corroborated policies on HSA selection and provided additional information on the selection process and criteria. The perspectives and policies show that District Health Offices (DHOs) select HSAs based on educational qualification and pay less emphasis on demographic attributes of the candidates.

Selection entails credential screening and pre-employment examination

A policy document suggests that HSA candidates are expected to have some secondary education (Institute for International Programmes et al. 2012). One HSA, however, clarified that candidates are expected to have a 12-year education (previously 10 years) that guarantees adequate knowledge of science, literacy in English and numeracy skills as evidenced by credit pass in the relevant subjects at the Malawi Secondary School Certificate (Box 4.4.1: 1 below). While it is preferred that HSAs are residents of the community (UNICEF 2014), programme staff explained that residence in the community is not considered in the selection or deployment of HSAs (Box 4.4.1: 12, 13 appendix). They added that they *'recruit women and men'* and do not consider candidate's gender during the recruitment process (Box 4.4.1: 2 below).

As explained by one of the HSAs, the final stage of the selection process entails pre-employment examination (Box 4.4.1: 14 appendix).

Box 4.4.1 (Selection)	
1	*"They choose people with Malawi School Certificate of Education [MSCE]. They choose people who can speak English."* FGD 002, HSA
2	*"We recruit women and men. They are recruited depending on district needs; the recruitment is based on 1:1,000 ratio. The interviews are done in the district by people from the district office."* KII 005, Programme staff

Training and career progression of HSAs

Programme staff and HSAs clarified policies on HSA training. They described the various factors influencing timing of pre-service training and the content of in-service training:

HSAs may provide health services without pre-service training

Policy documents show that successful HSA candidates undergo a residential pre-service training lasting 12 weeks before they start providing health services (UNICEF 2014; Institute for International Programmes et al. 2012). A programme staff, however, clarified that new HSAs are often deployed to provide services before they are trained. Therefore, they are expected to develop their initial knowledge and

skills by *'learning from their friends [trained colleagues]'* since pre-service training may be delayed for months due to non-availability of funds (Box 4.4.1: 3 below). At the end of the training, HSAs undergo an examination and the Ministry of Health awards a certificate to successful candidates (Box 4.4.1: 15 appendix).

In-service technical training courses are informed by local health needs and availability of NGO support

As a policy, the NGOs (in collaboration with the Ministry of Health) working in specific health areas support in-service technical training of HSAs in a disease or health area. The focus of the technical training, however, depends on the health needs and priorities of the district and the availability of NGOs within the district that will support these training courses (UNICEF 2014). A programme staff explained that technical training sessions are organised based on local health needs as informed by *'data from the catchment area.'* In addition, priority for technical training is given to the *'hard-to-reach areas'* (Box 4.4.1: 4 below). One HSA mentioned training on family planning and HIV counselling and testing as examples of technical training courses provided based on local health needs (Box 4.4.1: 16 appendix).

Additional training or promotion exam is required for career progression

While the reviewed policy documents lacked a description of HSA's career progression, the HSAs and environmental health officers described career paths of HSAs. One HSA explained that HSAs with satisfactory MSCE grades undergo additional three-year training at the school of health sciences to become assistant environmental health officers (Box 4.4.1: 5 below).

Asides educational advancement, they may also advance their career to become senior HSAs based on their performance. HSAs and environmental health officers explained that environmental health officers recommend candidates for promotion while the district health office conducts promotion interviews for these candidates. They added that recommendation is based on *'merit'*, *'hard work'*, *'leadership capacity'* and having a minimum of *'four-year work experience'* (Box 4.4.1: 17-19 appendix).

	Box 4.4.1 (Training)
3	*"They go to work first before they go for training. The duration before going for training depends on the availability of funds. Some organisations organise the training sometimes. Some can stay for six months while others can stay for one year. You start working before training. Yes, you learn from your friends."* KII 003, Programme staff
4	*"They use the outcome of data from the catchment area such as maternal and neonatal deaths. We choose those from hard-to-reach areas."* KII 001, Programme staff
5	*"To get promoted from HSA to AEHO [Assistant Environmental Health Officer], they consider your qualifications and performance, and if you have good MSCE grades, you apply and go to School for Health Sciences, and it is a three-year training."* FGD 001, HSA

Remuneration of HSAs

As a policy, the government pays monthly salaries to HSAs (UNICEF 2014). However, HSAs clarified that there is no additional allowance with the government salary except for training allowance paid by supporting NGOs (Box 4.4.1: 6, 7 below).

	Box 4.4.1 (Remuneration)
6	*"We don't get allowances as at now. We only get salaries.*" FGD 001, HSA
7	*"Some NGOs just give lunch allowance during training."* FGD 003, HSA

Supplies used by HSAs

A policy document itemised the various drugs, vaccines, diagnostic kits and equipment, data collection tools and commodities used by HSAs. It noted that NGOs working in the respective health areas provide these drugs and commodities channelling them through the link health centres where the HSAs receive supervision and submit their reports (Institute for International Programmes et al. 2012).

Programme staff and members of the VHC added that HSAs have uniforms for identification and use protective wears such as raincoats and gumboots *'to be used during the rainy season'* (Box 4.4.1: 8, 9 below).

	Box 4.4.1 (Supplies)
8	*"They use counselling cards, weighing scales, timers and thermometers and data collection tools for documentation."* KII 001, Programme staff
9	"*In addition are gumboots and raincoats to be used during the rainy season and torches."* FGD 001, Village health committee

Supervision of HSAs

Policies and perspectives of programme staff and nurse-midwives suggest that HSAs receive their supervision solely from the formal health system. Overall, programme staff of the District Health Office, environmental health officers and other health professionals in the health centre supervise HSAs. The focus and frequency of supervision, however, tend to vary between supervisors.

Programme staff, environmental health officers and senior HSAs monitor service delivery

As a policy, programme staff, environmental health officers and senior HSA monitor and support HSAs in delivering services to their recipients. They monitor HSAs through direct observation at the village clinic and during home visits. Supervision entails a review of reports and registers against the work plan. The frequency of supervision, however, varies between these supervisors. While district-level programme staff are expected to conduct supervisory visits on a monthly or quarterly basis, facility-level supervisors such as senior HSAs and environmental health officers provide daily and weekly supervision respectively (Institute for International programmes et al. 2012). A programme staff added that district-level supervisors conduct review meetings with HSAs to *'see the challenges, strengths and map the way forward.'* In addition, they conduct joint meetings of HSAs and community leaders to discuss *'how to improve'* health status of the community members (Box 4.4.1: 10 below).

Nurse-midwives focus on strengthening clinical skills of HSAs

As a policy, nurse-midwives are expected to provide clinical supervision to HSAs. They supervise and support HSAs to perform clinical procedures such as vaccination, strengthen their clinical competence and ensure that HSAs do not provide services beyond their scope of practice (Institute for International

programmes et al. 2012). A nurse-midwife explained that when they observe any inadequacy, they *'talk to their supervisors [environmental health officers] during general staff meeting'* as they are not the direct supervisors of HSAs (Box 4.4.1: 11 below; box 4.4.1: 20 appendix).

Box 4.4.1 (Supervision)	
10	*"I do supervise them to see how they are conducting the home visits for pregnant and postnatal women and we also do review meetings to see the challenges, strengths and map the way forward. With the HSAs, I also meet the community leaders and discuss how we can improve the health of the newborn and the mothers in the communities."* KII 001, Programme staff
11	*"We only check their performance when we are working with them. At the general staff meeting, we talk to their supervisors when they go beyond their job description. The HSAs also attend."* KII 001, Nurse-midwife

4.4.2 The scope of practice of HSAs in MNH care

Table 4.4.2 shows the scope of practice of HSAs in MNH care. It illustrates the role of HSAs in identifying pregnant women and providing ANC, PNC, neonatal care and family planning services in the health facility and in the community. In addition, policies (Kadzandira & Chilowa 2001) and perspectives of study participants highlight the roles of VHC members and other support workers in providing some services on behalf of HSAs.

ANC services provided by HSAs

The HSAs provide ANC services with respect to the stage of pregnancy. A policy document suggests that HSAs work together with TBAs to identify pregnant women or may expect pregnant women to report their pregnancies to them (Government of Malawi 2008). A nurse-midwife, however, pointed out that community women prefer to keep news of their pregnancies as a *'secret'* to *'avoid being bewitched.'* Therefore, HSAs depend on a support group known as *'Amayi Achinsinsi [secret women]'* who the women usually confide in (Box 4.4.2: 1 below).

Following confirmation of pregnancy at the health centre, HSAs are expected to conduct one focused home visit in each trimester of the antenatal period. During the first visit, they are expected to emphasise the importance of attending ANC clinics and educate the women on the danger signs in pregnancy (Government of Malawi

2008). Working on behalf of the HSAs, the VHC members stated that they *'send reminders'* to prompt women to attend ANC clinics (Box 4.4.2: 6 appendix).

The second visit tracks ANC services received till the date of visit, identifies danger signs and facilitates discussion on a birth plan and emergency preparedness. During the third visit, they are expected to emphasise skilled birth attendance and prepare the family for postnatal and neonatal care (Government of Malawi 2008). A programme staff mentioned that HSA may assist with vaccination of pregnant women when they are at the health centre (under the supervision of nurse-midwives) and conduct HIV counselling and testing if they have received the required training (Box 4.4.2: 7 appendix).

Another programme staff pointed out that HSAs encourage pregnant women who live far away from the health centre to *'move into the facility (waiting room) to wait for labour'* by 36 weeks of gestation. This precautionary measure aims to avoid deliveries at home or by the roadside (Box 4.4.2: 8 appendix).

Labour and delivery services provided by HSAs

Even though it is not explicitly stated in policy documents, perspectives of VHC members suggest that HSAs have limited roles during labour and delivery. Especially as pregnant women who reside far away from the health centre are expected to be in the "waiting rooms" by 36 weeks of gestation (Box 4.4.2: 2 below).

PNC services provided by HSAs

HSAs and VHC members explained that there are community by-laws forbidding home deliveries. In situations where a woman has delivered at home, documented clearance must be obtained from the village head before proceeding to the health centre for postnatal care. The HSAs (working in collaboration with VHC members) identify these women and accompany them to the health centre after obtaining a written clearance from the village chiefs (Box 4.4.2: 3 below; box 4.4.2: 9 appendix). These women are assessed for post-delivery danger signs at the health centre particularly to rule out retained products of conception.
As a policy, HSAs are expected to pay three home visits during the postnatal period. Using counselling cards, they are expected to educate the nursing mother on

adequate nutrition, breastfeeding and danger signs in the postnatal period (Government of Malawi 2008).

Neonatal care services provided by HSAs

During the postnatal home visits, the HSAs are expected to educate nursing mothers on umbilical cord care, newborn danger signs and Kangaroo mother care for low birth weight babies (Government of Malawi 2008). HSAs and VHC members corroborated findings from the policy documents and added that HSAs monitor growth of low birth weight babies (Box 4.4.2: 10, 11 appendix). A programme staff and VHC members explained the role of HSAs in vaccinating the newborn stating that HSAs provide oral polio and BCG vaccines at the health centre (Box 4.4.2: 4 below; box 4.4.2: 10-12 appendix).

Family planning services provided by HSAs depend on additional training

As a policy, all HSAs provide health education on all forms of contraception (Government of Malawi 2008). However, HSAs added that they provide oral contraceptive pills and administer contraceptive injection at the village or outreach clinics only if they have undergone technical training on family planning (Box 4.4.2: 5 below; box 4.4.2: 13 appendix). HSAs also mentioned that HSAs residing in the community are able to provide family planning services to community members in their houses (Box 4.4.2: 13 appendix). A programme staff explained that HSAs supervise community-based distribution agents (volunteers that have received a 10-day training) to distribute condoms from door-to-door and replenish the stock of oral contraceptive pills (Box 4.4.2: 14 appendix).

Box 4.4.2 (Scope of practice in MNH care)	
1	*"There is a group called Amayi Achinsinsi [in English "secret women], which they use to identify pregnant women. Culturally, pregnancy is not revealed to anybody to avoid being bewitched. They work as collaborators between pregnant women and HSAs. They work as support groups."* KII 001, Nurse-midwife
2	*"Usually women are advised not to give birth at home. When a woman gives birth at home, the HSAs advise the woman to go to the hospital to check if both the baby and the woman are ok or not."* FGD 001, Village health committee

	Box 4.4.2 (Scope of practice in MNH care)
3	*"If a woman gives birth at home, we advise the spouse to take the woman to the hospital. When such a thing happens the couple gets a letter from the traditional leader to get help at the hospital. The Chiefs are informed as well as the HSAs before the woman goes to the hospital. At the hospital, we give reasons why the delivery was done at home which is a thing which is not acceptable these days. The couple pays a certain fee, like a penalty, and this just encourages couples to deliver at the hospital."* FGD 005, Village health committee
4	*"After discharge, the HSAs do a detailed check of the baby especially on the healing of the umbilical area and colour of the eyes. They also give BCG vaccine to the baby."* FGD 005, Village health committee
5	*"We give IEC on family planning i.e. Information, Education and Communication on family planning. We do give some family planning methods such as pills and contraceptive injection which is depo, and it is only these days that we have been trained to give depo, in the past, we were only issuing pills. We also give condoms. Our daily important role is to give IEC [Information, Education and Communication] materials to the community."* FGD 001, HSA

Table 4.4.2: The scope of practice of HSAs in MNH care

Scope of practice	HSA
Antenatal care	
Identification of pregnant women in the community	
Screening for danger signs	
Clinical assessment for high-risk pregnancy	
Provision of iron and folic acid	
Calcium supplementation where needed	
Tetanus vaccination	
HIV Counselling and Testing	
Provision of long-lasting insecticidal nets (LLINs) to prevent malaria	
Provision of Intermittent preventive treatment in pregnancy (IpTP) to prevent malaria	
Facilitation of birth and emergency preparedness	
Labour and delivery	
Skilled birth attendance	
Accompany women (pregnant women in labour) to the health facility	
Provision of transport support to and from a health facility	
Administration of prophylactic uterotonics to prevent postpartum haemorrhage	
Initial management of postpartum haemorrhage (e.g. uterotonics, uterine massage)	
Facilitate initiation of breastfeeding (within 30 minutes post-delivery)	
Postnatal care	
Facilitation of sustained breastfeeding	
Counselling on birth spacing and post-delivery family planning	
Identification of danger signs and subsequent referral to a health facility	
Provision of ART support to women living with HIV	
Neonatal care	
Immediate thermal care	
Neonatal resuscitation when required	
Administration of Vitamin K	
Assessment for danger signs	
Facilitation of hygienic cord and skin care	
Kangaroo mother care (KMC) for preterm babies and babies with birth weight less than 2500g.	

Scope of practice	HSA
Childhood vaccination: BCG and oral polio	
Promotion and support of timely ARV prophylaxis in HIV-exposed newborns	
Family planning	
Barrier methods (male and female condoms)	
Oral contraceptives (progestin-only and combined)	
Hormonal contraceptive injection	
Intra-uterine devices	
Implant	
Permanent (Irreversible) birth control	

Data sources :

1.Policy documents :

- The Role of Heath Surveillance Assistants (HSAs) in the delivery of health services and immunization in Malawi, 2001: http://www.unicef.org/evaldatabase/Files/MLW_01-04.Pdf.

2. Key informant interviews and focus group discussions

Key	
	Provide
	Refer
	Do not provide

CHW scope of practice template, adapted from *Strengthening the capacity of community health workers to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health* by UNAIDS et al., 2015

4.4.3 Factors influencing HSAs' MNH service delivery

The various stakeholder groups highlighted the influence of HSAs' demographic attributes, level of knowledge and skills, motivators, formal health system and community-related factors on HSAs' service delivery.

Attributes influencing the suitability of HSAs for health service delivery

The various stakeholder groups described various demographic factors that influence HSAs' MNH service delivery. While a nurse-midwife technician acknowledged that HSAs are better at communicating with service recipients, HSAs described the difficulty with communication when there is a gender difference between HSAs and the recipients. In addition, programme staff, an environmental health officer, HSAs and service recipients stressed the need for HSAs to reside in the community in order to provide prompt services:

HSAs' understanding of the community language and gender similarity with recipients foster communication

A nurse-midwife technician explained that community members *'understand HSAs'* more than doctors and nurses because the HSAs communicate in ways that are readily comprehensible to the community members (Box 4.4.3: 1 below). HSAs, however, explained that gender difference between HSAs and their recipients tend to limit the ability to communicate and deliver services. Especially as female HSAs are preferred for pregnant women because of social norms that limit service delivery by male HSAs (Box 4.4.3: 23 appendix).

Residence within the community

A service recipient expressed satisfaction with HSAs that reside within the community. She described how these HSAs are viewed as their *'own people'* thereby making them more approachable, available and accessible to their service recipients (Box 4.4.3: 2 below). Programme staff, an environmental health officer and HSAs identified reasons why some HSAs may reside outside the community served. The HSAs complained that their place of residence is often not considered in recruiting or deploying them (Box 4.4.3: 3 below). The environmental health officers and programme staff explained that HSAs may resort to living outside the community when there is no habitable accommodation within the community. Consequently,

these HSAs are less accessible to the community members and unable '*to help the community promptly'* (Box 4.4.3: 24, 25 appendix).

Box 4.4.3 (Attributes)	
1	*"...people in the community understand HSAs more than they understand the nurses and doctors."* KII 006, Nurse-midwife technician
2	*"In this catchment area, we are blessed because the HSAs are within the area. We are free to discuss things with them because they are our own people, we know them better."* FGD 001, Service recipient
3	*"Previously they would recruit and deploy people within their homes but these days they recruit and deploy anyhow they want."* FGD 003, HSA

Factors influencing the acquisition of knowledge and skills

Perspectives of nurse-midwives and HSAs suggest that HSAs lack the requisite competencies in providing MNH services due to the inadequacy of their training:

Delay in pre-service training and infrequent in-service training

HSAs emphasised that they provide various health services for which they were yet to receive training (Box 4.4.3: 3 below; box 4.4.3: 26 appendix). While a programme staff emphasised that priority for in-service training is given to HSAs in hard-to-reach areas, the HSAs in these areas argued that they do not get the invitation to participate in training. Especially as invitation letters are often sent to the health centres in peri-urban areas (Box 4.4.2: 2 above). Consequently, their colleagues working in peri-urban areas attend the training *'pretending to be from their area [hard-to-reach]'.* As a result, HSAs in hard-to-reach areas consider that their knowledge and skills may be out-of-date when compared to their colleagues in peri-urban and urban regions who regularly attend training. They also feared that they may be providing poor quality health services because of infrequent training (Box 4.4.3: 27 appendix).

HSAs have a limited understanding of theoretical concepts

The nurse-midwives and HSAs noted that the short duration of pre-service and in-service training tend to limit HSAs' in-depth understanding of clinical concepts that inform service delivery. The nurse-midwives emphasised that HSAs are deficient in

'knowledge of anatomy and physiology' to manage clinical cases. HSAs added that they need longer training to enable them to fill *'new registers'* (Box 4.4.3: 4 below; box 4.4.3: 28 appendix).

Frequent changes in the register and report formats without update training

HSAs complained of the frequent changes in health registers and report format without related update training. They lamented that these changes *'confuse'* them *'a lot'* making it difficult for them to use newer versions of same documents (Box 4.4.3: 5 below; box 4.4.3: 29 appendix).

Box 4.4.3 (Knowledge and skills)	
3	*"We lack knowledge of some things because of lack of training. We need refresher courses. We need to be updated so that we should be on the same page with other HSAs nationwide. We are limited to some of the things due to lack of knowledge."* FGD 003, HSA
4	*"They are not knowledgeable about the anatomy and physiology of the newborn, so sometimes it is difficult for them to manage some cases. The duration is short for them to understand these things."* KII 006, Nurse-midwife technician
5	*"Changing of report writing now and again is a challenge to some of us. This confuses us a lot."* FGD 004, HSA

Motivating factors that influence the performance of HSAs

Perspectives of nurse-midwife technicians and HSAs illustrate HSAs' intrinsic and extrinsic motivating factors. These factors relate to job satisfaction, recognition and reward. The nurse-midwife technician and HSAs agreed that HSAs are motivated by job satisfaction and recognition, but many HSAs complained about their allowances and career progression. The details of the factors are described below.

The intrinsic factor relates to:

Job satisfaction from positive health outcomes of service recipients:

HSAs expressed the job satisfaction they derive from the positive health outcomes of their recipients which keep them motivated and committed despite not receiving adequate supplies of commodities (Box 4.4.3: 6 below; box 4.4.3: 30 appendix).

Extrinsic factors that influence HSA motivation:

Commendations from supervisors

A nurse-midwife technician explained that HSAs who receive positive feedback and commendations during review meetings tend to be better motivated, committed and dedicated to discharging their duties (Box 4.4.3: 7 below).

Payment of allowances that are commensurate with the level of commitment

HSAs described how environmental health officers nominate them to attend training as *'a way of appreciation'* for meritorious performance at work. Moreover, it is anticipated that HSAs will earn an allowance from attending the training sessions (Box 4.4.3: 8 below).

In contrast, HSAs residing within the community lamented the limitless working hours with no additional allowance for the extra working hours. They narrated how community members call on them irrespective of the time of the day. Furthermore, they complained about health professionals who receive undeserved preferential treatment. They stated that '*the clinician who is sitting in the office is receiving allowances without working'* as compared to them that *'work day and night'* without additional allowance (Box 4.4.3: 31 appendix).

Transparency of promotion criteria

One HSA expressed concerns that the criteria for promotion to senior HSA are not transparent especially as HSAs with lower academic qualification (Junior Malawi School Certificate) are promoted ahead of those with higher academic qualification. Additionally, they perceive that the promotion exercises tend to favour HSAs living in urban areas as against those residing in rural areas (Box 4.4.3: 9 below).

Box 4.4.3 (Motivating factors)	
6	*"We are happy that due to these [health services], we have been saving babies from neonatal deaths."* FGD 003, HSA
7	*"Getting feedback and commendation during review motivates them to work very hard."* KII 006, Nurse-midwife technician
8	"*When you are a hard worker, the bosses can send you to attend training as a way of appreciation.*" KII 001, HSA

	Box 4.4.3 (Motivating factors)
9	*"It is a challenge to be promoted; we do not know what they consider. The last time they did interviews, they invited people with Junior certificates, and they left people with MSCE like some of us."* FGD 001, HSA

Health system support influences service delivery

The health system support relates to human resources, logistic issues that help with supplies and supervision of CHWs to deliver health services.

The **human resource-related** issues include:

Need for additional HSAs to improve coverage of health services

HSAs and VHC members (who assist HSAs in providing services at the community-level) stressed the need for additional HSAs and VHC members in catchment areas where the *'population is large'*. VHC members explained that the large coverage area prevents them from achieving the work-related targets. They emphasised the voluntary nature of their role and complained that '*due to too much work'* involved in health service delivery for the large population, they are unable to *'attend to family issues'* and personal income-generating activities (Box 4.4.3: 10, 11 below).

	Box 4.4.3 (Health system-human resources)
10	*"We need additional HSAs in areas where the population is large."* FGD 004, HSA
11	*"Others have large areas, so, we take a long time to reach out to these people though we work on voluntary basis. Transport problem also is a challenge as the areas are just too large. Due to too much work, we do not have time to help at our houses because we are busy doing development and health activities instead of attending to family issues."* FGD 001, Village health committee

Supply-related factors: Overall, HSAs and VHC members complained of an inadequate supply of commodities and poor logistic support for transport and communication.

Availability of means of identification, protective outfit, and commodities to complement health education improves service delivery

HSAs and VHC members complained that they lack means of identification such as uniforms or ID cards, thereby making it difficult for the community to identify them as HSAs or VHCs, and accept their health services (Box 4.4.3: 12 below; box 4.4.3: 32 appendix). Furthermore, they stressed the need for an adequate supply of commodities and protective wears such as *'raincoats and gumboots'* needed to conduct home visits during the rainy season and *'torchlights'* when they have to travel in the dark (Box 4.4.3: 33, 34 appendix).

They explained that HSAs are expected to provide the commodities that complement the health messages they have provided before community members can *'appreciate'* their work. For example, they expect them to provide mosquito nets for malaria prevention after health education session on malaria. Consequently, these community members tend to lose *'trust'* and respect for HSAs or VHC members who provide health messages without the commodities to implement the message and may stop *'attending health education sessions'* (Box 4.4.3: 35-37 appendix).

Telecommunication and transport support for VHCs

The VHC members stressed that poor transport network and communication support aggravates the challenge of providing services within a large catchment area and communicating with the HSA overseeing their community activities. Moreover, most VHC members lack mobile phones (and calling credit) to communicate with HSAs or bicycles to ride to the facility to inform the HSA of pressing health needs in the community. The VHC members emphasised the need for transport facilities to prevent women from *'delivering in the bush on the way to the hospital'* (Box 4.4.3: 13 below; box 4.4.3: 38, 39 appendix).

Lack of building or structure for the village clinics

The HSAs explained that many of the village and outreach clinics have no structure and they resort to providing health services in an open space. As such, it may be difficult to run the clinics to provide essential health services during the rainy season (Box 4.4.3: 14 below).

	Box 4.4.3 (Health system-supplies)
12	*"Some members do not have identity cards, so it becomes difficult to be accepted by the people. We also need uniforms such as T-shirts for identification."* FGD 004, Village health committee
13	*"The problem that we have here is transport. This sometimes makes women deliver in the bush on their way to the hospital."* FGD 005, Village health committee
14	*"…other HSAs cannot operate village clinic, so the other areas are deprived of important health services. Another challenge is the lack of structures to operate when doing village clinics because it becomes difficult to work during rainy season."* FGD 003, HSA

Supervision-related factors: The various stakeholder groups all provided views which illustrate the importance of adequate supervision on service delivery and identified factors preventing adequate supervision. Nurse-midwives stressed the importance of supervision in ensuring compliance with the scope of practice while programme staff and a nurse-midwife technician highlighted the factors that prevent adequate supervision. Furthermore, HSAs criticised the existing approach to supervision.

Inadequate supportive supervision

The HSAs stressed the need for their supervisors to be *'committed to supportive supervision'* which addresses their work-related challenges rather than *'report supervision'* that focuses on reviewing performance reports against targets (Box 4.4.3: 15 below).

Inadequate logistic support for supervision

Programme staff supervising HSAs explained that supervisors often lack transport support for supervision. They explained that senior HSAs require bicycles to facilitate supervision and district-level programme staff need to fuel official vehicles to travel to the community (Box 4.4.3: 16 below; box 4.4.3: 40 appendix).

Nurse-midwife technicians are not aware of HSAs' job description and competencies

While the nurse-midwives complained that HSAs sometimes go beyond their scope of practice when they are not adequately supervised (Box 4.4.3: 17 below), the

nurse-midwife technicians who also work with HSAs maintained that it is difficult to supervise HSAs as they (Nurse-midwife technicians) are not involved in training them. Consequently, they *'don't know what they were taught'* (Box 4.4.3: 41 appendix).

Box 4.4.3 (Health system-supervision)	
15	*"Let me ask the government and the bosses to be committed to supportive supervision, not the report supervision. Can you underline that? We would like to ask them to visit us when we tell them there is a problem, and they should be doing a follow-up of the problem on the phone."* FGD 001, HSA
16	*"… for us, we do supervision every three months, but sometimes we fail to do it because of some logistical challenges such as not having fuel for vehicles. At the moment, we have cars but no fuel."* KII 002, Programme staff
17	*"Another challenge is that they work outside the scope of their work because they work in all stations at the facility."* KII 001, Nurse-midwife

Community-related factors

The community-related factors reflect the perspectives of programme staff, HSAs, VHC members and service recipients. These factors relate to community perception of VHC members, HSAs and the link health facility. Other factors were community policies and events.

Community perception that VHC members are being paid

VHC members complained about community members who have the false impression that VHC members are paid workers. They lamented that *'pregnant women do not like'* them as they think they are *'being paid for the services'* they provide to them. Consequently, pregnant women have the notion that VHC members, despite being fellow community members, are using them as their source of income generation (Box 4.4.3: 18 below).

Community events and activities that compete for recipients' time

HSAs narrated their experience of *'low turnout'* in the village and outreach clinics during *'rainy season'* because community members are *'always busy in the field'*. Additionally, they experience low turnout of community members when the clinic

day falls on the same day with *'funeral ceremonies'* and *'traditional leader's meetings'* (Box 4.4.3: 19 below).

Community by-laws enforcing facility-based care

The VHC members mentioned that there are existing community by-laws mandating every pregnant woman to seek facility-based ANC and skilled birth attendance with an attendant penalty of *'giving a goat'* for non-compliance (Box 4.4.3: 20 below). Programme staff, however, maintained that even though these laws were *'formulated by the communities'*, there is a low level of compliance and consequently, *'women are still delivering at home'* (Box 4.4.3: 42 appendix).

Long waiting time at the link health centre

VHC members stated that despite advocacy to encourage delivery at the health facility, some community women still '*choose to give birth at home'* due to poor attitude of health workers at the link facility. They cited instances of service recipients who comply with referrals but meet *'nurses who do not help them'* at the health centre. Service recipients corroborated this, complaining that they *'stay in the queue for a long period'* when they require *'treatment as quickly as possible'* and they may return home *'without getting any treatment'* (Box 4.4.3: 21 below; box 4.4.3: 43 appendix).

Fear of stigmatisation at the health centre

VHC members expressed discouragement from women that do not comply with referrals. They explained that women who get pregnant out of wedlock are often reluctant to comply with ANC attendance and wait till the time of delivery before going to the health facility. Furthermore, they stated that pregnant women may fail to comply with ANC attendance because of the fear of HIV-related stigma if they test positive for HIV during routine ANC tests (Box 4.4.3: 22 below; box 4.4.3: 44 appendix).

Box 4.4.3 (Community-related factors)	
18	*"…pregnant women do not like us to see them because they think we are being paid for the services we are providing to them."* FGD 004, Village health committee

Box 4.4.3 (Community-related factors)	
19	*"We experience low turnout of clients during the rainy season because people are always busy in the fields and also when the village clinic coincides with traditional leader's meetings. Sometimes we fail to fulfil our work plan due to funerals in the community."* FGD 003, HSA
20	*"The issue of giving birth at home is now in the hands of chiefs because if this happens, they [couple] will give a goat as a penalty. There is a law whereby any woman who gives birth at home should give a goat as a penalty so this thing [home delivery] does not happen these days."* FGD 001, Village health committee
21	*"The problem is when we go to the hospital, we stay on the queue for a long period up to 2 pm when we need to get treatment as quickly as possible. Sometimes we stay on the line and go back home without getting any treatment, but the HSA fulfilled their responsibilities."* KII 002, Service recipient
22	*"There are other women who become pregnant, but they are not married. They feel shy to attend antenatal clinics. They only go to the hospital when they are about to give birth. These women make our job to be tough."* FGD 005, Village health committee

4.5: The Junior Community Health Extension Workers (JCHEWs) and Community Health Extension Workers (CHEWs) in Nigeria

4.5.0 Study participants in Nigeria

The principal researcher reviewed policy documents (NPHCDA 2013; CHPRBN 2015; National Primary Health Care Development Agency 2012) and consulted with in-country partners to identify stakeholder groups for the study. The groups comprised:

i) Programme staff of the National Primary Health Care Development Agency (NPHCDA), Primary Health Care Board and Community Health Practitioner Regulatory Board of Nigeria (CHPBRN). This stakeholder group also includes programme staff of the local government area councils. The agency and boards formulate policies relating to CHWs while the local government area councils implement these policies.

ii) Health professionals such as nurse-midwives who supervise CHWs at the PHC.

iii) CHEWs and Junior CHEWs (JCHEWs) providing MNH services.

iv) Ward Development Committee (WDC) members comprising respected community members.

v) Women who received MNH services from CHWs.

Table 4.5.1 describes the characteristics of the study participants in Nigeria. It shows that most of the nurse-midwives and CHEWs that participated in the study were females while male participants were relatively more among the programme staff and WDC members. The nurse-midwives and WDC members had the longest median duration working with CHEWs. An assessment of the median ages of CHEWs and their service recipients shows that the CHEWs had a higher median age.

Table 4.5.1: Characteristics of study participants in Nigeria

Stakeholder group	Total number of participants	Male: female ratio	Median duration working with/as CHWs (years)	Median age (years)
Policy makers & programme staff	9	5:4	8	N/D
Nurse-midwives	5	1:4	10	N/D
Ward Development Committee (WDC) members	11	6:5	10	N/D
Community Health Extension Workers (CHEWs) and Junior Community Health Extension Workers (JCHEWs)	15	4:11	8	37
MNH Service recipients	8	0:8	N/D	31

N/D- Not documented

4.5.1 Characteristics of CHEWs and JCHEWs

Selection of CHEWs and JCHEWs

Largely, the description of CHEWs' and JCHEWs' selection reflects the perspectives of the study participants as selection process and criteria were not adequately described in the reviewed policy documents.

CHEWs and JCHEWs are selected based on certification

Programme staff and CHEWs explained that representatives of local government area councils select CHEWs based on certification and focus less on their demographic attributes (Box 4.5.1: 1, 2 below).

CHEWs and JCHEWs are expected to understand the local language

Even though policy documents suggest that CHEWs and JCHEWs are expected to be indigenes of the community (SURE-P 2013), programme staff, CHEWs and JCHEWs clarified that there are many areas where community members may not meet the educational qualification for admission into the school of health technology. Consequently, community membership is not mandatory for selection but an added advantage *'because they speak the language'* of the community. They clarified that many communities have *'multiple languages'* so CHEWs and JCHEWs are only expected to have *'an idea of the local languages'* (Box 4.5.1: 1, 2 below).

Box 4.5.1 (Selection)	
1	*"They don't have to be members of the community; it is actually open. It is not really a hard and fast criterion. However, if they are members of the community, it's usually an advantage, because they are able to speak the local language of the people around, so they could relate better with them. However, what I want to say again is that there are areas with multiple languages, so some of them need to have the idea of the local languages."* KII 001, Programme staff, Local government
2	*"I have my certificate before I was employed. I am not even from this area, so they did not consider that. It is the merit… I speak the local language. You just have to, so far you are in the community. We must understand their language." KII* 001, CHEW

Training and career progression of CHEWs and JCHEWs

Policies and perspectives of study participants suggest that CHEWs and JCHEWs undergo pre-service training at the school of health technology before being recruited for service delivery. As a policy, JCHEW candidates undergo training for two years and CHEWs for three years to be certified for service delivery. Furthermore, they may undergo additional long-duration training for career progression. While the duration of training and career path seem relatively clear, the policies on entry qualifications for pre-service training are less clear.

Entry qualification for pre-service training at the school of health technology is flexible and varies across states: Overall, candidates require 12-year education as evidenced by credit pass in at least five subjects or four subjects (in the Senior

Secondary School Examination) to be enrolled as CHEW or JCHEW candidates respectively. However, the policy on admission requirement tends to vary across states with some states requiring credit pass in fewer subjects than others (College of Health Technology Calabar 2016; Lagos State College of Health Technology 2016). A national policy document suggests that there are attempts to design flexible school admission requirements in order to have more candidates qualifying from educationally disadvantaged areas which may not readily have candidates who will qualify with the present admission requirements (Federal Ministry of Health 2010). Furthermore, programme staff stressed that admission requirement for CHEW candidates is usually less than credit pass in five subjects as individuals with credit pass in five subjects or more will choose a more prestigious profession or seek university education as against education in the school of health technology (Box 4.5.1: 3 below; box 4.5.1: 12 appendix).

