Scaling Up and Maintaining Effective Community Health Worker Programs at Scale

Steve Hodgins, Lauren Crigler, Simon Lewin, Sharon Tsui, and Henry Perry

30 September 2013

Key Points

- Effective programming at scale requires having a viable, scalable program that works on a small scale under routine field conditions, followed by careful planning (appropriate to the national context) that assures long-term sustainability at scale.
- Ongoing monitoring and evaluation (M&E), with adjustments to the program based on these findings, is essential both for effective scale-up and long-term program effectiveness at scale.
- Scaling up is a political process, so leadership and proper engagement with the political system, national-level stakeholders, and the Ministry of Health (MOH) is essential.

INTRODUCTION

A pitfall affecting many areas in global health, including community health worker (CHW) programs, is the tendency of planners and managers to uncritically assume that because something works well when implemented on a small scale, with fairly intensive engagement and support (undertaken by an nongovernmental organization [NGO], for example), there should be no problem doing more or less the same thing on a large scale (under the Ministry of Health [MOH], typically). As discussed in the introductory chapter (see Chapter 1), there have been a number of noteworthy small-demonstration experiences over the history of primary health care (PHC) program implementation that have influenced thinking about what is possible at the community level. Although not necessarily "replicated," they have served as inspiration and informed planning for the development of somewhat analogous efforts, some of which have also been effective at large scale. But such successful translation is far from straightforward. Often, the results obtained by CHW programs operating at large scale are far less impressive than those seen in demonstration projects.

Although not necessarily "replicated," these demonstration experiences have served as inspiration for the development of somewhat analogous efforts that have also been effective at large scale. However, such successful translation is far from straightforward. Often, the best that can be done at large scale is a pale shadow of the conspicuous successes seen in demonstration projects.

Highlight the challenge of scaling up a community-based PHC program is offered at the outset as a word of caution. When successful demonstration projects are proposed as solutions to nationwide problems of PHC, the challenges of achieving this proposition should be recognized. Policymakers and planners need to look critically at the landscape of all the specific requirements that needed to be met to achieve that success. A careful look at the settings where implementation is planned is required, along with a determination of what it would take to meet these requirements—at scale. Is there a robust enough policy framework and adequate political support, management and supply systems, numbers of staff, and financial resources for successful scale-up and continued long-term effectiveness? If the picture looks favorable, it may be warranted to cautiously proceed, first implementing on a limited scale but under realistic conditions (i.e., what one could expect to provide at scale), and monitoring closely for performance, ready to make any necessary adjustments to address identified barriers or constraints to good performance. Then, as an approach is progressively validated, we can move toward scale.

So, from the beginning we are focusing not merely *getting to scale*, but on what it is going to take to ensure a functional and effective program (with demonstrated impact) on a continuing basis once we are at scale. In this chapter, we discuss a number of questions that policymakers and program managers need to consider when considering taking CHW programs to scale. We assume here that the MOH will be guiding the scale-up of a national CHW program.

Key Questions

- What kind of planning is needed for CHW programs to operate at scale?
- How do we get to scale?
- What are some of the pitfalls of scaling up?

Box 1 contains a set of detailed issues that relate to both the key questions for this chapter, as well as to other chapters in this guide. In this chapter, we focus on the core questions related to scaling up specifically.

Box 1. Some key issues to consider when scaling up a CHW program

Below are some detailed issues that need to be considered as a scaling-up process is being envisioned. These issues have been adapted specifically to CHW programs, but the questions were originally developed to address issues of scaling up any type of health program.[1] Help with addressing these issues is what this entire guide is about, so the information in each of the various chapters of this guide can contribute to the process of answering each of these questions.

- What is the range and complexity of activities or tasks that the CHW program includes (i.e., what exactly is being scaled up?), and what implications does this have for scale-up?
- To what extent, and how, will the CHW program be tailored to local needs and capacity, and what are the implications for scale-up? Is there a model or pilot project that will provide a 'blueprint' for scale-up?
- How will CHWs actually deliver their services in the community?
- What are the requirements of the CHW program in terms of the governance/regulation of services at national, regional and local levels, and what are the implications for scale-up?
- What are the requirements that the CHW program imposes on the capacity of the health system and its institutions, and on managers and health care providers? What are the implications for scale-up?
- What requirements are needed for good performance?
- What demands will the scale-up make on the current system? What requirements and demands would this make on existing managers or clinical staff? How can these demands be met? What possible unintended negative (or positive) effects can this have elsewhere in the system? What would the costs be, both in terms of rolling out the new service and in recurrent costs?
- Is the widespread implementation of the CHW program likely to have important impacts on the health sector at large and on other sectors beyond and, if so, what are the implications for scale-up?
- What are the likely cost and financing considerations of scaling up and sustaining the CHW program? What new procurement costs and salary costs would we need to plan for? How would these costs be covered?
- What systems, including monitoring and evaluation (M&E) systems, need to be in place to ensure quality of service provision for effective performance at scale?
- Is the CHW program sustainable over the long term? Is the CHW program or its effects likely to change over time?
- What are the likely impacts of scale-up on equity? Should high need areas be prioritized rather than trying to achieve uniform coverage?

What Kind of Planning Is Needed for CHW Programs to Operate at Scale?

Table 1 outlines a series of steps that should be considered when planning the scale-up of a CHW program. The questions outlined here bring us back to many of the issues addressed in Chapter 3 on planning.

