

Chapter 5
**Financing Large-Scale
Community Health Worker Programs**

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Key Points

- Proper costing of a community health worker (CHW) program and assurance that those costs can be paid for on a sustainable basis are essential for an effective large-scale CHW program. Failure to do so has led to the demise of large-scale CHW programs in the 1980s.
- Direct and indirect costs of CHW programs need to be estimated, along with investment and recurring costs, in order to adequately plan for the sustainable financing of a CHW program.
- CHW program costs vary widely from country to country as a result of contextual factors, such as local labor costs, whether CHWs are paid or voluntary, and the degree to which the program is well-supervised with a strong logistics systems.
- Governments, local communities, and external donors are the main sources of financing for CHW programs.

INTRODUCTION

Community health worker (CHW) and related programs have been promoted over the last half century as a principal means to extend basic health services to large populations of underserved people at low and sustainable cost. However, experiences with the last wave of major CHW development, during the 1980s, showed that the tendency to see CHWs as low-cost health care could be misleading. The relatively low cost of training and supplying individual CHWs—compared to more highly trained health workers—distracted attention from the large number of workers needed and the importance of financing a full range of costs that such programs might require to be successful. Insufficient funding was likely one reason why CHW programs in the 1980s were not sustained.

Financing mechanisms for CHW programs are more than just a means of generating resources. They can be means for incentivizing good performance, generating community ownership, assuring sustainability, and fairly distributing the burden of health care costs. In low-income countries, governments have often under-invested in health, typically in the range of 5% of the national budget. Often, ministries of health have had little clout in the decisions of government finance. Political pressure from elite groups has emphasized support for curative care and urban hospitals. Political support for primary health care (PHC) has been limited, leading to limited political support for CHW programs. Often, financial resources for CHW programs are cut during time of budget shortfalls, thereby increasing pressures on these efforts.¹

Failure to Consider the Real Costs of CHW Programs

One of the lessons learned from the 1980s was that the planning of large-scale CHW programs failed to consider the real costs of the programs.² As one observer noted:

...in the decade following Alma-Ata, CHW programs had both low cost and low effectiveness. What the programs needed to improve was the combination of more adequate support, and that implied more resources.”³

The cost of supervision was an area frequently overlooked in those programs, and it was later determined that supervision costs can amount to as much as 40% of the salary cost of one CHW.⁴ Furthermore, costing a CHW program can be a complex exercise since, in contrast to vertical disease control programs that have distinct budgets from regular governmental operations, CHW programs are more horizontal, and costs are allocated to multiple budgeting authorities. Finally, it was often assumed at the outset that communities would pick up most of the costs of these programs, but this hope was never realized. The Bamako Initiative was an initiative to foster community contributions to support PHC services, including those of CHWs; yet, in spite of great initial enthusiasm, the initiatives were not financially sustainable.

Insufficient attention to the full resources needed for successful and sustained implementation is another reason why CHW programs from the 1980s faltered. The absence of fully defined costs and unrealistic plans exacerbated this problem. Particularly troublesome was the basic idea that once CHWs were trained, they could be sent back to their communities and the communities would somehow pay the costs required to support them, with no additional budgetary commitment from government beyond the training. One expert panel convened by the World Health Organization (WHO) reported in 1989 that “... experience now shows, however, that the costs of training, supervision, personnel, and transport can be very high, and that these require careful planning and make considerable demands on government expenditure.”⁵

Lehmann and Sanders, in their 2007 review of CHW programs for WHO, concluded that CHW programs are:

“... neither the panacea for weak health systems nor a cheap option to provide access to health care for underserved populations. Numerous programmes have failed in the past because of unrealistic expectations, poor planning, and an underestimation of the effort and input required to make them work. This has unnecessarily undermined and damaged the credibility of the CHW concept.”⁶

Although CHW programs are neither cheap nor easy to implement, the emerging consensus is that these programs are nonetheless a good investment to promote equity because as Lehmann and Sanders say, “... the alternative in reality is no care at all for the poor living in geographically peripheral areas.”⁶ Information in the public domain regarding the costs of CHW programs is scarce. In this chapter, we will attempt to share some of this information and link it to other information about financing and costing of health programs more generally.

