

Appendix A

**Case Studies of Large-Scale Community  
Health Worker Programs:  
Examples from Afghanistan, Bangladesh,  
Brazil, Ethiopia, India, Indonesia, Iran,  
Nepal, Pakistan, Rwanda, Zambia, and  
Zimbabwe**

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# Introduction

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Throughout this guide we have referred to specific community health worker (CHW) programs, but in a cursory fashion, referring to one aspect of the program or another. Here, we provide an overview of seven large-scale CHW programs. All of these are public-sector programs except for the first example from Bangladesh, which describes the CHW program of BRAC. BRAC (formerly the Bangladesh Rural Advancement Committee) has recently become the largest nongovernmental organization, or NGO, in the world. It has almost 100,000 CHWs in Bangladesh.

The examples provided below are meant to inform policymakers and program implementers in designing, implementing, scaling up, and strengthening large-scale CHW programs. CHW programs, by their very nature, are a product of the local context because many geographical, historical, cultural, social and health-system factors influence how CHW programs emerge and evolve. Thus, as is appropriate for a guide such as this, these case studies provide examples of how CHW programs emerge and operate in regions throughout the world—Asia, the Middle East, Africa, and South America.

# THE COMMUNITY-BASED HEALTH CARE SYSTEM OF AFGHANISTAN\*



## Summary

### Background

The Afghanistan CHW program is part of the community-based health care (CBHC) component of the Basic Package of Health Services (BPHS), which was developed in 2003 after the end of 25 years of violence and conflict. At the present time, there are approximately 19,000 CHWs.



### Implementation

CHWs are based in pairs at health posts as a male and female team, usually as spouses or as family members. They are trained and supervised by NGOs who have contracts from the government to implement the BPHS, including CHW training and supervision, in specific districts.

### Training

CHWs receive three separate 3-week modules with a month of field experience in the village in between. Trainers attempt to visit all the trainees in their villages during the month of field experience.

### Roles/Responsibilities

CHWs provide a comprehensive set of services from health promotion to provision of health services to referral to the next level of care at a Basic or Comprehensive Health Center. Of note is their capacity to carry out community case management of acute childhood illness (pneumonia, diarrhea, and malaria, where malaria is endemic), treatment of patients diagnosed with tuberculosis (TB), and provision of family planning (FP) commodities.

### Incentives

CHWs are volunteers.

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\* This account was prepared by Iain Aitken, Advisor on Community-Based Health Care to the Ministry of Public Health, Afghanistan, through Management Sciences for Health from 2004 to 2012, and by Said Habib Arwal, Head of the Community-Based Health Care Department of the Ministry of Public Health, Afghanistan, since 2004.

## Supervision

Each health facility supporting health posts has a Community Health Supervisor (CHS). CHSs visit monthly each health post where a pair of CHWs is based, and the CHWs come monthly to the “parent” health facility where the CHS is based for a joint meeting with the other CHWs.

## Impact

CHWs now provide a major portion of primary health care (PHC) services in Afghanistan and are widely recognized as one of the important contributors to Afghanistan’s marked improvement in health status during the past decade.

## Background

For almost 25 years, from 1978 to 2002, Afghanistan suffered from war and internal conflict. Before 1978, the health system had not been very well developed, and after conflicts ceased in 2002, there were only a limited number of health facilities, and these were run by the government or by NGOs. Most health professionals had fled the country if they could. The population was largely illiterate and social and economic structures were very weak.

The transitional Islamic Government of Afghanistan made two key decisions for the development of the health services in 2003. The first was the development of the BPHS. In consideration of the primary health needs of the population; the availability of effective, evidence-based interventions; the levels of resources required; and the goal of creating an equitable health system, priority was given to the health of women and children. The second decision, in light of the nonfunctioning of the government health delivery system, was to contract out health care delivery to NGOs through a series of partnership agreements. Funding of these contracts was provided by the World Bank, the US Agency for International Development (USAID), and the European Union. This arrangement has continued and has been developed over the past 10 years.

A key element of the BPHS was the inclusion of a CBHC component, centered on the use of CHWs at a village health post. The innovation that had not been a part of previous attempts to use CHWs was that each health post should have one female CHW as well as one male CHW. The inclusion of female CHWs was considered necessary because of the constraints that women and their children faced in obtaining services at health facilities. These constraints arose because of security issues as well as cultural norms.

In 2004, agreement was reached on a job description for the CHWs, a CHW training curriculum and training manual were completed, and training of CHWs by NGO trainers started. The NGOs had targets for the numbers of CHWs to be trained. Within the first year it became very clear that the expectation that health facility staff would be able to make time to provide supervision to the CHWs was proven unrealistic. In 2005, therefore, a new category of CHSs was created. These were envisioned as full-time staff based at the peripheral health facilities.

## Key Health Needs

Much of Afghanistan’s population is scattered across deserts, and another major portion of the population lives in remote mountain valleys that are usually cut off for several months during winter. So the development of accessible health services is a major health challenge that can only be met through the development of community-based programs.

A further challenge was the weakness of the existing health facilities. In 2003, for instance, only 24% of hospitals had the capability of performing cesarean sections. Furthermore, only 21% of health facilities had female health staff (a necessity if women are going to be examined by a trained health provider), and only 467 midwives were available in the entire country. This all

contributed to a maternal mortality ratio (MMR) estimated at 1,600 per 100,000 live births, an under-5 mortality rate of 257 per 1,000 live births, a child stunting rate of 48%, a total fertility rate of 6.7, and a crude birth rate of 48 per 1,000 population. Only 23% of the population had access to safe water and 12% had improved sanitation. More than 50% of the population was at risk of malaria. Only 8% of pregnant women received skilled antenatal care (ANC) and only 14% of women delivered in a health facility. The contraceptive prevalence rate (CPR) was 8.5% and the child immunization rate was 30%. As a result of the war there was also a considerable burden of disability among soldiers and the civilian population, including mental illness.

## Health System Structure

The government health system operates in each of the 34 provinces. Each province has a provincial referral hospital, and each district in the province has a district hospital. In addition, there are many Basic Health Centers and Comprehensive Health Centers staffed by doctors, nurses, and midwives, whose numbers correspond to the size of the populations they serve and their workload. Each of the district-level facilities has a network of health posts with CHWs in its catchment area. The median number of health posts per health facility is now between 15 and 20. However, some facilities support up to 50 health posts. Each health post is supposed to have one male and one female CHW, and serve a maximum of 150 households.

## Scope of Work of the CHWs

The CHW is active in the following activities.

Health promotion (through personal and group activities, including Family Health Action (FHA) Groups, with the support of a village health committee, the Shura-e-sehie). Topics addressed are the following:

- Safe water and sanitation, personal and food hygiene
- Prevention of malaria, including use of insecticide-treated bed nets (ITNs)
- Safe pregnancy, childbirth preparedness, and care in the postpartum period
- Pregnancy and child nutrition, including breastfeeding
- Immunization
- Birth spacing and contraception
- Use of maternal and child health (MCH) and birth spacing services at the health facility

Direct patient care services:

- Community case management of childhood illnesses and referral of complicated cases
- Screening for and referral of suspected TB cases, and community-based treatment of cases with directly observed therapy (DOT)
- Counseling about and provision of contraceptives
- First aid and trauma management

Management activities:

- Getting to know the families in the community and maintaining a community map showing families requiring or using particular services

- Reporting vital events (births, maternal deaths, and deaths among children younger than 5 years of age), and submitting a monthly report for the national health management information system (HMIS) of all health post activities
- Managing the health post and maintaining all equipment, supplies, and drugs

## Community Roles

Each community with a health post has a health committee—the *Shura-e-sehie*. The *shura* members are selected by the community with help from the CHW, the CHS, and the head of the health facility. The health *shuras* provide leadership and support to all health-related activities in their communities. They select, support, and supervise the CHWs in the community. They encourage families to make full use of preventive and curative health services. They provide leadership in the adoption and promotion of new behaviors and social norms.

Attempts at different times to form women’s health *shuras* have met with varying degrees of success. However, women’s FHA Groups have proved very effective in promoting healthy behavior change among women and their families. The female CHW selects a group of 10–12 women who are respected in the community and whom she trusts. They are given a series of monthly “lessons” on important health topics, including home hygiene, diet and nutrition, care of newborns and young children, and use of health services. Each woman is encouraged to put the lessons into practice and then demonstrate and share them with the women from 8–10 of the households in her neighborhood. In about one-third of the provinces, the FHA Groups have also carried out growth monitoring of children in the community.

## CHW Selection Process and Criteria

CHWs are selected through a consultation process between the NGO staff and the community elders. Each health post is supposed to have a male and a female CHW; these are frequently spouses or other close relatives, allowing them to work together. They should be more than 18 years old and be respected members of the community. There has been no upper age limit. There is no education requirement, but if a person with education meets the other criteria, they may be preferred.

## Training of CHWs

The basic training course for the CHWs consists of three separate 3-week modules with a month of field experience in the village in between when CHWs can practice their new skills before moving on to the next module. The trainers attempt to visit all the trainees in their villages during the practical month.

The modules are designed to take the CHWs from simpler to more complex skills. The first module deals with common infectious diseases, environmental and personal hygiene, the prevention of malaria and diarrhea, some principles of health education, and the management of diarrhea and eye and skin infections. The second module is on promoting MCH. This includes the CHW’s role in ANC and birth preparedness, postnatal and newborn care, breastfeeding and nutrition, and immunization. The CHWs also learn some basic first aid. The third module includes community case management of childhood illnesses, TB, birth spacing promotion and provision of contraceptive methods, and further skill development in talking with people about sickness, treatment, and birth spacing.

While the basic scope of the CHW’s work has not changed, over the last five years the details of the job have been modified somewhat and training methods and job aids have been improved. New tasks given to the CHWs include postpartum FP and provision of injectable contraceptives, newborn care, and growth monitoring of children. An improved training package and pictorial

job aid for community case management as well as TB-DOT have been developed. These have been incorporated into a revised training manual and curriculum.

## Support and Supervision

Each health facility supporting health posts has a CHS, who is almost always a man. In less than 10% of facilities there is also a female CHS. Their selection criteria include a high school education, residence in the district where they will work, and good communication skills.

Their job description includes

- Regular on-the-job training provided to the CHWs,
- Assurance on a monthly basis that the health posts have adequate supplies and drugs,
- Supervision of the quality of the community maps and monthly reports,
- Planning and management of all community health activities in the catchment area, and
- Support of the community health *shuras*.

These activities are managed through monthly visits to each health post and a monthly meeting of CHWs at the health facility where the CHS is based. CHSs frequently have a motorcycle and a fuel allowance that makes it possible for them to visit the health posts. CHSs participate in all the training programs provided for CHWs. In addition, special training courses are provided specifically to the CHSs to build their capacity as supervisors, trainers, and managers.

## Linkages with the Formal Health System

The Afghan CBHC system is an essential part of the national health system and a key element in the BPHS. CHWs are linked to a health facility and given technical supervision and supplies by the CHS. Their monthly reports are part of the national HMIS. In the province, the NGO that is responsible for managing the community-based work has a CBHC Coordinator and CHW trainers to manage and support the CBHC program. In the Provincial Health Office, there is usually someone who is the CBHC focal point. Since 2012, about one-third of provinces have specific CBHC Officers to oversee and promote all CBHC activities in the province.

At the national level, there is a CBHC Department in the Ministry of Public Health (MOPH). Its role within the overall stewardship role of the MOPH is to promote CBHC, oversee policy and program development, monitor implementation, and coordinate the inputs of other technical departments (e.g., the Departments of Child Health, Reproductive Health) in the MOPH that are stakeholders in CBHC.

## Compensation and Motivation

Afghan CHWs have been volunteers from the beginning of the program. This policy has been reviewed and reaffirmed periodically because the issue of salary is constantly raised. Attempts to encourage financial support for CHWs from the community itself have never been very successful. Since 2008, CHWs have received allowances to cover travel and food for all monthly meetings at the facility and any training courses they attend. In some provinces, CHWs participate in the polio campaign and in the National Immunization Days, and for this they receive an honorarium. In some areas, CHWs may receive financial or “in-kind” rewards for referrals of particular categories of patients.

Since 2010, December 5 has been recognized as National CHW Day in Afghanistan. Celebrations are held for CHWs at both the national and the provincial levels. The quarterly *Salamati Magazine* is designed for and distributed to all CHWs.

## Monitoring and Data Use

At the community level, the CHWs prepare and update a community map. This displays all households in the community and, with use of different symbols and colors, locates women and young children requiring/receiving preventive health services, FP, or TB treatment.

