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Working with Non-State Providers in Post-Conflict & Fragile States in Primary Healthcare Service Delivery

A Systematic Review, August 2017

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Picture

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SYSTEMATIC REVIEW SUMMARY

INTRODUCTION

The state may be more or less directly involved in catering for the health needs of its citizens as follows:

a) Full provision of healthcare by the state including delivery of services to the citizenry
b) Partial provision of healthcare mainly by the state, blended with competition and choice of health services from non-state providers
c) Partial provision via contracting non-state providers to deliver certain aspects of healthcare and support inputs to what the state is providing
d) Complete healthcare provision by a non-state sector within agreed standards, regulations and policy frameworks or because the state is completely unable (failed state).

The scope of primary health services provided by the non-state sector includes preventive (e.g. promoting use of and distributing mosquito nets; nutritional counselling) or curative (e.g. providing treatment for common illnesses) or restorative (e.g. rehabilitative services such as physiotherapy); and can include traditional (e.g. traditional birth attendance) or modern (e.g. skilled birth attendance in health facilities) practices.

This review identifies existing evidence on strategies for how governments of post-conflict and fragile states can effectively engage non-state providers, with a view to strengthening health systems and improving health outcomes. We sought to answer the following research questions:

a) How effective are different approaches of engaging with non-state providers in improving the delivery of primary healthcare in fragile, conflict or post–conflict settings?
b) What is the impact of non-state actors' delivery of primary healthcare in fragile, conflict or post-conflict settings?

This review identifies both what the available evidence can tell us, and what gaps there are in the evidence base. This summary provides an overview of the key evidence synthesised in the systematic review. The evidence is deeply contextual and this brief provides a broad overview. It is not designed to provide advice on which interventions are more or less appropriate in particular contexts but summarises what is known about the effects of interventions.

SUMMARY CONCLUSIONS

High quality evidence from post-conflict and fragile states supports working with non-state providers in primary healthcare service delivery in the following ways:

- Community empowerment (involving communities in taking the lead in planning, implementing and or monitoring health services) – to increase service quality, use and satisfaction; and to reduce neonatal and child mortality, but not stillbirth; and to reduce morbidity
- Community health insurance – to increase utilization of modern health services and reduce catastrophic expenditure
- Pay for performance – to improve satisfaction and quality of care (although low quality evidence raises concerns about how this is achieved)
- Training traditional birth attendants (TBA) – to reduce perinatal and infant mortality

Moderate quality evidence supports:

- Contracting out to non-state actors – to increase service use
- Social franchising – to improve the availability, use and cost-effectiveness of primary care services
- Community empowerment – as a cost-effective strategy that strengthens the coverage and capacity of health that facilitates and enables communities to deliver primary care services
- Accreditation and regulation – to improve the quality of service delivery, and raise satisfaction levels with health services
- Training traditional birth attendants – to increase capacity for TBAs to provide antenatal, postnatal and other primary healthcare services

OUTLINE OF THE EVIDENCE

A total of 402 studies were included in the map of evidence addressing working with non-state providers in post-conflict and fragile states in primary healthcare service delivery. The majority of the studies were about non-state actors' activities in Africa (51%), Asia and the Pacific (39%) with less literature from South America (4%) and Europe (2%). The remainder covered other or multiple areas. In Africa, studies were focused on primary healthcare in Nigeria; private sector involvement in Kenya; and on innovative health financing strategies in Rwanda. The studies included in Asia were Afghanistan, Bangladesh, Nepal, Iran and Lao People's Democratic Republic. Studies about contracting out of health services to non-governmental organisations were mainly from experiences in Afghanistan; with studies about a major local non-governmental organisation activity from Bangladesh (BRAC). Overall, the majority of the studies employed quantitative designs to assess impact (64%), with fewer studies using qualitative approaches, such as case studies or descriptive accounts of non-state actors providing primary healthcare in post-conflict states. Only a small number of studies employed a mixed methods design (7%).

Of these 402 studies, 107 studies reported the effects of 10 interventions (see Table 1). Conclusions about what works, and the confidence that can be placed in these conclusions, are summarised in Table 2.

Table 1 Scale of literature

Type of intervention	Number of studies
Government and management	
Contracting out health services: engagement via governance, financing or informal sector arrangements	12
Social franchising: propagating a health product or model according to pre-specified standards	11
Public-private partnerships: partnering the private sector to deliver public health services	16
Community empowerment: involving the community in taking the lead in planning, implementing and or monitoring of health services	11
Accreditation/regulation: public recognition, implementation and monitoring of pre-agreed standards or guidelines	3
Health financing arrangements	
Community health insurance: local communities pool resources for healthcare	23
Private health insurance: commercial schemes for healthcare by employers or private individuals	3
Pay for performance: incentives given to healthcare workers or institutions tagged on results	8
Microcredit schemes: soft loans extended to health service providers to extend specific services such as family planning	6
Engaging the informal sector	
Training for traditional birth attendants: training and supervising attendants	14

Table 2 Summary of findings

Intervention	What do we know about what works? [What confidence can we place in the evidence?]
Contracting out to non-state actors	• Improved utilization of health services (increased visits for family planning, antenatal care, delivery, immunization, oral rehydration salts use in diarrhoea and general out-patient care). [**Moderate** confidence] • Improved the following outcomes: illness; perceived quality; coverage; equitable access of the primary healthcare services; capacity of government health units to manage or monitor contracts; and reduced family expenditure on health. [**Low** confidence] • It is not clear if it actually saves lives. [**Very low** confidence]
Social franchising	• Improved the availability, use and cost effectiveness of primary care services. [**Moderate** confidence] • Improved the quality of family planning services. [**Low** confidence] • Increased access to poorer groups or those in need of specific health services for example youth and contraceptive services. [**Very low** confidence] • No studies reported the direct effect of social franchising on death or illness. [**Very low** confidence]
Public-private partnership	• Improved the use of services. Where such partnerships are used for the management of tuberculosis, they lead to improved diagnosis, more successful treatment and increased private doctors' knowledge of tuberculosis management. [**Low** confidence] • It is not clear whether they reduce mortality rates. [**Very low** confidence] • These partnerships generally lead to an increase in the cost of treatments. [**Very low** confidence]
Community empowerment	• Reduced neonatal and child mortality. [**High** confidence] • It increases the use of primary care services, as well as the quality of care. [**High** confidence] • It is a cost-effective strategy that strengthens the capacity of health and facilitates and enables communities to deliver primary care services. [**Moderate** confidence] • The evidence on maternal deaths is low. [**Low** confidence]

Intervention	What do we know about what works? [What confidence can we place in the evidence?]
Accreditation and regulation	• Accreditation improves the quality of service delivery by reducing errors in the dispensing of medicines. [**Moderate** confidence] • Healthcare users are more satisfied with health services that are accredited. [**Moderate** confidence] • There are costs associated with accrediting hospitals. [**Low** confidence]
Community health insurance	• Increased use of health services [**High** confidence] • Reduced catastrophic expenditure on health. [**High** confidence] • Reduced out of pocket payments. [**Low** confidence] • The effect on quality of services, satisfaction, equitable access to health services is unclear. [**Low** confidence] • Studies were too small to detect any effects on death. [**Very low** confidence]
Pay for performance schemes	• Improved satisfaction and quality of care. [**High** confidence] • Increasing coverage, capacity building and nursing workforce; increased utilisation and reduced out of pocket costs. [**Low** confidence] • The only study reporting death (neonatal mortality) was too small to detect a significant effect of pay for performance, and no study reported the effect on illness. [**Very low** confidence]
Microcredit incentives or loans	• Increased utilisation and quality of care. [**Low** confidence] • Enhanced opportunities for building knowledge and skills. [**Very low** confidence] • Reduced infant mortality and improved use of treatments for diarrhoeal diseases. [**Very low** confidence]
Private insurance schemes	• Increased rates of readmission leading to longer hospital stays and higher daily charges. [**Low** confidence] • It is not clear whether it reduces or increases catastrophic costs. [**Very low** confidence]

Intervention	What do we know about what works? [What confidence can we place in the evidence?]
Training for traditional birth attendants	• Training TBAs reduced perinatal and infant mortality. [**High** confidence] • Training TBAs raised referrals for convulsions. [**Moderate** confidence] • Quality of care was measured in various ways, all in studies of weak quality. [**Low** confidence]

SYSTEMATIC REVIEW APPROACH

To conduct this review, we searched key electronic databases and grey literature, contacted key informants and scanned relevant websites for additional papers. Experimental and quasi-experimental studies were included if they were published after 1990 and evaluated the impact of interventions seeking to improve primary healthcare outcomes, and were delivered by non-state actors in primary health facilities or communities in post-conflict and fragile states. We systematically screened 7,946 titles and abstracts before selecting 107 full texts to inform the evidence on impacts. We conducted a two-stage review in which we first mapped the nature of the available evidence then synthesised the evidence on impacts of engaging non-state actors. We categorised this synthesis into arrangements for governance in the health sector, health financing as the key pillars of health systems strengthening described by the World Health Organisation; and training traditional birth attendants. We assessed the risk of bias of each primary study and used the GRADE approach for assessing the overall quality of evidence.

RESEARCH GAPS

Research focus on improving quality of evidence: Although there is a growing body of evidence on the impact of interventions measuring health outcomes delivered by non-state actors in post-conflict and fragile states, the overall quality of this evidence is low to moderate. There is a need for more high quality studies across all areas covered in this review including randomised trials or other robust experimental or quasi-experimental designs. In particular, future studies should pay attention to the time of follow-up, particularly implementation research.

Research focus on improving what is measured and is meaningful for decision-making: Few studies considered death or illness as the primary outcome yet this is crucial in assessing health impact at population level. Further, data on cost-effectiveness to support health outcomes was often lacking across the board.

We have identified specific areas for further inquiry within each intervention reviewed in the respective sections of chapter 3. A shortlist of areas for inquiry include: (a) assessing the cost-effectiveness of community empowerment, contracting out, community insurance schemes and public-private partnership; (b) impact evaluation of social franchising, accreditation and regulation and private health insurance schemes on the primary outcomes of morbidity and mortality; (c) equity implications of pay for performance schemes, accreditation/regulation, traditional birth attendance.

CONTENTS

1 BACKGROUND

1.1 INTRODUCTION

This systematic review has been prepared in response to a question asked by policy and decision makers in the United Kingdom Department for International Development (DFID). The methods used were pre–specified in a published protocol and followed internationally accepted guidelines (Obuku et al., 2014). This review assesses how non-state actors can be engaged to provide primary healthcare in fragile, conflict or post-conflict states. It includes key findings from research and considerations about the relevance of this research for health system decisions concerning engagement of non-state actors in delivering primary healthcare in post-conflict and fragile states.

Clearly, fragile states have weak governments and insecurity due to conflict or poverty and may not provide the required infrastructure to effectively implement some of the interventions in this review. On the one hand, using a community scorecard (community participation or involvement) that has shown positive impact with a high quality of evidence may not be possible in mobile populations such as refugees. This intervention requires frequent organised meetings by elected community members and health facility staff which may not be possible during times of war. On the other hand, certain historical institutions are useful even when states are peaceful but lack the capacity for healthcare provision. An example is traditional birth attendants (TBAs), who are equipped, skilled and supervised to reduce maternal and perinatal deaths.

1.2 AIMS AND RATIONALE FOR REVIEW

Governments in low- and middle-income countries (LMICs) cannot be viewed as the sole or even principal providers of social services including healthcare (Basu et al., 2012; Palmer et al., 2003). The non-state sector has increasingly covered this gap and expanded options for health service delivery in post-conflict and fragile states. In fact previous studies have shown that the poorest are more likely to use non-state health service providers (Hanson et al., 2008).

It is noteworthy that in fragile countries there is limited coordination and regulation of the non-state health service providers, a situation characterised by fragmentation and parallel systems (Batley & Mcloughlin, 2010). Consequently, governments and donors are faced with uncertainties about how to optimally deploy their limited capacity for engagement with non-state actors (Bennet et al., 2005). This uncertainty is heightened by the lack of synthesised research evidence about the effective ways to work with non-state providers to deliver primary healthcare in post-conflict and fragile states. Our report provides a systematic review of empirical evidence about interventions governments of post-conflict and fragile states can employ to engage the non-state providers with a view to strengthening health systems and improving health outcomes.

AIMS AND OBJECTIVES

The purpose of this review is to summarise the research literature about the types, effects and impact of non-state actors in the delivery of primary healthcare in fragile, conflict or post-conflict states. Specifically we sought to answer the following research questions:

a) How effective are different approaches of engaging with non-state providers in improving the delivery of primary healthcare in fragile, conflict or post–conflict settings?
b) What is the impact of non-state actors' delivery of primary healthcare in fragile, conflict or post-conflict settings?

PRIMARY OBJECTIVE

To describe the types and to determine the effects of different approaches of engaging with non-state providers in improving the delivery of primary healthcare in fragile, conflict or post-conflict settings.

SECONDARY OBJECTIVE

To assess the impact of non-state actors in delivery of primary healthcare in fragile, conflict or post-conflict settings.

This review was driven by a protocol we developed *a priori* and published on the DFID Research for Development website (Obuku et al., 2014). Below is an outline of these methods. The protocol is accessible here: http://r4d.dfid.gov.uk/SystematicReviews.aspx#Health and Nutrition.

DEFINITION OF TERMS AND CONCEPTS

FRAGILE AND POST-CONFLICT STATES

There is no consensus on the definition of a fragile state. In this review we use the definition by DFID which refers to fragile states as: 'those where the government cannot or will not deliver core functions to the majority of its people, including the poor' (DFID, 2005). This definition captures even those states that have never experienced conflict and yet have weak government capacity to provide security and social services to their citizenry.

The International Development Association (IDA) defines post-conflict states in terms of the intensity and duration of the conflict causing a disruption, a decline or total halt in borrowing from the IDA, for example Iraq; or a newly created sovereign state that has emerged through the violent break-up of a former sovereign entity, for example South Sudan or East Timor (IDA, 2014). Consequently we included 70 countries in this report (see Table 1.1), the majority of which were in sub-Saharan Africa (56%).

Generally, fragile and post–conflict states lack the capacity to mobilise resources for key objectives, are unable to exercise political power, exert territorial control, manage their

economies and implement national policies (Batley & Mcloughlin, 2010). However, fragility and post- conflict situations are not static (Messner et al., 2015). Rather, situations are characterised by transition from more fragile to less fragile states or as the conflicts improve or worsen over time.

Table 1.1 Fragile and post-conflict states searched for by geographical region

Africa (n=39)		
Angola	Equatorial Guinea	Nigeria
Burkina Faso	Ghana*	Republic of the Congo
Burundi	Guinea	Rwanda
Cameroon	Guinea Bissau	Sao Tome and Principe
Central Africa Republic	Kenya	Sierra Leone
Chad (Tchad)	Liberia	Somalia
Comoros	Libya	South Sudan
Cote d'Ivoire (Ivory Coast)	Madagascar	Sudan
Democratic Republic of Congo	Malawi	Tanzania*
Djibouti	Mali	Togo
Egypt	Mauritania	Uganda
Eritrea	Mozambique	Zambia
Ethiopia	Niger	Zimbabwe
Asia, Caribbean and the Pacific (n=26)		
Afghanistan	Iraq	Solomon Islands
Bangladesh	Kiribati	Sri Lanka
Bhutan	Lao PDR (Laos)	Syria
Burma (Myanmar)	Lebanon	Tajikistan
Cambodia	Marshall Islands	Papua New Guinea
East Timor (Timor Leste)	Micronesia	Uzbekistan
Gaza & The West Bank (Palestine)	Nepal	Yemen
Haiti	North Korea (Korea, DPR)	Vanuatu
Iran	Pakistan	
South America and Europe (n=5)		
Colombia	Georgia	Kosovo
Bosnia and Herzegovina	Guatemala	

**Included later when the DFID priority country list was reviewed.*

THE NON–STATE HEALTH SECTOR

According to Palmer and colleagues, non-state service providers are "...all providers who exist outside the public sector..." As such, the non-state providers are not exclusively employees or agencies of the state (Palmer et al., 2006, page 3 - 4). However it is important to note that the blurring of the boundaries between state and non-state may be extremely complex (Mills et al., 2002). This problem is compounded in fragile and post-conflict states where regulatory and policy environments are severely weakened.

Common examples of non-state providers are: individual providers including formal health professionals (medical doctors, nurses, midwives or paramedics) or traditional practitioners (birth attendants, healers, bone setters, spirituals); organisations such as non-governmental or community or faith based organisations; universities or commercial companies. Various terms used to describe the non–state providers include private sector, private not for profit or informal sector (Palmer, 2006). The health services provided by the non-state sector are preventive (e.g. promoting use of and distributing mosquito nets; nutritional counselling) or curative (e.g. providing treatment for common illnesses) or restorative (e.g. rehabilitative services such as physiotherapy); and can be traditional (e.g. traditional birth attendance) or modern (e.g. skilled birth attendance in health facilities) practices.

A key feature to consider here is the dual role formal health sector workers can play in the provision of primary healthcare services. Formal health sector workers often seek dual employment to supplement their income (Kiwanuka et al., 2011; Rutebemberwa et al., 2014). For example, clinicians in fragile states will more often than not own private practices or work in private for profit or not-for profit facilities.

LEVELS OF ENGAGEMENT WITH NON-STATE ACTORS

The extent to which the state is involved in provision of health service delivery varies with the context of fragility and post-conflict status (Batley & Mcloughlin, 2010). The state may be more or less directly involved in catering for the health needs of its citizens as follows:

a) Full provision of healthcare by the state including delivery of services to the citizenry
b) Partial provision of healthcare mainly by the state, blended with competition and choice of health services from non-state providers
c) Partial provision via contracting non-state providers to deliver certain aspects of healthcare and support inputs to what the state is providing
d) Complete healthcare provision by a non-state sector within agreed standards, regulations and policy frameworks or because the state is completely unable (failed state).

More often than not the line of distinction between these models is unclear. Hence in this review we have considered non-state actors operating at the various levels (b), (c) and (d).

PRIMARY HEALTHCARE

In this report we have adopted the concepts of the Alma Ata Declaration of 1978 (World Health Assembly, 1978; pages 430-432), whose ultimate goal of primary healthcare (PHC) is better health for the entire population. That:

“Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community...It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.”

The spectrum of primary healthcare encompasses health promotion, prevention, diagnostic, curative, and rehabilitation and palliative services. Typically health systems in low and middle income countries are organised such that primary healthcare is provided in the community or peripheral health facility with secondary and tertiary healthcare sought in district, regional and national referral hospitals (Kruk et al., 2010).

The underpinning values of primary healthcare are universal access, equity, participation and inter-sectoral collaboration. Indeed in the past, attaining primary healthcare was almost always an exclusive preoccupation of the health service providers in the public sector, with total disregard of the non-state actors.

A key feature of primary healthcare in more recent years is universal health coverage (Hsieh et al., 2015; Sambo & Kirigia, 2014). Universal health coverage is defined as access to key promotive, preventive, curative and rehabilitative health interventions of sufficient quality by all those who need it and at an affordable cost, thereby achieving equity in access. The three key features defining the universal health coverage are:

- Financial-risk protection: To ensure that citizens accessing primary healthcare do not experience catastrophic costs and impoverishment.
- Equity: That those in need of health services should get them, not only those who can pay for them. This calls for engaging all stakeholders providing primary healthcare particularly non-state actors.
- Quality health services: To ensure that the health services provided are good enough and effective to improve the health of those receiving services.

Universal health coverage is a deliberate response to the growing inequity in the distribution of primary healthcare benefits. Global populations increasingly find it difficult to pay for healthcare or are increasingly impoverished by healthcare expenses (Ashorn et al., 2000). Therefore, we posit that universal health coverage is an attempt to reprioritize primary healthcare with specific attention to equity of health service distribution (Hsieh et al., 2015; Sambo & Kirigia, 2014).

POLICY AND PRACTICE BACKGROUND

Global inequity in accessing healthcare continues to worsen despite massive investments in the health sector. Although the Alma Ata Declaration identified primary healthcare as the key to the attainment of the goal of “Health for All” by the year 2000, this significant milestone was not realised (Ashorn et al., 2000; Rathwell, 1992). Consequently in the year 2000 the global leadership realigned itself and embraced the Millennium Development Goals (MDGs), with various health-related targets to be achieved in the year 2015. A significant majority of the LMICs that constitute the fragile and post-conflict states in sub-Saharan Africa and some Southeast Asian countries are yet to attain the MDGs, with high maternal and child mortality rates. In contrast, all regions, with the exception of sub-Saharan Africa and Oceania, have reduced their under-five mortality rate by more than half since 2000 (UNAIDS, 2015; United Nations Economic Commission for Africa, 2014; World Health Organization, 2014). Importantly, 34 of the 54 countries (63%) classified as least developed countries are in Africa (United Nations Economic Commission for Africa, 2014) and

specifically 44 out of 66 (67%) fragile and post-conflict states included in this systematic review are in Africa. This performance (Table 1.2) is likely driven by the disproportionate burden of poverty and disease, and of post-conflict governments in Africa; which if targeted by specific interventions provides significant promise of reversal (World Health Organization, 2015).

Table 1.2 Performance indicators on Millennium Development Goals (1990 – 2015)

Millennium Development Goals (Health related)		Target on track	
		World (%)	Africa (%)
1.c	Nutrition: reduce hunger by 50%	No (-39)	No (-24)
4.a	Child health: reduce child mortality by 66% (<5 year olds)	No (-50)	No (-45)
5.a	Maternal Health: reduce maternal mortality by 75%	No (-45)	No (-48)
5.b	Maternal Health: universal access to reproductive health	No (69)	No (53)
6.a	HIV/AIDS: halt and begin to reverse the spread	Yes (-44)[§]	Yes (-48)[§]
6.b	HIV/AIDS: universal access to antiretroviral treatment	No (41)	No (41)
6.c	Malaria: halt and begin to reverse the incidence	Yes (-42)[§]	Yes (-31)[§]
6.c	Tuberculosis: halt and begin to reverse the incidence	Yes (-1.5)[§]	No (+16)

Sources: World Health Statistics 2013; Millennium Development Goals Report 2014; UNAIDS 2015 How AIDS changed everything, fact sheet MDG 6: 15 years, 15 lessons of hope from the AIDS response

[§] The decline in new HIV infections between 2001 and 2012 globally, in Southern and Central Africa (highest burden) was 44%, 48% and 54% respectively; tuberculosis incidence has reduced by 1.5% per year since 2000 – 2013; TB incidence in Africa increased by an average of 16% between 1990 and 2011. Noteworthy, in the past decade there has been a rise in both non-communicable diseases and global conflict, with the potential of a negative impact on any previous health-related gains (on infectious diseases) made in these fragile and post-conflict states.

The Sustainable Development Goals (SDGs) are the new aspirations being set by the global community to guide the post – 2015 development agenda (World Health Organization, 2015). The SDGs have three health-related goals that build on the MDGs (Table 1.3). With the renewed focus on SDGs and the concept of universal health coverage, decision-makers are looking towards reforms in the health sector that can produce greater access, quality, efficiency and equity of health services, particularly in post-conflict states (Tangcharoensathien et al., 2015). As a result, global development actors and governments are paying increasing attention to engaging non–state actors to deliver social services in fragile and post-conflict states including primary healthcare (Olafsdottir et al., 2014; Sambo & Kirigia, 2011).

Table 1.3 Health related Sustainable Development Goals (2015 and beyond)

Sustainable Development Goal (Health related)	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
3	Ensure healthy lives and promote well-being for all at all ages
6	Ensure availability and sustainable management of water and sanitation for all

Source: United Nations Sustainable Development Goals Knowledge Platform, 2015

RESEARCH BACKGROUND

Research evidence shows that non-state actors make significant contributions to providing primary healthcare. A study by Palmer and colleagues documented total health expenditure contributions of 65% to 75% by private sector expenditure in Bangladesh, Malawi, Nigeria and Pakistan (Palmer, 2006). In this same study, 42% to nearly 100% of private expenditure was out of pocket. In terms of health facility operations, by 2005 there were 159 hospitals in Nairobi of which 79 (50.6%) were either private-for-profit or run by faith-based organisations (Chakaya et al., 2008). Further, in some urban centres in Asia the non-state health sector provide up to 80% of tuberculosis services (Lonnroth et al., 2007). In Nigeria, traditional and religious healers were the first contact for the majority (69%) of mental health patients (Adeosun et al., 2013). It is therefore imperative that governments and international agencies engage non-state actors, the interventions of which require supporting scientific research evidence as assessed in this review.

DESCRIPTION OF THE INTERVENTIONS UNDER REVIEW

Governments and aid agencies have three major areas for engaging non-state health service providers. These are governance arrangements, financing arrangements and through training (Bennet et al., 2005); and together with end user engagements we prioritised these three areas in our systematic review. Table 1.4 maps several systematic reviews examining various aspects of primary healthcare delivery in LMICs with an emphasis on governance and financing arrangements. We used these existing reviews to guide targeted searching. Nonetheless, hardly any robust empirical evidence syntheses exist focusing on non-state actors' delivery of primary healthcare in fragile and post–conflict states. Based on initial scoping, further evidence gaps exist with a lack of systematic reviews addressing key governance arrangements such as accreditation and regulation or health financing strategies such as health equity funds, which are crucial in improving the distribution of health resources and benefits.

Table 1.4 Peer reviewed evidence syntheses about strategies to deliver primary healthcare in low- and middle-income countries

Health systems pillar	Review topic focus and systematic review references	* Existing systematic reviews
Governance, leadership and stewardship	***Accreditation or Regulation*:** (Patouillard, Goodman, Hanson, & Mills, 2007)	1
	***Community empowerment*:** (Marstonet al., 2013; Moore et al., 2014; Prost et al., 2013; Soubeiga et al., 2014)	4
	***Contracting out*:** (Lagarde & Palmer, 2009; Liu et al., 2008; Loevinsohn & Harding, 2004)	3
	***Social franchising*:** (Beyeler et al., 2013; Koehlmoos et al. 2011; Koehlmoos et al., 2009; Nijmeijer et al., 2014; Patouillard et al., 2007; Peters et al., 2004)	5
	***Public private partnership*:** (Lei et al., 2015; Marasini et al., 2015)	2
	Governance interventions: (Patouillard et al., 2007; Peters et al., 2009; Peters et al., 2004)	3
Health financing	***Microfinance loans*:** (Bassani et al., 2013; Leatherman et al., 2012; Saha & Annear, 2014)	3
	***Community health insurance schemes*:** (Acharya et al., 2012; Acharya et al., 2013; Adebayo et al., 2015; Comfort et al., 2013; Ekman, 2004; Escobar et al., 2010; Robyn et al., 2013; Spaan et al., 2012)	8
	***Performance based financing*:** (Ogundeji, 2015; Oxman & Fretheim, 2009a, 2009b; Witter et al., 2012)	3
	***User fees/out of pocket payments*:** (Dzakpasu et al., 2014; Lagarde & Palmer, 2008, 2011)	3
	Private health insurance schemes: (None)	0
Informal health services	***Training traditional birth attendants:*** (Byrne & Morgan, 2011; J. Hussein et al., 2012; Kidney et al., 2009; Krüger, 2009; Lassi et al., 2014; Lee et al., 2011; Sibley & Sipe, 2004; Sibley, Sipe & Koblinsky, 2004; Sibley, Sipe, & Barry, 2012; Sibley et al., 2007; Sibley, Sipe, & Koblinsky, 2004; Vieira et al., 2012; Wilson et al., 2011)	11

Existing systematic reviews as at January 2016, when the last search was done.

HEALTH SYSTEM

A health system is an amalgamation of efforts to improve health and livelihoods of citizens in a country by the state as well as non-state actors (World Health Organization, 2007). This implies that the delivery of health services is beyond the individual and beyond the health facility; hence public health and community health initiatives. Social determinants of health dictate that the health system cannot function without close joint action with other social sectors such as education and agriculture to circumvent the deadly triad of poverty, disease and lack of information (Eshetu & Woldesenbet, 2011; Worku & Woldesenbet, 2015).

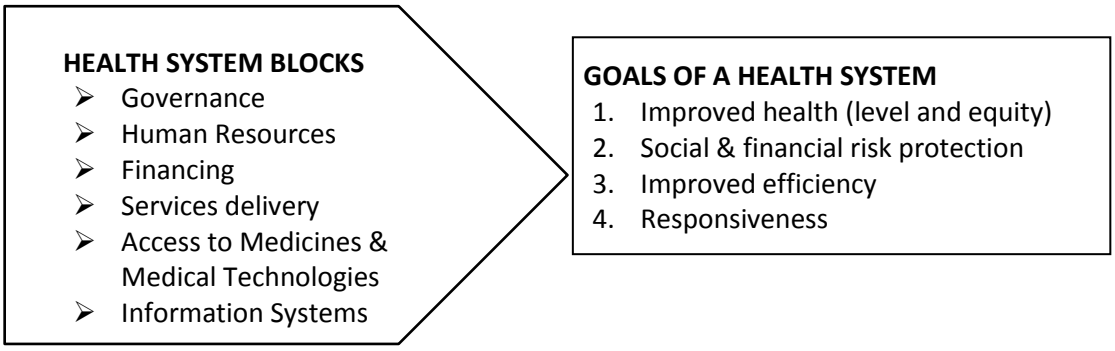
The spectrum of a health system starts at home as the basic unit where family members can provide healthcare. This continuum evolves to basic care peripheral health facilities and

specialised referral hospitals. Public health initiatives such as vector control complete the cycle. The World Health Organization proposes six health system building blocks and four overall goals of a health system (Figure 1.1).

GOVERNANCE OF A HEALTH SYSTEM

Health systems governance is about performing leadership or stewardship and organisational functions to effectively deliver healthcare to the citizens in a country (World Health Organization, 2007). This role of governance is almost always an exclusive engagement of the country's government through its ministry of health or equivalent. However, with the increasing involvement of the citizens and non-state actors, health systems governance is increasingly a shared role by all stakeholders (Bradley et al., 2015). In fact, in fragile and post-conflict states where governments have weakened capacity the sheer lack of governance structures creates fertile ground for multiple parallel and uncoordinated systems for healthcare delivery (Batley & Mcloughlin, 2010).