Key questions to consider in financing large-scale CHW programs, which are discussed in detail below, are:

- What are the elements of CHW programs that need to be included in cost calculations?
- What are the full costs of CHW programs?
- What are the different options for the financing of CHW programs and the strengths and limitations of each option?
- What are some examples of how CHW programs have been financed?
- What guidance can be given to assure that financing becomes a sustainable positive element in CHW program development?

WHAT ARE THE ELEMENTS OF CHW PROGRAMS THAT NEED TO BE INCLUDED IN COST CALCULATIONS?

Total costing for any program activity can be complex. One has to consider all relevant costs, both investment and recurring costs, direct and indirect costs, and not only financial costs but social costs, as well. In making decisions about investments, one should compare the costs of alternative programs along with their relative efficiency and effectiveness. However, such a formal analysis is rarely possible because of its complexity.

A typical cost framework will distinguish between investment costs (i.e., those one-time costs needed for program start-up) and recurrent costs (i.e., the costs that must be met annually to sustain programs). Table 1 provides a typology of CHW program costs that need to be considered during the planning stage of a CHW program.

Table 1. A typology of costs for CHW programs

TYPE OF COST	INVESTMENT COSTS	RECURRING COSTS
DIRECT	Initial planning, management, and administration	Ongoing planning, management, and administration
	Establishing governance and stewardship (including certification, accreditation, and quality control)	Ongoing costs of governance and stewardship (including certification, accreditation, and quality control)
	Developing training institutions, and initial training of CHWs and supervisors	Costs of continuing education of CHWs and supervisors
	Initial recruitment and training of CHW and supervisors	Costs of recruitment and training of new CHW and supervisors
	Initial orientation of health staff	
	Initial community engagement, engagement with community leaders, and community mobilization (including publicity)	Ongoing costs of maintaining community engagement, engagement with community leaders, and community mobilization
	Initial costs of determining remuneration, setting up the payment system, producing the first set of uniforms, identification badges, etc.	Salaries and benefits for CHWs and their supervisors, accessories for identification of CHWs (uniforms, badges, etc.), other incentives (e.g., costs of community appreciation days)
	Initial purchase, materials, supplies and medicines, drug kits	Annual purchase of materials, supplies, medicines and drug kits including contracting and procurement costs as well as distribution costs
	Initial purchase of equipment, furniture, and vehicles	Maintenance or rent of vehicles, furniture, and equipment; fuel
	Costs of buying or building new operational facilities for CHW program management and for training CHWs (CHWs are not based in facilities)	Utility bills, maintenance and repairs
Planning of monitoring and evaluation	Ongoing monitoring and evaluation	
INDIRECT		<p>Costs incurred by CHWs themselves (out-of-pocket expenses they have to make to carry out their work, opportunity costs)</p> <p>Costs to the health system of additional health care generated by CHW referrals</p> <p>Costs to patients and their families for services provided by CHWs</p> <p>Costs of high CHW turnover (disruption of services, low staff morale, poor quality, recruitment of replacements)</p>

Costing of specific activities in large-scale CHW programs are shown in Table 1. **Investment costs** (including capital expenditures) involve, of course, planning at the outset, which requires budgeting for time and money. Then, there are important issues related to certification, accreditation, and quality control that need to be budgeted at the outset, as well as the development of training institutions for the CHWs and their supervisors. Orientation of health staff to the role of CHWs is an important activity to carry out up front before program

implementation, as well as publicity, community engagement, and community mobilization. Other investment costs include the initial costs of vehicles, equipment, materials, supplies and medicines, and drug kits. Capital expenses for vehicles and equipment will need to be made on an ongoing basis, as well.

