GHWA technical brief

global health workforce alliance

The cost-effectiveness of close-to-community health programmes:
What do we know and where are the gaps?

Critical shortages in the health workforce in many developing countries - specifically the number, skills and geographic distribution of health workers - pose a significant challenge to the achievement of universal health coverage and the Sustainable Development Goals (SDGs). Increasing attention has therefore been focused on the potential of community health workers (CHWs) to expand access to essential health services, particularly in low- and middle-income countries. The term CHW is broad, and CHWs can be defined as health workers who have been trained to some extent but do not possess a formal professional certificate, many live and work in the community. It encompasses a wide range of health workers, paid and unpaid, professional and lay, experienced and inexperienced, including traditional birth attendants, village health workers, peer supporters, community volunteers and health extension workers.

Research shows that CHWs are effective in delivering health services in low- and middle-income countries. They can also improve equitable health care and extend access for populations who are difficult to reach. But data are often too patchy or project specific. Several assumptions are commonly made about CHWs including that they are less expensive than formal health care workers as a way of delivering key services. What is striking, however, is the lack of robust evidence on the cost-effectiveness of CHWs. In order to enhance understanding and inform policy dialogue on the role of CHWs in the health system, the international research consortium, REACHOUT, has recently supported research on this topic. Two new papers have been published which will shed light on this important area:

• Evidence from a review of the literature by Vaughan and colleagues on the costs and cost-effectiveness of CHWs http://www.human-resources-health.com/content/13/1/71
• A study by McPake and colleagues into the cost-effectiveness of CHWs in Ethiopia, Indonesia and Kenya http://www.who.int/bulletin/volumes/93/9/14-144899/en

Outline of studies and methods

Literature review (Vaughan et al): Searches identified 32 relevant articles and four discussion papers for review, dating from 2003 to 2015, on the costs, health outcomes/benefits and cost-effectiveness of CHW programmes. The studies covered a large variety of CHW tasks, differences in the amount of training CHWs received, many different geographical settings and multiple health areas. The studies also differed in the costs they counted, such as CHWs' time, training, patient costs and overheads. Health outcomes/benefits measured in the studies included changes in health status and well-being (for example, the number of deaths averted or TB cure rate) as well as intermediate outcomes (such as the number of patient referrals made or weeks of exclusive breastfeeding). The review found that cost-effectiveness was also assessed in various ways in the studies, for example, in terms of cost per visit; cost per patient treated or cost per patient cured.

Study in three countries (McPake et al): This assessed the cost-effectiveness of CHW programmes in Ethiopia, Indonesia and Kenya. Programmes were selected because of their national scale, similar activities - all reproductive, maternal, newborn and child health (RMNCH) interventions - and availability of data on effectiveness. The close-to-community health programmes under review varied to a large extent in their design, the type of CHWs employed and levels of CHW training. The cost-effectiveness of each CHW programme was estimated using data from four districts, two of which were in Indonesia. In order to measure the effectiveness of the health programmes, a number of tools were utilised, notably the life-years gained (LYG) tool. Costs were estimated from data collected from a range of sources, and included start-up and recurrent costs. Costs and lives saved were estimated over a one-year period. The cost-effectiveness ratio for each district was expressed as the incremental cost per LYG. It is noteworthy that the cost-effectiveness of each programme was assessed from the perspective of government.

Key findings

Both the literature review and study revealed promising evidence about CHWs: that they can be cost-effective in certain contexts and under certain circumstances compared to standard or alternative delivery models. Specific findings are:

• *Literature review:* CHWs can be cost-effective in low-and middle-income countries. In the area of TB, CHWs reduced the cost per patient treated and cured from an impressive 40 per cent to 74 per cent compared to facility-based care. One study emphasised the importance of proper training and supervision for success. In other areas, such as RMNCH and malaria, evidence in support of the cost-effectiveness of CHWs is weaker but nonetheless on the whole positive. In wider primary health care, studies showed that CHWs expanded the coverage and equity of service delivery at low cost.

• *Three country study:* all three CHW programmes in Ethiopia, Indonesia and Kenya were cost-effective, based on certain assumptions. Coverage of essential health services improved: this suggests that the CHW programmes in these districts helped save lives, although data on the effect of CHW programmes in districts in Indonesia and Kenya was only available for newborn health, and for children under age five in the district in Ethiopia.