Table 1. Planning process for scaling up CHW programs

Vision of desired future: What would this look like?	Durable impact at scale High effective coverage Appropriate service delivery model(s) effectively ▪ implemented at scale
↓	
What conditions need to be satisfied to achieve this vision?	▪ Realistic testing/refining of service delivery approach(es) ▪ Policy, systems, and operational conditions are met, including: – Supplies of drugs and commodities – Personnel (service providers, managers, and so forth) equipped and supported for their roles with appropriate training, and tools – Supervision and monitoring systems in place and functioning
↓	
What needs to be done to meet these necessary conditions? How will we get there, and what are the priority initial tasks?	Specify who will be responsible for developing: ▪ Roles/responsibilities ▪ Work plans/budgets ▪ Coordination/planning/oversight
↓	
What needs to be done now, and over the coming year(s)? Who will need to be doing what?	Specify who will be responsible for developing: ▪ Roles/responsibilities ▪ Work plans/budgets ▪ Coordination/planning/oversight

Developing a Scale-Up Plan

A good plan is always a work-in-progress and will need to be adapted as scale-up progresses. Looking beyond just the first steps of planning for scale-up to how to ensure continued institutionalized high performance at scale is the long-term goal. Doing so requires foresight and making appropriate choices now to ensure that we create the conditions for success later.

A "learning phase"[1] (or piloting) is a realistic, reasonably large-scale practice run, which is rigorously monitored to generate learning on key operational issues. On the basis of the learning from this phase, the approach may be adapted to try to ensure better performance in the next stage of scaling up. The best plans are those that have been adjusted in response to feedback as plan implementation proceeds.

Elements that need to be considered in planning (from which specific anticipated strategic tasks can be derived) include the following:

- Supplies of drugs and commodities
- Personnel (e.g., service providers, managers, and so forth) equipped and supported for their roles with appropriate training and tools

[1] Note that learning and adapting (modifying based on what we are learning) needs to be done at all phases, including once we have fully institutionalized and "scaled up" an effort.

- Supervision and monitoring systems in place and functioning
- Human and institutional actors and their perceptions, needs, and interests
- Regulatory and approval issues
- Performance management. (This involves monitoring key indicators of the program, including quality of training and quality of care. See Chapters 8 and 14 on training and on M&E.)
- Supply chain and other key systems issues
- Product issues (Is there an appropriate fit of the proposed program with the users and the context?)
- Resources/funds needed at each stage of the plan
- Human and institutional actors and their perceptions, needs and interests
- Direction

Scaling up and maintaining an effective CHW program over the long-run also requires performance management. This is best carried through processes that include monitoring of key indicators of the program, including quality of care. (See Chapter 14 on monitoring and evaluation.)

Sustaining Impact at Scale

For CHW programs, it is important not just to achieve implementation at scale, but also to maintain effective programming at scale. Below, we describe some principles for sustaining impact at scale.

Gain and Maintain Support from Policy-Makers at the Relevant Levels

Key gate-keepers and opinion leaders (e.g., leading pediatricians in the country) need to be informed and "won over" to the initiative through early one-on-one informational briefings and exchange of views. Potential champions, who are well-placed to influence opinion and decision-making, need to be identified and encouraged.

Policy and regulatory processes, both formal and informal, must be dealt with from the beginning. Examples of formal processes include registration with drug regulatory bodies and revisions to the Essential Medicines List, if the program will introduce any new medications. Informal processes include fully informing and eliciting concerns from key government and non-governmental counterparts, opinion leaders, and funding agencies.

Sustain Program Momentum

Program momentum may diminish for a range of reasons including withdrawal of support from a key stakeholder, budgetary constraints, poor management and supervision, and so forth. (See chapters on financing, supervision and relationship with other parts of the health system.) One proactive strategy to avoid loss of momentum is the formation of a technical working group with MOH leadership and establishing an ongoing and meaningful involvement by all key partners in directing the initiative. An alternative is to assign this responsibility to an existing technical working group, if it has a suitable membership and mandate. An example might be a Ministry-led working group responsible for community health services. Sustaining program momentum involves ensuring effective and sustained functioning of whatever group is selected, including that regular meetings are held, action points are identified, and follow-up is carried out.

Ensure that What the Scale-Up Initiative Offers Will Appeal to the Intended End-User

Formative research can help in identifying the potential end users' current practices, perspectives, and preferences with respect to the specific new service planned. These end-users include the MOH, the district health system, front-line health workers, and beneficiaries. In developing any new approach, strategy, or product, one has to start with where the user is now, "bridging from the known to the new." Formative research can help to establish this strategy. Then, messaging and strategies related to scaling-up can be geared to this current reality. Not uncommonly, there is a major disjunction between what people want and what programs can deliver.[2]

Achieve and Maintain High Coverage (Especially Among Segments of the Population Where Disease Burden Is Concentrated)

Design a delivery strategy tailored to the country context, taking advantage of available channels or platforms. Start with a learning (pilot) phase, implementing at limited scale (e.g., within one district), but under conditions closely approximating what one would expect when institutionalized and running as a normal program. Rigorously monitor during this phase, and then, based on what has been learned, revise and streamline the approach for implementation at the next stage of scale (preferably not nationally).