Recurrent costs are those costs required to fund the operational expenses year to year. Direct costs are those that are obvious and budgeted for, while indirect costs refer to the support provided to the CHW program from other parts of the health system through administration, training, supervision, and supplies. Indirect costs also include costs incurred by patients or their relatives in obtain services from CHWs.

Table 1 outlines the types of direct annual operational expenses that need to be budgeted for. These include the costs of recruitment and training, compensation, supervision, supplies and equipment, community engagement, and monitoring and evaluation (M&E). Even when CHWs work as volunteers, there are costs incurred by the CHW that need to be considered, whether they are opportunity costs (what a CHW could have earned if she had not been working as a CHW) or actual expenses that CHWs may incur in their work that they are not reimbursed for (such as paying for transport to attend meetings or pick up supplies when these are not reimbursed). The value of non-monetary compensation also needs to be considered. For examples, sometimes CHWs receive free health care from the government health system as a form of compensation. This would probably be considered an indirect expense. Salaries or incentives for supervisors need to be included, as well.

In contrast to holding training at the national level in a centralized location (e.g., in the capital), local training cuts down on the costs of transport, lodging, and per diem expenses needed for trainees, but it can also reduce standardization and control over quality of training. In Tanzania, the cost of local-level training was 20% of the cost of regional-level training.⁹ There are other costs to be considered. The length of training, of course, has a great impact on the cost of training. When supervisors need transport to visit CHWs at some distance, these costs can be significant. In addition to costs of recruitment and training are the costs (both financial and in terms of reduced health benefits) of CHW turnover, including disruption of services, poor quality of services, and low staff morale by being short-staffed as the remaining workers may have a greater workload.¹⁰

Maintaining a reliable supply chain for medicines, supplies, and equipment needed by CHWs may involve contracting and procurement costs, distribution costs, and monitoring and auditing costs. These costs are often substantial and if funds are not available to maintain a reliable supply chain, the entire CHW program falters. Accessories for identification of CHWs in the community (e.g., uniforms, T-shirts, dresses, badges, and so forth), as well as costs for recognition of good performance and so forth need to be take into account. M&E activities require personnel, equipment, development, and utilization of health management information systems and evaluation surveys. Travel allowances are sometimes needed for CHWs and usually for supervisors.

If CHW programs work well, they will place additional demands on other routine services, which should be anticipated. For example, beneficiaries may demand additional health services because of improved access to PHC. The costs of providing these additional health care services will need to be considered.

WHAT ARE THE FULL COSTS OF CHW PROGRAMS?

CHW program costs can be considered from a variety of vantage points. This includes costs that need direct funding, as well as in-kind costs. These costs can be calculated as total program

costs, costs per program beneficiary or cost per CHW. Cost per program beneficiary may not be the same as the cost per capita (of the total population) if the CHWs are serving a targeted population, such as mothers and children. Thus, it is important to be clear which cost definition is being used and why it is preferable.

Table 2 lists costs reported by the large-scale CHW programs described in detail in Appendix A. These costs are only roughly comparable because they have not been adjusted for the same year, since the data have been obtained from reports prepared mostly during the past decade. Also, the purchasing value of a U.S. dollar varies substantially from country to country. Finally, the level of training provided, as well as the duties and time commitments of the CHW, vary substantially from one country to another. Further, monthly salaries vary from free local medical care for female community health volunteers (FCHVs) in Nepal to US\$25-50 in India and Pakistan to US\$84 in Ethiopia to US\$100–\$200 in Brazil. The annual cost per CHW is in the range of US\$170 in India (not including performance incentive payments) to US\$745 in Pakistan.

Berman¹¹ was able to assemble some costs for several large-scale CHW programs in the 1980s. These costs were a small fraction of what is now being proposed for future CHWs in Africa. At that time, for large-scale CHW programs from India, Indonesia, Peru, and Thailand, where CHWs were working as volunteers (except in India, where they were receiving a modest honorarium), the cost per CHW (for training, supervision, supplies, and drugs) was in the range of US\$38 per year per CHW in Indonesia to US\$725 per year per CHW in Peru. The main expenditures required to support these programs were for training, supplies and equipment, drugs, and the time required for monitoring and supervision.