Limitations

A key limitation outlined in both papers concerns the issue of perspective. Costing studies often fail to capture the significant costs and benefits which CHWs – who, by their very nature, are rooted in the community - bring to society. This means that some advantages afforded by CHWs may have been ignored, such as costs saved for TB patients who receive care in the community and no longer need to travel to health facilities. Another limitation arises from assessing the cost-effectiveness of CHWs in isolation rather than as an integral part of the health system: in practice, CHWs often form part of a larger team. Costs incurred by CHWs were not measured in either paper and they may in fact be subsidising programmes. Specific limitations of each paper include:

Literature review: the research team encountered methodological challenges, including weak data underpinning some of the 36 papers. Results should therefore be interpreted with a degree of caution. Making valid comparisons between the studies and drawing general conclusions is challenging, given the various approaches and ways in which CHW effectiveness, costs and cost-effectiveness were assessed, for instance, many did not count the crucial recruitment, training, supervision or retention costs incurred in relation to CHWs. Volunteers' time was also assigned different values in the studies and sometimes even excluded. And finally, the sheer diversity of CHWs - with a huge range of skills and training - makes comparison difficult.

Three country study: It may be that cost-effectiveness was over-estimated because well-functioning programmes were selected, given that one of the criteria for selection was availability of evidence on effectiveness. Equally, it is

also possible that cost-effectiveness was under-estimated since the study only looked at those interventions which have definite health benefits, thereby missing other positive contributions that CHWs bring to society. Likewise, by using a government perspective, costs to society were not captured which may have an impact on cost-effectiveness.

Research gaps

Both papers illustrate the clear need for additional research. The literature review points to the lack of rigorously designed cost-effectiveness studies, and highlights the need for a mixed method research approach. More evidence is needed to explore why CHWs appear to be cost-effective in some health areas, such as TB, and less so in others. In addition, the review found that most studies assessed CHWs in the short-term only: more research is needed on the long-term cost-effectiveness of CHW programmes. Such an analysis could consider important issues of CHW retention.

The three country study underlines the need for further research into the effectiveness of CHW programmes, since in Kenya LYG were estimated from data which was not always robust.

Both papers point out the constraints of the narrow perspective offered when costs and benefits are viewed only through the lens of government or programme. Research is needed to enrich understanding of the costs, benefits and cost-effectiveness of CHW programmes from the perspective of society and CHWs as well as government. It may not be possible to assign a monetary value to these benefits which transcend health, such as better relationships between patients and care providers.

Conclusions

"Several studies have demonstrated the potential of various types of community-based practitioner in delivering a range of health services. The new analysis by McPake and colleagues in this issue of the Bulletin adds an important dimension to this debate, by providing an empirical foundation to the argument." Dr James Campbell, Executive Director, Global Health Workforce Alliance, WHO

This research shows that CHWs can represent, in some settings and under some circumstances, a cost-effective approach for the delivery of essential health services. They have the potential to provide good value for money for donors and governments in providing health services in low- and middle-income countries. As such, donors need to see the value of investing in CHWs.

Both studies were hampered not only by different methodological approaches and ways of assessing costs and effectiveness (and cost-effectiveness in the case of the literature review) but also by the plethora of different classifications used to describe CHWs. When CHWs are bracketed together in this way, evidence can become blurred and inter-country analysis is more difficult. Agencies such as WHO must take the lead in introducing much-needed clarity by defining and categorising different types of CHWs.

The study into CHW programmes in three countries raises questions about the role of voluntary CHWs, in terms of remuneration and supervision. Volunteers may be motivated by values other than money, however, it should not be inferred that they would not welcome predictable payment.

Critical shortfalls in the health workforce cannot be alleviated by simply delegating tasks to CHWs without sufficient training. CHWs should not be seen as a cheap alternative to standard health care, but rather as complementary, especially in rural, poor communities which have limited access to qualified health professionals. The study by McPake et al points out that community-based approaches are likely to be cost-effective in the provision of some essential health interventions when CHWs are integrated into and supported by the health system. A recent editorial by James Campbell and colleagues in the WHO Bulletin echoes this, reinforcing that "it is critical to take a broader health system perspective".

Policymakers must take steps to fully incorporate CHWs into the health system, harmonising policies and ensuring that they can benefit from a range of opportunities, such as employment, supervision, support, remuneration and career development. Looking forward, WHO's draft Global Strategy on Human Resources for Health: Workforce 2030 provides an excellent opportunity to highlight the vital contribution of CHWs and their cost-effectiveness. WHO is also drafting guidelines on the role, education and integration of CHWs for publication in 2017. This is the time to recognise the potential of CHWs - if supported by, and integrated into, the wider health system - in advancing universal health coverage and, ultimately, the achievement of the SDGs.

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