Through all phases, from early learning to at-scale implementation, ensure continued sound performance management—at all levels, monitoring important aspects of program performance (in particular, effective population coverage), and actively addressing identified performance issues. This monitoring is likely to entail incorporating appropriate population coverage indicators into the routine health information system, and ensuring that coverage is monitored at all levels as a basis for taking action to ensure good performance.

Secure long-term arrangements for procurement, if the initiative involves a particular program commodity, and ensure an adequately robust supply chain; special attention will be needed to do so.

HOW DO WE GET TO SCALE?

Conceptual Frameworks

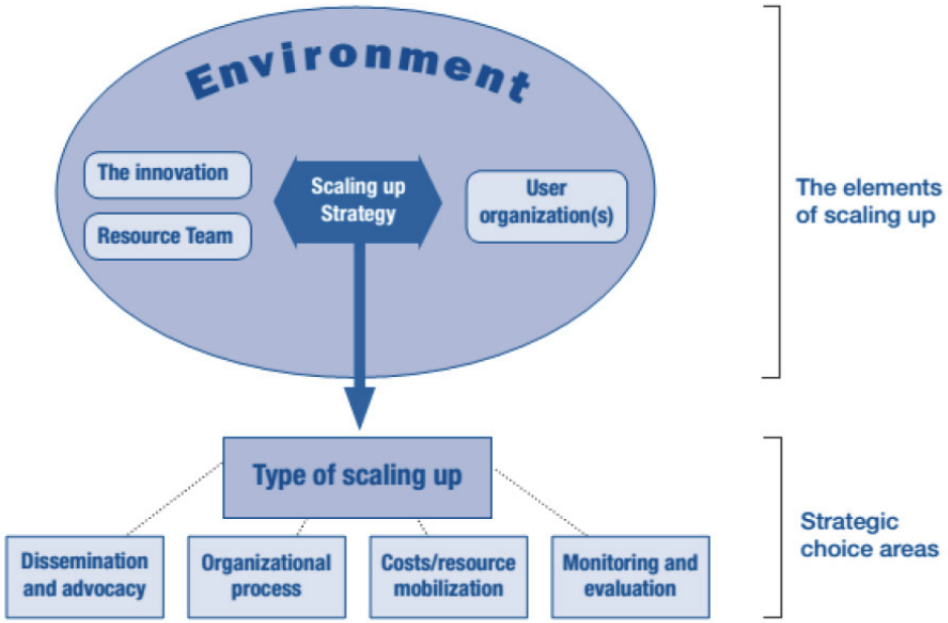
There are two major conceptual frameworks on scaling up health interventions that are widely used in global health: one developed by ExpandNet/World Health Organization (WHO)[3, 4] and the other by Management Systems International.[5] A principle guiding both is an "open systems perspective," which views scale-up in the context of existing systems (e.g., political, legal, policy, socio-cultural, health sector, and organizational systems). As mentioned previously, another key principle is that scaling-up is a *political* process and there will always be resistance to change and issues that need to be negotiated with the political system.[6] Scale-up requires leadership to champion adoption and maintenance of an innovation and is more than the implementation of technical steps.

The ExpandNet/WHO model consists of five components: the innovation, the user organization, the environment, the resource team, and the scale-up strategy (Figure 1). Adapting this framework to CHW programs is reflected as follows:

- **The innovation** – this refers to the program to be scaled up and including the specific interventions that it comprises
- **The user organization(s)** – this refers to the organization(s) primarily responsible for implementing the program, and those organizations that work closely with it or support it

- **The resource team** – this refers to individuals and entities promoting or facilitating the scale-up process
- **The environment** – this refers to conditions external to the user organization that are fundamental to scaling up the program (this is sometimes referred to as the context)
- **The scale-up strategy** – this refers to plans and actions necessary to scale up the program

Figure 1. The ExpandNet/WHO framework for scaling up[3]



Attributes Contributing to Success (from ExpandNet)

Building on some of the diffusion of innovation literature that has permeated the social science literature over the past four decades, we describe here some of the ways to design a scale-up that might facilitate success.

The Innovation

While some health interventions can spread passively with minimal help, substantial strategic planning and action is normally needed to successfully scale-up CHW programs. According to Glaser, Abelson, and Garrison,[7] innovations that possess the following "**CORRECT**" characteristics may be more likely to spread:

- **Credible** – based on sound evidence, supported by respected persons or institutions
- **Observable** – results that can be seen by user organizations
- **Relevant** – addresses relevant needs
- **Relative advantage** – has benefits over existing practices
- **Easy to implement and understand** – straightforward to learn and put into practice
- **Compatible** – consistent with existing values and norms of the user organizations
- **Testable** – can be tried out on a pilot basis without a long-term commitment to adoption and scale-up

With any important new CHW initiative under consideration, these issues should be addressed at the planning stage. What can be done to create more optimal conditions for successful spread? Or as Simmons[4] frames it, "Are there ways to simplify the innovation while making sure that essential components that produce successes are not lost?"