A very different approach to costing of CHWs was undertaken by McCord and colleagues, as part of their proposal to train one million CHWs for Africa.^{12, 13} They carried out a costing exercise to estimate the cost of a modern “professionalized” generalist multipurpose CHW in Africa. These “professionalized” CHWs would be able to: diagnose and treat childhood pneumonia, malaria, tuberculosis, and neglected tropical diseases; screen for childhood and maternal malnutrition. They would receive also one year of training (three months didactic and nine months of supervised field experience) and a monthly salary of US\$80. There would be one CHW manager for each 30 CHWs. Services provided would include screening for tuberculosis, deworming, and screening pregnant women for HIV infection. Ultimately, McCord et al. estimated that the total cost of training, equipping, and supporting such a CHW would be US\$3,750 per year.

Providing one generalist CHW for every 650 inhabitants and one childbirth specialist for every 3,500 inhabitants in rural Africa would cost US\$2.6 billion, or US\$6.86 per person covered by CHW services. These authors further suggest that a well-funded CHW program would cost only a small fraction of PHC services overall, which cost in a low-income country in the range of US\$50–55 per person.

Another approach to considering the costs of a CHW program is to include not only the cost to provide the program but also the cost to use it. For medical services, these costs include transport and opportunity costs for patients and their families, which for poor people in isolated rural areas, can be significant when obtaining care at distant facilities. As such, the cost savings provided by CHWs, when they can reduce costs for patients, is significant, particularly for those with the lowest incomes.⁹ This whole approach to costing—comparing the costs of the CHW program and the benefits it provides to the cost of providing the same services and benefits through facility-based services—is an important exercise, albeit one that can be resource-intensive. Notably, this approach can provide important leverage for justifying the cost of a

CHW program to decision-makers. Further work on developing practical strategies for cost-benefit analyses of large-scale CHW programs is urgently needed.

Finally, program unit costs, as we alluded to earlier, may be affected by the scale of the program. There is some evidence that, in general, health program costs may increase as the program goes to scale, as the coverage of services increases, and as the density of the population served by the program decreases. In general, as health program coverage expands into remote areas, the marginal cost of reaching each additional person increases. In their paper, Johns and Torres¹⁴ describe four mechanisms that may explain this situation:

1. Geography and infrastructure: Costs of transporting, training, supplying, and monitoring may be higher in areas of difficult access and undeveloped infrastructure.
2. Human resources: Higher incentives may be required to locate health personnel in remote areas.
3. The extent of fixed costs: Increasing coverage can exceed the productivity function of some goods. For example, a vehicle may be needed to transport only one person or small number of vaccines to areas of remote access or low population density.
4. Managing the process of scale-up.

Table 2. Costs for Selected Large-Scale CHW Programs

COUNTRY/CHW	MONTHLY SALARY/COMPENSATION/ INCENTIVE FOR EACH CHW	ANNUAL COST PER CAPITA	ANNUAL COST PER CHW	SOURCE OF FUNDING
Brazil/ Community Health Agent (CHA)	\$100-200	US\$41-50 (for the entire primary health care team, including the CHAs). According to one estimate, CHA salaries constitute 22% of the primary health care team salaries, and the cost for a CHW to serve an individual is \$9-11 per year.		Mostly, the states and municipalities (states are required to allocate 12% of their total budgets to health, and municipalities are required to allocate 15%). Health Councils exist in some municipalities. These councils help to guide health spending at the local level and mobilize community engagement. However, there are some employer health insurance payments made.
Ethiopia/Health Extension Workers (HEWs) and Health Development Army Volunteers	For HEWs, regular monthly salary of \$84 with benefits For volunteers, formal recognition, certificates, and community celebration			National and sub-national entities, bilateral and multilateral donors, user fees; districts (<i>woredas</i>) receive grants to cover CHW program expenses.
India/Auxiliary Nurse-Midwives	Salaried government employees, those working at sub-centers, are given living accommodations.			From national government
India/Anganwadi Workers	Approximately \$25. They also qualify for a government life insurance scheme. The basic salary (paid with funds from the central government) is often supplemented with additional payments from the state government to additional activities beyond those expected by the central government.			90% from the national government and 10% from the state budget

