CHAPTER 2. Health systems and community health workers: insights from theory and history

This Chapter discusses some of the theoretical concepts and the historical background on which this thesis is based, with regard to health systems, community health workers (CHWs) and their performance.

2.1 The health system and its workforce

It will be difficult to achieve universal health coverage without greater and more effective investment in health systems. In order to promote a common understanding of what a health system is and guide global agencies, national governments and other organizations in their efforts to strengthen health systems, the World Health Organization (WHO) issued a “Framework for Action”. In this framework, a health system is defined to include “all organizations, people and actions whose primary intent is to promote, restore and maintain health”. For health systems to be strengthened, six essential health system functions, the so-called building blocks, need attention in an integrated manner. The six building blocks entail: service delivery, human resources, information, medicines and technologies, financing and governance (WHO (2007), Figure 2.1). The building blocks can be seen as sub-systems of the health system and within every sub-system there is an array of other systems. There are multiple relationships and interactions among the sub-systems, and interventions that aim to improve health need to be implemented in this dynamic architecture.

![Figure 2.1 The health systems framework (De Savigny and Adam 2009, p. 32)](image-url)
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There is a central place for people in the health systems framework. People are driving the system, but are at the same time beneficiaries of it (De Savigny and Adam 2009). The centrality of people in the health systems framework reflects that the health system is driven by human interaction: from political decision making to the relationships among actors involved in delivering and receiving promotive, preventive and curative health care (Hernandez 2014).

Human resources, being one of the health systems building blocks, are critical to functioning health services and attaining the newly set sustainable development goals (Tangcharoensathien, Mills, and Palu 2015). An adequate health workforce is needed to reach more people with an extended health benefit package of good quality (Campbell et al. 2013). There is a massive shortage of health workers in both Africa and Asia. New projections based on the WHO Global Health Observatory show that 10.3 million additional health workers are needed to ensure universal health coverage; this includes 2.8 and 7.1 million health workers in Africa and Asia, respectively (ILO 2014). For these gaps to be met, governments should commit to produce and retain health workers in their country. In addition to increasing the number of available health workers, their skill mix, distribution, quality and performance are also of utmost importance (Cometto and Witter 2013). Matching population health needs with a supply of competent and motivated health workers that are both “fit for purpose” and “fit to practise” in a country’s context is therefore the foundation for accelerating the attainment of universal health coverage (Campbell et al. 2013).

The above figures on the shortage of health workers focus on physicians, nurses and midwives. Despite the importance of these skilled health workers, it is clear that the majority of low- and middle-income countries (LMICs) will not be able to close the gaps. It has been estimated that some low-income countries would have to allocate 50% of their gross domestic product to health to be able to reach the optimal amount of skilled health workers. Therefore, in many LMICs, mid-level providers (such as clinical officers and medical assistants) and CHWs are deployed to improve the availability and accessibility of (primary) health care services (Cometto and Witter 2013).

2.2 Community health workers

There are many types of CHWs, depending on country and setting. All have in common that they are health workers performing functions related to healthcare delivery; they have received limited training focused on activities they need to carry out in the context of the intervention(s) they implement; and they have received no formal professional or paraprofessional certificate or tertiary education degree (Lewin et al. 2010). In some countries, they are salaried workers and official part of the health sector, while in other countries they are volunteers at village level. They can have specified tasks and work for a
particular programme (for example a malaria or tuberculosis programme), but many CHWs have broad job descriptions with different tasks to perform and large workloads. CHWs’ tasks mainly focus on health promotion and prevention, although sometimes they also conduct simple curative tasks. CHWs form the first contact with the health sector for people at community level (Lehmann and Sanders 2007). With adequate performance of CHWs, it can be assumed that there would be less health-related problems at village level and a decreased workload in health facilities, as a result of preventive measures and timely referrals.

**The history of community health worker programmes**

In the 1960s, the inability of the modern western medical model of trained physicians, nurses and midwives to serve the needs of rural and poor populations in low-income countries was becoming readily apparent. In 1978, the WHO and the United Nations Children’s Fund (UNICEF) organized the first international conference on primary health care at Alma-Ata, Kazakhstan. This conference resulted in the “Declaration of Alma-Ata”, which called for the achievement of “Health for All” by the year 2000 through primary health care. The principles of primary health care which were adopted, and which are still applicable to date, are: social justice, equity, community participation, disease prevention, multi-sectoral collaboration, decentralization of services to the periphery as close as possible to the people, use of appropriate technology, and the provision of services by a team of workers, including community-based workers (WHO 1978).