The User Organization

As a condition for successful adoption and implementation, the user organization (which in this case generally will be the MOH and its district health systems) needs to be convinced of the need for the particular program, and have the necessary capacity and resources to implement it. Champions are a key ingredient to advocate and inspire others at all phases, including when an initiative is first being considered, as well as much later, ensuring serious attention to ongoing implementation.[3, 8, 9] According to McCannon et al.[8], to be effective, champions should be respected, have an established platform from which to speak, be aligned with the cause, and be willing to publicly support the cause. Experience and capacity are preconditions for effective implementation at scale.[3] A user organization with the capacity for large-scale implementation has the needed infrastructure and human resources network to undertake the rollout process and to ensure adequate continuing resources and systems support to maintain sound performance.[10, 11]

Resource Team

The "resource team" could consist of a technical working group, convened under MOH auspices. Leadership could be supplemented from partner agencies or academic institutions. To be effective, those making up the resource team need collectively to have sound leadership, advocacy, and managerial skills in addition to technical and implementation skills.[3, 9, 10, 12] Whether the team is advisory or has a decision-making role must be set out clearly, and the relationship between the resource team and implementing organization needs to be negotiated and formalized.

Strong leadership and management are also needed to create a vision for scale (by defining the scope of the proposed effort and how it fits into the health needs of the country) and to develop strategies to build momentum and energy over time.[8] Further, advocacy skills are needed to influence the views of user organizations and opinion leaders (e.g., the MOH, regulatory bodies, professional bodies, and donors) and to garner their support.

The User Organization/Resource Team Relationship: Factors Promoting Success

- Close physical proximity[3]
- Opportunities to develop informal contacts and relationships[10, 13]
- Clear and established norms for operation[8]
- Compatibility in organizational values, norms, and systems[5]

Environment

The national political environment can influence the choice and pace of scale-up strategies. The political environment often exerts a marked influence on national decisions to go to scale with CHW programs, and the stability and longevity of such support can affect decisions about whether a gradual, phased approach is adopted or a rapid scale-up is selected to take advantage of a politically opportune time.[14] The timing and duration of support from donor and international organizations can also influence the approach. In the past, the international political environment has been an important factor in the renewed interest in CHW programs.

There are considerable differences among settings that are relevant to community health services and that need careful consideration when planning for larger-scale implementation. Contextual issues of particular importance to large-scale implementation of community health services include:

- Local epidemiology, including population demographics and burden of disease
- Local mix of PHC services, including public, private and NGO providers, what categories of health workers are present, and the density of health care providers per unit population
- Strengths and weaknesses of the local PHC system, including in relation to governance, financial, and delivery arrangements

The guided process may involve three types of scale-up: scaling up horizontally, vertically, and through diversification[3, 9] **Horizontal scale-up** involves expansion, in that, increasing the number of beneficiaries reached by the CHW program. This can be done additively by increasing the overall size of the program through one or more separate community-based organizations that work in non-overlapping catchment areas but provide similar, if not identical, CHW services. The Bangladesh national family planning program was scaled up in this way (see below).

Vertical scale-up involves institutionalization, in that, ensuring sustainability of the scaled-up program through changes in high-level systems, such as policies, budgets, and laws.[3, 9] The timing of advocacy to promote institutionalization depends on the innovation promoted. In some instances of institutionalization, laws or regulations must be changed in order to allow for task-shifting of health activities to CHWs (e.g., authorizations for properly trained and supervised CHWs to manage childhood pneumonia with antibiotics in the community). This has to take place prior to the launch of the CHW program. In other instances, institutionalization occurs after the CHW program has demonstrated impact, as in the case of the Bangladesh family planning program, discussed further below.

Finally, scaling up by diversification refers to adding new interventions into an existing CHW program. An example of this is CHWs who were originally trained to monitor growth and treat malnutrition are now also trained to treat childhood diarrhea and pneumonia.[9] An unguided approach to scale-up can also be carried out multiplicatively through the creation of learning centers, centers of excellence, or living universities around which scaling up takes place.[9, 15]

WHAT ARE SOME OF THE PITFALLS OF SCALING UP?

Scaling-up a CHW program is a complex and challenging process. Even if heroic efforts are made to consider and plan for success, there will always be many factors that lie outside of the program's control. For example, the availability of resources may not be synchronized with the policy or political environment.[14] However, many challenges can be mitigated by foresight and careful planning. Designing the initial program with scalability in mind certainly helps the scaling up process. (For an example of this, see Islam and May's 2011 case study on BRAC's community-based tuberculosis program relying on CHWs.[16]) Coordination and consensus among multiple implementing partners is vital but often difficult to achieve. A common strategy endorsed by all stakeholders is necessary so that the MOH can give its full support in a coordinated way. (For an example of where this was not done, see the case study of scaling up mHealth in Sri Lanka, where inadequate coordination and different funders of demonstration sites led to the creation of standalone systems that were very difficult to unify.[17])

Expanding tasks of an existing cadre or starting out anew with a totally new cadre is an important to issue to settle up front. For example, a CHW cadre involved primarily in

immunization outreach services can progressively have new duties added. In Malawi, health surveillance assistants (HSAs) have long been responsible for outreach immunization services. Recently, case-management of childhood illness has been added to their duties. Alternatively, new cadres of CHWs have been created and they have been given comparatively long initial training and, from the beginning, have been expected to cover a wide range of duties. This has been the case, for example, with health extension workers (HEWs) in Ethiopia. There is no single correct strategy, in this regard. However, it can be very challenging to simultaneously introduce a broad range of new functions. It can also be challenging for trainees to adequately absorb all the necessary material and it can be very difficult to put in place adequately functional support systems to cover the requirements of multiple interventions and programs. If these conditions can be met, then this more ambitious approach can be successful. In many settings however, more modest initiatives, such as incrementally adding on functions to CHWs, may stand a better chance of success.