The CHWs keep a monthly record of their activities and any births or deaths on the Pictorial Tally Sheet. This is designed so that it can easily be used by illiterate CHWs. For every service provided, the CHW puts a line (tally) in the appropriate box indicated by a picture representing that service. At the end of each month, the CHS transfers this information into a health post report, which is then combined into an aggregated CBHC report for the health facility. These and the health facility reports are all entered into a database at the provincial level and forwarded quarterly to the national HMIS Department. Checks and analyses of the data are done at both national and provincial levels. Usually, a specific set of priority indicators are monitored regularly for program management purposes.

## Demonstrated Impact of the CBHC Program

HMIS data on the management of sick children and the provision of contraceptives are the best data to illustrate the relative contribution of CHWs to these services. Since 2003, the numbers of health services being provided to the population have increased dramatically. At present, CHWs are treating 30% to 36% of all cases of childhood acute respiratory infections and diarrhea recorded by the HMIS. Of the reported provision of contraceptives, 55% of women who are using short-term methods are being supplied by CHWs. Rates of ANC, skilled birth attendance, and immunizations have all also increased markedly. While CHWs and FHA groups have, no doubt, contributed to these, the presence of a female health worker in most health facilities has also been essential.

The Afghan Mortality Survey 2010 found marked improvements in utilization of services and health status compared to the levels observed in 2003. The CPR was 20% (compared to 8.5% in 2003); the total fertility rate was 5.1 (compared to 6.7 in 2003); 68% of women had obtained ANC (compared to 8% in 2003); 34% of births were attended by a skilled birth attendant; 64% of children with diarrhea were given oral rehydration solution (ORS) or safe home fluids; and 64% of children with symptoms of pneumonia were given antibiotics. The under-5 mortality was estimated at 105 per 1,000 live births (compared to 257 in 2003) and the MMR was estimated at 372 per 100,000 live births (compared to 1,600 in 2003). Although its contribution cannot be precisely measured, the CBHC system has undoubtedly played a major role in the dramatic progress that has been achieved.

## Financing of CBHC and Its Development

The BPHS implementation by NGOs, including the CBHC program, continues to be financed by the World Bank, USAID, and the European Union. Most of the funding for development of the CBHC program has come from USAID. GAVI Alliance; the Global Fund to Fight AIDS, Tuberculosis and Malaria; the Japan International Cooperation Agency; and some smaller donors have also supported these activities.

## Program Scale-Up

Because CBHC has been part of the BPHS from the beginning, its scale-up has been part of national health planning. Each provincial NGO contract and each contract renewal has included a target for the training of CHWs. The current total of 29,000 CHWs is approaching the total anticipated to provide national coverage at the desired ratio of health posts to population. Two additional population groups have received attention in the past three years: nomads and those living in urban communities. Modifications to the CHW job descriptions and

to the training programs have been made according to the special circumstances of these populations.

### **Challenges**

Afghanistan has developed considerably over the past 10 years. However, security has worsened in the past few years, illiteracy persists in the adult population, and poverty has not diminished, especially in rural areas. All of these challenges remain barriers to reaping the full health benefits of the services provided by CHWs.

# THE BRAC SHASTHYA SHEBIKA COMMUNITY HEALTH WORKER IN BANGLADESH†

## Summary

### Background

Bangladesh has a history of using CHWs to support health services. BRAC has been a driving force and has been refining its strategies. The *Shasthya Shebika* (SS) Program is rooted in a gendered perspective, focusing on the need for female health workers in Bangladesh to address socio-cultural barriers to access to health care services. BRAC first adopted the Barefoot Doctor approach used in China a half-century ago and trained male paramedics, but then shifted the approach in the early 1980s to focus on women with lesser training who were often illiterate.



### Implementation

In 1990, there were 1,080 SSs, and by 2008 the number had grown to 70,000. At present, there are approximately 100,000 SSs.

### Training

SSs receive 4 weeks of basic training by the local BRAC office. They are trained to treat common medical conditions, to promote a wide variety of health behaviors, and to refer patients to preventive and curative services as appropriate.

### Roles/Responsibilities

During monthly household visits, SSs provide health promotion sessions and educate families on nutrition, safe delivery, FP, immunizations, hygiene, and water and sanitation. They also use this time to sell health products, such as basic medicine, sanitary napkins, and soap. BRAC introduced the sales component to provide a small profit as an additional incentive for and motivation to the Community Health Volunteers (CHVs) to continue working. When someone has an illness that the SS cannot manage, the person is referred to government health centers or a BRAC clinic.

### Incentives

CHVs are given small loans to establish revolving funds, which they use to make some money by selling health products at a small markup.

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† This case study was written by Dena Javadi and Jessica Gergen, students in the Johns Hopkins Bloomberg School of Public Health, and Henry Perry. Dr. Perry lived in Bangladesh from 1995 to 1999 and has served as an advisor to BRAC.

## Supervision

Direct supervision is conducted by higher-level CHWs called *Shasthya Kormis* (SKs). Other program staff at BRAC also provide supervisory support.

## Impact

The program is self-sustaining and is widely perceived to have made an important contribution to Bangladesh's remarkable progress in reducing under-5 mortality and to its national TB control program.

## What Is the Historical Context of BRAC's *Shasthya Shebika* Program?

Community-based programming with CHWs has been widespread in Bangladesh, especially through the national implementation of Bangladesh's well-known and highly successful national family program. This program relied on FWAs to visit every home on a regular basis to promote the uptake of FP at a time when women were not able to leave the immediate environs of their home.<sup>1</sup> BRAC set up the CHV program to address the health needs of the communities where it works. BRAC community-based integrated programs now reach more than 110 million people in Bangladesh.

The development of the SSs Program has been deliberate, slow, and organic. There was no preconceived national blueprint that was scaled up rapidly. Rather, a viable role was established for these CHWs appropriate for the Bangladeshi context, and BRAC found a way to provide sufficient locally generated financing to motivate the women to carry out their responsibilities. Then, as BRAC was able to provide appropriate training and supervision, the program began to grow over the course of 2 decades.

## What Are Bangladesh's Health Needs?

The health status of the poor and vulnerable remains challenging, and families may suffer financial catastrophes if a member falls ill. Communicable diseases, poor MCH, and malnutrition are responsible for high levels of preventable morbidity and mortality. New challenges of the epidemiological shift to chronic and non-communicable diseases are arising, along with environmental hazards from air and water pollution, injuries, and unhealthy behaviors such as tobacco use and violence.<sup>1</sup>

## What Is the Existing Health Infrastructure?

While officially Bangladesh has a health system involving a three-tier service delivery system from the Ministry of Health and Family Welfare (MOHFW) with a comprehensive network of public facilities at tertiary, secondary, and primary levels, in practice it is quite pluralistic and unregulated, with low utilization of public sector health centers and district hospitals.<sup>2</sup> There is a mix of public, private, NGO, and traditional providers. These all have different reach and quality, and the public sector is responsible for less than 20% of curative services. The public and private sector have a porous boundary and doctors move between the sectors.<sup>2</sup> Village doctors (informally trained providers who practice allopathic medicine) are the dominant providers of care at the community level.<sup>3</sup>

## What Type of Program Has Been Implemented?

BRAC started in the early 1970s by adopting the Barefoot Doctor approach first used in China, but applying it to male paramedics. This approach failed, and BRAC shifted to lesser-trained female CHWs, often illiterate, who were oriented to health promotion and disease prevention.<sup>2</sup>

At present, SSs work part-time in the afternoon, providing services to an average of 250–300 households through monthly household visits.<sup>2</sup> SSs serve as the primary source of health information for their particular catchment areas. They also collaborate with trained traditional

birth attendants (TBAs) in the village as well as mobilize women to participate in national disease control campaigns, come to clinics for basic MCH services, and carry out growth monitoring of children.<sup>1</sup>

During the monthly household visits, SSs provide health promotion sessions educating families on safe delivery, FP, immunizations, hygiene, and water and sanitation. They also use this time to sell health products, a component introduced by BRAC to increase the incentives for and motivation of SSs. When someone has an illness that the CHV cannot manage, the person is referred to government health centers or a BRAC clinic.

Other activities that SSs carry out include the following:<sup>1</sup>

- Identifying pregnancy
- Providing ANC including supplemental food to malnourished pregnant women
- Identifying high-risk pregnancies
- Referring women for tetanus toxoid immunization
- Referring women to a trained TBA for delivery
- Providing postnatal care (PNC)
- Promoting exclusive breastfeeding during the first 5 months of life and continued breastfeeding with appropriate weaning foods thereafter
- Monitoring nutrition and providing supplemental food for low-birth-weight infants when the infant reaches 6 months of age
- Promoting vitamin A supplementation at the time of national campaigns for vitamin A supplementation for children 12–59 months of age
- Providing health and nutrition education and nutritional surveillance for adolescent girls (11–16 years of age)
- De-worming children
- Treating uncomplicated acute illnesses
- Promoting awareness about reproductive tract infections and AIDS

SSs link into the formal MOHFW system in important ways. They mobilize women and children in the catchment areas to attend satellite clinic sessions when a mobile government team comes to give immunizations and provide FP services, usually once a month. They also mobilize their clientele to participate in the national government's health campaigns and usually serve as outreach workers for special campaigns such as vitamin A distribution and de-worming. In addition, SSs identify patients with symptoms suggestive of TB and, on selected days, collect sputum specimens from them. A second-level supervisor (the program organizer) takes these specimens to the district health facility, where they are tested. Then, patients who tested positive are given DOTS by the SS under authorization from the MOHFW (Akramul Islam, personal communication, 2013).<sup>1,2</sup>

### **What About the Community's Role?**

SSs are accepted by the community because they are from the community, answerable to the communities for their activities, and supported by the health system through both BRAC and the government. They serve as health promoters, as the first point of care, and as sellers of medical products.<sup>2</sup>

## **How Does BRAC Select, Train, and Retain Shasthya Shebikas?**

BRAC works at the village level through Village Organizations, which are small groups of women who participate in BRAC's microcredit savings and loan program. SSs are self-selected from within these groups.<sup>2</sup> The identification of prospective SSs is made first by the Gram Committee, which is the local village health and development committee. The Gram Committee is made up of 8–10 women, 1 SS, and 1 TBA. The final selection is made by BRAC staff together with local village leaders and government officials.<sup>1</sup> To be an SS, a woman must be supported and selected by the community, between the ages of 25 and 35, married with no children younger than 5 years, and motivated; have some schooling preferably; and not live near a health care facility or large bazaar, which would create competition.<sup>2</sup>

CHVs receive 4 weeks of basic training by the local BRAC office. They are trained on treatment of everyday conditions such as skin and eye infections, common cold and cough, and diarrhea and other abdominal complaints. Some are additionally trained to detect symptoms suggestive of TB and provide drugs to patients who are diagnosed with TB. Many SSs are also trained to diagnose and treat pneumonia in children. Refresher training, done in an interactive and problem-solving way, is central to BRAC's method and serves to keep the knowledge of SSs updated, provide opportunities for discussion of problems, and facilitate regular contact; it also allows SSs to replenish supplies including drugs.<sup>2</sup>

## **How Does BRAC Supervise Its Shasthya Shebikas?**

SSs are supervised by SKs, who are also recruited from their communities. SKs are paid a sum equivalent to about \$40 per month to supervise the SSs and perform ANC in villages. The SKs, all women, have a minimum of 10 years of schooling and work between 4 and 5 hours per day. They accompany each of the SSs in their charge on community visits at least twice per month and meet monthly with their group of SSs to discuss problems, gather information, and provide supplies and medicines. BRAC program staff members also participate in supervision. There is a formal link to the local government's health service delivery system for referral when necessary.<sup>1,2</sup>

## **How Is the Program Financed?**

SSs earn an income from selling supplies such as oral contraceptives, birthing kits, iodized salt, condoms, essential medications, sanitary napkins, and vegetable seeds at cost plus a small markup. They receive incentives for good performance that are based on achieving specific objectives during that month, such as identifying pregnant women during their 1st trimester. Supervisors verify and monitor performance during their visits to communities, where they have the chance to talk with village women.<sup>2</sup> Like most other program activities at BRAC, the SS Program is subsidized by income-generating activities that BRAC operates at scale, including commercial enterprises in handicrafts, milk and poultry production, printing, and banking.