COUNTRY/CHW	MONTHLY SALARY/COMPENSATION/ INCENTIVE FOR EACH CHW	ANNUAL COST PER CAPITA	ANNUAL COST PER CHW	SOURCE OF FUNDING
India/ASHA Workers	Outcome-based remuneration related to facilitation of institutional deliveries, provision of home-based neonatal care, immunizations, facilitation of family planning (sterilizations), and toilet construction. They are also compensated for attending trainings and meetings. They receive approximately \$10 for facilitating an institutional delivery and \$3 for each child they facilitate to attend an immunization session.		The program is supposed to cost approximately \$170 per AHSA worker per year for all expenses except the outcome-based incentives. This cost includes the selection process, social mobilization, training drug kits, identity cards, and supervision. But because of a lack of absorptive capacity, only half of the allocated budget was spent between 2005 and 2011.	
Nepal/ Female Community Health Volunteers (FCHVs)	They receive a dress allowance, an incentive for timely retirement, and free local health services. They are also given a badge, an ID card and an annual day of honor recognizing their work. Local endowment funds exist that are controlled by Village Development Committees which FCHVs can draw from to support income-generation activities. The endowment fund is approximately \$500 per FCHV.			
Pakistan/Lady Health Workers (LHWs)	\$30 per month (paid directly into personal bank accounts). Payments are frequently delayed.	\$0.75 per person served per year	Approximately \$ 745 per year. This is mostly for salary, drugs and supervision. 4% was for training.	89% from the government and 11% from donors during the first 8 years (1995-2003)
Note: These are all CHW programs included in the case studies section: Appendix A. References can be located there. The dollar amounts cited here are not directly comparable since they year of the report varies as does the country of origin, so purchasing power parity has not been accounted for.				

Box 1. Example of a Cost Analysis of a CHW Program in South Africa

In 1997, Bupendra Makan and Max Bachmann carried out an economic analysis of six NGO CHW programs in the Western Cape Province of South Africa.¹⁵ The categories of costs are similar to what we have described here. The analysis found that annualized capital (investment) costs ranged from 5–12% of total costs. It also found that there appeared to be economies of scale, with larger programs having smaller per capita expenses for training, supervision, and support. In addition, it found that programs that had been started more recently had higher costs than those that had been operating for some time.

WHAT ARE THE DIFFERENT OPTIONS FOR FINANCING CHW PROGRAMS AND THE STRENGTHS AND LIMITATIONS OF EACH OPTION?

As shown in Table 1, sources of funding range from the central national government to a combination of revenue from the central national government, state government, and local municipalities, to local contributions from communities (via user fees, volunteer donation of time by CHWs to general community contributions), to funding from international donors. When CHWs are volunteers, they are in fact a major source of the funding for the program. We will consider briefly some of the advantages and drawbacks of each of these sources of financing. Key considerations here are who bears the burden of financing, whether the financing mechanism has incentives for efficiency and quality and how sustainable it is, and what the risks to sustainability are.

The Government as Funder

Funding from government has important advantages, most notably job security for the individual CHW and stability (of a sort) for the program. It also helps the CHW program to achieve a higher degree of equity than would be possible with local community financing. General revenue tax financing is generally more equitable than user-financed services. Programs that rely primarily on community financing, such as fees for services, place greater burdens on poor communities and the sick.