CHEWs and JCHEWs undergo in-service technical training of varied duration

A programme staff explained that in-service training varies in duration. Furthermore, some in-service training target specific cadre such as family planning training which targets CHEWs (Box 4.5.1: 12 below).

Additional training is required for career progression

A CHEW explained the career paths of JCHEWs and CHEWs. The CHEWs stated that JCHEWs with up to two years of work experience require two additional years of training at the school of health technology to become CHEWs. To progress from CHEW to community health officer, CHEWs are also expected to have a minimum of two years' work experience and subsequently undergo tertiary education in a university (Box 4.5.1: 5 below).

Box 4.5.1 (Training)	
3	*"The entry qualification usually is a young Nigerian with a senior secondary school certificate with between three and four credits in the result. Anybody who has five credits will either apply to nursing school or go to the university or something. So, it is not true that they have five credits, even if they tell you that, it is not true."* KII 005, Programme staff, Regulatory Agency

	Box 4.5.1 (Training)
4	*"We train them on family planning methods. We give refresher training, and it lasts for…I think three to four weeks, so it's the senior CHEWs that do family planning training."* KII 002, Programme staff, Regulatory Agency
5	*"When you have your JCHEW, you can now go to school to become a CHEW after two years of experience. When you have your CHEW, you can go back to school to become a Community health officer. It was eight years of experience, but now it's two years, you go back to school for additional qualification, that is B.Sc. in community health."* KII 001, CHEW

Remuneration of CHEWs and JCHEWs

Programme staff explained that most CHEWs and JCHEWs are salaried even though policy documents do not explicitly state their forms of remuneration. The programme staff mentioned that CHEWs and JCHEWs receive a monthly salary and additional allowances for participation in health outreaches such as immunisation campaigns. These allowances serve as an incentive for participation (Box 4.5.1: 6 below).

Some JCHEWs perform their roles as volunteers: A JCHEW clarified that remuneration varies with contract type stating that JCHEWs employed on a volunteer basis are paid transport allowance without a monthly salary (Box 4.5.1: 7 below).

	Box 4.5.1 (Remuneration)
6	*"The only thing that may come up that has to do with incentives is maybe if there are programmes like supplemental vaccination. Ad hoc, sometimes the area councils can be involved in the programme. Such incentives are paid by the state or by the federal government or by some partners. So, they get all those incentives as well."* KII 007, Programme staff, Local government
7	*"… as you see us as volunteers… in our case, there is no money, they are giving us 3,000 naira for transport, is that payment?"* FGD 001, JCHEW

Supplies used by CHEWs and JCHEWs

Policies and perspectives of study participants suggest that CHEWs and JCHEWs receive supplies of drugs and commodities from local government or the supporting NGOs.

Supplies used by CHEWs and JCHEWs include 'essential' and 'non-essential' drugs: Policies and perspectives of programme staff and CHEWs suggest that essential

drugs (or commodities) are used in priority health areas and provided by the local government area council. In contrast, non-essential drugs (commodities) are often provided by NGOs working in a related health area (National Primary Health Care Development Agency 2012) (Box 4.5.1: 8 below; box 4.5.1: 13 appendix). Even though policy documents suggest that CHEWs and JCHEWs may charge the market price for drugs (National Primary Health Care Development Agency 2012), the different groups of stakeholders stated that many of the drugs and commodities (especially essential drugs) are provided to service recipients free of charge (Box 4.5.1: 9 below; box 4.5.1: 14 appendix).

	Box 4.5.1 (Supplies)
8	*"In our own facility, we have what we call DRF [Drug Revolving Fund]. And if we don't want to use that of DRF, we have...those drugs that we need, we forward it to the pharmacist of that area council, so he will now order at their own level. But most of them are just the common drugs. Then we have some people, like NGOs, they use to send drugs, but after the treatment, the drugs are going back to the DRF."* KII 004, CHEW
9	*"They [CHWs and nurse-midwives] will sell those drugs after they have sat together with the members of the ward development committee to check the prevailing market price because they should not sell above the going market price. The money they make, they will use it to replenish the stock."* KII 002, Programme staff, Regulatory Agency

Supervision of CHEWs and JCHEWs

As a policy, JCHEWs are supervised by CHEWs while CHEWs are supervised by community health officers or nurse-midwives (in the absence of community health officers). Programme staff from local government and government agencies (on behalf of the formal health system) and Ward Development Committee (on behalf of the community) provide oversight of activities in the PHC centres. On the one hand, the approach to supervision tends to be similar and include direct observation using a checklist, review meetings and capacity building to improve competency. On the other hand, the frequency of supervision varies across these stakeholder groups (National Primary Health Care Development Agency 2012).

The frequency of CHEWs and JCHEWs' supervision depends on need and availability of resources

Although policy documents suggest that CHEWs and JCHEWs should be supervised at specific intervals (National Primary Health Care Development Agency 2012). Programme staff, CHEWs and JCHEWs stated that supervisory visits are usually unscheduled (Box 4.5.1: 10, 11 below; box 4.5.1: 15, 16 appendix).

	Box 4.5.1 (Supervision)
10	*"They are called for monthly training at the Local Government Area [LGA], where they check all the registers and forms, they follow it one-by-one to fix the errors."* KII 009, Programme staff, Local Government
11	*"I used to assess them, at least during clinical procedures. If there's any mistake, then we correct it together, there and then. And also just to encourage them any time that they do well."* KII 001, Nurse-midwife

4.5.2 The scope of practice of CHEWs and JCHEWs in MNH care

Policies and perspectives of study participants illustrate how the scope of practice of CHEWs and JCHEWs depends on cadre and receipt of additional training. They also show that the primary workstation varies between the two cadres. As a policy, CHEWs are expected to spend 80% of their working hours in the primary health centre and 20% in the community. The JCHEWs, in contrast, are expected to spend 40% of their working hours in the primary health centre and 60% in the community (National Primary Health Care Development Agency 2013). Overall, nurse-midwives and JCHEWs suggest that CHEWs and JCHEWs working in the same facility as nurse-midwives are often limited to less technical MNH tasks (Box 4.5.2: 1 below; box 4.5.2: 8 appendix). Furthermore, a CHEW added that male CHWs have fewer roles relating to MNH as MNH tasks are often assigned to female CHEWs and JCHEWs (Box 4.5.2: 2 below).

Table 4.5.2 draws on the policies and stakeholders' perspectives to illustrate the scope of practice of each cadre in relation to MNH care. Furthermore, it highlights the tasks shared by the two cadres and identifies other tasks where the two cadres have different roles.

ANC services provided by CHEWs and JCHEWs

Policy documents and perspectives of study participants suggest that CHEWs and JCHEWs provide ANC services appropriate to the stage of pregnancy. Through CoRPs and WDC members, they identify pregnant women at the early stage of pregnancy and encourage them to access facility-based ANC (National Primary Health Care Development Agency 2013) (Box 4.5.2: 3 below). A programme staff and CHEWs described MNH services provided by CHEWs and JCHEWs at the PHC. These include health education on nutrition in pregnancy, malaria and infection prevention and birth preparedness. Furthermore, they are expected to provide haematinics, mosquito nets, administer vaccination (against tetanus infection) and assess pregnant women for high-risk pregnancy by checking their weight and blood pressure. In addition to checking weight and blood pressure, they also request for an obstetric ultrasound scan and conduct laboratory tests to rule out diabetes, HIV infection and anaemia in pregnancy. Pregnant women with high-risk pregnancies are referred to secondary-level facilities (Box 4.5.2: 8-11 appendix).

The WDC members explained the role of CHEWs and JCHEWs in reviewing the birth plan and emergency preparedness of pregnant women that are approaching their expected date of delivery. They mentioned that CHEWs and JCHEWs review and ensure that all the essential materials are included in the delivery pack (Box 4.5.2: 12 appendix).

Labour and delivery services provided by CHEWs and JCHEWs

Policies and perspectives of programme staff, CHEWs and JCHEWs show that CHEWs and JCHEWs manage labour with supervision from nurse-midwives (CHPBRN 2006) (Box 4.5.2: 4 below). In contrast to findings from the policy document, a programme staff explained that only CHEWs and JCHEWs who have undergone training on modified lifesaving skills conduct deliveries (Box 4.5.2: 4 below). Overall, CHEWs and JCHEWs are expected to assess women for danger signs during labour and delivery including excessive vaginal bleeding and retained placenta (Box 4.5.2: 13, 14 appendix). A programme staff explained that CHEWs and JCHEWs monitor labour without using a partogram as policymakers have only recently included partogram in the revised training curriculum (Box 4.5.2: 15 appendix).

PNC services provided by CHEWs and JCHEWs

Policies and perspective of programme staff show that CHEWs and JCHEWs are supposed to conduct postnatal home visits to support breastfeeding, assess nursing mothers for danger signs and educate family members on these signs (National Primary Health care Development Agency 2013) (Box 4.5.2: 16 appendix). In contrast to policies, WDC members and service recipients pointed out that CHEWs and JCHEWs rarely conduct postnatal home visits. They added that CHEWs and JCHEWs focus on newborn immunisation during home visits paying little or no attention to nursing mothers (Box 4.5.2: 5 below; box 4.5.2: 17 appendix).

Neonatal care services provided by CHEWs and JCHEWs

The CHEWs, JCHEWs and service recipients described the roles of CHEWs and JCHEWs in assessing the newborn for danger signs and birth defects, ensuring thermal control and vaccinating the newborn. CHEWs and JCHEWs stated that they conduct "head-to-toe" clinical assessment of the newborn to identify danger signs and detect birth defects in the immediate post-delivery period. Furthermore, they described their roles in ensuring that the baby is kept warm always, to prevent hypothermia. Particularly, low birth weight newborn whose mothers are encouraged to provide skin-to-skin care to keep the child warm (Box 4.5.2: 6 below; box 4.5.2: 18, 19 appendix). Service recipients mentioned that CHEWs and JCHEWs provide age-appropriate vaccination to newborns in the community, especially the newborns that were delivered at home. The CHEWs and JCHEWs described how they educate the mothers on cord care, encourage nursing mothers to bring their babies for additional immunisation during the postnatal visit at six weeks and promote early HIV testing for HIV-exposed newborns (Box 4.5.2: 20-22 appendix).

Family planning services provided by CHEWs and JCHEWs

One programme staff and one of the CHEWs explained that the role of CHEWs and JCHEWs in family planning services depends on CHW cadre and whether the CHW has received the requisite technical training. They explained that all CHWs, irrespective of cadre or technical training, provide health education on all forms of contraception. They also provide condoms and oral contraceptive pills. However, it

is only CHEWs who have undergone technical training on family planning that provide contraceptive injections (Box 4.5.2: 7 below; box 4.5.2: 23 appendix).

Box 4.5.2 (Scope of practice in MNH care)	
1	*"We don't leave the delivery for them to handle, we are always there, they just assist, so we're the ones that conduct the deliveries, and even antenatal, we don't leave it for them to do. They only assist."* KII 004, Nurse-midwife
2	*"Antenatal care and delivery are given to our female counterparts, but you know that everybody can do it."* KII 001, CHEW
3	*"From the pregnant mother to the newborn care; they are expected to go into the community. They are able to know the pregnant mothers there, and then they follow them up so that they come to the clinic for antenatal care."* KII 002, Programme staff, Regulatory Agency
4	*"After antenatal care, you find some of them offering delivery services, but we try to limit these to those who have gained some experience and have been trained further especially those that have received the lifesaving skills training. So, they are able to provide delivery services. But of course, you know that delivery at that level is limited to low-risk pregnancies."* KII 001, Programme staff, Regulatory Agency
5	*Yes, when they come, they focus on administering immunisation to children, not on the nursing mothers"* KII 003, Service Recipient
6	"*After the woman delivers, you just have to check the child from head to toe to know if there is any abnormality."* KII 002, CHEW
7	*"They give the barrier method, the pills, and contraceptive injection; but only senior community health workers provide contraceptive injection. The junior CHEWs, they can administer or render services like the barrier method, and the pills, you know."* KII 007, Programme staff, Local Government

Table 4.5.2: The scope of practice of CHEWs and JCHEWs in MNH care

Scope of practice	CHEW	JCHEW
Antenatal care		
Identification of pregnant women in the community		
Screening for danger signs		
Clinical assessment for high-risk pregnancy		
Provision of iron and folic acid		
Calcium supplementation where needed		
Tetanus vaccination		
HIV Counselling and Testing		
Provision of long-lasting insecticidal nets (LLINs) to prevent malaria		
Provision of Intermittent preventive treatment in pregnancy (IpTP) to prevent malaria		
Facilitation of birth and emergency preparedness		
Labour and delivery		
Skilled birth attendance		
Accompany women (pregnant women in labour) to the health facility		
Provision of transport support to and from a health facility		
Administration of prophylactic uterotonics to prevent postpartum haemorrhage		
Initial management of postpartum haemorrhage (e.g. uterotonics, uterine massage)		
Facilitate initiation of breastfeeding (within 30 minutes post-delivery)		
Postnatal care		
Facilitation of sustained breastfeeding		
Counselling on birth spacing and post-delivery family planning		
Identification of danger signs and subsequent referral to a health facility		
ART support to women living with HIV		
Neonatal care		
Immediate thermal care		
Neonatal resuscitation when required		
Administration of Vitamin K		
Assessment for danger signs		
Facilitation of hygienic cord and skin care		

Scope of practice	**CHEW**	**JCHEW**
Kangaroo mother care (KMC) for preterm babies and babies with birth weight less than 2500g.		
Childhood vaccination: BCG and oral polio		
Promote and support timely ARV prophylaxis in HIV-exposed newborns		
Family planning		
Barrier methods (male and female condoms)		
Oral contraceptives (progestin-only and combined)		
Hormonal contraceptive injection		
Intra-uterine devices		
Implant		
Permanent (Irreversible) birth control		

Data sources :

1.Policy documents :

- Federal Ministry of Health, 2010. National Strategic Health Development Plan.
- National Primary Health Care Development Agency, 2013. Minimum-Standards-for-Primary-Health-Care-in-Nigeria.
- National Primary Health Care Development Agency, 2012. National Guidelines for Development of Primary Health Care System in Nigeria

2. Key informant interviews and focus group discussions

Key	
	Provide
	Refer
	Do not provide

CHW scope of practice template, adapted from *Strengthening the capacity of community health workers to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health* by UNAIDS et al., 2015

4.5.3 Factors influencing CHEWs' and JCHEWs' service delivery

The factors influencing service delivery emerged from the views of all stakeholder groups. These factors include demographic attributes, acquisition and retention of knowledge and skills, motivation and factors relating to the formal health system and the community. The perspectives of programme staff, CHEWs and JCHEWs cut across all the sub-themes. In contrast, perspectives of nurse-midwives focused on knowledge and skills while those of WDC members and service recipients focused on the availability of supplies and community-related factors.

Attributes influencing suitability of CHEWs and JCHEWs for health service delivery

According to programme staff, specific demographic attributes, language competency and familiarity with climate condition tend to influence the suitability of CHEWs and JCHEWs for their roles:

Female CHEWs and JCHEWs are preferred and more acceptable for MNH service delivery: Although gender of CHEWs and JCHEW candidates is not considered during recruitment, service recipients prefer, accept and utilise MNH services provided by female CHEWs and JCHEWs as against those provided by their male counterparts. Programme staff emphasised that in labour rooms with male CHEWs and JCHEWs, *'you won't see anybody'* as the recipients are likely to prefer delivery with a TBA (female) than a male CHEW or JCHEW (Box 4.5.3: 1 below).

CHEWs and JCHEWs who are community members are better placed to provide culturally-sensitive services and have better retention: Programme staff explained that community members are preferred during recruitment of CHEWs and JCHEWs. Especially as they are more likely to have same (or similar) language and religion as community members thereby enabling them to deliver culture-sensitive services. Similarly, community members are more likely to be better adapted to the prevailing climatic conditions in the community and unlikely to seek redeployment based on difficulty with culture and climate of the community.

However, there are communities in which no community member has the required educational qualification to be admitted into the school of health technology. As a result, the CHEWs and JCHEWs providing services within the community may not be members of the community and may be socioculturally different from the

community members. These CHEWs and JCHEWs may lack an in-depth understanding of the dominant language and religion of the community making it difficult for them to deliver culturally-sensitive health services. Additionally, the difference in climate between their place of origin and the community served may make them request for deployment (Box 4.5.3: 2 below; box 4.5.3: 29 appendix).

Box 4.5.3 (Attributes)	
1	*"Because in the northern part of Nigeria, any labour room that is managed by a male, especially in the communities, you won't see anybody, they will continue seeing their TBAs"* KII 003, Programme staff, Regulatory agency
2	*"Majority! The majority are within that community, but as I told you, there are some communities that don't have. They need a health facility, and the government has made provision of health facility there. So, if they don't have, you have no choice but to post somebody from elsewhere"* KII 002, Programme staff, Regulatory agency.

Factors influencing acquisition and retention of knowledge and skills

Programme staff, nurse-midwives, CHEWs and JCHEWs described how CHEWs' and JCHEWs' knowledge and skills are influenced by regularity and depth of in-service training. While CHEWs and JCHEWs described how training sessions have improved their knowledge and skills, nurse-midwives complained that CHEWs and JCHEWs lacked the requisite knowledge and skills. Programme staff provided recommendations on how to improve acquisition and retention of knowledge and skills.

CHEWs and JCHEWs in hard-to-reach areas have fewer technical training sessions

CHEWs and JCHEWs stated that in-service technical training equips them with the requisite knowledge, skills and confidence to manage clinical cases that they could not manage before *'modified life-saving skills training'*. For example, conducting deliveries of babies with *'breech'* presentation (Box 4.5.3: 3 below; box 4.5.3: 30 appendix).

CHEWs, JCHEWs and programme staff complained of the imbalance in the invitation of CHEWs and JCHEWs for technical training. While CHEWs and JCHEWs in PHCs located in urban regions continue to attend frequent training

sessions, those in hard-to-reach areas are rarely invited to these training sessions. Consequently, the "frequently trained" CHEWs and JCHEWs in urban areas *'don't even have time to implement what they have learnt'* as they are often away from the PHC participating in training. Conversely, those in hard-to-reach areas have relatively limited knowledge and skills to provide quality services to their service recipients (Box 4.5.3: 31, 32 appendix).

The presence of higher cadre health workers in the PHCs presents an opportunity for on-the-job skill training: The CHEWs and JCHEWs noted that the presence of nurse-midwives who are better skilled at providing technical services often presents an opportunity for learning new skills (Box 4.5.3: 4 below).

CHEWs and JCHEWs have a limited understanding of theoretical concepts underpinning clinical procedures: Nurse-midwives complained that the training of CHEWs and JCHEWs lacked the needed *'theoretical'* depth. Especially as this theoretical knowledge is to provide the foundation for understanding the concepts guiding the various clinical procedures. Consequently, nurse-midwives struggle to explain clinical procedures to CHEWs and JCHEWs who lack understanding of the theoretical basis of the clinical procedures (Box 4.5.3: 5 below). To improve the competency of the CHEWs and JCHEWs in providing MNH services, programme staff suggested that they should be put through an abridged *'midwifery programme for community health workers'* using the midwifery curriculum and delivered by the Nursing and Midwifery Council (Box 4.5.3: 33 appendix).

Self-motivation increases the desire to learn: JCHEWs working as volunteers explained that despite being unpaid, they have *'no regrets'* and their desire to improve their clinical knowledge and skills serves as the driving force for reporting to work on a daily basis (Box 4.5.3: 6 below).

Box 4.5.3 (Knowledge and skills)	
3	*"It has helped me, and there was one case in which I was faced with breech presentation. I've never known how to deliver it, so when we went, we were taught how to deliver breech. There are other conditions that I learned from that modified life-saving skills training."* KII 003, JCHEW
4	*"There are some cases that nurses and midwives can handle, but since they are no more there, it may happen that we can now refer instead. Adding more nurses and midwives, especially the midwives, it would be helpful to us. Most of*

	Box 4.5.3 (Knowledge and skills)
	them are more trained in handling these cases, and their experience may be more than us in the community, most of them have worked in bigger hospitals, so I learnt a lot from them. They shared ideas with us." KII 005, CHEW
5	*"And you know that this medical line, sometimes it will be very hard if you don't know the theoretical aspects of it, for you to be good in practical, it goes along. When you know the theory, when they are teaching you the practical you will be able to understand."* KII 004, Nurse-midwife
6	*"This our work when you keep your job without practicing it frequently, you will not learn new things based on new experiences, but as we are with them [PHC] it is as if we are in school, we gain a lot because we see different cases, so for us to be volunteers, we have no regret, we signed for it"* FGD 001, JCHEW

Factors motivating CHEWs and JCHEWs

One programme staff, CHEWs and JCHEWs identified the various intrinsic and extrinsic factors that motivate CHEWs and JCHEWs. The intrinsic factor relates to their altruistic goals.

Altruistic goals: CHEWs and JCHEWs pointed out that their desire to make an impact in their communities through the provision of health care, especially free health services, serves as a key source of motivation (Box 4.5.3: 7 below; box 4.5.3: 34, 35 appendix).

Their extrinsic motivators relate to monetary reward and career progression.

Payment of salary, allowances and incentives influence the motivation of CHEWs and JCHEWs

The CHEWs and JCHEWs described the motivation they derive from regular and timely payment of their salaries, allowances for participation in training and monetary incentives when they participate in community activities such as vaccination campaigns (Box 4.5.3: 36, 37 appendix). However, JCHEWs working as volunteers lamented the loss of morale from providing services without a salary (Box 4.5.3: 38, 39 appendix).

Career progression engenders commitment to work

A programme staff noted that clear guidelines on CHEWs and JCHEWs' career progression engenders their commitment to service delivery (Box 4.5.3: 9 below).

Box 4.5.3 (Motivating factors)	
7	*"A community health extension worker is the best career I chose for myself because you are the technician there, you're the doctor, you're the nurse, you're everything, and people in the community they don't know anybody but you."* KII 005, JCHEW
8	*"Somebody is working far distance; he should be paid an early salary. Like us now, we have not yet been paid last month's salary, today is what? Is it not 9?"* KII 001, CHEW
9	*"By the time, they are rising, and they see their career progressing they will be committed to the work and motivated to do more."* KII 001, Programme staff, Regulatory agency

Health system factors influencing service delivery

The health system factors relate to human resources, supplies and supervision.

Factors relating to **human resources** comprise availability of health workers and inter-cadre conflicts. Overall, the various stakeholder groups emphasised the need for more health workers at PHC, especially doctors and midwives. Some CHEWs, however, complained that nurse-midwives often prevent them from providing the full range of MNH services in their scope of practice. There is a lack of consensus among programme staff on the limit to CHEW and JCHEW scope of practice with an argument for expanded scope of practice and counter-arguments against expanding their scope of practice.
The human resources related factors include:

The CoRPs' activities increase service demand at the PHC centre: The CHEWs and JCHEWs commended the activities of CoRPs in creating demand for health services and identifying potential service recipients within the community (Box 4.5.3: 10 below).

An inadequate number of health workers at the PHC centre results in additional facility roles and limited community roles for CHEWs and JCHEWs: A programme staff and a CHEW noted that inadequate number of health workers (especially inadequate number of nurse-midwives) in the PHC centre often results in CHEWs and JCHEWs spending more time in the PHC centre managing minor ailments and health conditions. Consequently, they are only able to spend a small fraction of their working hours in the community to provide health promotion and disease prevention (Box 4.5.3: 11 below; box 4.5.3: 40 appendix).

In emergency situations, CHEWs and JCHEWs in PHC centres without nurse-midwives are pressured to provide services beyond their competency: Programme staff explained that CHEWs and JCHEWs are often pressured to deliver services beyond their competency especially when they work in facilities where there are no nurse-midwives to provide highly-skilled services in emergency situations. They elucidated saying, in a situation when *'a woman coming with head-on-perineum'* with a CHEW who is yet to receive modified lifesaving skills training being the only one on duty, she *'can't refer such a woman'* but should *'take the delivery with caution'* (Box 4.5.3: 12 below). Moreover, patients often view referrals as incompetence on the part of the health worker, and as such, the CHEWs and JCHEWs may be pressured to provide services beyond their ambit (Box 4.5.3: 41 appendix). Service recipients suggested that health professionals like nurse-midwives and a medical doctor should be available at the PHC centres to manage obstetric complications (Box 4.5.3: 42 appendix).

Conflicts between CHEWs and JCHEWs and nurse-midwives due to lack of clarity in job descriptions: The CHEWs complained that nurse-midwives restrict them to less technical roles, thereby preventing them from implementing the knowledge and skills learnt in the school of health technology. They argued that this restriction often results in progressive depreciation of their knowledge and skills. Subsequently, it may become difficult for them to deliver health services effectively when deployed to a clinic where they have no nurse-midwife to supervise and support them (Box 4.5.3: 13 below). Similarly, programme staff had divergent opinions on the limit of CHEW and JCHEW scope of practice. Some argued that with a shortage of midwives in the PHC centres (especially in Northern Nigeria), CHEWs and JCHEWs need to take up midwifery roles to prevent maternal mortality. Another programme

staff, however, maintained that there is a tendency for CHEWs and JCHEWs to perform roles beyond their scope of practice and function like doctors (Box 4.5.3: 43, 44 appendix).

Box 4.5.3 (Health system-human resources)	
10	*"...client flow usually encourages you. The village health workers are employed by NGOs in their area. We send them to the community. Those that they identify as new pregnant women, they send them to the clinic"* KII 001, CHEW
11	*"...so, if we are seven CHEWs in total and two or three are going for outreach, how many will remain in the various departments of the clinic? so you know, it is affecting our services, both the outreach and the facility"* FGD 001, CHEW
12	*"When a woman is coming with the 'head-on-perineum, as a CHEW and you are the one on duty, you don't have anybody to supervise you, would you refer such a woman? You can't refer such a woman. They eventually take the delivery with caution. So, they end up doing what they are not supposed to do"* KII 003, Programme staff, Regulatory agency
13	*"When you go to family planning, they [nurse-midwives] will say you are not supposed to be there, it is for nurses. You go to antenatal, they say no, it is not community...we are community health workers, and we are trained to do all aspects of the work...We are to take delivery, we are to do antenatal, we are to do everything. Based on our standing order, a CHW can be posted where that person will be there alone in the facility. If tomorrow, I am posted somewhere, will I be able to stay and practice what I have been taught in school while I have not been practising it?"* FGD 001, CHEW

Logistic support and supply related factors:

CHEWs, JCHEWs and WDC members complained about the inadequacy of logistic support and supplies. Additionally, programme staff described the various factors that prevent CHEWs and JCHEWs from having the needed logistic support and supplies.

Some CHEW and JCHEW roles are not officially supported: A programme staff pointed out that the government does not support certain traditional roles of CHEWs and JCHEWs such as mapping demographic and health profile of community households. Consequently, the unsupported roles are not performed as *'a CHEW cannot use his money'* to provide these services (Box 4.5.3: 14).

Inadequate logistic support for supervision and service delivery: Programme staff explained the difficulty in supervising CHEWs and JCHEWs in hard-to-reach communities when there is no transport support for supervisory visits. The CHEWs and JCHEWs also emphasised the need for transport support to facilitate referrals to higher level facilities from the hard-to-reach communities. Furthermore, CHEWs and JCHEWs stressed the need for commodities to support delivery of services (Box 4.5.3: 15 below; box 4.5.3: 45-47 appendix).

Fragmentation of services due to activity-based incentives: A programme staff mentioned that CHEWs and JCHEWs receive incentives for some activities and *'are happy to'* participate in those activities. Consequently, there is fragmentation of health service package and service recipients may fail to access other components of the package based on the assumption that they received the complete package during CHEWs and JCHEWs' community outreach. Such fragmentation includes community-level vaccination exercises in which some NGOs support CHEWs and JCHEWs *'with small incentive'* to administer polio vaccination while leaving out other vaccines. The recipients may assume that they are up-to-date with vaccination after receiving the polio vaccine and fail to acknowledge that their child will still require other age-specific vaccines (Box 4.5.3: 16 below; Box 4.5.3: 48, 49 appendix). Another programme staff added that adequate coordination and harmonisation of NGO support is required to reduce effort duplication and ensure that all states' CHW programmes are adequately supported with the needed logistics and enabling environment (Box 4.5.3: 50 appendix).

Inadequate infrastructure and supplies may compromise service delivery and lead to unnecessary referrals: The CHEWs and JCHEWs noted that inadequate power supply makes it difficult for them to maintain a cold chain for their vaccines. They complained about the lack of potable water especially as they depend on the constant flow of water for most of their activities in the PHC (Box 4.5.3: 17 below; box 4.5.3: 51-53 appendix). They pointed out that where facilities are available, they are not fit for purpose. For example, using halls with poor thermal control for newborn examination (Box 4.5.3: 54 appendix).

Furthermore, lack of equipment, commodities and/or drugs often result in unnecessary referral of service recipients. Such recipients become dissatisfied and

exercise reluctance to utilise CHW services. A CHEW, however, stated that CHEWs sometimes buy the needed items with their earnings in order not to lose the trust and confidence of their recipients (Box 4.5.3: 53 appendix). Service recipients suggested that health services such as obstetric ultrasound scan services at PHC centres will reduce unnecessary referrals (Box 4.5.3: 55 appendix).

Non-resident CHEWs and JCHEWs tend to shorten their working hours: Programme staff pointed out that lack of habitable accommodation for CHEWs and JCHEWs makes it difficult for them to live within the community and cause them to close earlier to travel to their residences outside the community (Box 4.5.3: 18 below). Consequently, many PHC centres lack the required number of CHEWs and JCHEWs to cater for community activities and run the various units in the clinic during opening hours. Additionally, programme staff stated that if CHEWs and JCHEWs have accommodation within the community, they will be more accessible to the community members (Box 4.5.3: 56 appendix).

Security concerns in the PHC: The WDC members explained that due to lack of perimeter fencing, CHEWs and JCHEWs entertain security concerns. Consequently, this prevents them from providing services at night as they have the fear of being harassed by *'hoodlums'* (Box 4.5.3: 19 below).

Means of identification for CoRPs and WDC members: WDC members who assist CHEWs and JCHEWs in community mobilisation complained that lack of identity cards prevents the community members from identifying and accepting them when they conduct home visits (Box 4.5.3: 20 below).

Lack of equipment to practise training content often leads to a depreciation in acquired knowledge and skills: CHEWs and JCHEWs complained that in-service training without provision of the requisite equipment and materials for implementing the content of the training often leads to a progressive depreciation in the knowledge and skills. This is because they lack the opportunity to practise the knowledge and skills acquired during the training (Box 4.5.3: 21 below).

Box 4.5.3 (Health system-supplies)	
14	*"Before, the CHEWs used to assist with information on what we call clinic master card where all the information of every household is present, the number of pregnant women, those vaccinated. But since the government is not*

Box 4.5.3 (Health system-supplies)	
	assisting much with money, and a CHEW cannot use his money to do that" KII 009, Programme staff, Regulatory agency
15	*"There are some places where we need to provide treatment, a far distance, and transportation is one of the challenges. It is only when we are going for immunisation outreach that we have transportation allowance, apart from that, there is none"* FGD 001, CHEW
16	*"…I can say immunisation at the community, most of the health workers are happy to do it, maybe because of the small incentive that is coming with it, I don't know. But if you want to do polio they will like to go and do it, but it is making the community people not to come to the facility to take other antigens, they are waiting in their community for the person to go to them. It is only polio and some few vaccines that go to their community, for the others, they have to come to the facility, which they hardly come"* KII 004, Programme staff, Regulatory agency
17	*"Even this issue of light [power supply], we do not have constant light here. And even our freezer is faulty now, so we don't have the vaccine in the clinic unless on Thursday. After the immunisation, they will take the remaining vaccines back"* KII 006, JCHEW
18	*"Most of the facilities are not offering 24-hour services because they don't have the manpower, as the staff don't have accommodation to stay in the community. Delivery does not tell you when it will come; it can come at any time. Some facilities within the community open in the morning, and close by 2 p.m."* KII 004, Programme staff, Regulatory agency
19	*"This building behind was built to accommodate the health workers, to stay, to be able to work at night but the abattoir hoodlums did not allow them to. All these doors were vandalised. We even wrote to the local government for this fence to be raised"* FGD 003, WDC member
20	*"The only problem we have at times when we visit a house, someone will ask for written approval, like ID card, and so on and some of them will not allow us to move close based on that"* FGD 003, WDC member
21	*"In that training, we were able to learn so many things, but coming down to our facility, those things are not here for us to put them to practice the way we saw them there [at the training]. So, the knowledge begins to die gradually. But in fact, that programme [training] was very, very interesting"* KII 003, JCHEW

Community-related factors

CHEWs, JCHEWs, WDC members and service recipients explained the role of local norms, beliefs and events in influencing health-seeking behaviour of community members. In addition, programme staff, CHEWs and JCHEWs described how the

financial status of community members impact on their health-seeking behaviour and consequently their relationship with the CHEWs and JCHEWs:

Persistence of local beliefs and practices despite health education:

A CHEW and a JCHEW lamented the persistence of harmful local beliefs and practices despite health education and community advocacy. The CHEW explained that nursing mothers often use red oil for umbilical cord care (rather than chlorhexidine), thereby predisposing the newborn to umbilical cord infection. This practice is premised on the perception that with red oil, the umbilical cord falls off faster (Box 4.5.3: 22 below; box 4.5.3: 57, 58 appendix).

Lack of male involvement impairs women's consent for family planning: According to WDC members, women do not make unilateral decisions on their health. Consequently, lack of male involvement often results in difficulty in obtaining unilateral consent for family planning from women (Box 4.5.3: 23 below; box 4.5.3: 59 appendix).

Unpleasant side-effects of family planning: Service recipients on contraceptive injection complained of increased duration of menstruation which prevents them from their religious functions such as routine prayers and rites. They explained, *'women cannot perform regular prayers when menstruating'* (Box 4.5.3: 24 below).

Non-compliance with referrals due to recipients' financial constraints: CHEWs, JCHEWs and WDC members lamented that service recipients are often reluctant to comply with referrals citing financial constraints. Furthermore, out-of-pocket payment leads to dissatisfaction of service recipients which may make them resort to cheaper alternatives such as seeking care from TBAs (Box 4.5.3: 25 below; box 4.5.3: 60, 61 appendix).

Non-competitive drug prices act as a disincentive for seeking care at the PHC: A JCHEW noted that community members often resort to accessing health services from informal providers. Such providers include patent medicine stores which may be closer to them and offer drugs at prices which compete favourably with the price of drugs at the PHC centres (Box 4.5.3: 26 below).

The timing of community activities conflicts with community members' daily routine: A CHEW lamented the non-availability of community members during community health activities; despite the adequate publicity. He explained that the community members may be on their farms or businesses at the time slated for community health activities (Box 4.5.3: 27 below).