Figure 1.1 The World Health Organization health system strengthening blocks (WHO, 2004)



Indeed we recognize that there are numerous definitions and conceptual frameworks of governance that have been proposed with regard to health systems (Pyone et al., 2017). These variations are based on the extent to which certain aspects of governance are emphasised. In this review we apply the lens of the World Health Organization (World Health Organization, 2007), which views health systems governance according to the following functions:

- *Policy and guidance*: This entails setting up and developing a health system policy framework that gives strategic direction to all actors. Key technical policy positions and guidelines spell out the scope, roles and responsibilities of all actors with the government ministries of health as stewards. Additionally, strategies for resource mobilization and priority interventions are detailed in such policy documents. Examples include health sector strategic plans, health investment plans or disease specific technical policies. The policy and guidance function is ideally informed by research evidence and provide benchmarks for monitoring progress.
- *Regulation*: Creating a regulatory framework by enacting laws, rules and regulations to ensure standards (quality) are adhered to (accreditation) but also protect the providers and citizens from the undesired effects of health service delivery. In fragile

and post-conflict states such regulations are lacking or if present are weakly implemented and mostly govern the provision of formal health services. However, more recently there have been initiatives to develop regulations to control the informal sector such as traditional medicine or drug shops or drug peddlers. Other mechanisms of engaging non-state actors to maintain pre-specified standards include contracting out and franchising.

- *Accountability*: That all actors in the health sector are held responsible for delivering health as a public good. Health systems are responsive when citizens participate in the setting of priorities and monitoring health systems actions. An outgrowth of poor governance is corruption, which can be discouraged by mechanisms that ensure transparency, community empowerment and involvement.
- *Coordination*: Clearly, the environment in fragile and post–conflict states is that of mistrust and high security risks to healthcare workers and non-state actors, including local and international nongovernmental entities. This function necessitates building coalitions and collaborations with other key players in the delivery of health services. Principally these are other government departments working together in a sector-wide approach (education, agriculture, public service and agencies) to engage non–state actors. Good coordination promotes harmonization and alignment with national health policies to reduce duplication and fragmentation. Example strategies include public–private partnerships.
- *Oversight*: This function ensures that progress on set goals and strategic objectives is met and the rules and regulations are followed. This function is mostly performed by the state whose legitimacy is derived from the citizenry.

HEALTH FINANCING

Health financing refers to how the health sector mobilises, pools and distributes resources for the benefit of good health to society (World Health Organization, 2007). There are three broad aspects of health system financing (Kutzin, 2008). These are mechanisms for (i) revenue generation, (ii) pooling of the revenue generated and risks, and (iii) purchasing of health services. Sources of revenue include taxes collected by government; direct out of pocket payments by households, pre–payment of premiums for insurance schemes and external funds from donor agencies. Ultimately, of course, all funds are derived from the population (households) either directly or indirectly. The accumulation of these funds on behalf of the population constitutes the pooling function of health financing. The most common form of pooling is enacting a health insurance fund or a social security fund at community or national level. Prepayments for health insurance schemes may be mandatory or voluntary. Mechanisms for purchasing healthcare services entail the transfer of funds to providers through direct out-of-pocket payments by patients or paying for performance or pre-agreed health services and costs by insurance funds.

In order to achieve social and financial risk protection, the World Health Organization proposes a good health financing system as that which "...raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them..." (World Health

Organization, 2007). There is no blueprint or particular model or system of financing healthcare since countries have such diverse contexts, including disparities within that country. The goal of a responsive health-financing plan is to enable universal access to quality services and achieve the aspirations of "Health for All" as enshrined in the Alma Ata Declaration of 1978 (World Health Assembly, 1978). More recently, this has been echoed globally within the Universal Health Care coverage initiative (Hsieh et al., 2015).

The economic environment in fragile and post–conflict states is typically that of poverty, large income disparities and poor growth (Batley & Mcloughlin, 2010). Consequently, health systems are largely financed formally by donor agencies and informally by non–state actors as the state struggles to rebuild its capacity. Healthcare spending from all sources (total health expenditure) in fragile and post–conflict states is commonly below the level recommended by the High-Level Taskforce on Innovative International Financing for Health Systems, of the International Health Partnership (IHP+). This per capita total health expenditure threshold was $44 by 2010 and projected to be $60 by 2015 in order to achieve significant global progress on the Millennium Development Goals (World Health Organization, 2013). Indeed, there has been an improvement in the number of African fragile and post-conflict states, which have met the 2010 IHP+ threshold of $44 from almost 7% in 2001 to nearly 35% by 2010.

Table 1.5 Trends of total health expenditure of African fragile and post-conflict states from 2001 – 2010

Year	Total health expenditure	
	< US$44	> US$ 44
2001	28 (93.3%)	2 (6.7%)
2005	28 (93.5%)	3 (6.5%)
2010	19 (65.5%)	10 (34.5%)

Source: State of health financing in the African region, WHO 2013

Further analysis reveals limited political commitment to increased general government health expenditure (and reduced donor dependency) as a recovery process in African and post-conflict states (Table 1.6). Although health funding has risen over a decade after the Abuja Declaration of 2000 (World Health Organization, 2013), most African nations have not met their commitment to increase government budget health expenditure to 15%. Only four (12%) (Madagascar, Rwanda, Togo and Zambia) out of the 34 African fragile and post-conflict states with available data met this threshold by 2010 (Table 1.6).

Table 1.6 African and post-conflict states meeting the Abuja declaration from 2001 – 2010

Total health expenditure	General government health expenditure	
	< 15%	> 15%
< US$44	18	2
> US$44	12	2
	30 (88%)	4 (12%)

Source: State of health financing in the African region, WHO 2013

TRAINING AND TECHNICAL SUPPORT

Research evidence suggests knowledge and skills gaps in healthcare delivery among non-state providers. In addition, reports have indicated limited or non-use of national guidelines (Basu et al., 2012; Berendes et al., 2011). On the one hand, informal sector non-state providers require training and technical support to permit standardization, reporting, monitoring and ultimately provision of effective and safe health services (Patouillard et al., 2007). On the other hand, even in the formal non-state sector, data is scarce regarding the effective strategies for capacity building of the workforce in post-conflict settings (Roome et al., 2014). Appropriately trained health personnel are a key issue in post-conflict states as they suffer major losses of personnel and have significant difficulties in recruiting and retaining staff in peripheral areas. These challenges include raising adequate numbers and how to attract, retain and develop health staff. During conflicts, health-care workers are often trained by many different organisations, whose courses require standardization and accreditation. This in turn would facilitate staff to easily transition government systems once the conflict is over.

PRIORITY HEALTH INTERVENTIONS DELIVERED BY NON-STATE ACTORS

A unique aspect of this review was to synthesise the evidence about the impact of priority health interventions delivered by non-state actors. We have focused on interventions improving the priority areas of (a) child and (b) maternal health in line with the MDGs and SDGs. Women and children are the most vulnerable in society, particularly in situations of fragility and conflict (United Nations Sustainable Development Goals Knowledge Platform, 2015). Details of these interventions are tabulated below (Table 1.7).

Table 1.7 Priority areas and sub-interventions for health service delivery

Health priority area	Sub-intervention under review
Child health	1. Integrated management of childhood illnesses 2. Immunization
Maternal health	1. Sexual and reproductive health 2. Skilled birth attendance 3. Traditional birth attendance

2 METHODS

2.1 TYPE OF REVIEW

We used a two-stage approach in completing this systematic review (Gough et al., 2012). In the first stage we electronically identified and descriptively mapped the fragile and post-conflict states, types of non-state actors, engagement of non-state actors and their interventions from all of the 7,946 titles and abstracts. Additionally, we conducted keyword mapping as part of the screening process. Subsequently, we synthesised the research relating to the included studies using the World Health Organization health systems strengthening framework. We used EPPI-Reviewer 4.0 software to manage the data for this systematic review.

2.2 USER INVOLVEMENT

A key feature of this review was user involvement with DFID, who commissioned this project and are crucial end-users of the findings. Our project advisor was Dr. William Newbrander, who has extensive experience with post-conflict states including working in Afghanistan. We engaged DFID Health Advisors during question refining, protocol development, review conduct and report writing as reviewers.

2.3 IDENTIFICATION OF STUDIES

Figure 3.0 outlines the flow of studies through the review. AK and SR are the two professional Information Science Specialists who led the search strategy process. Briefly, we used multiple searching approaches to identify the published and grey literature included in this report. We developed an electronic search strategy through identifying scientific, technical and lay terms in the field of post-conflict states, non-state sector and primary healthcare. We tested this strategy in PubMed before proceeding to search for articles in the following 6 additional databases:

1. Embase
2. Web of Science
3. Google Scholar
4. CENTRAL
5. Eldis
6. WHOLIS

Firstly, we (AK, EAO, RM and SR) held several face-to-face meetings to appraise this search strategy. Secondly, we conducted targeted searching by reviewing references of included studies and existing systematic reviews. Lastly, we emailed the list of included studies to key informants including authors of included studies and experts in the respective WHO health systems strengthening pillars. We retrieved a total of 7,946 titles and abstracts. Appendix 1 contains the electronic search string for PubMed.

ELIGIBILITY OF STUDIES FOR THIS REVIEW

To be included in the map studies needed to meet the following minimum criteria:

1. Setting: Primary health-care facility or community
2. Geographical location: Fragile and post–conflict states
3. Actor: Deliver an intervention by a non-state actor
4. Intervention: That aims to improve selected primary care outcomes
5. Population: General or specific targeted vulnerable populations of the post-conflict state
6. Language: English and other languages
7. Year: Published 1990 – 2015

To be included studies in the synthesis studies needed to meet the following additional criteria:

8. Aim of study: To assess impact of non-state actors in delivery of primary healthcare
9. Study design: Quantitative primary empirical studies with a comparison group or time period

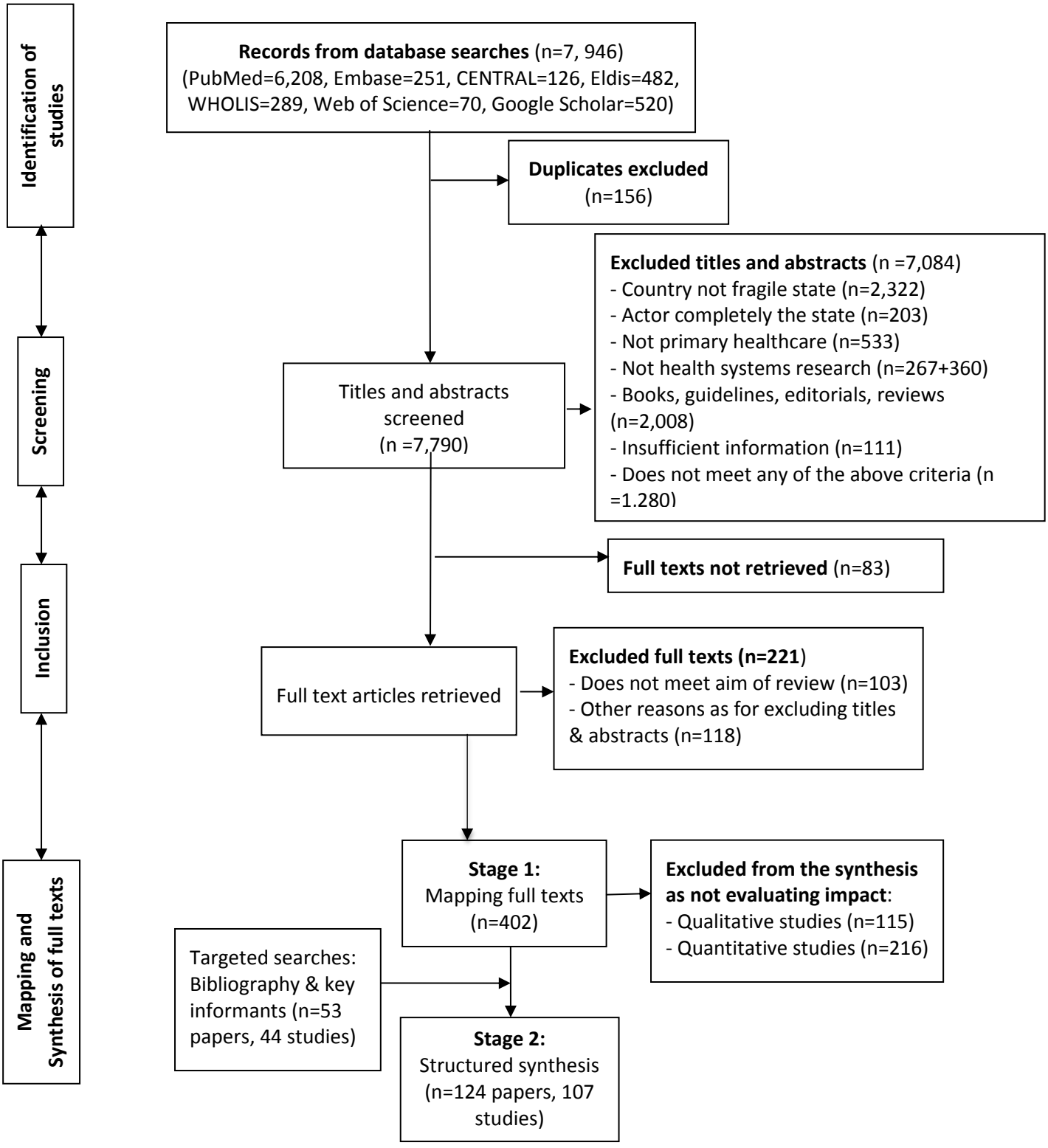
We included studies using experimental or quasi-experimental designs, as these are judged to be most suitable for aggregating data and answering a review question on effectiveness and overall impact.

We excluded studies at both title, abstract and full text stages of the review for the following reasons:

1. Setting: Secondary or tertiary healthcare facility.
2. Geographical location: Any country not listed as a post-conflict state. These were commonly of high or middle income; or low income but non-priority to DFID.
3. Actor: State actor including government and the military health providers.
4. Intervention: Related to but does not aim to improve primary healthcare outcomes or co-administration of interventions (or a cluster of interventions) in which delineating the effects of the intervention of interest would not be possible. For example, studies about traditional birth attendants sometimes included activities by other birth attendants such as regular health workers or community (lady) health workers.
5. Population: Non-citizens of post-conflict states e.g. military personnel in Afghanistan.
6. Aim of study: Studies that did not assess the activities or impacts of the non-state actors in delivery of primary healthcare.
7. Study design: Secondary analyses, non-systematic reviews, policy documents, editorials, opinions, perspectives, commentaries, text books, purely qualitative studies (in the synthesis of impact studies), purely descriptive quantitative studies and those without a comparison group or comparison time period (one time measurements).
8. Language: No limitation.

9. Year: Published pre – 1990.
10. Not meeting the above criteria: Studies that were neither about post-conflict states nor primary healthcare nor non – state actors or citations with insufficient details e.g. missing an abstract.

Figure 3.0: A flow diagram illustrating the systematic review process



SCREENING AND SELECTION OF STUDIES

We conducted multiple screening phases to minimize bias in selecting studies for inclusion. After removing duplicates using EPPI-Reviewer 4.0 software, FA, EAO and RM conducted initial independent screening of 2,100 titles and abstracts to develop screening codes through discussions and consensus. In phase two DS, EAO, FA, JA and RM completed initial independent screening for all the titles and abstracts. In phase 3 more team members (AN, AS, DA, DS, EAO, FA, JA and RM) performed duplicate screening on all the excluded titles and abstracts yielding 2,149 included titles and abstracts for potential inclusion. In phase 4, EAO and RM conducted a second round of screening and reduced the included studies for full text retrieval by the information science specialists (AK and SR). In phase 5, EAO and RM re-screened the 673 full text articles and discussed any disagreements to achieve consensus on inclusion, which narrowed these down to 402 studies for description of the literature (stage one of the review). Finally, we performed further targeted searching (studies included in existing relevant reviews, bibliographies of included articles and from key informants) and exclusions during data abstraction resulting in final sample of 126 studies for the impacts assessments (stage two of the review).

DATA ABSTRACTION FROM INCLUDED STUDIES

AS, DA, EAO, EM, EN, FA, JN, JO, MO, RB, RM and ROL captured the data from all included studies, which we discussed in our review synthesis meetings. EAO and MO performed quality checks on data abstracted for 100% of the included studies. We abstracted information relating to the following:

1. Administrative data: author, year of publication and country where the study or project was carried out and type of actor.
2. Data describing the healthcare setting: rural, urban, facility or community based.
3. Data describing the types of interventions: governance, financing or training arrangements.
4. Outcome and impact assessment data: primary, secondary and health services outcomes, effects and or impacts.
5. Study design: including sampling, sample size and comparator.
6. Data to assess equity in the delivery primary healthcare by non-state actors such as equitable access or utilization (distribution of access across socio-demographic characteristics, income disparities, rural-urban gap, race, gender, education levels), where available.

RISK OF BIAS ASSESSMENT OF INCLUDED STUDIES

We adapted the Effective Public Health Practice Project (EPHPP) quality assessment tool to assess the risk of bias of the studies included to answer the effectiveness questions (Armijo-Olivo et al., 2012) (Appendix 4). Briefly, we worked in pairs to independently assess for the following domains that threaten the validity of study findings:

a) Selection bias: Representativeness of the study population.
b) Study design: Type of study design.
c) Confounders: Important differences between comparison groups prior to intervention.
d) Blinding: Awareness of exposure status by outcome assessors and awareness of the research question by the study participants.
e) Data collection methods: Validity and reliability of the data collection tools.
f) Withdrawals and dropouts: Proportion of participants completing the study.
g) Intervention integrity: Consistency of the intervention administered, proportions that received the intervention or received an unintended intervention.
h) Analyses: Unit of allocation, unit of analysis and appropriateness of statistical analysis techniques.

We used three levels of rating each of these domains per study: strong (3 points), moderate (2 points) or weak (1 point). We independently provided a global rating for each study as strong (no weak score), moderate (one weak score) or weak (at least 2 weak scores) (Armijo-Olivo et al., 2012). We expected discrepancies due to oversight or differences in the interpretation of the rating criteria or the study itself. We resolved these disagreements in the scores by discussion and consensus before arriving at the final decision on the overall risk of bias assessment. Risk of bias is one of the elements applied in downgrading the quality of evidence using the GRADE approach.

ASSESSING THE OVERALL QUALITY OF EVIDENCE FOR SPECIFIC INTERVENTIONS AND OUTCOMES

In order to assess the overall quality of evidence from quantitative studies, we employed the Grading Recommendations Assessments Development and Evaluation approach (GRADE) (Guyatt et al., 2008). The GRADE framework reflects the extent to which we are confident that an estimate of effect is trustworthy. GRADE is widely accepted and applied for systematic reviews of effects.

We optimised the available data to consider the following GRADE criteria at initiation, mainly applying the risk of bias, to make judgments about the overall quality of evidence:

Downgrading criteria:
- Study design limitations (risk of bias)
- Inconsistency or heterogeneity of effect estimates
- Imprecision
- Indirectness of the evidence
- Publication bias

Upgrading criteria:
- Size of effect estimate
- Dose-response relationship and
- Plausible confounding.

In the final step of GRADE assessment for each outcome we depicted this degree of confidence

into four categories as: high, moderate, low and very low. In the GRADE framework randomized studies start at a high rating and downgraded if required; whilst all observational studies are set at low rating, with a potential for up- or downgrading. The interpretation of these categories is shown below (Table 2.1).

Table 2.1 GRADE categories of quality of overall evidence from quantitative studies

Category	Explanation	Symbol
High	We are **very confident** that the true effect lies close to that of the estimate of the effect. Further research is **very unlikely** to change our confidence in the estimate of effect	⊕⊕⊕⊕
Moderate	We are **moderately confident** in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different. Further research is **likely** to have an important impact on our confidence in the estimate of effect and **may change** the estimate.	⊕⊕⊕◯
Low	Our **confidence** in the effect estimate is **limited**: The true effect may be substantially different from the estimate of the effect. Further research is **very likely** to have an important impact on our confidence in the estimate of effect and is **likely** to change the estimate.	⊕⊕◯◯
Very Low	We have **very little confidence** in the effect estimate: The true effect is likely to be substantially different from the estimate of effect. Any estimate of effect is **very uncertain**. Further research is **very likely** to have an important impact on our confidence in the estimate of effect and is **likely** to change the estimate.	⊕◯◯◯

SYNTHESIZING THE EVIDENCE

In order to communicate the results of this review efficiently and effectively, we have adapted summary of findings tables from the GRADE framework. In addition, we provided a discussion of additional contextual details of the findings of the studies. We opted to report the general direction of results (trends) and deferred quantitative aggregation of the actual findings from various studies (meta-analysis). The nature of this topic under review lends itself to studies with high variability in the types of the populations, nature and delivery of the interventions; definition and measurements of the outcomes as well as differences in time periods when the studies were done. For example, in the study about Community Health Insurance in West Africa, the populations (rural peasants and farmers compared to an urban working population) and premiums (2.5% versus 12% of the country minimum wage) were different in Ghana and Cameroon respectively (Atim, 1999). Additionally, the scheme in Cameroon provided additional risk cover for funeral services whilst in Ghana this was not the case. Combining such results in a quantitative meta-analysis would generate high heterogeneity measures, which would not permit interpretation as a single finding

(Higgins & Green, 2011). Instead we present a structured tabular and narrative synthesis. Findings tables disaggregate data from individual studies and re-combine data across studies to present the direction of effects for each outcome, the number of studies and the quality of the evidence, as recommended by the GRADE Working Group. For each outcome, the quality of the evidence overall is rated as high, moderate, low or very low using the definitions below.

- **High**: We are confident that the true effect lies close to what was found in the research.
- **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different.
- **Low**: The true effect may be substantially different from what was found.
- **Very low**: We are very uncertain about the effect. These judgements were based on the appraisal methods described above.

3 IDENTIFYING AND DESCRIBING STUDIES: RESULTS

3.1 STAGE ONE: IDENTIFYING AND DESCRIBING STUDIES

DESCRIPTION OF THE SEARCH RESULTS

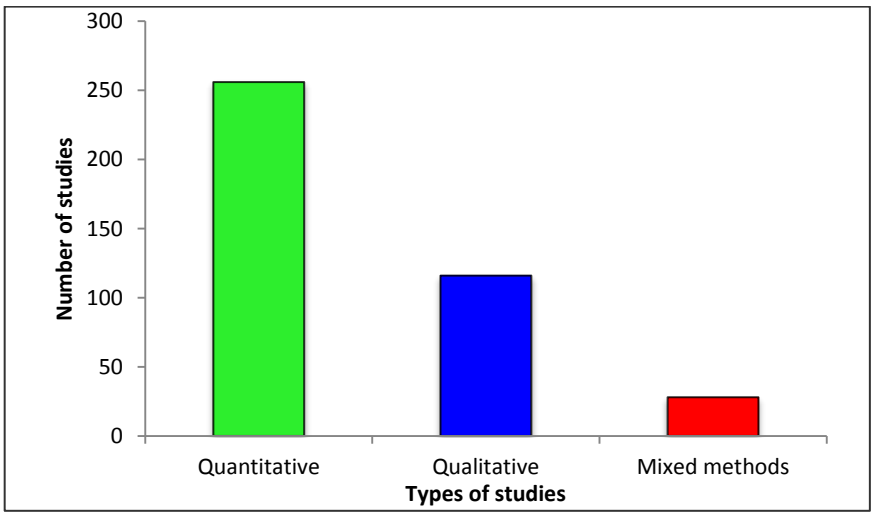
The results of this systematic review are based on 402 studies in stage 1 and 107 studies in stage 2.

We have depicted the detailed results of our search, screening and selection in the PRISMA flow chart (Figure 3.0). Briefly, we retrieved 7,946 titles and abstracts in total. The majority of these papers (78%) were from the PubMed database, which is a key source of health related and other biomedical literature. After excluding the 156 duplicates we screened 7,810 titles and abstracts and excluded the majority (7,104; 91%) for not meeting the eligibility criteria. We retrieved 623 full texts, of which we excluded 221 (36%) for not meeting the reviews objectives or for reasons similar to those described in the part for excluding titles and abstracts. We were unable to access relatively few full texts (83; 12%) as they were no longer available or due to time constraints or required subscription to the journal without obvious indicators for inclusion (if the review team did not value the initial data for the sake of screening) or required subscription to the journal without obvious indicators for inclusion. However, the review team had access to most subscription journals. We included 402 full texts in stage 1, the descriptive aspect of the review.

TYPES OF STUDIES IN THE LITERATURE

Overall, the majority of the studies employed quantitative designs to assess impact (64%), with fewer studies using qualitative approaches, such as case studies or descriptive accounts of non-state actors providing primary healthcare in post-conflict states. Only a small number of studies employed a mixed methods design (7%).

Figure 3.1 Types of studies



GEOGRAPHICAL DISTRIBUTION OF THE LITERATURE

By far the majority of the studies were about non-state actors' activities in Africa (51%), Asia and the Pacific (39%) with less literature from Europe (2%) and South America (4%). In Africa studies were focused on primary healthcare in Nigeria; private sector involvement in Kenya; whilst those in Rwanda concentrated on innovative health financing strategies. Afghanistan, Bangladesh, Nepal, Iran and Lao People's Democratic Republic were the countries in Asia most written about. Studies about contracting out of health services to non-governmental organisations were mainly from experiences in Afghanistan; with studies about a major local non-governmental organisation activity from Bangladesh (BRAC).

Figure 3.2 Primary care, non-state actors and post-conflict states by continental region (n=402)

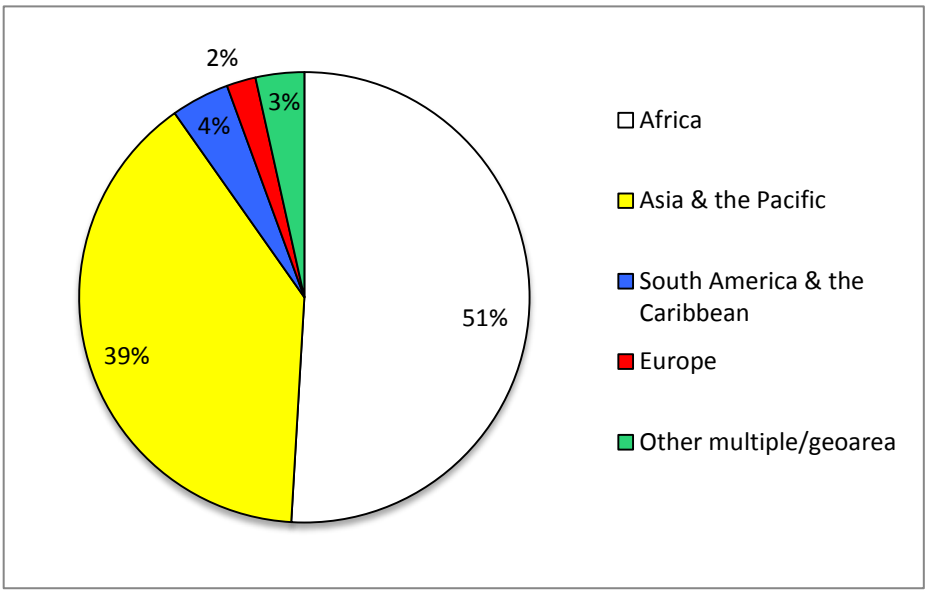


Figure 3.3 Primary care, non-state actors and post-conflict states by countries in Africa

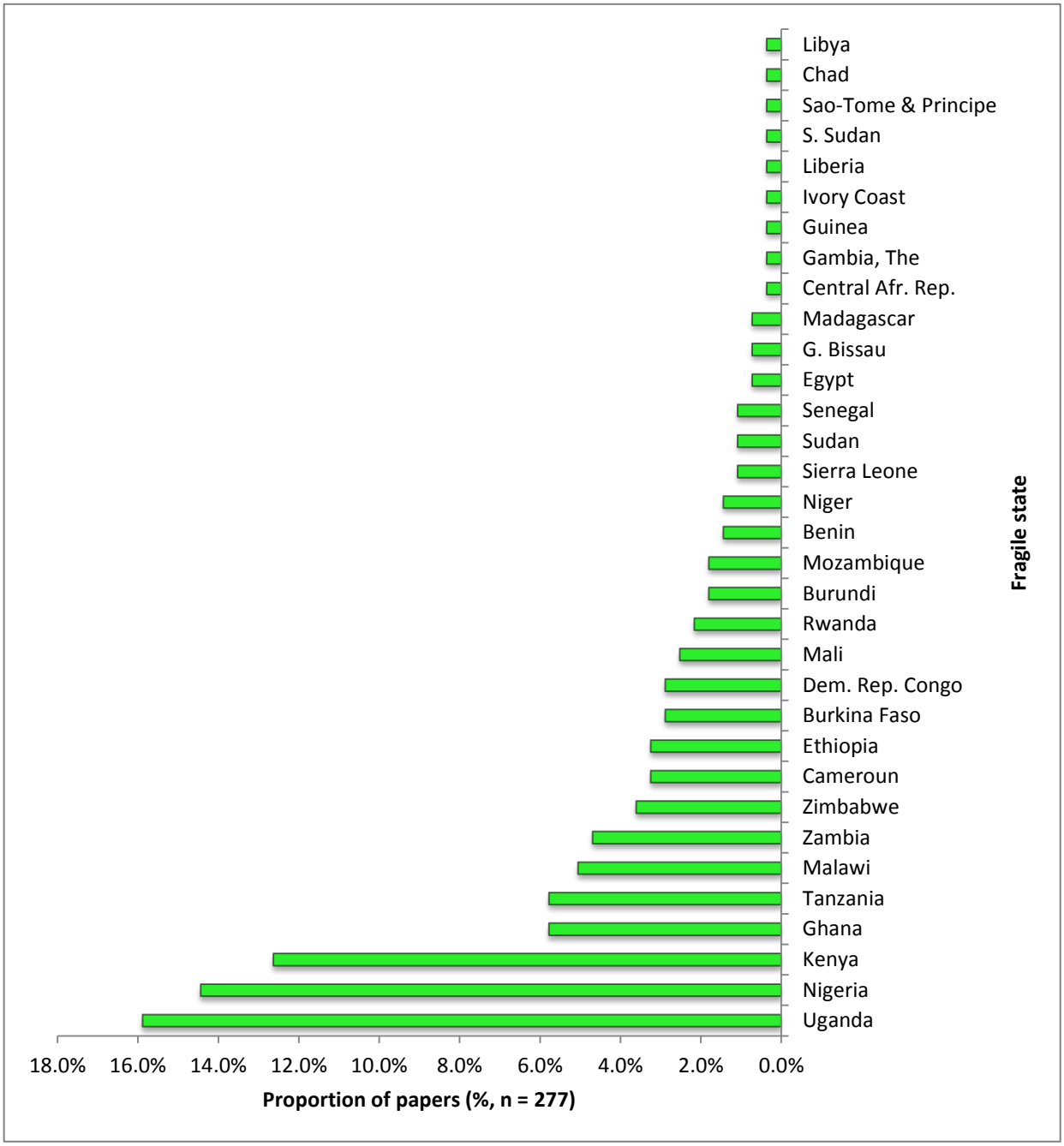


Figure 3.4 Primary care, non-state actors and post-conflict states by countries in Asia