In the 1970s and 1980s, many countries invested in CHWs, who received basic training and were often volunteers. Government CHW programmes at national scale emerged in Indonesia, India, Nepal, Tanzania, Zimbabwe, Malawi, Mozambique, Nicaragua and Honduras as well as in other Latin American countries. During the same time, smaller CHW programmes led by non-governmental organizations (NGOs) were initiated in many LMICs. In Brazil, Bangladesh and Nepal, large and successful NGO-led CHW programmes were established. However, from the 1980s onwards, in many countries programmes involving CHWs went into decline, due in part to political instability, economic policies and difficulties in financing. CHWs were often given inadequate support (training, remuneration, incentives, continuous education, supervision and supplies) and were sometimes seen as lacking legitimacy. In their effort to reach out to underserved communities, CHWs often dropped out due to lack of motivation. As a result of these influences, many governments reduced or discontinued their national CHW programmes in the late 1980s and early 1990s (Perry and Zulliger 2012; Standing and Chowdhury 2008). During these decades, vertical programmes, focusing on selected health interventions aiming to tackle the main disease problems in LMICs, gained prominence (Cueto 2004).
Renewed interest in community health workers

Due to the continuing shortage of skilled human resources, health systems are once again turning to strengthening CHW programmes. This renewed interest has been prompted by a number of other factors, including the increased simplification of diagnostic procedures, the growing HIV epidemic, the resurgence of other infectious diseases and the failure of health systems to provide adequate care for people with chronic diseases (Hadley and Maher 2000; Maher et al. 1999). The growing emphasis on decentralization and partnerships with community-based organizations also contributed to the renewed interest in CHWs. As stated above, CHWs conduct a variety of tasks, of which some were formerly the responsibility of other, higher level health workers. Task shifting – sometimes referred to as “task sharing” or “optimizing” – is a process of delegation in which tasks are moved, where appropriate, from more to less specialized health workers. Delegation of tasks is often extended to CHWs (Chopra et al. 2008; Samb et al. 2007).

Various countries have begun to again invest in large CHW programmes. For example, the lady health worker programme in Pakistan, which was launched in 1992, has gradually scaled up to serve 70% of the rural population. In 2004, Ethiopia began its Health Extension Programme, deploying and training health extension workers (Bhutta et al. 2010; Perry and Zulliger 2012; Standing and Chowdhury 2008). More recently in 2010, Zambia started a CHW programme with community health assistants (Zulu et al. 2013). Initiatives like the One Million CHW Campaign, a partnership of United Nations agencies, civil society, the private sector and academia launched in 2013 and supporting African governments in increasing the number and quality of CHWs, show that the trend of expanding CHW programmes is expected to continue.

The potential of community health workers

A Cochrane review assessed the contribution of CHWs towards health of communities from around the globe (Lewin et al. 2010). The review assessed the effectiveness of various CHW programmes and interventions. It concluded that there is evidence that CHW programmes, compared with usual care:

- increase immunization uptake in children;
- increase the number of women initiating breast feeding and who breastfeed their child at all;
- reduce neonatal mortality; and
- improve pulmonary tuberculosis cure rates, but have little or no effect on tuberculosis preventive treatment completion.

This review found less strong evidence regarding the effect of CHWs on reducing maternal morbidity and mortality (Lewin 2010). However, another Cochrane review conducted in
2010 shows that community-based care packages, delivered by a range of community-based workers, can reduce maternal morbidity, neonatal mortality, stillbirths and perinatal mortality (Lassi, Haider, and Bhutta 2010). With regard to CHWs’ tasks related to other health issues, such as family planning, evidence is insufficient to draw conclusions about the effectiveness of CHWs. This is mainly due to a lack of high quality randomized controlled trials on the involvement of CHWs in these areas (Lewin et al. 2010).

From a systems perspective, the position and role of CHWs offer other advantages than merely conducting health-related (sometimes shifted) tasks. CHWs offer services closer to the community: this reduces opportunity costs that poor communities would have when using health facilities. CHWs often offer services to their own community. This embedment can offer possibilities to improve access of marginalized communities to health services, as CHWs are familiar with and respond to the existing socio-cultural norms (Bhutta et al. 2010). CHWs have been referred to as cultural brokers or mediators, providing a link between communities and health and social services (Maes and Kalofonos 2013). They are able to empower communities to exercise their rights (Pérez and Martinez 2008). In addition, the opportunity to interact with clients at household and community level gives them a better understanding about the broader context of people’s lives (Standing and Chowdhury 2008). This insight can be helpful for the development of prevention programmes and optimization of treatment regimens, which are led by public health and medical professionals who often miss this insight as a result of being facility-based.