Conflicts between CHWs and service recipients due to non-availability of free drugs:

A programme staff and a CHEW explained CHEWs' and JCHEWs' discouragement from non-sustainability of programmes funding free services. They complained that some state governments promise free health care without providing drugs and commodities to complement the free health care. They stressed that these empty promises by state governments often create misunderstanding between these CHWs and the community served. Based on the propaganda of free health, the service recipients who anticipate or are already used to having free drugs and commodities are often reluctant to make out-of-pocket payment and may challenge the CHEWs and JCHEWs (Box 4.5.3: 28 below; box 4.5.3: 62 appendix).

Box 4.5.3 (Community-related factors)	
22	*"And this care of cord, some will even deliver in the hospital, when you use the cord clamp, immediately they reach home, they will remove it. Some will use red oil with salt to remove the cord so that they say it easily removes the cord if they use red oil with salt. You tell them, but they will not listen, they won't take it"* KII 001, CHEW
23	*"…some women will like to do the family planning, but if they don't come with their husbands, they will be ashamed of all those things"* KII 001, WDC member
24	*"The problem that I have is that of my menses, I used to have it for between three and five days, but now it takes up to eleven to twelve days, and you see women cannot perform regular prayers when menstruating, that's just my major problem"* KII 003, Service recipient
25	*"Moreover, referring patients, they will think it is a big problem for them that they cannot afford to go"* KII 001, CHEW
26	*"The price of drugs at the facility is the same as that of the chemist, but if we can reduce our price a little, it will go a long way in attracting people to this clinic"* KII 003, JCHEW
27	*"At times when you go for outreach, we announce, we fix a date, and you know the community. Some will go to the farm; to get the people is a challenge."* KII 001, CHEW

Box 4.5.3 (Community-related factors)	
28	*"For example, now, this folic acid, iron tablet and other things, they have been free. When they finish from the store, and you tell the community to pay, they will say they will not pay because the drugs are free. The organisation [programmes funding free services] have already corrupted them that it is free…If you want to help the community, you do things that are sustainable. Because an organisation will come for three years and go."* KII 004, CHEW

4.6 Summary of chapter

This section compares the five cases in order to highlight common and unique themes with respect to CHW cadre, study country or region. Overall, it describes the study findings in relation to participants' profile and study objectives:

4.6.0 Profile of study participants

A comparison of the study participants in the five study countries shows that programme staff had worked the longest with CHWs in comparison to other stakeholder groups. This may explain the breadth and depth of their responses in relation to the research questions. In the study countries, CHWs were generally older than their service recipients.

4.6.1 Characteristics of CHWs

Selection of CHWs

The country comparisons demonstrate how CHWs are mostly selected based on some secondary education (10-12 years of formal education) and additional criteria which depend on stakeholder group involved in selection. The governments of study countries select salaried CHWs based on educational qualification and success at a pre-employment examination. Conversely, non-salaried CHWs such as ASHAs and CHVs are selected by (or in collaboration with) the community members based on demographic attributes such as residence in the community. Other considerations include abilities such as leadership skills. Even though most demographic attributes used in selection tend to be similar across regions; unlike in sub-Saharan Africa, only female candidates are selected to provide MNH care in South Asia.

Training of CHWs

Overall, the duration of CHW pre-service training in study countries is between eight days and three years. While the pre-service training of ASHAs and CHVs tend to be shorter and spaced out, other CHWs tend to undergo longer training in a training institution. This multiple-case study illustrates that CHWs with shorter training tend to have their primary workstation in the community, unlike CHWs with longer training who have their primary workstation in the health facility. Irrespective of training duration, most CHWs receive broad-based pre-service training aimed at preparing them for a broad range of health areas except for ANMs whose training focuses on midwifery.

Remuneration of CHWs

All the CHWs receive a form of compensation for service delivery. However, the form of compensation tends to vary with the duration of their pre-service training and the stakeholder groups involved in their selection. The ASHAs and CHVs who undergo shorter pre-service training and are selected in collaboration with community members, tend to receive either a performance-based incentive or an allowance while the other CHWs tend to be salaried by the government.

Supplies used by CHWs

Unlike other characteristics, the type of supplies may not be used in characterising CHWs even though its availability tends to influence service delivery. Especially as these supplies tend to vary widely; depending on the different service packages in CHW scope of practice. Overall, these supplies include drugs, commodities, diagnostic equipment and kits, data collection and health education tools.

Supervision of CHWs

Apart from HSAs who are solely supervised by the formal health system, all the other CHWs in this case study are supervised by both the formal health system and community leaders. Overall, supervisors from the formal health system tend to focus on monitoring or auditing service delivery against performance targets. In contrast, the community-level supervisors focus on health needs of the community and seek to address the challenges that CHWs face during service delivery.

4.6.2 CHW scope of practice in MNH care

Irrespective of cadre, all CHWs provide health services in relation to health promotion and disease prevention. CHWs with longer training tend to have additional roles in diagnosis and therapeutic care.

The role of CHWs in MNH usually depends on whether they have undergone relevant training, the duration of such training and presence of other health workers who are more skilled in obstetrics and newborn care than the cadre of CHW. Figure 5.1 (Discussion chapter) illustrates the pattern in the scope of practice of CHWs in relation to ANC, labour and delivery, PNC and neonatal care. It shows that irrespective of the duration of training, all CHWs are involved in providing health education and screening for danger signs. CHWs who have been trained for longer duration

administer vaccines to pregnant women and newborns and provide skilled birth attendance.

ANC provided by CHWs

This multiple-case study notes the key roles of CHWs in identifying pregnant women, ensuring that they access skilled ANC and preparing them for skilled birth attendance. This multiple-case study, however, highlights a significant regional difference in the way pregnant women are identified in the community. The news of pregnancy is often considered a secret in sub-Saharan Africa and as such, CHWs have to depend on their community network to identify pregnant women. Conversely, in South Asia, CHWs identify pregnant women by monitoring menstrual cycles of married women. Furthermore, this multiple-case study notes the additional roles of CHWs who have longer pre-service training (greater than three months). It notes that CHWs who have longer pre-service training have additional tasks such as diagnosis of existing or pregnancy-related health conditions and treating minor ailments during pregnancies.

Labour and delivery services provided by CHWs

The role of CHWs tends to depend on the stage of labour and the primary workstation of the CHW. CHWs who are primarily based in the community (community-based) tend to play key roles at the onset of labour. In contrast, management of labour and delivery is provided by facility-based CHWs who have received up to six months of training on skilled birth attendance.

PNC provided by CHWs

Overall, CHWs focus on preventing postnatal complications and identifying complications that require referrals. At the health facility, CHWs trained on skilled birth attendance conduct clinical assessments for features of postpartum haemorrhage. During the early and late postpartum period, all CHWs irrespective of the duration of pre-service training assess nursing mothers for features of postnatal sepsis. They also ensure proper positioning of the baby for breastfeeding to prevent breastfeeding-related complications such as cracked nipples.

Newborn care provided by CHWs

Similar to PNC, CHWs in the study countries focus on prevention, identifying health conditions requiring referrals and to a limited extent, therapeutic care. Overall, CHWs prevent hypothermia by ensuring that newborns are kept dry and wrapped in clothing. They also prevent umbilical cord sepsis by applying and encouraging nursing mothers to apply chlorhexidine gel. Apart from ASHAs in India and CHVs in Kenya (who receive less than three weeks of pre-service training), all CHWs provide age-appropriate vaccination to the newborn. The multiple-case study identified the role of ANMs (India) in providing parenteral Vitamin K to prevent Vitamin K deficiency bleeding and a pre-referral dose of antibiotics to treat sepsis of the newborn. Furthermore, ANMs (India) and CSBA (Bangladesh) provide basic resuscitation of newborn during the early neonatal period.

Family planning services provided by CHWs

In relation to family planning, all CHWs provide health education on all forms of contraception. However, CHWs who have received pre-service training of longer duration or technical training on family planning have additional roles compared to their colleagues. For example, CHWs with the longest pre-service training such as CHEWs administer contraceptive injection and ANMs insert intra-uterine devices. FWAs provide contraceptive injections based on short but in-depth technical training and HSAs who have had technical training on family planning may also administer contraceptive injection.

4.6.3 Factors influencing CHWs' service delivery

These factors relate to socio-demographic attributes, knowledge and skills that foster CHWs confidence and competence in service delivery, motivation and health system factors. This multiple-case study shows that CHWs require regular training to acquire knowledge and skills, adequate supplies and supervision to apply and reinforce the acquired knowledge and skills. Furthermore, supportive supervision addresses the challenges to service delivery.

CHWs are motivated by the acquisition of additional knowledge and skills and adequate stakeholder support in the form of supplies or supportive supervision. Furthermore, CHWs with regular, timely and sustainable remuneration are better motivated.

Overall, social acceptance of CHWs enables service delivery. However, recipient's acceptance of health service depends on sociocultural beliefs and their perception of the health service either based on previous utilisation or based on word of mouth from other community members. Furthermore, CHWs with similar demographic attributes as their service recipients earn better social acceptance and consequently better acceptance of their services. Other factors influencing service delivery are affordability and timing of health services.

CHAPTER 5: DISCUSSION

5.0 Overview of the chapter

This multiple-case study described the scope of practice and characteristics of CHWs providing MNH care in sub-Saharan Africa and South Asia and documented the factors influencing their service delivery. This chapter reflects the key findings from the five case studies. It situates these findings within the broader literature to document the study's contributions to the current global discussion on specific characteristics of CHWs and their MNH services. Furthermore, this chapter highlights the strengths of the study and acknowledges its limitations. The chapter concludes by drawing on the discussion of the study findings to provide key recommendations for community health policy, practice and research.

5.1 Summary of key findings

This study was conducted with 10 CHW cadres from five study countries. The findings show that all 10 cadres are expected to have secondary-level education, provide MNH services and are linked to the formal health system. They differ by sociodemographic characteristics, duration of pre-service training, remuneration type and primary workstation (facility or community). CHWs who are community-based (who provide most of their services through home visits) tend to be selected by community leaders and members and often have similar sociodemographic characteristics as their service recipients. In contrast, facility-based CHWs (who provide most of their services within government-owned health facilities) are often selected by government representatives based on success in pre-employment examinations irrespective of community membership. This multiple-case study shows that age and gender similarity between CHWs and service recipients are key selection criteria in South Asia in contrast to CHWs in study countries in sub-Saharan Africa where male CHWs can provide health services to female service recipients.

Overall, the 10 CHW cadres in the five study countries may be categorised according to their secondary education and duration of pre-service training as levels 1 and 2 paraprofessional CHWs. The level 1 paraprofessional CHWs had undergone

previous secondary education and pre-service training lasting 8-21 days while level 2 paraprofessional CHWs had undergone post-secondary pre-service training lasting 3 months-3 years.

All CHWs in the study countries identify pregnant women, provide MNH-related health education and screen for diseases and health conditions that require referral of mothers and newborns. Skilled ANC and birth attendance, therapeutic care and clinical procedures are within the exclusive remit of facility-based level 2 paraprofessional CHWs who have received longer training. These facility-based paraprofessional CHWs are often under the direct supervision of nurse-midwives or have referral links to Comprehensive Emergency Obstetrics and Neonatal Care (CEmONC) centres. CHWs who are not under direct supervision of nurse-midwives, however, tend to exceed their MNH-related scope of practice during emergencies when there are challenges with referrals to a comprehensive emergency obstetric centre.

The barriers to CHWs' service delivery include issues relating to trust when male CHWs provide services to female service recipients. Furthermore, lack of clarity in the criteria informing invitation to in-service training demotivates CHWs. The enablers of service delivery include mentoring and supervision by health professionals to reinforce knowledge and skills acquired from training and availability of supplies to apply the knowledge and skills. Furthermore, CHWs are motivated by supervisory approaches that identify and address their work-related challenges, altruistic goals and remunerations that are timely, regular, sustainable and commensurate with their effort.

5.2 Characteristics of CHWs

This study identified key characteristics of CHWs by first conducting a systematic review of definitions of CHWs and used this definition to purposively select 10 different CHW cadres for case studies in five countries in sub-Saharan Africa and South Asia. In general, these cadres have at least secondary-level education but differ in duration of pre-service training, socio-demographic characteristics, remuneration type and primary workstation. These differences tend to relate to whether the CHW cadre is selected by the government or community-level stakeholders with some inter-country variations.

5.21 Characteristics of CHWs

Table 5.1 illustrates the characteristics of the CHW cadres in the five study countries.

Table 5.1: Characteristics of CHWs providing MNH services in the study countries

Country	CHW cadre	Selection	Pre-service training	Remuneration type	Primary workstation
Bangladesh	**Community Health Care Practitioner (CHCP)**	**Education:** Secondary level **Gender:** Male or female **Characteristics:** Community indigene with altruistic motivation **Candidate screening:** Pre-employment examination organised by the government	3 months	Salary	Facility (Community clinic)
	Community Skilled Birth Attendant (CSBA)	**Education:** Secondary level **Gender:** Female **Characteristics:** A CHW (CHCP, FWA or HA) below 45 years and motivated to conduct deliveries **Candidate screening:** Invitation for SBA training	6 months (in addition to previous CHW training)	Salary	Facility (Community clinic)
	Family Welfare Assistant (FWA) & Health Assistant (HA)	**Education:** Secondary level **Gender:** FWA: Female (Preferably married) HA: Male or Female **Characteristics:** Community indigene with altruistic motivation **Candidate screening:** Government pre-employment examination	3 weeks	Salary	Community
India	**Auxiliary Nurse Midwife (ANM)**	**Education:** ANM certification (Pre-service training) **Gender:** Female **Candidate screening:** Pre-employment examination organised by the government.	2 years	Salary	Facility (sub-centre)
	Accredited Social Health Activist (ASHA)	**Education:** Secondary level **Gender:** Female **Characteristics:** Indigene of the community aged 25-45 years **Candidate screening:** Community leaders and members using point-based system informed by the features above	8 days	Performance-based incentive	Community

Country	CHW cadre	Selection	Pre-service training	Remuneration type	Primary workstation
Kenya	**Community Health Volunteer (CHV)**	**Education:** Secondary level **Gender:** Male or female **Characteristics:** Respected community resident who is financially self-supported **Candidate screening:** By government representative, community leaders and members based on the above features and social acceptance	10 days	Allowance, income-generating activities	Community
Malawi	**Health Surveillance Assistant (HSA)**	**Education:** Secondary level **Gender:** Male or female **Candidate screening:** Pre-employment examination organised by the government	3 months	Salary	Facility (Village clinic)
Nigeria	**Community Health Extension Worker (CHEW) & Junior Community Health Extension Worker (JCHEW)**	**Education:** CHEW: CHEW certification (Pre-service training) JCHEW: JCHEW certification (Pre-service training) **Gender:** Male or Female **Characteristics:** Understand local language **Candidate screening:** Pre-employment examination organised by the government	CHEW: 3 years JCHEW: 2 years	Salary	Facility (PHC centre)

Data sources: Primary data and policy documents from the study countries

(light green)	Level 1 paraprofessional CHWs
(dark green)	Level 2 paraprofessional CHWs

Table 5.1 shows that community-based CHWs tend to have characteristics that align more with international definitions of CHWs which emphasise community membership and sociodemographic similarity between CHWs and their service recipients (WHO 1989; Lehmann & Sanders 2007; Health Resources and Services Administration 2007). In contrast, this multiple-case study shows that facility-based CHWs are often selected by the government, based on their post-secondary certificate and success at the pre-employment examination and may not be from the community they serve. While international definitions emphasise the importance of community membership and sociodemographic similarity with recipients to ensure social acceptance by community members, these definitions failed to acknowledge the difficulty in identifying educationally qualified CHW candidates to serve as facility-based CHWs in some hard-to-reach communities with low literacy rates (UNESCO 2015). Policymakers and programme planners involved in selecting CHWs may need to review and revise educational requirements for selecting facility-based CHWs in hard-to-reach areas. Particularly, as some of these areas may have culturally-competent candidates who may not qualify based on existing national CHWs' educational requirements.

This study clarifies that the choice of sociodemographic characteristics used in selecting CHW candidates for MNH services varies between sub-Saharan Africa and South Asia. Irrespective of whether CHWs are community or facility-based, CHWs in the Asian study countries are expected to be female (preferably married) within a specified age limit (usually within the reproductive age bracket) in contrast to findings from our study countries in Africa where gender and age are not considered during selection. Furthermore, community-based CHWs in the Asian study countries such as ASHAs are expected to be indigenes of the community or married to an indigene of the community to ensure they remain within the community. Conversely, community-based CHWs in the African study countries (CHVs) are only expected to be community residents even when they are non-indigenes. These findings align with those of a systematic review assessing CHWs effectiveness (Lehmann & Sanders 2007). The systematic review noted how community norms and gender relations in South Asia influence selection of CHWs based on age and gender (Lehmann & Sanders 2007). While the systematic review did not specify the health area covered by CHWs selected based on age and gender, it may be argued that selection of

female CHWs within the reproductive age attempts to foster demographic similarity between CHWs and their MNH service recipients who are usually women within the reproductive age bracket. Moreover, a systematic review of the factors influencing CHWs performance in LMICs notes that the sociodemographic characteristics of CHWs may relate to the health area in which they are expected to function as these tend to influence their performance in these roles (Kok et al. 2015). Future research on CHWs may explore and identify socio-demographic characteristics that are key to CHWs' optimal performance in different areas. These characteristics may guide decision makers in selecting ideal CHW candidates for the various health areas.

Unlike health professionals with a first-degree certificate or higher qualifications from higher education training that lasted at least three years (ILO 2012), all the CHW cadres in this study may be classified as paraprofessionals. Table 5.1 categorises the CHW cadres into two categories of paraprofessionals, drawing on the CHW categories identified in the systematic review chapter (Chapter 2). ASHAs, CHVs, FWAs and HAs may be categorised as level 1 paraprofessional CHWs based on secondary education and subsequent pre-service training lasting 8-21 days. Conversely, ANMs, CHCPs, CSBAs, HSAs, CHEWs and JCHEWs may be categorised as level 2 paraprofessional CHWs based on their post-secondary pre-service training in a recognised training institution lasting between three months to three years. This study shows that level 1 paraprofessionals tend to be community-based as they provide most of their MNH services in the homes of their service recipients. Conversely, level 2 paraprofessionals tend to be facility-based, relying on their service recipients to access services at the health facility (where these CHWs are based) with occasional home visits to their recipients. The third category of CHWs, lay health workers, were not included in this study. The reasons for excluding this CHW category are provided in Section 5.5.

As global and local stakeholders in community health continue to deliberate on harnessing the full potential of CHWs by harmonising their MNH services with those of health professionals in multidisciplinary health teams (Tulenko et al. 2013), this categorisation of CHWs presents a useful guide. CHW categories identified in this multiple-case study may be useful in making distinctions between different CHW cadres providing MNH services within the community and other health workers in multidisciplinary teams. Policy makers may use these categories to develop a

common framework for mapping community health workforce data that will be comparable locally and globally. Analysis of this health workforce data (disaggregated by category of CHW) may inform the quantitative planning of health worker skills mix. Furthermore, the CHW categories identified from the systematic review (Chapter 2) may guide health programme planners in planning the scope of practice, training curricula, career path and remuneration for each CHW category. This study, however, acknowledges that optimal utilisation of available health workers through skills mix should respond to the diversity in local health workforce density. Future studies may evaluate the ratio of health professionals and the different categories of CHWs that will constitute the optimal skills mix in different contexts and strategies to harmonise services provided by health professionals and CHWs.

5.3 The scope of practice of CHWs in MNH care

Figure 5.1 illustrates the study findings in relation to the scope of practice of CHWs providing MNH services in the five countries. This multiple-case study shows that some MNH services are provided by all CHW cadres while the provision of other health services relates to the duration of MNH training or their primary workstation. Furthermore, it shows that most CHWs provide auxiliary services that support their service delivery.

Figure 5.1: CHW scope of practice in MNH care

	MNH care services							
Antenatal care	Identification of pregnant women	Health education	Birth preparedness	Disease screening	Malaria prevention	ANM, CHEW, CSBA Diagnosis of high-risk pregnancy	ANM, CHCP, CHEW, CSBA, HSA Iron and folate supplementation	ANM, CHCP, CHEW, CSBA, HA, HSA Vaccination
Labour& delivery	ASHA, Birth companionship	ANM, CSBA, CHEW Skilled birth attendance						
Postnatal care	Facilitation of breastfeeding	Disease screening						
Neonatal care	Thermal control	Kangaroo mother care	Disease screening	Umbilical cord care	ANM, CHCP, CHEW, CSBA, HA, HSA Vaccination	ANM Treatment of neonatal infection		
Family planning	Barrier method	ANM, CHCP, CHEW, CSBA, Oral contraceptive	CHEW, FWA, HSA Contraceptive injection	ANM Intrauterine device				

Data source: Primary data and policy documents from study countries

Legend	
(light green)	Services provided by all CHW cadres
(dark green)	Services provided by a few CHW cadres

5.3.1 Variations in CHW scope of practice

In general, this study found that all CHWs in the study countries provide MNH services but their scope of practice and approach to service delivery vary with cadre and country. All the CHW cadres from the study countries identify pregnant women, provide health education and screen pregnant women and nursing mothers for pregnancy-related complications and other conditions that may require a referral. Furthermore, all CHW cadres screen newborns for neonatal infection and neonatal jaundice. However, CHWs with MNH-related training of longer duration have additional roles in therapeutic care, skilled ANC and birth attendance. They provide contraceptive injections, insert intrauterine devices and treat neonatal infections. For example, level 2 paraprofessional CHWs (such as ANMs, CHEWs, JCHEWs and CSBAs) are trained to provide skilled birth attendance. Over the years, many global guidelines continue to identify MNH roles for CHWs (UNAIDS et al. 2015; WHO 2016b; PMNCH 2011), without clarifying the CHW categories that are best placed for each MNH task. Furthermore, as different MNH tasks may require different levels of competency, there is a need to consider the diversity in CHW duration of pre-service training and work-related experience (Mulder et al. 2010). Hence, findings from this multiple-case study (summarised in Figure 5.1) present a useful guide for national and sub-national level decision makers in planning and harmonising the scope of practice of the different CHW categories. While the effectiveness of the different CHW categories in providing health service packages in MNH care is beyond the scope of this study, the question of the effectiveness of each CHW category in delivering different MNH services presents an opportunity for future research.

This multiple-case study shows that CHWs with a similar level of education tend to have a similar MNH scope of practice but their approach to service delivery tends to vary across countries and relates to local sociocultural norms and beliefs. CHWs in our study countries in South Asia identify pregnant women in the community by monitoring their menstrual cycle or depend on self-reporting by women. Conversely, CHWs in Africa rely on community networks to identify pregnant women as news of pregnancy is kept secret as the local populations believe disclosing this information may lead to bad omens. A qualitative study exploring indigenous practices of pregnant women in South Africa underscores the cultural sensitivity of pregnancy-

related issues and shows that women delay reporting their pregnancies and commencing ANC attendance because of the superstitious beliefs that jealous community members with supernatural powers may cause them to have abortions (Mogawane et al. 2015).

Similarly, ANMs in India do not provide health education on or administer contraceptive injections. This contrasts with CHEWs and JCHEWs in Nigeria who have pre-service training of similar duration and provide contraceptive injection. It is possible that ANMs do not administer contraceptive injection because of side effects such as irregular menstrual cycle which prevents their service recipients from performing religious rites. This presumption aligns with a report of Indian women's perspective on contraceptive injections which showed that women are likely to discontinue contraceptive injections following episodes of irregular menstruation as cultural norms prevent them from performing religious rites or entering places of worship during menstruation (Jejeebhoy & Zavier 2012). Hence, decision makers at the national and sub-national levels may consider developing CHW scope of practice and approach to service delivery that respond to, or address local norms, beliefs and priorities (WHO 2016b).

5.3.2 Task-sharing between CHW cadres

This study documents the tensions between CHW scope of practice backed by law and CHW job description influenced by local health needs. It shows that some task-sharing taking place "formally" between different CHW categories while others take place "informally". Figure 5.1 shows that formal task-sharing in the same country relates to less technical tasks such as health education and auxiliary services while relatively technical tasks that tend to constitute the hallmark of the profession such as skilled birth attendance are not shared with other CHW cadres. Using India as an example, ANMs (two-year pre-service training) and ASHAs (eight-day pre-service training) both provide health education and participate in the documentation of health records, but skilled birth attendance is only provided by ANMs. Similarly, CHCPs (three-month pre-service training), FWAs and HAs (three-week pre-service training) in Bangladesh all provide health education and document health records but only CHCPs are permitted to provide therapeutic care.

Additionally, this study highlights the "informal task-sharing" of relatively technical tasks in which CHWs provide some health services beyond their stipulated scope of practice, especially during emergencies with no available health professionals and challenges with transport logistics. Findings from India, Kenya and Nigeria illustrate how service recipients (and their family members) pressure CHWs to conduct deliveries even when they have not been trained to provide the service. For example, ASHAs in India are pressured to manage labour during long journeys to referral centres, CHVs in Kenya are also pressured to conduct deliveries by poor members of the same community who cannot afford to pay for facility-based delivery. Furthermore, CHEWs and JCHEWs who have not been trained on skilled birth attendance conduct deliveries when a nurse-midwife is unavailable, and referral may not be feasible for logistic reasons. These findings align with findings of a systematic review exploring challenges of implementing CHW programmes in countries from all income status, which showed that CHWs in LMICs are more likely to be confronted with health issues beyond their scope of practice as compared to their counterparts in high-income countries due to limited availability of health workers in these countries (Glenton & Colvin 2013). This challenge is often exacerbated by maldistribution of the scarce health workforce in the various LMICs (WHO 2009). National and sub-national decision makers in countries with poor health worker density and maldistribution need to formally acknowledge that due to local health needs, CHWs tend to informally expand their job descriptions beyond their scope of practice. Subsequently, the subnational policymakers may use relevant global guidelines on CHW scope of practice to conduct CHW job analyses. The job analysis may inform a formal review (and revision) of their scope of practice based on knowledge and skill level of each CHW category, local health workforce density and health needs (Glenton & Javadi 2013). Expansion of CHW scope of practice should inform the revision of the training curriculum to match their competency with the requirements of their new role. Furthermore, decision makers should support them with regular supervision to reinforce new knowledge and skills, improve their remuneration to sustain motivation and strengthen the referral links in case of complications or health issues beyond their scope of practice (Deller et al. 2015).

This multiple-case study illustrates how in-country governments and NGOs continue to expand CHW scope of practice to include additional roles. It equally notes the

unintended consequences of taking up these additional roles. Particularly, some facility-based CHWs who have more facility-based roles tend to neglect their community-based roles. For example, facility-based CHWs (such as CHEWs and JCHEWs in Nigeria and HSAs in Malawi) tend to focus on their facility-based roles such as management of childhood illnesses at the expense of their traditional community-based roles that entail home visits especially in relation to postnatal care. Some of the facility-based CHWs, however, rely on lay health workers (or support groups) to provide these community-level services. Additionally, FWA in Bangladesh who spend half of their working week in community clinics are said to be failing to meet targets relating to their traditional role of providing family planning services during home visits. These findings corroborate findings of a qualitative study exploring task-shifting of clinical roles from nurses to HSAs in Malawi which noted that HSAs tend to neglect their community-based roles in order to fulfil the new work demands in the health facility (Smith et al. 2014).

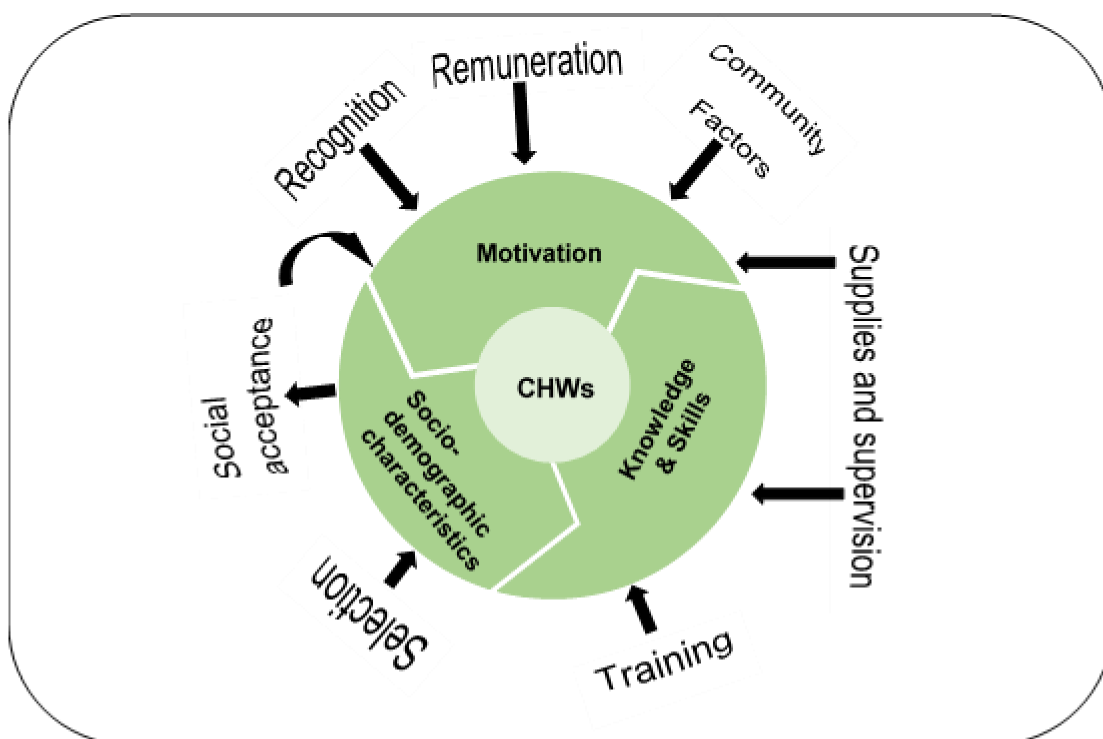
For researchers, there is a range of research themes to be explored relating to the breadth and depth of CHW scope of practice. It is important to evaluate and compare the effectiveness of expanding their scope of practice towards specialisation in a few technical roles as opposed to non-specialisation in many less-technical roles. Additionally, it may be rewarding to assess the proportion of working time that facility-based CHWs should spend providing community-level services that will lead to the achievement of targets and foster links and commitment to the community they serve (Smith et al. 2014).

5.4 Factors influencing CHWs' MNH service delivery

In general, CHWs require motivation, job-related knowledge and skills and sociodemographic attributes that foster social acceptance. Other factors influencing their service delivery relate to motivating factors, health system and community-related factors in which some of these factors may either act as enablers or limiting factors depending on the situation. This multiple-case study underscores the role of adequate remuneration, recognition and social acceptance by the community members in motivating CHWs. It highlights the importance of training in the acquisition of knowledge and skills and illustrates the dual roles of supervision and supplies in motivating CHWs and enhancing acquisition, application and retention of

knowledge and skills. Finally, it documents the role of community members' health-seeking behaviour in influencing CHWs' service delivery and motivation. In describing the factors influencing service delivery, this multiple-case study notes that study participants described sociodemographic characteristics, training, knowledge and skills in relation to MNH practices. In contrast, motivation, supervision, supplies and community factors are described broadly referring to all services included in CHW scope of practice (including MNH services). Especially as all the CHWs included in the study have roles in other health areas that transcend MNH. The latter factors cut across tasks and it may be difficult to limit description to MNH practices. For example, CHWs are motivated by regular salary for services provided (services that transcend MNH), altruistic goals (goals that transcend MNH) and discouraged by excessive workload (including workload relating to MNH). Figure 5.2 summarises the linkage between the factors influencing CHWs' service delivery.

Figure 5.2: Factors influencing CHWs' service delivery



5.4.1 Sociodemographic characteristics influencing CHWs' MNH service delivery

Findings from this multiple-case study show how CHWs' gender, age, socioeconomic status impact on the social acceptance of CHWs and how these characteristics influence how the community members perceive CHW services.

Additionally, it highlights how geographic location within the community may influence their ability to perform home visits. Overall, these sociodemographic characteristics tend to be beneficial in certain situations and detrimental in others. Irrespective of the situation, however, women and their caregivers in the study countries prefer MNH services to be delivered by female CHWs. A study assessing the effect of gender differences on health promotion activities of CHWs in Tanzania argues for male-female pairs of CHWs rather than female CHWs working alone (Feldhaus et al. 2015). The authors cite examples of male-female pairs in Tanzania to emphasise that male-female pairs will ensure male involvement in maternal, newborn and child health issues and address mistrust that relate to gender difference between male CHWs and their female service recipients (Feldhaus et al. 2015). In contrast to this study, a review exploring the role of a gender-balanced health workforce in addressing inequality in health service delivery argue for female CHWs to provide services to female recipients (George 2008). The use of male CHWs (to promote the involvement of male partners) in providing MNH services to women may lead to the reinforcement of gender norms that encourage male dominance in issues relating to the reproductive health of women (George 2008). Future research may consider the knowledge gap in this area to explore the best gender mix of CHWs that encourages male involvement, engenders trust, preserves the woman's autonomy in making decisions that relate to her health and efficiently utilises the scarce health workforce.

In addition to gender, this multiple-case study notes the varied influence of other sociodemographic factors. Female CHWs that are significantly older than their service recipients tend to earn more respect from their service recipients as they are seen as "mother figures" but this age difference also limits communication (as the vocabulary, use of colloquialisms and slang varies between age groups) between CHWs and the service recipients. A cluster-randomised trial assessing factors influencing male and female CHWs' performance in MNH tasks in Zimbabwe noted that young female CHWs (less than 40 years) are better positioned to identify pregnant women in the community because of the age and gender similarity to women within the reproductive age group. These demographic similarities were shown to aid communication especially as news of pregnancy is a culturally sensitive issue in Africa and women may be more comfortable discussing it with women within their own age group (Kambarami et al. 2016).

Furthermore, findings from the study countries show that CHWs who reside within the community are more accessible to the community they serve. This criterion plays a defining role in selecting CHVs in Kenya, ensuring that every area in the community has a CHV. However, the undue familiarity that ensues from the close relationship between CHWs and service recipients often means that their services are underrated and considered as substandard compared to those of CHWs who reside outside the community.

Overall, the above study findings illustrate how the different sociodemographic characteristics of CHWs such as residence within the community may be an enabler (making CHWs more accessible) in certain situations while being a barrier in other situations (undue familiarity means CHW services are perceived as sub-standard). The tensions in identifying ideal socio-demographic characteristics for selecting CHWs underscores the relevance of more research evidence to inform selection criteria that promote social acceptance of CHWs and aid their service delivery. Future research may also consider how these selection criteria will accommodate the diversity in age, socioeconomic status of service recipients as service recipients are socio-demographically heterogeneous (Brach & Fraserirector 2000; Larson et al. 2016).

5.4.2 The role of training in acquisition of knowledge and skills

This multiple-case study notes that models and duration of training influence the acquisition of requisite knowledge and skills. Furthermore, it discusses how CHWs in hard-to-reach areas may be deprived of training leading to limited capacity to provide services to these communities.