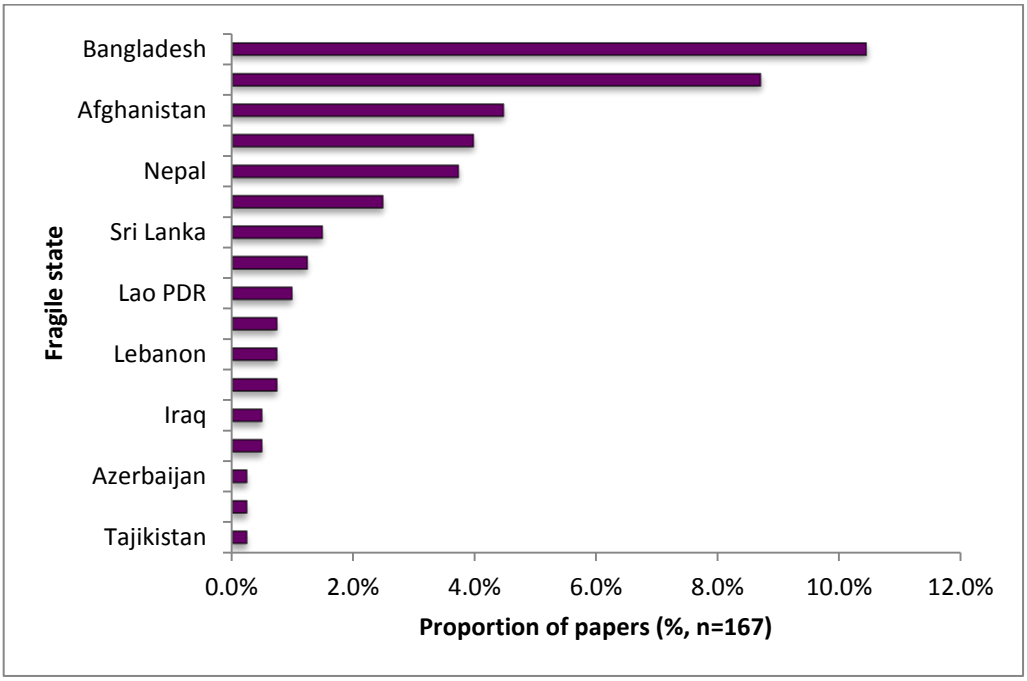
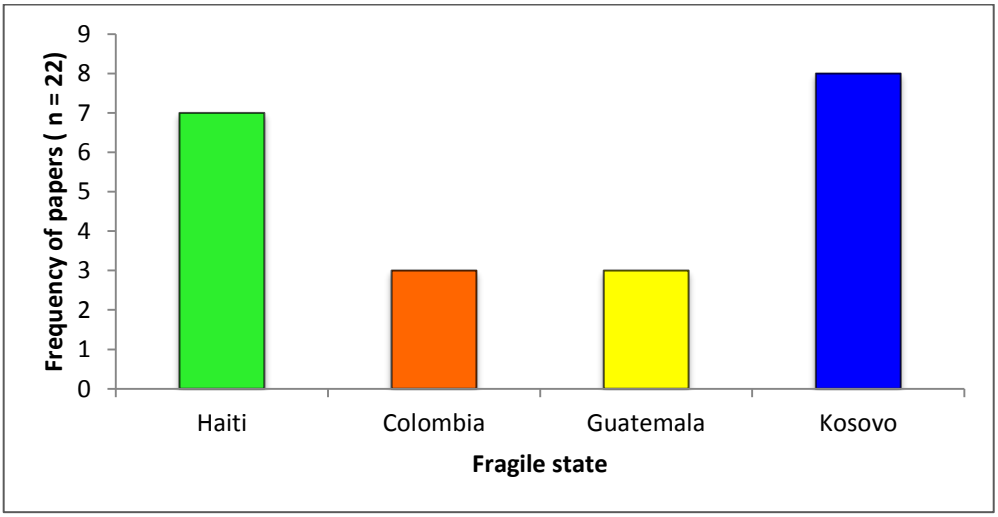


Figure 3.5 Sources of literature on primary care, non-state actors and post-conflict states by countries in South and Central America and Europe

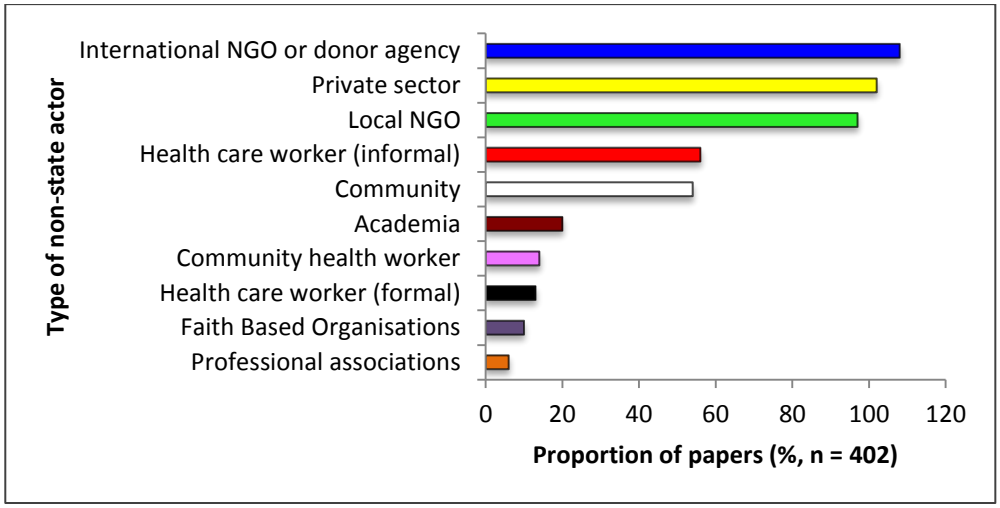


TYPES OF NON-STATE ACTORS

Most papers investigate the activities of non-governmental organisations and the private sector. Prominent examples of the international non-governmental organisations were the International Red Cross (IRC), Management Sciences for Health (MSH), Medicines Sans Frontieres (MSF), the United Nations agencies (UNICEF and WHO) and Merlin amongst others. Non-governmental organisations, both local and international, were involved in

charity or free for service activities, whilst for the private sector, the studies concentrated on health financing and quality of care. It is important to note that studies commonly involved both local and international non-governmental organisations, with the latter funding activities of the former. The fewest number of papers were about professional associations.

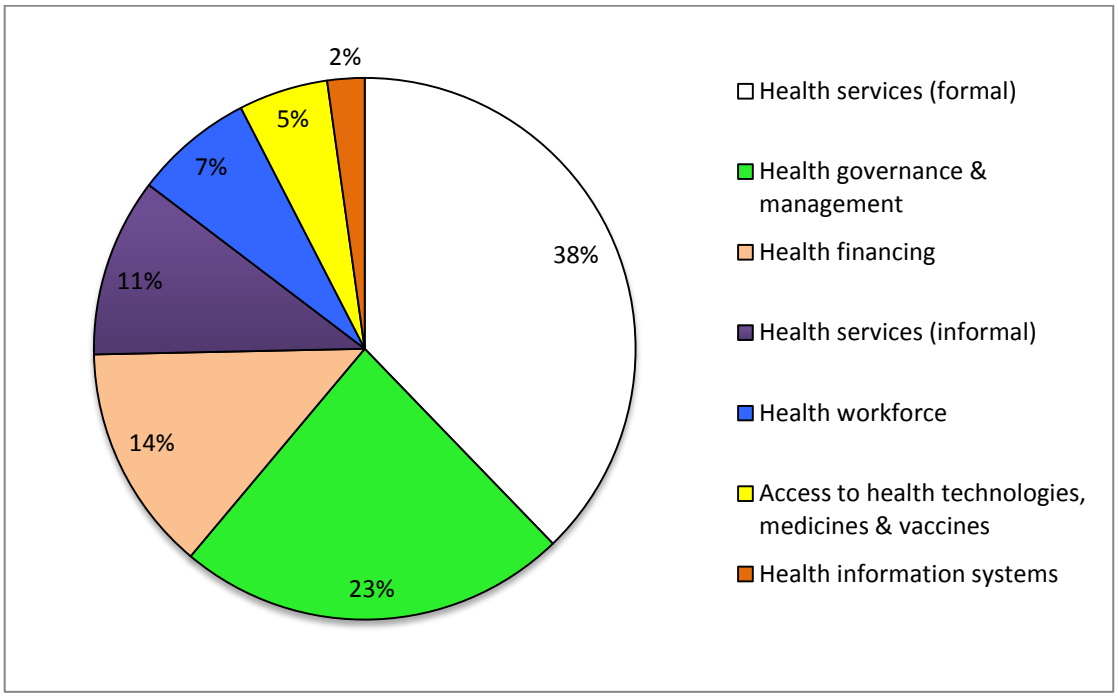
Figure 3.6 Types of non-state actors in the reviewed literature.



TYPES OF INTERVENTIONS

Health services delivery was most commonly investigated, particularly that by the formal sector. These papers mainly focused on primary healthcare for maternal and child health, sexual and reproductive health, mental health, HIV and Tuberculosis control activities. There was hardly any literature about non-communicable disease control, a rising burden in fragile and post-conflict states, which are mostly low- and middle-income countries. Studies about the informal sector were mainly about the role of traditional birth attendants and distribution or accessing drugs from vendors or drug shops.

Figure 3.7 Types of interventions by health systems strengthening blocks (n=402).

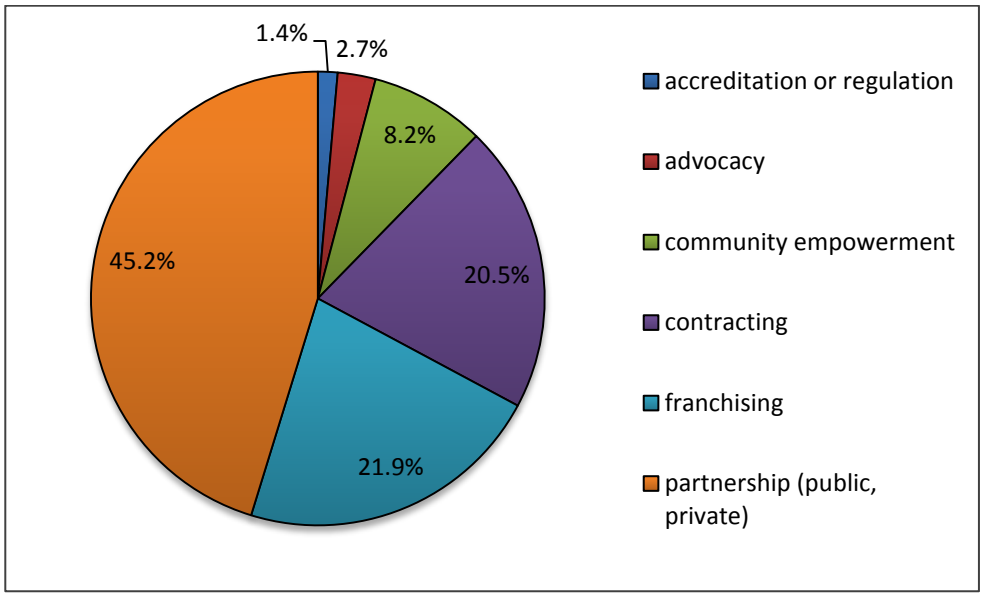


**Formal – health services in the formal sector such as facility-based healthcare by a faith based organisation*

INTERVENTIONS ABOUT STRATEGIES TO IMPROVE GOVERNANCE OR MANAGEMENT OF THE HEALTH SYSTEM:

Most of the literature on health governance arrangements was about partnerships or collaborations between the public sector (government) and private entities or non-governmental organisations. Seldom did these partnerships constitute a non-governmental organisation and a private for-profit, or collaborations between several non-governmental organisations. The overriding aim of such partnerships was to pull together synergies to expand delivery of primary healthcare, and to coordinate the existing non-governmental organisations or aid agencies in a post-conflict state where the Ministry of Health or equivalent lacked capacity. Franchising of health services to maintain accredited quality standards accounted for a fifth of the literature and was commonly employed in sexual and reproductive health services. Fragile and post-conflict state governments or international aid agencies frequently contracted delivery of primary healthcare to non-governmental organisations. The bulk of the literature on contracting was from Afghanistan and Southern African states.

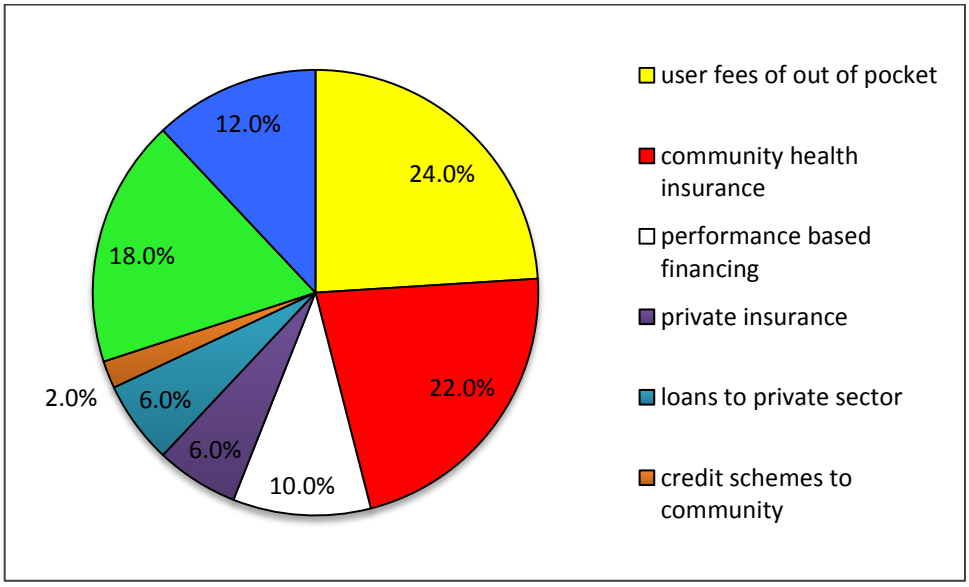
Figure 3.8 Types of interventions for health governance (n=105).



STRATEGIES TO IMPROVE FINANCING OF THE HEALTH SYSTEM

Arrangements for health financing were dominated by studies on out of pocket expenses or user fees by families; which reflects the significant contribution of direct household income to financing primary healthcare in fragile and post-conflict states. This was followed by community health insurance schemes, which were commonly voluntary. There were a number of innovative strategies to improve efficiency of primary healthcare services delivery such as performance based financing, providing loans to private sector health units and micro-credit schemes to incentivize the community. Economic analyses constituted studies about costing of health services and cost recovery strategies as well as cost-efficiency particularly by non-governmental organisations.

Figure 3.9 Types of interventions for health financing (n=61).



3.2 STAGE 2: EFFECTS AND IMPACTS OF INTERVENTIONS BY NON-STATE ACTORS IN THE DELIVERY OF PRIMARY HEALTHCARE IN POST-CONFLICT STATES

DESCRIPTION OF STUDIES INCLUDED IN THE IN-DEPTH REVIEW

Overall, we judged 107 studies to be suitable for inclusion to answer the review question on effectiveness. The studies included in the synthesis addressed governance, leadership or management (n=53), health financing (n=40) and training interventions for informal health services (n=14). Table 3.1 below provides an overview of the volume of literature contributing to the synthesis of effects of non-state actors in providing primary healthcare in this review.

Table 3.1 Summary of the intervention studies included for impacts assessments

Health System Pillar	Intervention types	N (100%)
Governance & management	Contracting	12
	Franchising	11
	Public-Private Partnership	16
	Community empowerment	11
	Accreditation/regulation	3
Health financing	Community health insurance	23
	Pay for performance	8
	Private health insurance	3
	Microcredit/loans	6
Informal health services (Health workforce)	Training Traditional Birth Attendants	14
Total		**107**

Altogether, the studies informing this impacts section of the systematic review were mainly from Africa (52%) and Asia (46%) with only two from Haiti. Randomised trials constituted less than a fifth (17%) of the studies we included, the rest being observational designs (see Table 3.1.1). We assessed only a tenth (11%) of the studies as strong with the bulk being of moderate (20%) or weak (69%) quality. This suggests a general high risk of bias with the evidence base on impacts included in this review (Table 3.1.1).

Table 3.1.1 Summary of the characteristics of studies included for impacts assessments

Characteristic	N (100%)
Study type	
Randomized controlled trials	18 (16.8)
Non-Randomized controlled trials	28 (26.2)
Uncontrolled trials	30 (28)
Case control/cross sectional surveys	31 (29)
Study quality	
Strong	12 (11.2)
Moderate	21 (19.6)
Weak	74 (69.2)
Geographical region	
Africa	57 (52.3)
Asia & Pacific, The	50 (45.9)
Europe, America & Caribbean, The	02 (1.8)

4. IN-DEPTH REVIEW AND SYNTHESIS

4.1 IMPACTS OF HEALTH GOVERNANCE ARRANGEMENTS BY NON-STATE ACTORS

We included 53 impact studies regarding governance arrangements by non-state actors. These were contracting (n=12), franchising (n=11), public-private partnership (n=16), accreditation or regulation (n=3), community participation or empowerment (n=11). The overall quality of these studies that contributed to the assessment of governance interventions ranged from strong (n=5), moderate (n=15) to weak (n=33). Below we present the results summary tables for governance arrangements.

CONTRACTING NON-STATE ACTORS TO DELIVER PRIMARY HEALTHCARE:

TYPES AND QUALITY OF STUDIES

We found 12 studies (12 articles) examining the contracting of healthcare in post-conflict states, published between 1999 and 2014. Contracts are formally documented with details usually specifying the nature of the health service to be delivered and resources available to meet the performance targets (Palmer et al., 2006).

The studies we included were randomised controlled trials (1=)(Bloom et al., 2006), non-randomised controlled trials (n=7) (Alonge et al., 2014; Arur et al., 2010; Bhushan et al., 2002; Blaakman et al., 2014; Loevinsohn et al., 2009; Schwartz & Bhushan, 2004; Soeters & Griffiths, 2003), uncontrolled trials (n=2) (Marek et al., 1999; Newbrander et al., 2014) and a cross-sectional survey (post-only with a control group) (n=2) (Chirwa et al., 2013; Cockcroft et al., 2011). Most of the included studies scored poorly because of their designs, as only one study was designed as a randomized controlled trial. The remaining studies had comparison groups or employed a before-and-after approach but failed to randomize these, to blind their assessors, or to describe their methods explicitly or in such a way that the assessor could tell whether they were valid and reliable. One study was designed as a retrospective chart review. Using the risk of bias assessment tool, we categorised the quality of these studies about contracting as strong (n=1), moderate (n=3) or weak (n=8), (Table 4.2.1). We assessed overall quality of evidence for specific outcomes as either moderate or low at initiation as per the GRADE approach. We have depicted these findings in Table 4.2 further below.

Table 4.2.1 Risk of bias assessment for studies about contracting with non-state actors to deliver primary healthcare in post-conflict states

Administrative information					Quality assessment domains						
No.	Author	Year	Country	Description of study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Marek	1999	Senegal	D3	S	W	W	W	M	W	Weak
			Madagascar	D3	S	W	W	W	M	M	Weak
2	Bhushan	2002	Cambodia	D2	S	M	M	W	M	M	Moderate
3	Soerters	2003	Cambodia	D2	S	M	M	W	M	M	Moderate
4	Schwartz	2004	Cambodia	D2	S	M	M	W	M	M	Moderate
5	Bloom	2006	Cambodia	D1	S	S	S	W	S	S	Strong
6	Loevinsohn	2009	Pakistan	D2	M	M	W	W	M	W	Weak
7	Arur	2010	Afghanistan	D2	S	M	S	W	M	W	Weak
8	Cockroft	2011	Afghanistan	D4	S	W	W	W	S	W	Weak
9	Chirwa	2013	Malawi	D4	W	W	W	W	S	W	Weak
10	Alonge	2014	Afghanistan	D2	S	M	S	W	M	W	Weak
11	Blaakman	2014	Afghanistan	D2	S	W	M	W	S	W	Weak
12	Newbrander	2014	Afghanistan	D3	S	M	W	W	S	W	Weak

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups)
S = strong; M = medium; W = weak evidence.

DESCRIPTION OF THE INTERVENTION: CONTRACTING OUT

Contracting-out occurs when provision of health services is issued to non-state actors, commonly the private sector or non-governmental organisations. Contractors maintain full responsibility for health service delivery including management of financial, human and material resources. In the Cambodian example contractors retained full management control over allocation and disbursement of the budget supplement. Nonetheless, the contractors followed government rules and regulations with respect to the government-provided resources (Bhushan, Keller, & Schwartz, 2002).

Contracting-in refers to when the state or aid agency engages the provision of health services to a body within the state, in this case the ministry of health or a non-state actor, but with strict government oversight. This state body is usually semi-autonomous from the ministry of health in its operations. Examples include contractors providing only management support to civil service health staff, and recurrent operating costs catered for by the government through normal government channels (Bhushan et al., 2002). Government selects one or more private service providers through a competitive process and some provided for performance bonuses (money payments) including meeting health equity targets.

Nearly all the actors were international and rarely local non-governmental organisations coming in at a critical stage in rebuilding the health systems. Examples were Agetip community nutrition project in Senegal or Secaline in Madagascar (Mareket al., 1999), Health Net International in Cambodia (Soeters & Griffiths, 2003), Christian Health Association of Malawi (Chirwa et al., 2013) and a myriad of NGOs in Afghanistan which were commonly funded by the USAID, World Bank, and the WHO (Newbrander et al., 2014).

Although roughly an equal number of studies examined contracting-out only (n=5) or both contracting-in and contracting-out arrangements (n=7), we focused on the results of contracting-out in all the 12 studies, since it is non-state actors who primarily delivered this mode of intervention.

Two studies addressed the outcome of death (Bloom et al., 2006; Newbrander et al., 2014), three reported on illness (Alonge et al., 2014; Bhushan et al., 2002; Bloom et al., 2006) whilst the majority of the studies (n=9) reported about health services utilization (Alonge et al., 2014; Arur et al., 2010; Bhushan et al., 2002; Bloom et al., 2006; Chirwa et al., 2013; Loevinsohn et al., 2009; Newbrander et al., 2014; Schwartz & Bhushan, 2004; Soeters & Griffiths, 2003) .

SUMMARY OF THE EVIDENCE: CONTRACTING NON-STATE ACTORS TO DELIVER PRIMARY HEALTHCARE

Table 4.2 Contracting non-state actors to deliver primary healthcare

Key messages:

- ✓ There is **moderate quality** evidence that contracting out to non-governmental organisations improved utilization of health services (increased visits for family planning, antenatal care, delivery, immunization, ORS use in diarrhoea and general out-patient care).
- ✓ There is **low quality** evidence that contracting out to non-governmental organisations improved the following outcomes
  - Illness
  - Perceived quality
  - Coverage
  - Equitable access of the primary healthcare services
  - Capacity of government health units to manage or monitor contracts
  - Reduced family expenditure on health.
- ✓ **Very low quality** evidence of contracting out reducing infant mortality.

Patients or population: General population, mothers of childbearing age, children < 5 years, rural and peri-urban poor seeking primary healthcare.
Setting/ country: Peri-urban, rural and remote areas in Afghanistan, Cambodia, Madagascar, Malawi, Pakistan and Senegal.
Intervention: Contracting out of primary healthcare services to non-governmental organisations or private sector (non-state actors).
Comparison: Standard of primary healthcare service delivery by the government health units (other than contracting out) or contracting-in.

Outcomes	Impact	Number of studies n=12	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: Reduced maternal, child and infant mortality in 1 trend analysis of routine data. RCT was too small to detect differences in mortality.	2	⊕◯◯◯ Very low
	Illness: Three studies each differently reported reduced proportion of malnutrition in children below 3 years of age; reduced length of illness>3 weeks; reduced incidence of diarrhoea in children <5 years old	3	⊕⊕◯◯ Low
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: Government ministries of health and health units were trained to manage contracting engagements; improved infrastructure; activation of village health committees and increased meetings. One study reported increased number of midwives and better health data reporting	5	⊕⊕◯◯ Low
	Adverse events: No study reported adverse events due to contracting.	0	-
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** Improved in 9 studies with quality that was strong (1), moderate (3) or weak (5). Increased visits for family planning, antenatal care, delivery, immunization, ORS use in diarrhoea and general out patient care.	9	⊕⊕⊕◯ Moderate
	Coverage: Two moderate and two weak studies showed an increase. One weak study showed no difference.	5	⊕⊕◯◯ Low
	Quality or satisfaction: Perceived quality higher in 3 studies. Lower in 1 study (staff attitude, competence and facility supplies)	5	⊕⊕◯◯ Low
	Costs: Increased costs per capita by the service provider in 3 studies. Lower costs per capita in 1 study.	7	⊕⊕◯◯ Low
	Cost-effectiveness: No study reported about the cost-effectiveness of contracting.	0	-

	Out of pocket: Decreased expenditure in 4 studies. Reduced or abolition of user fees in 1 study.	4	⊕⊕◯◯ Low
	Equity or access: Increased utilization of primary care services by poorest strata in 3 studies; increased immunization in poorer stratum in 1 study; increased access to female community health worker in 1 study; and reduced rural facility to population ratio in 1 study. 7 studies were conducted in rural or urban poor settings	8	⊕⊕◯◯ Low
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

DISCUSSION OF FINDINGS ABOUT CONTRACTING NON-STATE ACTORS TO DELIVER PRIMARY HEALTHCARE

Governments of post-conflict states are eager to improve the availability and quality of health services despite their shortcomings in capacity; be they financial, human or material resources (Batley & McLoughlin, 2010). Consequently contracting out to private providers emerges as a business model that could be applied in the health sector. Contracting has been hailed as a mechanism to improve efficiency, accountability and ultimately health service delivery in response to increased competition within the market of health scare providers (Palmer et al., 2006).

Our review brings on board assessment of health related and patient important outcomes such as death, illness and satisfaction beyond what other previous reviews have reported (Lagarde & Palmer, 2009; Liu et al., 2007). Although a single randomised trial study was too small to detect a significant effect of contracting on a child aged <12 months remaining alive (Bloom et al., 2006), a larger population based observational analysis of routine data suggests that contracting reduced maternal, child and infant mortality at population level in Afghanistan (Newbrander et al., 2014). Studies from Madagascar and Senegal (Marek et al., 1999), Cambodia (Bloom et al., 2006) and Afghanistan (Alonge et al., 2014) demonstrated that episodes (malnutrition, diarrhoea) or duration of illness were reduced among populations that received healthcare via contracting mechanisms.

In post-conflict states, contracting dramatically and rapidly improved the availability of services in terms of new and increased number of facilities providing primary healthcare, increased availability of health personnel and a new and broadened range of health services (maternal, child, sexual and reproductive health). Crucially, our review found contracting boosted equity with better penetration of geographically hard to reach areas (rural

communities) or poorer components of the population (urban poor, lower wealth quartiles), (Alonge et al., 2014; Arur et al., 2010; Bhushan et al., 2002; Schwartz & Bhushan, 2004). The exception was Loevinsohn et al. (2009), who found contracting had little effect on the coverage of preventive services, possibly because the NGO was not given managerial responsibility over vaccinators and other community health workers.

Contracting may improve efficiency but increase administrative costs. Despite several studies generally reporting reduced household costs in terms of total family expenditure on health, the per capita investment borne by the service providers was higher with contracting. One study reported contract administrative costs between 13% and 17% (Marek et al., 1999). There were hardly any studies assessing the cost-effectiveness of contracting, hence limiting our interpretation of these findings. Along this line, patients tended to report better satisfaction or perceived quality of healthcare.

Indeed our synthesis about contracting mechanisms for health service delivery is limited by differences in contexts such as varying government capacity, terms of contracts, local culture etc. This in itself limits how far we can generalise our results about contracting mechanisms. There was hardly any reporting of adverse events due to contracting such as management problems leading to termination of contracts or fragmentation of health service delivery. Fragmentation arises when weak governments lack the capacity to supervise or enforce contracts (Batley & Mcloughlin, 2010) and development partners find it appealing to ignore building the capacity of post-conflict state governments in favour of non-governmental organisations. The overall quality of evidence about the effects of contracting is low except for utilization, which is of moderate quality. Hence these results should be interpreted with caution. Further, publication bias is a likely limitation due to inaccessible grey literature in form of programme reports, particularly about unsuccessful contracting initiatives. Additional research about contracting private-for-profit non-state actors may be informative.

SOCIAL FRANCHISING AS AN ENGAGEMENT STRATEGY FOR NON-STATE ACTORS

TYPES AND QUALITY OF THE STUDIES

We found 11 studies examining franchising of which 2 had linked data sets (13 articles). These studies were conducted over a decade between 2004 and 2015.

We included one randomised controlled trial (n=1) (Aung et al., 2014), non-randomised controlled trials (n=4) (Agha, Karim, et al., 2007; Azmat et al., 2013; Hennink & Clements, 2005; Lonnroth et al., 2007), two uncontrolled trials (n=2) (Agha, Gage, et al., 2007; Munroeet al., 2015), and cross-sectional surveys (n=4) (Decker & Montagu, 2007; Montagu et al., 2013; Shah et al., 2011; Stephenson et al., 2004). The two cost-effectiveness evaluations were based on the one randomised controlled trial (n=1) (Bishai et al., 2015) and a large multi-country before and after survey (Munroe et al., 2015). Most of the studies were about networks of franchises providing sexual and reproductive health (n=8), with single studies on tuberculosis control (n=1), childhood diarrhoea (n=1) or access to vaccines and essential medicines for children less than five years of age (n=1).

These studies were of either moderate (n=3) or weak (n=8) quality, suggesting unclear or high risk of bias (see table 4.1.1). We did not consider any of the studies to be of strong quality (n=0). With regard to the GRADE framework, we assessed the overall quality of evidence for specific outcomes as mostly low or very low. These findings are depicted in Table 4.3.