By giving serious attention to such questions up front, we can more confidently make decisions about if and how to proceed. We can design a process focusing not just on a short-term rollout effort, but with serious attention to ensuring that all the necessary conditions can be achieved and maintained such that the desired new service will continue to be effectively delivered. All too often, CHW programs have fallen prey to pitfalls that are not widely known and certainly not described or analysed in the peer-reviewed literature or even in publicly available documents. Such pitfalls are detailed below.

Inappropriate Pilots/Learning Phases

In many instances, NGOs or donor-supported projects develop relatively small-scale programs or services relying on CHWs and with relatively intensive inputs (for example, with regard to training and supervision). Where evaluations of these programs show very promising results, the models may be promoted for large-scale implementation. However, unless piloting has been done under conditions closely approximating how these activities would be delivered at scale, many important issues of feasibility, scalability, sustainability, and so forth are unlikely to have been adequately addressed or evaluated. It can be very risky to proceed with scale-up without getting answers to such questions.

As important issues of scalability tend not to be addressed in most pilot programs, many MOHs have grown impatient with external partners proposing yet another pilot program. Instead, they insist that partner support be invested in the introduction of new interventions or program elements *at scale*, from the very beginning. Depending on the complexity of the innovation, this can be a very risky practice. In many instances, a learning phase, conducted under realistic program conditions but rigorously documented and evaluated, can answer many critical questions that need to be addressed in developing a sound strategy for implementation at scale.

Too Rapid a Pace of Geographic Spread

Too often, there is an uncritical rushing forward to "take it to scale," assuming that sound implementation will take care of itself. And all too often, several years down the road, someone will do a rigorous evaluation and demonstrate that the program has achieved virtually no impact in spite of major efforts and financial inputs. Therefore, for any change that could involve community-based services and before committing to a new initiative, it is important to look very closely at the current health system, such as staffing and management capacity, systems support, service utilization patterns, and population coverage of services, to determine needs *and* also what we can realistically expect from the health system to deliver.

Whether due to political pressures or timing constraints on availability of funds, there can be considerable pressure on both governments and external partners to introduce and expand new programs very quickly. Typically with rapid spread, many aspects of implementation may be

inadequate, including monitoring of program performance. The key metric of success may be the number of districts "covered" or the number of CHWs trained, rather than measures of service delivery, utilization, or health behavior. In many instances these programs perform more poorly than was initially expected. In contrast, some of the most effective community health programs now operating at large-scale expanded at a very measured pace, with quality of the program work carefully attended. A good example of this is the vitamin A supplement distribution program in Nepal, in which female community health workers (FCHWs) were the key players. Scale-up was done over a period of 10 years, with new batches of districts added each year, and serious attention was given to the quality of implementation and to the ongoing monitoring of population coverage.

Failure to Ensure the Quality of Training

This failing was one of the important contributors to the disappointing results seen with most integrated management of childhood illnesses (IMCI) scale-up efforts. In many instances, large-scale, rapid, cascade-model training initiatives have resulted in seriously compromised *quality* of training. Good training requires good trainers, who tend to be in short supply, and it requires careful monitoring of the quality of training. A hybrid model that has been used in many stronger CHW training programs has been to ensure the presence of at least one expert, external trainer with *every* training batch, to help ensure the quality of training.

Envisioning Scaling-Up Simply as a Training Cascade

There are many examples where scale-up has been conceived of as an intensive, cascade training initiative (when trainers are taught, then they teach trainers of trainers, and so on). Although there may be instances where this is appropriate, in very many cases the results (when finally rigorously evaluated) turn out to be very disappointing. If, in fact, the key missing piece is providing CHWs with appropriate knowledge and skills, an appropriate training can result in a service being properly delivered. However, for most new community health interventions or services, providing CHWs with knowledge and skills is just one of a number of conditions that need to be met for the service to be properly provided (and to reach the intended population at high coverage). So, even if well-done, training alone will generally not be sufficient to produce the desired change.

Scaling Up without Ensuring Long-Term Sustainability

Some scaled-up CHW initiatives have been successful initially, but the success was short-lived. Continued improvements in population health requires continued high-quality program activity, and that, in turn, requires continued vigilance in ensuring that the program remains functional and reaches a large proportion of those needing it. For both MOHs and external partners, it can be much more appealing to throw effort and resources into the latest new narrow approach than to keep flogging away at an established program.

Large-scale CHW initiatives probably need to be planned with a 10-year horizon at least. Otherwise there may not be much point in starting at all. This requires a secure political commitment and secure funding, among other things. Continued progress in pushing down maternal and child mortality, for instance, requires that important community-based programs remain solid and functional. This is much more likely to happen if it is planned for from the beginning of scale-up efforts and if key partners firmly commit not only to support scale-up but to the ongoing, longer-term efforts to ensure that programs continue to perform solidly.

Lack of Adherence to Basic Standards

Basic standards need to be set and, secondly, some governmental or quasi-governmental body (e.g., a CHW program board) needs to be tasked with monitoring implementation and the

quality of care and ensuring that the implementing agencies adhere to the basic standards. This is a governance issue as well. (See Chapter 4 on Governance.)