## **What Are the Program's Demonstrated Impact and Continuing Challenges?**

Supervisors track SS performance, and BRAC provides support to address challenges as they occur.<sup>2</sup> One formal study assessed how well SSs managed childhood pneumonia using the protocol approved by the World Health Organization (WHO); the study revealed the SSs performed as well as physicians in implementing this protocol.<sup>4</sup> Another formal study compared the prevalence of TB in districts where SSs were identifying suspected cases and providing DOT for those diagnosed with TB and demonstrated that the prevalence of TB in BRAC areas was half of that in control districts.<sup>5</sup>

Challenges of supervision, livelihoods, accountability, and focus are mostly addressed with systematic supervision, logistic support, and formal links to the health system. SSs still struggle

for legitimacy in the pluralistic health environment, where they may be viewed as second-rate and not as good as doctors.<sup>2</sup>

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# THE GOVERNMENT FAMILY WELFARE ASSISTANT AND HEALTH ASSISTANT PROGRAMS IN BANGLADESH‡



## Summary

### Background

Bangladesh has a history of using CHWs to support health services. At present there are some 219,000 CHWs in Bangladesh, with approximately 56,000 of these, government CHWs. This case study will describe the government programs for Family Welfare Assistants (FWAs), Health Assistants (HAs), and Community Health-Care Providers (CHCPs).



### Implementation

FWAs were introduced in 1976 and now number 23,500.<sup>1</sup> Their work focuses on FP and referral of clients for ANC and PNC. HAs were introduced in 1995 but previously they had worked as vaccinators or malaria control workers. At present there are 20,615 HAs.<sup>1</sup> Their work focuses on immunizations, vitamin A supplementation, and detection and treatment of pneumonia, diarrhea, malaria, and TB. CHCPs were introduced in 2010 to staff community health clinics. They now number 12,991.<sup>1</sup>

### Training

FWAs receive 21 days of training followed by on-the-job training. HAs receive training of a similar length. CHCPs receive 12 weeks of training.

### Roles/Responsibilities

FWAs visit households every 2 months, register couples, motivate them for FP, distribute contraceptives, and refer clients for ANC and PNC. HAs provide immunizations and vitamin A capsules and distribute packets of ORS. They visit homes to promote the use of ORS and to treat acute infections (acute respiratory infection, TB, and malaria). CHCPs provide ANC and PNC; treat cases of pneumonia, diarrhea, and anemia; and give injectable contraceptives.

### Incentives

FWAs receive a government salary of \$98 per month. HAs receive a government salary of \$103 per month. CHCPs receive a government salary of \$110 per month.

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‡ This case study was written by Dena Javadi and Jessica Gergen, students in the Johns Hopkins Bloomberg School of Public Health, and Henry Perry. Dr. Perry lived in Bangladesh from 1995 to 1999.

## Supervision

FWAs are supervised by male supervisors, with whom they meet twice per month. HAs are supervised by Assistant Health Inspectors, each of whom is responsible for five to six HAs. CHCPs are supervised by the Subdistrict Hospital Manager.

## Impact

There are no available evaluations of these programs. The strong CHW presence in Bangladesh is widely perceived to have made an important contribution to Bangladesh's remarkable progress in reducing under-5 mortality and maternal mortality.

## What Is the Historical Context of Bangladesh's Government CHW Programs?

FWAs were established to scale up the successful pilot FP program in Matlab, Bangladesh. As the program scaled up with external donor support and technical assistance, the details of the FWAs' work has changed slightly, but for more than two decades FWAs were the "backbone" of the government's FP program, which is widely credited as being one of the most successful such programs in the world, in a country not undergoing simultaneous rapid socioeconomic development.<sup>2</sup> The HA program is an outgrowth of the government smallpox and malaria control programs from the 1960s and, later, a government disaster response program. The CBHC program arose in response to the need to improve access to treatment for acute illness and to make injectable contraceptives more available as part of the government's 1996 commitment to establish 18,000 community clinics across the country to provide "one-stop" provision of basic services at a community-owned facility and to reduce reliance on "doorstep delivery" of basic services.<sup>1</sup>

## What Are Bangladesh's Health Needs?

The health status of the poor and vulnerable remains challenging, and families may suffer financial catastrophes if a member falls ill. Communicable diseases, poor MCH, and malnutrition are responsible for high levels of preventable morbidity and mortality. New challenges of the epidemiological shift to chronic and non-communicable diseases are arising, along with environmental hazards from air and water pollution, injuries, and unhealthy behaviors such as tobacco use and violence.<sup>2</sup>

## What Is the Existing Health Infrastructure?

While officially Bangladesh has a health system involving a three-tier service delivery system from the MOHFW with a comprehensive network of public facilities at tertiary, secondary, and primary levels, in practice it is quite pluralistic and unregulated, with low utilization of public sector health centers and district hospitals.<sup>3</sup> There is a mix of public, private, NGO, and traditional providers. These all have different reach and quality, and the public sector is responsible for less than 20% of curative services. The public and private sector have a porous boundary and doctors move between the sectors.<sup>3</sup> Village doctors (informally trained providers who practice allopathic medicine) are the dominant providers of care at the community level.<sup>4</sup>

## What Type of Program Has Been Implemented?

FWAs have been responsible for visiting the homes of married women of reproductive age every 2 months to promote the utilization of FP methods and, to a lesser degree, promote basic MCH activities (child immunization, referrals for ANC, and ORS for childhood diarrhea cases). Historically, HAs were responsible for responding to local emergencies, such as natural disasters, thus justifying the recruitment of only men because, culturally, men have more mobility and flexibility to travel. However, recently women have been allowed to become HAs and are now more mobile, though still not at the same level as men.<sup>2</sup> HAs are supposed to provide immunizations, ORS packets, and vitamin A capsules at immunization sites (Expanded Programme on Immunization Outreach Sites), making occasional home visits for health

promotion, such as using ORS for diarrhea, treating acute respiratory infections, and collecting blood samples for detection of malarial parasites. The HAs' target population is women and children in need of immunization. In addition to their other duties, one FWA and one HA are each assigned to work at a community clinic 3 days a week.<sup>1,2</sup>

CHCPs are based at community-owned clinics, which are open from 9 a.m. to 3 p.m. 6 days a week. Each clinic is supposed to be supplied with 23 essential drugs.

The goal is to have one FWA for every 4,000–5,000 persons and one HA for 6,000 people. There is supposed to be one community clinic served by one CHCP for each 6,000 people. The location of each clinic is supposed to be such that 80% of the population is within a 30-minute walk of the facility.<sup>1</sup>

### **What About the Community's Role?**

There is no explicit role for the community in the selection, training, or supervision of FWAs and HAs. Communities were involved in the designing, planning, monitoring, and implementation of community clinics. They provided land for the clinic and assisted in its construction, while the government provided the necessary funds for construction, provided the supplies and equipment, and staffed the clinic. The community assists further through a community clinic support group that, among other things, helps with the maintenance of the facility.<sup>1</sup>

### **How Does the Government Select, Train, and Retain Its CHWs?**

The community has no explicit role in the selection of FWAs, HAs, or CHCPs. FWAs are required to be female and have at least 10 years of schooling. HAs can be either male or female and also are required to have 10 years of schooling. CHCPs are required to have 10 years of schooling, be a local resident, and be capable of operating a computer.<sup>1</sup> FWAs receive 21 days of training followed by on-the-job training. HAs receive training of a similar length. CHCPs receive 12 weeks of training.

### **How Does the Government Supervise Its CHWs?**

FWAs are supervised by male supervisors, with whom they meet twice per month. HAs are supervised by Assistant Health Inspectors, each of whom is responsible for five to six HAs. CHCPs are supervised by the Subdistrict Hospital Manager.

### **How Is the Program Financed?**

Although external donors, particularly the World Bank, provided significant support for the FWA program during the early decades, all three CHW cadres are supported with government funds at present. The program for community clinics and CHCPs has been highly political from the start, being a signature project of the Awami League government that was closed down when another government came to power in 2001. When the Awami League returned to power in 2008, the clinics were reopened.<sup>1</sup>

### **What Are the Program's Demonstrated Impact and Continuing Challenges?**

There are no available evaluations of these programs. The strong CHW presence in Bangladesh is widely perceived to have made an important contribution to Bangladesh's remarkable progress in reducing under-5 mortality and maternal mortality.

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# THE COMMUNITY HEALTH AGENT PROGRAM OF BRAZIL<sup>§</sup>

## Summary

### Background

The *Programa Saúde da Família* (Family Health Program, now called the Family Health Strategy and abbreviated PSF) was launched in 1994, building upon several previous decades of experience in rural underserved areas with Community Health Agents (CHAs), who were legally recognized as professional in 2002. Currently, Brazil has 236,000 CHAs working as part of 33,000 family health care teams (*Equipos de Saúde Familiar*).



### Implementation

Originally, CHAs provided vertical (centrally directed) MCH services (such as immunizations and FP) in isolated rural areas where services were limited, but have evolved into the cornerstone of the national PHC program that reaches virtually the entire population of the country. CHAs operate as members of the family health care teams that are managed by municipalities. With usually 4–6 CHAs on each team (but sometimes more), each CHA is responsible for 150 families (ranging from 75 to 200 households). Some teams also include a dentist, an assistant dentist, a dental hygienist, and a social worker.

### Training

The CHAs are often selected by local health committees, and they must be literate adults who work in the community where they reside. The training of CHAs is conducted at the national Ministry of Health (MOH), but the training curriculum is approved by the Ministry of Education. Nurses provide 8 weeks of formal didactic training at regional health schools. Following this, CHAs receive 4 weeks of supervised field training. CHAs also receive monthly and quarterly ongoing training.

### Roles/Responsibilities

The scope of work for the health care teams varies with geographic distribution, but most teams provide comprehensive care through promotive, preventive, recuperative, and rehabilitative services. CHAs register the households in the areas where they work and are also expected to empower their communities and link them to the formal health system.

### Incentives

CHAs are full-time salaried workers earning in the range of \$100 to \$228 per month.

### Supervision

CHAs are supervised by nurses and physicians from the local clinics. Supervisory nurses spend 50% of their time in these supervisory roles and the rest of the time working in the local clinic.

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<sup>§</sup> This case study was written by Rose Zulliger, a student at the Johns Hopkins Bloomberg School of Public Health.

## Impact

Brazil has experienced dramatic improvements in a broad range of national health indicators over the past 3 decades, and much of this progress is attributable to the strength of its PHC program and the critical role played by CHAs.

## What Is the Historical Context of Brazil's Community Health Worker Program?

The Brazilian health system dates back to large-scale vaccination and other public health campaigns that were implemented by sanitary police in the late 1800s and early 1900s. The history of the health system is well-characterized by Paim and colleagues in the recent *Lancet* Series on Brazil.<sup>1</sup> Briefly, the health system was shaped by the country's tumultuous history. Public health was institutionalized under the Vargas dictatorship in the 1930s and 1940s, and the first MOH was later formed in 1953. A strong private health care system also developed in the 1950s; it continued to expand with the support of the federal government, as did PHC programs. In the 1980s, the country transitioned from dictatorship to democracy, and 1985 marked the start of the New Republic. The Eighth National Health Conference in 1968 established the notion that health is "a citizen's right and the state's duty."

The *Sistema Único de Saúde* (SUS, or Unified System of Health) was instituted as part of the constitution in 1988. The system has its origins in the struggle for democracy within the country. Government responsibilities for health are defined broadly as encompassing social and political realities along with traditional medical services.<sup>1</sup> This includes the support of efforts to provide free access to health care services as well as social protection, social mobilization, and expansion of social rights to facilitate "community participation, integration, shared financing among the different levels of government, and complementary participation by the private sector."<sup>2-4</sup> States and municipalities were given taxation authority, and federal guidelines mandated that 10% of this revenue be allocated to health (since then this minimum has been raised to 12% for states and 15% for municipalities).<sup>5</sup>

CHW programs have been implemented in Brazil for decades, including the successful *Visitadora Sanitaria* (health visitor) program in which CHWs provided immunizations, information, and various other MCH interventions.<sup>6</sup> The CHA program was initiated in the 1980s as a pilot program in Ceará, one of the poorest areas of Brazil. Its success influenced subsequent PHC programs.<sup>7</sup>

The CHA program started during a drought and followed several successful pilot projects, including a project that trained 6,000 women in 112 municipalities. The women received 2 weeks of training to promote breastfeeding, the use of ORS, and immunization uptake.<sup>5</sup> In 1989, 1,500 of these original 6,000 CHWs were incorporated into a new CHA system, supervised by local nurses. These CHAs provided mostly health promotion and health education services in clearly defined geographic areas near their homes. This program was highly successful and served as a model for subsequent CHA programs.<sup>5</sup> It did, however, face formal resistance from nurses for a variety of reasons, including unclear roles and overlap of CHA work with that of auxiliary nurses.<sup>8</sup> The first national CHA program was developed in 1991 and implemented as part of Brazil's first national PHC program; later, it was integrated into the PSF.<sup>9</sup>

The PSF was launched in 1994 to expand health care access to the poorest Brazilians.<sup>4</sup> CHAs in programs like the Ceará one were integrated into the PSF.<sup>5</sup> In 1996, the federal government transferred control of the management and financing of health care services to the PSF and in 2002 CHAs were officially recognized as professionals by Law No. 10.507/2002.<sup>10,11</sup> CHAs originally provided vertical MCH services, but have evolved into the cornerstone of PHC services.<sup>1</sup>

Brazil has made important advances in other areas of health care. It was one of the first middle-income countries to provide free antiretroviral medication for patients with HIV/AIDS. It has developed legislation supporting the use of generic drugs, and it has strong government regulation of private health plans.