Table 4.3.1 Risk of bias assessment for studies about franchising of primary healthcare services by non-state actors

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Description of study	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Stephenson	2004	Ethiopia	D4	W	W	W	W	W	W	Weak
2	Hennink	2005	Pakistan	D2	S	M	M	W	W	M	Moderate
3	Decker	2006	Kenya	D4	M	W	W	W	W	W	Weak
4	Agha*	2007a	Nepal	D3	W	W	W	W	W	W	Weak
5	Agha*	2007b	Nepal	D2	W	W	W	W	W	W	Weak
6	Lonnroth*	2007	Myanmar	D2	W	W	W	W	W	W	Weak
7	Shah	2011	Ethiopia	D4	W	W	W	W	W	W	Weak
			Pakistan	D4	W	W	W	W	W	W	Weak
8	Berk	2012	Kenya	D4	W	W	W	W	W	W	Weak
9	Azmat	2013	Pakistan	D2	M	M	M	M	W	W	Moderate
10	Montagu*	2013	Myanmar	D4	W	W	W	W	W	W	Weak
11	Aung α	2014	Myanmar	D1	M	M	S	W	W	M	Moderate
12	Bishai α	2015	Myanmar	D1	M	M	S	W	M	M	Moderate
13	Munroe	2015	Multi-country	D3	W	W	W	W	M	W	Weak

*NB: Linked studies: *Agha 2007 (a) & Agha 2007 (b); * Lonroth 2007 & Montagu 2013; α - Aung 2014 & Bishai 2015; Munroe 2015 is a multi-country study including 12 and post-conflict states in Africa (Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Nigeria, Senegal, Sierra Leone, Uganda, Zambia, and Zimbabwe) and 2 in Asia (Pakistan and Yemen).*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF THE INTERVENTION: SOCIAL FRANCHISING

Franchising is a contractual relationship between a franchisee (usually a small business) and a franchisor (usually a larger business) in which the franchisee agrees to produce or market a product or service in accordance with an overall blueprint devised by the franchisor (Stanworth et al., 2003). Social franchising borrows the tenets of a commercial franchise and applies them to achieve social goals. Specifically, social franchising is: "…An adaptation of a commercial franchise in which the developer of a successfully tested social concept

(franchiser) enables others (franchisees) to replicate the model using the tested system and brand name to achieve a social benefit. The franchisee in return is obligated to comply with quality standards, report sales and service statistics, and in some cases, pay franchise fees. All service delivery points are typically identified by a recognizable brand name or logo…" (Huntington et al., 2007). Franchises can be "fractional" in which add-on services are provided to an existing facility or "stand-alone" in which a new franchise is established to provide a service. First generational franchises are those that have limited control with mere provision of territory and brand name within specified guidelines of work; while second generation franchises involve closer monitoring and control (Smith, 1997).

In the health sector, private service providers engage in franchising enterprises to improve efficiency and quality as well as to achieve social goals such as increasing access to unavailable services and to reach the disadvantaged (Montagu, 2002; Stanworth et al., 2003). In our review, providers joining franchises were trained in delivery of quality primary healthcare, services marketing and supported by an external marketing campaign plus referral linkages in the network. The health component of the training covered reproductive health and family planning, counselling, quality improvement, contraceptive insertion and removal as well as disease specific management for diarrhoea and tuberculosis. While the business training emphasised basic budgeting skills, record keeping, stock management, branding, marketing and voucher management (Agha, Gage, & Balal, 2007; Agha, Karim, Balal, & Sosler, 2007; Aung et al., 2014; Azmat et al., 2013; Bishai et al., 2015; Lonnroth et al., 2007).

The international non-state actors involved in franchising enterprises in this review were Population Service International, Marie-Stopes Society, Futures Group, The Health Store Foundation and Pathfinder International. In the local scene, the Kisumu Medical Education Trust in Kenya, Nepal Fertility Care Centres in Nepal and Social Marketing Pakistan in Pakistan were prominent. Franchises were branded and promoted as social marketing programmes such as Biruh Tesfa (Ray of Hope) in Ethiopia, CFW Shops in Kenya, The Mahila Swahsta Sewa in Nepal, Green star or Green Key in Pakistan and Suraj (The Sun) Quality Health in Myanmar.

SUMMARY OF THE EVIDENCE: SOCIAL FRANCHISING OF HEALTH SERVICES

Table 4.3 Social franchising of primary healthcare services by non-state actors

Key messages:

- ✓ There is **moderate quality** evidence suggesting that social franchising improves availability and utilisation of primary care services.
- ✓ **Low quality** evidence indicates franchising improves the quality of family planning services.
- ✓ There were **no studies** that reported the direct effect of social franchising on death or illness.
- ✓ The evidence on equity is of **very low quality** and not explicit that franchising increases access to poorer strata or those in need of specific health services, for example youth and contraceptive services.

Patients or population: Women of reproductive age, youth, patients with tuberculosis, children with diarrhoea, children due for immunization and the general population seeking primary healthcare.
Setting/ country: Family planning clinics, primary care facilities and communities in both urban and rural areas in Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Myanmar, Nepal, Pakistan, Senegal, Sierra Leone, Uganda, Yemen, Zambia and Zimbabwe.
Intervention: Social franchising of primary healthcare services to non-governmental organisations.
Comparison: Standard of primary healthcare service delivery by government facilities.

Outcomes	Impact	Number of studies n=11	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: No study reported about the direct effect of social franchising on death.	0	-
	Illness: No study reported about the effect of social franchising on illness.	0	-
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: 6 studies reported training in business marketing skills, family planning services, management of diarrhoea and tuberculosis control among franchisees.	6	⊕⊕◯◯ Low
	Adverse events: No study reported adverse events due to franchising.	0	-
Tertiary outcomes (Health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** 7 studies suggested increased utilization. Of these 5 studies reported increased use of family planning; 1 study each reported increased use oral rehydration salts plus zinc in diarrhoea or an increased number of tuberculosis cases notified. Only 1 study found no significant changes in use of family planning contraceptives.	8	⊕⊕⊕◯ Moderate
	Coverage: 1 study reported exponential increase coverage of family planning services.	1	-
	Quality or satisfaction: 3 studies reported higher quality scores or perceived quality or satisfaction with the health services, by recipients of care	3	⊕⊕◯◯ Low
	Costs: 4 studies reported cost data; with higher costs per capita in 1 study; no cost differences in another study.	4	⊕⊕◯◯ Low
			⊕⊕⊕◯

	Cost-effectiveness: *Higher cost-effectiveness for DALYs but not deaths in one study; unnecessary maternal deaths averted.	2	Moderate
	Out of pocket: 1 study reported consultation fees per visit.	1	⊕⊕◯◯ Low
	Equity or access: 6 studies showed mixed inconsistent results by wealth quartile or distance from franchised health facilities.	6	⊕◯◯◯ Very low
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

Downgraded the evidence for risk of bias for the outcomes of (a) utilization and (b) cost-effectiveness; and due to inconsistency for outcome of (c) equity or access

**Source: United Nations Statistics Division*
http://data.un.org/CountryProfile.aspx?crName=MYANMAR

DISCUSSION OF FINDINGS ON SOCIAL FRANCHISING OF PRIMARY HEALTHCARE BY NON-STATE ACTORS

The private sector is a crucial player in health service provision, particularly in low- and middle- income countries where population growth is outstripping the existing public health infrastructure (Huntington et al., 2007). However, the private sector remains largely unregulated, consisting of numerous service providers with varying levels of quality of care (Basu et al., 2012). These providers range from traditional and alternative medicine practitioners to drug vendors, drug shops, pharmacies, private clinics, individual or group practices (from various cadres of nurses to doctors), to for-profit hospitals and not-for-profit.

Social franchising is one way of standardising health services delivery and improving access to quality healthcare (McBride & Ahmed, 2001). Three studies suggested franchises provide better quality of services by objective measures (Munroe et al., 2015) or as perceived by the recipients (Agha, Gage, et al., 2007) or client satisfaction scores (Azmat et al., 2013; Munroe et al., 2015). Still, these findings should be interpreted with caution as two recent systematic reviews suggest that health services delivered via the private sector do not necessarily guarantee higher quality of care than the public sector (Basu et al., 2012; Berendes et al., 2011).

Our review includes the latest studies about franchising health services in low and middle-income countries, and unlike previous reviews (Beyeler et al., 2013; Koehlmoos et al., 2011; Koehlmoos et al., 2009; Nijmeijer et al., 2014; Patouillard et al., 2007; Peters et al., 2004) we

have a large multi-country survey (Munroe et al., 2015), one randomised controlled trial (Aung et al., 2014) and one cost-effectiveness evaluation (Bishai et al., 2015).

We did not find studies reporting about the direct impact of health services franchising on death or illness. The indirect evidence is from two cost-effectiveness assessments (Bishai et al., 2015; Munroe et al., 2015). In one simulation, health services delivered via franchising were cost-effective in terms of disability-adjusted life years (DALYs) but not deaths averted. The median incremental cost effectiveness of the franchised approach to improving coverage of oral salts for diarrhoea was $5,955 (IQR: $3437-$7589) per death averted and $214 (IQR: $127-$287) per discounted DALY averted. The incremental cost-effectiveness was a quarter and sevenfold the Gross Domestic Product per capita, for DALYs and deaths respectively, of Myanmar in 2010 dollars (~800) (Bishai et al., 2015). Details of the unwanted pregnancies, deaths and costs averted documented in the second report are insufficient to support any firm conclusions on cost-effectiveness (Munroe et al., 2015).

Included studies seem to suggest that provision of new services is accompanied by an increase in the client volumes in utilising available services, mostly for family planning but also treatment of common ailments. This observation suggests a very simple logic model linking provision with utilisation. Nonetheless, the efficiency benefits of health services franchising were not elucidated. There are reports suggesting that social franchising maintains health services prices that are generally lower and predictable benefiting from economies of scale due to large numbers of health service providers in a single network (McBride & Ahmed, 2001; Schlein at al., 2013). In Ethiopia franchised clinics provided either more expensive services or at a cost no different from government facilities (Shah et al., 2011).

Perhaps more concerning is that despite this increased provision, there is not clear evidence of increased access by the poorest strata in society that many of these initiatives claim to serve. These mixed results on equity showed limited access among the poorer wealth strata (Munroe et al., 2015; Shah et al., 2011) and the younger population in need of contraceptives (Munroe et al., 2015); or increased access to either the poorest (Lonnroth et al., 2007; Montagu et al., 2013) or wealthier quartiles in Pakistan (Hennink & Clements, 2005; Stephenson et al., 2004) or no difference by wealth strata in Ethiopia (Stephenson et al., 2004) and Pakistan (Shah et al., 2011). A distance from a franchised facility of less than 30 kilometres was associated with increased access to vaccines and treatment for illness (Decker & Montagu, 2007).

Not unexpectedly given the relatively poor quality evidence base, findings are largely positive with no mention of adverse affects. Indeed this update does not provide a dramatic change in the evidence and more rigorous studies on the effects of franchising are warranted looking at health outcomes, quality of services and cost-effectiveness.

PUBLIC-PRIVATE PARTNERSHIP WITH FOR NON-STATE ACTORS

TYPE AND QUALITY OF STUDIES

In this review, we included 16 studies with 17 papers (2 linked data sets) about public-private sector engagements to deliver basic care services in fragile and post-conflict states.

Nearly all the studies we included were about tuberculosis control (n=14) (Ahmed et al., 2009; Chakaya et al., 2008; Chughtai et al., 2013; Daniel et al., Karki et al., 2007; Lonnroth et al., 2004; Maung et al., 2006; Naqvi et al., 2012; Newell et al., 2004; Tigani et al., 2008; Vieira et al., 2014; Zafar et al., 2012). Only three covered the delivery of primary healthcare (Farahbakhsh et al., 2012; Nakimuli-Mpungu et al., 2013; Tawfik et al., 2006). Generally, most partnerships were with private for-profit clinics, drug shops and hospitals (n=14) with few non-governmental organisation health facilities (n=3).

The types of these studies were non-randomised controlled trials (n=5), uncontrolled trials (n=9), and cross-sectional surveys (n=3) published over a 10-year span between 2004 and 2014. The majority of the studies assessing PPP models were of weak quality (n=14) signifying the high risk of bias. Using the GRADE framework we assessed the overall quality of evidence for the pre-specified outcomes as mostly low.

Table 4.4.1 Risk of bias assessment for studies about public-private partnerships with non-state actors in the delivery of primary healthcare in fragile and post-conflict states

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Description of study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Lonnroth	2004	Kenya	D3	W	W	W	W	W	W	Weak
2	Newell*	2004	Nepal	D3	W	W	W	W	W	W	Weak
3	Tawfiq	2006	Uganda	D3	S	W	W	W	M	W	Weak
4	Karki*	2007	Nepal	D3	S	W	W	W	M	W	Weak
5	Maung	2007	Myanmar	D2	M	M	M	W	S	W	Weak
6	Tigani	2007	Kosovo	D3	M	W	W	W	W	W	Weak
7	Chakaya	2008	Kenya	D2	W	M	W	W	M	M	Weak
8	Ahmed	2009	Pakistan	D3	W	W	W	W	M	M	Weak
9	Gidado	2009	Nigeria	D4	W	M	W	W	W	W	Weak
10	Farahbakhsh	2012	Iran	D2	M	M	M	W	M	M	Moderate
11	Khan	2012	Pakistan	D2	M	M	S	W	S	M	Moderate
12	Naqvi	2012	Pakistan	D3	M	W	M	W	M	W	Weak
13	Zafar	2012	Bangladesh	D3	S	W	W	W	S	W	Weak
14	Chugtai	2013	Pakistan	D2	W	M	M	W	S	W	Weak
15	Daniel	2013	Nigeria	D4	W	W	W	W	S	W	Weak

16	Nakimuli-Mpungu	2013	Uganda	D3	S	W	W	W	S	W	Weak
17	Vieira	2014	Guin. Bissau	D3	M	W	W	W	S	S	Weak

*NB: Linked studies: *Newell 2004 & Karki 2007*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF THE INTERVENTION: PUBLIC-PRIVATE PARTNERSHIP

Public-private partnership (PPP), also known as public-private mix (PPM), commonly involves the state making a business proposal to a private entity for the benefit of the public. In a recent systematic review, Roehrich and colleagues (Roehrich et al., 2014) have documented the varying conceptualizations of PPP. Nonetheless, PPP can be defined as a "…long-term contract between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility…" (World Bank Institute, 2012). The state and private sector share roles and responsibilities borne in a contractual agreement with contextual variation. The cost of these services is borne by either the taxpayer or other health financing strategies such as insurance or user fees or a mix of them. For example, in the health sector a public entity will typically contract the private sector to provide certain services which are not accessible to the general public, such as specialised laboratory tests. In the quest to expand HIV treatment monitoring, PEPFAR and the Global Fund initiatives entered into PPP models to provide immune (CD4+) and HIV-viral load testing (Sturchio & Cohen, 2012).

In low and middle-income countries, PPP is more established in tuberculosis control led by the Global STOP-TB partnership of the WHO (World Health Organization, 2006). Here PPP collaborations encompass public-private, public-public and private-private providers for the common purpose of delivering standardised TB services (Lei et al., 2015). PPP initiatives have been crucial in prioritising otherwise neglected diseases (Hentschel, 2004), food fortification (Mannar & van Ameringen, 2003), pandemics (Lal et al., 2011; Nwaka, 2005) and delivery of vaccines (Mahoney et al., 2007) through vertical programmes.

In this review the partnership interventions were diverse and can be classified as (a) governance arrangements to streamline standards of practice in the private sector, (b) training and technical assistance and (c) capital investment in terms of construction of facilities, human resources, supply of equipment, drugs and other consumables. The specific interventions in this review ranged from negotiation meetings with contracts between the ministry of health and non-state actors to provide quality primary healthcare services (treatment of respiratory infections, malaria and diarrhoea) (Tawfik et al., 2006); sensitization and behaviour change communication campaign (Khan et al., 2012); training about tuberculosis diagnosis and case management (Zafar et al., 2012); supportive supervision and distribution of national guidelines for primary healthcare and tuberculosis control (Lonnroth et al., 2004; Newell et al., 2004); provision of capital costs (anti-tuberculosis drugs, diagnostic equipment, health worker salaries and incentives, utility bills),

financing sputum transportation and setting up a national tuberculosis control programme from scratch (Tigani et al., 2008).

The non-state providers included private general practitioners, private physicians, midwives, nurses, drug sellers and factory health workers in drug shops, clinics and hospitals as well as international aid agencies. The local agencies in Africa included the Kenya Association for the Prevention of Tuberculosis and Lung Disease in Kenya; Makerere University and Butabika National Referral Hospital in Uganda. In Asia these were Cooperative Health Centers in Iran; Nepal Anti-TB Association, Patan Hospital and Yala Urban Health Programme in Nepal; Myanmar Medical Association in Myanmar; Society for Empowerment Education and Development, BRAC, the Progoti Samaj Kallyan Protisthan, Population Services Training Centre and the Bangladesh Garment Manufacturers and Exporters Association in Bangladesh; Basic Development Need, Indus Hospital, the Agha Khan Development Network and the Asia Foundation in Pakistan. International actors who supported these partnerships were the International Union Against Tuberculosis and Lung Diseases in Nigeria (IUATLD); Nuffield Centre for International Health and Development University of Leeds in Bangladesh; Aid, Health and Development (AHEAD) in Guinea Bissau; DOW-USA and the Fogarty International Centre/National Institutes of Health in Kosovo; the Peter C. Alderman Foundation in Uganda and USAID in Nigeria and Pakistan.

SUMMARY OF THE EVIDENCE: PUBLIC PRIVATE PARTNERSHIP FOR HEALTH

Table 4.4 Public-private partnerships for primary healthcare services by non-state actors

<table>
<tr><td colspan="4">Key messages:
✓ We found low quality evidence suggesting increased utilization of services due to public-private partnership; higher cure and treatment success rates for tuberculosis as well as improved laboratory diagnostic capacity and increased private physician knowledge of tuberculosis management.
✓ The evidence for the effect of public-private partnership on death was of very low quality and is conflicting.
✓ Very low quality data also suggest public-private partnership models generally increase costs of treating tuberculosis.</td></tr>
<tr><td colspan="4">Patients or population: General population and factory workers seeking diagnosis and treatment for tuberculosis as well as primary healthcare.
Setting/ country: Rural and remote areas in Bangladesh, Guinea Bissau, Iran, Kenya, Kosovo, Myanmar, Nigeria, Nepal, Pakistan and Uganda.
Intervention: Public-private partnership for tuberculosis diagnosis and treatment or primary healthcare service delivery.
Comparison: Public or private facilities delivering tuberculosis diagnosis and treatment or primary healthcare service delivery independent of public-private partnership engagements.</td></tr>
<tr><td>Outcomes</td><td>Impact</td><td>Number of studies n=16</td><td>Quality of the evidence (GRADE)</td></tr>
</table>

Primary outcomes (Health outcomes: death or illness)	**Death**: 6 studies reported mixed findings about the effect of public-private partnership on tuberculosis related deaths. All were weak designs except one, which only reported deaths from private facilities and not public facilities. 3 studies documented lower deaths in the PPP model while 2 studies showed no difference in deaths and 1 study reported low deaths in private facilities.	6	⊕◯◯◯ Very low
	Illness: 9 studies reported improvements in illness; 8 studies reported increased or very high cure or treatment success rate among tuberculosis patients within public-private partnership facilities; 1 study reported resolving mental illness. 2 studies reported mixed or no difference in tuberculosis treatment outcomes.	11	⊕⊕◯◯ Low
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: 3 studies reported improved tuberculosis diagnostic capacity of private laboratory facilities or moderate improvement in knowledge after training of private sector physicians. 14 studies conducted training or supportive supervision for private health entities.	14	⊕⊕◯◯ Low
	Adverse events: No study reported adverse events due to public-private partnership.	0	-
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** 9 studies reported increased notification or detection or referral of tuberculosis cases by the private sector; 3 studies reported increased patients seen in public-private arrangements; 1 study reported reduced absolute numbers admitted for tuberculosis.	12	⊕⊕◯◯ Low
	Coverage: 2 studies reported increased coverage of infant primary care services or tuberculosis control in the private sector.	2	⊕⊕◯◯ Low
	Quality or satisfaction: 7 studies reported improved quality or satisfaction with private-public arrangements in the form of higher cure rates, reduced treatment abandonment or re-treatment for tuberculosis or availability and cleanliness of primary care services. 2 reported lower application of microscopy services or higher smear positivity rates for tuberculosis diagnosis in the private sector.	9	⊕⊕◯◯ Low

	Costs: 5 studies reported mixed results; with higher costs for tuberculosis services (2 studies) or reduced per capita or direct patient care costs in private-public models (2 studies).	5	⊕◯◯◯ Very low
	Cost-effectiveness: No study reported about the cost-effectiveness of the public-private partnership strategy.	0	-
	Out of pocket: Details of out of pocket expenses were not specified in the included studies that assessed for costs.	0	-
	Equity or access: 4 studies reported inequity in access by vulnerable groups (2 studies documented user fees limiting access to the poor; 1 study reported higher costs borne by female patients with tuberculosis; 1 study reported limited access by minority populations due to political tensions). These studies were conducted in post-war districts among the urban poor and the rural population.	12	⊕◯◯◯ Very low
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

Downgraded for high risk of bias and or inconsistency for the outcome of (a) death and (b) costs of health services in PPP models. We did not downgrade for the high risk of bias for (c) illness or (d) utilization because of the consistent general direction of results by majority of the studies from diverse settings.

DISCUSSION OF FINDINGS ABOUT PRIVATE-PUBLIC PARTNERSHIPS FOR ENGAGING NON-STATE ACTORS IN THE DELIVERY OF PRIMARY HEALTHCARE

In fragile and post-conflict states, governments gradually find themselves unable to close the health demand gap, which disproportionately affects the marginalised in society. Indeed citizens increasingly rely on both formal (Awor et al., 2014) and informal private health service providers (Sudhinaraset et al., 2013). PPP models permit governments and international aid agencies to expand formal health services where they are scarce or unprofitable, at the micro-level (Lei et al., 2015). At macro-level new technologies, such as new vaccines and drugs that would otherwise be unavailable if left to the public sector alone, have been introduced through PPP initiatives (Mahoney et al., 2007; Nwaka, 2005; Pedrique et al., 2013).

We report the impact of PPP on the vital health outcomes of death (mortality) and illness (morbidity). The most recent systematic review on PPP models, which focuses on tuberculosis control, addressed these vital health outcomes indirectly (Lei et al., 2015). In our review, six studies reported mixed findings. There were lower tuberculosis related deaths in three studies (Maung et al., 2006; Tigani et al., 2008; Vieira et al., 2014), no difference in deaths in two studies (Chakaya et al., 2008; Gidado & Ejembi, 2009) and one study reported low deaths in the private health facilities without data from the public sector (Khan et al., 2012). Importantly, we downgraded the overall quality of evidence to very low due to this ambivalence in the direction of results, but also high risk of bias. This means that we are uncertain about the effects of PPM on lowering deaths. In Myanmar partnering with private general practitioners in tuberculosis control decreased deaths in participating urban centres eight deaths (3%) on average compared to 18 deaths (7.4%) in the control townships, with over 500 tuberculosis patients in the study areas (Maung et al., 2006). However this assessment was over a year's follow up (third quarter 2002 to fourth quarter 2003 cohorts). In Kosovo a joint initiative between international partners and the local national tuberculosis control programme led to a reduction in tuberculosis deaths from 4% in 2001 to 1% in 2004, with about 1,400 registered patients over the same post-war period (Tigani et al., 2008). In Hospital Raoul Follereau, a referral facility in Guinea Bissau, there were significantly reduced deaths from 21% (2009-2010) to 6% (2012-2013) after the introduction of PPP for a total of 409 tuberculosis patients admitted (Vieira et al., 2014). Clearly the sparse number of participants and events in these studies illustrate the need for more research in this area.

More studies indicated better performance of PPP models in terms of response to treatment of common illnesses. Over 2800 patients treated in five psycho-trauma clinics established in post-conflict district hospitals in Uganda demonstrated a decline in scores for mental health (depression and post-traumatic stress disorder) and improvement in scores for overall functioning (Nakimuli-Mpungu et al., 2013). This finding is corroborated by eight observational studies in Bangladesh, Kenya, Kosovo, Nepal, Nigeria and Pakistan that showed improvements in tuberculosis treatment success rates when the private providers were engaged (Chakaya et al., 2008; Chughtai et al., 2013; Gidado & Ejembi, 2009; Khan et al., 2012; Maung et al., 2006; Naqvi et al., 2012; Tigani et al., 2008). We did not downgrade the overall low quality of evidence due to coherence of the results from diverse settings. This means further research is needed to strengthen the evidence base for the effects of PPM models on treatment outcomes.

PPP engagements may improve utilization of primary care services, from the general direction of results from 12 studies. In this review eight studies (only one moderately well designed) reported increased notification or detection or referral of tuberculosis cases by the private sector (Ahmed et al., 2009; Chughtai et al., 2013; Khan et al., 2012; Lonnroth et al., 2004; Maung et al., 2006; Newell et al., 2004); while 3 studies (only one moderately well designed) reported increased patients seen in public-private arrangements (Farahbakhsh et al., 2012; Gidado & Ejembi, 2009; Naqvi et al., 2012). It is possible that this could be as a result of the introduction of a new health service (tuberculosis diagnosis and treatment) hence attracting new patients to the facilities.

Our review addresses PPP in expanding availability of health services and adherence to standards by the private sector, although all of the studies offered weak designs. Tuberculosis services were either introduced where they were not available before, or augmented in private health facilities due to PPP engagements. For example, workplace tuberculosis screening in over 60 garment factories in Bangladesh led to an exponential increase in case detection and referrals for appropriate treatment (Zafar et al., 2012). In Nairobi, tuberculosis services increased to 57% of private sector (26 of 46 hospitals and nursing homes) with the onset of PPP (Chakaya et al., 2008). Nonetheless, it is crucial to consider stakeholder needs in the PPP engagements in particular risk that could affect profitability. In Pakistan and Nepal private physicians were reluctant to join the partnership citing potential loss of their clientele (Ahmed et al., 2009; Newell et al., 2004). In Pakistan the private providers were given monetary incentives for participating in the training sessions and for each adult diagnosed with sputum smear positive tuberculosis and could charge standard consultation fees (Ahmed et al., 2009). In a mass tuberculosis screening initiative targeting private providers screeners were given performance incentives (Khan et al., 2012).

PPP underscores the need for strengthening the regulatory environment in the private sector and constant technical supportive supervision to encourage adherence to national guidelines and to assure quality. Generally, private health facilities that provided primary care or tuberculosis diagnosis and treatment did not necessarily adhere to national guidelines. Several studies suggested that the PPP model was followed by significant improvements in quality of care as reflected in the higher tuberculosis cure rates and lower occurrence of treatment abandonment. A study in Guinea-Bissau reported reduced absolute numbers admitted for tuberculosis, suggesting improvements in early detection and management of ambulatory cases (Vieira et al., 2014). In Uganda, negotiations with performance contracts (no incentives) yielded quality improvement in treatment of malaria, respiratory infection and diarrhoea. However, some aspects of standard care were neglected such as providing appropriate messages for health promotion or to defer unhelpful practices management of diarrhoea (Tawfik et al., 2006). In Iran (in the only moderately well designed study) clients expressed higher overall satisfaction with services, personnel attitude, waiting time, equipment and security, contact time and cleanliness with the PPP model (Farahbakhsh et al., 2012).

There were no studies on cost-effectiveness of PPP models, and the available evidence on costs was highly uncertain, all of it coming from weakly designed studies. The more comprehensive showed higher treatment costs for tuberculosis when private facilities were engaged compared to the public ones with a median of US$57 versus US$33. At the time of the study in 2004, Nepal had an average per capita income of US$378. This same study showed that recurrent costs were incurred by patients and constituted 50% of the total costs (Karki et al., 2007). In Nairobi, Kenya, Chakaya and colleagues reported higher tuberculosis treatment initiation costs of $60 in the private sector compared to free treatment in the public health facilities. This cost was borne by patients who preferred treatment in private facilities (Chakaya et al., 2008). However, the advent of the Global Fund initiative in Kenya dampened these costs as anti-tuberculosis drugs were provided free of charge by the state. In Guinea-Bissau there was a reduction in direct care costs to patients

possibly due to lower cases of tuberculosis related admissions (Vieira et al., 2014). In Iran expanding access to in a PPP model of Cooperative Health Centres resulted in lower per-capita costs of Rials 12,784 ($US1.6) compared to Rials 14,279 ($US1.8) in public primary healthcare facilities. In 2002 the exchange rate was $US1 to 7,925 Rials (Central Bank, 2002).

The evidence on equity (all from weak studies) suggests PPM models may disproportionately limit access to vulnerable groups. Few actually provided explicit assessments of equity considerations. Generally, these studies were conducted in post-war districts (Nakimuli-Mpungu et al., 2013; Tawfik et al., 2006; Tigani et al., 2008) or targeted the urban poor (Maung et al., 2006; Naqvi et al., 2012; Newell et al., 2004) or rural populations (Ahmed et al., 2009; Gidado & Ejembi, 2009; Tawfik et al., 2006). Four studies reported inequity in access by vulnerable groups with user fees limiting access to the poor (Chakaya et al., 2008; Lonnroth et al., 2004) and higher costs borne by female patients with tuberculosis (Karki et al., 2007). In Kosovo, minority populations experienced limited access to tuberculosis services due to political tensions (Tigani et al., 2008).

This evidence review has some strengths and limitations. These studies were from diverse settings, were pragmatic in design and were conducted within the ambit of the national tuberculosis programmes. These attributes generally improve the applicability of these results. However, the majority of the studies lacked the rigour of randomised trials, which reflects the difficulty of evaluating the impact of PPP models as private providers rarely have the time to participate in them. Larger longitudinal studies with longer follow up periods measuring impact on vital health outcomes (death) and cost-effectiveness would strengthen the evidence base for PPM models in post-conflict states.

COMMUNITY PARTNERSHIP: INVOLVING THE COMMUNITY AS NON-STATE ACTORS IN THE DELIVERY OF PRIMARY HEALTHCARE

TYPE AND QUALITY OF STUDIES

We found 11 studies about community involvement (action, participation or empowerment) as a key governance strategy in the delivery of primary healthcare. The studies were conducted in a period of slightly over a decade (1997 – 2009), and represent an aggregation of relatively recent data. These studies were mostly cluster-randomised controlled trials (n=8), two non-randomised controlled trials and one uncontrolled trial with before and after measurements. We characterised the quality of these primary studies as mostly moderate (n=5) or strong (n=4), with only two weak studies (Table 4.5.1). Although these were randomised trials, we postulated that the absence of blinding due to the nature of the clustered unit of allocation and analysis generally increased the risk of bias except where deliberate precautions were made to mitigate bias. As such we posit that the risk of bias due to non-blinding in the cluster trials would not impact on hard outcomes such as death which was reported in seven studies (Table 4.5.1). Using the GRADE framework we assessed the overall quality of evidence for the pre-specified outcomes as moderate to high. Table 4.5 provides the detailed results.