In many settings, even when new community health services come under MOH plans and structures, implementation is by NGOs, multilateral agencies, or donor-supported projects. One consequence is that initiatives that may look very neat and tidy in national planning documents but may be implemented by different partners in very different ways. The way training is done may differ; the use of incentives may vary; program elements or CHW duties not appearing in national plans may be added in different settings—all due to the varying priorities or interests of the partners. Some governments have been quite assertive with external partners, insisting on adherence to standards. This can be very helpful in avoiding the free-for-all that otherwise often develops.

At the same time, there can be legitimate reasons for variation in community health services. Most obviously, for example, the situation in urban areas is very different from rural areas. There are generally far more health workers of all types, and private practitioners often play a very important role in providing health services. Reaching the population with health messages in an urban area needs to be done in quite a different way than how one would do so at a village level. Similarly, pastoralist groups or remote, sparsely populated regions may require different approaches to community health services than those in more densely populated rural areas. In some cases, the appropriate programmatic response will be to use completely different delivery modalities. In other cases, modest modifications may be sufficient. For example, for optimal service delivery coverage, the ratio of population/CHW may need to be adjusted, with a smaller number of households per CHW in smaller, more remote communities.

EXAMPLES OF COMMUNITY HEALTH WORKER PROGRAM SCALE-UP

Numerous examples exist of CHW programs that have been scaled up, but there are far fewer examples of CHW programs that have been scaled up and effectively sustained for a long period of time. The Barefoot Doctor program in China collapsed as rural communes collapsed. India's early national CHW program, which was initiated in 1978, scaled up quickly to produce 500,000 CHWs. But, because of lack of attention to proper selection, training, supervision, and linkage to health facilities, the program was abandoned within only a few years.[18]

India

By far the most dramatic scale-up of a CHW program has been India's ASHA Worker Program, which began in 2006 and now, less than a decade later, has close to one million workers, making it the largest CHW program in the world. The recent evaluation of the ASHA Program demonstrated that almost one-third of households were not reached by AHSA workers, and they were among the most disadvantaged members of the population.[19] The evaluation concluded that improving the skills of ASHA workers is still needed, as are improvements in supervisory and commodity supply.

Brazil

Another of the world's largest CHW programs is Brazil's Community Health Agent (CHA) Program, which now has 236,000 CHAs. This program expanded over three decades and was closely integrated with the PHC program of the country and its family health care teams (*Equipo de Saúde Familiar*). There is evidence that this scaling-up process has been effective, with maintenance of high-quality services, high levels of coverage, and very impressive achievements in terms of national progress in reduction of maternal and under-five child mortality.

Bangladesh

Bangladesh has a long history large-scale community health services. The most notable of these are the national community-based family planning (FP) program, the national oral rehydration therapy program, the national tuberculosis program, and the BRAC CHW (Shasthya Shebika) program. The development and expansion of these programs took different trajectories. The Bangladesh FP program, generally considered one of the most effective in the world in a low-income country not undergoing rapid socioeconomic development, began with an effective pilot program in a typical rural district (Matlab) in 1977. There, CHWs visited homes, promoted FP, and distributed birth control pills and condoms. A strong operations research effort (including a control area where such services were not implemented) demonstrated an increase in coverage of services and a decrease in fertility.

This provided the impetus for a gradual scale-up nationally over the following two decades, with a specially funded program at icddr,b (formerly the International Centre for Diarrhoeal Disease Research, Bangladesh) called the Rural Extension Project, which played a resource team function, providing ongoing monitoring and support for scale-up. In addition, activities were coordinated between the government and NGOs (many of which were funded by the United States Agency for International Development) so that there was eventually a uniform and national coverage of household services provided by FP CHWs (called family welfare visitors, or FWVs). This scaling up process took place gradually over a two-decade period with the total fertility rate declining from one of the highest in the world in 1971 (6.3) to 2.3 at present, one of the lowest rates in the world among countries at similar levels of development. The program eventually had 23,500 government-paid FHWs and another 7,000 CHWs supported by NGOs.[20, 21]

The BRAC National Oral Therapy Extension Program (OTEP), mentioned previously, is a good example of a large-scale CHW program that focused on a single intervention and was not envisioned initially as a long-term sustained program. BRAC gradually scaled up a home visitation program in which trained CHWs (called oral rehydration workers or ORWs) visited every rural household in Bangladesh—12.5 million in total—to teach mothers how to manage childhood diarrhea using home-based commodities, such as sugar, salt, and water. The house-to-house visits by ORWs have changed the norms of childhood diarrhea treatment, and Bangladesh now has one of the highest utilization rates of oral rehydration therapy for childhood diarrhea in the world, with 81% of children with diarrhea given oral rehydration solution (ORS). The scale-up process included a strong M&E component managed independently by icddr,b.