CHW training models and duration

The duration and model of CHW pre-service training in the study countries ranged from eight-day informal training received by ASHAs in India to three-year formal CHEW training in a recognised training institution in Nigeria. In general, non-salaried level 1 paraprofessional CHWs with flexible work schedules such as ASHAs (India) and CHVs (Nigeria) undergo incremental training lasting less than 10 days. This training is designed to ensure that the acquired knowledge and skills have been applied before undergoing training for additional knowledge and skills. This multiple-case study shows that in contrast to CHWs with short pre-service training,

CHWs with longer pre-service training are able to perform additional tasks following short in-service training for specific tasks. For example, CHWs in our study countries (apart from ANMs) require an additional in-service “skilled birth attendance” training to provide intrapartum care irrespective of whether the duration of pre-service training was three years (CHEWs in Nigeria), three months (CHCP in Bangladesh) or three weeks (FWAs and HAs in Bangladesh). However, CHEWs (Nigeria) require only two-week in-service “skilled birth attendance” training to provide intrapartum care while CHCPs, FWAs and HAs (Bangladesh) require six-month in-service training. This finding aligns with a mixed-method study of doctors, nurse-midwives, mid-level health workers, CHEWs and nurse-aides in Africa and Asia (Ameh et al. 2016). The study showed that health workers such as doctors with longer pre-service training are likely to have better knowledge and skill retention following short in-service training (three-five days) compared to nurse-midwives. Similarly, nurse-midwives had better knowledge and skill retention compared to nurse aides with the shortest pre-service training (Ameh et al. 2016).

In response to the health workforce shortage, a commentary and a review on health workers suggest short competency-based training (Nancarrow 2015; Frank et al. 2010). It is anticipated that this approach will ensure that CHWs can provide health services to meet pressing local health needs after short training courses rather than longer training courses with a broad curriculum which may have contents that are not locally relevant. Furthermore, many training models for health workers suggest that competency-based incremental training of short duration with various exit points will enable health workers to provide the needed health services after short-duration training. They emphasise that long duration pre-service training is often based on global guidelines which may not be relevant to local health needs or priorities (Nancarrow 2015; Frank et al. 2010). A global guideline on human resources for health corroborates this by suggesting that countries with health workforce shortage should focus on training community-level health workers with the minimum set of competencies required to meet local health needs (Global Health Workforce Alliance 2015). In contrast, this multiple-case study illustrates the long-term benefit in pre-service training of longer duration. It shows that CHWs with long pre-service training can take up new roles in their expanded scope of practice following short in-service training. Policy makers involved in revising CHW training curricula should

prioritise contents that may not be immediately relevant to local context but are necessary for cumulative learning in future sessions.

Lack of equity in the invitation for in-service training

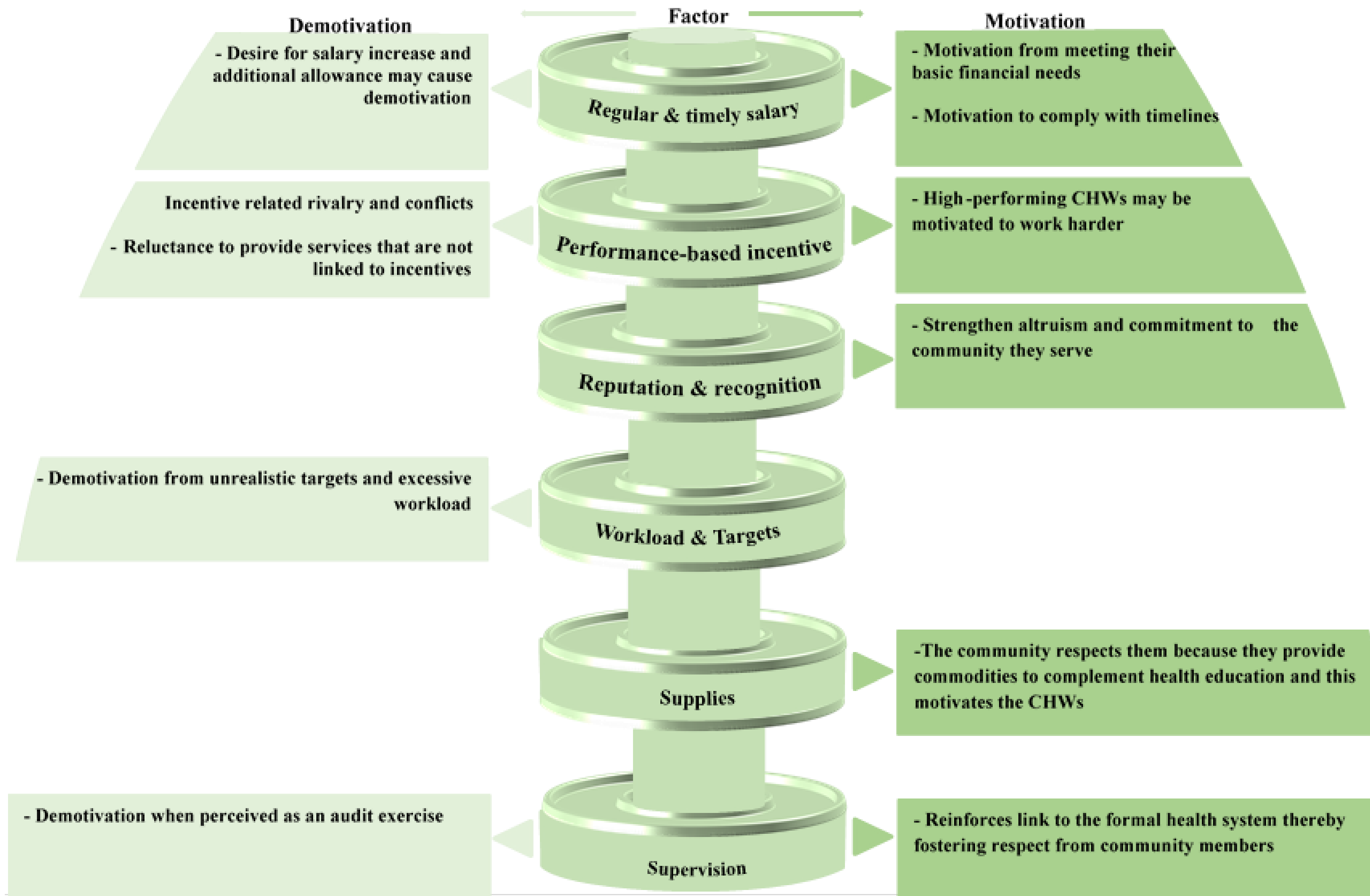
This multiple-case study shows that CHWs (HSAs and CHEWs) in urban and peri-urban areas in Malawi and Nigeria tend to attend more in-service training than their colleagues in hard-to-reach regions because of their visibility and accessibility to local ministries of health that issue invitation to training. This imbalance in training invitations ignores the multi-pronged challenge of low health workforce density and high disease burden in the hard-to-reach areas. Similar to the inverse care law in which access to adequate medical care tends to vary inversely with the health needs of the population (Tudor Hart 1971; Watt 2002), findings of this multiple-case study shows there may be an "inverse need" in which CHWs that have the greatest need for training lack access to these training. Hence, decision-makers in community health programmes may need to map and monitor the geographical locations of CHWs invited to in-service training to ensure fairness in invitations to training. Furthermore, they may consider other ways of improving knowledge and skills of CHWs in hard-to-reach areas, such as strengthening the step-down training model and encouraging facilitated peer-to-peer learning in a supportive environment with a more senior CHWs or health professionals in attendance (Bluestone et al. 2013). The content and duration of training should be documented in a logbook and this may inform CHW re-licensing, additional classroom training and promotion. Technological innovations such as educational mobile phone applications or telecasting recorded videos may also be considered (Global Health Workforce Alliance 2015). However, future research should explore the best approaches to adapting current technological innovations to meet the needs of CHWs who lack the skills for using advanced information technology tools or have low literacy or numeracy skills. Additionally, these studies should explore technologies that are low on maintenance and are adaptable to hard-to-reach regions which may have poor internet connectivity and power supply.

5.4.3 Factors influencing CHWs' motivation

Figure 5.3 illustrates how salaries, performance-based incentives, recognition and reputation, workload, supplies and supervision influence CHWs' motivation. These

factors either act as CHW motivators or demotivators depending on the situation in which they are applied. In general, this multiple-case study shows variations in what CHWs consider valuable, fair and motivating. While recognition may be motivating to a financially-stable community-based volunteer CHW (such as CHVs) who has a manageable workload and seeks to be viewed as altruistic, remunerated CHWs who interface regularly with other health workers may compare their remuneration with these workers and may still be demotivated despite recognition.

Figure 5.3: Factors influencing CHWs' motivation



Regular and timely salary

This study shows that the desire for salary increase or additional allowances may be insatiable. In general, CHWs on some form of remuneration expressed the need for timely, regular and sustainable remuneration with the desire for additional income. Unsalaried CHVs in Kenya with the unmet expectation of financial rewards tend to engage more in their personal income-generating activities (rather than CHV activities) in the bid to be financially self-sufficient. Furthermore, these unsalaried CHVs tend to be less accountable for the services they are required to provide. These findings corroborate those of a systematic review assessing the sustainability of CHW programmes in LMICs which found that CHWs are demotivated by inadequate or lack of remuneration and tend to look for other jobs that have better remuneration packages (Pallas et al. 2013). A case study exploring human resource practices supporting CHWs in five sub-Saharan African countries also explains the difficulty in applying sanctions on unsalaried CHWs when they fail to provide the required services within stipulated timeline (Raven et al. 2015). Policy makers may consider drawing from a systematic review of factors influencing CHWs' service delivery in LMICs. The review suggested that CHW remunerations should be commensurate with their efforts and competitive when compared with remuneration of other workers with a similar level of competency in the district (Pallas et al. 2013). Furthermore, decision makers utilising unsalaried CHWs in providing health services may be guided by a qualitative study exploring the best approaches to designing CHW incentives. The study suggested regular financial compensation to CHWs who are given heavy workloads which take away their autonomy, flexibility and time for income generating activities (B-Lajoie et al. 2014).

Performance-based incentives

This multiple-case study shows the dual but contrasting influence of incentives on health service delivery for CHWs. For example, there are arguments for and against performance-based incentives of ASHAs. On the one hand, the performance-based incentives tend to encourage ASHAs to work harder and provide services to more service recipients. On the other hand, this form of payment may demotivate those ASHAs unable to meet outcome-based targets and consequently unable to earn an adequate income. An additional challenge is that ASHAs are only paid incentives

when they achieve certain outcomes (such as a pregnant woman accessing ANC services) while the frequent home visits which led to the ANC visits are not incentivised. Consequently, ASHAs are not motivated to carry out activities that do not earn them incentives or may rely on coercion of service recipients to achieve the outcomes. Among salaried CHWs such as CHEWs and JCHEWs in Nigeria, this study notes a tendency to focus on incentivised health services such as polio vaccination within the community at the expense of other community-based services that are not incentivised, thereby resulting in fragmentation of the community health service package in which other vaccines are not provided in the community.

A qualitative study exploring factors influencing ASHAs' service delivery corroborate the above findings illustrating how financial incentives improve service delivery of incentivised activities but limit their participation in non-incentivised activities such as community mobilisation. It suggested the need for fairness in providing incentives to CHWs (Saprii et al. 2015). Hence, community health programme planners may draw from principles in human resources. These principles suggest that performance-based incentives should accommodate intangible inputs and processes that are not often measured but critical to achieving the outcomes (Gilmore & Williams 2012; Pilbeam & Corbridge 2010).

Incentive-related conflicts among CHWs: This multiple-case study illustrates the tendency for conflicts among CHWs when incentives are paid to a member of the health team rather than shared among all team members. Among CHWs in Bangladesh, all team members are paid at agreed rates for facilitating permanent methods of contraception and these incentives tend to motivate them. In contrast, ANMs and ASHAs in India tend to have conflicts based on the fact that either the ANM or the ASHA (not both) that played the main role in facilitating the permanent methods of contraception is paid. While this case study underscores the benefit in team-based performance incentives to enhance teamwork and prevent rivalry and conflicts among team members, human resource management principles (Pilbeam & Corbridge 2010) drawn from motivation theories acknowledge the above assertion but point out that team-based reward tends to discourage individual innovation and creativity (Pilbeam & Corbridge 2010). Hence, there are suggestions of team-based rewards with individual recognition (Pilbeam & Corbridge 2010; Dieleman et al. 2009). Decision makers may draw from other human resource management

principles which suggest rewarding high-performing teams while identification of high-performing individuals within the team should be left to the team members through anonymous vote or nominations within the group. It is anticipated that this will guarantee consensus within the group and strengthen the team spirit while encouraging self-motivation and individual creativity (Redman & Wilkinson 2009).

In addition to conflicts from payments relating to permanent methods of contraception, this multiple-case study highlights conflicts between ANM sub-groups (contract and regular ANMs) with similar knowledge and skills level and scope of practice but variation in salary. Also, ASHAs are demotivated from the significant difference in their remuneration as compared to ANMs despite sharing certain tasks with ANMs based on the overlaps in their scopes of practice. Human resource management principles clarify these findings stating that remuneration should relate to results achieved, processes involved in generating the results and the knowledge and skill levels of the individual producing the result (Armstrong & Brown 2001). Hence, this multiple-case study acknowledges that the difference in knowledge and skills level between ANMs and ASHAs may explain the variation in remuneration.

The role of reputation and recognition in motivating CHWs

Irrespective of cadre or country, CHWs in the study countries are motivated by altruistic and religious goals, career progression, job satisfaction from positive health outcomes of recipients and reputation in the community (especially CHWs residing in the community). Furthermore, CHWs residing in the community (such as ASHAs and CHVs) tend to place importance on their reputation within the community. They are also motivated by words of appreciation from community members and recognition by community leaders. This is particularly true of volunteer CHWs (CHVs in Kenya) who aim to be perceived by the community members as unsalaried health workers because of the “psychological contract” (Handy 1993) with the community in which they, as co-community members, are expected to provide services based on community interest rather than financial gains. This finding is similar to that of a systematic review exploring challenges of CHWs in countries from all income groups (Glenton & Colvin 2013) and a qualitative study exploring challenges faced by volunteers in South Africa (Hunter & Ross 2013). These studies noted a breach in the moral standing of volunteer CHWs when they are paid and a

consequent strain on the relationship between them and their recipients, thereby limiting their ability to deliver health service to these recipients. Consequently, workers who want to be perceived as being altruistic may not consider payment of stipends as a motivating factor (Glenton et al. 2013; Hunter & Ross 2013). However, findings from this multiple-case study suggest that only CHWs who are financially self-sufficient may be able to sacrifice financial reward to earn moral standing within the community. Especially as CHVs (the only volunteer CHW in the study) are expected to be financially self-sufficient. This multiple-case study also adds that salaried CHWs (such as CHWs in Bangladesh) may place less emphasis on awards or recognitions lacking complementary monetary reward, emphasising that these awards lack market value. The above findings corroborate those of a quantitative study comparing paid workers and volunteers providing emergency services in Australia in which rewards such as recognition and status were more rewarding for volunteers (Fallon & Rice 2011).

Programme planners working with community-based CHWs may consider harnessing recognition and awards emanating from the community to foster this psychological contract and commitment to service delivery. For remunerated CHWs, human resource management principles suggest a “total reward system” that combines tangible rewards such as allowance, performance-based incentives and intangible rewards such as recognition for meritorious performance (Pilbeam & Corbridge 2010). As human resource management principles tend to draw from different work sectors and countries, future research may explore the effectiveness, efficiency and sustainability of different combinations of tangible and intangible rewards for CHWs providing services in low resource settings.

Excessive workload and unrealistic work-related targets demotivate CHWs

Some CHWs in our study countries complained of an excessive workload and unrealistic work-related targets irrespective of cadre or country. For example, the ANMs pointed out that the targets relating to facility-based deliveries tend to ignore current realities. The current advocacy in family planning has reduced community pregnancy rates thereby necessitating the need to revise targets relating to facility-based deliveries. This finding underscores a principle in human resource management which emphasises the need for targets that are responsive to the ever-

changing contexts in which workers provide services (Gilmore & Williams 2012; Pilbeam & Corbridge 2010). Decision makers at the sub-national level may consider drawing from this principle and review CHW work-related targets regularly to ensure that they are pragmatic and reflect the "contextual reality" where the CHWs work rather than generic national targets. Particularly, they should relate these targets to the topography, health worker density, population density and magnitude of a health condition among the population as suggested by disaggregated health data.

Community-based CHWs such as ASHAs are also demotivated by the excessive workload despite having a form of time flexibility to structure their working hours to their convenience and recipients' health needs. ASHAs also mentioned the competing demands for their time especially their household chores. Furthermore, the excessive workload is exacerbated by duplication of reports to different health programmes and travel time for home visits to houses that are far apart. In contrast to ASHAs, however, community-based CHVs who are largely unpaid, did not complain of an excessive workload. Possible reasons are that CHVs are assigned to health service coverage areas based on geographical considerations thereby removing the need for long-distance travel. Decision makers working with CHWs who reside within the community served need to consider geographical location of the CHW's residence in assigning catchment areas to them. This will reduce the non-productive time they spend travelling for home visits especially in sparsely populated areas where the recipient's residence may be far from the CHWs' place of residence (Scheffers et. al 2016).

Non-availability of supplies demotivates CHWs

This study shows that non-availability of supplies often leads to CHW demotivation, and depreciation in the level of knowledge and skills as an adequate supply of equipment and commodities are often required to apply knowledge and skills gained from training. CHWs in the African study countries noted that CHWs who provide health education without complementary commodities often lose the recipients' respect and this may degenerate into conflicts whereby the recipients accuse the CHWs of pilfering the commodities. In general, recipients also tend to lose confidence and respect for CHWs when their facility or referral (link) facility refer the recipient due to a lack of diagnostic facilities such as obstetric ultrasound

machine or the inability to conduct surgical procedures such as caesarean section. In line with these findings, reviews exploring challenges to scaling up community case management and improving CHW productivity show that without an adequate supply, CHWs tend to lose the respect of their service recipients with consequent fall in demand for their services (Oliver et al. 2012; Jaskiewicz & Tulenko 2012).

Availability of supplies enhances the application of knowledge and skills

CHWs in the study countries complained of the non-availability or inadequacy of infrastructure, drugs and commodities limiting their ability to provide services and apply the knowledge and skills gained from training. For example, CHEWs and JCHEWs in Nigeria pointed out that lack of the requisite equipment and commodities to practise content of training leads to depreciation of knowledge and skills gained from training which may affect their ability to provide such services when commodities become available. This finding corroborates that of a review exploring factors influencing CHW productivity which highlighted how the availability of supplies enables application of knowledge and skills as well as service delivery (Jaskiewicz & Tulenko 2012; Mohan et al. 2004).

Programme planners involved in the training of CHWs should consider the availability and type of supplies in the facilities where CHWs provide services and this should inform content and delivery of the training. On the other hand, programme planners should ensure that CHWs are provided with the requisite supplies that will aid implementation of the knowledge and skills gained from the training.

Role of supervision in motivating CHWs

This multiple-case study shows how the different components of "supervision" seem to affect CHWs differently. On the one hand, HSAs in Malawi are demotivated by "administrative or audit" type of supervision which seeks to monitor achievement of work-related targets through submitted reports and records rather than "supportive supervision" which identifies and addresses the work-related challenges. On the other hand, CHEWs in Nigeria expressed how "technical supervision" by nurse-midwives guides their service delivery to comply with standards and offered on-the-job training. Other studies exploring supervision of CHWs in Tanzania and South Africa suggest a need to unpack the term "supervision" to understand its various

components in order to ensure that all CHWs are adequately supervised (Roberton et al. 2015; Daniels et al. 2010). Hence, community health programmes should ensure supervisory strategies and tools that entail data verifications against targets, address identified challenges and provide technical support with regards to job-related knowledge and skills (Daniels et al. 2010).

Role of supervision in reinforcing their knowledge and skills

This multiple-case study shows the key role of supervision in reinforcing CHWs' knowledge and skills. For example, in Malawi and Nigeria, the technical oversight provided by nurse-midwives reinforces and strengthens CHWs' knowledge and skills retention. This is in line with findings of a study on mid-level health workers in Mozambique which suggests that low cadre health workers under the tutelage of higher cadre health workers at referral centres are more likely to retain knowledge and skills than their counterparts. Hence, it suggested that supportive clinical supervision may be key to addressing the knowledge and skills gaps after pre-service training (Feldacker et al. 2015). Moreover, a systematic review exploring supervision of primary care health workers in developing countries suggests that the shorter the duration of health worker training, the more frequent the supervisory visits should be. This approach would reinforce the acquired knowledge and skills (Bosch-Capblanch & Garner 2008).

This multiple-case study equally illustrates the importance of supervisory visits in maintaining linkages between community-based CHWs and the formal health system thereby legitimising their roles and earning them respect. A trial assessing the factors influencing acceptability and community trust of CHWs providing MNH care in rural Uganda clarifies by highlighting that the role of these supervisory visits in fostering CHW respect is more important for volunteer CHWs who reside within the community and lack any symbolic link to the health system such as uniforms or badges (Singh et al. 2015).

While this multiple-case study identified challenges with implementing supervisory visits which relate to distance, logistic support for transportation and supervisors' competing demands; it equally highlights the opportunities for innovation. Programme planners may explore a mix of supervisory approaches to include group and peer supervision, and telephone discussions where there are logistic challenges

with supervisory visits. There are examples of innovative approaches in the literature, including a study of programme experience using CHEWs in primary care in Nigeria that showed how two-way telephone communication between assigned doctors and CHWs improved service delivery (Ordinioha & Onyenaporo 2010). Another example includes the use of Whatsapp mobile messaging by CHWs and supervisors for group supervision and peer-to-peer learning (Henry et al. 2016), although there were concerns about protecting the privacy of their service recipients (Henry et al. 2016).

5.4.4 Factors influencing CHWs' ability to deliver services

This section highlights factors that influence the productivity of CHWs especially as it relates to their workload and targets.

The influence of transport and communication support on service delivery

This multiple-case study illustrates the key role of transportation and communication tools in referrals of service recipients and communication with supervisors and other health workers. It notes the challenges with transportation for patient referral which relate to poor road network, lack of funds to purchase fuel and maintain available vehicles. Communication challenges relate to poor telephone connectivity in hilly regions. These findings are similar to those of a mixed-method study aimed at identifying evidence for improving supplies for CHWs. The mixed-method study documents how CHWs in Africa often resort to using non-motorised transportation such as travelling on foot or with animals in order to provide services to their recipients (Chandani et al. 2014). Hence, decision makers may consider transportation and logistics approaches that are feasible in hard-to-reach areas considering the challenges of road networks in these areas. They may consider working with researchers in identifying transport facilities that are low on maintenance such as non-motorised transport facilities (e.g. bicycle-drawn carriage) that are usable in places with the poor road network.

Community-related factors limiting health service delivery

Factors limiting CHWs' service delivery in the study communities relate to local socio-cultural beliefs and norms and the timing of community-level health activities. ASHAs in India and CHVs in Kenya complained that recipients often need to perform rituals before receiving health services and show a preference for spiritual

solutions rather than orthodox medicine. Consequently, these socio-cultural beliefs that affect health-seeking behaviour also limit CHWs' service delivery. This finding aligns with a review exploring barriers to utilising health services among ethnic minorities in the United States. This review noted that health-seeking behaviour of minority ethnic groups was influenced by beliefs in the spiritual underpinnings of health conditions (Scheppers et al. 2006). It, however, emphasises the need for health workers' understanding of these cultural beliefs and adjusting their communication style to overcome these barriers (Scheppers et al. 2006; Mogawane et al. 2015). Decision makers may consider training CHWs in cultural competency to address poor health-seeking behaviour which stems from cultural beliefs and norms.

Irrespective of cadre or country, CHWs often find it difficult to provide services when the timing of community-based health activities conflicts with recipients' daily income-generating activities such as farming. While the CHWs in this study stated the importance of service recipients in meeting their work-related targets and consequently motivating them, a systematic review exploring factors influencing CHWs in MNH roles adds that patients flow enables them to apply their knowledge and skills thereby promoting retention of skills and engendering confidence (Bigirwa P. 2009). Different groups of stakeholders in the study countries suggested that CHWs need to plan their community activities to accommodate the daily routine of their service recipients. Some of these stakeholders suggested that home visits should be done early in the morning (before recipients embark on their income generating activities) instead of evenings when the recipients are tired from the day's work and there are security challenges for unaccompanied female CHWs walking to recipient's home.

5.5 Study strengths and limitations

This section highlights the strengths and limitation of the study design and methods, the conduct of the study and the data collected.

5.5.1 The study design and method: To the best of our knowledge, this is the first qualitative study exploring the common themes in the scope of practice of 10 CHW cadres providing services with regards to MNH in five LMICs across two regions. Therefore, this multiple-case study has contributed to the methodology of

conducting multi-country studies on CHWs and the findings provide a guide for formulating policies and planning community health programmes in LMICs.

Over the years, many reviews and reports have relied on CHW definitions and categories based on expert opinions (Lehmann & Sanders 2007; Lewin 2010; WHO 1989; Perry et al. 2014). However, these definitions do not accommodate the diversities in CHW characteristics and use CHW categories with unclear distinctions. Consequently, the lack of robust CHW definition and categories have limited the ability of these reviews to objectively compare different cadres of CHWs to inform decision making. Building on these attempts at comparing diverse cadres of CHWs, this study used a systematic review of common themes in definitions of CHWs to develop a working definition for purposively selecting CHWs from the study countries. Furthermore, it identified competency-based CHW categories to guide an objective categorisation of 10 CHW cadres from the five study countries before comparing their scope of practice and factors influencing their service delivery.

There are, however, a few limitations in the study design and method which should be considered in interpreting the findings and may subsequently inform future research. Only "Making it Happen" programme countries, districts and participants were selected for this multiple-case study. Even though recruitment of study participants through the "Making it Happen" programme provided easy access to participants, it also introduced gate-keeper bias (Ritchie et al. 2014) in which the gate-keepers limited participant recruitment to only health facilities and individuals linked to the programme. This bias, therefore, limits the extent to which the study findings can be generalised to the wider population of CHWs. In addition, this study cannot quantify the extent to which the views and opinions are prevalent in the communities and facilities included in the study sample. It is possible that other relevant views that relate to the study's research questions were left out. But considering the diversity of policy documents, views and opinions generated during data collection; it may be broadly representative of CHWs in the study countries. Moreover, the sample included CHWs and stakeholders from different geographical areas, sociocultural backgrounds and age groups. Future studies may consider using quantitative methods to measure the frequency of some of the factors influencing CHWs' service delivery. The outcome of such quantitative studies may guide decision makers in knowing the extent to which these factors influence service

delivery. Subsequently, they would be better positioned to prioritise the prevalent factors in CHW programme planning and implementation.

The number of CHW groups that met the inclusion criteria based on the working definition varied across countries. For example, four groups of CHWs met the study's inclusion criteria in Bangladesh while only CHVs were eligible for inclusion in Kenya. Therefore, the description of CHWs from the different study countries varied in depth and robustness. Analysis of data from the four CHW cadres in Bangladesh enabled adequate comparisons thereby identifying unique and generic characteristics of the respective CHW cadres in Bangladesh. Conversely, this type of comparison was not possible in Kenya as there was no other health worker cadre that met our inclusion criteria asides the CHVs. While this is acknowledged as a study limitation, it reflects the diversity in the use of CHWs across the study countries depending on each country's need and disease burden. On the one hand, some countries tend to use few cadres of CHWs to perform diverse roles. On the other hand, other countries use many cadres of CHWs, each having few but unique roles in health service delivery.

Despite reviewing the policy documents of study countries and holding discussions with in-country partners while developing the study proposal, it was difficult to map out all the key groups of CHWs providing MNH services in these countries. Due to time and budget constraints, the primary research team had limited in-country discussions with the staff of governmental and non-governmental organisations without engaging community-level stakeholders. Consequently, the team left out some community support groups who would have qualified as lay health workers (working with paraprofessional CHWs) based on the working definition of CHWs. Future research on these themes should map all CHWs to identify the lay health workers through broader consultation with community-level stakeholders and subsequently explore their characteristics, scope of practice or job description and the factors influencing their service delivery. These future studies should entail comparison of the MNH scope of practice of lay health workers and paraprofessional CHWs to identify links and overlaps in their scope of practice. The findings from these studies may inform health workforce planning and integration of lay health workers (and other CHWs that are not formally integrated) into the formal health system.

5.5.2 Conduct of the study

A key strength in implementing this study design is the local relevance and cultural appropriateness of the approach. In each of the study countries, the research team sourced policy documents, identified and recruited participants through LSTM's in-country partners and assistance from ministries of health staff. Furthermore, opinions of the in-country partners and ministries of health staff informed adapting the topic guides to local contexts and interpretation of the study findings. Additionally, trained local research assistants (with an in-depth understanding of local language and culture) facilitated the FGDs and KIIs at the community level using culturally appropriate approaches to stimulate discussion thereby enriching the insights and diversity of views.

However, there were logistic challenges stemming from applying the study design and method in diverse contexts. Thus, the data collection method employed varied for the same stakeholder group in the different study countries to mitigate the local logistic challenges. For example, it was difficult to reach a quorum (5-10 participants) for FGDs with level 2 paraprofessional CHWs such as ANMs in India. The challenge relates to bringing them together outside their health facility as some were the only health provider in their health facility. Conversely, there were fewer logistic challenges with reaching a quorum for FGDs with level 1 paraprofessional CHWs with flexible time schedules (such as ASHAs and CHVs). Hence, future research considering FGDs with facility-based CHWs should plan and consider holding FGDs at times and locations where facility-based CHWs already meet regularly.

5.5.3 The data collected and data analysis

This thesis highlights the benefit of conducting a multi-stakeholder study as it entailed data triangulation of opinions from five groups of stakeholders in the formal health system and community. Surprisingly, many of the stakeholder groups within each study country had common views and perceptions in relation to the research questions with a few exceptions. Data from the community-level stakeholders helped to confirm health services that were not being provided by CHWs despite being in their scope of practice, thereby opening a window of opportunity to explore the factors influencing CHWs' service delivery.

However, despite the assurance of confidentiality and anonymity, some of the study participants who were employees of the formal health system provided answers which only emphasised the positive image of their in-country government and often tried to conceal challenges faced by the CHWs. To minimise courtesy bias as much as possible, the privacy of participants was considered in all key informant interviews by limiting the number of people at the interview venue and temporarily stopping the interview any time a visitor entered the interview venue.

In relation to document analysis, many of the policy documents from Bangladesh were only available in Bengali. Considering the financial implication of translating the documents, the principal researcher was limited to reviewing documents available in English. Therefore, some information (documented in Bengali) relevant to the study may have been omitted in the analysis.

Furthermore, many of the FGDs and KIIs (especially at the community level) were conducted in the local language with subsequent transcription and translation into English and it is possible that some messages may have been lost in translation. Nevertheless, a few transcripts with English texts were back-translated into the original language of the KIIs and FGDs and it was noted that the key messages were preserved despite translation.

A key limitation of this study is the comparison of data from diverse socio-cultural and political contexts especially as a study of CHWs in LMICs shows that these contextual factors vary widely and influence their service delivery (Kok et al. 2015). Nevertheless, the principal researcher kept field notes of informal discussions of these contextual factors and this informed data analysis. However, the rich and in-depth description of each study context is beyond the scope of this study and decision makers working in different socio-cultural and political contexts may have to adapt the study findings to suit their contexts. The above assertion also calls for an ethnographic research to understand the diverse contexts in which CHWs provide services and how contextual factors influence CHW selection criteria, scope of practice and service delivery.

5.6 Implications for policy and practice

This section revisits the study findings with respect to the existing body of knowledge to highlight the gaps relating to CHW policy and practice. Furthermore, it provides recommendations, which may inform how policymakers and programme planners rethink the role of CHWs in MNH care. The implications are presented in relation to each of the study objectives:

5.6.1 Characteristics of CHWs providing MNH care

First, the literature review underscored the need to have CHW categories that are locally and globally comparable using levels of education and duration of training to draw distinctions between CHW cadres. The CHW categories described in this study should guide local and global policymakers in developing a framework for grouping CHWs and inform mapping of CHW data (disaggregated by categories) to ensure local and global comparability. Drawing from a common understanding of CHW categories, policymakers would be better positioned to make informed decisions on the quantitative planning of skills mix of the various CHW categories with the available health professionals.

Second, the multiple-case study underscores the gaps in policies suggesting a common educational requirement for all level 2 paraprofessional CHWs without acknowledging the challenge of low literacy rate in hard-to-reach communities. It notes how this approach may disqualify CHW candidates who are culturally competent and motivated to provide MNH services but do not meet the national educational requirements for the position. This finding calls for a review and possible revision of sub-national policies to consider local contexts in formulating policies on educational requirements of level 2 paraprofessional CHWs. For example, they may consider lowering the educational qualification from 12 years of formal education to 10 years of education.

5.6.2 Scope of practice of CHWs in MNH care

The multiple-case study identified a gap in guidelines that do not specify the minimum level of education and duration of pre-service training required to provide MNH services. While findings from this multiple-case study call for flexibility of criteria, it also underscores the importance of having clear guidelines to guide practice. There is an urgent need for national and subnational policymakers and

programme planners to review the various MNH tasks and identify the minimum level of education and duration of training required to gain proficiency in performing each task. Subsequently, they may draw from findings of this multiple-case study to assign MNH tasks to CHWs to reflect their level of education and duration of training.

In addition, this study acknowledges that some CHWs informally expand their scope of practice to meet local health needs and demands. Such local demands include pressures to conduct deliveries during emergencies when no health professional is available and referral is not feasible. Sub-national policymakers have key decisions to make in reviewing and possibly revising CHW scope of practice in MNH care to reflect local realities. Subsequently, some CHWs may receive specialisation training similar to CSBA training (Bangladesh) in order to address the local need for skilled birth attendants. Furthermore, CHWs with an expanded scope of practice in MNH care may be considered for improved remuneration to ensure they are motivated to provide additional health services.

5.6.3 Factors influencing CHWs' MNH service delivery

While this multiple-case study described the influence of sociodemographic characteristics, job-related knowledge and skills and motivation on MNH service delivery, it also identified gaps in the existing approaches to addressing these factors.

First, unlike South Asia, male CHWs provide services to female service recipients in sub-Saharan Africa raising concerns relating to trust between opposite sex. Policymakers working with CHWs in sub-Saharan Africa should consider revising the existing selection criteria to ensure that MNH services are largely provided by female CHWs. This approach may address issues relating to trust between male CHWs and female service recipients.