Table 4.5.1 Risk of bias assessment for studies about community involvement as key non-state actors

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Description of study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Babalola	2001	Cameroon	D3	S	W	M	W	S	M	Weak
2	Okonofua	2003	Nigeria	D1	S	W	M	W	M	W	Weak
3	Manadhar	2004	Nepal	D1	S	S	M	W	M	S	Moderate
4	Waterkeyn	2005	Zimbabwe	D2	S	M	M	S	M	M	Strong
5	Hossain	2006	Bangladesh	D2	M	M	W	M	M	M	Moderate
6	Bjorkman	2009	Uganda	D1	M	S	S	W	M	M	Moderate
7	Azad	2010	Bangladesh	D1	S	S	S	W	S	S	Moderate
8	Midhet	2010	Pakistan	D1	S	S	S	M	S	M	Strong
9	Colbourn	2013	Malawi	D1	S	S	S	W	M	M	Moderate
10	Fottrell	2013	Bangladesh	D1	S	S	S	M	S	S	Strong
11	Lewycka	2013	Malawi	D1	S	S	S	M	S	S	Strong

NB: Although blinding may not be feasible or may not directly affect hard outcomes such as death in cluster randomised trials, we opted for a more conservative approach to assessing bias as strategies to limit contamination were rarely reported.

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups)

DESCRIPTION OF THE INTERVENTION: COMMUNITY AS NON-STATE ACTORS

In this review we considered community participants as non-state actors taking the initiative to better their own lives and as direct beneficiaries or stakeholders. As such we applied the definition of community involvement as a process where "…people, both individually and in groups, exercise their right to play an active and direct role in the development of appropriate health services, in ensuring the conditions for sustained better health and in supporting the empowerment of community to help development…" (Oakley & Kahssay, 1999 page 3-19). Indeed, communities can be supported to contribute to their healthcare politically, for example through setting priorities for health problems and appropriate interventions; or economically by collectively pooling resources (money, effort, in kind support and ideas) to solve the prevailing priority health problems. Community participation requires mutual efforts by actors directed towards increasing community control (buy in); and communities being empowered to apply their collective skills and resources.

Nearly all of the studies investigating community participation of non-state actors were focused on a range of sexual and reproductive health initiatives (n=9) (Azad et al., 2010a;

Babalola et al., 2001; Colbourn et al., 2013; Fottrell et al., 2013; Hossain & Ross, 2006; Lewycka et al., 2013; Manandhar et al., 2004; Midhet & Becker, 2010; Okonofua et al., 2003) involving pregnant women or women of reproductive age (n=7) or the youth (n=1). Male involvement in reproductive health was also experimented on in one study (Midhet & Becker, 2010). The two studies focused on primary healthcare generally (Bjorkman & Svensson, 2009), and on hygiene and sanitation specifically (Waterkeyn & Cairncross, 2005).

There were four types of interventions in studies of community participation and empowerment of non-state actors. The reproductive studies investigated participatory learning and action by women's groups to improve pregnancy related maternal and child health outcomes (Azad et al., 2010a; Babalola et al., 2001; Colbourn et al., 2013; Fottrell et al., 2013; Hossain & Ross, 2006; Lewycka et al., 2013; Manandhar et al., 2004; Midhet & Becker, 2010), or reproductive health youth clubs (Okonofua et al., 2003), whilst the two remaining studies explored citizen scorecards to monitor delivery of health services (Bjorkman & Svensson, 2009), and community health clubs to improve hygiene in terms of safe water use and sanitation (Waterkeyn & Cairncross, 2005).

The citizens' scorecard in rural Uganda involved a community meeting, a staff meeting, and an interface meeting. In these meetings performance report cards for the utilization and quality of health services were disseminated, and joint community action plans for improvement were made (Bjorkman & Svensson, 2009). In the second intervention community health clubs in the rural north and west of Zimbabwe were voluntary organisations open to all irrespective of age, gender, education and were free of charge (Waterkeyn & Cairncross, 2005). Resource persons facilitated these health clubs in two phases of health education and application of the applied knowledge to improve water hygiene and sanitation such as hand washing. The reproductive health clubs in Nigeria targeted the youth and fostered peer education (Okonofua et al., 2003). These clubs provided a forum for interaction between the adolescents on reproductive health matters and conducted health awareness campaigns in the schools. The fourth intervention involved the formation of women's groups and meetings to identify and prioritize maternal and child (neonatal) health problems, planning action and evaluation of the steps with intent of improvement (Colbourn et al., 2013). In the different studies and settings there were variations to the fourth intervention that included male involvement, training to identify danger signs, referral linkages and making local arrangements for emergency transportation for obstetric complications.

The local actors involved in community participation and empowerment initiatives included Femmes-Sante-Development in Njangi Community, Cameroon; MaiKhanda (mother and newborn infant) and MaiMwana projects in Malawi; Women's Health and Action Research Centre, University of Benin, Nigeria; Village Development Committees Mother and Infant Research Activities in Nepal; Community Health Clubs by the Zimbabwe Applied Health and Development initiative; Dinajpur Safe Mother Initiative and the Diabetic Association of Bangladesh, in Bangladesh. The international actors comprised of academia namely Johns Hopkins University, University of London and Stockholm University); implementing partners (CARE and Population Services International); international aid agencies such as UNICEF,

DFID, New Zealand High Commission, Danida, Oak Foundation, USAID, WHO and the World Bank.

SUMMARY OF THE EVIDENCE: COMMUNITY INVOLVEMENT OR PARTICIPATION

Table 4.5 Communities as non-state actors in the delivery of primary healthcare

<table>
<tr><td colspan="4">✓ There is high quality evidence that community participation positively impacted health outcomes by reducing neonatal and child deaths, but not still birth.
✓ We found high quality evidence that community empowerment increased utilization of primary care services as well as the quality of care and satisfaction.
✓ Evidence of moderate quality suggests that community participation is cost effective and strengthened the capacity of facilities and communities to deliver primary care services.
✓ The evidence on maternal deaths is of low quality and weak.</td></tr>
<tr><td colspan="4">Patients or population: Women who are pregnant or of reproductive age, young people, husbands of pregnant wives and the general public.
Setting/ country: Rural communities in Cameroon, Bangladesh, Malawi, Nepal, Nigeria, Pakistan, Uganda and Zimbabwe.
Intervention: Community empowerment, ownership and accountability via participatory learning and action by women groups, women's group cycle, citizen scorecards, reproductive health clubs and community health clubs.
Comparison: Primary healthcare delivery without community empowerment</td></tr>
<tr><td>Outcomes</td><td>Impact</td><td>Number of studies n=11</td><td>Quality of the evidence (GRADE)</td></tr>
<tr><td rowspan="2">Primary outcomes (Health outcomes: death or illness)</td><td>Death: Reduced deaths (neonatal, infant, child or maternal) separately reported in 5 studies. No difference in deaths reported in 5 studies.</td><td>7</td><td>⊕⊕⊕⊕
High</td></tr>
<tr><td>Illness: Reduced illness in 3 studies (pregnancy related illness; sexually transmitted infections and weight for age scores). No difference in stillbirths in 4 studies.</td><td>7</td><td>⊕⊕⊕⊕
High</td></tr>
<tr><td rowspan="2">Secondary outcomes (Capacity building or adverse events)</td><td>Capacity building: 9 studies reported increased community capacity to deliver different aspects of primary healthcare. These were awareness, knowledge and skills for sexual and reproductive health (7 studies) or capacity to monitor and demand for quality health services or practices (2 studies).</td><td>9</td><td>⊕⊕⊕◯
Moderate</td></tr>
<tr><td>Adverse events: No study reported adverse events due to community participation.</td><td>0</td><td>-</td></tr>
</table>

Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** Increased utilization in 7 studies in terms of: family planning, antenatal care, immunization or skilled or health unit deliveries (5 studies); hygienic hand-washing and sanitation (1 study) and treatment by physician with concomitant reduced treatment by patent medicine dealers or pharmacists (1 study).	7	⊕⊕⊕⊕ High
	Coverage: 1 study reported higher latrine coverage with community health clubs.	1	⊕⊕⊕◯ Moderate
	Quality or satisfaction: 3 studies reported increased quality of care in terms of equipment use by health worker during health unit visits (1 study); higher number of youths informed partners about sexually transmitted disease (1 study) and adequate prenatal care (1 study)	3	⊕⊕⊕⊕ High
	Costs: 1 study reported US$0.21-US$0.55 per beneficiary of community participation.	1	⊕⊕◯◯ Low
	Cost-effectiveness: Community participation was cost-effective relative to World Bank threshold (1 study) or country specific GDP (2 studies).	3	⊕⊕⊕◯ Moderate
	Out of pocket: No study reported about the out of pocket costs due to community participation.	0	-
	Equity or access: 9 studies conducted in rural population; 1 study in politically disadvantaged area/tribe where housewives were more likely to observe hygienic practices than working women; in 1 study in farming women were disadvantaged in terms of utilizing reproductive health services; whilst rural areas had greater impact than urban dwellings.	9	⊕⊕◯◯ Low

GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.

DISCUSSION OF FINDINGS ABOUT COMMUNITY PARTNERSHIPS AND ENGAGING COMMUNITIES AS NON-STATE ACTORS IN THE DELIVERY OF PRIMARY HEALTHCARE

Our team conducted a comprehensive systematic review and included studies about water and sanitation, sexual and reproductive health for young people as well as preventive services such as immunization. We investigated the effects of community participation on health outcomes and other health services indicators in post-conflict states. In line with the 1978 Alma Ata declaration (World Health Assembly, 1978), it is imperative to have a sound understanding of the communities in which health interventions are implemented, and thus community participation becomes inevitable. Empowering communities is inherently democratic as this places the citizens at the centre of identifying their priority health problems, proposing solutions and proposing how they can be part of the collective initiative to solve these problems. Indeed community participation raises awareness of citizens' rights and responsibilities. Although there have been previous systematic reviews on community participation, with an overlap of studies with our review, these focused on maternal and newborn health (Marston et al., 2013; Prost et al., 2013; Soubeiga et al., 2014).

Our findings that community participation reduced deaths and illness are consistent with previous systematic reviews (Marston et al., 2013; Prost et al., 2013). Although only three included studies reached statistical significance (Bjorkman & Svensson, 2009; Lewycka et al., 2013; Manandhar et al., 2004), the general direction of results showed that community participation reduced neonatal, child or maternal deaths in five out of seven included studies (Fottrell et al., 2013; Midhet & Becker, 2010). The evidence for maternal deaths was less strong. One of the three statistically significant studies included is a trial in Uganda that showed community participation in planning and monitoring primary healthcare services generally (citizens' scorecard) reduced deaths in children under five years old by 33% (Bjorkman & Svensson, 2009). These variations in effectiveness could be explained by extent of coverage of the intervention, with less than 30% showing greater effectiveness than less than 30% in a previous review (Prost et al., 2013). We maintained these aggregate findings as high quality evidence overall due to the randomised controlled study design, coherence of the direction of results with different interventions and implemented in different settings. In addition, we found corroborating evidence that community participation reduced illness in terms of reduced weight for age scores (Bjorkman & Svensson, 2009), or lower pregnancy related illness (Midhet & Becker, 2010) or lower sexually transmitted illness. All the four studies which reported about stillbirths showed no statistically significant effect of community participation (Azad et al., 2010a; Colbourn et al., 2013; Fottrell et al., 2013; Manandhar et al., 2004).

It is no surprise that community participation improved utilization and quality of healthcare probably as a consequence of a high sense of ownership and responsibility (community buy-in). These findings manifested differently in the included studies with higher volumes of clients utilizing family planning services (Babalola et al., 2001; Bjorkman & Svensson, 2009); immunization uptake (Bjorkman & Svensson, 2009); increased facility visits for antenatal care with skilled or health unit deliveries (Fottrell et al., 2013; Hossain & Ross, 2006; Manandhar et al., 2004); higher hygienic hand-washing and sanitation (Waterkeyn & Cairncross, 2005); and increased treatment for sexually transmitted infections among the

youth by physicians with a concomitant reduction of treatment by patent medicine dealers or pharmacists (Okonofua et al., 2003). Strengthening of community capacity with increased awareness, knowledge and skills for sexual and reproductive health probably had a positive bearing on utilization. These findings are further reinforced by enhanced capabilities and interest to monitor and demand for quality health services or practices due to community participation (Babalola et al., 2001; Bjorkman & Svensson, 2009). Training of community resource persons including leaders likely increases their sense of self-efficacy (Colbourn et al., 2013; Waterkeyn & Cairncross, 2005). The ramifications of strengthened community capacities ultimately results in increased quality of care in terms of equipment use by health worker during health unit visits (Bjorkman & Svensson, 2009); a higher number of disclosure to partners of youths about sexually transmitted disease (Okonofua et al., 2003) and more clientele receiving adequate prenatal care (Manandhar et al., 2004).

Efficiency, costs and effectiveness are paramount considerations for scaling up community participation as a primary healthcare intervention. In Zimbabwe, community health clubs resulted in higher latrine coverage of 43% contrasted to 2% in the control area after two years. Although this was not a full cost effectiveness evaluation, this strategy in Zimbabwe reported costs of US$0.21-US$0.55 per beneficiary of community health clubs (Waterkeyn & Cairncross, 2005). At the time of this study the prevailing exchange rate and GDP were US$38 and US$535 respectively (The World Bank, 2012). In three studies community participation was found to be cost-effective relative to the World Bank threshold (Manandhar et al., 2004) or country specific GDP (Fottrell et al., 2013; Lewycka et al., 2013) as per World Health Organization guidelines for cost-effectiveness analysis (World Health Organization, 2003). We characterized this body of evidence as high quality overall and decision makers should prioritize community participation as a viable strategy to improve health indicators in post-conflict states.

In terms of equity, empowering the community to be part of solving their health problems is even more important among the disadvantaged or disenfranchised. This situation is prevalent in fragile states where access to health is ultimately a question of social justice (World Health Assembly, 1978). Only three studies explicitly reported equity considerations. In the first study community health clubs were more effective in households where women were not the main bread winners and had time to observe hygienic practices. This study was done among the Ndebele tribe who were considered politically marginalised (Waterkeyn & Cairncross, 2005). The second study done in Nepal showed less strong effects of health services utilization among tea garden residents who were more disadvantaged in terms of access to services (Fottrell et al., 2013). In the third study in Cameroon, the effects of community participation had greater impact in rural areas of Mbounda than urban dwellings in Djuongolo (Babalola et al., 2001), perhaps signifying stronger effects on a stable rural population compared to a mobile urban one. Otherwise, nearly all the studies were conducted in rural areas or among the urban poor.

The strengths of this synthesis lie in the solid evidence base arising from robust study designs, coherence of the findings and the pragmatic settings in which the studies were conducted. Indeed, community participation should be prioritised as one of the cluster of interventions to improve primary healthcare vital outcomes. Further health systems

research on the impacts of community participation on maternal health outcomes requires urgent attention particularly in the low and middle-income countries that did not meet their 2015 MDGs number 5 (reducing maternal mortality). A synthesis of qualitative evidence would be more informative on the population dynamics exploring why and how community participation was effective, and discerning the variation in effects in rural versus urban areas. Understanding more about the sustainability of community participation initiatives beyond donor projects would facilitate decision making, which calls for longer follow-up impact studies.

ACCREDITATION OR REGULATION OF NON-STATE ACTORS TO DELIVER PRIMARY HEALTHCARE

TYPE AND QUALITY OF STUDIES

We found three studies about accreditation or regulatory engagements to deliver primary care services by non-state actors in fragile and post-conflict states.

The first study is a non-randomised controlled trial about accreditation of 30 non-governmental organisation health units in Egypt (Al et al., 2009). This program consisted of three phases, namely preparation phase, accreditation phase and follow-up phase. The intervention involved ensuring the pharmacies met the set standards for accreditation after which they were evaluated against the set standards and whether these new standards led to better health outputs. This study therefore had both accreditation and regulation components.

The second study is a before and after uncontrolled trial about how a hospital accreditation system was implemented in Zambia between 1997 and 2000 (Bukonda, Tavrow, Abdallah, Hoffner, & Tembo, 2002). This report describes the two-phased educational and accreditation surveys approach for 79 hospitals. The aim of the education survey was to inform and familiarise the hospital teams about operational considerations for the accreditation system. The second phase assessed the hospitals against these pre-set accreditation standards. The main actor was the Zambia Health Accreditation Council, which was made up of the Zambia Medical Association, Zambia Dental Association, Zambia Nurses Association, Medical Council of Zambia and the General Nursing Council.

The third study is a randomised controlled trial about the regulation of 92 private pharmacies in Lao People's Democratic Republic (Stenson et al., 2001). The interventions consisted of a cluster of four activities conducted between December 1998 and February 1999. These were (a) four high-quality inspections, (b) enforcement of regulation through selective punishments, (c) supply of up-to-date regulatory documents to the private pharmacies and (d) providing information to the drug sellers about particular points needing improvement. The aim of these interventions was to increase their knowledge on correct standard treatment for common communicable disease; namely respiratory infections, diarrhoea, and malaria. Transportation and per diems for the district drug inspectors were given totalling US $1,000 throughout the study period.

We assessed the quality of these primary studies as having a low to moderate risk of bias (Table 4.6.1). Using the GRADE framework we assessed the overall quality of evidence for the pre-specified outcomes as moderate. See Table 4.6 for detailed results.

Table 4.6.1 Risk of bias assessment for studies about accreditation or regulation of non-state actors in the delivery of primary healthcare in fragile and post-conflict states

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Description of study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Stenson	2001	Lao PDR	D1	S	M	M	W	M	S	Moderate
2	Bukonda	2002	Zambia	D3	W	W	W	W	W	W	Weak
3	Tehewy	2009	Egypt	D2	M	M	S	W	S	S	Moderate

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF THE INTERVENTION: ACCREDITATION OR REGULATION OF NON-STATE ACTORS

There are various definitions of accreditation. The Australian Council on Healthcare Standards defines accreditation as "…the public recognition by a health care accreditation body of the achievement of accreditation standards by a health care organisation, demonstrated through an independent external peer assessment of that organisation's level of performance in relation to the standards…" (Australian Council on Healthcare Standards International, 2016). This definition highlights the key pillars of accreditation which are (a) a governance mechanism; (b) a process of agreeing on benchmarks and targets; (c) external evaluation against the pre-set benchmarks; (d) an improvement process after the assessment and (e) continuity of quality improvement. In another more liberal definition, accreditation is regarded as voluntary and not a requirement by law or regulation often conducted by a non-governmental organisation (Rooney & van Ostenberg, 1999).

Accreditation, certification and licensure are often applied interchangeably, with a thin line of distinction. Scholars have argued that licensure involves a state agency giving permission to an individual practitioner or healthcare organisation to operate in an occupation or profession. Licensure commonly leans towards regulation per se and is granted after meeting minimum standards with the aim of protecting the public (Montagu, 2003), whilst certification emphasises an organisational or individual accomplishment such as additional technology or knowledge and skills base respectively (Rooney & van Ostenberg, 1999). Certification assesses if the pre-agreed standards have been met (Shaw at al., 2010). The International Standards Organization (ISO), founded in 1947, issues ISO certification in

various fields including health (International Organization for Standardization, 2016).

Regulation is "…the public administrative policing of a private activity with respect to a rule prescribed in the public interest…" (Mitnick, 1980). This definition of regulation should not be erroneously assumed to ignore the public sector health facilities. Regulatory interventions are aimed at limiting availability of harmful services, practices, products or substances and thereby providing public health safety. Examples of regulatory interventions are for medical or pharmacy or insurance practice; complete with punitive rewards for non-compliers.

SUMMARY OF THE EVIDENCE: ACCREDITATION OR REGULATION OF HEALTH SERVICES

Table 4.6 Accreditation or regulation of non-state actors in primary healthcare

Key messages

- ✓ We found **moderate quality** evidence suggesting improved quality of service delivery in terms of reduced errors in dispensing of medicines, and perceived satisfaction by the end user.
- ✓ We found **low quality** evidence about the costs of an accreditation programme for hospitals.

Patients or population: Women who are pregnant or are of reproductive age, youth and the general public.
Setting/ fragile and post-conflict state country: Egypt and Lao People's Democratic Republic.
Intervention: Inspection, enforcement of regulation, providing regulatory documents, information for improvement.
Comparison: Health units without accreditation or regulation operated by non-state actors.

Outcomes	Impact	Number of studies n=3	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: No study reported about the effect of accreditation or regulation on death.	0	-
	Illness: No study reported about the effect of accreditation or regulation on illness.	0	-
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: No study reported about the effect of accreditation or regulation on capacity building.	0	-
	Adverse events: No study reported adverse events due to public-private partnership.	0	-
Tertiary outcomes (health services impacts: utilization, coverage, access,	**Utilization:** No study reported about the effect of accreditation or regulation on utilization.	0	-
			-

quality, satisfaction, costs or efficiency)	**Coverage:** No study reported about the effect of accreditation or regulation on coverage.	0	
	Quality or satisfaction: 1 study reported a difference between active and regular intervention in means of pharmacy indicators (essential drugs) or dispensing indicators (information, labeling, mixing); 1 study reported improved quality scores driven by patient care, admission & assessment, human resources and leadership management; 1 study reported higher end user satisfaction scores.	3	⊕⊕⊕◯ Moderate
	Costs: 1 study reported $1,000 per diem to inspectors in active intervention arm; 1 study reported the cost of accreditation of $9,960 per hospital.	2	⊕⊕◯◯ Low
	Cost-effectiveness: No study reported about the cost-effectiveness of accreditation or regulation.	0	-
	Out of pocket: No study reported about the effect of accreditation or regulation on out of pocket.	0	-
	Equity or access: No study reported about the equity issues around accreditation or regulation.	0	-
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

DISCUSSION OF FINDINGS ABOUT ACCREDITATION OR REGULATION NON-STATE ACTORS TO DELIVER PRIMARY HEALTHCARE

Accreditation and regulation have become an intrinsic part of the discourse of universal healthcare in low and middle-income countries. Clearly as the role of non-state actors in health service delivery is increasingly formalised by the state, fruitful engagements with service providers to ensure efficiency are needed.

Overall the evidence for support of accreditation of non-state actors to support primary healthcare is weak. The general direction of results shows that accreditation or regulation improved quality of service delivery or satisfaction of the recipients of care. Not a single

study had data on primary outcomes of death or illness. This evidence doesn't permit any firm conclusions.

Importantly, there is a dearth of evidence generally. The existing studies and systematic reviews are populated by studies conducted in high-income countries. Those in Africa are mainly about laboratory networks and not necessarily primary healthcare. More robust impact studies on accreditation and regulation are required and this should include accreditation or regulation of non-state actors like traditional healers and traditional birth attendants.

HEALTH FINANCING

We included 40 impact studies regarding heath-financing arrangements by non-state actors. These were about community health insurance (23), performance based financing (8), micro-credit schemes to recipients and private providers of care (6), as well as private health insurance interventions (3). We also identified cost-effectiveness studies of specific health services. The overall quality of these studies ranged from strong (n=4), moderate (n=6) and weak (n=30). Below we present summary of findings tables of financial arrangements for effective primary healthcare service delivery by non-state actors.

COMMUNITY HEALTH INSURANCE SCHEMES FOR PRIMARY HEALTHCARE SERVICES BY NON-STATE ACTORS

TYPE AND QUALITY OF STUDIES

We found 23 studies examining community health insurance, of which six studies had linked data sets giving a total of 28 articles including grey literature. These studies were conducted over two and a half decades; between 1985 and 2012.

We included three randomised controlled trials (n=3) (Gnawali et al., 2009; Hounton et al., 2012; Parmar, Reinhold, Souares, Savadogo, & Sauerborn, 2012), non-randomised controlled trials (n=2), uncontrolled trials (n=3) and case-control designs (n=12). There was no study that assessed the cost-effectiveness of community health insurance. All the studies were about the use of pooled resources to provide health cover to the wider community.

The studies we found were of strong quality (n=3), moderate (n=2) or weak (n=18), suggesting unclear or high risk of bias (see Table 4.7.1). With regard to the GRADE framework, we assessed the overall quality of evidence for specific outcomes as moderate to high for the primary outcomes of death, illness and utilization; and low or very low for catastrophic expenditure and equity of access. These findings are depicted in Table 4.7.

Table 4.7.1 Risk of bias assessment for studies about community health insurance for financing primary healthcare by non-state actors in a post-conflict state

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Description of study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Moen*	1990	Zaire/DRC	D3	S	W	W	W	W	W	Weak
2	Noterman	1995	Zaire/DRC	D3	M	M	W	W	W	W	Weak
3	Criel*	1997	Zaire/DRC	D3	M	M	W	W	W	W	Weak
4	Criel*	1999	Zaire/DRC	D4	M	W	W	W	W	W	Weak
5	Desmet	1999	Bangladesh	D4	W	W	W	W	W	W	Weak
6	Atim	1999	Ghana	D4	M	W	W	W	W	W	Weak
			Cameroon	D4	M	W	W	W	W	W	Weak
7	Chee	2002	Tanzania	D4	M	W	W	W	W	W	Weak
8	Jutting	2003	Senegal	D4	M	M	M	W	M	W	Weak
9	Msuya	2004	Tanzania	D4	S	W	W	W	W	W	Weak
10	De Allegri	2006	Burkina Faso	D4	S	W	M	W	M	W	Weak
11	Schneider*	2006	Rwanda	D4	W	W	W	W	W	W	Weak
12	Renaudin	2007	Mauritania	D4	M	M	M	W	M	M	Moderate
13	Franco	2008	Mali	D4	W	W	W	W	W	W	Weak
14	Gnawali	2008	Burkina Faso	D1	S	S	M	M	S	S	Strong
15	Chankova*	2008	Senegal	D4	M	W	M	W	M	M	Weak
			Mali	D4	M	W	M	W	M	M	Weak
			Ghana	D4	M	W	M	W	M	M	Weak
16	Sulzbach*	2008	Senegal	D4	M	W	M	W	M	M	Weak
			Mali	D4	M	W	M	W	M	M	Weak
			Ghana	D4	M	W	M	W	M	M	Weak
17	Shimeles*	2010	Rwanda	D4	W	W	W	W	W	W	Weak
18	Hong*	2011	Rwanda	D4	M	W	W	W	W	W	Weak
19	Sekabaraga	2011	Rwanda	D3	S	M	M	W	M	W	Weak
20	Haddad	2012	Benin	D2	M	M	M	W	M	M	Moderate
21	Parmar	2012	Burkina Faso	D1	S	S	S	M	S	S	Strong
22	Stoermer	2012	Nepal	D4	W	W	W	W	M	W	Weak
23	Hounton	2012	Burkina Faso	D4	W	W	W	W	W	W	Weak
24	Lu	2012	Rwanda	D3	W	M	M	W	M	W	Weak
25	Ansah	2012	Ghana	D1	S	S	S	M	S	S	Strong
26	Islam	2012	Bangladesh	D4	W	W	M	W	W	W	Weak
27	Robyn	2013	Burkina Faso	D4	W	W	M	W	M	W	Weak
28	Fakunle	2014	Nigeria	D3	W	M	W	W	W	W	Weak

*NB: Linked studies: *Moens 1990, Criel 1997 & Criel 1999; Schneider 2006, Shimeles 2010 & Hong 2011; Chankova 2008 & Sulzbach and Smith 2008*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF THE INTERVENTION: COMMUNITY HEALTH INSURANCE SCHEMES

Health insurance is one of the options for financing healthcare. In essence, the risks and resources are pooled together and shared (Davies & Carrin, 2001). Clearly it is difficult to predict the risk of an individual but possible for a whole population (Mills, 1983). The aim of health insurance is to provide universal financial protection to the subscribers by guarding against unplanned catastrophic expenditures due to healthcare costs. Catastrophic expenditure, defined as more than 40% of household consumption, has been shown to lead to poverty since families have to sell property or incur loans to finance healthcare (Kawabata et al., 2002).

There are various types of health insurance schemes that for purposes of this review we have categorised as (a) national mandatory initiatives targeting mainly the formal sector; (b) private health insurance schemes, which are commonly commercial and provided by an employer; and (c) community voluntary schemes targeting the informal sector and rural hard to reach areas, which is the thrust of this systematic review. This however does not limit external sources of funding to bridge the financing gap and improve access for those unable to afford insurance such as the indigent. Donor agencies and tax monies from governments commonly constitute this pool of external funds.

The community health insurance strategy is in line with the Alma Ata Declaration of 1978, which promulgates community participation and is thus inherently democratic (World Health Assembly, 1978). In community health insurance the principles of insurance are applied to the social context of communities, guided by their preferences and based on their structures and arrangements. In francophone settings these are known as health *mutuelles* defined as a voluntary, non-profit insurance schemes, formed on the basis of an ethic of mutual aid, solidarity and the collective pooling of health risks, in which the members participate effectively in its management and functioning. In this case solidarity implies the consciousness of togetherness and willingness to share in its responsibility. Alternative terminologies used include micro-insurance or medical societies of medical aid schemes (Carrin et al., 2005).

The schemes that we included in this review were mostly from African and post-conflict states such as: Ouesse and Pepane in Benin; Nouna in Burkina Faso; Mutuelle Famille Babouantou de Yaounde in Cameroon; Nkoranza, Offinso and Dangme west in Ghana; BlaVille, Kemeni, Wayerma and Bougoula in Mali; Nouakchott in Mauritania; Obio cottage hospital in Nigeria; Rwandaise d'Assurance Maladie in Rwanda; Thies region in Senegal; Hanang and Igunga districts in Tanzania; and Bamwanda and Masisi hospitals in Zaire/DRC. We included studies from two Asian countries; the Gonoshasthya Kendra in Bangladesh and

six private (Mandhesa, Syaphru, Rajmarga, Bikalpa, Chapagaun & Saubhagya) and six public (Lamahi, Tikapur, Mangalabare, Dumkauli, Katari and Chandraningahapur) schemes in Nepal.