Following a pre-pilot and a pilot stage, the OTEP program expanded in phases, with the first phase reached 2.5 million households over a three-year period (1980–83), the second phase reaching twice that many households over the subsequent three-year period (1983–86), and in the final three-year period another 5 million households. Scaling up involved organizing CHWs into decentralized teams with strong provisions for supervision and accountability. An innovative program of CHW performance evaluation was developed by independent evaluators visiting 10% of homes following an educational session given by a CHW. CHWs with outstanding performance were rewarded with a financial bonus, thereby motivating workers and improving program effectiveness. This is an example of a national CHW program implemented by an NGO working in close collaboration with the government, other NGOs, and multiple donors.[21, 22]

The Bangladesh MOH has also scaled up an innovative national community-based tuberculosis program involving CHWs in collaboration with NGOs. CHWs visit homes and identify those with a cough of more than three weeks duration and then collect a sputum specimen that is examined microscopically by a MOH technician at a government health facility. The CHW

working with the NGO then supervises directly observed therapy (DOTS) of those who test positive. This program began in 1994 follow a successful pilot program led by BRAC, in close coordination with the MOH, in one district that took place between 1984 and 1991, with expansion to nine additional districts in 1992 and eight more in 1995. Now, this program has gradually expanded so that there are 10 collaborating NGO partners. Case detection rates are quite high—in the range of 80%—and treatment success rate is in the range of 85%.[21, 23, 24]

In short, BRAC's experience with successful scale-up of a number of different community-based health interventions involving CHWs all involve a similar process: develop and pilot a model program that is scalable, then gradually scale it up with a strong external M&E process so that mid-course corrections can be made. Maintenance of strong training programs and strong supervisory support at each step is essential for success.

CONCLUSIONS

Effectively scaling up of a CHW program and sustaining effective program functioning at scale are enormous challenges. However, examples of well-run programs at scale suggest that this is achievable with the proper combination of leadership, visioning, planning, identification of the appropriate model, fitting the program to the local and national contexts, ensuring long-term financial support, and continuing performance improvements on the basis of rigorous ongoing M&E. Learning from successful and failed experiences of other programs can also provide invaluable insights.

Key Resources

WHO. Beginning with the end in mind: Planning pilot projects and other programmatic research for successful scaling up. World Health Organization. 2011. http://www.expandnet.net/PDFs/ExpandNet-WHO%20Guide%20-Beginning%20with%20the%20end%20in%20mind%20-%20May%2019,%202011%20-%20draft.pdf

WHO. Nine steps for developing a scale-up strategy. World Health Organization. 2010. http://www.expandnet.net/PDFs/Nine%20steps%20for%20developing%20a%20scaling%20up%20strategy%20-%20WHO%20publication.pdf

WHO. Practical guidance for scaling up health service innovations. World Health Organization. 2009. http://www.expandnet.net/PDFs/WHO_ExpandNet_Practical_Guide_published.pdf

Simmons R, Fajans P, and Ghiron L, eds. Scaling up health service delivery: from pilot innovations to policies and programmes. 2007. http://www.expandnet.net/PDFs/Scaling-Up_Health_Service_Delivery-WHO-ExpandNet.pdf

ExpandNet scaling-up bibliography: http://www.expandnet.net/biblio.htm

The following is a detailed guide, also focusing particularly on public sector efforts for scaling up:

> MSH. A guide for fostering change to scale-up effective health services. 2007. http://erc.msh.org/toolkit/toolkitfiles/file/FC_Guide2.pdf

The following guide draws particularly from NGO experiences in South Asia:

> Kohl R, Cooley L. "Scaling up: from vision to large-scale change," Management Systems International. 2005. http://www.msiworldwide.com/files/scalingup-framework.pdf

The following guide, as the title suggests, is particularly oriented to maternal-newborn scale-up efforts:

> Robb-McCord J, Voet W. Scaling up practices, tools, and approaches in the maternal and neonatal health program. Jhpiego. 2003. www.jhpiego.org/resources/pubs/mnh/scaleupMNH.pdf

The following guide draws on an approach developed by the Institute of Healthcare Improvement:

> Massoud MR, Donohue KL, and McCannon CJ. 2010. Options for Large-scale Spread of Simple, High-impact Interventions. *Technical Report.* Published by the USAID Health Care Improvement Project. Bethesda, MD: University Research Co. LLC (URC). http://www.ihi.org/NR/rdonlyres/B37CD455-9F65-422F-878F-3DB1C920A380/0/MassoudDonahueMcCannonLargeScaleSpreadHighImpactInterventions_USAIDURCSept10.pdf

Related to our focus here on scale-up is the challenge of closing the research-to-practice gap. The following review captures a broad range of this literature:

> Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). Implementation Research: A Synthesis of the Literature. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231). http://www.fpg.unc.edu/~nirn/resources/detail.cfm?resourceID=31

Two other useful resources (not specific to health) are the following:

Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyiakidou O. Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations. Milbank Quarterly 82(4); 2004: 581–629.

Daniel Taylor-Ide and Carl Taylor. Chapter 22. How to go to scale. Just and Lasting Scale: When Communities Own Their Futures. Baltimore: Johns Hopkins University Press, 2002, pp. 282–307.