Second, this multiple-case study underscores the complementary role of the triad of training, supplies and supervision in fostering knowledge and skills acquisition and retention. It shows the potential for depreciation in knowledge when CHWs are trained without adequate supplies to apply the knowledge and lack of supervision to reinforce knowledge and skills. Therefore, programme planners should consider a holistic approach to improving CHW knowledge and skills by identifying resources

for supplies and supervision when they are planning for training. Programme planners working with CHWs in hard-to-reach areas require innovation in ensuring that these CHWs are provided with the requisite MNH knowledge and skills. This may entail step-down training using “training-of-trainers” model such that MNH training can be cascaded to hard-to-reach areas that are often left out of training invitations. They may also consider the use of technological innovations such as educational mobile phone applications to foster self-directed learning or telecasting educational videos that they can watch and discuss as a group while their supervisor facilitates the discussion at the link facility. The content and duration of training should be documented in a logbook while knowledge and skill acquisition and retention should be assessed periodically and graded. Subsequently, the activities and results of the assessments should inform competence-related allowance, CHW re-licensing and career progression. In situations where inadequate transport logistics limits supervisory visits in these areas, programme planners may consider the use of telephone and other information technology platforms to complement supervisory visits.

Third, this multiple-case study identified gaps in the existing approaches to identifying motivated CHW candidates and sustaining the motivation of CHWs. CHW programmes utilising volunteers for MNH roles may reconsider their approach to identifying motivated candidates who would remain motivated throughout the period of volunteering. Programme planners may consider culturally-appropriate psychometric tests (Armstrong & Taylor 2014) that assess short and long-term motivations for volunteering in order to predict their suitability for a volunteer role. To sustain motivation of volunteers, it is important to regularly review their workload to ensure that they are not demotivated from a heavy workload that takes away their autonomy, flexibility and time for income-generating activities. In addition, they may harness their altruistic motivation and various forms of recognition and awards to foster motivation.

Among remunerated CHWs, there is a need to provide financial incentives that are considered valuable and commensurate with workload, appropriate-to-context, encourage individual innovation and strengthen team spirit. Programme planners involved in reviewing performance-based incentives should consider the intangible efforts and steps that are not often measured but critical to achieving results.

Performance-based incentives may take the form of weighted allocation in which achieving the result is highly rewarded, but the efforts and steps are rewarded to ensure that other CHWs who did not achieve desired results are not demotivated. Furthermore, this multiple-case study proposes a need for a holistic approach to motivating remunerated CHWs with rewards that they consider valuable. Particularly, it highlights the challenges with motivating remunerated CHWs who have an insatiable demand for financial incentives. Programme planners working with remunerated CHWs may consider a "total reward system" that combines different forms of financial rewards (base salary, allowance, performance-based incentives) and non-financial rewards (career progression, recognition and awards). This approach may be key to ensuring that remunerated CHWs are motivated by other factors even when they are demotivated by absence or inadequacy of any component of financial reward.

In relation to excessive workload, CHW work-related targets should reflect local realities such as the magnitude of a health condition within the population, population density, health worker density and topography of the community. Programme planners may consider dividing the community into catchment areas and deploy CHWs to these catchment areas based on their residence within the community. This approach may reduce the non-productive time spent travelling for home visits, especially in sparsely populated areas.

5.7 Implications for future research

This multiple-case study proposes new research themes based on knowledge gaps identified through the study findings. As reflected in the description below, these new research themes cut across CHW characteristics, scope of practice and factors influencing service delivery.

To strengthen the existing evidence on the relationship between CHW categories and the scope of practice in MNH care, researchers may evaluate the effectiveness of each CHW category in providing different services included in MNH care. For example, they may conduct a comparative study to assess the relationship between contraceptive prevalence rate and the category of CHW that provided the family planning counselling. Findings from this research may identify which CHW category is best suited for each component of the MNH service package and subsequently, the

knowledge may inform assigning tasks within multidisciplinary primary health care teams.

Additional evidence is needed on the ideal CHW training models and duration that will ensure CHWs acquire the needed competency to provide MNH services in their scope of practice. The effectiveness of such training models and duration may be assessed using post-test questionnaire and direct observation of service delivery at specified periods after training. An example of such studies may be an evaluation of knowledge and skills retention by CHWs after receiving short training on the use of partograph in labour and delivery. The validity of such studies would depend on a rich description of the CHWs' levels of education, durations of pre-service training and the training on partograph, availability of supplies and supportive supervision. Findings from these studies may guide decisions on the minimum duration and model of training that will ensure competency of CHWs.

This multiple-case study highlights how socio-demographic heterogeneity of service recipients shapes their cultural and language needs with respect to MNH services. While women in labour perceive older female CHWs as mother figures, the difference in age-related vocabularies makes communication difficult. There is a research opportunity in exploring and identifying knowledge and skills, personality traits and attitudes that are important for ensuring cultural competency of MNH service delivery. These may include but not limited to age-related vocabularies, local and religious norms and beliefs. These findings may inform the revision of CHW subnational training curriculum to include modules that address local cultural needs of MNH recipients. There is also an opportunity for researchers to conduct a review of global literature to identify knowledge and skills, personality traits and attitudes that are essential for cultural competency in MNH service delivery irrespective of geographic location and others that are unique to certain regions, cultures or religions. Findings from this review may inform standardisation of tools that assess the generic skills that are required of CHWs providing MNH services. Additionally, this approach will ensure that the tool contents are locally and globally comparable.

5.8 Conclusion

Almost four decades since the Alma Ata declaration, the key messages of identifying roles for community-level health workers and ensuring equitable distribution of health care are still relevant today. To the best of our knowledge, this is first multi-country case study exploring characteristics and scope of practice of CHWs providing MNH services. This study clarified the term “community health worker” for the various stakeholders involved in community health policy, practice and research, and organisations and programmes working to ensure fair distribution of healthcare. The findings from this study provide a useful guide for harnessing the potentials of CHWs in the formal health system through optimal skills mix of CHWs with the available health professionals providing health services at the community level. Furthermore, it highlights the inadequacy of guidelines recommending a common scope of practice for all CHWs without segmenting this common scope of practice to reflect the varied levels of education and pre-service training duration. CHWs are uniquely positioned geographically and socio-culturally to link community members with health services. Hence, by strengthening their training, supervision, motivation and supplies, they may be able to take up some of the MNH tasks previously performed by health professionals thereby presenting an opportunity for mitigating the health workforce shortage that has affected service delivery in LMICs. Particularly in sub-Saharan Africa and South Asia with the multi-pronged burden of low health worker density, high maternal mortality ratio and high neonatal mortality rate. This study suggests that policymakers and programme planners involved in designing, implementing and evaluating community health programmes need to regularly review the adequacy of CHW selection criteria, training, remuneration, supervisory support and supplies. This approach may be key to fostering social acceptance of CHWs by the community members, CHW competency and motivation within an enabling work environment.

As various United Nation bodies (UNAIDS, UNFPA, UNICEF, UN Women, WHO and the World Bank) continue to reposition the role of CHWs in MNH care (UNAIDS et al. 2015), these findings should guide policy revisions. Subsequently, the revised policies may orient national and sub-national stakeholders in adapting recommendations on CHW scope of practice in MNH care to their contexts. Furthermore, stakeholders in the five study countries may draw from findings on

their respective countries to revise existing policies and address challenges that prevent CHWs from delivering MNH services.

Four decades after Alma Ata declaration, these findings provide compelling evidence to guide effective implementation of programmes seeking to utilise CHWs to achieve equity in the distribution of MNH care.

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Annexe 1.1: Study timeline

	2014				2015				2016				2017			
	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	Oct - Dec
Development of research proposal																
Development of data collection tools																
Application for ethics approval from LSTM																
Application for ethics approval from study countries																
Identification of policy documents (Secondary data)																
Primary data collection (Bangladesh)																
Primary data collection (Nigeria)																
Primary data collection (Kenya)																
Primary data collection (Malawi)																
Primary data collection (India)																
Data analysis (Primary and secondary data)																
Write-up of study findings and discussions																

Annexe 2.1: Search strategy

We conducted a preliminary exploration of the literature for alternate terms of community health workers and searched databases for subject terms of community health workers. For the purpose of this review, we excluded terms which can be classified as a health professional, as defined by the WHO's mapping of occupations (WHO 2010a). In all database searches, we set search limits for the date of publication (2004-2016) and language (English).

MEDLINE search

#1. Community health worker

#2. Health promoter

#3. Health educator

#4. ("Community health extension worker" OR " Lady health worker" OR "Health coach" OR "Community health advisor" OR "Family advocate" OR "Outreach worker" OR "Peer counsellor" OR "Patient navigator" OR "Health interpreter" OR "Public health aide" OR "Community Health Agents" OR "Maternal Health Worker" OR "Community Nutrition Worker" OR "Maternal & Child Health Promotion Workers" OR "Community-based Worker" OR "Maternal Child Health Worker" OR "Nutrition Worker" OR "Mental Health Worker" OR "Postnatal Support Worker" OR "Community-based Skilled Birth Attendant")

#5. ("Lay health worker" OR "Volunteer health worker" OR "Village health worker" OR Village Malaria Worker" OR "Female Community Health Volunteer" OR "Voluntary Malaria Worker" OR "Nutrition Volunteer" OR "Community Health Volunteer" OR "Village Health Guide" OR "Community Drug Distributor" OR "Village Health Helper" OR "Mother Coordinator" OR "Village Drug-Kit Manager"

OR “Community Reproductive Health Worker” OR “Lay Health Visitor” OR “Community Volunteer” OR “Community Health Advocate” OR “Community Health Aide” OR “Village Health Promoter” OR “Rural Health Worker” OR “Traditional Midwife” OR “Community Volunteer” OR “Lay Counselor” OR “Volunteer Counselor” OR “Volunteer Peer Counselor” OR “Peer Support Worker)

#6. ("Shasthyo Sebika" OR "Agente Comunitario de Salud" OR "Saksham Sahaya" OR "Visitadora" OR “Anganwadi Workers” OR “Promotoras de Salud” OR “Raedat” OR “Accompagnateur” OR “Behvarz” OR “Kader Posyandu” OR “Brigadistas” OR “Colaborador Voluntario” OR “Dai” OR “Bidan Kampong” OR “Dayas” OR “Doot”)

#7. (#1 OR #2 OR #3 OR #4 OR #5 OR #6)

#8. Defin*, this term only

#9. #7 AND #8

Annexe 2.2: An inductive approach to identifying the common themes in CHW definitions

Theme	Sub-theme	Code	Description of CHW	Reference
Selection criteria	Community members with an understanding of community culture and language	Community member	Community member	(Hinton et al. 2004; Anonymous 2005; Brownstein et al. 2005; de Heer et al. 2012; Farzadfar et al. 2012; Jarvis & Termini 2012; WestRasmus et al. 2012; Gallo et al. 2013; A. M. Koskan et al. 2013; A. Koskan et al. 2013; Ramsey et al. 2013; Thom et al. 2013; Zulu et al. 2013; Ahmad et al. 2014; Balcazar et al. 2014; Barogui et al. 2014; Condo et al. 2014; Gobezayehu et al. 2014; Kaufmann et al. 2014; Lopes et al. 2014; Kelkar & Mahapatro 2014; Redick et al. 2014; Sarmento 2014; Cherrington et al. 2015; Dye et al. 2015; Farah, Fathima et al. 2015; Fischer et al. 2015; Jimenez et al. 2015; Johnson & Gunn 2015; Kowitt et al. 2015; Moshabela et al. 2015; Gampa et al. 2017; Brunie et al. 2016; Loskutova et al. 2016)
		Community members	Indigenous members of the community served	(Kennedy et al. 2008; Holt et al. 2012; Whop et al. 2012; Zanchetta et al. 2012; Das et al. 2014; Cook & Mueser 2015; Ramírez et al. 2015)

Theme	Sub-theme	Code	Description of CHW	Reference
		Community member	Individuals who reside within the community	(Douthwaite & Ward 2005; Darmstadt et al. 2009; Houston et al. 2012; Crigler et al. 2013; Dynes et al. 2013; Elkins et al. 2013; Mangham-Jefferies et al. 2014; Sarfraz & Hamid 2014; Tran et al. 2014; Singh et al. 2015; Silva et al. 2016; do Valle Nascimento et al. 2017; Gomes et al. 2017).
		An understanding of the culture and language of the community served	Understand or share community culture, language or ethnicity, socioeconomic status and life experiences with the community served	(Hinton et al. 2005; Martin MY 2005; Health Resources and Services Administration 2007; Vargas et al. 2008; APHA 2009; Catalani et al. 2009; De Jesus 2009; Granillo et al. 2010; Herce et al. 2010; Alvillar et al. 2011; Herman 2011; Larkey et al. 2012; Trejo et al. 2013; Pinto et al. 2014; Uriarte et al. 2014; Zulu et al. 2014; Abrahams-Gessel et al. 2015; Barbero et al. 2016; Tong et al. 2017; Zavadsky 2017)
	Specific skills and abilities that engender the trust and respect of community members	Trusted and respected individuals	Respected and trusted by community members	(Martin MY 2005; Johnson & Gunn 2015; Barbero et al. 2016; Brownstein et al. 2005; Herman 2011; Peacock et al. 2011; Trejo et al. 2013; A. M. Koskan et al. 2013; Catalani et al. 2009)

Theme	Sub-theme	Code	Description of CHW	Reference
			Possess leadership qualities	(Ramírez et al. 2015; Bonilla et al. 2012; Allen et al. 2014)
	Gender consideration	Expected to be females	Female, preferably married in some cases	(Sarfraz & Hamid 2014; Gobezayehu et al. 2014; Allen et al. 2014; Nandi & Schneider 2014; Bill et al. 2009; Keating et al. 2014; Sikander et al. 2015; Shrestha et al. 2011; Houston et al. 2012; Farah et al. 2015; Mangham-Jefferies et al. 2014; Sarin et al. 2016)
	Job-related knowledge based on formal or informal education	Previous healthcare experience	Expected to have some healthcare experience	(De La Cruz et al. 2014; Gabitova & Burke 2014)
		Some formal education	Expected to have some level of education	(Farzadfar et al. 2012; De La Cruz et al. 2014)

Theme	Sub-theme	Code	Description of CHW	Reference
Educational qualification and pre-service training	Limited formal educational qualification and subsequent short duration informal pre-service training	Individuals with limited formal education but have undergone an informal job-related training lasting less than one month	Individuals with minimal or no previous, formal education but have undergone a job-related training. This pre-service training lasting between a few days to a month and does not take place in a recognised training institution	(Lewin et al. 2005; Bill et al. 2009; Shrestha et al. 2011; Elkin et al. 2012; Raphael et al. 2013; Allen et al. 2014; Uriarte et al. 2014; Kowitt et al. 2015; Elkins et al. 2013)
		Individuals with limited formal education who have undergone informal job-related training lasting between one and six months	Individuals with minimal formal education and have undergone a job-related training lasting between one and six months which does not take place in a recognised training institution	(Give et al. 2015)

Theme	Sub-theme	Code	Description of CHW	Reference
	Previous secondary education and subsequent short duration informal pre-service training	Individuals with some form of secondary education who have undergone an informal job-related training lasting less than six months	Individuals with some form of secondary education and have undergone a job-related training lasting a few weeks but less than six months. The job-related training is not in a recognised training institution	(Johnston et al. 2016; Das et al. 2014; Sarin et al. 2016; do Valle Nascimento et al. 2017; Brunie et al. 2016).
	Previous secondary education and subsequent long duration formal pre-service training	Individuals with some form of secondary education who have undergone a formal job-related training lasting between six months and a year	Individuals with some form of secondary education and subsequent formal training in a recognised training institution lasting between six months and a year	(Mangham-Jefferies et al. 2014; Dynes et al. 2013; Gobezayehu et al. 2014)

Theme	Sub-theme	Code	Description of CHW	Reference
		Individuals with some form of secondary education who have undergone a formal job-related training lasting more than a year	Individuals with some form of secondary education and subsequent formal training in a recognised training institution lasting more than one year but less than three years	(Farzadfar et al. 2012; Sarfraz & Hamid 2014; Mumtaz et al. 2015; Nkwo et al. 2015)
Remuneration	Unpaid	Unpaid	Unpaid volunteers	(Osawaa et al. 2010; Gau et al. 2013; Singh et al. 2013; Keating et al. 2014; Gobezayehu et al. 2014; Nandi & Schneider 2014; Kaufmann et al. 2014; Ranaghan et al. 2015; Moshabela et al. 2015)
	Paid	Receive an allowance or incentive	Paid an allowance	(Thom et al. 2013; Allen et al. 2014; Kowitt et al. 2015)
			Receive performance-based incentive	(Das et al. 2014; Sarin et al. 2016)

Theme	Sub-theme	Code	Description of CHW	Reference
		Receive a salary	Receive a formal salary	(Mangham-Jefferies et al. 2014; Nkwo et al. 2015; Farzadfar et al. 2012; Zulu et al. 2014; Silva et al. 2016; Zulu et al. 2015)

Theme	Sub-theme	Code	Description of CHW	Reference
Roles and tasks of CHWs	Health promotion and disease prevention	Involved in health promotion	Provide services that promote the health of community members	(Condo et al. 2014; Dye et al. 2015; Zulu et al. 2013; Hinton et al. 2004; Bill et al. 2009; Zanchetta et al. 2012; Dynes et al. 2013; Sarmento 2014; Jimenez et al. 2015; Ramírez et al. 2015; Kowitt et al. 2015; Rosenthal et al. 2011; WestRasmus et al. 2012; Balcazar et al. 2014; Lopes et al. 2014; Hinton et al. 2005; Kennedy et al. 2008; Nandi & Schneider 2014; Keating et al. 2014; Anonymous 2005; Hill-Briggs 2007; Gau et al. 2013; Peu 2014; Give et al. 2015; Wholey et al. 2013; Wayne & Ritvo 2014; Naimoli et al. 2012; Singh et al. 2013; FHWC 2013; Houston et al. 2012; Thom et al. 2013; Gobezayehu et al. 2014; Cook & Mueser 2015; A. Koskan et al. 2013; Granillo et al. 2010; Alvillar et al. 2011; South et al. 2013; Pinto et al. 2014; Trejo et al. 2013; Larkey et al. 2012; A. M. Koskan et al. 2013; Bonilla et al. 2012; Gerber et al. 2012; Goff et al. 2013; Mash et al. 2014; Benskin 2012; Jandorf et al. 2005; Elkin et al. 2012; Charlot et al. 2015; Brenner et al. 2014; Zavadsky 2017)

Theme	Sub-theme	Code	Description of CHW	Reference
			Mobilise and encourage community members to utilise available health services	(Gobezayehu et al. 2014; Farah, Fathima et al. 2015; Anonymous 2005; Singh et al. 2013; FHWC 2013)
			Facilitate access to facility-based healthcare by helping community members understand where to access care when needed	(Keane et al. 2004; Bill et al. 2009; Shrestha et al. 2011; Filgueiras & Silva 2011; de Heer et al. 2012; Jacobson et al. 2012; Carver et al. 2012; Dynes et al. 2013; Sarmento 2014; Sarfraz & Hamid 2014; Kaufmann et al. 2014; Jimenez et al. 2015; Farah et al. 2015; Johnson & Gunn 2015; Barbero et al. 2016; Brownstein et al. 2005; APHA 2009; Alvillar et al. 2011; Herman 2011; South et al. 2013; Balcazar et al. 2014; Tran et al. 2014; Ramsey et al. 2013; Kelkar & Mahapatro 2014; FHWC 2013; Gampa et al. 2017)

Theme	Sub-theme	Code	Description of CHW	Reference
		Patient navigation within the health facility	Patient navigation, helping patients to understand a complex healthcare system by translating the instructions and messages to them	(Keane et al. 2004; Jandorf et al. 2005; Petereit et al. 2008; Esparza & Calhoun 2011; Van Walleghem et al. 2011; Pierre et al. 2012; Goff et al. 2013; De La Cruz et al. 2014; Gabitova & Burke 2014; Ruben et al. 2015; Ranaghan et al. 2015; Charlot et al. 2015; Fischer et al. 2015; Raj et al. 2012; Brenner et al. 2014; Vargas et al. 2008; Loskutova et al. 2016).
		Provide psychosocial support	Provide psychosocial support helping patients better cope with medical conditions	(Hinton et al. 2005; Martin MY 2005; Hill-Briggs 2007; Bill et al. 2009; Alvillar et al. 2011; Carver et al. 2012; de Heer et al. 2012; Jacobson et al. 2012; A. M. Koskan et al. 2013; Thom et al. 2013; De La Cruz et al. 2014; Cherrington et al. 2015; Cook & Mueser 2015)
		Health activist, representative and advocates	Act as community representatives or advocates, serving as a link between the community and health system	(Anonymous 2005; Granillo et al. 2010; Hill-Briggs 2007; de Heer et al. 2012; Gerber et al. 2012; Trejo et al. 2013; Peu 2014; Nandi & Schneider 2014; Johnson & Gunn 2015; Darmstadt et al. 2009; Alvillar et al. 2011).

Theme	Sub-theme	Code	Description of CHW	Reference
	Provide basic treatment	Provide basic case management and therapeutic care	Provide basic case management of obstetric cases	(Sarfraz & Hamid 2014; Mumtaz et al. 2015; Agrawal et al. 2012)
			Provide basic therapeutic care for minor ailments	(Zulu et al. 2013; Zulu et al. 2014; Anonymous 2005; Herce et al. 2010; Barogui et al. 2014; Farah et al. 2015; Give et al. 2015; Benskin 2012).
	Health data collection	Collection of community health information	Collect information on the health status of community members and report to the formal health system	(Zulu et al. 2015; Agrawal et al. 2012; Gau et al. 2013; Johnson & Gunn 2015)

Theme	Sub-theme	Code	Description of CHW	Reference
CHWs' service recipients	Provide health services to individuals in high-income countries	Provide services to defined populations in high-income settings	Provide health services to ethnic minority and low-income populations in high-income settings	(Gabitova & Burke 2014; Ruben et al. 2015; Dye et al. 2015; Jimenez et al. 2015; Cherrington et al. 2015; Cook & Mueser 2015; Martin MY 2005; Hill-Briggs 2007; Larkey et al. 2012; Raj et al. 2012; de Heer et al. 2012; Gerber et al. 2012; Whop et al. 2012; Pierre et al. 2012; Thom et al. 2013; Wayne & Ritvo 2014; Brownstein et al. 2005; Vargas et al. 2008; Ramírez et al. 2015; Johnson & Gunn 2015; Petereit et al. 2008; De Jesus 2009; Granillo et al. 2010; Peacock et al. 2011; Esparza & Calhoun 2011; Trejo et al. 2013; Zanchetta et al. 2012; Elkin et al. 2012; Carver et al. 2012; Holt et al. 2012; A. Koskan et al. 2013; A. M. Koskan et al. 2013; Elkins et al. 2013; Brenner et al. 2014; Allen et al. 2014; Kaufmann et al. 2014; Fischer et al. 2015; Kennedy et al. 2008; Health Resources and Services Administration 2007)

Theme	Sub-theme	Code	Description of CHW	Reference
		Provide services to individuals who have (or at risk of) diseases in high-income countries	Provide services to individuals who have (or are at risk of) non-communicable diseases in high-income countries	(Gabitova & Burke 2014; Ruben et al. 2015; Dye et al. 2015; Jimenez et al. 2015; Cherrington et al. 2015; Cook & Mueser 2015; Martin MY 2005; Hill-Briggs 2007; Larkey et al. 2012; Raj et al. 2012; de Heer et al. 2012; Gerber et al. 2012; Whop et al. 2012; Pierre et al. 2012; Thom et al. 2013; Wayne & Ritvo 2014; Brownstein et al. 2005; Vargas et al. 2008; Abrahams-Gessel et al. 2015; Ranaghan et al. 2015; Charlot et al. 2015; Hinton et al. 2005; Jandorf et al. 2005; Van Walleghem et al. 2011; Jacobson et al. 2012; De La Cruz et al. 2014; Wholey et al. 2013)
			Provide services to individuals who have, or are at risk of, communicable diseases in high-income countries	(Teti et al. 2009)

Theme	Sub-theme	Code	Description of CHW	Reference
		Provide maternal and child health services in high-income countries	Provide maternal and child health services to ethnic minority populations in high-income countries	(Bill et al. 2009; De Jesus 2009; Bonilla et al. 2012; Goff et al. 2013)
	Provide health services to individuals in low- and middle-income countries	Provide services to individuals who have (or at risk of) diseases in low- and middle-income countries	Provide services to individuals who have, or are at risk of, noncommunicable diseases in low- and middle-income countries	(Farzadfar et al. 2012; Mash et al. 2014)
			Provide services to individuals who have, or are at risk of, communicable diseases in low- and middle-income countries	(Condo et al. 2014; Moshabela et al. 2015; Give et al. 2015; Herce et al. 2010; Osawaa et al. 2010; Peu 2014; Das et al. 2014; Barogui et al. 2014; Kowitt et al. 2015)

Theme	Sub-theme	Code	Description of CHW	Reference
		Provide maternal and child health services in low- and middle-income countries	Provide maternal and child health services to an unspecified population in low- and middle-income countries	(Sarin et al. 2016; Farah et al. 2015; Johnston et al. 2016; Shrestha et al. 2011; Houston et al. 2012; Agrawal et al. 2012; Dynes et al. 2013; Sarmento 2014; Keating et al. 2014; Mangham-Jefferies et al. 2014; Gobezayehu et al. 2014; Ahmad et al. 2014; Sarfraz & Hamid 2014; Singh et al. 2015; Darmstadt et al. 2009; Nandi & Schneider 2014; George et al. 2012; Rasanathan et al. 2014; Mumtaz et al. 2015)

Annexe 2.3: Summary table of included papers

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
1	Keane D et al, 2004	Grey literature	Commentary	USA	High-income country	Not documented	Community Health Worker (Promotoras)	Public health professionals who carry out a variety of health promotion, case management and service delivery activities at the community level. They come from the communities in which they work and act as advocates or representatives of those communities. They link individuals with needed health care by helping them understand and access an increasingly complicated healthcare system.
2	Anonymous, 2005	Peer-reviewed	Descriptive study	India	Lower middle-income country	Not documented	Accredited Social Health Activist (ASHA)	ASHAs are female health activist in the community who create awareness on health and its determinants and mobilise the community towards local health planning and increased utilisation. They promote good health practices and provide a minimum package of therapeutic care as appropriate and feasible for that level. They have a formal education up to eight class.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
3	Brownstein NJ et al, 2005	Peer-reviewed	Narrative review	USA	High-income country	Patients with uncontrolled blood pressure, heart disease and stroke among an underserved population	Community Health Worker	Trusted, respected members of the community and their informal, but direct, involvement enhances the delivery of health-related services.
4	Douthwaite M., 2005	Peer-reviewed	Evaluation study	Pakistan	Lower middle-income country	Women	Lady health worker (LHW)	LHWs have a minimum of 8-year formal education and are residents of the community they serve. They undergo 15 months of training and receive a small allowance. Each LHW is attached to a government health facility.
5	Hinton A et al, 2005	Peer-reviewed	Descriptive study	USA	High-income country	Cancer patients	Community Health Advisors	Usually, local women (and some men) who share cultural or ethnic characteristics with the population to be served. They often provide support and health education to community members in need of health improvement, along with promoting community capacity building.
6	Jandorf L et al, 2005	Peer-reviewed	Evaluation study	USA	High-income country	Individuals at risk of colorectal cancer	Patient Navigator	An individual who works individually with patients to both educate and help them negotiate the medical system.

S/ N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
7	Lewin SA et al, 2005	Peer-reviewed	Systematic review	International	Multiple countries	Not documented	Lay Health Worker	Any health worker carrying out functions related to healthcare delivery, trained in some way in the context of the intervention as well as having no formal professional or paraprofessional certificate or tertiary education degree.
8	Martin MY, 2005	Peer-reviewed	Evaluation study	USA	High-income country	Ethnic minority groups at risk of cancer	Community Health Advisor	Trusted helpers from within the community who provide emotional support, advice and facilitate tangible aid to members of their social network. Their understanding of community culture allows them to provide culturally appropriate, informal and spontaneous assistance to community members.
9	Health Resources and Services Administration (HRSA), 2007	Grey literature	Technical report	USA	High-income country	Underserved populations	Community Health Worker	Lay members of the community who work either for pay or as volunteers in association with the local healthcare system in both urban and rural environments and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve.
10	Hill-Briggs F et al, 2007	Peer-reviewed	Descriptive study	USA	High-income country	Urban African Americans with diabetes	Community Health Worker	Lay people who are trained to provide advocacy, support, counselling and information within the community.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
11	Kennedy LA et al, 2008	Peer-reviewed	Descriptive study	UK	High-income country	Food recipients in hard-to-reach neighbourhoods	Lay Food and Health Worker, Lay Health Worker	They are paraprofessionals who are, usually, but not exclusively, recruited from outside the immediate social network and trained to fulfil slightly more specialist and demanding roles including duties usually undertaken by professionals (e.g. as health educators). Lay health workers should share the same social, cultural and ethnic backgrounds of the communities served. Any lay health worker: indigenous to the communities being served, carrying out functions related to community-based public health initiatives designed to prevent disease or promote health and well-being with a specific focus on food and public health; trained in some way in the context of the intervention, but having no formal professional or paraprofessional qualifications.
12	Petereit DG et al, 2008	Peer-reviewed	Evaluation study	USA	High-income country	American Indian communities	Patient Navigator	Individuals who help their patients move through the complexities of the healthcare system.

S/ N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
13	Vargas RB et al, 2008	Peer-reviewed	Descriptive study	USA	High-income country	Recipients of breast cancer care among African-American and Latino populations	Patient Navigator	Navigators are selected largely on the basis of being "dedicated people from the community" that are "sensitive to and can communicate with the population served"; subsequently they are taught or learn about the system that the patient will experience to "know the obstacle course, the terrain and the players". Navigators are employees of the clinical site where they are based.
14	American Public Health Association (APHA), 2009	Grey literature	Editorial	USA	High-income country	Not documented	Community Health Worker	Frontline public health workers who are trusted members of and/or have a deep understanding of the community served. This trusting relationship enables community health workers to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
15	Bill DE et al, 2009	Peer-reviewed	Descriptive study	USA	High-income country	Low-income pregnant Latina women	Promotoras	Bi-lingual and bicultural (Spanish speaking) indigenous women who participated in a comprehensive 115-hour training programme to connect low-income pregnant immigrant Latina women with perinatal support and health promotion services.
16	Catalani CE et al, 2009	Peer-reviewed	Descriptive study	USA	High-income country	Not documented	Community Health Worker	Trusted members of the community with unique access to and understanding of the community derived from shared ethnicity, culture, language and life experiences. This trust is vital to their work and descriptive of their practice. Public health professionals who work in a variety of environments and institutions on behalf of the community's health.
17	Darmstadt GL et al, 2009	Peer-reviewed	Systematic review	International	Multiple countries	Newborns	Community-based Health Provider	Community-based Health Providers ideally live within the community in which they work, understand local culture and customs surrounding pregnancy and childbirth; and are likely to be well-respected by community members; thus increasing the acceptability and uptake of interventions and galvanising behaviour change.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
18	De Jesus M et al, 2009	Peer-reviewed	Descriptive study	USA	High-income country	Cape Verdean women	Health Promoter	Members of communities who work either for pay or as volunteers in association with the local healthcare system in both urban and rural environments. They usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve.
19	Teti M et al, 2009	Peer-reviewed	Descriptive study	USA	High-income country	People living with HIV/AIDS in a marginalised population	Peer Educator, Health Educator	Peers are often hired for their experience or commitment rather than their training; some may have little or no formal training. Peers differ from health educator because peers often share the culture, demographics and/or HIV serostatus of programme recipients.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
20	Granillo B et al, 2010	Peer-reviewed	Descriptive study	USA	High-income country	Native Americans	Community Health Representative	A public health paraprofessional whose role as a community health educator and health advocate has expanded to become an integral part of the health delivery system of most tribes. They possess a unique set of skills and cultural awareness that makes them an essential first responder on tribal land. As a result of their distinctive qualities, they have the capability of effectively mobilising communities during times of crisis. They undergo a nationally accredited training programme consisting of 48 hours of didactic sessions.
21	Herce ME et al, 2010	Peer-reviewed	Evaluation study	Mexico	Upper middle-income country	Patients with tuberculosis	Health Promoters	Health promoters are mostly bilingual, speaking Spanish and one of the indigenous languages, conduct clinical and public health work in their communities.
22	Osawaa E et al, 2010	Peer-reviewed	Evaluation study	Zimbabwe	Low-income country	People living with HIV/AIDS	Care Facilitator	Lay health worker working voluntarily for the community.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
23	Alvillar M et al, 2011	Peer-reviewed	Evaluation study	USA	High-income country	Not documented	Community Health Worker	A frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the community health worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. Builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counselling, social support and advocacy.
24	Esparza A et al, 2011	Peer-reviewed	Descriptive study	USA	High-income country	Vulnerable populations	Patient Navigator	Patient navigators seek to promote coordination of care by providing guidance for vulnerable individuals so that they may overcome barriers to timely, appropriate, high-quality care.
25	Filgueiras AS et al, 2011	Peer-reviewed	Evaluation study	Brazil	Upper middle-income country	Not documented	Community Health Agent	Community Health Agents act as links between families, users and the health service.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
26	Herman AA et al, 2011	Peer-reviewed	Commentary	USA	High-income country	Not documented	Community Health Worker	A trusted member of the community reflecting the linguistic and cultural diversity of the population served who plays an important role in connecting public and primary care to the communities that they serve. In some states, a more formal member of the integrated primary healthcare team and provides structured linkages between the community, the patient and the healthcare system.
27	Peacock N et al, 2011	Peer-reviewed	Evaluation study	USA	High-income country	African American communities	Community Outreach Worker	Lay health workers who typically have close ties to the communities they serve and establish trusting relationships with clients and study participants.
28	Prata N et al, 2011	Grey literature	Evaluation study	Ethiopia	Low-income country	Women	Community-based reproductive health agents (CBRHAs)	Lay health workers allowed to distribute oral contraceptives and condoms, for which they can receive a small commission.
29	Rosenthal EL et al, 2011	Peer-reviewed	Evaluation studies	USA	High-income country	Not documented	Community Health Worker	Skilled community members who work with communities to improve health through a variety of strategies.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
30	Shrestha BP et al, 2011	Peer-reviewed	Evaluation study	Nepal	Low-income country	Children	Female Community Health Volunteer	A grassroot worker nominated by a mother's group, responsible for building linkages with the health system at village level. They receive initial training on primary healthcare lasting 18 days.
31	Van Walleghem et al, 2011	Peer-reviewed	Evaluation study	Canada	High-income country	Young adults with Type I diabetes	Patient Navigator	The patient navigator works closely with community-based health centres to promote community linkages and improve communication and not a health professional.
32	Agrawal PK et al, 2012	Peer-reviewed	Evaluation study	India	Lower middle-income country	Newborns	Auxiliary Nurse Midwives (ANMs), Angan Wadi Worker (AWW)	They are multipurpose CHWs employed by the government to promote various aspects of maternal and child health in India. ANMs provide counselling and health services to pregnant and postpartum mothers including birth attendance. AWWs are the community-based frontline workers selected from the community. They monitor and promote the growth of children.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
33	Benskin LL et al, 2012	Peer-reviewed	Narrative review	International	Multiple countries	Not documented	Village Health Worker	Lay person, rather than a health professional or a paraprofessional. A lay person who provides very basic, scientifically verified, therapeutic care; educates and persuades within his or her own community to help implement illness-preventative and health promotion measures such as improved sanitation, hygiene and nutrition at locations where health professionals are not readily available.
34	Bonilla ZB et al, 2012	Peer-reviewed	Descriptive study	USA	High-income country	Women	Promotoras	Promotoras are community leaders who are involved in health education initiatives in both clinical and nonclinical settings.
35	Carver H et al, 2012	Peer-reviewed	Evaluation study	UK	High-income country	Hard-to-reach, disadvantaged or underserved populations	Outreach Worker	Outreach workers work with members of an at-risk community in a variety of settings to improve access to healthcare and health improvement. A major task of outreach workers is to link clients with the services and resources they require, as well as providing support to improve coping, learning new skills and changing behaviour. Flexibility in these activities is viewed as essential.