### **What Are Brazil's Health Needs?**

Brazil has undergone a demographic, epidemiological, and nutritional transition since the 1970s. During this transition, fertility, infant mortality, and illiteracy have all decreased as life expectancy and urbanization have increased.<sup>1</sup> For example, the infant mortality rate (IMR) has declined from 114 deaths per 1,000 live births in 1975 to 19 deaths per 1,000 live births in 2007. Life expectancy has increased from 52 years in 1970 to 73 years in 2008.<sup>1</sup> The country also has a strong HIV/AIDS program; has completely eliminated polio; and has almost eliminated measles, diphtheria, and Chagas disease.<sup>12</sup>

Despite these positive advancements, the country is plagued by increasing levels of non-communicable diseases, including very high levels of hypertension and diabetes.<sup>1</sup> Other persistent health challenges include overuse of health care services and medications, and challenges in the field of reproductive health such as high levels of utilization of unsafe abortion services, high rates of adolescent pregnancy, and high rates of mother-to-child transmission of sexually transmitted infections.<sup>4</sup> There is also a large burden of homicide and traffic-related deaths, and dengue and visceral leishmaniasis remain important problems.<sup>12</sup>

### **What Is the Existing Health Infrastructure?**

There are three levels of health care provided in Brazil, but the country strongly emphasizes the first level—basic PHC. This level is the entry point to more advanced care and includes promotive and preventive components. Family health care teams are the main service providers and comprise one doctor, one nurse, one auxiliary (assistant) nurse, and a minimum of four CHAs.<sup>1,3</sup> Secondary care, consisting of community-level hospitals, has many challenges, including its high reliance upon the private sector.<sup>1</sup> Tertiary care is provided at specialty referral hospitals, mostly by the private sector and public teaching hospitals, leading to high costs among other challenges.<sup>1</sup>

The current health system consists of the SUS, a private subsector, and a private health insurance subsector. The private sector is regulated by the National Supplementary Health Agency (*Agência Nacional de Saúde Suplementar*).<sup>10</sup> Private providers are often subcontracted by the SUS to provide a range of services at the secondary and tertiary levels. Coordinating the mix of public and private services remains a challenge for Brazil's health system.<sup>13</sup> The private subsector has grown substantially with state support, while the public subsector of PHC services remains often underfunded, which potentially compromises its ability to guarantee quality of and access to PHC.<sup>1</sup> Additionally, private health insurance is disproportionately used in the southeast and south regions of Brazil. Overall, 75% of Brazilians are dependent solely on the SUS for health care.<sup>14</sup>

CHAs employed by the PSF are hired through special contracts in order to expedite hiring and provide more competitive salaries than is legislated for civil servants in Brazil. This has many benefits, but it means that CHAs lack job security and fringe benefits afforded to other civil servants, leading to higher staff turnover.<sup>12</sup>

Finally, a central feature of the Brazilian health system is the engagement of civil society in decisions about government health programs. This is structured by the formation of councils at the federal, state, and municipal levels, along with the periodic use of health conferences.<sup>2</sup>

## What Type of Program Has Been Implemented?

CHAs are closely integrated into formal health services.<sup>5</sup> They operate as members of the family health care teams described above that are managed by municipalities.<sup>7</sup> Throughout Brazil's population of approximately 200 million people, there are 236,000 CHAs working in 33,000 family health care teams.<sup>1</sup> These teams are based within PSF clinics and provide services to usually 600–1,000 families (1,500–3,000 people), but they occasionally serve as many as 4,500 people.<sup>1</sup> With 4–6 CHAs on each team normally, each CHA is responsible for 150 families (ranging from 75 to 200 households). Some teams also include a dentist, an assistant dentist, a dental hygienist, and a social worker.<sup>14,15</sup> CHAs are part of the team that primarily operates outside of the health facility to provide health education promotion and linkage to referral services.<sup>3</sup> One study of CHAs in Araçatuba, a city in São Paulo state, found that 83% of CHAs reported good communication within the teams, although some CHAs felt that physicians undermined their work.<sup>8</sup> Unfortunately, there are no structured opportunities for career advancement for CHAs.<sup>14</sup>

The scope of work for the health care teams varies with geographic distribution, but most teams provide comprehensive care through promotive, preventive, recuperative, and rehabilitative services. Key services provided by CHAs include the promotion of breastfeeding; the provision of prenatal, neonatal, and child care; the provision of immunizations; and participation in the management of infectious diseases, such as screening for and providing treatment for HIV/AIDS and TB.<sup>16,17</sup> CHAs register the households in the areas where they work and also are expected to empower their communities and link them to the formal health system.<sup>14</sup> However, not all CHAs receive training on community mobilization and not all are engaged in this activity.<sup>8,14</sup>

In the 1990s, CHAs were trained to provide integrated management of childhood illness (IMCI) in the home, including providing prescription antibiotics for children suspected of having pneumonia. Unfortunately, this stopped in 2002 following pressure from medical societies.\*\* Nurses have also pressed against allowing CHAs to administer injections.<sup>12</sup>

Other significant cadres of CHWs in Brazil include those trained and supported by the Catholic NGO Pastorate of the Child. This NGO has a network of 260,000 volunteer CHWs who promote child survival through low-technology interventions such as the administration of ORS for childhood diarrhea.<sup>4</sup>

## What About the Community's Role?

One of the goals of the PSF program is to “promote the organization of the community” and to analyze the community's needs.<sup>18</sup> Thus, CHAs are expected to serve as the link between family health care teams and the communities served by the teams.<sup>9</sup> The community is also involved in the organization and budget of the health system, and some municipalities and states have developed a system in which the public is able to vote on the proportion of the municipal budget allocated to health.

In 1993, health councils were functioning in 84% of the rural municipalities of the state of Ceará in northeastern Brazil. These councils were responsible for conducting assessments and making recommendations on health priorities and collection and disbursement of funding, among other roles.<sup>5</sup> A 2001 review of CHAs in the city of Araçatuba, São Paulo, found that municipal health councils—comprising representatives from government, health services, and the community—were responsible for the allocation of financial resources for health. They also developed health strategies and mobilized communities' involvement in health.

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\*\* In many countries where the need to expand access to services is great, commonly there is pressure from medical and nursing societies to limit CHWs' management of conditions that involve dispensing medications.

There are now health councils operating at a national, state, and municipal level with over 5,500 municipal councils throughout the country. Council membership is allocated as follows: 50% are users, 25% are health workers, and 25% are health managers and service providers. Health conferences are also held every 4 years to “propose directives for health policies.”<sup>12</sup>

### **How Does Brazil Select, Train, and Retain Community Health Agents?**

The CHAs in the early Ceará program were selected by local health committees. There were two selection criteria: (1) they had to come from and reside in the area where they would be working and (2) they had to be literate.<sup>16,17</sup> At the outset, priority was given to recruiting CHAs in households most affected by the drought as well as on their responses to hypothetical community problems presented during the selection process.<sup>5,14,19</sup>

CHA training is conducted in regional health schools operated by the national MOH using curricula approved by the Ministry of Education.<sup>14,19</sup> CHAs receive 8 weeks of training from local nurses, followed by 4 weeks of supervised fieldwork. This includes training on home visits and how to conduct a family census, and then on specific priority health care interventions. CHAs receive monthly and quarterly ongoing education training during meetings<sup>5,14</sup> Those who teach CHAs receive an 80-hour training module.<sup>14,20</sup>

CHAs are salaried, full-time workers. In 2006, CHAs in Araçatuba earned a monthly salary of 500 Brazilian reals (US\$228), representing 22.3% of the total family health care team’s salary costs. However, the Araçatuba CHAs had higher education levels than most CHAs in the national program, where the monthly salary is 40% to 50% lower.<sup>8,14</sup>

### **How Does Brazil Supervise Its Community Health Agents?**

CHAs are supervised by nurses and physicians from the local clinics.<sup>20</sup> Supervisory nurses spend 50% of their time in these supervisory roles and the rest of the time staffing the local clinic. The role of the nurse as a supervisor is clearly defined, and nurses have protected time to perform their supervisory role. Strong supervision of CHAs has been identified as one of the important contributors to the program’s success.<sup>21</sup>

Brazil also has strong referral systems. CHAs report any ill person within their catchment area to a nurse and the CHA may, at times, escort the person to the local health facility. Upon the patient’s release, the CHA is expected to maintain the continuum of care and follow up with the patient. This role performed by CHAs helps to ensure accountability of the health system to local health needs.<sup>14</sup>

The PSF has an information system that utilizes data collected by CHAs.<sup>14</sup> This has helped to strengthen vital statistics reporting, rapid identification of problems, and implementation of locally relevant solutions.<sup>1,5</sup>

### **How Is the *Programa Saúde da Família* Financed?**

The recent health advancements in Brazil have occurred alongside an evolving health system and increased investment in health. Between 1990 and 2010, the proportion of the gross domestic product (GDP) spent on health increased from 6.7% to 8.4%. Out-of-pocket expenditures have increased steadily as have other expenditures in the private sector such that now, 57% of health-related expenditures are from the private sector. The growth of funding from the public sector has been more constrained.<sup>1</sup>

The financing of the health system in Brazil is decentralized and arises from a variety of funding sources, including taxes, social contributions, out-of-pocket expenditures, and employer health insurance purchases.<sup>1</sup> The PSF provides services free of charge to recipients, and the program is financed on a capitation basis with incentives for municipalities to increase

coverage.<sup>7</sup> Since 1996, states and municipalities have been responsible for the management and financing of health care. Now, states must allocate at least 12% of their total budget to health; municipal governments are required to spend 15% of their total budget on health—a requirement met by 98% of municipalities.

In 2006, the Brazilian government health expenditure was \$252 per person, which is less than in neighboring countries such as Argentina (\$336) and Uruguay (\$431). An estimated additional \$100 per person is spent each year in order to achieve universal health coverage in Brazil.<sup>10</sup>

### **What Are the Program's Demonstrated Impact and Continuing Challenges?**

Brazil has experienced dramatic improvements in a broad range of national health indicators over the past 3 decades. This includes marked increases in access to MCH interventions and marked reductions in maternal, infant, and child mortality as well as marked reductions in childhood stunting. There have also been reductions in the health disparities within the country. The Millennium Development Goal (MDG) 1 indicator of a 50% reduction in the percentage of underweight children and the MDG 4 indicator of a two-thirds reduction in under-5 mortality between 1990 and 2015 have already been met.<sup>4,12</sup>

A variety of factors such as socioeconomic development, social improvements, and conditional cash transfers have facilitated this progress, but the PSF and various health interventions have been critical components in the improved health indicators.<sup>4</sup> Victora and colleagues used vital statistics, United Nations model life tables, and census data to compare infant mortality in areas with different levels of PSF coverage. They found that while infant mortality was highest within poor communities irrespective of level of PSF coverage, when PSF coverage was higher, the mortality differences between poor and rich communities were less.<sup>4</sup>

Macinko and colleagues used public data from each state to determine the impact of the program on infant mortality from the pre-intervention period (1990 to 1994) to the period from 1999 to 2002, when PSF expansion had occurred.<sup>8</sup> During this time period, the IMR decreased from 49.7 per 1,000 live births to 28.9 and PSF national coverage increased by 36.1%. The authors found a significant and temporal relationship between coverage by PSF and decreased IMR. A 10% increase in PSF coverage was associated with a 4.6% decrease in the IMR, holding all other variables constant. A different analysis found that the program was associated with a 13% to 22% reduction in the IMR, depending on the level of PSF coverage.<sup>17</sup> Additional analyses of municipal-level data found that exposure to the PSF program was associated with a reduction in mortality, with the greatest impact on under-5 mortality. The programmatic impact was largest in the poorest municipalities as well as in the more rural regions in the country with worse baseline health indicators.<sup>17,18</sup>

Current challenges within the Brazilian health system include a high turnover of the PHC workforce, lack of integration between different primary health clinics, lack of investment in linkages and integration between PHC and other levels of care, and management challenges. The competing interests of the health system subsectors also require a reconsideration of the most appropriate roles of the public and private sectors.<sup>1</sup> Additionally, patients are provided very different levels of care by private providers depending on whether their care is funded by the SUS or by private health insurance, and there are concerns related to low quality of care provided for patients whose care is funded by the SUS. There are perverse incentives for private providers to provide more services (such as cesarean sections) since they are reimbursed by fee-for-service (as in much of the United States). There are also rising costs for private health care, and the SUS remains underfunded.<sup>1,12</sup> Progress has been made toward reducing socioeconomic and regional gaps in service access and in health indicators, but gaps remain and there are some charges of insufficient commitment by the federal government to the SUS.<sup>10,12</sup>

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# ETHIOPIA'S HEALTH EXTENSION PROGRAM<sup>††</sup>

## Summary

### Background

The first cadre of Health Extension Workers (HEWs) was trained in 2004. In the following years, Ethiopia expanded its PHC programs in hope of achieving universal health coverage. Human resources that serve at the community level in Ethiopia include: HEWs, voluntary CHWs, and Community Health Promoters (CHPs), now called Health Development Army (HDA) volunteers.