References

1. Munabi-Babigumira S, Oxman A, Lavis J, Fretheim A, Lewin S. Scaling up policies and programmes. Oslo: Norwegian Knowledge Centre for the Health Services, 2009.http://www.cdbph.org/documents/STP_13_Scaling%20up_policies_and_programmes_2009_06_12.pdf
2. Glenton C, Carlsen B, Swartz A, Lewin S, Noyes J, Rashidian A. Barriers and facilitators to the implementation of lay health worker programmes to improve access to maternal and child health: qualitative evidence synthesis. *Cochrane Database Syst Rev* 2013 (Submitted for Publication).
3. Simmons R, Ghiron L, Fajans P. Nine steps for developing a scaling-up strategy Geneva, Switzerland: World Health Organization, ExpandNet, 2010.http://whqlibdoc.who.int/publications/2010/9789241500319_eng.pdf
4. Simmons R, Fajans P, Ghiron L, Johnson B. Managing scaling up. In: Cash R, Chowdhury MR, Smith GB, Ahmed F, eds. From One to Many: Scaling Up Health Programs in Low Income Countries. Dhaka, Bangladesh: The University Press Limited; 2011: 3-12.
5. Cooley L, Kohl R. Scaling Up - From Vision to Large-scale Change: A Management Framework for Practitioners. Washington, D.C.: Management Systems International 2006.http://www.msiworldwide.com/files/scalingup-framework.pdf
6. Lavis JN, Rottingen JA, Bosch-Capblanch X, et al. Guidance for evidence-informed policies about health systems: linking guidance development to policy development. *PLoS Med* 2012; **9**(3): e1001186.
7. Glaser E, Abelson HH, Garrison KN. Putting knowledge to use: facilitating the diffusion of knowledge and the implementation of planned change. San Francisco, California: Jossey-Bass; 1983.
8. McCannon J, Schall MW, Perla RJ, Barker P. Planning for Scaling Up. In: Cash R, Chowdhury MR, Smith GB, Ahmed F, eds. From One to Many: Scaling Up Health Programs in Low Income Countries. Dhaka, Bangladesh: The University Press Limited; 2011: 15-29.
9. CORE Group. "Scale" and "Scaling-Up" A CORE Group Background Paper on "Scaling-Up" Maternal, Newborn and Child Health Services. 2005 CORE spring meeting and the USAID child survival and health grants program mini-university 2005; Washington, D.C.: CORE Group; 2005. p. 11.http://www.coregroup.org/storage/documents/Workingpapers/scaling_up_background_paper_7-13.pdf
10. Kaosar A. Scaling up BRAC's maternal, neonatal and child health interventions in Bangladesh. In: Cash R, Chowdhury MR, Smith GB, Ahmed F, eds. From One to Many: Scaling Up Health Programs in Low Income Countries. Dhaka, Bangladesh: The University Press Limited; 2011: 59-73.
11. Pallas SW, Minhas D, Perez-Escamilla R, Taylor L, Curry L, Bradley EH. Community health workers in low- and middle-income countries: what do we know about scaling up and sustainability? *Am J Public Health* 2013; **103**(7): e74-82.
12. Nahar T, Azad K, Aumon BH, et al. Scaling up community mobilisation through women's groups for maternal and neonatal health: experiences from rural Bangladesh. *BMC Pregnancy Childbirth* 2012; **12**: 5.
13. Gawande A. Slow ideas. Some innovations spread fast. How do you speed the ones that don't? The New Yorker. 2013 July 29, 2013.http://www.newyorker.com/reporting/2013/07/29/130729fa_fact_gawande

14. Simmons R, Shiffman J. Scaling up health service innovations: a framework for action In: Simmons R, Fajans P, Ghiron L, eds. Scaling Up Health Service Delivery from Pilot Innovations to Policies and Programmes. Geneva, Switzerland: World Health Organization 2007: 1-30.
15. Taylor-Ide D, Taylor CE. Just and Lasting Change: When Communities Own Their Futures. Baltimore, MD: Johns Hopkins University Press; 2002.
16. Islam MK, May MA. Decentralized management in the expansion of BRAC's rural tuberculosis program (DOTs). In: Cash R, Chowdhury MR, Smith GB, Ahmed F, eds. From One to Many: Scaling Up Health Programs in Low Income Countries: The University Press Limited; 2011: 207-14.
17. Chathoth P. Scaling up in eHealth: leveraging the potential of ICTs. In: Cash R, Chowdhury MR, Smith GB, Ahmed F, eds. From One to Many: Scaling Up Health Programs in Low Income Countries. Dhaka, Bangladesh: The University Press Limited; 2011: 105-28.
18. Rohde JE, Wyon J. Introduction to Part I: A brief history of community-based primary health care. In: Rohde JE, Wyon J, eds. Community-Based Health Care: Lessons from Bangladesh to Boston. Boston, MA: Management Sciences for Health (in collaboration with the Harvard School of Public Health); 2002: 3-12.
19. National Health Systems Resource Centre. ASHA Which way forward...? Evaluation of ASHA Programme. New Delhi, India: National Rural Health Mission. National Health Systems Resource Centre, 2011. http://nhsrcindia.org/download.php?downloadname=pdf_files/resources_thematic/Community_Participation/NHSRC_Contribution/ASHA_Which_way_forward_-_Evalaution_of_ASHA_Programme_Report_NHSRC_417.pdf
20. Cleland J, Phillips JF, Amin S, Kamal GM. The Determinants of Reproductive Change in Bangladesh. Washington, DC: The World Bank; 1994.
21. Perry H. Heath for All in Bangladesh: Lessons in Primary Health Care for the Twenty-First Century. Dhaka, Bangladesh University Press Ltd.; 2000.
22. Chowdhury AM, Cash R. A Simple Solution Dhaka, Bangladesh University Presst Ltd.; 1996.
23. Zafar Ullah AN, Newell JN, Ahmed JU, Hyder MK, Islam A. Government-NGO collaboration: the case of tuberculosis control in Bangladesh. *Health Policy Plan* 2006; **21**(2): 143-55.
24. Islam MK, May MA, Ahmed F, Cash R, Ahmed J. Joining forces: a public private partnership for TB control Making Tuberculosis History: Community-based Solutions for Millions: The University Press Limited; 2011.