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36	de Heer HD et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	Hispanic adults at risk of cardiovascular disease	Promotoras de Salud	Outreach health workers who are members of the community in which they work, serve as a liaison between healthcare providers and patients, providing various forms of health-related services, such as community advocacy, social support and cultural mediation.
37	Elkin EB et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	Uninsured, low-income and high-risk populations	Patient Navigator	Lay health educators recruited from within the respective hospital systems or the surrounding communities, which are predominantly minority populations. They receive intensive initial training in a 1-week programme orientation and subsequent ongoing training.
38	Farzadfar F et al, 2012	Peer-reviewed	Evaluation study	Iran	Upper middle-income country	Patients with noncommunicable diseases	Beharv	Community members with at least primary education. They undergo two years of classroom and practical training before beginning work in their local community and they receive a fixed salary.
39	George A et al, 2012	Peer-reviewed	Evaluation study	sub-Saharan Africa	Multiple countries	Children	Community Health Worker	Any health worker who carries out functions related to healthcare delivery, is trained in some way to deliver an intervention and has no formal professional or tertiary education degree.

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40	Gerber BS et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	African-Americans and Latinos with diabetes.	Community Health Promoter	Health promoters provide education, evaluate medication use, promote behavioural change and self-management. They reinforce pharmacist and other providers' recommendations.
41	Holt CL et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	African American population	Community Health Advisor	Ethnically, linguistically, socioeconomically and experientially indigenous to the community, they serve as conduits of information, resources and services often to low-income populations.
42	Houston R et al, 2012	Peer-reviewed	Narrative review	Nepal	Low-income country	Mothers and children	Female Community Health Volunteer	Female community health volunteers inform, educate and provide essential maternal and child health and family planning services at the community level. They are chosen by their community and reside in the communities.
43	Jacobson N et al, 2012	Peer-reviewed	Descriptive study	Canada	High-income country	Individuals with mental health and/or addiction problems	Peer	Peers who work with clients as a coach, connector and partner to support and link clients to community-based supports and other resources. The peer role is explicitly a non-clinical one.

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44	Jarvis L et al, 2012	Grey literature	Technical report	International	Multiple countries	Not documented	Community Health Worker	CHWs are members of the communities where they work, who are selected by the communities, answerable to the communities for their activities, supported by the health system but not necessarily a part of its organisation and have shorter training than professional workers.
45	Jean Pierre P et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	Hispanic population with cancer	Patient Navigator	Patient navigators are trained to help patients effectively access and use healthcare resources in order to facilitate timely completion of recommended care and treatment. They vary in educational and socioeconomic backgrounds, ranging from lay health workers to healthcare professionals.
46	Larkey LK et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	Underserved Latina Women at risk of cancer	Promotoras/es	Promotoras/es provide language-matched and culturally relevant health education, are networked in their community and have a deep understanding of how one might overcome logistical and psychosocial barriers to health behaviour change.

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47	Naimoli JF et al, 2012	Grey literature	Technical report	International	Multiple countries	Not documented	Community Health Worker	A health worker who receives standardised training outside the formal nursing or medical curricula to deliver a range of basic health, promotional, educational and mobilisation services and has a defined role within the community system and larger health system.
48	Raj A et al, 2012	Peer-reviewed	Evaluation study	USA	High-income country	Underserved patients diagnosed with breast cancer	Patient Navigator	Patient navigators facilitate access to quality medical care by identifying barriers to care and by bridging gaps in care through culturally sensitive coordination. They are trained lay workers who are culturally diverse and generally representative of the population served.
49	West Rasmus EK et al, 2012	Peer-reviewed	Annotated bibliography	USA	High-income country	Underserved population	Promotoras/es de Salud	A cultural broker between their own community and the formal healthcare system and can play a crucial role in promoting health and wellness within their community.

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50	Whop LJ et al, 2012	Peer-reviewed	Literature review	USA	High-income country	Indigenous cancer patients	Patient Navigator	Community-based patient navigators are indigenous individuals who largely focus on awareness and prevention of cancer, networking and the maintenance of relationships with local health agencies; whereas, hospital-based patient navigators primarily assist indigenous people with cancer through their cancer-related treatment and social and emotional issues. The background of patient navigator ranges from lay individuals who are leaders in their community to registered nurses.
51	Zanchetta MS et al, 2012	Peer-reviewed	Evaluation study	Brazil	Upper middle-income country	Shantytown individuals and families	Community Health Agent	Most community health agents are born, raised and live in the communities they serve and have formal education. They are to follow up with their clients, to ensure successful treatment and to protect, promote and restore their clients' health.
52	Crigler L et al, 2013	Grey literature	Guideline	International	Multiple countries	Not documented	Health Extension Worker	Usually paid, full-time employees but normally have about a year of initial training or less (in some cases, just a few weeks) and are generally recruited from the localities where they work.

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53	Dynes M et al, 2013	Peer-reviewed	Evaluation study	Ethiopia	Low-income country	Mothers and children	Health Extension Worker	Health extension workers are recruited from local villages, possess a 10th-grade education and are given one year of didactic and clinical health education. Health extension workers are expected to spend 75% of their time conducting community outreach with a focus on health promotion and serve as a connection between the home and health post.
54	Elkins T et al, 2013	Peer-reviewed	Descriptive study	USA	High-income country	Underserved families in rural and inner city communities	Outreach Worker	Outreach workers are trained community mothers, who mentor their peers. They are residents of the target community, same race, culture and language use as the families served, provide services to underserved families in rural and inner-city communities. They should complete at least 40 hours of initial training before they begin to serve families.

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55	Frontline Health Worker Coalition (FHWC), 2013	Grey literature	Descriptive study	International	Multiple countries	Not documented	Community Health Worker	Community health workers provide health education and referrals for a wide range of services and provide support and assistance to communities, families and individuals with preventive health measures and gaining access to appropriate therapeutic health and social services. They create a bridge between providers of health, social and community services and communities that may have difficulty in accessing these services.
56	Gallo MF et al, 2013	Peer-reviewed	Evaluation study	Madagascar	Low-income country	Recipients of contraceptive injection	Volunteer Community Health Worker	Individuals who have received less training than professional healthcare providers and are typically members of the community they serve.
57	Gau Y et al, 2013	Peer-reviewed	Evaluation study	China	Upper middle-income country	Not documented	Community Health Volunteer	The volunteers are individuals who are educated to assist residents by delivering health promotion and health monitoring activities.
58	Goff SL et al, 2013	Peer-reviewed	Evaluation study	USA	High-income country	Low-income pregnant women	Patient Navigator	They assist patients in overcoming barriers to achieving healthcare goals. They assist patients attempting to access and interpret publicly reported information about the quality of care, tailoring the assistance to the patient’s needs.

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59	Koskan A et al, 2013	Peer-reviewed	Evaluation study	USA	High-income country	Hispanic population	Community Health Worker, Promotoras/es de Salud	Lay individuals trained to deliver health education and outreach to other members of their community. Promotoras/es de Salud function as integral members of healthcare teams, providing community-based outreach to marginalised populations and ideally, promotoras live, work and have existing social connections within the targeted community.
60	Koskan AM et al, 2013	Peer-reviewed	Evaluation study	USA	High-income country	Hispanic population	Promotoras/es de Salud	Trusted and respected community members who engage in community outreach, participatory health education and provision of social support to others within their personal and community social networks.
61	Ramsey K et al, 2013	Peer-reviewed	Commentary	Tanzania	Low-income country	Children under five years of age	Community Health Agent	Community health agents facilitate linkages between the community and the health system. A health worker who is formally trained and employed by the health system provides a package of health services in the community and connects people across the household to facility continuum. They are members of, selected by and accountable to the communities where they work.

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62	Raphael JL et al, 2013	Peer-reviewed	Systematic review	International	Multiple countries	Children	Lay Health Worker	Lay health workers are individuals who perform functions related to healthcare delivery, have no formal or paraprofessional training, typically provided with informal job-related training. They may work in paid positions or as volunteers.
63	Singh P et al, 2013	Peer-reviewed	Commentary	sub-Saharan Africa	Multiple countries	Not documented	Community Health Worker	CHWs are volunteers who provide a few simple services, mostly in community awareness and disease prevention.
64	South J et al, 2013	Peer-reviewed	Narrative review	United Kingdom	High-income country	Not documented	Lay Health Worker	Lay health worker share social status or common experiences and promote health and/or protect against different stressors. Their primary role is to act as a bridge between communities and health services, particularly where those communities experience health and social inequalities. Selected based on their knowledge of social networks and their ability to translate health messages to community members. Lay health workers are involved in mobilising community resources and building community capacity to address health issues.

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65	Thom DH et al, 2013	Peer-reviewed	Evaluation study	USA	High-income country	Low-income patients with diabetes	Community Health Worker, Peer Educator, Peer Coach	Community health workers are members of the same community as the patients they assist but do not necessarily have the same disease as the patient. Though some are volunteers, most are employed by a health facility or community agency. Peer educators and coaches, collectively known as peer supporters, in contrast, always have the same disease as the people they assist. Peer educators are usually volunteers who may receive a small monetary allowance and generally focus on providing ongoing support for self-management to a small group of clients.
66	Trejo G et al, 2013	Peer-reviewed	Evaluation study	USA	High-income country	Latino farmworker families	Lay Health Promoter	Respected members of their community who understand community needs and share the culture, language and personal experiences of the people they serve. They use formal and informal teaching strategies to disseminate health information, increase awareness and empower people to change.

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67	Wholey DA et al, 2013	Peer-reviewed	Evaluation study	USA	High-income country	Patients with a chronic health condition	Care Guide	Lay individuals who work with both providers and patients to achieve evidence-based chronic disease health goals such as keeping blood glucose readings and blood pressures within target levels.
68	Zulu JM et al, 2013	Peer-reviewed	Evaluation study	Zambia	Lower middle-income country	Not documented	Community health worker (CHW)	Members of the communities where they work, selected by their communities and answerable to the communities for their activities. Although they may be supported by the health system as they perform a wide range of tasks that can be preventive, therapeutic and developmental in nature, they have less training than professional workers.
69	Ahmad MNS et al, 2014	Peer-reviewed	Descriptive study	Afghanistan	Low-income country	Women	Community Health Worker	Most often community members who are trained, supported and supervised by more formal health professionals to deliver primary health services to their communities.

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70	Allen JD et al, 2014	Peer-reviewed	Evaluation study	USA	High-income country	Latinas (women)	Peer Health Advisor	Women from the church trained to deliver evidence-based screening interventions and reduction of structural barriers to screening. Peer Health Advisor candidates were selected by the pastor based on their leadership, communication and interpersonal skills. They complete two full days of training and receive a small stipend.
71	Balcazar HG et al, 2014	Peer-reviewed	Evaluation study	USA	High-income country	Not restricted to any group	Community Health Worker, Promotoras/es de Salud	Community members serving as frontline public health workers, facilitating access to health and social services for those in need. CHWs serve as liaisons between health and social services and the community to facilitate access to services and service delivery, including health education and promotion services.
72	Barogui YT et al, 2014	Peer-reviewed	Evaluation study	Benin	Low-income country	Patients with Buruli ulcer	Community Health Volunteer	Lay individuals trained in a particular role of delivering therapeutic or preventative care or control in their own community.

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73	Brenner AT et al, 2014	Peer-reviewed	Evaluation study	USA	High-income country	Vulnerable population	Patient Navigator	The patient navigator primarily facilitates completion of screening by addressing additional barriers that often supervene even after a screening test has been ordered. However, a patient navigator may also help to build on the knowledge, intent and self-efficacy.
74	Condo J et al, 2014	Peer-reviewed	Evaluation study	Rwanda	Low-income country	Mothers and children; individuals with communicable diseases	Community health worker (Binome and Animatrice deSanté Maternelle)	CHWs are required to have a minimum of 6 years of education and are elected by their communities. Binomes are responsible for community health, nutrition and HIV/AIDS prevention. Animatrice deSanté Maternelle manages infant, pre and postnatal maternity care.
75	Das VNR et al, 2014	Peer-reviewed	Evaluation	India	Lower middle-income country	Leishmaniasis patients	Accredited Social Health Activist (ASHA)	ASHAs are women who live in the community and receive performance-based incentives for overseeing maternal and other health-related issues in their village.

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76	De La Cruz I et al, 2014	Peer-reviewed	Evaluation study	USA	High-income country	Women with breast and cervical cancer screening abnormalities	Patient Navigator	Navigators are employees of the health centres trained to provide social support and address financial and logistical barriers to accessing cancer care. They have at least a high school education and some healthcare experience.
77	Gabitova G et al, 2014	Peer-reviewed	Evaluation study	USA	High-income country	Breast cancer patient among ethnic minorities and low-income population	Patient Navigator	Navigators are bi-or multilingualism lay health workers with no clinical background who do not possess specific qualifications except for some prior experience in a hospital setting, strong communication skills and ability to work in a complex, multi-cultural setting with vulnerable patients.
78	Gobezayehu A et al, 2014	Peer-reviewed	Evaluation study	Ethiopia	Low-income country	Mothers and children	Health Extension Worker, Community Health Development Agent	Health extension workers are young women with ten years of primary and secondary school education and one year of certificate level health training. Community health development agents are members of the community who are chosen by the community or organisation to work as volunteers in health-related activities such as community mobilisation and health education.

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79	Kaufmann LJ et al, 2014	Peer-reviewed	Evaluation	USA	High-income country	American Indian and Alaska Native Veterans	Community Outreach Worker	A volunteer, a veteran and tribal community member who seeks out unenrolled native veterans, provides them with information on healthcare services and benefits and assist them with enrollment paperwork. The tribal veteran representative goes through extensive training every year.
80	Keating NL et al, 2014	Peer-reviewed	Evaluation study	Mexico	Upper middle-income country	Women	Community Health Promoters	Individuals, almost all women, with little formal training and some basic health promotion training; they retain a non-salaried affiliation with local health clinics and undertake more basic awareness-building activities.
81	Lopes SC et al, 2014	Peer-reviewed	Evaluation studies	Guinea-Bissau	Low-income country	Children under five years of age	Community Health Worker	Members of the community who are recruited and trained in health prevention and promotion to provide services within their community.
82	Kelkar S et al, 2014	Peer-reviewed	Descriptive study	India	Lower middle-income country	Not restricted to any group	Community Health Worker	Community members who work almost exclusively in community settings and serve as a link between healthcare consumers i.e. the community and healthcare providers.

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83	Mangham-Jefferies L et al, 2014	Peer-reviewed	Evaluation study	Ethiopia	Low-income country	Newborns	Health Extension Worker	Health extension workers are resident in the local community. They are females who are at least 18 years old and have completed the 10th grade of schooling. They receive one year of training and are paid a government salary.
84	Mash RJ et al, 2014	Peer-reviewed	Evaluation study	South Africa	Upper middle-income country	People with Type 2 diabetes	Health Promoter	Health promoters are employed by community health centres who have been trained to deliver health education messages and to counsel patients.
85	Nandi S et al, 2014	Peer-reviewed	Evaluation study	India	Lower middle-income country	Women who experience domestic violence	Mitanin	The Mitanins are women volunteers whose role is to undertake family level outreach services, community organisation building and social mobilisation on health and its determinants along with advocacy for the improvement of the health system.
86	Peu MD, 2014	Peer-reviewed	Evaluation study	South Africa	Upper middle-income country	Families with adolescents orphaned by HIV and AIDS	Health Promoter	Health workers provide preventive and promotive health services. They are employed by the government and NGOs to act as advocates for various communities.

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87	Pinto R et al, 2014	Peer-reviewed	Descriptive study	Canada	High-income country	Non-specific community and South Asian community	Peer, Lay Health Educator	Peers and lay health educators are members of the community but may not necessarily share a common health condition or concern. They live in the communities in which they work, understand what is meaningful to those communities, communicate in the language of the people and recognise and incorporate social buffers to help community members cope with stress and promote health outcomes.
88	Rasanathan K. et al, 2014	Peer-reviewed	Evaluation study	sub-Saharan Africa	Multiple countries	Children under 5 years of age	Community Health Worker	A health worker delivering health care in the community, trained in some way in the context of the intervention, having no formal professional or paraprofessional certificate or tertiary education degree; regardless of whether or not they receive payment.
89	Redick C et al, 2014	Grey literature	Review	sub-Saharan Africa and South Asia	Multiple countries	Not documented	Community Health Worker	Lay members of the community who are trained to provide basic health services.

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90	Sarfraz M et al, 2014	Peer-reviewed	Evaluation study	Pakistan	Lower middle-income country	Women in the reproductive age group	Lady Health Worker	A resident of the catchment area, aged between 18 and 45 years, preferably married and have had at least eight years of schooling and subsequently receive 15-month facility and community-based training. They act as a liaison between the formal health system and community, disseminate health education messages and provide health services.
91	Sarmento DR, 2014	Peer-reviewed	Review	Timor-Leste	Lower middle-income country	Women	Community Health Worker	Lay members of the community who work exclusively to serve people who have lacked access to adequate care and establish vital links between healthcare consumers and providers to promote health in community settings. In general, they have been defined as the members of the community who are selected by the communities to provide care for a broad range of health issues to the poorest and most vulnerable communities.
92	Tran NT et al, 2014	Peer-reviewed	Systematic review	International	Multiple countries	Not restricted to any group	Community Health Worker	Lay people who live in the communities where they work and function as a critical link between these communities and the primary healthcare system.

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93	Uriarte JA et al, 2014	Peer-reviewed	Descriptive study	USA	High-income country	Not documented	Community Health Worker	Lay members of communities who are either paid or volunteer in association with the local healthcare system in both urban and rural environments and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve. They undergo a certification programme requiring applicants to complete a 160-hour course.
94	Wayne N et al, 2014	Peer-reviewed	Evaluation study	Canada	High-income country	People with diabetes from a modest socioeconomic strata community	Health Coach	Health coaches are individuals who primarily focus on helping patients define and attain personal goals and discover intrinsic health-oriented motivations.

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95	Zulu JM et al. 2014	Peer-reviewed	Evaluation study	Zambia	Lower middle-income country	Mothers and children; individuals with minor ailments	Community-based health worker (CBHW), Community health assistant (CHA)	CBHW are members of communities who work either for pay or as volunteers in association with the local health care system and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve. CHAs are recruited by the MoH, with the support of the community leaders and the Neighbourhood Health Committees (NHCs). They are registered by health professional bodies, receive a standardised 1-year training after secondary school education and they are on government payroll.
96	Abrahams-Gessel SM et al, 2015	Peer-reviewed	Evaluation study	Bangladesh, Guatemala, Mexico and South Africa	Multiple countries	Patients at risk of cardiovascular disease risk	Community Health Worker	Health workers without traditional professional training, residing in the community and fluent in the community's dominant language.

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97	Charlot M et al, 2015	Peer-reviewed	Evaluation study	USA	High-income country	Patients at risk of cancer	Patient Navigator	Patient navigators serve as patient advocates embedded within the clinical care practice and conduct their work with access to clinical providers as well as scheduling and administrative personnel. They work to reduce barriers to care by helping patients acquire health insurance and gain access to care; address logistical barriers such as scheduling, transportation and child care; and educate patients to improve knowledge, facilitate communication between patients and their providers and encourage patients to follow through with their care.
98	Cherrington AL et al, 2015	Peer-reviewed	Evaluation study	USA	High-income country	African American patients with diabetes	Community Health Worker	CHWs are lay individuals who are actively part of their communities and either have diabetes themselves or have helped provide support to a close family member or friend with diabetes.

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99	Cook JA et al, 2015	Peer-reviewed	Evaluation study	USA	High-income country	Individuals with mental health challenges in low-income and at-risk population	Community Health Worker	Indigenous members of patients' communities who have been trained to provide support, education and care coordination to improve medical outcomes for low-income and at-risk populations.
100	Dye CJ et al, 2015	Peer-reviewed	Descriptive study	USA	High-income country	Hypertensive patients	Community Health Coach	CHWs are helpers who can be effective in facilitating education, behaviour change, health self-management and access to health care among underserved and hard-to-reach populations recruited from the local community.

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101	Farah FN et al, 2015	Peer-reviewed	Evaluation study	India	Lower middle-income country	Mothers and children	Accredited Social Health Activist	A woman selected by the community, resident in the community and who is trained, deployed and supported to function in her own village to improve the health status of the people through securing their access to healthcare services. Her job responsibilities are three-fold, including the role of a link-worker (facilitating access to healthcare facilities and accompanying women and children), that of a community health worker (depot-holder for selected essential medicines and responsible for treatment of minor ailments) and of a health activist (creating health awareness and mobilising the community for change in health status).
102	Fischer SM et al, 2015	Peer-reviewed	Evaluation study	USA	High-income country	Latinos with serious illnesses	Patient Navigator	Often lay people who are part of or identify with the community with which they work. Their role is to educate, activate and advocate for patients and families, addressing barriers to care.

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103	Give CS et al, 2015	Peer-reviewed	Evaluation	Mozambique	Low-income country	Individuals with malaria, acute respiratory infection, diarrhoeal diseases, sexually transmitted infections and HIV infection	Agentes Polivalentes Elementares	Multi-purpose agents who have received a 4-month training reflecting the package of preventive, promotive and therapeutic services. They are volunteers who sign an agreement, describing their right to an allowance and access to free healthcare at the local health centre.
104	Jimenez DE et al, 2015	Peer-reviewed	Evaluation study	USA	High-income country	Older Latinos (Aged 60+) at risk of mental health challenges	Community Health Worker	Lay community members who work almost exclusively in community settings and effectively connect consumers to providers in order to promote health and prevent diseases among groups that have traditionally lacked access to adequate care.

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105	Johnson SL et al, 2015	Peer-reviewed	Descriptive study	USA	High-income country	Socially and economically disadvantaged groups	Community Health Worker	Trusted members of and/or have an unusually close understanding of the community they serve. They often focus on bridging cultural divides between patients, communities, healthcare providers and healthcare systems. They also engage in policy advocacy and community-based research aimed at improving conditions necessary for health.
106	Kowitt SD et al, 2015	Peer-reviewed	Evaluation study	Thailand	Upper middle-income country	Individuals with communicable diseases, non-communicable diseases and maternal and child health	Village Health Volunteer	Community members selected from the community. They receive seven days of training in primary health care and 15 days of specialised on-the-job training in health promotion, disease prevention and health education. They are given a monthly THB600 (about USD20) government allowance to assist with implementing their duties.
107	Moshabela M et al, 2015	Peer-reviewed	Evaluation study	South Africa	Upper middle-income country	Chronically ill patients with communicable diseases	Community Care Worker	They are recruited from within and around the local community by home-based care organisations and trained to provide basic services as volunteer caregivers to people in their home.

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108	Mumtaz Z et al, 2015	Peer-reviewed	Evaluation study	Pakistan	Lower middle-income country	Poor, marginalised and disadvantaged women	Community Midwife	They are trained to attend normal childbirths and to recognise and refer obstetric complications through the establishment of private practices in their home villages. Their training includes a 12-month classroom component followed by a 6-month practical clinical component. They are expected to meet education and residency criteria.

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109	Nkwo PO et al, 2015	Peer-reviewed	Evaluation study	Nigeria	Lower middle-income country	Not documented	Community Health Extension Worker, Junior Community Health Extension Worker	The community health extension worker is trained for three years to provide basic public health services in primary healthcare clinics and in the communities. The junior community health extension worker is trained for 2½ years on the same skills as the community health extension worker and is expected to assist the community health extension worker in his/her duties. Both categories of community health extension workers are officially designated as community health extension worker although their starting salary levels are different. The community health extension worker and junior community extension worker have no competency-based midwifery training
110	Ramírez DM et al, 2015	Peer-reviewed	Evaluation study	USA	High-income country	Small and home-based Hispanic businesses	Promotoras	A female, Hispanic community member who has leadership qualities allowing her to effectively promote a particular issue in her own community. She partners with organisations to assist them in achieving common goals and is indigenous to the community where she works.

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111	Ranaghan CP et al, 2015	Peer-reviewed	Systematic review protocol	USA	High-income country	Adult patients, 18 years and older in ambulatory care settings	Patient Navigator	A trained person who helps patients in overcoming barriers to care and use the healthcare system effectively and efficiently. They do not provide clinical care and may not be clinically oriented individuals. They can be non-professionals such as lay persons or volunteers.
112	Ruben K et al, 2015	Peer-reviewed	Descriptive study	USA	High-income country	Low-income emergency department patients	Patient Navigator	They are to "provide culturally and linguistically competent health services", help with patient access and interpretation/translation of languages. They are based in hospitals and community health centres throughout the country.
113	Sikander S et al, 2015	Peer-reviewed	Evaluation study	India Pakistan	Lower middle-income countries	Mothers with perinatal depression	Peers	Women with children living in the same community as the clients, who are trained and supervised in delivering the intervention and work in partnership with established CHWs.
114	Singh D et al, 2015	Peer-reviewed	Evaluation study	Uganda	Low-income country	Mothers and newborn in rural regions	Community Health Worker	Lay individuals, usually residents in the community in which they work who are trained in some aspect of healthcare.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
115	Zulu JM et al, 2015	Peer-reviewed	Evaluation study	Zambia	Lower middle-income country	Individuals with a minor ailment	Community health assistant (CHA)	CHAs undergo a one-year standardised training programme and are registered with a regulatory body, perform much broader tasks and on the government payroll.CHAs conduct health promotion activities, prevention as well as testing for and treating minor illnesses. They develop registers on the total number of people and common diseases in the community
116	Aurélie, B et al, 2016	Peer-reviewed	Evaluation study	Uganda	Low-income country	Recipients of contraceptive services	Community health worker	CHWs are community members with primary or secondary education and subsequently received an 8-day pre-service training to carry out one or more basic health functions in their village. They are either paid or volunteers.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
117	Colleen B et al, 2016	Peer-reviewed	Review	USA	High-income country	Not documented	Community Health Worker	A frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community being served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.
118	Johnston HB et al, 2016	Peer-reviewed	Evaluation study	Ethiopia, India and South Africa	Multiple countries	Women seeking a medical abortion	Health Extension Workers, Accredited Social Health Activist, Community-based Educators	Health extension workers have a minimum of 10 years basic education and 12 months of public health training. Accredited social health activists have a minimum of 8 years of basic education and 20 days of public health training or village health workers with a minimum of 5 years of basic education and 28 days of public health education. Community-based educators have a minimum of 12 years of basic education and 20 days of public health training.

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
119	Knuth, BS et al, 2016	Peer-reviewed	Evaluation study	Brazil	Upper middle-income country	Not documented	Community health agent	A respected health professional who resides in the community is over 18 years and fully available to conduct home visits, interviews, register family health data and perform community mapping.
120	Loskutova, NY, 2016	Peer-reviewed	Evaluation study	USA	Upper income country	Diabetic and pre-diabetic patients	Patient Navigator	Patient navigators are community members who had received three hours of web-based training session to enable them link patients referred by their family physician for a specified set of community resources based on their needs navigation services delivered over the telephone.
121	Sarin E et al, 2016	Peer-reviewed	Descriptive study	India	Lower middle-income country	Mothers and children	Accredited Social Health Activist (ASHA)	ASHAs are female CHWs selected from the village to deliver health services and receive an incentive for the activities. The ASHA is required to have completed eight years of education.

S/ N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
122	Silva R et al, 2016	Peer-reviewed	Evaluation study	Ethiopia, Malawi, Mali	Low-income country	Mothers and children	Health Extension Worker (HEW), Health Surveillance Assistant (HSA) and Lay volunteer	HEWs are female CHWs who are paid government workers with an average of 10 years of formal schooling and resident in their catchment area. HSAs are male and female CHWs who are paid health workers with approximately 10 years of schooling, but sometimes not a resident in their catchment area. Lay volunteers are community volunteers who are resident in their local community and are nominated by it.
123	Do Valle Nascimento TMR et al, 2017	Peer-reviewed	Evaluation study	Brazil	Upper middle-income country	Diabetic patients	Community Health Agents (CHA)	The Community Health Agents are community residents with some secondary education and 40 h pre-service training to deliver behavioural counselling.
124	Fink R et al, 2017	Peer-reviewed	Evaluation study	USA	Upper income country	Latinos with advanced cancer	Patient Navigator	Patient navigator are lay individuals who deliver a culturally tailored intervention aimed at improving palliative care outcomes

S/ N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
125	Gampa, V et al. 2017	Peer-reviewed	Evaluation study	USA	Upper income country	Indian clients with noncommunicable diseases such as Diabetes or Hypertension	Community Health Representative (CHR)	CHRs are bilingual community members who are certified nursing assistants (CNAs), at least 18 years of age and trained to provide health education, conduct health screenings, conduct home safety assessments and assist with connecting their clients to important medical, housing and economic resources.
126	Liang Chung, MH et al. 2017	Peer-reviewed	Evaluation study	Malaysia	Upper middle-income country	Individuals at risk of Non-communicable diseases	Community health volunteer	Unpaid volunteers who are permanent residents of the village; selected and supervised by the village head and community members. They have primary or secondary education and subsequently receive 1-2-day pre-service training in order to improve awareness on non-communicable diseases
127	Tong, Elisa K. Et al. 2017	Peer-reviewed	Evaluation study	USA	Upper income country	Chinese and Vietnamese Americans at risk of colorectal cancer	Lay health educators	Lay health educators are bilingual/bicultural community members who have received training in health topics to deliver community-based interventions

S/N	Author & year of publication	Paper type	Publication type	Country of service recipients	World Bank income status*	Service recipients	Nomenclature	Definition
128	Xavier Gomes, LM et al. 2017	Peer-reviewed	Evaluation study	Brazil	Upper middle-income country	Children with sickle cell disease	Community health worker	Community health workers live in the area in which they work and have had at least elementary education and have completed introductory basic training.
129	Zavadsky, Matt 2017	Grey literature	Descriptive study	USA	Upper income country	Not documented	Community health worker	CHWs are frontline health workers who have a close understanding of the communities. They build individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counselling, social support and advocacy.

Annexe 2.4: Summary table of reviews on CHW scope of practice in MNH care

Author, year, (country)	Objective of the review	Definition or description of the CHWs	Key findings (Scope of practice)
Darmstadt et al. 2009 (International)	To present a review of evidence of the effect of CHWs in improving perinatal and intrapartum-related outcomes	Categorised as: • Community-based skilled birth attendants (SBAs) with midwifery skills • Trained traditional birth attendants (TBAs) • Community health workers (CHWs) with pre-service training of 12-30 days	A trained TBA may conduct deliveries Provide a pre-referral dose of antibiotic injection for neonatal sepsis Basic neonatal resuscitation with bag and mask
Lewin et al. 2010 (International)	To assess the effects of CHW interventions on maternal and child health	Health workers with no formal professional or paraprofessional certificate or tertiary education degree.	Distribution of oral supplements and drugs Facilitate and promote exclusive breastfeeding Vaccination of the newborns Facilitate Kangaroo mother care for low-birthweight babies
WHO, 2010b (International)	To assess the evidence base of the impact and effectiveness of global experience of CHWs in delivering care related to health	Described as: • Members of their communities • Have shorter training than professional workers	Provide health education during home visits Clinical assessment of newborn for diseases requiring referral Provide a pre-referral dose of antibiotics to treat pneumonia Vaccination of the newborns Facilitate Kangaroo mother care for low birth weight babies Distribute condoms and provide oral contraceptive pills
WHO, 2012 (International)	To provide evidence-based recommendations to facilitate universal access to key, effective maternal and newborn interventions through the optimisation of health worker roles.	Described as: • Health worker who provide health services • Trained in the context of the intervention • Has received no formal professional or paraprofessional certificate or tertiary education degree	Clinical assessment of newborn for diseases requiring referral Distribute condoms and provide oral contraceptive pills Administer contraceptive injection

Author, year, (country)	Objective of the review	Definition or description of the CHWs	Key findings (Scope of practice)
WHO, 2015a (International)	To provide recommendations for increasing access to timely and appropriate health and promote community participation in programme planning	Categorised as: • Community health workers • Traditional Birth Attendants	Provide health education during home visits Distribution of oral supplements and drugs Serve as birth companions Provide misoprostol for home delivery
WHO, 2015b (International)	To present a guideline focused on interventions that could be provided during pregnancy, labour and during the newborn period with the aim of improving outcomes for preterm infants	Categorised as: • Community health workers • Traditional Birth Attendants	Administer parenteral corticosteroids (Dexamethasone) to women with a high risk of preterm birth
WHO 2016 (International)	To provide recommendations to complement existing WHO guidelines on the management of specific pregnancy-related complications.	Categorised as: • Community health workers • Traditional Birth Attendants	Distribution of oral supplements and drugs Provide health education during home visits Clinical assessment of mothers for diseases requiring referral

Annexe 2.5: Summary table of reviews on factors influencing CHWs' service delivery in MNH care

First author, year, (Study country)	Objective of the review	Definition or description of the CHWs included in the review	Key findings (Factors influencing service delivery)
(Glenton, C 2013 (International)	To explore factors affecting the implementation of CHW programmes for maternal and child health.	Described as: • Health worker who provide health services •Trained in the context of the intervention • Has received no formal professional or paraprofessional certificate or tertiary education degree.	Adequacy of training Existing link to the formal health system Motivation from altruistic goals, social recognition, knowledge gain, regular salary and career development
WHO, 2010b (International)	To assess the evidence base of the impact and effectiveness of global experience of CHWs in delivering care related to health	Described as: •Members of their communities •Have shorter training than professional workers	Adequacy of training Local norms and beliefs that affect health-seeking behaviour

Annexe 3.1: LSTM ethics approval

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Dr Abimbola Olaniran
Liverpool School of Tropical Medicine

Thursday, 03 March 2016

Dear Dr Olaniran,

Research Protocol (15.007) Community health workers for maternal and newborn health: Case studies from the field

Thank you for your email of 14 January 2016 providing the necessary in-country India approval for this project. I can confirm that the protocol now has formal ethical approval from the LSTM Research Ethics Committee for all countries specified within the study design. Namely; Bangladesh; India; Kenya; Malawi; Nigeria.

The approval is for a fixed period of three years and will, therefore, expire on 02 March 2019. The committee may suspend or withdraw ethical approval at any time if appropriate.