### Implementation

HEWs are supposed to split their time between health posts and the community. The HDA volunteers' role is to increase utilization of primary health services through part-time work (less than 2 hours per week) within their communities.

### Training

HEWs have more than 1 year of pre-service training conducted by trainers who were taught through a cascade train-the-trainer approach.

### Roles/Responsibilities

The main responsibilities of HEWs include health promotion, disease prevention, and treatment of uncomplicated and non-severe illnesses, such as cases of malaria, pneumonia, diarrhea, and malnutrition in the community.

### Incentives

HEWs are formal employees and are paid a salary. HDA volunteers are not monetarily compensated, but receive nonfinancial incentives such as formal recognition, ongoing mentorship, certificates, and recognition at community celebrations.

### Supervision

Supervision is conducted by the *woreda* (district) supervisory team, which comprises a health officer, a public health nurse, an environmental/hygiene expert, and a health education expert. In 2005, HEWs had an average of three supervisory visits over the course of 9 months.

### Impact

Ethiopia is making some of the strongest improvements in health in all of Africa at present. Its declines in under-5 mortality and in maternal mortality, along with dramatic improvements in the CPR, are among the most notable in all of Africa. HEWs are widely seen as the main reason that services have expanded and these results have been achieved.

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<sup>††</sup> This case study was written by Rose Zulliger, a student in the Johns Hopkins Bloomberg School of Public Health.

## What Is the Historical Context of Ethiopia's Community Health Worker Program?

CHWs have a long history in Ethiopia, dating back to around the time of the 1978 Alma Ata Conference on Primary Health Care. One early program in Tigray, during the time of the civil war there in the 1970s and 1980s, trained 3,000 CHWs. These workers were selected by their communities to receive training in maternal, child, and environmental health and in malaria diagnosis and treatment. The Tigray program was suspended in 1991 at the end of the war, but various CHW programs continued throughout the country.<sup>1</sup>

In the 1997–1998 fiscal year, the Ethiopian Federal MOH (FMOH) launched the National Health Sector Development Program (HSDP). This program shifted the health system focus from predominantly curative to more preventive and promotive care, and it prioritized the needs of the rural inhabitants, who make up 83% of the Ethiopian population.<sup>2</sup> A review of the first 5 years of the HSDP found that challenges remained in obtaining universal PHC coverage.<sup>3</sup>

In response to these unmet needs, the Government of Ethiopia launched in 2003 two programs: (1) the Accelerated Expansion of Primary Health Care Coverage and (2) the Health Extension Program (HEP).<sup>4</sup> Multiple stakeholders, including the Federal Ministries of Health, Education, Labor, Finance, and Capacity Building, were all involved in the development of the HEW model.<sup>5</sup> The program was designed to expand health service coverage, particularly in rural areas, using locally available human resources. These included community-based human resources such as HEWs and CHPs, now HDA volunteers.<sup>4</sup> The first group of HEWs was trained in 2004–2005.<sup>6</sup> Between 2005 and 2008, the HSDP aimed to deploy 30,000 HEWs in 15,000 health posts with the goal of achieving universal PHC access by 2008.<sup>7,8</sup>

There have been numerous recent changes in the HEP. Following the rapid expansion of HEP coverage in rural areas, attention shifted to scaling up these services in urban and pastoralist communities. In 2009, the FMOH launched the Urban HEP, which trained female clinical nurses for 3 months as urban HEWs.<sup>9</sup> Rural HEWs were initially used in health promotion and disease prevention; in 2010 their services were extended to include treatment of uncomplicated diseases. The CHP Program has also undergone changes and these volunteers are now called the Health Development Army (HDA). Associated with the title change is a shift from an NGO-directed program where each volunteer is responsible for 25–30 households to a government program with one volunteer for every 5 households. HDA volunteers' new scope of work also includes broader development work beyond health.

## What Are Ethiopia's Health Needs?

Ethiopia has a large burden of communicable diseases, nutritional disorders and maternal/neonatal conditions, but progress has been made in the past 5 years.<sup>10</sup> Key health issues in Ethiopia include high rates of maternal and child mortality and malaria.<sup>11</sup> The MMR for Ethiopia is 470 deaths per 100,000 live births and women have very low prenatal and postnatal service utilization.<sup>12,13</sup> Leading causes of maternal mortality include obstructed/prolonged labor, pre-eclampsia/eclampsia, and malaria.<sup>8</sup> The country also has a high IMR of 59 deaths per 1,000 live births and a high under-5 mortality rate of 88 deaths per 1,000 live births.<sup>13</sup> The leading causes of deaths among children younger than 5 years of age are pneumonia, diarrhea, malaria, neonatal problems, malnutrition, and HIV/AIDS.<sup>5</sup>

Infectious diseases in Ethiopia stretch the health system's resources and are associated with substantial morbidity and mortality. Ethiopia is among the five countries in sub-Saharan Africa with the highest prevalence of malaria. In Tigray, malaria is the leading cause of hospital admission and death.<sup>14</sup> TB and HIV are important problems. The national HIV prevalence was 2.3% in 2009. At that time, only 8.2% of HIV-positive pregnant women received prophylaxis for prevention of mother-to-child transmission (PMTCT) of HIV. Although the national TB cure rate and treatment success rate are relatively high at 67% and 84%, respectively, it is estimated

that only 34% of cases are detected.<sup>8</sup> Additionally, environmental factors facilitate disease transmission. For example, 38% of Ethiopian households report no toilet facility.<sup>13</sup>

### **What Is the Existing Health Infrastructure?**

The Ethiopian health system is decentralized and has been reorganized into three tiers. Tier 1 is made up of PHC units comprising a health center (one health center for 15,000–25,000 people) and five satellite health posts (one health post for 3,000–5,000 people) along with *woreda* hospitals, each serving 60,000–100,000 people. Tier 2 includes zonal/general hospitals (one hospital for 1 million to 1.5 million people). And Tier 3 involves specialized/referral hospitals (one hospital for 3.5 million to 5 million people).<sup>8,15,16</sup>

In addition to the expansion of HEWs, the Ethiopian government has increased the number of medical students and health officers, some of whom are trained using an accelerated curriculum.<sup>17</sup> This expansion of health personnel is motivated by substantial deficits in human resources. For example, the country has a shortage of 19,489 midwives, and only 3% of births in rural areas are attended by a skilled birth attendant.<sup>4</sup>

### **What Type of Program Has Been Implemented?**

HEWs are a formally recognized cadre that has strong political support, including from the FMOH and the prime minister.<sup>18</sup> HEWs are supposed to manage the other CHW cadres, but their relationship with these cadres in the field is not clear.<sup>4,7</sup>

HEWs are full-time employees who are meant to split their time between health posts and the community. These expectations have changed considerably since the HEW program was initiated. HEWs were originally conceived as links between their local community and the formal health services, dedicating at least 75% of their time to community outreach activities.<sup>19,20</sup> Despite these guidelines, there is some evidence that HEWs spend more time at health facilities, and recent reports indicate that HEWs should spend 50% of their time in the health posts.<sup>21</sup>

There have been four HSDPs since 1997–1998. In 1997, there were 76 health posts, 243 health centers, and 87 hospitals.<sup>8</sup> Rollout has occurred in steps; the speed of expansion has been influenced by available resources for health posts and presence of eligible women to become HEWs. As of June 2007, the HEP covered 59% of villages (with 17,653 HEWs) and had constructed 66% of 9,914 projected health posts.<sup>19</sup> By the end of 2009, 33,819 HEWs had been trained and deployed and 14,416 health posts had been constructed.<sup>8</sup>

The main role of the HEW is in health promotion, disease prevention, and treatment of uncomplicated and non-severe illnesses such as malaria, pneumonia, diarrhea, and malnutrition. HEWs provide a range of services, including prevention, health promotion, and health education; support role for outreach health services; distribution at the community level of commodities whose use does not involve clinical judgment; clinical case-management that involves exercising clinical judgment; ongoing care or support to assist people with a chronic illness (e.g., HIV/AIDS); and participation in and support of campaign-type activities. They also provide immunizations, injectable contraceptives, basic first aid, diagnosis and treatment of malaria and diarrhea, and treatment of intestinal parasites.<sup>15</sup>

The role of HDA volunteers is to increase utilization of primary health services. They work less than 2 hours per week within their communities. Their services include prevention, health promotion, and health education; support for outreach work by health services; and participation in or support of campaign-type activities. They are expected to be model community members and to share health information with others in their communities. This includes information on latrine construction, waste disposal, personal hygiene, ANC,

immunization, infant feeding, and FP.<sup>22</sup> Other cadres that provide community-oriented services include community counselors, peer educators, and home-based care providers who provide HIV-related services.<sup>20</sup>

### **What About the Community's Role?**

Village health committees are involved in the selection and oversight of HEWs. In some geographical areas they are also engaged with HDA volunteers. Additionally, the *kebele* (ward) council is supposed to be involved in every step of the HEP, from program planning through to evaluation.<sup>23</sup>

### **How Does Ethiopia Select, Train, and Retain Health Extension Workers and Community Health Promoters?**

HEWs are adult women who have completed 10th grade. HDA volunteers can be male or female and must be older than 15 years old and, preferably, literate. However, the literacy level in Ethiopia is very low: 51% of women have no education and only 29% of rural women are literate.<sup>8,13</sup> This necessarily limits the number of eligible women in each community.

HEWs and HDA volunteers are also supposed to work in or close to their community of origin or their permanent residence, yet the first HEWs largely did not meet this criterion. Only 8% of interviewed HEWs were assigned to work in the village where they were born, and 52% were from urban areas. Many trained HEWs preferred to be placed in a community other than that in which they were born, and only 16% expected to stay in the *kebele* where they were currently employed for more than 3 years.<sup>7</sup>

HEWs have more than 1 year of pre-service training conducted by trainers who have been taught by a higher level of trainers.<sup>24</sup> HEW training is a collaboration of the MOH and the Ministry of Education and occurs at 40 technical and vocational education training schools.