### 2.3 Performance of community health workers

As with other types of health workers, the availability of CHWs alone is insufficient to improve quality of care and have an impact on the health status of communities. It is important to avoid mistakes made in the past and to identify what is needed to make health services provided by CHWs function well. CHW programmes are often hampered by poor motivation, high workloads and varying quality, resulting in staff attrition and sub-optimal effectiveness (Glenton et al. 2013; Perry et al. 2014). There is a need to better understand the context and conditions in which CHWs work, in order to support them in improving their performance and realising their potential (Glenton et al. 2013; Lewin et al. 2010).

According to the WHO definition in the “World health report 2006”, a well-performing health workforce is a workforce that:

>“works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given the available resources and circumstances” (WHO 2006: p. 67)
This definition of performance also applies to CHWs, as they are or can be seen as part of the health workforce, depending upon the level of integration of CHWs in the health system. A description of the specific concept of CHW performance is not available from the international literature. However, previous work has shed some light on the different elements of performance of CHWs. CHW performance can be measured at two levels (Figure 2.2). At the level of the individual CHW, there are cognitive, affective and behavioural changes in the CHW him- or herself, such as self-esteem, motivation, attitudes, competencies, guideline adherence, job satisfaction, and capacity to facilitate community agency (Bhutta et al. 2010; Chen et al. 2004; ERT2 2012; ERT3 2012). At the level of the end-user (the community), we can measure CHW-attributable outcomes in communities’ behaviour, such as increased use of health services and adoption of health-promoting practices. The ultimate measurement of CHW performance would be CHW-attributable change in population health (impact level), such as a reduction in mortality or morbidity related to certain health conditions (ERT2 2012).

Figure 2.2 Conceptual framework on CHW performance
Factors influencing performance of community health workers

The ability of CHWs to deliver effective health services depends on many different factors (Figure 2.2). These factors can be categorized as programme-related or intervention design factors and contextual factors.

Intervention design factors

The features of the programme or intervention design in which CHWs function can have direct influence on CHW performance. Many studies focus on these factors, which are easier to influence than contextual factors: if programme implementers know how certain features of an intervention affect performance, interventions can be shaped and adjusted to yield optimal CHW performance.

Many intervention design factors are related to human resource management. The basic training that is offered to CHWs and the possibility of continuing education influence the performance of CHWs and the effectiveness of their services. In addition, availability of a supervision system and how supervision is conducted as well as how CHWs are incentivized can influence performance (Bhattacharyya et al. 2001; Bhutta et al. 2010; Crigler et al. 2011; Glenton et al. 2013; Jaskiewicz and Tulenko 2012; Lehmann and Sanders 2007; Naimoli et al. 2014; Palazuelos et al. 2013; Prasad and Muraleedharan 2007). Incentive packages depend on whether CHWs are volunteers or more integrated cadres in the health sector, and should take into account the workload of the CHW (Bhattacharyya et al. 2001). Some scholars discuss that CHWs who volunteer are unlikely to continue to serve without salaries — particularly if the expectations related to their tasks are broadened (Akintola 2010b; Peltzer et al. 2010). However, other scholars argue that intrinsic factors, such as commitment, sense of achievement and altruism, combined with well-functioning support and recognition from the health system, are critical to becoming and remaining a voluntary, non-remunerated CHW (Kasteng et al. 2015; Maes and Kalofonos 2013).

Vertical, disease-specific programmes that use CHWs for service delivery tend to give limited consideration to multiple workloads and have resulted in CHWs facing competing priorities (Ye-Ebiyo et al. 2007). In many countries, the job description of CHWs (either officially or unofficially) has become broader over time as a result of task shifting; the increased workload has not always been accompanied with the necessary compensation, training and support mechanisms (Jaskiewicz and Tulenko 2012). Task shifting can even lead to role conflicts and competition between different groups of health workers (De Brouwere et al. 2009; Kok, Herschderfer, and de Koning 2012; Yakam and Gruénais 2009). On the other hand, CHWs taking on new tasks may become more motivated because of increased salaries and public recognition (De Brouwere et al. 2009).
CHWs act as intermediates between communities and the health sector. Their relationships with the health sector are established by their contacts with professional health workers, through support and supervision. Their relationships with communities can be shaped by the involvement of community members in selection and support. These links between CHWs and actors in the communities and health sector can influence performance as well. For example, when CHWs are not chosen by communities but rather by local elites or the political establishment, CHWs can lose their sense of relatedness and accountability to communities, diminishing their motivation to perform (Kane et al. 2010). Village health committees, women groups, peer support groups and others often assist CHWs in the performance of their promotional and preventive tasks. Communities can also provide CHWs with incentives, in the form of recognition of the value of CHWs’ work or the provision of in-kind incentives, such as special privileges (ERT1 2012). Thus, the link between CHWs and their communities has an influence on their motivation and performance.