Approval is conditional upon:

- Continued adherence to all in-country ethical requirements.
- Notification of all amendments to the protocol for approval before implementation.
- Notification of when the project starts.
- Provision of an annual update to the Committee.
- Failure to do so could result in suspension of the study without further notice.
- Reporting of new information relevant to patient safety to the Committee
- Provision of Data Monitoring Committee reports (if applicable) to the Committee

Failure to comply with these requirements is a breach of the LSTM Research Code of Conduct and will result in withdrawal of approval and may lead to disciplinary action. The Committee would also like to receive copies of the final report once the study is completed. Please quote your Ethics Reference number with all correspondence.

Yours sincerely

Dr Angela Obasi
Chair
LSTM Research Ethics Committee

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Annexe 3.2: Participant Information Sheet and Consent Form

Section A: The Research Project

Purpose and value of the study

I am Abimbola Olaniran, a PhD student at the Liverpool School of Tropical Medicine conducting research on community health workers. Community health workers are individuals who have received a standardised job-related training that is distinct to the formal nursing or medical curricula to provide culturally appropriate health care. This group of health workers have been used to provide health services to pregnant women and newborn babies in your community. We would like to find out their tasks, remuneration, recruitment, training; factors that help them deliver health services very well and factors that prevent them from performing their activities effectively. The knowledge gained from this study may help us in planning effective use of community health workers in delivering services to pregnant women and newborn babies in your community.

Invitation to participate

We would be grateful if you will be able to tell us what you know about community health workers and the factors affecting their effective task performance as well as recommendations for overcoming challenges to their effective task performance.

Who is organising the research and the source of funding

This study is a PhD student research project at the Liverpool School of Tropical Medicine, United Kingdom. This study is funded by Department for International Development (DFID) through the Centre for Maternal and Newborn Health "Making it Happen" programme.

What will happen to the results of the study?

The understanding that we get from this research will be shared with you and your community before it is made widely available to the public.

Plans for publication

The result of the study will be made available to the public through international conferences and publications in peer-reviewed journals.

Section B: Your Participation in the Research Project

Why you have been invited to take part

You are being invited to take part in this research because we feel that you have an understanding of and/or experience in using community health workers to deliver services to pregnant women and newborn babies and can contribute to our understanding and knowledge on CHWs in maternal and newborn health.

Whether you can refuse to take part or withdraw at any time and how

Your participation in this study is entirely voluntary and it is your choice whether to participate or not. The choice you make will have no bearing on your job or work-

related evaluations or access to health services. You are free to change your mind at any stage of the interview and consequently stop participating even if you agreed earlier. You do not need to offer any explanation for refusal or further participation. However, you should notify the principal researcher of your decision to discontinue your participation.

What will happen if you agree to take part

If you accept being a part of this study, it will involve your participation in an interview that will take between 60 to 90 minutes. The questions will be about community health workers (delivering health services to pregnant women and newborn babies in your community) in general and the enablers and barriers to their effective task performance. We will not ask you to share personal beliefs or practices and you do not have to share any knowledge that you are not comfortable sharing. The interview will take place in a location that we both consider appropriate.

Whether there are any risks involved and if so what will be done to ensure your well-being/safety

There is a risk that you may share some personal or confidential information by chance or that you may feel uncomfortable talking about some of the sub-topics. You are encouraged not to answer any questions you consider too personal or if talking about it makes you feel uncomfortable. However, we will ensure that the information shared is handled with the utmost confidentiality.

What happens to the information that is collected from you

The entire interview will be recorded; the tape will be kept in a locked cupboard that can only be accessed by members of the research team. The information recorded will be considered confidential and no one else will have access to the tapes. The tapes will be destroyed after 5 years. However, if you want a copy of the audio recording, it will be made available to you on request.

Whether there are any benefits from taking part

There may be no direct benefit to you, but your participation is likely to help us find out more about community health workers in general and the enablers and barriers to their effective task performance and this may inform future planning. Light refreshments will be provided during the interview. Also, we will reimburse the transportation costs incurred as a result of your participation.

How your participation in the project will be kept confidential

The research being done in the community may draw attention and if you participate you may be asked questions by other people in the community. We will not be sharing information about you with anyone outside of the research team. The information that we collect from this research project will be kept with utmost confidentiality. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is and the records will be stored under lock and key.

Section C: Contact details

Contact for further information

If you have any questions, you can ask them now or at a later stage. If you wish to ask questions later, you may contact Dr Abimbola Olaniran through this e-mail address: Abimbola.Olaniran@lstmed.ac.uk

This proposal has been reviewed by ethics committees of LSTM and your country. These committees ensure that research participants are protected from harm. If you wish to ask questions from the in-country ethics committee, you may contact them through:

Country	Name of in-country ethics committee	Phone number	Email address
Bangladesh India Kenya Malawi Nigeria			

You may wish to ask additional questions about any part of the study that you are not clear about before proceeding to consent.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP, TOGETHER WITH A COPY OF YOUR CONSENT FORM

Part II: Certificate of Consent

I have been invited to participate in the research on "**Community health workers for maternal and newborn health: case studies from the field**".

I have read the above information, or it has been read to me. I have had the opportunity to ask questions about it and any question I have asked has been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Print name of participant____________________________
Signature of participant ____________________________
Date ____________________________
Day/month/year

If illiterate [1]

I have witnessed the accurate reading of the consent form to the potential participant and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness_________________ Thumb print of participant

Signature of witness ________________
Date _________________________
Day/month/year

OR (if the participant wishes to give verbal consent in the presence of witness rather than thumbprint).

I have witnessed the accurate reading of the consent form to the potential participant and the individual has had the opportunity to ask questions. I confirm that the individual has given verbal consent freely.

Print name of witness__________________________________
Signature of witness __________________________________
Date _________________________
Day/month/year

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant and to the best of my ability made sure that the participant understands that the following will be done:

1. The interview will be recorded
2. The duration of the interview may be between 60-90 minutes

I confirm that the participant was given an opportunity to ask questions about the study and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent and the consent has been given freely and voluntarily.

A copy of this informed consent form has been provided to the participant.
Print name of researcher/person taking the consent___________________________

Signature of researcher /person taking the consent___________________________
____

Day/month/year

Annexe 3-3: Interview guide for decision makers

Participant profile:

1. How would you describe the role of your organisation or institution in designing and implementing programmes for community health workers?

2. Could you please describe your own role in working with community health workers?

Scope of work, task, selection, remuneration, supervision and links to the health system (Questions will be based on the unit/department of the participants e.g. training etc.)

1. Could you please describe the selection (process and criteria) for the group of community health workers mentioned?
2. Could you please describe the method and process of training this group of community health workers?

3. Based on your experience in your role, what do you consider to be the scope of practice and MNH tasks of this group of community health workers?
Prompt: Do they do any of the following?

ANC: Iron and folic acid supplementation, tetanus vaccination, prevention and management of malaria with insecticide-treated nets and antimalarial medicines, calcium supplementation to prevent hypertension (high blood pressure).

Childbirth: Prophylactic misoprostol to prevent excessive bleeding after birth, manage postpartum haemorrhage using uterine massage and misoprostol, and social support during childbirth.

Neonatal care: Immediate care to keep the baby warm, initiation of early breastfeeding (within the first hour), hygienic cord and skin care

Family planning: Barrier (condom), injectable.

Probe: Which MNH tasks do you actually carry out in reality and why?

How much of your time do you spend on MNH as compared to other tasks?

4. What forms of remuneration/salary/incentives are available to this group of community health workers?

5. Could you please describe if and how community health workers are supervised and supported?

6. Please describe the integration/link/access that this group of community health workers have to the formal health system?

Factors influencing service delivery

1. How are CHWs assessed in their MNH role?

    Prompt: Is feedback provided to the CHWs after each assessment? If so, what form of feedback? Is there any sort reward or remedial system for good or poor performance respectively? If so, what form of reward or remedial?

2. What factors encourage effective task performance of this group of CHWs?

    Prompt: Please probe for how each of these has affected each cadre's effective task performance: training, remuneration, community and health system support, supervision, scope of work and tasks, link and access to health system.

3. What factors discourage/ challenge effective task performance of this group of CHWs?

    Prompt: Please probe for how each of these has affected each cadre's effective task performance: training, remuneration, community and health system support, supervision, scope of work and tasks, link and access to health system.

4. What are the ways of overcoming challenges to effective task performance of CHWs?

    Prompt: What role can your organization/institution play in overcoming some of the challenges mentioned. What roles can the community play and other stakeholders?

Annexe 4: Supplementary quotes

4.1: Bangladesh

Box 4.1.1 (Characteristics of CHWs)	
	Selection
12	*"CHWs should be from the same community"* KII 006, CSBA
13	*"The FWAs are totally female.HAs are usually female. So CSBA is a combination of the two groups, but most of them are female."* KII 007, Programme staff
14	*"Recruitment was on an area basis. Married women are given priority during recruitment."* KII 003, FWA
15	*"A community health worker should be a girl or wife of the community member."* KII 006, CSBA
16	*"...she is from that union, she knows the people from that union, ... she can visit people frequently, people are used to her and very much friendly with her and she can do much more. The people rely on her as she is some kind of family member like them."* KII 007, Programme staff
17	*"They are not transferable, they are to work in that area, they are recruited from the union level and they are not transferable."* KII 008, Programme staff
	Training
18	*"They [CSBA] are from our FWAs and our female HAs and they are female"* KII 007, Programme staff
19	*"About 926 female CHCPs got the six months SBA training."* KII 008, Programme staff
20	*"They are learning how to do ANC, PNC, conduct delivery and when to refer the patient to the Upazila health complex. Now, we are also giving importance to filling up partograph."* KII 006, Programme staff
21	*"In CSBA training, CHWs work in gynae ward with us. They stay with us in the hospital and learn. They learn 3rd stage management, 2nd stage management, newborn resuscitation and other things. They need to sit for examination after the training."* KII 003, Nurse-midwife
	Supervision
22	"*…Assistant Health Inspector, he checks our attendance, number of field visits we conducted and cleanliness of the clinic. He writes down his comments and findings in the inspection book.*" KII 004, CHCP
23	*"The FPI [Family Planning Inspector] can follow the FWA where she is going as there is a work plan to see whether she motivated the client who is taking IUD [intrauterine device]. The FPI can go to the house and talk to the people whether the lady is taking IUD."* KII 007, Programme staff

Box 4.1.1 (Characteristics of CHWs)	
24	*"One day, I called one community worker and asked her about her location and told her to pass the phone to her supervisor if he is available there. I worked in this way. Because I cannot visit community clinic every day, that is why sometimes I communicate over the phone."* KII 005, Programme staff
25	*"We assess every month. At the end of every month, the statistician extracts the data…and present it in my office. From the data, we identify the poor performing Upazila and we focus on them."* KII 005, Programme staff
26	*"In the monthly meetings, they update us about the clinic, services they have provided and the programme they have run in that month. We monitor their activities. We ask the community about the services they are getting."* FGD 001, Community group
27	*"On the 10th of every month, we organise meetings and solve relevant problems and take various decisions."* FGD 003, Community group

Box 4.1.2 (Scope of practice in MNH care)	
Antenatal care	
6	*"During the check-up, if we find baby's position is all right, we go for normal delivery. And if the position is not ok we suggest that the mother goes for C/S."* KII 005, CSBA
Postnatal care	
7	*"We ask them to breastfeed about 30 minutes after their delivery."* KII 005, CSBA
Family planning	
8	*"Birth control programme is their [FWA] main work. They also advise on how to avoid unwanted pregnancies. Family welfare assistants also promote not having more than two children."* KII 004, Programme staff
9	*"Community health care providers work in the community clinic for six days. They are the key persons in a community clinic and provide reproductive services; distribute contraceptives and provide maternal & child care."* KII 004, Programme staff

Box 4.1.3 (Factors influencing service delivery)	
Knowledge and skills	
21	*"We do not get enough training. I participated in a training six years ago and after that, I have not got any training"* KII 005, CSBA
22	*"They are not doctors, so, they cannot diagnose all the diseases and because of*

Box 4.1.3 (Factors influencing service delivery)	
	that, sometimes people become unsatisfied" FGD 002, Community group
	Motivating factors
23	*"CHWs are motivated. They can see the result of their work. Because of their service, maternal and neonatal death is getting low."* KII 004, Nurse-midwife
24	*"Usually, patients pay. If any poor patient comes, I pay because I think life is more important than money."* KII 001, CHCP
25	*"I have already told you, we are living very inhumane life. We have not got a salary for the last two months. Our salary needs to be paid monthly and regularly. We did not even get Eid bonus."* KII001, CHCP
26	*"We do not get transport cost for collecting medicine from the UHC."* KII 001, CHCP
27	*"… in 2001, the community clinic project was shut down …revitalised in 2009. About eight years, it was closed. So, the CHWs think community clinic project may close down again."* KII 008, Programme staff
	Health system-human resources
28	*"Previously, within two months, they cover the whole community, but now, they have to spend three days in the community clinic. So, there is some trouble because they must be present there [community clinic] and they must visit the home. So, they cannot cover the whole community in the two months, so they need more months for this"* KII 007, Programme staff
	Health system-supplies
29	*"There is no electricity at this facility and it is really hard to work during the summer because we cannot use the fan"* KII 001, CHCP
30	*"It would better if the Health Inspector can get a motorcycle for monitoring. Some places are remote to travel and no road or other means of communication, in that case, a bicycle for Family welfare assistant is needed"* KII 004, Programme staff
31	*"Transport would be very helpful to carry mothers. There is no transport system for them. There is an ambulance but not sufficient for the Upazila. Another transport should be added."* KII 006, CSBA
	Community-related factors
32	*"At field level, educated people recognise our work but not the illiterate ones."* KII 006, CSBA
33	*"Mothers-in-law prefer home delivery. Apart from these, there are religious barriers. Poverty is the main reason for all the problems. Deliveries with unskilled birth attendants often result in complications that present late at the facilities."* KII 002, Medical officer
34	*"Community group does not help us at all. The group tells us that government*

Box 4.1.3 (Factors influencing service delivery)	
	set up the clinic so it [government] will provide all the support. Members of the group do not attend any meeting saying that they are busy." KII 007, CHCP
35	*"Previously we heard loads of bad comments about us working at the field level. Even community people do not accept us as good women. However, now they understand that taking contraceptive is good and we are well accepted by the community."* KII 005, CSBA
36	*"If normal delivery can be performed here, that would be good. Going far for delivery sometimes make mother and baby`s lives critical."* FGD 001, Service recipient
37	*"Previously we had allegations against us that we sell the medicines instead of providing to the community people. We all were very upset. But now, no one complains about us because we open the supply in the presence of CG (Community Group)."* KII 004, CHCP
38	*"If clinic runs out of drugs, local people become violent. We try to make them understand and manage the situation."* FGD 003, Community group

4.2: India

Box 4.2.1 (Characteristics of CHWs)	
Selection	
11	*"The preference is given to the candidate if she has worked with an NGO, a health NGO. Gram sabha decides the final candidate. Preference is given to widows."* KII 004, Programme staff
12	"*ASHA needs to have good communication skills; boldness is needed."* FGD 004, ASHA
Training	
13	*"They have pre-training and post-training questionnaires which are marked and scored at the end of training. After comparing both questionnaires they get to know about their understanding and learning."* KII 005, ASHA trainer
Remuneration	
14	*"We keep monthly records of services provided, on the monthly ASHA day, we show the record…for each ANC registration, 50 rupees; …if we bring mother for delivery, then, it is 600 rupees."* KII 001, ASHA
15	*"All the work done by ASHA is documented in that booklet…the ANM verifies it…then the ASHA supervisor checks all that and signs on it. Ultimately, it comes to the medical officer for his signature. She is then given incentives for whatever work she has done"* KII 002, Medical Officer
Supplies	
16	*"The kit given after the delivery is meant for that patient only. We have been given HBNC [Home-based Newborn Care] form; we record baby's weight, temperature using the kit provided to us by the government. Suppose if somebody is very poor and cannot afford those things they temporarily keep that kit [baby kit] with that family and later on take it back from them."* FGD 002, ASHA
17	*"We give the kit to the baby, called kangaroo kit. That has clothes for the baby, soap is there, powder is there and soap for the mother as well and even pad is given."* KII 008, ANM
18	*"We receive family planning materials."* KII 004, ANM
Supervision	
19	*"…there is ASHA supervisor at PHC level, then Block supervisors at the district level. They visit from time to time. If ASHAs are facing difficulties in their work, they help them to solve their problems. These officials [supervisors] visit the village and meet the villagers. And ask them about the feedback of ASHA's work. And also whether they are working or not"* KII 001, Medical Officer.
20	*"They [lady health visitors] supervise us, see how we conduct deliveries, they also help us in delivery, they visit the community, they see the record, even*

	Box 4.2.1 (Characteristics of CHWs)
	they talk to patients." KII 003, ANM
21	*"Yes, we do tally the reports [reports from ANM and ASHA]…most probably, they match. In general, there is no discrepancy.*" KII lady health visitor 002
22	*"There, you have the maternal and child tracking system. There is a call centre, everyday calls are made to random numbers to see whether the pregnant woman exists and whether she got the services."* KII 002, Programme staff
23	*"We go to the field, almost once in a month or two months. Wherever the performance of ASHA is less, those districts are identified, as per the indicator…we select such districts and pay visits"* KII 009, ASHA supervisor
24	*"We review the data online and then we come to know deliveries at the sub-centre for that year. Wherever the target is not achieved we focus on those areas and try to improve. Whoever visits the field, that person would monitor if ANM stays at sub-centre and if she provides services to the patients."* KII 012, Programme staff.
25	*"We are appreciated and felicitated for completing our target during the monthly meeting…ANC registration before 12 weeks, TT injections, bringing a maximum number of ANC cases to the PHC for delivery."* KII 003, ANM.
26	*"It is 10,000 rupees that come from the government…some will be kept aside for emergencies."* FGD 003, ASHA.
27	*"We discuss if the money should be used for taking the pregnant women for delivery."* FGD 004, ASHA.
28	*"…vaccination is also monitored by VHSNC members."* FGD 001, VHSNC.
29	*"If something has gone wrong, we tell them that this should be done."* FGD 001, Women group
30	*"…complaints like ANMs are not treating us well or they didn't give injections…these are discussed in the meeting."* ANM, KII 008

	Box 4.2.2 (Scope of practice in MNH care)
	Antenatal care
6	*"They [ASHA] call me if any woman misses her periods, they conduct UPT [Urine Pregnancy Test] and tell me about her pregnancy."* KII 002, ANM
7	*We regularly enquire about missing menstrual cycle. Even people know that sister [ANM] is available in the village. So, many times they come to us and tell us that they have missed their periods, then we check it with pregnancy kit."* KII 010, ANM
8	*"If she says she missed her period, then we go and cross "X" on her calendar. Then we go the next month again and ask her, if she says No, then*

Box 4.2.2 (Scope of practice in MNH care)	
	we confirm it by doing UPT test through the ANM." FGD 002, ASHA
9	*"If there is an ANC camp, we check her sugar, BP and all, TT vaccination and educating them on healthy meals.*" FGD 002, ASHA
10	*"ASHA visits me and would tell me to eat vegetables, eggs, fruits, dates."* KII 002, Service recipient
11	*"They have the record of the ANC from their area. Whether they have taken TT on time, when it is due, they go and remind the women"* KII 001, Medical officer
12	*"It is the ASHA's responsibility to check if her ANC cases completed the ANC check-up schedule, she calls for the vehicle to take her ANC cases to the ANC camp."* KII 007, ASHA supervisor
13	*"After ANC registration, they monitor the movement of the baby as per the gestational age."* KII 009, ASHA supervisor
14	"*We register ANC within 12 weeks; we suggest to her to do sonography at 3rd, 6th and 9th month of pregnancy"* FGD 003, ASHA
15	*"We do blood group, Hb, HIV tests and VDRL. And if there is any illness then according to that illness, the necessary tests are done. But the above are 4 important tests."* KII 010, ANM
16	*"So ANM used to give me these tablets and I started having it since third month only."* KII 002, Service recipient
17	*"They [ANM] know if she is a high-risk mother, then it is written on one corner in bold type."* KII 001, Lady health visitor
18	*"There is a camp, once-a-month at the PHC level…we refer to the doctor. And if a patient is having bad obstetric history or pain or any other problem she can tell the doctor and she [doctor] can make her own decision."* KII 005, ANM
19	*"In the 9th month, we tell her everything about delivery and all. What they [pregnant women] should carry with them, the clothes, pads…"* FGD 002, ASHA
20	*"She [ASHA] came home and told me to keep the bag ready and give her a missed call when labour starts so that she would come home and she did. Neetatai [ASHA] was with me during my delivery."* KII 002, Service recipient
	Labour and delivery
21	*"ANM's main role is conducting deliveries at the sub-centre."* KII 012, Programme staff
22	*"When her labour pain starts, we check her cervical dilatation and check her B.P and document on her card. And from that time we start monitoring everything. We keep a partograph and in that way, we process her delivery."* KII 005, ANM

Box 4.2.2 (Scope of practice in MNH care)	
23	*"We ask her to breastfeed the baby after half an hour of delivery because it helps to reduce the bleeding."* KII 002, ANM
24	*"...they [ANM and GNM] both carry out deliveries with the help of each other."* KII 012, Programme staff
25	*"... if the patient is dicey, then we inject half of Oxytocin in their IV fluid to run slowly. It helps to open the uterus. Then we conduct delivery. The doctor remains with us. Sometimes we give episiotomy for safe delivery."* KII 006, ANM
26	*"Woman is given stitches. She is given Methergine injection in labour room; placenta is removed, then she is being shifted to the room. If there is excessive bleeding, then the condition may become serious, we have to keep watch for first 6 hours."* KII 010, ANM
27	*"…We have to go with her (pregnant woman) because it is a huge moral support to her that somebody is there with her…. I mean mother or aunt is there with her, but they are not allowed inside the labour room."* FGD 002, ASHA
28	*"We assure them that we are there until the delivery and we will see that everything will be all right. Then we wrap the baby there check the weight of the baby, we are allowed to enter into operation theatre."* FGD 004, ASHA
Postnatal care	
29	*"Like which colour of discharge have they got…which we understand clinically."* KII 005, ANM
Neonatal care	
30	*"…sometimes the relatives of the mother are scared of doing those things, so at such times, cleaning the baby, helping out the mother, all these things are taken care of by ASHA."* KII 002, ANM
Family planning	
31	*"During the ANC, when delivery period comes nearer, they inform them about available family planning options as well"* KII 002, ANM
32	*"Now girls want the freedom to roam, so they don't want pregnancy immediately after marriage. So, we tell them about this on the first visit. We tell them about the menstrual cycle and ask to take such measures which won't create a risk to their health. We have a list of eligible couples, so, we meet such girls and give them proper advice so that their life would become pleasant…sometimes she is studying."* FGD 001, ASHA
33	*"Those who have one child, we advise them to use Cu-T, pills or condom."* KII 012, ANM
34	*"We provide condom when they [community members] request for it. People know that we are working in that area. Anybody can come to us and say that give me pills or I want to fit a copper T or give me a condom. We tell the*

Box 4.2.2 (Scope of practice in MNH care)	
	ANM about that. Suppose if there is someone who does not want another child because she already has two children, then the ANM temporarily give her pills till the time she gets operated [Bilateral tubal ligation]. If any woman has 1 or 2 children, then we suggest an operation." FGD 002, ASHA
35	*"Now, we insert the copper T, instead of going here and there we put it and [when she wants to remove it] we ask her to come back for removing it.*" KII 009, ANM
36	*"We give them oral pills for spacing. After six months of delivery, we tell the mother that we have Copper T and nirodh [condom] and you can use that for family planning."* KII 001, ANM
37	*"Here, 2 or 3 women have taken that injection and there are some side effects. Like they are getting irregular menstrual cycle, weight has increased suddenly. So such effects are there."* KII 010, ANM
38	*" … there are people who will say this [contraceptive injection] is harmful to the lady, she will get more bleeding, she is already anaemic. It [contraceptive injection] is being considered in India now"* KII 012, Programme staff

Box 4.2.3 (Factors influencing service delivery)	
Motivating factors	
33	*"We have been asked to conduct a survey but we are not paid for that... Whenever ANM comes to the community for the home visits, ASHA has to accompany her but no incentive for that…"* FGD 001, ASHA
34	*"I would say 70% of the work she [ASHA] does are linked to incentives but 30% are not"* KII 001, Programme staff
35	*"Every day, we do two hours of home visits, we do not get paid for that. We get paid only if there is some case of delivery or any operation and my mother-in-law gets angry saying that, she is just wandering here and there without earning any salary (All participants laugh out loud)."* FGD 002, ASHA
36	*"… we should get fixed monthly money, let it be 2 rupees, we all have families and they ask us that you haven't got any rupee in the last 6 months, why are you still working?"* FGD 003, ASHA
37	*"…they are demanding for permanent job, whenever you give a permanent job to them, then their performance definitely will decline"* KII 003, Programme staff
38	*"The doctor over there checked the beneficiary and asked me to take her to the General hospital giving me the referral chart. The doctor called me to his room and told me to take the delivery box with me and told me to cut the umbilical cord if she delivers in the vehicle. And while travelling if anything happens to mother or baby then whose responsibility is that, people will feel*

Box 4.2.3 (Factors influencing service delivery)	
	that we have not done our work properly and everything comes on ASHA." FGD 002, ASHA.
39	*"… she delivered and it was a stillbirth. That lady, she used to blame us for six months. Nobody says anything to ANM or MPW [Multipurpose worker]."* FGD 004, ASHA
40	*"People come here [sub-centre] because they trust us but if something happens, we have to face their anger. Sometimes stillbirth happens, people don't understand the reasons behind it but they blame the ANM."* KII 003, ANM
41	*"We see if she completes the target given to her, we give targets to the contractual ANMs that they have to bring minimum three delivery cases per month. There are some areas where this target is not feasible, a hilly area with a scattered population, but still, the main target for them is deliveries, we are aiming at 100% institutional deliveries."* KII 012, Programme staff
42	*"We get a new contract every year and get the target, there is nothing like promotion. In 2012, they terminated 15 or 16 girls as those girls did not achieve the target of deliveries. Permanent employees get 30,000 or 35,000 salary, they have a full guarantee of a job, whether they conduct delivery or not."* KII 010, ANM.
Health system-policies	
43	*"Earlier, they used to give cheques for specific tasks, but now they credit the money directly to our account, so we don't know what we got payment for and what is pending. We do the activities today and they transfer the money after six months."* FGD 004, ASHA
44	*"The pay comes from 10 separate sources, how will they know from whom it was transferred, this should not happen; it should be fixed income."* KII 001, Programme staff
Health system-human resources	
45	*"What can ANM do during delivery, the main decision should be taken by the medical officer, sometimes patients go into postpartum haemorrhage, then we need to refer but at that time the ambulance is not available."* KII 003, ANM
46	"*ANM is there but the medical officer should also be there for delivery."* FGD 004, ASHA
47	*"The ANC camp should be available at the sub-centre level and not only at the PHC level."* FGD 001, Service recipient
48	*"It would be good if a doctor comes to our village once a month"* FGD 001, Women group
49	*"Sometime in the field people consider ASHA as a member of the community because she belongs to that village so people may feel that she won't know anything. But when such people don't listen to ASHAs, they receive an*

	Box 4.2.3 (Factors influencing service delivery)
	explanation from the ANM." KII 008, ASHA supervisor
50	"*…if they don't listen to ASHA then ANM goes there and tells the family members about the benefits of the services. But there are some aged or illiterate people who don't listen."* KII 007, ASHA supervisor
51	*"…patient wants a doctor to attend their deliveries. They are not happy only with ANM... If MO is there, then we feel confident that we have somebody to support us. We feel energetic to work."* KII 008, ASHA supervisor
52	*"There is no fixed time for ANM's work; sometimes we work for 24 hours. If there is delivery, then there is work for 24 hours."* KII 010, ANM
53	*"…they [ASHAs] tell us that you expect us to work 3 to 5 days but we are on call all the days, anybody can call us in the middle of the night and say come with us to the health facility."* KII 001, Programme staff
54	*"If there is adequate staff, things will be better managed, supposed I am called for a meeting, then…should I attend to the patients at the sub-centre or attend the meeting?"* KII 007, ANM
55	*"Her [ANM] village is the hilly one; vehicles do not go there, very remote place, still many delivery cases. There is a single sister, she is expected to visit the villages, then she will be back to conduct the delivery. Sometimes she has to do night duty. It happens that sometimes ANM has to do 24 hours' duty, she gets irritated then."* FGD 004, ASHA
56	*"When ASHA identifies a woman for family planning and reports to the ANM, the ANM may claim it as part of her target and receives 150 rupees because only one person will receive the cash and the other person is jealous of her."* KII 008, ASHA supervisor
57	"*At some places, communication between ASHAs and ANMs is difficult…suppose my patient comes to the sub-centre for delivery without telling me, if the sister [ANM] and I have good coordination, she will tell me about her."* KII 001, ASHA
58	*"We have been informed about ANC task just one day prior to the ANC camp and asked to bring ANC cases at 11 o'clock but vehicles do not reach there. If we have to reach here from the village, it's 1.5 or 2-kilometre walk. How can I bring ANC by walking? There can be intense summer or rainy season or winter, so their families do not send them like this. So, sometimes we spend our own 6 rupees per head for the ticket and bring them here."* FGD 001, ASHA
59	*"If they (ASHAs) bring one woman for delivery, they get 600 rupees, but ANM works more, sometimes full night she has to work so she should get at least 1000 rupees for this."* KII 010, ANM
60	*"We have fixed payment, we don't get incentives for this work…like ASHAs gets extra money for ANC registration and immunization, we don't get such."* KII 003, ANM

Box 4.2.3 (Factors influencing service delivery)	
61	*"…7-8 years being ASHA, we are doing 99% of the work like ANM but we receive only 24% of the amount."* FGD 003, ASHA
62	*"I used to be the one to call 108 for ambulance used to take the patient, then I call the sister and only pick her up on the way. It means we are doing all the work and credit goes to ANM."* FGD 004, ASHA
Health system-supply	
63	*"So, state procurement might be weak in which case you know up and down the chain don't have drugs. In many cases the system for replenishment of ASHA, I am afraid, it's very bad; it's really, across the country. Insufficient supplies, inadequate supplies, non-supply it's all there."* KII 001, Programme staff
64	*"…if we need to repair the tank and finishing, it costs 20-25 thousand rupees and we receive a grant of ten thousand. Previously, we used to get equipment such as a delivery table, copper-T but now they just sanction money and ask us to buy only things that are necessary. It should not be the case."* KII 002, ANM
65	*"We have to go to private hospitals for some services, so government should provide those services, government hospitals should start sonography."* KII 003, Service recipient
66	*"Yes, sonography centre should be there [at the PHC], we have to take the caesarean patient at least 70–80 kilometres from here to the General [Secondary level] hospital through poor roads. So, there should be something midway between the town hospital and our village….so it should be possible to have a caesarean section there [PHC]. People in our area believe that somebody going to the General Hospital does not come back [Patient dies in the hospital]."* FGD 002, ASHA
67	*"There are no facilities here. Suppose ANC case comes here, Haemoglobin can't be done fast, blood sugar level can't be done, everything can't be managed here. ANC cases have to go to Rural Hospital; they have to travel. There are women who have investigations in the ninth month; there are no sonography centres here [sub-centre]."* KII 007, ANM
68	*"ANMs get travel allowance, but it is not money but just that the vehicles are not there. So, that's a problem"* KII 012, Programme staff
69	*"Generally, we bring labour patients over here because all this area comes under hilly area. It is difficult to get phone connectivity so under this condition, it is better to take them here and keep them under observation of Medical Officer."* KII 005, ANM
Community-related factors	
70	*"ASHA worker went there and asked her to consume tablets and take injections. She was ready to take but suddenly her mother-in-law refused her to take injection and tablets. She wanted to go with the God's worship"* KII

	Box 4.2.3 (Factors influencing service delivery)
	008, ASHA supervisor
71	*"Also, some communities have their own customs, there are such backward communities who refuse to have delivery at the hospital. Due to all this, her [ASHA] incentives are affected"* KII 002, Medical officer
72	*"Everybody has a concern that they get good services in the private [hospital] which is not there in the government. People used to take women in labour to private hospital."* FGD 001, ASHA
73	*"ASHAs feel bad when they don't get cooperation and support from the community members, like those who are from a comparatively better financial background…because they go for private health care services and speak ill of government health services."* FGD 002, ASHA
74	*"ASHA is a local person, if a woman comes to her and tells that she missed her periods, so she can also check the urine sample from the kit and so that the fast registration is possible. People will trust her more."* KII 001, Lady health visitor
75	*"We have some value in the village…people feel that they should tell us their problem and if we do delivery, then that will be free of cost. The family will thank us…"* FGD 004, ASHA
76	*"Everybody knows that the government health services are free of cost but one needs a ladder to climb up…and that is why people have built trust in us. If any patient has any positive experience, she will tell other 10 people, you should go to ABC [a particular ASHA], she is very cooperative."* FGD 001, ASHA
77	*There are so many women for ANC camp, so, the doctor is in a hurry with the check-up. Women are not satisfied with the treatment they receive from the doctor... At least a doctor should spend five minutes since women waited for the whole day. He will just give two minutes to each woman."* KII 001, ASHA
78	*"Nowadays the attitude is changing, people want everything ready-made at their doorstep and ASHA provides services at their doorstep."* KII 001, VHSNC head
79	*"We are able to manage few household at a time, we are able to cover 20-25 households in a day. Means we are unable to cover community in a day because the houses in the other community are locked by the time we reach there because many of them are engaged in agricultural activity."* FGD 003, ASHA
80	*"The ANM comes here from another village. She comes here at 10 o'clock. By the time, she comes here, people have gone to the field, only old people are at home."* KII 001, Head of women group
81	*"If one house is here at one place, then, the other one is far beyond that hill [pointing to the hill], that takes our time unlike in the city where there are a lot of houses in a single building, ...it is not a plain land but completely hilly area and walking in the sun is such a big problem."* FGD 002, ASHA

Box 4.2.3 (Factors influencing service delivery)	
82	*"They should either make visits in the morning when they can find people at home. In the evening people are very tired and even if you want to talk to them, they will try to avoid you. Also in the evening, she cannot roam around, so it is important for her to come in the morning."* KII 001, Head of women group

4.3 Kenya

Box 4.3.1 (Characteristics of CHWs)	
Selection	
11	*"They belong to the community, possibly a migrant, but should be somebody who is almost there to stay."* KII 003, Programme staff, NGO
12	*"we cannot choose people from the same homestead…you will have mapped the village and then at least one person from each corner of the village so that we cover the whole village. We also talk about part of them being women, youth also have to be included."* KII 008, Programme staff, Government
13	*"One, we look at the regional balance whereby we don't concentrate on one area, we want each and particular area to have a participant."* FGD 003, Community health committee
14	*"…the volunteer's gender is not an issue, they must be respected by the community. If married, the spouse must also consent to the partner volunteering. If not married, then the consent is not sought, so one of the criteria is that this person is mature."* KII 001, Programme staff, Government
15	*"…if we have retired health care workers, who are among us like the medical health workers, we give an inclination to that and we recommend they can work as CHVs."* KII 008, Programme staff, Government
16	*"It is the community themselves who would nominate and of course the government."* KII 003, Programme staff, NGO
17	*"…the one [CHV candidate] they like, they will all be happy and shout but if they don't like the person, they will all hmm [folding arms and looking down]."* KII 001, Programme staff, Government
18	*"When we form a unit, the community comes together, it is spearheaded by the CHEWs, the facility-in-charge and the chief; the community selects those they feel should be the CHVs."* FGD 001, Community health committee
Training	
19	*"We talk about active people; these are the people to be taken to the training so that they can empower us."* FGD 002, CHV
20	*"Maybe, I am called and trained by an organisation; they will train me especially on PMTCT, once they train me I will come back and call these CHWs and I will train them.*" KII 006, CHEW
Remuneration	
21	*"…also, whenever there is training, I will involve the active ones in activities which have remunerations. They have stipends, I do involve the active ones."* KII 001, CHEW