HEW training includes didactic and clinical training in modules on (1) family health services, (2) disease prevention and control, (3) hygiene and environmental sanitation, and (4) health education and communication.<sup>4</sup> HEWs also recently received a one-time 1-month in-service training provided in response to identified inadequacies in their initial training. As of 2007, 4,772 HEWs had completed integrated refresher training conducted by *woreda* health offices and health center staff.<sup>23</sup> A 2007 study of this continuing education for HEWs found that most HEWs underwent multiple continuing education trainings on malaria and reproductive health, among other subjects. There was, however, little coordination of these trainings, and HEWs expressed a desire for additional training on basic nursing care, home delivery, and care of children with common childhood diseases.<sup>25</sup>

Before CHPs became HDA volunteers, they received an initial training conducted by the HEWs. CHPs were given 96 hours of training on prevention of communicable diseases, family health, environmental and household sanitation, and health education.<sup>6</sup>

Compensation for the two cadres of health workers is as follows: HEWs are regular government employees with a regular salary and benefits, while HDA volunteers do not receive financial compensation. A range of nonfinancial incentives has been effective with CHPs and now HDA volunteers, including formal recognition, ongoing mentorship, certificates, and recognition at community celebrations.<sup>22</sup>

## How Does Ethiopia Supervise Its Health Extension Workers?

HEW supervision has varied throughout the history of the program, and it currently varies from one geographical location to another. In 2005, HEWs had relatively high levels of supervision: each HEW had an average of three supervisory visits over the course of 9 months.<sup>7</sup> There are supposed to be multiple levels of HEW supervision, including by the *woreda* supervisory team that comprises a health officer, a public health nurse, an environmental/ hygiene expert, and a health education expert.<sup>23</sup> HEWs supervise the cadres such as HDA volunteers as well as TBAs and community-based reproductive health agents.<sup>26</sup>

The program has extensive monitoring and evaluation (M&E) systems that include routine reports and monitoring of indicators for maternal, neonatal, and child health; disease prevention and control; nutrition; and hygiene and environmental health. Among the indicators that are reported are contraceptive acceptance rate, deliveries attended by skilled birth attendants and by HEWs, TB case detection and cure rates, and proportion of households using latrines.<sup>21</sup>

## How is the Health Extension Program Financed?

The HSDP has been financed by national and sub-national government entities, bilateral and multilateral donors, NGOs, private contributions, and user fee revenues. Current HSDP funders include the GAVI Alliance's Health System Strengthening Program; the Global Fund to Fight AIDS, Tuberculosis and Malaria; and the Carter Center, among others.<sup>17</sup>

The total per capita health expenditure in 2007–2008 was \$16.09.<sup>8</sup> A costing exercise determined that an additional \$11.96 per capita per year for 5 years (totaling \$8.83 billion) would be required to meet Ethiopia's health-related MDGs. This investment would reduce under-5 mortality by 32% and maternal mortality by 55%. Forty-five percent of the budget would be allocated to sustain and strengthen the HEP. There is, however, a substantial gap between the amount required to achieve the MDGs and the current level of funding.<sup>8</sup>

The costs of HEWs are as follows: \$234 for 1 month of training; \$178 for the apprenticeship; and \$84 monthly for the salary of one HEW.<sup>16</sup> At the local level, financing and planning are decentralized and the *woredas* receive block grants to cover the expenses of the HEP.<sup>20</sup>

## What Are the Program's Demonstrated Impact and Continuing Challenges?

By 2008, 24,534 HEWs had been trained to provide services, leading to substantial increases in health service coverage. The percentage of the population that is served by the program has increased from 61% in 2003 to 87% in 2007.<sup>27</sup> The program has also demonstrated success in health service areas such as increased use of ITNs.<sup>19</sup> The percentage of pregnant women and under-5 children using an ITN was over 40% in malarial regions.<sup>8</sup> Significant, positive associations were also found between exposure to the HEP and child vaccination uptake, ITN use by children and pregnant women, utilization of ANC early in pregnancy, and proper disposal of babies' fecal matter.<sup>28</sup> Additionally, some regions have achieved increases in institutional deliveries and tetanus vaccination coverage.<sup>29</sup>

In 2009, ANC coverage was 68% and PNC coverage was 34%. The percentage of deliveries performed by HEWs was 11% and the percentage performed by skilled health personnel increased to 18.4%. Full immunization coverage reached 66%,<sup>8</sup> and HEWs were found to be making an important contribution to improving the effectiveness of TB control at a modest cost.<sup>30</sup>

The HEP has faced a number of challenges in its implementation, including delayed construction of health posts, delayed provision of health kits to HEWs, inadequate supervision

for HEWs, and deficiencies in training.<sup>27</sup> The reach of HEWs is also limited in some settings.<sup>19</sup> Additionally, a survey of HEW knowledge of maternal and neonatal health, skills, and confidence in providing services found substantial gaps.

HEWs are often younger women who may not be trusted by the community to assist during delivery.<sup>26</sup> A recent analysis of strengths, weaknesses, opportunities, and threats identified numerous weaknesses in the HEP, including low health service utilization; weak referral systems; low service quality; shortage of drugs, medical supplies, and equipment; and lack of a career trajectory for HEWs.<sup>8</sup> The analysis also raised a concern that the increasing number of tasks allocated to HEWs and their growing workload will compromise their ability to complete their tasks. Finally, additional challenges for the HEP include high levels of staff turnover and lack of integration of services.<sup>9</sup>

In spite of many operational challenges to the operation of the HEP, Ethiopia is nonetheless making very impressive progress in achieving its health-related MDGs. The under-5 mortality has declined from one of the highest in the world in 1990 (204 per 1,000 live births) to 68 in 2011, enabling Ethiopia to reach the MDG for child health—one of the few African countries to achieve this so far.<sup>31</sup> The MMR has declined from 950 per 100,000 live births in 1990 to 350 in 2010 and is expected to come close to achieving the MDG for women's health by 2015.<sup>32</sup> In addition, Ethiopia has achieved one of the “most rapid and unprecedented” expansions of contraceptive prevalence in Africa and, in fact the world, with the CPR increasing from 8.2% in 2000 to 28.6% in 2011 (based on national Demographic and Health Surveys [DHSs]).<sup>33</sup> The HEWs are widely seen, both within and outside of Ethiopia, as one of the major reasons these remarkable results have been achieved.

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# INDIA'S AUXILIARY NURSE-MIDWIFE, ANGANWADI WORKER, ACCREDITED SOCIAL HEALTH ACTIVIST, MULTIPURPOSE WORKER, AND LADY HEALTH VISITOR PROGRAMS<sup>##</sup>



## Summary

### Background

India has three cadres of CHWs. The first created is the Auxiliary Nurse-Midwife (ANM), who is based at a subcenter and visits villages in addition to providing care at the subcenter. The second is the *Anganwadi* Worker (AWW), who works solely in her village and focuses on provision of food supplements to young children, adolescent girls, and lactating women. The most recently created cadre is the Accredited Social Health Activist (ASHA), who also works solely in her village. ASHA workers focus on promotion of MCH, including immunizations and institutional-based deliveries, for which they receive a performance-related fee.



### Implementation

There are at present 208,000 ANMs, 1.2 million AWWs, and 857,000 ASHA workers. They each have their own supervisory systems and payment systems.

### Training

ANMs receive 18 months of training while AWWs and ASHA workers each receive 3–4 weeks with additional trainings from time to time.

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## Roles/Responsibilities

ANMs are now officially Multipurpose Workers (MPWs) with a broad set of responsibilities, including the support of AWWs and ASHA workers. Some obtain additional training to manage birth complications and refer women with complications to higher levels of care, and some obtain additional training for insertion of intrauterine devices. AWWs manage nutritional supplementation at *anganwadi* centers for young children, adolescent girls, and lactating women. They also help with promotion of healthy behaviors and mobilization of the community for improved water and sanitation, participation in immunization activities and other special health activities. ASHA workers are given performance-based incentives that focus around facilitating institutional deliveries, immunizations, provision of basic medicines (including oral contraceptives), and referral of patients to the subcenter.

## Incentives

ANMs are paid a government salary. AWWs are considered to be volunteers but are paid an “honorarium” of about \$27–\$29 per month. ASHA workers receive performance-based incentives, such as \$10 for facilitation of an institutional delivery and \$2.50 for facilitation of a child’s completion of immunizations. They also now receive \$16 per month for completing their day-to-day routine tasks independent of the specific tasks for which they receive performance-based incentives.

## Supervision

Supervision of each of these three cadres is carried out independently. For all cases, there is a widespread consensus that the supervision is inadequate.

## Impact

Evaluations of these programs have produced mixed results. Wide variations exist in the quality of training and in the competency and effectiveness of these CHWs, but strong efforts are under way (particularly for the ASHA Program) to improve training, supervision, remuneration, and logistical support.

## What Is the Historical Context of India’s CHW Programs?

The network of primary health centers currently forms the foundation of the Indian rural health care system and also the main link to India’s CHW programs. These primary health centers were established in the late 1940s, shortly after India’s Independence in 1947. When subcenters were created below the primary health center level in the 1960s, lower-level temporary health workers were required to staff them.<sup>1</sup> In response to this demand, the Indian MOHFW created the ANM cadre.<sup>2</sup> This was followed by the establishment of AWWs for child development through the Integrated Child Development Service (ICDS). The newest addition to the CHW family has been ASHA workers, established by the MOHFW.

At the time the ANM program was launched, ANMs received two years of training focused primarily on MCH, with midwifery being the focus of nine out of the 24 months of training.<sup>3,4</sup> ANMs were envisioned to be village-level midwives with “less than full qualifications.”<sup>3</sup> Within a decade, in the early 1970s, the role of ANMs was expanded to include a wide range of preventive and curative work at the village level, particularly around FP and immunization.<sup>2</sup> With the expansion of their role, ANMs transitioned from temporary to permanent staff within the health system.<sup>1</sup> At the same time, ANMs were also reclassified in the health system, from a nurse-midwife to a female MPW.<sup>5</sup> In response to the Srivastava Committee’s call for improved ANM training to reflect their multipurpose role,<sup>6</sup> in 1977 the Indian Council of Nurses approved a syllabus for ANM training that focused on an expanded set of responsibilities and reduced the midwifery component of the training from 9 to 6 months.<sup>4</sup> At the same time the number of subjects included in the training increased, the duration of training was reduced from 24 to 18

months because, as MPWs, ANMs were no longer considered to require extensive and specialized training.<sup>3,7</sup>

The National Rural Health Mission (NRHM), launched in 2005, is the latest broad vision for improving comprehensive primary health services for the rural poor in India. ANMs are positioned as a key health worker within the NRHM human resources framework.<sup>3</sup> The NRHM doubled the number of ANMs at subcenters from one to two full-time staff.<sup>8</sup>

In 1972, the central government released an interministerial survey suggesting that existing social welfare and nutrition programs in India were not improving the nutritional status of children.<sup>9</sup> The government attributed these program failures to resource constraints, inadequate coverage, and fragmentation.<sup>9</sup> To address some of these shortcomings, the Government of India initiated the ICDS scheme in 1975. *Anganwadi* Centers, staffed by AWWs, are the central implantation mechanism of the ICDS. The term *anganwadi* comes from the word *angan*, meaning courtyard. The *angan* is traditionally an open space at the center of the house where families can gather and where food is often prepared.

The ICDS program began with a two-year pilot phase involving 4,981 Anganwadi Centers in 33 blocks<sup>§§</sup> throughout India.<sup>10</sup> An evaluation found that the program increased BCG and DPT immunization rates, improved the distribution of vitamin A and supplementary food provisions, and improved child nutrition status.<sup>11</sup> Subsequent evaluations in 1978 and 1982 found further positive outcomes, and the scheme was scaled up throughout the 1980s. Program coverage expanded rapidly, from 33 blocks in 1975, to 4,200 around the year 2000, and over 5,500 in 2003.<sup>12-14</sup> During the 1990s, the program's budget and number of beneficiaries almost doubled.<sup>13</sup>

ICDS initially focused on the health issues of children from birth to six years of age.<sup>15</sup> However, over the decades, ICDS has expanded to include nutritional support and health education for adolescent girls (under the *Kishori Shakti Yojana* scheme) and lactating women. In some states the AWW has been envisioned as a curative health care provider and equipped with drug kits to address common illnesses among young children.<sup>16,17</sup> However, more recent ICDS reports have indicated that this component of responsibility for drug provision has been eliminated from AWW's work.

Beginning in 1978, inspired by the first successful CHW program in India—the Jamkhed Comprehensive Rural Health Project—the government of India embarked on a national scale-up of the Jamkhed CHW model. Over the course of five years, some 500,000 Village Health Guides were trained in rural India with the goal of having one Village Health Guide for every 1,000–2,000 people. These CHWs had three months of formal training to treat minor ailments and first aid, and they were paid a small stipend.<sup>18</sup> They had no supervision. Some major problems that were documented during program scale-up included lack of a functioning supply chain for the Village Health Guides, lack of supervision, and lack of community engagement. Selection of trainees was based more on political considerations (and connections to local leaders) than on motivation to serve and competence (R Arole, personal communication, 1997).

In 1979, two years after the program had been deployed, an evaluation of the program found that 40% of Village Health Guides reported not receiving their drug kits, and over 60% had not received the supplementary materials for community health and counseling.<sup>19</sup> In addition, about 50% of the Village Health Guides reported not receiving the CHW manual that was supposed to be used as a reference guide for village activities.<sup>19</sup>

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<sup>§§</sup> Blocks are rural jurisdictions ranging in population from fewer than 100,000 to more than three million; several blocks (approximately 10) make up a district and several districts (from two in Goa to 75 in Uttar Pradesh) make up a state.