The international actors who supported these initiatives were state agencies or non-governmental organisations including the United Kingdom Department for International Development, United States Agency for International Development, The World Bank, German Development Agency (GTZ), Partners for Health Reform; the academia were the University of Montreal, London School of Hygiene and Tropical Medicine, Tokyo Medical and Dental University, German Research Foundation and the University of Heidelberg; as well as one commercial entity, the Shell Development Petroleum Company.

SUMMARY OF THE EVIDENCE: COMMUNITY BASED INSURANCE SCHEMES

Table 4.7 Community health insurance for primary healthcare services by non-state actors

Key messages:

- ✓ We found **high quality** evidence suggesting community health insurance increase utilization of modern health services, and reduced catastrophic expenditure.
- ✓ We found **high quality** evidence of reduced catastrophic expenditure on health (and low quality evidence of reduced out of pocket payments).
- ✓ The evidence on access to health services with community insurance schemes is of **very low** quality; access may be increased even for vulnerable groups (except at longer distances from facilities) but the effects on equitable access is ambivalent.
- ✓ Studies were **low quality** and too small to assess the effects on death.

Patients or population: Children, pregnant women or of reproductive age, youth and the general public.
Setting/ country: Bangladesh, Benin, Burkina Faso, Cameroon, Ghana, Rwanda, Mali, Mauritania, Nepal, Nigeria, Senegal, Tanzania and Zaire/DRC.
Intervention: Community health insurance schemes.
Comparison: Standard of health financing including free tax based schemes (government); user fees or private insurance schemes.

Outcomes	Impact	Number of studies n=23	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: Two studies (randomized trials) were too small to detect differences in death.	2	⊕◯◯◯ Very low
	Illness: Two studies (randomized trials) reported no significant effect of community health insurance on illness.	2	⊕⊕⊕⊕ High
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: Two studies reported strengthening of the health system by construction of a hospital (1 study) or referral systems (1 study).	2	⊕⊕◯◯ Low
	Adverse events: Seven studies reported increased cesarean section for delivery or hospitalizations or facility visits or	7	⊕⊕◯◯ Low

	higher enrollment of those with chronic illnesses or the handicapped; after community health insurance was started.		
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** Nineteen studies reported about utilization. Only 1 study reported no difference in utilization irrespective of insurance. In 18 studies (1 randomized trial) there was increased use of health services after community health insurance was introduced. The utilization was reported as an increase in health facility visits, hospital admissions, antenatal care, birthing in formal health facilities, skilled deliveries, surgeries, uptake of family planning, treatment for fevers and diarrhoea.	19	⊕⊕⊕⊕ High
	Coverage: Thirteen studies reported about the proportion that enrolled into the community health insurance schemes as <30% (9 studies, 2 randomized trials); or 30% (5 studies).	13	⊕⊕◯◯ Low
	Quality or satisfaction: 5 studies reported about quality of care or patient satisfaction. These were increased quality (2 studies); reduced quality (2 studies); or no difference in quality (1 study) of primary healthcare services after community health insurance was started.	5	⊕◯◯◯ Very low
	Costs: Twelve studies reported data on costs (cost items including enrollment fees) and showed reduced catastrophic expenditure (5 studies, 1 randomized trial).	12	⊕⊕⊕⊕ High
	Cost-effectiveness: No study reported about the cost-effectiveness of community health insurance.	0	-
	Out of pocket: Six studies reported lower, reduced or savings in out of pocket expenditures after community health insurance was introduced.	6	⊕⊕◯◯ Low
	Equity or access: Fifteen studies reported about the effect of community	15	⊕◯◯◯ Very low

	health insurance showing increased access by vulnerable groups including the poor, destitute and women (8 studies); increased access by the better educated or less poor or wealthier categories (7 studies); as well as clear reduced access or increased mortality further away from the center of the scheme or health facilities (4 studies).		
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

Downgraded the evidence for high risk of bias or inconsistency for the outcomes of (a) death, as the RCTs were not powered to measure death; (b) coverage; and (c) equity or access.

DISCUSSION OF FINDINGS ABOUT COMMUNITY HEALTH INSURANCE SCHEMES FOR PRIMARY HEALTHCARE SERVICES BY NON-STATE ACTORS

The tenets of universal health coverage are to provide healthcare and financial protection to all citizens of a particular country (Hsieh et al., 2015). The closely related pillars of health financing and human resources for health constitute the core inputs for quality health service delivery (Sambo & Kirigia, 2014). Consequently, decision makers in post-conflict states grapple with the most effective options for mobilising financial and human resources for primary healthcare, particularly to cater for the marginalised in society as well as the informal sector. A key concern is that any community financing system should not only ensure equity in access but also deliver quality healthcare (Tangcharoensathien et al., 2015).

Our review provides new evidence, including randomised trials, about the impacts of community health insurance on the health outcomes of death and illness. Indeed, there are at least seven pre-existing systematic reviews on community health insurance. However, these syntheses are now either over a decade old (Ekman, 2004), or focused on specific groups including the informal sector (Acharya et al., 2013) or maternal and child health (Comfort et al., 2013), or health provider payment (Robyn, Sauerborn, & Barnighausen, 2013), or other outcomes other than death and illness (Escobar et al., 2010; Spaan et al., 2012). One review also included national health insurance schemes (Acharya et al., 2012), whilst an unpublished thesis synthesised the determinates of enrolment into community insurance schemes (Adebayo et al., 2015).

We report moderate quality evidence from three randomised trials that community health insurance does not reduce overall mortality in children under five years in Ghana (Ansah et al., 2009) or the general population in Burkina Faso (Hounton et al., 2012). Certainly the absence of evidence is not evidence of absence as there were very few events with only nine deaths (four and five in control and intervention arms respectively) out of about 2,000 children enrolled in one study (Ansah et al., 2009). These trials were underpowered (did not

have sufficiently large sample sizes) to detect death, a secondary outcome, and had short follow-up times. Such design features could be improved in future trials answering this question on mortality impacts of community health insurance schemes. With respect to illness, we found high quality evidence that community insurance schemes did not show significant difference in children who suffered from malaria parasite prevalence, severe anaemia and malnutrition (Ansah et al., 2009); or unspecified acute and chronic illnesses (Gnawali et al., 2009).

The finding that community insurance schemes increase utilization of modern health services is corroborated by previous systematic reviews (Acharya et al., 2013; Comfort et al., 2013; Escobar et al., 2010), albeit with cautious interpretation. Our review strengthens this evidence base with results from a randomized trial and the consistency of 18 out of 19 included studies that reported this outcome across a broad range of services including family planning, antenatal care, outpatient visits, inpatient admissions, skilled deliveries, surgeries, sleep under an insecticide-treated net and treatment of common illnesses. This suggests that community health insurance improves access to healthcare by reducing the higher cost financial barriers at the time of illness and at the point of use (out of pocket user fees). However, such findings should be interpreted with care since this increased utilization could be a feature of moral hazard; that is, the unnecessary overuse (abuse) of health services (Mills, 1983). Individuals enrolled into insurance schemes tend to overuse healthcare options simply because they are available or service providers offer a broader range of usually more costly health services which would otherwise not be routine (Mills, 1983). In our review we found a higher rate of facility visits (Atim, 1999; Noterman et al., 1995; Robynet al., 2013) or hospital admissions (Moens, 1990) or caesarean sections (Criel et al., 1999) among members of community insurance schemes, suggestive of moral hazard. Related to this phenomenon is adverse selection where sicker individuals tend to enroll more; for example the handicapped or those with pre-existing chronic illnesses as found in our review (Chankova et al., 2008; Gnawali et al., 2009). Adverse selection and moral hazard increase the likelihood or size of the risk against which they have insured (Mills, 1983) and are undesirable features of unsustainable insurance schemes. Community sensitization to curb moral hazard and adverse selection may be considered.

In this review, we report high quality evidence including a well-designed randomized trial showing community health insurance schemes reduced catastrophic expenditure among members (Parmar, Reinhold, et al., 2012). There was consistency in this result in all the four observational studies that reported this outcome (Franco et al., 2008; Msuya et al., 2004; Sekabaraga et al., 2011; Shimeles, 2010). These findings were corroborated by six studies that showed savings or lower out of pocket costs among the insured (Chankova et al., 2008; Franco et al., 2008; Haddad et al., 2012; Jütting, 2003; Msuya et al., 2004; Smith & Sulzbach, 2008). Financial protection is a core expectation of community financing schemes, which in our review manifested as less engagement in welfare threatening practices to pay for healthcare (Msuya et al., 2004), lower household health expenditures as a percentage of overall cash consumption (Franco et al., 2008) or even increased per capita household assets (Parmar, Reinhold, et al., 2012). This protection from catastrophic expenditure was in relation to hospitalization (Chankova et al., 2008; Franco et al., 2008; Jütting, 2003).

We found very low enrollment rates in community insurance schemes, with many of the studies (n=7) reporting this outcome recording less than 30% membership including two randomized trials after at least two years of follow up (Atim, 1999; Chee et al., 2002; Franco et al., 2008; Gnawali et al., 2009; Noterman et al., 1995; Smith & Sulzbach, 2008; Stoermer et al., 2012). Five studies reported more than 30% enrollment into community health insurance schemes (Criel & Kegels, 1997; Criel et al., 1999; Lu et al., 2012; Moens, 1990; Shimeles, 2010). We adopted a 30% cut-off of intervention coverage from a previous meta-analysis that showed differences in the effects of community participation in primary healthcare on health outcomes (Prost et al., 2013). This raises the question of barriers to accessing community health insurance since several schemes showed very low coverage of less than 15% after two years (Gnawali et al., 2009; Parmar, Souares, de Allegri, Savadogo, & Sauerborn, 2012; Smith & Sulzbach, 2008).

Enrollment costs (premium) and co-payments could easily deter particularly the poor from enrolling into health insurance schemes. A recent systematic review of qualitative and quantitative evidence found low levels of income and lack of financial resources as major factors affecting enrolment into community insurance schemes (Adebayo et al., 2015). This review reported that the less educated, men, younger adults and larger households were willing to pay more (Adebayo et al., 2015). The subscription fees could affect other key functions of the households that need money as well such as paying for school fees for the children, food and other household consumption items (opportunity cost). However, in some instances of very low enrollment between 3.3% and 11%, the subscription fees were 1.7% to 3.0% of annual income at Mali's poverty line of US$ 295 per capita or US$ 1,765 per household in 2004. In contrast, schemes in Rwanda recorded exponential increases in enrollment as the premium was not set to cover the cost of providing community health insurance services. Instead premiums were fixed at what was considered to be affordable in the community (Hong et al., 2011; Lu et al., 2012; Sekabaraga et al., 2011; Shimeles, 2010). Equity in accessing community health insurance schemes and the quality of care are two aspects that could help elaborate on this low enrollment rate. For example, in Zaire there was a low enrolment rate of 6.7% in the first year and 26.8% in the second year; and in Masisi it was much lower at 3.6% in the more remote rural communities despite the $US1 per month fee. As communities in post-conflict states rely on agriculture, tagging the enrolment period to the harvest seasons of the year when crops are sold would facilitate monetary subscription into the schemes thus improve scheme coverage to above 30%.

Generally, the evidence on equitable access to community insurance schemes was conflicting and hence of low quality. On the one hand, seven studies showed increased access to community health insurance schemes by vulnerable groups including the poor, destitute and women (Criel & Kegels, 1997; Desmet et al., 1999; Hong et al., 2011; Jütting, 2003; Sekabaraga et al., 2011; Shimeles, 2010; Stoermer et al., 2012). On the other hand, roughly an equal number (seven studies) depicted the better educated or less poor or wealthier categories as having better enrolment opportunities (Chankova et al., 2008; De et al., 2006; Hounton et al., 2012; Islam et al., 2012; Jütting, 2003; Schneider & Hanson, 2006, 2007). The evidence on the effect of distance was of moderate quality as there was a clear pattern of reduced access or increased mortality further away from the centre of the community insurance schemes or health facilities shown by five studies including data from

a randomised trial (Criel & Kegels, 1997; Criel et al., 1999; Franco et al., 2008; Hounton et al., 2012; Noterman et al., 1995).

The five studies that documented quality of care or patient satisfaction were inconsistent, providing very low quality evidence. This uncertainty in evidence manifested as earlier discharge after facility based deliveries (Haddad et al., 2012) or increased overall patient satisfaction (Renaudin et al., 2007; Robyn, Barnighausen, et al., 2013) for improvements in quality. Among the insured in one study post-partum surveillance was rarely done, antibiotics and oxytocics were used irrationally at delivery despite standardized protocols (Renaudin et al., 2007); there was less comprehensive diagnostic care with less likelihood to have weight, temperature, stethoscope use, a physical examination done, and information about diagnostics results given to the patient ($p<0.05$) (Robyn, Barnighausen, et al., 2013) for reduced quality of primary healthcare services after community schemes were started. Two studies documented no difference in quality of health services due to community insurance in terms of no significant difference in average length of stay (10 versus 9 days) (Criel et al., 1999) or no difference in the level of satisfaction which was high at greater than 85% for each indicator (Haddad et al., 2012). Although there was no discernible relationship between enrolment rates and quality of care in our review, the same synthesis by Adebayo and colleagues (Adebayo et al., 2015) found an association between low enrolment and poor healthcare quality (stock-outs of drugs and medical supplies, negative healthcare worker attitudes, and long waiting times).

This synthesis exposes shortcomings in the evidence base about the effects of community health insurance schemes. There were very few randomised trials to appropriately measure effects of community health insurance on vital health outcomes, in particular death. The bulk of observational studies with short follow up periods reduce the internal validity for most outcomes. A number of studies attempted to minimise these confounding effects by using robust analysis methods such as propensity score matching (Gnawali et al., 2009), difference in difference or inverse variance (Parmar, Reinhold, et al., 2012), which approximate randomization. Still future impact evaluations should be better designed with longer-term follow up in more mature schemes.

The nature of the intervention provides for marked differences in the design of community insurance including payments, benefits, target population, coverage and maturity of the scheme. These context specific variations do not permit aggregation of data but highlight the importance of insurance scheme design to meet the needs of the target community and be sensitive to the political economy. In this regard, we found important heterogeneity in certain outcomes such as coverage and equity as well as variations in the study designs, interventions and outcome measures, which limit comparability. However, for some similar outcomes such as utilization and catastrophic expenditure the consistent general direction of results strengthened the evidence base, despite these potential differences.

Noteworthy in post-conflict states the limited health infrastructure may not meet the demand brought about by the influx of patients following this increased utilization particularly for in-patient admissions. Regardless of the low enrolment rates that could introduce selection bias, non-state actors could partner with governments to strengthen the

health infrastructure, particularly in rural communities. In addition, political commitment has a bearing on the success of community health insurance, a case in point being in Zaire where the scheme had to be stopped due to unfavourable conditions (Criel & Kegels, 1997; Criel et al., 1999).

PAY FOR PERFORMANCE FOR DELIVERY OF PRIMARY HEALTHCARE IN FRAGILE AND POST-CONFLICT STATES:

TYPE AND QUALITY OF STUDIES

We included eight studies, which resulted in 12 publications examining the role of pay for performance as a mechanism of health financing (incentives) in fragile and post-conflict states. These studies were conducted between 1999 and 2012, therefore providing relatively recent evidence.

The study designs we included were randomised controlled trials (n=1) (Engineer et al., 2016), non-randomised controlled trials (n=6) (Bonfrer, Soeters, et al., 2014; Falisse et al., 2015; Rudasingwa et al., 2015; Soeters et al., 2005; Soeters et al., 2011; Zeng et al., 2013) and uncontrolled trials (n=4) (Ashir et al., 2013; Eichler et al., 2001; Soeters et al., 2005; Witteret al., 2011). There were no post-only designs either as case control or cross sectional surveys (n=0). Using the risk of bias assessment tool, we categorised the quality of these studies as strong (n=1), moderate (n=2) or weak (n=5); as there was only one randomised controlled trial, hence limited opportunity for strong studies. Consequently, the overall quality of evidence for specific outcomes was mostly low using the GRADE framework. The summary of findings is provided in Tables 4.8 and 4.8.1:

Table 4.8.1 Risk of bias assessment for studies about pay for performance strategy to deliver primary healthcare in fragile and post-conflict states

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Description of study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Eichler	2001	Haiti	D3	M	M	M	W	W	W	Weak
2	Soeters*	2005	Rwanda	D2	M	M	M	W	M	W	Weak
3	Soeters*	2006	Rwanda	D3	W	W	W	W	W	W	Weak
4	Soeters	2011	DRC	D2	W	M	M	W	M	S	Weak
5	Witter	2011	Pakistan	D3	M	W	M	W	M	W	Weak
6	Ashir	2013	Nigeria	D3	M	W	W	W	M	W	Weak
7	Zeng	2013	Haiti	D2	M	M	M	W	S	S	Moderate
8	Bonfrer*	2014 (a)	Burundi	D2	S	M	M	W	M	S	Moderate
9	Bonfrer*	2014 (b)	Burundi	D2	S	M	M	W	M	S	Moderate
10	Falisse*	2014	Burundi	D2	S	M	S	W	M	S	Moderate
11	Rudasingwa *	2015	Burundi	D2	S	M	M	W	M	S	Moderate
12	Engineer	2016	Afghanistan	D1	S	S	S	S	S	S	Strong

*NB: Linked studies: *Soerters 2005 & Soeters 2006; Bonfrer 2014 (a), Bonfrer 2014 (b), Falisse 2014 & Rudasingwa 2015;*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF INTERVENTION: PAY FOR PERFORMANCE

Pay for performance is defined as "…a system of health financing that employs the transfer of money or material goods conditional on taking a measurable action or achieving a predetermined goal…"(Eichler et al., 2009; Oxman & Fretheim, 2009a, 2009b). This strategy is also known as results-based financing or input-based financing or performance-based financing or targeted payments (Oxman & Fretheim, 2009b). The money or material goods are the incentives whilst the measurable action assessed by predetermined performance targets are health related outcomes. Pay for performance initiatives are governed by written or unwritten contracts or mutual understanding between the purchasers (principals) and the providers of the health services (agents) (Eichler et al., 2009).

A number of theories inform pay for performance initiatives. The principal-agent theory describes the payer as the principal (Grossman & Hart, 1983), therefore governments, citizens, donor agencies or insurance schemes constitute principals; whilst service providers (practitioners, clinics, pharmacies, laboratories and hospitals) are the agents in the health sector. The principal purchases health services from the market place of agents. Traditional payment systems use fixed salaries for an agreed amount of work hours. However, this approach does not empower the principals to demand quality services. Therefore the challenge of monitoring public services, to ensure value for money, is the foundation for pay for performance. In pay for performance, principals demand quality health services and the agents are provided financial incentives for achieving the pre-agreed performance targets (Eichler et al., 2009; Grossman & Hart, 1983; Ogundeji, 2015).

Theories of motivation generally converge that monetary or material incentives influence positive health worker behaviour change (Michie et al., 2014). According to the social cognitive theory of Bandura, individuals are driven by external factors and not by inner forces (Bandura, 1986). Bandura's model posits that it is the interaction of behaviour, personal and environmental factors that influence human functioning. Further, Bandura argues that for individuals to perform a task, they may require an external intervention (material incentives), which is an essential component of pay for performance strategies. The two-part theory of Herzberg postulates that factors involved in producing job satisfaction (and motivation) are different from the factors that lead to job dissatisfaction (hygiene) (Herzberg, 2003). In essence Herzberg counters the pay for performance perspective. Hygienic factors are part of the work environment whose absence may lead to dissatisfaction in employees but whose presence does not necessarily lead to their satisfaction, unless appropriately applied by an organisation. According to Herzberg, money, which is the core of incentives in pay for performance initiatives, is a hygienic factor.

The types of local actors involved in the pay for performance initiatives included local non-governmental organisations such as Centres pour le Developpement et la Sante and Comite Bienfaisance de Pignon in Haiti and Bureau des Oeuvres Médicales in the DRC. Typically these were international non-governmental organisations funded by international aid agencies including the European Union, the Department for International Development, the World Bank and USAID. Examples of these actors are: Save the Children USA, Cordaid, HealthNet TPO, the Belgian Technical Corporation, the Swiss Tropical and Public Health Institute and Management Sciences for Health. These international agencies commonly played a kick-start role to experiment and set up pay for performance schemes for primary healthcare in these fragile and post-conflict states, upon which national actors or fragile and post-conflict state governments took over.

Implementation designs of pay for performance schemes vary by type of actor and contextual factors. Interventions may target recipients of care, providers of care, non-governmental organisations, sub-national governments or national governments (Oxman & Fretheim, 2009a). In this review we focused on those that targeted providers of care or non-governmental organisations. The types of interventions were commonly monetary rewards such as salary enhancements for specific health indicators. The types of primary health services targeted in the included studies were mostly maternal and child health. The method of computing these incentives is pre-agreed and commonly documented in a performance contract. Health workers may be contracted directly or indirectly through a third party organisation that typically would be responsible for the deliverables against which payments are made. In Haiti participating non-governmental organisation were paid 95% of the pre-agreed original budget with a possibility of earning a bonus of 10% (Eichler et al., 2001). In other words, there was a possibility (risk) of losing 5% of the budget if the performance targets were not attained. They agreed to indicators on health impact (oral rehydration therapy, vaccination, family planning and antenatal care), consumer satisfaction (waiting time) and improving coordination with the Ministry of Health (Eichler et al., 2001). In the Democratic Republic of Congo funders subsidized local healthcare providers for achieving certain benchmarks. The monthly subsidies to participating facilities varied between $200 and $4,000 (Soeters et al., 2011). In addition to the basic subsidies, remote health facilities benefited from an isolation bonus of up to 15%. The benchmarks were health output and patient perception indicators (knowledge of HIV/AIDS, vaccines, insecticide treated nets, family planning, latrine coverage and outpatient visits); patient perceived quality of primary healthcare (availability of drugs, health facility staff attitude, waiting time and cure from illness); and professionally determined quality (availability of qualified staff and supervision of health facilities) (Soeters et al., 2011). In Burundi, the pay for performance scheme payments ranged from $0.25 for outpatients consultations to $20 for tuberculosis treatment. The quality of healthcare delivery in Burundi was assessed using 58 composite quality indicators for care management (curative, maternity, prenatal), family planning, laboratory services, medicines management, and materials management (Bonfrer et al., 2014). Computations for payment were made clear using a pre-determined formula, which considered the quality score.

Table 4.8 Pay for performance as a strategy to deliver primary healthcare in post-conflict states

Key messages:

- ✓ There is **high quality** evidence supporting pay for performance improving satisfaction and quality of care.
- ✓ There is **low quality** evidence suggesting pay for performance enhanced services by increasing coverage and capacity building, and attracting better qualified nurses from other areas, and also increased utilisation and reduced out of pocket costs.
- ✓ The **single study** reporting death (neonatal mortality) was too small to detect a significant effect of pay for performance, and no study reported the effect on illness.

Patients or population: Children, women and the general population seeking primary healthcare and health workers providing care
Setting /fragile and post-conflict state country: Rural and peri-urban health facilities in Afghanistan, Burundi, Democratic Republic of Congo, Haiti, Nigeria, Pakistan and Rwanda
Intervention: Pay for performance by international non-governmental organisations
Comparison: Routine care by public or private health facilities or health workers

Outcomes	Impact	Number of studies n=8	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: No significant effect on neonatal mortality.	1	⊕◯◯◯ Low
	Illness: No study reported about the effect of pay for performance on illness.	0	-
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: Positive changes in organisational behavior; training managers to develop business plans, use financial tools to analyze revenues, and improve their expenses decision-making.	3	⊕⊕◯◯ Low
	Adverse events: More qualified nurses migrated to pay for performance supported areas; perceived increased workload and reduced revenues for health workers; sustainability issues with pay for performance accounting for a significant proportion of the annual district health expenditure.	3	⊕⊕◯◯ Low
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** Ambivalent findings; 8 studies reported increased use of health services. These were outpatient visits or maternal and child health services (family planning; antenatal care; institutional deliveries; immunization and oral rehydration therapy); whilst 4 studies reported no significant change in outpatient visits; or family planning use or antenatal-care or immunization due to pay for performance	8	⊕⊕◯◯ Low

	Coverage: Increased coverage/reduced unmet demand for family planning in 1 study. No difference in coverage in 1 study.	2	⊕⊕◯◯ Low
	Quality or satisfaction: Increased in terms of measurement of blood pressure, staff professionalism, patient knowledge and perceptions.	4	⊕⊕⊕⊕ High
	Costs: 4 studies reported about costs of pay for performance ranging from less than $1 to $55 for incentives. Administration costs can be up to 25%.	4	⊕⊕◯◯ Low
	Cost-effectiveness: No study reported cost-effectiveness data.	0	-
	Out of pocket/Catastrophic cost: Lowered direct payments to facilities or health expenses per annum; and reduced episodes of catastrophic expenditure.	2	⊕⊕◯◯ Low
	Equity or access: Mixed picture with higher vaccination effects among the poorer households, except for OPV; higher institutional delivery among wealthier (+4%) but no effects among the poor.	1	⊕◯◯◯ Very low
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

Downgraded the evidence for high risk of bias or inconsistency for the outcomes of (a) death, as the RCTs were not powered to measure death; (b) coverage; and (c) equity or access.

DISCUSSION OF FINDINGS ABOUT PAY FOR PERFORMANCE INCENTIVES FOR PRIMARY HEALTHCARE

Despite performance contracts dating back to 4,000 years ago (Hopkins & Mawhinney, 1992), the preferred approach to health service delivery is highly centralised with the state or donors paying human resources in public facilities; providing and maintaining the required infrastructure; and procuring and delivering the health goods. The private sector essentially does the same, for example it pays salaries for practitioners, using private funds. This approach does not necessarily demand quality health services or some targeted outcomes. Fragile and post-conflict states typically report financial and human resource shortages, and the few that are available may not be efficient (Dalton, 2014; Omaswa,

2014). Pay for performance is one of the innovative health financing strategies that could tie programme outputs to inputs, in an environment of scarce financial and human resources for health as well as high worker absenteeism (Belita et al., 2013).

We report results of our systematic review of pay for performance when applied in the non-state health sector and in fragile and post-conflict states. Generally, we found low quality evidence suggesting that pay for performance increased utilization of and reduced catastrophic costs for primary healthcare services. We also report high quality evidence that pay for performance increased the quality of primary healthcare services. Among the new findings in our review are data on the effects on financial incentives on catastrophic costs.

Although our review brings in new data on the effects of pay for performance on the vital health outcome of death (neonatal mortality), we found a non-significant result. Only one study reported about death (Bonfrer, Van de Poel, et al., 2014), yet this study, done in Burundi, was not focussed on detecting such a rare but crucial outcome. In addition, we did not find any evidence about the effects of incentive schemes on illness, which could have provided a basis for extrapolation. This low quality evidence about the effects of pay for performance on death implies limited confidence in this estimate of effect. Future well-designed trials are likely to be more informative.

Overall, there is low quality evidence that pay for performance schemes increased various aspects of utilization. The finding of a general increase in health services utilization is consistent with previous systematic reviews. All but one of the 11 studies we included reported a positive change in utilization of at least one primary healthcare service. Six studies reported significant increases in facility-based deliveries (Ashir et al., 2013; Bonfrer, Soeters, et al., 2014; Bonfrer, Van de Poel, et al., 2014; Soeters et al., 2006; Soeters et al., 2005; Witter et al., 2011), despite the evidence showing increased or no difference in antenatal care visits. Similarly, the rest of the indicators depict increased or no difference in immunization, contraceptive use and outpatient visits possibly suggesting low sample size issues. In Burundi, whilst there were improvement in clinical care services such as antenatal, maternal and outpatient care, pay for performance had no effect on clinical support services such as laboratory tests or supplies management of medicines and sundries (Rudasingwa et al., 2015).

In line with a general increase in utilization, we report high quality evidence a well-designed randomised trial in Afghanistan (Engineer et al., 2016) that pay for performance increased the technical quality of primary healthcare. A systematic review of pay for performance-programmes in high income countries found that 13 out of 17 reviewed studies showed a positive effect on quality improvement (Petersen et al., 2006). These findings are corroborated by three observational studies we included (Bonfrer, Soeters, et al., 2014; Bonfrer, Van de Poel, et al., 2014; Soeters et al., 2006; Soeters et al., 2005; Soeters et al., 2011). Quality care manifested as time spent on patients, counseling and physical examination including blood pressure measurements (Bonfrer, Soeters, et al., 2014; Bonfrer, Van de Poel, et al., 2014). A study in the DRC reported increased scores in professional quality (+25%, $p<0.05$), qualified staff (+15%, $p<0.001$) and increased patient-perceived quality score (+25%, $p<0.05$) (Soeters et al., 2011), perhaps reflecting improved capacity to

strengthen the management of human resources base with pay for performance initiatives. In Rwanda there was increased (+23%) respondents knowledge of HIV transmission through skin-piercing objects from 35% to 58% (Soeters et al., 2006), suggesting effective health education about HIV prevention.

We found low quality evidence proposing reduced (– 72%) episodes of catastrophic expenditure from 2.5 to 0.7 in Rwanda (Soeters et al., 2006). This evidence is strengthened by a study in DRC which documented lower direct payments (out of pocket) to health facilities for patients (Soeters et al., 2011). Such effects are difficult to interpret and attribute to pay for performance alone in the event of interaction effects of co-interventions. For example, in Burundi, user fees were withdrawn six months before the pay for performance scheme was introduced (Nimpagaritse & Bertone, 2011), which could in itself increase utilization and reduce costs (Bonfrer, Soeters, et al., 2014; Ridde & Morestin, 2011). Otherwise, pay for performance costs are borne of monetary incentives to service providers and administration of the system. Incentives payments ranged from less than $1 for simpler activities, for example outpatient consultations, to $55 for more demanding tasks such as institutional deliveries or patients with tuberculosis treated correctly, while administration costs were up to 25% (Soeters et al., 2006). This finding brings into question sustainability issues of pay for performance schemes post donor projects. Noteworthy, the Burundi government committed 1.4% of its annual budget to performance-based financing and related health financing strategies each year (Bonfrer, Soeters, et al., 2014). Indeed there were no studies on the cost-effectiveness of the pay for performance initiatives in post-conflict states. Hence future studies could investigate if effects of pay for performance compensate for the increased administrative costs and effort.

While all the studies were done in some of the poorest populations in the world, the evidence on equity is only from Burundi, is conflicting and therefore of very low quality. Special bonuses were paid to rural or remote facilities and those whose target populations were largely living below the poverty line (Bonfrer, Soeters, et al., 2014). Studies reported the poor utilised primary healthcare less when ill. Indeed there were higher institutional deliveries among wealthier populations (+4%) but no effects among the poorer ones (Bonfrer, Van de Poel, et al., 2014). Further, members from poorer homes reported increased vaccination effects, except for oral polio virus (Bonfrer, Van de Poel, et al., 2014).