22	"*We have tried to encourage them to come up with income generating activities; the things that they are interested in. Through guidance, they are doing proposal writing to see who can assist them and come up with something that would be more sustainable so that they won't say this work doesn't pay and I don't have anything to feed myself.*" KII 002, Programme staff, Government
23	"*…the government through the chief, they have given them some small portion of land, they want to plant and sell seedlings. So, that is something that the government has given them so I think it will motivate them*" KII 008, CHEW
24	"*It depends on the area and what they have decided. Mostly, some of them have decided to do farming, some water tanks, selling water to the community. So, they have quite a diversity of activities and it has been sustainable for a long time*" KII 005, Programme staff, Government
Supervision	
25	"*We have a template that ranks them monthly. From the report they bring CHCs have found which community volunteer is doing what and what. So, every month we have an evaluation of the CHVs and we rank them, it is like a scorecard.*" FGD 001, Community health committee

Box 4.3.2 (Scope of practice in MNH care)	
Antenatal care	
6	"*…they will know in this household, there is a pregnant woman, in this household there is newborn, they know some religious sects that don't go for health care. They believe in praying to their gods and everything is okay, they will help us identify those mothers and try to convince them.*" KII 009, Programme staff, Government
7	"*First of all, in the community, we identified the pregnant mothers and then we refer them to the hospitals to start the clinic earlier before three months.*" KII 001, CHV
8	"*We normally look for pregnant women in the village and when we find them, it is our role to make sure that they are undergoing [attend] both the antenatal and postnatal clinics. And for those who are not aware we typically educate them.*" FGD 003, CHV
Labour and delivery	
9	"*We tried to welcome the TBAs to our group so that they will not be offering those services at the community level, right now they normally refer and if the patient is very comfortable with that TBA to come and assist her in the facility to deliver, we have no problem with that, because there are those who trust them so much.*" KII 006, CHEW

	Box 4.3.2 (Scope of practice in MNH care)
10	"*I just sacrificed myself to help mothers in labour pain I do my best when the baby comes out of the uterus, I just massage the womb and the placenta will come out."* FGD 003, CHV (TBA)
	Postnatal care
11	*"…every day to see whether what they [CHV] are doing the correct positioning of the baby to the nipple."* KII 006, CHEW
12	*"…as they know their client has come from maternity, they can screen for danger signs in the mother and refer if there are danger signs."* KII 003, Programme staff, NGO
	Neonatal care
13	*"We normally tell them to keep the baby warm especially skin to skin we call it kangaroo"* KII 001, CHV
14	"*…and therefore having a CHV coming to see them, they learn especially now that we are promoting the use of chlorohexidine. Now, is it being applied properly than before when we were using methylated spirit. Is the mother washing hands before handling the baby and after handling the baby, to prevent infections?"* KII 007, Programme staff, NGO
15	"*They visit the mothers and they show how to clean the cord and also teach the mother to check on the danger signs in newborn, we have trained them on how to check the cord and how to check whether the baby is fine."* KII 008, CHEW
16	*"…maybe the child might have been born at home and have not gotten their first immunisation or we could call the vaccination polio, BCG. They are able also to refer and follow up on that."* KII 007, Programme staff, NGO
	Family planning
17	"*We have a smaller group of them who are trained in family planning matters, those are the people who do the supply of the commodities at the community level, they were well trained for ten days; they can give the oral contraceptive pills."* KII 006, CHEW
18	*"They can also give condoms, the only thing that they cannot offer are the injectable and the other methods, but for condoms, they normally supply to the client and they have their clients whom they give the supply every month.*" KII 006, CHEW
19	*"You find that in the third visit just toward delivery they start discussing with the mother what mode of family planning they would be taking because it is expected on the sixth week after delivery the mother should have decided what method do they want to use."* KII 007, CHV

Box 4.3.2 (Scope of practice in MNH care)	
20	*"Like me, I supply family planning pills and condoms to homesteads. That is also our work as CHWs."* FGD 005, CHV

Box 4.3.3 (Factors influencing service delivery)	
Attributes	
25	*"I know one gentleman, old. I imagine him visiting a homestead of a young lady or a baby. You know the community does not understand that there is guiding law, maybe the husband can think of other things."* KII 005, Programme staff, Government
Knowledge and skills	
26	*"The continuous training that they get, sometimes it helps them to go out there and continue giving clients information about family planning methods…most of them find it very challenging to go there and explain a certain method because they don't have most of the information. So you find when they go there, they are asked some very difficult questions like side effects* so *that they can assure them maybe it is a normal side effect. Maybe some mothers have experienced it and that is why they are changing to another method. That is why others [mothers] have opted to be referred here for the longer methods."* KII 003, Nurse-midwife
Motivating factors	
27	*"There are things that motivate them as we have some outreaches. We incorporate them and they are paid a small fee."* KII 002, CHEW
28	*"So, when the government is doing polio sensitisation or vaccination, those CHVs who are doing well that month are given the first priority, that is like encouragement, that is like motivating them."* FGD 001, Community health committee
29	*"…the allowance will encourage them when they go for their meetings at least they can get something to buy unga, to buy flour when they get home."* KII 009, Programme staff, Government
30	*"We call them stipends which are very low and only three of us are paid, the rest are not paid anything. There is no motivation. Some CHVs withdrew because there is no kind of motivation"* FGD 006, CHV
31	*"One of the problems that the government has been facing are the terms given to different organisations. Some [CHVs] are given different amounts of tokens and some receive large rates. You find out, it is not standardised."* KII 003, Programme staff, NGO
32	*"…one program has got incentives of up to 4,000 per volunteer per month. Then if in the next household the volunteer who is going there is getting nothing, he or she will feel somebody is stealing from them. Why does my*

Box 4.3.3 (Factors influencing service delivery)	
	colleague get this and I also don't get this? So that challenge of uncoordinated health interventions is a big challenge for the health volunteers" KII 001, Programme staff, Government
33	"*When a particular NGO came, they used to give them a lot of incentives; two thousand. When that project ended…most of them…I think they were discouraged and never went ahead."* KII 005, Programme staff, Government
34	*"You may get stipends of two thousand which will not be available for the rest of CHVs' life, but when you give them incentives to start an IGA[Income Generating Activity], that will be more sustainable"* KII 009, Programme staff, Government
35	*"Before we were fifty CHVs but we have reduced in numbers because they saw that there is no pay, they quit."* CHV, FGD 007
36	"*Some of them are being motivated by IGA [Income Generating Activity] because of the income."* KII 005, Programme staff, Government
37	"*They began table banking as a group. Now, they are saving money with the microfinance and therefore this has increased the cohesiveness of the group and volunteer drop out is almost not there because of motivation."* KII 007, Programme staff, NGO
38	*"We need you [CHVs] because you know the issues within the community, we the medical people cannot do it on our own. Therefore, they are very key to handling some of those health issues that are happening in the community because patients go back to the community that is where they are. So, I feel that with that understanding they realised they are important partners so that itself was an incentive; to realise that they are important.*" KII 002, Programme staff, Government
39	*"A way of reimbursing them like even provision of airtime when they need to make some phone calls, so they are not discouraged"* KII 007, Programme staff, NGO
40	*"…even maybe when they come to the hospital and it is a place where money should be paid, as CHVs, they should not pay."* KII 008, CHEW
41	*"…now when he gets sick nobody is there to clear their hospital bills, if there was an insurance cover for them, if they contract TB, even though they have been trained on how to safeguard themselves from such when they are dealing with patients, but anything can happen so if they are bed-ridden who will take care of them, who will take care of their children, they will still languish in poverty"* KII 003, CHEW
42	*"I would like to think about the insurance, if the government would say, somebody who has served as a volunteer from this period and as long you continue serving, the government will take care of your premiums to the insurance. To me, I think that is something that is doable and can make people who volunteer stay"* KII 001, Programme staff, Government

	Box 4.3.3 (Factors influencing service delivery)
43	*"They should know which community health worker unit has reached more mothers and they should look for a trophy to encourage them, even if the trophy is cash. Cash for excellence."* KII 001, Community health committee
44	*"Training and seminars…the community people who are learned are considered to be a bit superior. When they are studying and they are called to a seminar… they feel they are recognised by the government…the knowledge that we impart into them also encourage them because they are like doctors in the village, so they feel that they are also honoured by the community because they are offering the very thing the community wants.*" KII 003, CHEW
45	*"You know when they are in the village they are called doctors…I think people appreciate them and they feel good because, when someone is having some problem and it is at night they call "doctor" I have this and this problem, what can I do? They [community members] feel that they are surrounded by people who are skilled, so it also motivates them to see that the community is recognising them.*" KII 008, CHEW
46	*"We have been recognised and accepted by the community; we are called for meetings in schools and churches; things like that."* FGD 007, CHV
47	"*…and again as a community unit we sometimes give them a document just a written one just appreciating that this month you scored well your work has been recognised by the committee that is how we reward them."* FGD 001, Community health committee
48	*"…the community members, they accept us, that is one thing we are happy about, they treat us as one of them, when they are sick they call us and then we send them to the hospital they actually agree, everything they ask us we tell them and we cooperate*" FGD 002, CHV
49	*"Even though we are not paid and we are just volunteers, you can get someone who is sick and has no means of coming to the hospital and you bring him with your money."* FGD 007, CHV
50	*"If a mother delivers a baby, you can't go empty-handed. So when they visit them, they think they have brought for them something, yet they have nothing."* FGD004, Community health committee
	Health system-policies
51	*"…as a CHV, I may decide whether I want to bring the report or not because those standards are not very clear. Like a standard operating procedure, how do they operate, how will they be supervised, how will they conduct their meetings and how frequent because they have what we call community dialogue days, community action days, but it is at the volunteer level but if standards are set"* KII 005, Programme staff, Government
52	*"They [CHVs] should make a work plan that this is what we are going to achieve in this period, then there is a follow-up. They [supervisors] follow them on how often and how frequent so that even those who do better in terms of what they plan are able to be given some gifts or some recognition"* KII

Box 4.3.3 (Factors influencing service delivery)	
	005, Programme staff, Government
53	*"…of course distance, depending on geographical distribution…moving from one household to the other and they do not have means of transport. It is in the sun. Maybe, they do not have an umbrella, it becomes a big challenge and them being volunteers*" KII 007, Programme staff, NGO
54	*"Distance is a challenge, from one household to another is very far and we get tired often*" FGD 007, CHV
55	*"Sometimes one CHV is having pregnant women, some with up to twenty to twenty-five newborn, so he or she may spend a lot of time rather than doing work and when he or she goes back to his house, they don't have anything to feed themselves, so sometimes it is challenging for them."* FGD 001, Community health committee
56	*"..there is no motivation because these people are not employed. An unemployed person cannot work as a volunteer, these people do their small things to get a living or their daily bread. But they have to leave that thing and go to serve the community because by the end of the month they are required to make a report, but nothing [no financial returns] comes back it"* FGD 001, Community health committee
57	*"…you can take someone to the hospital, so the business that you run will not open that day. You go and stay with the client the whole day in the hospital, when you come back the children want something to eat, you don't have money because you did not work that day"* FGD 003, CHV
58	*"I have twenty houses but today I have visited only three houses because I cannot work only in the community I have other duties in my house"* FGD 007, CHV
59	*"…advocacy in the community through key people like chiefs is very important for enhancing this work of CHV they could be going to the Chief's barrazas [community gathering] they do a lot of advocacy on their roles then they try to enhance what they can do, they motivate, is a kind of motivation through that chiefs barraza"* KII 005, Programme staff, Government
Health system-supplies	
60	*"When I come to the facility with a patient wearing a badge, I will not queue and be served immediately because we are recognised."* FGD 004, CHV
61	*"…if they can be wearing some uniforms and identification badges so that we know who they are, because they are many and we can't know everybody. When they are referring a client, they should come and identify themselves to us, but some of them just come; they expect you to know them and so sometimes I may ask them who are you and what are you doing here, they become very rude"* KII 002, Nurse-midwife

Box 4.3.3 (Factors influencing service delivery)	
62	*"That is a big challenge; how to get supplies. They need materials to carry their items, but most of them are not getting those materials and even the IEC [Information Education and Communication] materials we produced got finished we didn't have other supplies. Maybe, the knowledge they have that is mostly what they are using"* KII 005, Programme staff, Government
63	*"We lack a lot of support and tools to work with, we lack those umbrellas, not all of us are having those umbrellas, we lack gumboots. Like now it is raining we find there are drainages that you are supposed to pass and you are supposed to go to that household where there is a sick child"* FGD 002, CHV
64	*"…if a facility that they are referred to, have no medicines…again there is another facility [with medicine], you find that clients prefer that than the one you are attached to, it makes us [CHVs] get discouraged"* FGD 004, CHV
65	*"…so the other is supply challenge, a CHV kit which has few supplies like gloves, weighing scale. CHVs lack some of the supplies because the government is unable to fund, to buy, replenishing becomes a challenge. In the areas where they have CHV kit is because partners have been able to buy but there have been discussions that even if partners support them to buy the kits then the link facilities should replenish them."* KII 007, Programme staff, NGO
66	*"…when you keep giving information and sometimes they have nothing to offer, it gets somewhere where you feel this person may not be useful. For a mother when a child has a fever it is not the information that I need it would be something to lower the temperature…giving paracetamols before you get to the facility to find out why the there is fever"* KII 008, Programme staff, Government
67	*"…without first aid kit, how can you give a patient first aid assistance?We have nothing; even panadol, aspirin. As you can see, so we are CHVs who have no weapons in our hands, I don't know how other groups are, we are soldiers without guns and is a challenge to us."* FGD 003, CHV
68	*"Maybe the government should put emergency kitty even in the village. So that when there is an emergency you can call for a taxi"* FGD 002, Community health committee
Health system-supervision	
69	*"I, as a CHC member, most of the time I accompany them because I am recognised and where they go they are probably not welcome because they are not known. I go and introduce them to the hospitals."* KII 001, Community health committee
70	*"…the community now knows that I am a doctor, they can see five cars came to see me do my work, they know I am not a joke, they take them seriously, so being visited they feel proud this is the boss who has come to see me how I am*

Box 4.3.3 (Factors influencing service delivery)	
	doing they feel very good," KII 003, Programme staff, NGO
71	*"Number one maybe when they want to go to the household where there is insecurity they call us so that we can accompany them.*" FGD 001, Community health committee
72	*"...if they are sometimes supervised by a community leader that gets to accompany them to see the community people because, for many of them, the community even don't trust them.*" KII 005, Programme staff, Government
73	*"...the chiefs participate in the monitoring like twice in a year supervising the CHVs. Maybe at one time they accompany them because they are respectable persons in the community, ...the community gets to trust those CHVs as they see the community leader participating."* KII 005, Programme staff, Government
74	*"The other challenge we have are the supporting partners [NGOs], they want to get hold of the volunteer and train the volunteer on what to do and then the training is not through the committee, so when that happens in a committee unit, the committee is sidelined.*" KII 001, Programme staff, Government
75	*"... but these committees have not been strengthened enough, their role is not very clear. There is a need to clarify how they should really supervise the CHVs."* KII 005, Programme staff, Government
Community-related factors	
76	*"There are some areas where if they [CHVs] go, they will find their childhood friend and it will be difficult for him to take you seriously. So if they go and advise the mother, she does not listen to them and doesn't respect their opinion"* FGD 003, Community health committee
77	*"... like the community can fail to cooperate, because of their challenges. For example, you can go to a household, they just ask you, we have our problems, we don't have food, why are you coming to tell us that we go for the services at the facility even the transport itself we cannot afford it"* KII 006, CHEW
78	*"...the CHV who came when I was seven months pregnant she didn't come back, but this one is nice, she took me to the hospital, carried the baby on the way from the hospital and she has been coming to check on us every time to know how the baby and I are doing."* KII 002, Service recipient
79	*"She [CHV] took me to the hospital during the time of delivery. That is the time that I know that the CHV has assisted me in a big way because I did not know what I would have done if I was walking to the hospital alone and when I was going to deliver by the roadside, I did not know how I was going to handle the baby and cut the cord"* KII 002, Service recipient
80	*"Labour, that is the time you need her most to help you and when you tell her I am in labour, she tells you, but you don't look like it. You don't look like you are in pain, but you are actually. The language, you know people are different,*

	Box 4.3.3 (Factors influencing service delivery)
	some may feel hurt, so they should have the etiquette of well-trained people. They should know how to talk to each and every person, it is like they are looking at the social class, if this person is well up you will help her, if this person is poor you will not help her." KII 003, Service recipient
81	*"It is the proximity and how accessible they are if a CHW is living close to us then we feel we have access to her easily or I can send my child to go and call her if they have a problem but the ones who are far they lose that contact."* KII 002, Service recipient
82	*"…and again if the in-charge of that facility is rude and does not have good manners and does not respect age, you will see the clients ignoring the facility. That makes the CHVs get discouraged."* FGD 004, Community health committee

4.4 Malawi

Box 4.4.1 (Characteristics of CHWs)	
Selection	
12	*"Living in the same catchment area is not part of the criteria for selecting the HSAs. There are no houses for the HSAs in the catchment area. These days, local leaders are advised to mobilise the community to build a house for HSAs.''* KII 001, Programme staff
13	*"It is the district that posts them irrespective of where they are coming from."* KII 003, Programme staff
14	*"I went for oral and written interviews. They consider Malawi School Certificate of Education [MSCE]."* FGD 001, HSA
Training	
15	*"We wrote exams and were given HSA certificates at the end."* FGD 001, HSA
16	*"… after that [preservice training], we attend several training such as family planning, HTC [HIV Testing and Counselling]."* FGD 002, HSA
17	*"I do assess them and recommend them for promotion from HSA to senior HSA."* KII 003, Assistant environmental health officer
18	*"A senior HSA is selected on merit due to hard work and served for more than four years and also demonstrated leadership capacity."* KII 004, Programme staff
19	*"To move from HSA to senior HSA, they just invite people to attend the interviews. The decision comes from top people in the Ministry. They just choose; we do not apply."* FGD 001, HSA
Supervision	
20	*"We do not supervise them but when we observe something incorrect we inform their supervisor."* KII 006, Nurse-midwife

Box 4.4.2 (Scope of practice in MNH care)	
Antenatal care	
6	*"We encourage pregnant women to attend antenatal clinics and send reminders on the days of antenatal clinics to all the women. If there are problems, we call the HSAs to come and help."* FGD005, Village health committee
7	*"These days there is task shifting where some are doing HIV Testing and Counselling, but they need to go for training for these extra activities."* KII 003, Programme staff

Box 4.4.2 (Scope of practice in MNH care)	
8	*"At thirty-six-week gestation, women who live far from the facility are advised to move into the facility and wait for labour to avoid delivery of babies at home or on the way to the hospital."* KII 002, Programme staff
Labour and delivery	
9	**"***We do keep records of all pregnant women in the community and do a follow up on the outcome of the pregnancies. If the woman delivers at home, we inform the village health committee and the village headman."* FGD 003, HSA
Neonatal care	
10	*"We advise the women with low birth weight babies to do kangaroo by carrying the baby in front always and we do monitor the weight"* FGD 002, HSA
11	*"They advise them to take the child to the hospital when there are bad signs such as jaundice and infected umbilical area which is oozing pus or blood. They advise women to do umbilical cleaning with a clean cloth."* FGD 004, Village health committee
12	*"They provide vaccines like polio and BCG to newborn babies."* KII 005, Programme staff
Family planning	
13	*"We give health education on the methods available. As HSAs, we only give Depo Provera, condoms and pills, other methods are found at the facility. We give these methods at village and outreach clinics. Sometimes I give the methods right there in my house because I live in the same community."* KII 003, HSA
14	*"Door-to-door is done by the Community Based Distribution Agents [CBDA]. The CBDA are volunteers who have gone for a ten-day training. They provide condoms and pills and are supervised by the HSAs."* KII 002, Programme Officer

Box 4.4.3 (Factors influencing service delivery)	
Attributes	
24	*"It was a challenge for a man to see a pregnant woman so it was difficult for a male HSAs to examine a pregnant woman."* FGD 002, HSA
25	*"Accommodation is also a problem because if there are no good houses in the community they stay in areas away from their catchment area"* KII 005, Programme staff
26	*"They need accommodation right there in the catchment area in order to help*

Box 4.4.3 (Factors influencing service delivery)	
	the community promptly." KII 004, Environmental Health Officer
Knowledge and skills	
27	*"We do much work some of which we are not qualified to do because we were not trained. e.g. for one to conduct a village clinic one has to be trained but sometimes we do these jobs without being trained properly."* FGD 002, HSA
28	*"Sometimes the people from the facility would go to a workshop on behalf of the other people without their knowledge pretending to be from these areas [hard-to-reach areas] making us miss information. In the end, the HSAs and the community will suffer."* FGD 001, HSA
29	*"It is a challenge to complete the new under-two register though we went for 2-day training. We do need refresher training."* FGD 003, HSA
30	*"…the register is difficult to complete. We do need refresher training on this new under-two register."* FGD 002, HSA
Motivating factors	
31	*"We do perform our duties out of dedication because we are not given all the supplies for us to work effectively. Every time we are told government has no money."* FGD 004, HSA
32	*"You can see that clinical officers, who are in the office are receiving the allowances without working."*FGD 001, HSA
Health system-supplies	
33	*"We need uniforms; others do not have."* FGD 003, HSA
34	*"We also need bags for carrying our materials such as books and we need raincoats and gumboots to be used during rainy season."* FGD 003, HSA
35	*"We also need raincoats and gumboots to use during rainy season. Especially at night, we need torches."* FGD 003, Village health committee
36	*"The HSAs should continue giving advice on these areas especially in the care of the child. The only thing that they do not have is the supplies because our child has not been immunised due to lack of vaccines."* FGD 001, Service recipient
37	*"As we are approaching rainy season we need mosquito nets to give to the people so that the community should appreciate our work."* FGD 002, Village health committee
38	*"…people have lost trust in health workers and did not attend to health education sessions. They complain that we give health education but do not provide them with the materials if you teach them about insecticide-treated nets they expect you to provide them with the nets afterwards."* FGD 004, HSA

Box 4.4.3 (Factors influencing service delivery)	
39	*"Another challenge is that when there is a problem in the community it takes time to inform the HSAs due to communication and transport problems."* FGD 001, Village health committee
40	"*What we want are things such as a bicycle and cell phones that would make it easy to deliver a message."* FGD 001, Village health committee
Health system-supervision	
41	*"…lack of supervision due to lack of bicycles for Senior HSAs."* KII 005, Programme staff
42	*"They have the opportunity of going for several training and they do many things which we don't know and we won't know what to supervise them on if we don't know what they were taught."* KII 006, Nurse-midwife technician
Community-related factors	
43	*"The community maternal, newborn by-laws which were formulated by the community themselves are not followed. As a result, women are still delivering at home.''* KII 001, Programme staff
44	*"Women are encouraged to give birth at the hospital, but when they go to the hospital, they find nurses who do not help them. So, the women are discouraged to go to the hospital, they choose to give birth at home. Maybe because of other problems at the hospital, women are just left unattended to."* FGD 002, Village health committee
45	*"Sometimes we meet difficult patients who don't want to listen to us, but with patience, we still encourage the patient until she accepts to go to the hospital."* FGD 003, Village health committee

4.5 Nigeria

Box 4.5.1 (Characteristics of CHWs)	
Training	
12	*"With that five credits, then you can go for CHEW direct, but if one lacks any of the subjects, maybe you have a pass in chemistry, physics, they will not give you CHEW, they will give you JCHEW. JCHEW is two years; CHEW is three years."* FGD 001, JCHEW
Supplies	
13	*"The L.G.A [Local Government Area Council] purchase their drugs. The primary healthcare agency is just to give them the guideline saying these are the types of drugs that should be provided. Then the agency goes there and check, is it there?"*KII 004, Programme staff, Regulatory agency
14	*"When clients come, patients come, they pay highly subsidised rates for those drugs that are used to recycle or to replenish their stock."* KII 001, Programme staff, Regulatory agency
Supervision	
15	*"They [Ward Development Committee] normally come and see how we are doing in the clinic...about the drug revolving fund, they normally come and see how the pharmacy is moving or how we are dealing with the patients."* KII 008, CHEW
16	*"Most of the supervisory visits are by NGOs and sometimes by the M & E unit of the local government area. Sometimes they tell us, other time, they just come"* KII 001, CHEW

Box 4.5.2: Scope of practice in MNH care	
Antenatal care	
8	*"The only thing that they will ask us to do is just to measure the pregnancy, to feel the heartbeat of the foetus, to take the BP, weight and all the small, small things."* KII 006, JCHEW
9	*"they give talks on antenatal care and they administer the tetanus injection to them as well. They give haematinics for the antenatal care. And general care for them, nutrition and whatever and even monitoring, their weight monitoring, blood pressure and some basic investigations they are able to send to various and reputable laboratories where they are able to interpret those results. If they think such a woman requires further care, they will send to the appropriate centre."* KII 007, Local government

	Box 4.5.2: Scope of practice in MNH care
10	*"Like a pregnant woman, I give TT [Tetanus toxoid], I book the clients, give a card and then I check the vital signs... Then take history with them, we observe them even by walking…the one that will be at risk…, send them for PCV check, urinalysis. Then after, if we do palpation we know the presentation. Sometimes we send them for an ultrasound scan. We send them for urinalysis whether there is sugar or protein in the urine so that you know how to monitor them, you know the one that is at risk that you need to refer."* KII 002, CHEW
11	*"...but something like maybe routine drugs and other drugs, we don't have. What we have in that aspect is mosquito net. That is the truth. After immunisation, she is entitled to mosquito net, because of malaria."* KII 001, CHEW
12	*"When the pregnancy is about 5-6 months, they [CHWs] examine them [delivery pack], if they're all intact, they tell them that when you are coming for delivery, you come with it."* FGD 001, Ward Development Committee member
	Labour and delivery
13	*"...sometimes I conduct deliveries, but when my senior colleagues are there."* KII 002, JCHEW
14	*"We make sure there is no pain or bleeding after delivery. Retained products are thoroughly checked and removed and make sure the placenta is not retained. Then make sure you pack the uterus."* KII 004, CHEW
15	*"You know partogram now is being included in their curriculum because before they are not doing the partogram. So now in their training, they will be taught how to use the partogram, so that they will be monitoring the client during delivery"* KII 009, Programme staff, Regulatory Agency.
	Postnatal care
16	*"A woman who registers for antenatal care, if she delivers they follow her up at home. They go and see how she is doing, she and the baby. They try to identify the silent problems that she may not be able to recognise; the danger signs. If they notice it, they will now come to the health centre where a CHEW will now refer them to the public healthcare centre."* KII 003, Programme staff, Regulatory Agency
17	*"When they go to houses in the rural area, what I see them do very well is immunisation, that is what they concentrate on mostly."* KII 001, Ward Development Committee member
	Neonatal care
18	*"...like kangaroo mother care, immediately the baby is delivered, the baby is attached to the mother because the baby wants to be warm all the time."* KII 004, CHEW

Box 4.5.2: Scope of practice in MNH care	
19	*"Sometimes they [nursing mothers] don't know how to give breast to their babies, to attach them and position them, so we tell them what to do."* KII 003, JCHEW
20	*"They gave the immunisation to the babies here at home and they brought her gifts and other things."* FGD 001, Service recipient
21	*"We educate them to take care of the cord of the baby."* KII 003, JCHEW
22	*"I give them the health talk on HIV to the HIV mothers, we refer for the test."* KII 008, CHEW
Family planning	
23	*"The only one we provide is that of the injectable and pills. Also, emergency oral contraceptives."* KII 004, CHEW

Box 4.5.3 (Factors influencing service delivery)	
Attributes	
29	*"So, what I am saying, in a nutshell, is that this language barrier and religion is one and even the climate, so most of them [CHWs] cannot even stay"* KII 003, Programme staff, Regulatory agency
Knowledge and skills	
30	*"If you are providing services and you update, maybe there is a training that comes up and you can go for the training, that may make you carry on the skill well."* KII 002, CHEW
31	*"Because they are not so many in the facility, when the programmes want to do training, or they want to provide an update on what to do, it is only one person they keep inviting. That person is the one to go for the modified life-saving scheme or health education or IMCI [Integrated Management of Childhood Illnesses] or HIV or other programmes. They don't even have time to come back and implement what they have learned."* KII 004, Programme staff, Regulatory agency
32	*"I think for the past two or three years, no one has gone for any training in this facility when training comes, they [government] will pick whom they want to send for the training and they leave others especially remote places."* KII 003, Nurse-midwife
33	*"The nursing and midwifery council should be able to design, maybe a six-month midwifery programme for community health workers to be trained properly as midwives"* KII 005, Programme staff, Regulatory agency
Motivating factors	
34	*"Because almost everything is free here, especially the family planning. I am happy and the patients are happy too. At least, the patient can come to the*

	Box 4.5.3 (Factors influencing service delivery)
	clinic without paying anything." KII 009, JCHEW
35	*"You are happy because people will be happy with you when you render the service and they also have confidence in you so that at any time they knock at your door in the field."* KII 006, JCHEW
36	*"Since they pay us salary, we don't have any reason for not going to work. So, I think with that, somebody has to be in his duty post."* KII 001, CHEW
37	*"After the training, they will give you something that will encourage you, like cash."* KII 003, JCHEW
38	*"Every day, I will be praying to God to help me, because my suffering is too much. Working without salary is not easy. Sometimes if I don't have transportation money, I will not be able to come."* FGD, JCHEW (Volunteer)
39	*"They are giving us transportation allowance, end of the month they are giving us 3,000 naira and is that payment? The money is not up to my transportation cost."* FGD, JCHEW (Volunteer)
	Support-human resources
40	*"… because the manpower requirements for the delivery of primary healthcare services in Nigeria is very poor.So, because of that, they are taking up new roles and instead of just working in the community, we find them more in the facility, providing curative services whereas they are supposed to be providing preventive service if they are in the community"* KII 001, Programme staff, Regulatory agency
41	*"At the same time referral of patients, most people feel when you refer a patient you are not competent"* KII 009, Programme staff, Local government
42	*"…there is a need for assistance, like to get more nurses, a resident doctor that will be permanent that would stay overnight attending to patients. When you come with your illness to see the doctor, you are told to go to the general hospital [Secondary health facility], that is how you see them sending people away to other places. We will appreciate receiving care within our locality"* KII 002, Service recipient
43	*"You know that majority of them when they come, they want to do everything, even more than what they are supposed to do, they want to be like a doctor"* KII 004, Programme staff, Regulatory agency
44	*"…sort of a professional wrangling, whereby a midwife is saying that CHEWs cannot receive delivery…like in Jigawa they may need 300 midwives, but Jigawa cannot produce ten midwives, can we allow patients to continue dying?"* KII 009, Programme staff, Regulatory agency
	Health system-supplies
45	*"… to go for supervision, you need logistics, you need cash to fuel the vehicles. Most of our primary healthcare centres are down into villages, hard-*

	Box 4.5.3 (Factors influencing service delivery)
	to-reach areas, you understand" KII 003, Programme staff, Regulatory agency
46	*"They can't do it, they don't have logistics to go there, the small money they have can't pay for a motorcycle to take them to the far villages and then they lack the needed materials"* KII 004, Programme staff, Regulatory agency
47	*"So, the means of getting these patients there [referral centre] may not be easy to get: if you're talking about the ambulance, you will not find an ambulance in every health facility"* KII 001, Programme staff, Regulatory agency
48	*"They do a home visit, in fact, they do go for outreaches when they [government] pay for it, but now government don't pay transportation allowance and other things, so maybe once a while we go for the outreach"* KII 003, Nurse-midwife
49	*"I have never heard of CHWs going from house-to-house talking about family planning or administering it."* FGD 001, Service recipient
50	*"Nigeria should have a basket for partners. Partners that want to support Nigeria should come together on a roundtable and say where and what they want to help out in. A lot of times you'll see two partners being in one state when the next state near them is not having the support of any partner at all."* KII 002, Programme staff, Regulatory agency
51	*"We don't have water in our facility and most of these activities we need water."* KII 004, CHEW
52	*"The challenge of drugs, electricity supply and the rest, because in the event of labour, if you come here, you will be referred there, no matter how late, that was why I started receiving care elsewhere."* FGD 001, Service recipient
53	*"I used my own money to buy suture. Although nobody forced me, but I cannot just send the person away. Because by tomorrow if she sees me outside she will look at me as if I am not competent."* KII 002, CHEW
54	*"…even if you want to examine you need to expose the children in the immunisation hall…when the weather is cold, exposing children and weighing them in that hall is not comfortable, we need an office that is covered."* FGD 001, CHEW
55	*"…like the ultrasound scan for pregnant women which causes them to refer to other facilities and major drugs so that we don't have to go and buy from outside. The ones prescribed are not available here; we would like them to be available here"* KII 003, Service recipient
56	*"They must have accommodation. If they have their accommodation they will stay in the community"* KII 003, Programme staff, Regulatory agency
	Community-related factors
57	*"At times, even with the town announcer, they will announce that they should come out for immunisation of their children, we will go and talk to them, they will not come out…some of them are saying that we are giving their children*

	Box 4.5.3 (Factors influencing service delivery)
	family planning [sterilisation through vaccination]. So, for that, they will not take" KII 006, JCHEW
58	*"We give them health talks; many people are still delivering at home."* KII 001, CHEW
59	*"We have to encourage the husbands to give her some money for delivery in the hospital. You know some of them they don't believe coming to the hospital for anything; they will rather do this traditional birth attendant."* FGD 002, WDC member
60	*"If you don't ask them to show you whether they have duly prepared for this delivery, they just bring themselves for delivery without materials for delivery. You know most of these deliveries; they come in the midnight. Where do you want to get anything to use for her?"* FGD 002, Ward Development Committee member
61	*"…they used to give us something we call mama kits for delivery. Anytime they come for labour we just pick them [mama kit] and use it for them. And if there are remaining ones [items in the mama kit] we give them, they will continue using them in their houses. But these days the programme has worn off. Most of the women, when they come, they don't have the means of buying such things. Handling labour without these supplies is very difficult, if they don't have the means, they may decide to deliver at home using whatever means that they have."* KII 005, CHEW
62	*"Most states will say they are doing free health service delivery, you go to the state, you won't see any drug."* KII 006, Programme staff, Regulatory agency