Some of the challenges that the Village Health Guide Program faced were lack of government buy-in and support following program implementation.<sup>18</sup> Moreover, community engagement in program design and deployment inhibited the program's acceptability and sustainability at the rural community level.<sup>18</sup> Community members that the Village Health Guides were intended to serve reported feeling that the PHC provided by the government lacked responsive and caring health care workers, and did not address the communities' health needs.<sup>18</sup> By 1983, the program had clearly failed and was abandoned by the government.

The Village Health Guide Program failed to provide the funds required to assure that supervision and the needed materials and supplies were available. The government's financing of the program was heavily dependent on external aid, and the program was poorly managed.<sup>18</sup> Furthermore, the government failed to integrate the community health efforts of the Village Health Guides with responses to other public health problems, such as water supply, and with economic growth opportunities like agricultural inputs and land reclamation.<sup>18</sup> Finally, the Village Health Guide scheme failed to provide supportive supervision to the Village Health Guides, which affected their accountability, job satisfaction, and motivation.<sup>18</sup>

In the early 2000s the Government of India was in the final stages of developing the NRHM, which was seen as an "architectural correction" for the rural PHC system.<sup>20</sup> Since then, the NRHM has guided an increase in public health care expenditure from 0.9% of GDP to 2%–3% along with expanded state-level efforts to improve accountability and community engagement in the public health care sector.<sup>20</sup> The initial draft proposal for the NRHM included a provision for a national CHW cadre focused only on mobilizing FP and promoting institutional delivery. Civil society actors argued that such a narrowly defined role for CHWs would be a lost opportunity and was "not in conformity with the spirit and experience of CHW programmes".<sup>21</sup> The MOHFW responded by creating a stakeholder task force to design the ASHA Program. This task force, together with the MOHFW, developed the ASHA Guidelines that became central to defining the program's scope.<sup>21</sup> When designing the ASHA Program, the task force drew lessons not only from earlier, relatively unsuccessful, state-run CHW programs, but also from several successful civil society-run programs.<sup>21</sup> These civil society programs included the Comprehensive Rural Health Project in Jamkhed, Maharashtra (1970–present) and SEARCH in Gadchiroli, Maharashtra (1980–present). Both of these programs showed that female CHWs with minimal formal education can bring about significant improvements in rural health conditions, provided they have strong training and support.

In 2005, when the NRHM was launched, one ASHA worker for every 1,000 people was a key feature.<sup>20</sup> In many states, the ASHA program built upon preexisting CHW programs. For instance, in Rajasthan, *Anganwadi* Center Helpers were nominated to become ASHAs. Andhra Pradesh's Women Health Volunteers were renamed ASHAs. The Chhattisgarh *Mitanin* CHW program, launched in 2003 as a precursor to the ASHA Program, has retained the name "*Mitanin*" for their health workers, but has otherwise been absorbed by the ASHA Program.<sup>22</sup> Initially (2005–2008) the ASHA Program was a component of the NRHM only in 18 high-focus states and in the tribal districts of other states. In 2009 the program was extended to cover the entire country of 31 States and Union Territories, although Tamil Nadu opted to continue limiting the ASHA Program to tribal areas only.

Now there are 1,203,300 *Anganwadi* Centers across India, each one staffed by one AWW,<sup>23</sup> 207,868 ANMs,<sup>24</sup> and 857,000 ASHAs.<sup>21</sup>

## What Are India's Health Needs?

In the past 60 years, the health status of Indians has improved markedly. The IMR has declined from 120 per 1,000 live births in the 1970s to 42 in 2010.<sup>25</sup> Life expectancy at birth has risen from 36 years in 1951 to 65 years in 2010. In 1951, women had an average fertility rate of 6.0,

while in 2010 it was 2.4. The MMR has also declined from 400 maternal deaths per 100,000 live births in 1998 to 178 in 2010.<sup>25,26</sup>

However, despite rapid growth in GDP over the last 20 years,<sup>27</sup> India has consistently failed to meet national and international health targets, and it has improved its health status more slowly than most other Asian countries.<sup>28</sup> India continues to have high rates of maternal and child mortality from communicable diseases along with poor management of chronic diseases of adulthood.<sup>29-32</sup> India's rank in the human development index among 177 countries rose only two positions between 1999 and 2004—from 128th to 126th.<sup>28</sup> One-fourth of all child deaths and 20% of all maternal deaths in the world occur in India.<sup>32,33</sup> Rural people, lower-caste people, religious minorities, women, and the poor all suffer from the marked health inequalities that exist in India and from a lack of access to good quality care because of social, geographic, and economic barriers.<sup>28,34-36</sup>

India is facing a “double burden” of disease, meaning that large proportions of mortality in the population can now be attributed to communicable disease on one hand and chronic conditions on the other. Communicable diseases, such as respiratory infections and diarrhea, are often considered diseases of poverty and disproportionately affect children and the poor. Chronic conditions such as mental health disorders, diabetes, and cardiovascular disease are often considered diseases of more affluent populations and typically cause death among adults later in life. Chronic diseases now account for more than one-half of deaths in India,<sup>37,38</sup> and communicable diseases account for 29%.<sup>38</sup> The remaining mortality is from injuries (10%), perinatal conditions (7%), and maternal conditions (1%). In 2008, one-third of all deaths in India were among people younger than 14 years of age, and 86% of these deaths were due to communicable diseases or perinatal conditions.<sup>39</sup> Among adult deaths, approximately one-fourth can be attributed to communicable disease and 65% to chronic diseases.<sup>39</sup>

### **What Is the Existing Health Infrastructure?**

The rural PHC system includes CHWs at the village level. Each village is supposed to have one AWW and one ASHA worker. AWWs provide information about basic child health and nutritional supplementation for children younger than six years of age, to adolescent girls, and to lactating women.<sup>40</sup> The AWW is based out of an *Anganwadi* Center and is the key functionary of India's ICDS.<sup>41</sup>

MPWs, generally a male MPW and an ANM, who is female, conduct outreach to the villages on a monthly basis. They focus on infectious disease and on MCH. MPWs work out of the primary health subcenter, a clinic that serves several villages. This subcenter is open around the clock and normally has a doctor on staff. Referrals can be made from there to the primary health centers and from there to the district hospital. Primary health centers form the second level of the health system, and they are based in larger villages or small towns. In terms of accountability, currently the state's Minister of Health and Family Welfare oversees the system, delegating responsibility to district medical officers (DMOs), who in turn oversee the block medical officers (BMOs).

India also has a prominent private health care sector. In fact, the majority of Indians seek care at private facilities rather than at free government health centers because of convenience, ease of accessibility, and perceived superior service. Even the poorest quintile of the population seek private care for 76% of their outpatient medical care and 58% of their inpatient care.<sup>42</sup> Health care spending composes 4.1% of India's GDP, which is a fairly average percentage for a developing country.<sup>43</sup> Households pay out of pocket for over 70% of health care expenditures in the country.<sup>43</sup>

## What Type of Program Has Been Implemented?

The ANM cadre is the most well-educated and oldest cadre among the village-level health workers, having been established in the 1960s. The AWW is also well-established in the domain of childcare and nutrition, having been part of the health care system since the mid-1970s. The ASHA is an entirely new cadre, launched in 2005 by the NRHM.<sup>20</sup> As the new and often younger addition, ASHAs are monitored and supported by the ANM and AWW. The ASHA is seen by some policymakers as a means of reducing the labor burden on the ANM<sup>44</sup> and is often seen as the ANM's assistant or helper.<sup>45</sup>

**ANMs** are women with 18 months of training who manage FP, immunization, and MCH programs. They are based out of subcenters, the lowest facility in the rural public health care system.

**AWWs** are female nutrition and child development workers who receive one month of training. They run preschool centers and provide nutritional supplementation for children, lactating and pregnant women, and adolescent girls. They are based out of *Anganwadi* Centers, which serve as preschools and spaces for the storage and preparation of supplementary foods.<sup>46</sup> The AWW is supported by a part-time assistant, called an *Anganwadi* Helper (AWH) or sometimes also called a *Sahayika*.

**ASHAs** are female CHWs who receive 23 days of training and who encourage women to seek ANC and give birth in health centers, assist the ANM with health events such as immunization days, and provide basic first aid and medical supplies such as ORS, contraceptive pills and iron folic acid tablets.<sup>20</sup> ASHA workers are to be based in their villages, and they refer people to their local primary health center and community health center. Village Health and Sanitation Committees, composed of village residents and the ASHA worker, also provide support for the ASHA's activities (see also the section on the community's role below). Although the precise manner of ASHA functioning varies by state, in general ASHAs are expected to attend weekly meetings at their local primary health center and make home visits to people in the community as needed. They are supposed to work approximately 2.3 hours a day and 4 days per week, except during training and mobilization events (such as health education or immunization promotion), when they are expected to put in more time.<sup>47</sup>

The Government of India describes the ASHA's role as having three key components. First, ASHAs are to play a central role in achieving national health and population policy goals.<sup>48</sup> Second, they are to act as a bridge between the rural people and the government health system. Third, they are to serve as social change agents, described as follows:

**ASHA will be a health activist in the community who will create awareness on health and its social determinants and mobilize the community towards local health planning and increased utilization and accountability of the existing health services.**<sup>47</sup>

This third component of the ASHA's role is ambitious. Early programmatic evaluations have found limited scope for this type of awareness raising, with many ASHAs working primarily on tasks such as immunization and promoting institutional delivery.<sup>45</sup>

The ASHA's formal tasks are as follows:<sup>22,49</sup>

- Create awareness and provide information to the community on determinants of health such as nutrition, basic sanitation and hygienic practices, healthy living, and work conditions.

- Provide information on existing health services and the need for timely utilization of health and family welfare services.
- Counsel women on birth preparedness, safe delivery, care of the young, breastfeeding and complementary feeding, immunizations, contraception, and prevention of common infections, including sexually transmitted infections.
- Mobilize the community and facilitate access to health services.
- Work with the Village Health and Sanitation Committee to develop a comprehensive village health plan.
- Facilitate health-care seeking for pregnant women and children requiring treatment/admission to the nearest health facility.
- Provide primary medical care for minor ailments such as diarrhea and fevers, and provide first aid for minor injuries.
- Provide DOT for patients with TB.
- Carry essential provisions (ORS packets, TB medicines, iron and folic tablets, chloroquine [in malaria-endemic areas], disposable delivery kits, oral contraceptive pills, and condoms) for use in the community.
- Inform the health system of births, deaths, disease outbreaks, and unusual health problems.
- Promote construction of toilets under the Total Sanitation Campaign.
- Provide home-based newborn care (a new role added in 2011).