Without question, performance incentives had undesired effects particularly on the perception and distribution of human resources. In Burundi more qualified nurses migrated to pay for performance supported areas (Falisse et al., 2015); whilst in Rwanda workers perceived increased workload and reduced revenues (Soeters et al., 2005). Such distortions of the labour market are likely to disadvantage the vulnerable section of the population. However, if well harnessed pay for performance initiatives can be employed to realign misdistribution of health workers congregated in urban centres of fragile and post-conflict states. Not least, the question of sustainability was pronounced in Pakistan, where pay for performance accounted for a significant proportion (44%) of the annual district health expenditure (Witter et al., 2012).

Despite these adverse events, pay for performance introduced positive changes in

organisational behaviour (Eichler et al., 2001) and management capacity. Managers were trained to effectively administer contracts, develop business plans, use financial tools to analyse revenues, and improve their expenses decision-making (Soeters et al., 2005; Soeters et al., 2011). This suggests that pay for performance could potentially strengthen efficiency mechanisms in health systems of fragile and post-conflict states. Some authors have argued that pay for performance devolves decision making to health facility level instead of central bureaucrats (Soeters & Vroeg, 2011). However, a qualitative study reported dampened community voice in preference for health workers in providing checks and balances (Falisse, Meessen et al., 2012).

In conclusion, it is clear that pay for performance has benefits, but the effects are disparate from none or minimal or significant. Thus, the more relevant question would examine the contextual factors that may impact on effectiveness of pay for performance initiatives, as in fragile and post-conflict states considering pay for performance schemes as a policy option. The evidence base is strong for effects of pay for performance on health services utilization and improvements of technical quality. However more larger well-designed studies cluster trials as well as interrupted time series with appropriate control groups are needed to address areas where data were totally absent such as effects on mortality and illness; catastrophic costs and cost-effectiveness, as well as equity where the evidence was heterogeneous.

MICROCREDIT INCENTIVES OR LOANS TO NON-STATE ACTORS FOR PRIMARY HEALTHCARE SERVICES IN FRAGILE AND POST-CONFLICT STATES:

TYPE AND QUALITY OF STUDIES

We found six studies (eight articles) looking at the impacts of microcredit or loans as a mechanism of health financing non-state actors in fragile and post-conflict states. Four studies were linked but assessed different aspects or outcomes (see Table 4.9.1). The included studies focus on borrowers who are linked to the health profession e.g. midwives and doctors. In this review we apply a broader term of ‘microfinance’ to capture the full range of financial services which includes credit, savings, insurance and money transfers and are provided to communities of low-income in fragile and post-conflict states (Leatherman et al., 2012). These target individuals or groups that are commonly not reached by traditional financial institutions, with varying payment terms in loanable amounts, interest rates or duration of payment. Beneficiaries commonly congregate as informal self-help groups or more formalised cooperative societies (Saha & Annear, 2014).

The study designs we included were non-randomised controlled trials (n=5), an uncontrolled trial (n=1) and post-only designs either as case control or cross sectional surveys (n=2). We did not find any randomised controlled trials (n=0). Using the risk of bias assessment tool, we categorised the quality of these studies as either moderate (n=2) or weak (n=6) as there were no randomised controlled trials, hence limited opportunity for strong studies (n=0). Consequently, the overall quality of evidence for specific outcomes was between low and very low using the GRADE framework at initiation. A summary of these findings is in Tables 4.9 and 4.9.1.

Table 4.9.1 Risk of bias assessment for studies micro-credit or loans to non-state actors for primary healthcare in fragile and post-conflict states

Administrative information				Quality assessment domains							
	Author	Year	Country	Study design	Selection	Design	Confounders	Blinding	Data Collection	Withdrawals	Overall quality
1	Amin*	1997	Bangladesh	D2	M	M	M	W	S	S	Moderate
2	MkNelly	1998	Ghana	D2	M	M	M	W	S	S	Moderate
3	Amin*	2001	Bangladesh	D2	M	M	W	W	S	S	Weak
4	Hadi	2002	Bangladesh	D2	M	W	S	W	S	W	Weak
5	Chee	2003	Kenya	D3	W	M	W	W	M	M	Weak
6	Agha[§]	2004	Uganda	D2	W	M	M	W	S	S	Weak
7	Seiber[§]	2007	Uganda	D2	W	M	M	W	S	S	Weak
8	Tseng	2015	Bangladesh	D4	W	W	W	W	S	W	Weak

*NB: Linked studies: *Amin 1997 & Amin 2001; [§]Agha 2004 & Seiber 2007*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF THE INTERVENTION: MICROCREDIT INCENTIVES OR LOANS

In this review we focused on studies about microcredit facilities targeting community members or health service providers where health interventions or outcomes were of interest. We did not touch micro-health insurance, which we have covered earlier in this review under health insurance mechanisms. Community interventions targeted mainly poor women and differed in including provision of microcredit facilities accompanied with sensitization or training on health education about child survival strategies, family planning or entrepreneurship. Health service providers were trained in business skills in addition to health interventions, mainly about sexual and reproductive health.

The mechanisms by which microcredit is posited to cause change among the general population are multiple. Briefly, microcredit or loans provide financial resources (capital); the accompanying training increases entrepreneurship skills; whilst the group schemes expand social networks (social capital). Altogether these empower the disadvantaged recipients (commonly women) by increasing their opportunities for income generation and decision-making power, the effect being improved health seeking behaviour and related outcomes. Health service providers access financial products to set up or expand new health services. In addition the health service providers acquire new knowledge and skills in business management as well as new skills for quality health service provision.

There were a number of interventions tested in the studies we included. Two studies documented loans to providers of care. In Uganda 280 private providers were trained in business skills and given small loans of $30 to $5,000 (Agha, Balal, & Ogojo-Okello, 2004). The average loan amount was $454. The aim was to increase the financial viability of small private practices in Uganda. These loans were given in 2000 in a group lending format and were payable within six to 12 months. Those who successfully repaid were eligible to a second loan whose average amount was $742. Midwives constituted the larger number of borrowers the rest being doctors, clinical officers and nurses. The loans were mostly used to purchase drugs, clinic equipment, and infrastructural renovations. This was accompanied by five days training in business planning, record keeping, financial reporting, credit management, marketing and client satisfaction (Agha et al., 2004). African Air Rescue (AAR), a health management organisation in Kenya, was given a loan in 1995 to deliver family planning services (Chee, 2003). This loan would establish a clinic system in the industrial area in Nairobi and deliver outreach services. The total value of the loan approximated $414,000 payable in six years, with incentives such as a repayment grace period of up to two years. In addition, technical training was provided to AAR clinicians and nurses in sexual and reproductive health focusing on family planning services.

The other studies examined loans to the recipients of primary healthcare. These studies adopted the Grameen Bank model where no material collateral is required for the micro-loans. Instead, individual access to a loan is determined by how well the group pays back (group responsibility) (Bond, 2007; Schurmann & Johnston, 2009). In Ghana, Freedom From Hunger implemented a credit with education programme starting 1992 targeting rural women (MkNelly & Dunford, 1998). The intervention consisted of loans of approximately $300 together with education on small business skills, basics of health (immunization, hygiene and sanitation), family planning (birth timing and spacing) and nutrition (exclusive breastfeeding). Women formed groups under village banks that met weekly, invested in small income generating projects and repaid the loans. The remaining studies were conducted in Bangladesh. In one study five local non-governmental organisations provided collateral free loans anchored on a health promotion programme (Amin & Li, 1997). These actors did not directly supply health services but promoted government programmes on safe motherhood (antenatal care and delivery), family planning (contraceptives, birth spacing) and child health (immunization and treatment seeking for diarrhoea and other childhood diseases) (Amin et al., 2001). The BRAC initiative integrated the prevention of acute respiratory infections with micro-credit to poor women considered as households that owned less than a half-acre of land and survived on selling manual labour (Hadi, 2002).

The most recent included study compared microfinance hospitals versus public hospitals in rural, peri-urban and urban districts in Bangladesh (Tseng & Khan, 2015). Although microfinance programmes were introduced in the 1980s, the three microfinance hospitals were started in the 2000s with 20, 50 and 70-bed capacity respectively. The public district hospitals had 100, 100 and 250-bed capacity. All these were general hospitals that provided services including primary healthcare.

In this review, the actors providing microcredit facilities linked to health interventions included local non-governmental organisations in Bangladesh: Bangladesh Rural

Advancement Committee (BRAC), Association for Social Advancement (ASA), Rangpur Dinajpur Rural Service (RDRS), Development Center International (DCI), Community Development Association (CDA), and the Village Education Resource Centre (VERC). Interventions targeting health service providers were conducted by the Summa foundation supporting private practitioners in Kenya and Uganda. These were either independent clinics or under the Uganda Private Midwives Association or the Africa Air Rescue (AAR) franchise or general hospitals. The Uganda Microfinance Union, National Small Holder Business Centre and the Research Initiative for Social Empowerment (RISE) supported the trainings in Uganda. International partners in the focus countries were Freedom from Hunger, the United Nations Children's Fund (UNICEF) and the United States Agency for International Development (USAID).

SUMMARY OF THE EVIDENCE: MICROCREDIT AS A HEALTH FINANCING STRATEGY

Table 4.9 Microcredit as a strategy to deliver primary healthcare in fragile and post-conflict states

Key messages:

- ✓ The evidence is suggestive of reduced infant mortality and improved use of treatments for diarrhoeal diseases. This evidence is scanty and of low quality.
- ✓ The evidence is of low quality and suggests microcredit or loan schemes increased utilisation and quality of care.
- ✓ Very low quality descriptive evidence points at capacity building opportunities in skills and knowledge acquisition in health promotion and prevention as well as entrepreneurship.

Patients or population: Women of childbearing age and the general population seeking primary healthcare as well as private healthcare providers
Setting/ country: Rural and peri-urban communities or health facilities in Bangladesh, Kenya and Uganda.
Intervention: Microcredit or small loan schemes to recipients of care (rural/poor women), or providers of healthcare (private health facilities or health workers) by national and or international non-governmental organisations or aid agencies.
Comparison: Non recipients of microcredit facilities (population or public or private health facilities or health workers).

Outcomes	Impact	Number of studies n=8	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: 2 studies reported reduced infant mortality among credit users. This difference was not significant compared to non-credit users in 1 study, but markedly reduced compared to the national average.	2	⊕◯◯◯ Very Low
	Illness: 1 study reported higher significant difference in using ORT for diarrhoeal diseases but no significant difference in prevention of diarrhoeal diseases.	1	⊕⊕◯◯ Low

Secondary outcomes (Capacity building or adverse events)	**Capacity building**: 6 studies reported training health workers in business skills or delivery of family planning services (4 studies) or women in child survival practices (1 study)	6	⊕○○○ Very Low
	Adverse events: 1 study reported failure to repay the loans or microcredit	1	⊕○○○ Very Low
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** 5 studies reported increased outpatient visits for malaria treatment or preventive services such as antenatal care or immunization or family planning with higher contraceptive prevalence (and reduced total fertility rate); 2 studies reported high but no significant difference in childhood immunization	6	⊕○○○ Very Low
	Coverage: No study reported the effects on coverage	0	-
	Quality or satisfaction: 2 studies reported increased perceived quality with reasons to visit intervention clinics (availability of drugs, fair charges, cleanliness and privacy); 2 studies reported increased knowledge in childhood nutrition and prevention of acute respiratory tract infection	4	⊕⊕○○ Low
	Costs: 2 studies costs borne of the principal loan amounts and repayments; 1 study reported no difference in costs of microfinance hospitals	2	⊕○○○ Very Low
	Cost-effectiveness: 1 study reported cost-effectiveness data; $ 0 - $4.11 per couple years protection; $0 - $18 per new acceptor of family planning	1	⊕⊕○○ Low
	Out of pocket: No study reported data on out of pocket expenses	0	
	Equity or access: 5 studies reported service provision to rural areas; 4 studies focused on poor rural women; 1 study reported exclusion of the bottom poor from microfinance hospitals	8	- ⊕⊕○○ Low

GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕○ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility

that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.

NB: Downgraded the evidence for risk of bias or inconsistency for the following outcomes: (a) death; (b) capacity building & (c) utilization.

DISCUSSION OF FINDINGS ABOUT MICRO-CREDIT FACILITIES TO NON-STATE ACTORS FOR PRIMARY HEALTHCARE

We conducted a synthesis on the effects of micro-loan schemes delivered to non-state actors in fragile and post-conflict states on primary healthcare outcomes. An income disparity is among the key social determinants of health that continue to inhibit progress of primary healthcare initiatives (Carey & Crammond, 2015; Preda & Voigt, 2015). It is now clear that single interventions will remain necessary but not sufficient to tackle ill health. Addressing the roots of poverty is fundamental, since the poor remain marginalized in accessing quality healthcare worldwide. As such innovative strategies that can help bridge this gap remain crucial.

We found low to very low quality evidence that innovative microfinance interventions for health service providers improved quality of care, whilst initiatives targeting recipients of primary healthcare showed a desirable general direction of impacts including: reduced infant mortality (Amin & Li, 1997; Amin et al., 2001); higher utilization of health services (Amin & Li, 1997; Amin et al., 2001; MkNelly & Dunford, 1998; Seiber & Robinson, 2007; Tseng & Khan, 2015); and strengthened business capacities of loan recipients compared to non-credit areas or members. Our findings are in consonance with two previous systematic reviews about initiatives to integrate microfinance and strategies to improve maternal and child health (Leatherman et al., 2012; Saha & Annear, 2014).

In terms of improvements in quality of care, health providers who received loans in Uganda invested in infection control measures, renovated and expanded their services. Patients perceived quality as availability of drugs, fair charges, cleanliness, and privacy (Agha et al., 2004; Seiber & Robinson, 2007). It must be underscored that this study was conducted at a time when the Ugandan government abolished user fees in public health facilities, during the 2001 presidential elections (Nabyonga et al., 2005). Specifically, one midwife purchased the kits for manual vacuum aspiration for managing partial abortions; whilst another acquired autoclave to sterilize examination and surgical instruments; and the third got synthetic material to cover her delivery couch (Agha et al., 2004).

A key strength of microcredit and health interventions is the opportunities for knowledge and skills transfer for quality primary healthcare. Nearly all the studies had training or education components for entrepreneurship skills for service providers and recipients of care, as well as specific skills for health service delivery such as family planning for midwives or child survival strategies such as home treatment of diarrhoea for the mothers. Consequently, studies documented improved knowledge about child feeding practices (breastfeeding with colostrum, weaning and food hygiene) (Hadi, 2002) and significantly higher (2 fold) awareness of prevention of acute respiratory infections ($p < 0.01$) (Hadi, 2002) among recipients of micro-credit.

The evidence for microfinance initiatives resulting in increased utilization of primary healthcare services is of very low quality due to the high risk of bias in the included studies and inconsistency of the effect estimates for some outcome measures. On the one hand, some studies showed increased uptake of childhood immunization (polio, tuberculosis and DPT) and maternal vaccines (tetanus toxoid) among credit users (Amin & Li, 1997; Tseng & Khan, 2015). It is noteworthy that these effects were conveyed to non-credit users in the credit programme areas, who had a higher uptake of immunization than non-programme areas (Amin & Li, 1997). On the other hand, two studies in Bangladesh and Ghana suggest no significant difference in immunization coverage (Amin et al., 2001; MkNelly & Dunford, 1998). Studies in Kenya (Chee, 2003) and Bangladesh (Amin et al., 2001) show increased contraceptive prevalence. In Bangladesh, this rose from 28% to 53% compared to 38.4% with a concomitant reduction in total fertility from 4.6 to 3.7 compared to 4.7 per woman. In Kenya, there was increased family planning with 449 new acceptors (15.8%), resulting in 1,906 years' protection for couples. In the Uganda study there were increased clinic visits (1.2 to 2.5 fold) particularly for malaria treatment, after introduction of the microfinance schemes. Not least, in Bangladesh there was higher use of preventive services (antenatal and immunization) in the microfinance hospitals (Tseng & Khan, 2015).

Microcredit combined with health interventions aims to reduce social inequities; the evidence suggests this may not always be the case. Although nearly all the studies included rural and disadvantaged populations, the evidence on equity is scanty since only two studies explicitly made such analyses (Seiber & Robinson, 2007; Tseng & Khan, 2015). Five studies reported integrated microcredit and health interventions to rural areas whilst four focused on poor rural women. In Uganda intervention clients were more likely to be of an upper socioeconomic strata as they preferred to visit private clinics even after user fees were abolished in government health facilities (Seiber & Robinson, 2007). In Bangladesh, the use of microfinance hospitals excluded very poor households and was instead associated with moderately poor (OR=4.09, $p<0.001$) and non-poor households (OR=7.34, $p<0.01$) (Tseng & Khan, 2015) (Tseng & Khan, 2015). In sum, microcredit interventions are context specific and care should be taken not to exclude the most vulnerable groups by probably providing exemptions.

There was hardly any data on cost-effectiveness of combining microcredit and health interventions. The only study which was done in Kenya concluded that this strategy was cost-effective with US$ 0 to US$ 4.1 per couple years' protection and US$0 to US$18 per new acceptor of family planning (Chee, 2003). In Bangladesh there were higher consultation fees for microfinance hospitals (76% paying >100 taka) compared to public ones (99% paying <50 taka) (Tseng & Khan, 2015). Still, clients preferred preventive services (antenatal care and immunization) from microfinance hospitals suggesting a willingness to pay for quality.

The enthusiasm to repay loans by recipients strengthens the feasibility of combining microfinance and health initiatives. Three studies reported costs of the principal loan amount ranging from $30 to $5,000 for health practitioners in Uganda, about $300 for rural women in Ghana and a total of $473,000 for AAR Kenya, a private sector medical facility. It is important to note that repayment rates were high. For example, AAR Kenya paid back $604,898 between 1995 and 2001, representing a positive return of 5.2% per annum net of

inflation. In Uganda 11 out of 15 midwives repaid their loans and took out second loans of a higher amount. It is not immediately clear if the four (26.7%) remaining midwives did not repay their loans, which would be an undesired outcome requiring further study.

This review found a number of strengths. These studies were generally of longer follow up of five years or more, and were set in rural and vulnerable populations in fragile and post-conflict states. However, we report a number of limitations of this review. Firstly there are internal validity issues arising from observational study designs (high risk of bias), raising the need for well-designed large cluster randomized trials. Secondly, some studies addressing providers of care had relatively short follow-up periods of 13 months to estimate the impact of the loans. Thirdly, future studies should address the primary outcomes of death and illness for more robust decision-making. Nevertheless, the evidence emerging from this review points at improved equity and overall health outcomes when combining microfinance and primary healthcare interventions.

PRIVATE HEALTH INSURANCE SCHEMES FOR PRIMARY HEALTHCARE SERVICES

TYPE AND QUALITY OF STUDIES

We included three studies (four articles) about private sector health insurance schemes in post-conflict states. These studies were done in three African countries, between 1998 and 2012.

These studies were observational with an uncontrolled trial (de Menil et al., 2014) and case control/cross sectional designs (Dekker, 2010; Ekman, 2007; Wilms, 2006), all of which were of weak quality (Table 4.10.1). We classified the strength of evidence from these studies as low using the GRADE criteria. See details in Table 4.10.

Table 4.10.1 Risk of bias assessment for studies about private health insurance schemes in the delivery of primary healthcare in post-conflict states

Administrative information				Quality assessment domains							
No.	Author	Year	Country	Study design	Selection	Design	Confounders	Blinding	Data collection	Withdrawals	Overall quality
1	Wilms	2006	Uganda	D4	W	W	W	W	M	W	Weak
2	Ekman	2007	Zambia	D4	M	W	M	W	M	W	Weak
3	Decker	2010	Uganda	D4	W	W	W	W	M	W	Weak
4	De Menil	2014	Kenya	D3	W	M	W	W	W	M	Weak

*NB: Linked studies: *Wilms 2006 & Decker 2010*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies with ≥2 comparison groups

DESCRIPTION OF THE INTERVENTION: PRIVATE HEALTH INSURANCE SCHEMES

Private health insurance is one of the options for financing healthcare and entails channelling of financial resources directly to the risk-pooling institution with no, or relatively little, involvement of the state (Drechsler & Jutting, 2007). In this review we distinguish private health insurance from that provided by non-governmental organisations which is typically humanitarian and social in nature (Atim, 1999; Preker et al., 2007). Private insurance schemes are profit-oriented and rarely extend beyond the formal workforce. Such schemes are characteristically market driven, voluntary and the costs are borne by individual members or families, employers or other organisations (Drechsler & Jutting, 2007).

The three schemes were Micro-care insurance in Uganda (Dekker, 2010; Wilms, 2006), Chiromo Lane Medical Centre in Kenya (de Menil et al., 2014) and the Zambia Cooper mines (Ekman, 2007). Micro-care was a private insurance company that targeted employees in the formal sector and the organised informal sector, such as farmer groups. Thus Micro-care served both rural and urban populations with a package covering outpatient and inpatient services but excluded chronic illnesses such as cancers, organ diseases, hypertension, diabetes and HIV/AIDS. In the true spirit of solidarity premiums paid by informal-sector were subsidized by the formal sector. A microfinance company, the Foundation for International Community Assistance (FINCA), provided loans to clients to pay their health-insurance premiums. Chiromo was a small (30-bed) private hospital providing mental health services to an urban population in Nairobi City. Fifty organisations (insurers and companies) provided insurance coverage, all without co-payment. The Chiromo scheme excluded suicidality and substance use disorders from all coverage; and pre-existing conditions for individual, but not corporate, coverage. The Zambian study does not provide details of the scheme design.

SUMMARY OF THE EVIDENCE: PRIVATE HEALTH INSURANCE SCHEMES

Table 4.10 Private health insurance schemes for primary healthcare services

Key messages: **Low quality** evidence suggests: ✓ Private insurance was a significant predictor of readmission, longer cumulative length of stay and higher daily charges. ✓ The evidence on catastrophic costs is ambivalent. One study suggests private health insurance reduces catastrophic costs, whilst another suggests an increased risk. **Very low** evidence suggests: ✓ Catastrophic costs were borne more by the rural than urban population.
Patients or population: General population seeking private primary health. Subsistence farmers and urbanites **Setting/ country:** Rural and urban communities in Kenya, Uganda and Zambia. **Intervention:** Private health insurance schemes **Comparison:** Non-insured payment modalities (out of pocket)

Outcomes	Impact	Number of studies n=2	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: No study reported about the effect of private insurance schemes on death.	0	-
	Illness: No study reported about the effect of private insurance schemes on illness.	0	-
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: No study reported about capacity building initiatives for private insurance schemes.	0	-
	Adverse events: 1 study reported longer hospital stay and readmission with private insurance schemes with longer hospital stay and readmission.	1	⊕⊕◯◯ Low
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** 1 study reported 36% (95% CI 13%–60%) longer hospital stay than those paying out-of-pocket; 2.5 times higher odds of readmission.	1	⊕⊕◯◯ Low
	Coverage: No study reported the coverage of private insurance schemes.	0	-
	Quality or satisfaction: 1 study reported 36% (95% CI 13%–60%) longer hospital stay than those paying out-of-pocket.	1	⊕◯◯◯ Very low
	Costs: 1 study reported higher costs than those paying out-of-pocket by 71% (95% CI: 35%–117%). 1 study reported premiums ranging from $13 - $22 (rural) for 4 – 8 members; to $80 - $108 (urban) for <4 family members.	2	⊕⊕◯◯ Low
	Cost-effectiveness: No study reported the cost-effectiveness of private insurance schemes.	0	-
	Catastrophic/Out of pocket costs: 1 study reported lower expenses 3% vs. 16% of household income; with lower catastrophic expenses at different cut offs of 20% (2.7% vs. 12.6%), 30% (0.7% vs. 10.8%) or 40% (0.7% vs. 7.2%) thresholds of total household income; no protection against catastrophic health expenditure instead increases risk.	2	⊕⊕◯◯ Low

	Equity or access: 1 study reported higher catastrophic expenditure among the rural population.	1	⊕◯◯◯ Very low
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

Downgraded the evidence for high risk of bias or inconsistency for the outcomes of (a) out of pocket payments and (b) catastrophic costs.

DISCUSSION OF PRIVATE FOR PROFIT HEALTH INSURANCE SCHEMES IN POST-CONFLICT STATES

Currently, the role of private health insurance in low-income countries is marginal with the rate of enrolments below 1%. We have reviewed the evidence systematically and found a dearth of empirical evidence on private health insurance schemes in post-conflict states. This scarcity of evidence was noted in three previous reviews about private health insurance schemes in low and middle-income countries (Drechsler & Jutting, 2007; Preker et al., 2007; Spaan et al., 2012). Therefore, the evidence is largely scarce and inconclusive. Future well-designed larger studies would be informative.

These few studies reported inconsistent findings in terms of out of pocket or catastrophic costs due to private insurance schemes. On the one hand, the Microcare scheme in Uganda demonstrated lower catastrophic costs at 20% (2.7% vs. 12.6%), 30% (0.7% vs. 10.8%) or 40% (0.7% vs. 7.2%) cut-offs of total household income (Dekker, 2010; Wilms, 2006). On the other hand, the Zambian Copper mines initiative had mixed results with an increased risk of catastrophic costs (Ekman, 2007). Similarly, patients under the private insurance scheme in Chiromo paid on average 25% more per day than those paying out-of-pocket (de Menil et al., 2014). Altogether with longer stay, the insured paid 71% more per year (95% CI: 35%–117%). One study found that private insurance could introduce inequities with rural folks facing catastrophic expenditure more than the urban elite (Dekker, 2010; Wilms, 2006).

Patients with PHI stayed in hospital 36% longer (95% CI 13%–60%) than those paying out-of-pocket and had 2.5 times higher odds of readmission (de Menil et al., 2014).

This review had a number of limitations, which make interpretation of these results difficult. Firstly the findings are not representative as there are definitely more private insurance schemes in fragile and post-conflict states, some of which have the fastest growing economies in the world. The challenge of proper documentation and accessing the data for studies may be hindered by contractual obligations and secrecy of commercial operations. Secondly, the included studies were poorly designed. For example, in the Ugandan study the insured and uninsured population in Kampala and Kisiizi were not randomly selected from their respective sampling frames and thus not generalizable (Dekker, 2010; Wilms, 2006). Thirdly, enrolments rates were very low, which defeats the purpose of economies of scale in pooling risks and resources for financial protection in seeking healthcare. Future studies

should address these methodological limitations as well as health outcomes and cost-effectiveness.

TRAINING TRADITIONAL BIRTH ATTENDANTS TO DELIVER PRIMARY HEALTHCARE AS NON-STATE ACTORS IN FRAGILE AND POST-CONFLICT STATES

TYPE AND QUALITY OF STUDIES

There were 14 studies (16 articles) that we included about training traditional birth attendants to deliver basic maternal and child health in fragile states. We did not include studies with additional interventions, which would otherwise blur the effects of the traditional birth attendants or those about the distribution or use of misoprostol by traditional birth attendants.

We found randomised controlled trials (n=3), non-randomised controlled trials (n=1), uncontrolled trials (n=4), a cross-sectional survey (post-only with a control group) (n=6) and a cost-effectiveness evaluation based on one of the randomised controlled trials (n=1). We categorised the quality of these studies about contracting as strong (n=3) or weak (n=11) in terms of risk of bias assessments (Table 4.11.1). Using the GRADE framework, we ranked the overall quality of evidence for specific outcomes as either moderate or low or very low at initiation. We downgraded for inconsistency for illness and capacity building. Five studies provided information about the primary outcome of death, two reported about illness, whilst six recorded outcomes of health services utilization. These findings are depicted in Table 4.11.

Table 4.11.1 Risk of bias assessment for studies about training traditional birth attendants as non-state actors for the delivery of maternal and child health

Administrative information				Quality assessment domains							
	Author	Year	Country	Description of study design	Selection Bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals & drop-outs	Overall score
1	Begum	1990	Bangladesh	D3	S	M	W	W	S	W	Weak
2	Lynch	1994	Uganda	D4	S	W	W	W	S	W	Weak
3	Goodburn	2000	Bangladesh	D3	W	M	W	W	S	W	Weak
4	Gloyd	2001	Mozambique	D4	S	W	W	W	S	W	Weak
5	Bailey	2002	Guatemala	D2	S	M	W	W	S	W	Weak
6	Sirivong	2003	Lao PDR	D4	S	W	W	W	S	W	Weak
7	Jokhio	2005	Pakistan	D1	S	S	S	M	S	S	Strong
8	Hussein	2005	Tanzania	D4	S	W	W	W	S	W	Weak
9	Rashid	2008	Bangladesh	D4	S	W	W	W	S	W	Weak
10	Falle	2009	Nepal	D4	S	W	S	W	S	W	Weak
11	Rowen	2009	Bangladesh	D3	W	M	W	W	S	W	Weak
12	Azad	2010	Bangladesh	D1	S	S	S	M	S	S	Strong
13	Gill*	2011	Zambia	D1	S	S	S	M	S	S	Strong

14	Sabin*	2012	Zambia	D1	S	S	S	M	S	S	Strong
15	Garces	2012	Guatemala	D3	W	M	W	W	S	W	Weak
16	Gill*	2014	Zambia	D1	S	S	S	M	S	S	Strong

*NB: Linked studies: *Gill 2011, Sabin 2012 & Gill 2014. Sabin 2012 is a cost-effectiveness evaluation.*

D1=Randomized controlled trials
D2=Non-randomized controlled trials
D3=Uncontrolled before & after trials & time-series designs
D4=Case-control studies (and cross-sectional studies ≥2 groups)

DESCRIPTION OF THE INTERVENTION: TRAINING TRADITIONAL BIRTH ATTENDANTS

The World Health Organization defines traditional birth attendants (TBA) as lay community members who assist pregnant mothers in childbirth and whose skills were self-acquired by delivering babies or through an apprenticeship to other traditional birth (World Health Organization, 1992). In fragile and post-conflict states over 50% of births in developing countries are attended by TBAs (Darmstadt et al., 2009). Although TBAs have been engaged in delivery of mothers from time immemorial, they haven't been recognised in the formal structures of health service delivery (Kayombo, 2013). Yet the human resources for health crisis continues to grow with an ever-widening scarcity of midwives to safely deliver mothers and provide care to the new born (Crowe et al., 2012).