The ASHA Program in India represents an interesting case in which the available government funding actually exceeded the amount spent by the program. Beginning in 2006, the government budgeted approximately US\$167 for each ASHA worker per year, but actual expenditures were substantially less than this, particularly in the poorest states such as Bihar. According to a program evaluation:

“The primary reason for this low expenditure is the inability or unwillingness to invest in management and support structures at state, district and block levels... Expenditure rates are also reflective of the quality of political and administrative support the programme as the willingness to put money where it matters.”¹⁶

One of the inherent problems with government funding, particularly from the central level, has been the vulnerability of CHW programs to cutbacks in funding when government shortfalls occur. Even though government funding has a certain degree of sustainability built into it, it has its own instability, as well. The lack of strong political support to continue funding levels for CHW programs in the face of competing demands has been a recurrent problem for large-scale public sector CHW programs.

The Community as the Funder

The concept of community financing is an attractive one, but unfortunately has proved to have serious limitations. Numerous examples exist of failures of sustainable community funding support for CHW activities.¹⁷ Frankel concludes that virtually no examples exist in which community financing led to consistent and regular payment of CHWs.¹⁸

It is not uncommon for communities to provide labor and pay for the construction of a community health post from which the CHW will work. Profits from revolving drug funds might be used to pay for maintenance of a health post, purchasing supplies, or providing payment to the CHW. Fee for service by CHWs is generally considered to be open to abuse (by placing the profit motive and private practice over the real needs of villagers) and for this reason is not recommended by UNICEF and WHO.¹⁸

The Chinese Barefoot Doctors were funded with locally generated resources. This was a unique experience since all community assets were controlled by the Communist Party and local Party officials could decide how to use them. Once the collective cooperative economy gave way to private ownership of land, this funding was no longer available and so the program began to be largely financed by fee for service, and the number of Barefoot Doctors gradually declined and now the program is virtually non-existent.

It is possible that too much reliance on community financing can exacerbate inequities since the poorest communities will likely have the greatest health problems but have also the least capacity to pay for services. However, in the case of BRAC Shasthya Shebikas, they earn most of their income by selling drugs and health-related products at a small markup. Since they are closely supervised, it does not appear that the sale of commodities is distorting their activities and the communities, even though they are quite poor, are capable of providing this financing. The incomes of Shasthya Shebikas is quite modest, usually only \$10–20 per months (see Box 1).

The CHW as a Volunteer (and therefore the “donor” of his/her time)

This form of community financing, although attractive on paper when making budgets, has serious limitations when a program is expecting a significant amount of work from the CHW. There is a general consensus that this approach can be unjust, inequitable, and unsustainable in the long term, although exceptions do exist. Frankel, in his landmark overview of CHW programs published in 1992, concluded that “there is little evidence that the mobilization of volunteers in national CHW programmes is an effective policy.”¹⁸ At the Yaoundé Conference, sponsored by WHO, the participants concluded that “it may be unreasonable, if not unfair, to expect individual CHWs themselves to contribute to the labour costs of the scheme.”¹⁵ This conclusion applied to situations in which CHWs have no other source of income and a significant portion of the day is needed to meet the job requirements.

Frankel goes on to say, however, “It is difficult to generalize on this issue, for there are clearly major differences in the time commitment of a CHW whose task it is to offer information on health issues to ten households, compared to the time required for a CHW to offer a curative and preventive service to a population of over one thousand.”¹⁸

Governments face formidable challenges by giving formal recognition and salaries to CHWs because in virtually all countries, CHW programs are not well established nor are their benefits for population health widely recognized. Therefore, CHW programs are commonly one of the first budget items to be cut when budget pressures arise. The provision of a salary carries with it the inherent risk of CHWs unionizing and demanding higher salaries and more benefits. Even though individual salaries are low, the financial implications of these pressures are considerable given the large number of workers involved. Serving in a voluntary role can have certain benefits that are not commonly appreciated. In some settings, government workers are

seen as unmotivated and unproductive or local hostility toward the government exists. In these settings, not linking CHWs to government salary support can be beneficial for a CHW program.