**Contextual factors**

CHWs do not work in a vacuum; they work in a broad cultural, social, gendered, political, economic, legal and communication context (Palazuelos et al. 2013). The influence of this broader context on CHW performance will vary, depending on locality (whether CHWs are based in rural or urban areas) and according to personal features, such as their age, gender, professional and familial experience. Broad contextual factors are related to the community context in which a CHW works. For example, the communities’ health-seeking behaviour and perceived legitimacy of the CHW can be influenced by gender norms and values, cultural practices and beliefs (Bhutta et al. 2010; ERT1 2012).

Besides these broad contextual factors, factors associated with the health system, such as the availability of human resources for health (HRH) policies, the health system’s financial model and infrastructure can also have an influence on the performance of CHWs. Bhutta et al. (2010) conclude that CHW programmes should be coherently inserted in the wider health system, and CHWs should be explicitly included within the HRH strategic planning at country and local level. On the same issue, Hermann et al. (2009) list political support and a regulatory framework as factors for the success of CHW programmes. Health system factors also address issues of more direct influence on CHWs’ working conditions. A systematic review on the role of CHWs in malaria treatment found that a well-functioning referral system and a reliable and consistent supply chain for getting essential medicines and equipment to the community level were instrumental for CHW performance (Smith Paitain et al. 2012). The Evidence Review Team 2 of the United States Government Evidence Summit on CHWs also identified several health system factors influencing CHW performance, such as support from the local and national governments and adequate...
resources to ensure CHWs are properly equipped, supplied and supported (ERT2 2012). Glenton et al. (2013) also stress the importance of flexible and appropriate working conditions and adequate supplies.

The complexity of community health worker performance

The performance of CHWs remains a point of global attention. The above described studies have identified various factors that may influence CHW performance, but present a far from complete overview. Improving performance of health workers in low-resource settings is a complex dilemma, due to the intersection of multiple factors that influence health workers’ ability and willingness to carry out their role (Franco, Bennett, and Kanfer 2002; Rowe et al. 2005). The factors that could influence CHW performance have never been assessed in their totality, and detailed information on “how” these factors play out on CHW performance is lacking (Frymus et al. 2013). The renewed interest and variety in CHW programmes around the globe, combined with the complexity and intersection of factors that influence CHW and programme performance, call for the development of a framework on this topic. The conceptual framework (Figure 2.2) presents an initial overview of the main categories of factors that could influence CHW performance, developed after a first scanning of the literature. The framework will be refined in this thesis, and specific pathways will be presented that shed more light on how performance is shaped in certain contexts.

The complexity of CHW performance lies not only in the multitude of influencing factors, but also in the fact that CHW performance, at the individual level, is the sum of different elements, such as self-esteem, motivation, attitudes, competencies, guideline adherence, job satisfaction, and capacity to facilitate community agency. Knowledge and quality of practice could be influenced by interventions introducing training, guidelines, protocols and technologies, which have shown to improve health outcomes in other settings (Hernandez 2014). Motivation could be improved by interventions that introduce different kinds of incentives, including performance-based incentives (Rahman and Tasneem 2008). While these “technical solutions” may improve CHW performance, they are often not enough. They need to be combined with “people-focused solutions” that enable CHW performance related to self-esteem and self-efficiency. These include processes that promote problem-solving capacity, socialization of values and priorities that engage CHWs’ commitment, encourage their participation and respond to their needs (Hernandez 2014). These social processes are related to how CHWs, communities and actors in the health sector interact with and relate to each other. They can be captured in the approach to supervision (supportive and problem solving-focused versus technical and record-based), and the nature of training (participative and including “soft skills”, like communication, versus skill-oriented).
In this thesis, performance is understood as a transactional social process between health workers, in this case CHWs, and their environment (Franco et al. 2002). Therefore, a part of this thesis presents an in-depth analysis of how relationships between CHWs and other actors in the health system are shaped, to better understand how CHW performance can be improved in certain contexts. Recent studies have not analysed CHW performance by explicitly taking into account that performance is a complex social process. There is a need for studies with this perspective, as CHWs have a unique intermediary position between communities and the rest of the health system and are as such in the middle of social processes between community members and actors in the health sector.