Training to upskill TBAs with the aim of integrating them into the formal health sector remains a key option to bridge this gap of skilled birth attendance (World Health Organization, 2010). Commonly the formal sector, led by ministries of health (Lynch & Derveeuw, 1994), conduct short courses that strengthen TBAs' knowledge and skills to improve maternal and child outcomes during pregnancy and at birth. Trained traditional birth attendants (TTBA) are commonly neither paid a regular salary nor recognized in the regular government structure and may be part of the community health volunteers (Kayombo, 2013).

The intervention included training and provision of supplies (delivery kits, antibiotics). Studies described various approaches of training TBAs to provide maternal and child health. Specifically the TBAs were trained to identify and refer complicated pregnancies (Bailey et al., 2002; Falle et al., 2009; Garces et al., 2012; Gill et al., 2012; Gloyd et al., 2001; Hussein & Mpembeni, 2005; Jokhio et al., 2005; Lynch & Derveeuw, 1994; Rowen et al., 2011), or perform hygienic deliveries (Goodburn et al., 2000) or neonatal resuscitation for asphyxia and hypothermia (Azad et al., 2010b; Garces et al., 2012; Gill et al., 2011) or administer antibiotics for sepsis (Gill et al., 2011). Additional areas covered included breastfeeding advice, sexual and reproductive health as well as primary healthcare in general. The training sessions included as intensive initiation (up to five days) and a refresher follow-up (two days) every three to four months (Gill et al., 2011). Studies assessed their knowledge and skills immediately after the training (few days to weeks) or health related outcomes over a longer duration (months to years).

Nearly all the actors were non-governmental organisations with few representing academia. In Bangladesh, where most of the studies we included were conducted, the actors were the National Institute of Preventive & Social Medicine, Gonshasthaya Kendra, Diabetic Association of Bangladesh (BADAS), Bangladesh Rural Advancement Committee (BRAC) and the Bangladesh Institute for Promotion of Essential and Reproductive Health and Technologies (BIRPERHT). Academia conducted the impact evaluations and included Liaquat University of Medical and Health Sciences, Pakistan; Muhimbili University College of Health Sciences, Tanzania; University of Birmingham, UK; London School of Hygiene and Tropical Medicine, UK; Johns Hopkins University, USA. International non-governmental organisations typically played the role of implementing partners or sub-contracted local agencies. These were the Global Network for Women's and Children's Health Research, Save the Children, John Snow Inc., Health Alliance International (HAI) and the Ford Foundation. The United Nations Population Fund (UNFPA), United Nations Children's Fund (UNICEF) and the United States Agency for International Development (USAID) were key players in funding the projects or regulating the governance of TBAs.

SUMMARY OF THE EVIDENCE: TRADITIONAL BIRTH ATTENDANTS

Table 4.11 Training Traditional Birth Attendants to deliver primary healthcare in fragile and post-conflict states

Key messages:
- ✓ There is **high quality** evidence that training TBAs reduces perinatal and infant mortality.
- ✓ **Moderate quality** evidence points at increased capacity for TBAs to provide antenatal, postnatal and other primary healthcare services.
- ✓ The evidence on illness is ambivalent and of **very low** quality.

Patients or population: Women of childbearing age, pregnant mothers, newly delivered mothers, neonates and infants.
Setting/ fragile and post-conflict state country: Rural and peri-urban communities or health facilities in Bangladesh, Guatemala, Kenya, Pakistan, Tanzania, Uganda, Zambia and Zimbabwe.
Intervention: Training traditional birth attendants to provide maternal and child health in the form of antenatal and post-natal care, delivery and primary healthcare. These included emergency procedures (maternal and neonatal resuscitation), first aid, breastfeeding advice, family planning, sexually transmitted diseases, HIV/AIDS and referral.
Comparison: Untrained traditional birth attendants providing similar health services.

Outcomes	Impact	Number of studies n=14	Quality of the evidence (GRADE)
Primary outcomes (Health outcomes: death or illness)	**Death**: 3 studies reported significant reduction in perinatal or infant mortality. 2 studies reported reduced but no significant difference in perinatal or infant or maternal mortality.	5	⊕⊕⊕⊕ High
	Illness: 1 study reported reduced post-partum complications. 1 study reported	2	⊕◯◯◯ Very Low

	no significant difference in overall complications (antenatal, intra-partum, postpartum, neonatal) or postpartum infection.		
Secondary outcomes (Capacity building or adverse events)	**Capacity building**: 10 studies reported increase in capacity in various areas of knowledge, skills & performance (referral, resuscitation, blood loss estimation, provision of correct advice, reporting of services). 3 studies reported no significant difference in referrals.	13	⊕⊕⊕◯ Moderate
	Adverse events: 1 study reported increased harmful practice of hand insertion during delivery thought to increase risk of infection; whilst another reported reduced harmful practices (applying mustard oil on umbilical stump).	2	⊕◯◯◯ Very Low
Tertiary outcomes (health services impacts: utilization, coverage, access, quality, satisfaction, costs or efficiency)	**Utilization:** 4 studies reported increased utilization (antenatal visits or deliveries); 2 studies reported no significant difference in utilization (childhood immunization; ORT use in diarrhoea or post-natal visits)	6	⊕⊕◯◯ Low
	Coverage: No study reported about coverage	0	-
	Quality or satisfaction: 7 studies reported increased quality parameters (aseptic delivery techniques, lower complications of hemorrhage, reporting of danger signs or feeding with colostrum); 3 studies reported poor or no difference in measures of quality (poor overall knowledge of danger signs or management of pregnancy complications among TBAs, no change in breastfeeding practices among mothers); 2 studies reported higher satisfaction for TBA services.	9	⊕⊕◯◯ Low
	Costs: 1 study reported the costs per TBA trained as $44 for 3 weeks compared to $150 per nurse/midwife over 3 years.	2	⊕◯◯◯ Very Low
	Cost-effectiveness: 1 study reported TBAs as cost-effective at $1,866 per death averted, (GDP Zambia: $1,772 in 2012).	1	⊕⊕◯◯ Low

	Out of pocket: 1 study reported <$5 compensation in kind to TBAs per delivery. **Equity or access:** 1 study reported reduced deliveries if clients did not make payments to TBAs.	1 1	⊕⊕◯◯ Low ⊕⊕◯◯ Low
GRADE Working Group grades of evidence: For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions below. ⊕⊕⊕⊕ **High**: We are confident that the true effect lies close to what was found in the research. ⊕⊕⊕◯ **Moderate**: The true effect is likely to be close to what was found, but there is a possibility that it is substantially different. ⊕⊕◯◯ **Low**: The true effect may be substantially different from what was found. ⊕◯◯◯ **Very low**: We are very uncertain about the effect.			

NB: Downgraded the evidence for inconsistency and or risk of bias for the following outcomes: (a) illness & (b) capacity building.

DISCUSSION OF FINDINGS TRAINING TRADITIONAL BIRTH ATTENDANTS FOR MATERNAL AND CHILD HEALTH

We present the results of our systematic review of TBAs providing maternal and child healthcare in fragile and post-conflict states. We recognise that involving the TBAs in delivery of pregnant mothers and providing new-born care has in the past stirred controversy (Rosenfield, 1997). In fact the World Health Organisation issued a strong statement to member states to exercise caution in incorporating TBAs into their primary healthcare teams instead emphasising skilled birth attendants (SBA). At the same time we are cognizant of the safe motherhood initiative launched in 1987 by international actors (AbouZahr, 2003; Rosenfield, 1997). The goal was to reduce the disparity of maternal morbidity and mortality between the rich and poorer nations through family planning, safe abortions, safe pregnancies and management of obstetric complications (AbouZahr, 2003; Rosenfield, 1997).

We mapped six systematic reviews directly addressing training of TBAs (Byrne & Morgan, 2011; Ray & Salihu, 2004; Sibley et al., 2012; Sibley et al., 2007; Vieira et al., 2012; Wilson et al., 2011) and one thesis (Krüger, 2009), suggesting that this field is over-researched. However, our systematic review brings forth new data on health services indicators that have not been reported in these previous systematic reviews. Generally, the results show that when TBAs are trained, there are improvements in health outcomes of death, illness, and health services indicators of utilization, quality of care, referrals as well as reduction in harmful practices. However, there are variations in the quality of the available evidence as well as scarcity of evidence for specific outcomes.

We found high quality evidence from five studies that training TBAs reduced perinatal mortality (foetal, stillbirths, neonatal) (Garces et al., 2012; Jokhio et al., 2005), neonatal mortality (Gill et al., 2011) or maternal mortality (Jokhio et al., 2005). Two robust randomised trials from Pakistan (Jokhio et al., 2005) and Zambia (Gill et al., 2011), and one uncontrolled trial in Guatemala (Garces et al., 2012) showed statistically significant

reductions in foetal, stillbirths, neonatal or infant mortality. Although maternal mortality was lowered, this wasn't statistically significant (Jokhio et al., 2005). The remaining two studies, a randomised trial done in Bangladesh (Azad et al., 2010b) and a case-control study in Mozambique (Gloyd et al., 2001), also showed reduced deaths but these results were non statistically significant. However, we did not downgrade the quality of evidence since there was consistency in the general direction of the estimates of effect. The apparent inconsistency due to confidence intervals of these two studies crossing the line of no effect would not be serious.

Perhaps training TBAs equips them with new knowledge and skills to identify complicated cases for referral. Consequently, the TBAs deliver the less complicated pregnancies which results in lower deaths. On the one hand, five studies, including two well designed randomised trials (Gill et al., 2011; Jokhio et al., 2005), reported higher referral for convulsions (Rowen et al., 2011), excessive bleeding (Falle et al., 2009; Rowen et al., 2011) or obstetric complications generally (Gill et al., 2011; Jokhio et al., 2005; Lynch & Derveeuw, 1994). On the other hand, three observational studies reported no difference between trained and untrained TBAs in referring mothers for obstetric complications (Bailey et al., 2002; Gloyd et al., 2001; Hussein & Mpembeni, 2005). It is possible that the high risk of bias could explain the non-significant results in these observational studies.

Whether training TBAs reduced illness among pregnant mothers and children remains inconclusive. We found very low quality evidence that was inconsistent and with high risk of bias. Whilst one study (uncontrolled trial in Guatemala) reported reduced post-partum complications (Bailey et al., 2002), another (non-randomised controlled trial in Bangladesh) showed no difference in post-partum infections (Goodburn et al., 2000). In addition, the Guatemalan study (Bailey et al., 2002) showed no difference in overall complications (antenatal, intrapartum, postpartum, neonatal). These findings suggest that training may have had no impact in changing the harmful (less hygienic) practices of traditional birth attendance. Indeed the Bangladeshi study reported TTBAs were more likely to insert their hands into the vagina to remove the placenta (Goodburn et al., 2000). It is possible that washing hands instilled a sense of hygiene and false confidence in the TBAs to insert hands. To the contrary, another Bangladeshi study showed reduced harmful practices such as applying mustard oil on the umbilical stump of the new-born after training (Begum et al., 1990). This mixed picture calls for further qualitative studies or a synthesis of the same to tease out the reasons for such inconsistent behaviour.

A key concern with engaging TBAs is the quality of care they would provide. We found eight studies reporting several aspects of quality, differently. Only two studies reported patient perspectives with 65% of mothers who preferred to be attended by a TTBA in the future in Mozambique (Gloyd et al., 2001) whilst 69% were satisfied with services of TBAs in Laos (Sirivong et al., 2003). The improved quality of care was characterised by increased practice of aseptic techniques during delivery (disinfectant and soap & water) (Begum et al., 1990; Falle et al., 2009; Goodburn et al., 2000), better umbilical cord care and newborn care (Lynch & Derveeuw, 1994). Although there was overall poor knowledge and practices in management of pregnancy and labour complications or of danger signs among TBAs

(Hussein & Mpembeni, 2005; Lynch & Derveeuw, 1994), TTBAs performed significantly better (Hussein & Mpembeni, 2005). The evidence on breastfeeding practices is ambivalent with significantly increased giving of colostrum (Sirivong et al., 2003) to no difference at all in breast feeding practices (Rashid et al., 1999) among the mothers attended by trained compared to untrained TBAs.

Training TBAs to prevent neonatal deaths due to sepsis, hypothermia and asphyxia was very cost-effective, using the World Health Organisation criteria (World Health Organization, 1998). The evidence on cost-effectiveness of training TBAs is from only one study based on a cluster randomised trial done in Zambia (Sabin et al., 2012). Sabin and colleagues estimated the cost per Disability Adjusted Life Year (DALY) averted was $74, $24, and $120 for the base case, best case and worst-case scenarios respectively. The same costs for per death avoided were $1,866, $591, and $3,024 respectively. Note that the Gross Domestic Product (GDP) of Zambia was $1,744 in 2011 when the economic study was done, which makes this intervention very cost-effective (World Health Organization, 1998). In Uganda, training TBAs cost $44 in 1994, which was a third of the cost for training a nurse or midwife at $150 (Lynch & Derveeuw, 1994). In addition, this training took a much shorter time of three weeks for a TBA compared to at least three years for the nurse or midwife (Lynch & Derveeuw, 1994).

In terms of equity, although these included studies were conducted in rural or remote settings the data do not distinguish effects of training TBAs by vulnerabilities such as gender, income or the rural-urban divide. However, one study reported that TTBAs performed fewer deliveries if clients did not make payments. This compensation was less than $5 as money or in kind for each delivery performed (Gloyd et al., 2001). This suggests that TBAs may alienate the poorer stratum in society by creating financial barriers, yet in most cases they are the first line of contact for maternal care. Policymakers could consider remunerating TBAs to reduce financial barriers to accessing primary care services delivered by them.

Our review manifests strengths to the extent that these studies are generalizable as per the intervention design, outcomes reported, the low-income fragile settings and the population of interest. Although we found some high quality studies including three randomised controlled trials, the evidence base is populated by observational studies with high risk of bias. A key weakness is the lack of robust data on the primary health outcomes of deaths and illness prevented by training TBAs in fragile and post-conflict states. Indeed there is room for future randomised trials to assess the impact of training TBAs on maternal mortality and morbidity. More primary cost-effectiveness analyses based on randomised trials and systematic reviews therefore would provide data critical for policy formulation.

In conclusion, there has been extensive literature on this subject but how to apply this evidence for decision-making remains the challenge. The good news is there is a general global decline in maternal and neonatal mortality, although disproportionately for low-income countries mainly in sub-Saharan Africa (Alkema et al., 2016). At the same time there is a significant proportion of women delivering without a skilled birth attendant (Crowe et al., 2012). Clearly, resource-constrained settings typical of fragile and post-conflict states will benefit from expanding the reach of skilled and available human resources through alternative and more accessible as TBAs. Skilling TBAs remains a viable priority option to at

least identify and refer mothers at risk of complicated pregnancies. To the extent that governments and international partners invest in these initiatives, TBAs should be incorporated into the formal health system and provided with incentives to deliver maternal and child health services.

5 DISCUSSION AND CONCLUSIONS

We synthesized empirical evidence about strategies governments of post-conflict and fragile states can employ to engage non-state providers of healthcare. In this section we highlight our main findings, strengths and limitations. We conclude by identifying policy implications and areas for further research.

5.1 SUMMARY OF FINDINGS

The highest quality evidence from post-conflict and fragile states supports working with non-state providers in primary healthcare service delivery in the following ways:

- Community empowerment (involving communities in taking the lead in planning, implementing and or monitor health services) – to increase service quality, use and satisfaction
- Community empowerment – to reduce neonatal and child mortality, but not stillbirth; and to reduce morbidity
- Community health insurance – to increase utilization of modern health services and reduce catastrophic expenditure
- Pay for performance – to improve satisfaction and quality of care (although low quality evidence raises concerns about how this is achieved)
- Training traditional birth attendants – to reduce perinatal and infant mortality

Moderate quality evidence supports:

- Contracting out to non-state actors – to increase service use
- Social franchising – to improve the availability, use and cost-effectiveness of primary care services
- Community empowerment – as a cost effective strategy that strengthens the coverage and capacity of health facilitates and enables communities to deliver primary care services
- Accreditation and regulation – to improve the quality of service delivery, and raise satisfaction with health services
- Training traditional birth attendants – to increase capacity for TBAs to provide antenatal, postnatal and other primary healthcare services

5.2 STRENGTHS AND WEAKNESSES OF OUR REVIEW

STRENGTHS OF THE SYNTHESIS

Our review holds a number of strengths. Firstly, the review question is embedded in the health systems strengthening framework which makes it relevant to decision makers. This view provides an abounding synthesis of evidence about multiple interventions in one document, as opposed to examining one intervention at a time, again reflecting the real world setting.

Secondly, this is the first review that we know to have assessed a range of interventions for non-state actors in primary healthcare and documented impacts on the primary health outcomes of death and illness. In line with this, the evidence takes into regard equity considerations for the vulnerable in society.

Thirdly, we employed robust methods to identify and assess the overall quality of evidence for each specific outcome, for each of the 10 different interventions, thereby increasing the reliability of our findings.

LIMITATIONS OF THE SYNTHESIS

Due to the differences in the designs and measurements of the outcomes of the included studies we deferred statistical synthesis. We weren't able to provide effect estimates as a meta-analysis. However, the nature of health systems research and implementation is such that multiple interventions are applied in combination.

The available evidence does not provide deeper insight into the 'how' of each of these strategies, which many policymakers regard as important. This can be further assessed by qualitative studies examining the dynamics of implementation. Nevertheless, we mapped the existing evidence around these intervention options under review including identifying existing systematic reviews on similar interventions.

There was scarcity of evidence for some interventions such as accreditation and impacts on the key outcomes economic data, death and illness. Although we conducted a comprehensive search using multiple approaches, it is possible we could have missed some important studies, including some English studies, due to limited time and resources.

5.3 IMPLICATIONS FOR POLICY AND PRACTICE

Policymakers looking to strengthen governance of health systems in fragile, conflict or post-conflict states may consider contracting out, which may relieve them of some duties and pass these on to entities that are better resourced and have the capacity to deliver services. Social franchising increases quality of care. Accreditation is shown to improve quality but there is a paucity of evidence on its effect on health outcomes or other aspects of the health system. If adopted policymakers may need to carry out ongoing evaluations of its effects. Governments may also look to strengthen the non-state private health service providers through providing micro-financing facilities to improve the latter's capacity to provide PHC. This would still relieve the government of the role of delivery, if only temporarily, but empower alternative providers who would be accountable to it. In all of these arrangements the government agrees with the non-state actors certain conditions in which to operate which not only leaves them with the sovereignty of governance but also provides services that they are not able to.

Another policy implication for governance is the value of involving the community in its health matters when the general systems may not be able to deliver. Community engagement as a strategy is not only affordable and cost-effective; the evidence has shown it to have positive impact on health outcomes.

Policymakers' reasons for choices of interventions vary but when it comes to financing arrangements, they are looking to mobilize resources for healthcare and also provide financial protection, as some of the top priorities. One policy implication emerging from this review is the benefit of community mobilization for community health insurance. Although the evidence showed that the intervention was effective on a number of indicators of health outcomes and the system, one of the barriers to success was low enrolment. Insurance relies on the involvement of clients in numbers so as to have a big enough group in which the rich and healthy subsidize the poor and the sick respectively.

Another policy implication is driven by the fact that there is a paucity of research on pay-for-performance as a finance strategy governments use to engage non-state actors. Anecdotal evidence suggests that this is a fairly common or popular intervention in low-income countries but it might be underused with very little evidence to support it. Furthermore, while the evidence suggests that pay-for-performance increases utilisation and quality of care, and may reduce out-of-pocket expenditure, policymakers need to be aware of its unintended consequence of distorting human resource dynamics at the workplace. Policymakers need to be cautious when choosing this as an intervention to use especially in the context of post-conflict and fragile states, which already have significant problems with health worker misdistribution.

Another policy implication is the need for policymakers opting for or considering private health insurance to be aware of moral hazard associated with it. Moral hazard, although common in almost all settings, is secondary to varying factors. In the setting of low-income countries, it may be secondary to the limited experience with the intervention and a generally low level of understanding and knowledge in the population. However it may also be worsened by the general impoverishment in these populations in conflict and fragile states. These may be issues to be addressed before private insurance is implemented.

Furthermore, in line with private insurance, the evidence on the users of the services bearing catastrophic costs is ambivalent. However, the evidence further suggests that where there is an increased risk of catastrophic costs, these are borne more by the rural than urban population. This is a fact that policymakers need to be aware of to monitor and ensure that the intervention does not lead to more inequities than before it was adopted.

Lastly, evidence presented here suggests that training TBAs reduces perinatal and infant mortality. It might be worthwhile for policymakers to invest in training programs for these actors. These TBAs have been shown to be used by large proportions of the population in many stable low income states but also in many cases, they are the ones people revert to when systems break down, for example, during conflict. Equipping them with knowledge and skills of how to work with the government system is important.

5.4 IMPLICATIONS FOR FURTHER RESEARCH

There were a number of knowledge gaps that future research could address. For many of the interventions, the evaluations considered short-term effects. It is not clear how long these effects would last if at all, or if there are any different ones that would be noted as time went on. Future research would be important in assessing the mid to long-term impact

of such interventions, especially on the health system, on individual behaviours of users, and on both state and non-state providers.

We also identified gaps in each of the sections of the interventions, where no studies had been done or where there was a lack of good quality evidence. Such gaps include studies to report on the cost-effectiveness of contracting and private-public partnership, effects of communities as non-state actors on out of pocket expenses and effects of accreditation and regulation on morbidity and mortality. On these and more areas, future research would be important to close the knowledge gap.

An important phenomenon in fragile and conflict/post-conflict states is resilience and/or rebuild of the system. Future research would be critical in assessing how these interventions that governments use to engage non-state actors impact (positively or negatively) on the ability and capacity of these health systems to stand resilient, or where lost to rebuild themselves.

As noted earlier, this review was quite broad and looked at the array of interventions but was not as in-depth to answer questions including the 'how' of the interventions working. Future research would be vital in conducting more 'specialised' reviews for the different interventions using ours as a base from which to start.

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6 APPENDICES

APPENDIX 1: ELECTRONIC SEARCH STRING FOR PUBMED/NATIONAL LIBRARY OF MEDICINE (2016)

1. Fragile OR Conflict OR “Post conflict” OR post-conflict OR failed OR collapsed OR vulnerable OR conflict-affected OR War-torn OR war[Mesh Terms]
2. Remote OR hard-to-reach OR “hard to reach”
3. State* OR countr* OR region* OR area* OR territor* OR setting* OR land OR lands OR context* OR situation*
4. 1-2/or AND 3
5. Bangladesh OR Burkina Faso OR Burma OR Burundi OR Cameroon OR Chad OR Djibouti OR “Equatorial Guinea” OR Togo OR Niger NOT (aspergillus niger) OR Vanuatu OR “Papua New Guinea” OR Angola OR Haiti OR Bhutan OR Kosovo OR “Bosnia & Herzegovina” OR Lebanon OR Cambodia OR Liberia OR Comoros OR Rwanda OR Ethiopia OR Egypt OR Eritrea OR Malawi OR Nepal OR Sierra Leone OR Georgia OR “Solomon Islands” OR Guatemala OR Guinea NOT (guinea pig*) OR Lao PDR OR Lao People’s Democratic Republic OR Laos OR “Timor-Leste” OR “East Timor” OR Guinea-Bissau OR Afghanistan OR Iran OR Burundi OR Nigeria OR “Occupied Palestinian Territories” OR Madagascar OR Chad OR “North Korea” OR “Democratic People’s Republic of Korea” OR “Korea, DPR” OR “DPR, K” OR “Central African Republic” OR Pakistan OR Colombia OR Somalia OR Syria OR “Syrian Arab Republic” OR “Cote d'Ivoire” OR “Ivory Coast” OR Sri Lanka OR “Democratic Republic of Congo” OR DRC OR “Republic of Congo” OR “Congo Brazzaville” OR Congo-Brazzaville OR “Sao Tome and Principe” OR Sudan OR “South Sudan” OR “Southern Sudan” OR Tuvalu OR Kiribati OR Libya OR Marshall Is* OR “Marshall Islands” OR Mauritania OR “Micronesia FS” OR “Micronesia, Federated States” OR Micronesia OR Mozambique OR OPTs OR Mali OR “Gaza & The West Bank” OR Tajikistan OR Kyrgyzstan OR Uzbekistan OR Iraq OR Uganda OR Kenya OR Myanmar OR Yemen OR Zambia OR Zimbabwe OR Tchad
6. 4-5/or
7. Non-state OR “Non state” OR formal OR “non formal” OR non-formal OR informal OR traditional OR licensed OR non-licensed OR "non licensed" OR drug AND (dispens* OR peddler*) OR TBA OR bone-setter* OR "bone setter" OR "bone setters" OR herbalist* OR faith-based OR “faith based” OR “social service” OR "social services" OR charit* OR religio* OR philanthrop* OR humanitarian*
8. NGO OR non-governmental organization* OR Non-governmental organisation* OR nongovernmental organizations OR non-governmental organisations OR not-for-profit organizations OR not-for-profit organisations OR "Organizations, Nonprofit"[Majr:noexp] OR ("Organizations, Nonprofit/organization and administration"[Majr:noexp] OR "Organizations, Nonprofit/utilization"[Majr:noexp]) OR “Private Sector” OR “Private practice” OR “Public-private partnership” OR “Public private cooperation” OR “Public-private cooperation” OR voluntary health agenc*
9. 7-8/or

10. 6 AND 9
11. “Primary Health Care” OR “Primary Healthcare” OR “Primary health-care” OR “Primary care” OR PHC OR “Essential Health Care” OR “Basic Health Care” OR “Basic care” OR “Primary health Services” OR “Primary health Service” OR Health Care Reform* OR “Health Care Reform” OR “HealthCare Reform” OR “health systems” OR Health Services Access* OR “Health services” OR “Delivery of health Care” OR “Delivery of healthcare” OR “Continuity of Patient Care” OR “Patient-Centered Care” OR “patient satisfaction” OR “health services delivery” OR “comprehensive health Care” OR “Ambulatory Care” OR “Community Health Services” OR “Community Health Nursing”

    AND

12. Utilization OR utilisation OR access* OR equity OR equitable OR quality OR Assurance OR efficiency OR performance OR coverage OR patient satisfaction OR Patient Acceptance OR Health care cost OR Fees and Charges OR Health Expenditures OR Insurance, Health OR Catastrophic expenses OR Out of pocket payment OR “economic evaluation” OR cost-benefit OR cost-utility OR cost-minimization OR cost-minimisation OR cost-consequence OR cost-effective OR Training OR capacity building OR Staff Development OR human resources OR “human resources for Health” OR Health Manpower OR Health Personnel OR Health work* OR Health workforce OR Community health workers OR CHW OR Lay Health worker OR LHW OR Village Health Team OR VHT OR Health Policy OR Planning OR Credentialing OR Decentralization OR coordination OR stewardship OR Leadership OR governance OR guidance OR guideline OR health information system* OR “health management information systems” OR Health Information OR HMIS OR HIS OR health indicators OR Health monitoring and evaluation OR “Essential medicines” OR “supply chain management” OR Medicines OR Vaccin* OR Immunization OR Immunisation OR Health technolog*

APPENDIX 2: DIFFERENCES BETWEEN THE PROTOCOL AND THE REVIEW

The following were the differences between the protocol and conduct of the review:

a) We refined the search strategy taking into consideration relevance, workload and technical terms therein
b) We did not conduct a statistical meta-analysis as earlier written in the protocol due to the marked differences in the study designs and measurements of outcomes
c) We presented a modified summary of GRADE to develop the summary of finding tables to suit the included data and address the review specific aims.

APPENDIX 3: TIMELINE (2014-2017)

	Start date	End date
	2014	
Registration of title with DFID	January	March
Preparation of protocol	March	September
DFID and External Review of protocol	September	May 2015
	2015 - 2016	
Published protocol	May 2015	May 2015
Study search	May 2015	June 2016
Assessment of study relevance	June 2015	June 2016
Extraction of data	June 2015	June 2016
Synthesis and/or statistical analysis	June 2016	March 2016
Preparation of draft report	November 2015	March 2016
DFID and External review of draft report & corrections	February 2016	Jan 2017
	2017	
Revision of draft report	February	February
Copyediting and design		
Publication of Final Report and Evidence Brief	June	June

APPENDIX 4: EFFECTIVE PUBLIC HEALTH PRACTICE PROJECT (EPHPP) QUALITY ASSESSMENT TOOL TO ASSESS THE RISK OF BIAS OF THE STUDIES (SEE NEXT PAGE)

APPENDIX 5: DATA ABSTRACTION

For each category of intervention:

- HEALTH SERVICES [INFORMAL] - TRAINING TRADITIONAL BIRTH ATTENDANTS
- GOVERNANCE: CONTRACTING
- GOVERNANCE: FRANCHISING
- GOVERNANCE: COMMUNITY PARTICIPATION
- GOVERNANCE: PUBLIC PRIVATE PARTNERSHIP
- GOVERNANCE: ACCREDITATION/REGULATION

The following information was recorded for each included study:

- Author
- Year
- Country
- Actor
- Name of actor
- Setting
- Respondents
- Population
- Intervention
- Sub-intervention
- Design
- Comparator
- Sampling technique
- Sample size
- Equity (describe)
- Primary Outcomes
    - Death
    - Illness
    - utilization
- Secondary Outcomes
    - Capacity building
    - Adverse events
- Health service delivery process or impacts
    - Access
    - Coverage
    - Quality of care
    - Patient satisfaction
    - Cost of services
    - Cost-effectiveness
    - Catastrophic cost
    - OOPocket or User fees
    - Quality

LIST OF ABBREVIATIONS

AAR	Africa Air Rescue
AHEAD	Aid, Health and Development
ASA	Association for Social Advancement
BADAS	Diabetic Association of Bangladesh
BIRPERHT	Bangladesh Institute for Promotion of Essential and Reproductive Health and Technologies
BRAC	Bangladesh Rural Advancement Committee
CDA	Community Development Association
DALY	disability-adjusted life years
DCI	Development Center International
DFID	UK Department for International Development
EPHPP	Effective Public Health Practice Project
FINCA	Foundation for International Community Assistance
GRADE	Grading Recommendations Assessments Development and Evaluation
HAI	Health Alliance International
IDA	International Development Association
IHP	International Health Partnership
LMIC	low- and middle-income country
MDG	Millennium Development Goal
PPM	public-private mix
PPP	Public-private partnership
RDRS	Rangpur Dinajpur Rural Service
RISE	Research Initiative for Social Empowerment
SBA	skilled birth attendants
SDG	Sustainable Development Goal
TBA	traditional birth attendants
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
VERC	Village Education Resource Centre

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