A further challenge in many countries is that the entry-level nurse cadre salary is the country's minimum wage. That prevents the country from hiring CHWs as full-time employees because it would require that entry-level nurses—and perhaps several lower-level nurse cadres as well—be given a raise. Thus, there is a potential ripple effect up the entire health worker pyramid (Kate Tulenko, personal communication).

There are surprisingly positive experiences of NGOs recruiting and effectively using volunteer CHWs. One of these approaches involve Care Groups, in which a paid low-level promoter meets with a group of 10 or so volunteers for two hours every two weeks, and then the volunteer visits with women in 10 adjacent households to convey a key health message. Such engagement requires perhaps four to five hours per week per volunteer. These experiences have been highly empowering and satisfying for the CHWs, and low rates of attrition have been experienced during the four to five year cycle of project funding.¹⁹⁻²¹ These programs still require training and supervision, support, incentives (such as T-shirts, skirts), annual community recognition days, and so forth.

One of the world's pioneer CHW programs, the Jamkhed Comprehensive Rural Health Project, has had a highly stable group of volunteer CHWs, with many serving in this capacity for 20 or even 30 years. This has been possible by giving the CHWs training in income-generating skills so they can earn funds on the side in addition to their activities as a CHW. But in general, volunteerism has been associated with a high attrition rate, leading to increased costs of recruitment and training.

External Donors

External donors are most likely to pay for certain start-up costs, such as planning, policy advocacy, technical support, initial training, and procuring an initial drug stock or an initial set of supplies and equipment. They are unlikely, however, to pay for long-term recurring expenses.

WHAT ARE SOME EXAMPLES OF HOW CHW PROGRAMS HAVE BEEN FINANCED?

Boxes 2 and 3 provide examples of very different forms of financing of two large-scale CHW programs: BRAC's CHW Program in Bangladesh and the Community Health Agent Program in Brazil.

Box 2. Financing of the BRAC CHW Program

The BRAC CHW Program is of significance for multiple reasons: 1) its scale, with some 80,000 workers, 2) its innovative financing scheme, and 3) it is an example of an NGO working at large scale (serving 110 million people in Bangladesh). *Shasthya Shebikas*, as the CHWs are called, are first and foremost a member of a BRAC women's micro-credit savings group. They then qualify for training in one of a number of multisectoral programs, including health. After four weeks of initial training, they begin to function within the BRAC community health system that functions alongside the formal government health system and the system of informal providers (of which there are many in Bangladesh). *Shasthya Shebikas* receive their income from a variety of sources. First of all, they sell commodities such as drugs for minor illnesses, contraceptives, feminine hygiene supplies, iodized salt, oral rehydration solution, safe delivery kits, sanitary latrines, and vegetable seeds. These supplies are obtained from the local BRAC office. She procures these supplies there by paying a wholesale price (with an initial start-up loan) and then from the markup

at the time of sale (according to a price fixed by BRAC), she is able to make a small profit. On average, the income from these sales amount to US\$10–20 per month. In addition, she receives a small performance-based incentive, such as for identifying a pregnant woman during her first trimester, completing the prescribed treatment of a TB patient, and so forth. The typical monthly income from these incentives is US\$8–10 per month. The *Shasthya Shebika*'s role is much broader than the services for which she receives compensation, including health promotion and assistance with referrals for health services.^{22, 23}

BRAC supports the organizational and managerial system within which *Shasthya Shebikas* work, including the cost of the supervisor (one for every 10 *Shasthya Shebikas*) and the system for providing the drugs and supplies that they use each month.

One of the great attractions of this approach is that through a primary community-based financing scheme, if successful and well-managed, as this one is, there can be a gradual and sustainable scale-up of program activities, with increasing speed. The number of *Shasthya Shebikas* has grown from a few hundred in 1990 to 15,000 in 2000 to 30,000 in 2004 to 100,000 at present.

Note: Akram Islam contributed to this information.

Box 3. Financing of the Brazil CHW program

The Brazil CHW program is an integral part of its PHC program, which has been growing in strength and stature for well over a half-century now. Its 236,000 CHWs, called Community Health Agents, are financed as an integral part of the PHC program. After serious political struggles, the country embraced in the 1980s a strong commitment to social protection, including health, through shared financing by different levels of government, strong community participation, and complementary participation by the private sector. Since CHWs are an integral part of a Family Health Care Team and formally recognized as part of the national health system, the financing for the entire team comes from the same sources. The central government requires that 12% of tax revenues raised by states and 15% of those raised by municipalities be devoted to health. Civic participation is made possible not only through democratic elections but through the formation of Councils at the federal, state and municipal levels which address health system issues, and health conferences are held periodically as well. There are over 5,500 municipal councils in Brazil, and 50% of the members are users of health services, 25% are health managers, and 25% are managers and service providers. They play a strong role in the allocation of financial resources for health. Every four years, health conferences are convened to propose a strategic direction for health services.

The cost of the CHW program is hard to determine because it is so integrated with Brazil's primary health care system. The member of the Family Health Care Team together take joint responsibility for 600–1,000 families (with 4-6 CHAs on each team along with one doctor, one nurse, one auxiliary nurse, and some dental staff).

Funding comes from a combination of sources: national, state and municipal governments, employer health insurance purchases, and out-of-pocket expenditures. The CHWs are employed by the municipality and paid a salary in the range of \$100–200 per month. The cost of the Family Health Care Team program is in the range of \$41–\$50 per individual covered per year, and the salary costs of the CHAs constitute, according to one study, 22% of the total Family Health Care Team salaries. Thus, an approximation of the cost of the CHA program is in the range of \$9–11 per person served per year.

The Brazil CHW program is an example of a program in which CHWs have become an essential

and foundational member of the primary health care team and therefore the funding to support CHWs does not come as a separate package but as a part of the overall governmental and societal support for PHC.

Note: See the Brazil Case Study in Appendix A for further details and references.

WHAT GUIDANCE CAN BE GIVEN TO ASSURE THAT FINANCING BECOMES A SUSTAINABLE POSITIVE ELEMENT IN CHW PROGRAM DEVELOPMENT?

General principles regarding costing and financing: First of all, careful planning which takes into account the full costs of the program is essential, and the establishment of a plan for adequate, fair, and sustainable financing must follow. Secondly, establishing a strong base of political support for long-term financing is critical if government funding is required. Early success can build long-term success—an ineffective program is hard to fund in the long term. Therefore, documenting early program quality and impact can generate political support that will be invaluable in securing governmental financial support. Strong evidence of effectiveness can help to secure political support for funding, and this can be achieved by having a strong monitoring and evaluation program.

Also, developing strong linkages to local sources of revenue can, in the long term, produce gradually increasing revenue since these sources of support are likely to grow more quickly than will funding from the central government. Finally, if CHWs are adequately remunerated (and have career advancement opportunities), attrition will be low, which can reduce the costs and poor quality associated with high rates of attrition.

CONCLUSIONS

Accumulating evidence on the effectiveness of CHWs in low-, middle-, and even in high-income countries provides strong indications that, for the foreseeable future, CHW programs are not merely a stopgap solution. Investments in these CHW programs are, in fact, investments in strengthening the health system. However, to reach their full potential, CHW programs need adequate financing just as do all essential programs. Whether emerging large-scale CHW programs can garner the financial resources they need to achieve their full potential is a question that is too early to answer at present.

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Additional Resources

The *Joint UN Tool for Modeling the Cost and Impact Needed to Reach the Health-Related MDGs* was designed to support the costing and modeling of national strategies from a systems-wide or a program-specific intervention. Information about this can be obtained at:
http://www.who.int/pmnch/topics/economics/20090407_joint_UN_tool_ha.pdf.

Another useful resource for estimating costs is a questionnaire used in Brazil by its primary health care program, developed to estimate the potential costs of scaling up the Program *Sauda e Familia* in Brazil. This is available (in Portuguese) at:
http://189.28.128.100/dab/docs/geral/determinacao_%20sintese.pdf.

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