ASHA drug kits are refilled through a state-to-village distribution system. Drug kit supplies are procured at the state level by the Office of the Chief Medical Officer of Health. They are then distributed to the block-level health facilities and then on to each primary health center in the block. At monthly ASHA meetings, drug kits are restocked when only 25% of the needed contents are present. ASHA facilitators maintain Drug Kit Stock Registers and send drug supply requests to the block-level medical officer.<sup>50</sup> In some cases, AWWs act as depot holders for drug kits and help resupply the ASHA workers.<sup>41</sup>

**LHVs** are ANMs who have been promoted to oversee six subcenters. To be eligible for this promotion, an ANM must have five years of work experience and complete a six-month training program.<sup>1</sup>

**MPW-Ms** are male health workers who receive six months of training and are linked to a subcenter (along with an ANM).<sup>51</sup> They generally focus on malaria prevention and treatment as well as on encouraging male sterilization. They are considered the “most neglected cadre” as there is no scope for in-service training and over 60% of the positions are vacant.<sup>51</sup>

These different groups of CHWs work together as a team. ASHAs are to be supported and monitored by both ANMs and AWWs. ANMs are responsible for the following tasks in relation to the ASHA:

- Have a weekly or fortnightly meeting with ASHAs
- Act as a resource person, along with the AWW, for the training of ASHAs
- Inform ASHAs about the date and time of the outreach sessions
- Help ASHAs maintain a register of couples eligible for FP, motivate pregnant women to come for ANC, and ensure that pregnant women receive iron pills and tetanus toxoid injections

- Orient ASHAs on the dose schedule and side effects of oral contraceptive pills
- Educate ASHAs on the danger signs of pregnancy and labor so that they can identify and help pregnant women get further treatment when needed
- Inform ASHAs about the date, time, and place for initial and periodic training
- Ensure that ASHAs receive compensation for their performance and for attending trainings
- Participate in and guide ASHAs in the organization of Health Days at the *Anganwadi* Center<sup>46</sup>

AWWs are responsible for the following tasks in relation to the ASHA:

- Guide the ASHA in organizing a Health Day once or twice per week
- Guide the ASHA in undertaking education activities on health issues during Health Days

### What About the Community's Role?

ASHAs and AWWs are both to be recruited and chosen by the community, while the ANM is hired and put into position by the district-level health administration.<sup>52</sup> ASHAs are selected by and accountable to the local village-level government, called the *Gram Panchayat*, through a participatory process involving the community. After selection, ASHAs work closely with the Village Health and Sanitation Committee. The NRHM envisions the ASHA worker to “act as a bridge between the ANM and the village and be accountable to the *Panchayat* [local democratic government].”<sup>24</sup>

The AWW serves as a member of the village Self-Help Group. The ANM, ASHA, and AWW together are to be members of the Village Health and Sanitation Committee (VHSC).<sup>53</sup> Self-Help Groups are government-supported voluntary microcredit groups for women. VHSCs are village-level voluntary health groups supported by the local level of the elected government (the *Gram Panchayat*) under the NRHM.<sup>54</sup> The VHSC is to lead the development of a Village Health Plan, which is prepared and implemented by the ASHA, AWW, ANM, functionaries of other departments, and Self-Help Groups.<sup>55</sup>

CHWs are envisioned by the MOHFW to work together on village-level health activities to integrate health facility service provision with village-level health needs. The Program Implementation Plan for the NRHM states that:

The relationship between the *Anganwadi* Worker and the ANM at the village level and their respective working methods is critical to the improvement of child health services in rural areas.<sup>56</sup>

### How Does India Select, Train, and Retain the CHWs?

#### Selection

AWWs must be female, aged 21–45 years and middle-school educated. Meanwhile, ANMs must have finished 12 years of school, must be female, and must be between 17 and 35 years of age to apply to ANM training programs in nursing schools across India.<sup>57</sup> ASHAs are to have a class eight education or higher and preferably be between the ages of 25 and 45. An ASHA is to be a “daughter-in-law” of the village<sup>44</sup> who is married, widowed, or divorced and who is likely to live in the village for the foreseeable future since unmarried women generally move to their husband’s village upon marriage. States were afforded the flexibility to select ASHAs with lower literacy levels in order to ensure local residence and community representation.

## Training

**AWWs:** According to official documentation,<sup>58</sup> AWWs receive 26 days of training over the course of one month; 22 days are for classroom education with mock sessions and four days are for supervised practice at the *Anganwadi* Center. However, a more recent review states that AWWs receive three months of training.<sup>9</sup> The Ministry of Women and Child Development states that the training should employ participatory learning techniques, whereby classroom teaching is to be supported by role play, demonstration, exercises, hands-on experience, and case studies.<sup>58</sup> However, in 2011–2012 only 47% of the AWWs targeted to receive initial training and 51% of the AWWs targeted to receive refresher training actually received it.<sup>15</sup> AWWs are also supposed to receive a seven-day refresher training at various points throughout their careers, but it is not clearly stated how often these trainings are to occur.<sup>58</sup>

**ASHA workers:** During their first year, ASHA workers receive 23 days of training. Then they are supposed to receive 12 additional days of training each year thereafter. The training manuals (Modules 1–4) have been found to be broadly simplistic, insufficient, and inconsistent.<sup>21</sup> In addition, the first four manuals did not have an accompanying training manual and trainers often just read through the manual with the ASHAs without any structured skill development process.<sup>21</sup> In contrast, Module 5, developed in consultation with the National ASHA Mentoring Group, includes reading material and a facilitator’s guide to train ASHAs in social mobilization. Two additional training modules have just been added to the training regimen.<sup>22</sup> ASHA training has in some states been outsourced to NGOs, while in other states it is being conducted by health staff within the public system.

**ANMs:** ANMs complete 18 months of training. There are 1,284 ANM training institutions in India that are recognized by the Indian Nursing Council. Funding for an additional 132 ANM schools (focused in geographic areas that lack an ANM training school) was made available in the NRHM 2011 funding cycle.<sup>59</sup> The curricula for all ANM training are provided by the Indian Nursing Council. Upon completing their 18 months of training, ANMs are considered to be female MPWs but not skilled birth attendants. The MOHFW is now offering an additional three- to six-week skilled birth attendant training program to ANMs whereby they can learn to better identify danger signs for referral as well as how to actively manage the third stage of labor (particularly with oxytocin or misoprostol) and conduct other emergency measures.<sup>60</sup>

ANMs can also obtain training in the insertion of intrauterine devices (IUDs) and gain permission to insert IUDs. Once an ANM has five or more years of experience, she can seek six months of promotional training to become a Lady Health Visitor (LHV)/HA (Female). It is helpful to position the ANM within the six levels of nursing training in India today: (1) Multipurpose Health Worker-Female training (ANM or MPHWF), (2) Female Health Supervisor training (HV or MPHS-F), (3) General Nursing and Midwifery training (GNM), (4) BSc. Nursing training, (5) MSc. Nursing training, and (6) MPhil and PhD Nursing training. The ANM, HV, and GNM trainings are conducted in schools of nursing. The last three are university-level courses, and the universities where these programs are located are responsible.<sup>57</sup>

## Retention

**AWWs:** AWWs are considered “honorary workers” who receive a monthly honorarium, but in fact, this honorarium serves as a salary. The payment is composed of a core honorarium from the central government that is often supplemented by additional payments from the state-level government to compensate AWWs for additional work on schemes beyond ICDS. The core monthly payment from the central government ranges from US\$27–\$29 (1,438–1,563 rupees) depending on the AWW’s educational qualifications and experience. Anganwadi Helpers (AWHs) receive \$9 (500 rupees) per month.<sup>41</sup>

**ANMs:** Salaries for ANMs are paid through national health budgets, while the MPW is paid through the state-level health budget.<sup>55</sup>

**ASHAs:** The ANM serves as the gatekeeper to the ASHA's receipt of reimbursement. ANMs check the ASHA's register to see how many services the ASHA has facilitated for which she can receive payment, such as the number of pregnant women she facilitated in getting an institutional delivery. After approving the register, the ANM sends the register on to the *Sarpanch* (head of village-level government) for approval. On receiving the *Sarpanch's* approval, the ANM is responsible for seeking the ASHA's payment through the closest primary health center. Payments are usually dispatched once every three months. Once the check is prepared for the ASHA, the ANM picks the check up from the primary health center and delivers it to the ASHA.<sup>44</sup> This process is quite convoluted and there have been reports of ANMs keeping portions of the ASHA's payments as a bribe or of ANMs understating the ASHA's earnings.

Although ASHAs are considered volunteers, they receive performance-based remuneration for a range of interventions. Initially limited to facilitating institutional deliveries and immunizations, the range has been expanded considerably to 31 activities. They include provision of home-based newborn care, promoting birth-spacing and birth-limiting FP, provision of DOT for TB treatment, making malaria slides, toilet construction, and follow-up of children with severe acute malnutrition after discharge from a nutritional rehabilitation center. For example, an incentive of 250 rupees (approximately \$4.10) is given for providing home-based newborn care. Facilitating institutional deliveries is the most common activity for which ASHAs receive payments. Under the *Janani Suraksha Yojana* (Pregnant Woman Safety Scheme) Program, if an ASHA worker facilitates an institutional delivery, she receives 600 rupees (approximately \$10) and the mother receives 1,400 rupees (\$23).<sup>61</sup> ASHAs also receive 150 rupees (approximately \$2.50) for each child completing an immunization session and each individual who begins to use FP.<sup>62</sup> ASHAs are compensated for training days, meetings, and additional health-related activities on a state-by-state basis.

The ASHA payment system fails to reflect the amount and type of work expected. Although ASHA workers are tasked with a wide range of activities, including developing and implementing Village Health Plans, they receive remuneration for only a very few highly specific activities (such as bringing in women for institutional deliveries). Understandably, ASHA workers tend to focus on the tasks they are paid for. Moreover, many ASHAs are dissatisfied with the current level of remuneration, reporting that they work far more hours than is sustainable for a volunteer position.<sup>63</sup> In response to this, a recent decision has been made to provide an "incentive" (not a salary since ASHAs are still considered to be volunteers) for completion of a set of routine activities regardless of population covered. Now, ASHAs receive 1,000 rupees (about \$16) for completing a set of routine and recurrent tasks each month (R. Ved, personal communication).

### How Does India Supervise Its CHWs?

Each group of CHWs has a different supervision system. ASHAs, ANMs, and AWWs each have their own separate and different supervisors.

**AWWs:** AWWs are supervised by an ICDS *Anganwadi* supervisor and the Child Development Project Officer (CDPO). The CDPO is responsible for ICDS at the block level. The ICDS *Anganwadi* supervisor oversees 25 AWWs. The CDPO is supported by a statistical assistant at the block level. The AWW is also supported by the ASHA and ANM on MOHFW programs (for immunization, health checkups, and health-related referrals).

**ANMs:** There is one LHV or HA (Female) assigned to supervise every six sub-centers. This person is tasked with supervising and providing technical guidance to the ANMs at the sub-centers and reporting to the Medical Officer.<sup>1</sup>

**ASHA workers:** According to national guidelines, there is to be one ASHA facilitator for every 20 ASHAs. The facilitator is to help with the selection of the ASHA, provide on-the-job mentoring to ASHAs, conduct cluster meetings, maintain records of ASHA activities, attend Village Health and Nutrition Days with the ASHAs, and attend monthly block primary health center meetings.<sup>50</sup> The ASHA facilitator is supervised at the block level by the Block Community Mobiliser, who is in turn supervised by the District Mobilization/Coordination Unit, which liaises with the state-level ASHA resource center. In their 2011 evaluation, the National Health Services Research Center found that some states had supervision only at the block level or delegated ASHA supervision to ANMs and other primary health center staff instead of hiring separate facilitators. In other states, the facilitator was hired only to help with ASHA selection and ceased functioning after selection.

At the national level, the ASHA Mentoring Group meets biannually and advises the MOHFW on ASHA policy and programming. The National Health Systems Resource Centre is the technical support unit under the MOHFW and serves as the secretariat for the ASHA Mentoring Group.<sup>22</sup>

Several states have introduced ASHA motivation and recognition initiatives such as cash awards for the best-performing ASHAs (in Bihar), newsletter and radio programs (in several states), bicycles for all ASHAs (in Assam), and career development opportunities through scholarships to study nursing (in Chhattisgarh).<sup>22</sup>

An ASHA monitoring system has been developed by the MOHFW. The main source of performance monitoring arises from monthly meetings of the ASHA facilitator with the 20 or so ASHA workers she or he oversees. The reports on ASHA functionality involve recording whether ASHAs are completing 10 tasks, including visiting newborns within the first day (for home deliveries), attending immunization camps, visiting households to discuss nutrition, and acting as DOT providers for TB treatment.<sup>50</sup> These reports are then submitted to the block community mobiliser on a monthly basis and assessed quarterly to determine what percentage of ASHA workers are functional. These results are then submitted to the district coordinator, who grades each block in the district based on ASHA functionality. Finally, the monitoring data is consolidated at the state level and each district is graded.

### How Is the Program Financed?

**AWWs:** \$8 billion (444 billion rupees) was allocated to the ICDS overall in the 11th Five Year Plan Period (2007–2012).<sup>\*\*\*</sup> Financing for AWW payments and the upkeep of *Anganwadi* Centers comes from both the central and state governments, with the central government contributing 90% and the states contributing 10%. The cost of the food provided by AWWs through ICDS is shared 50-50 by the central and state governments.<sup>41</sup> In 2008, ICDS spent \$0.07 (4 rupees) on supplementary food per child beneficiary (aged 6–72 months) per day and \$0.09 (5 rupees) on supplementary food per pregnant or nursing woman per day.<sup>41</sup>

**ASHA workers:** In 2006, the MOHFW stipulated that the ASHA program would cost 10,000 Indian rupees (approximately \$163) per ASHA worker per year across 18 high-focus states. This

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<sup>\*\*\*</sup> The Planning Commission of India allocates resources to the states based on planning sessions for the upcoming five years; these plans are written up into official Five Year Plans and have been released every five years since 1951.

included the cost of the selection process, social mobilization, training, drug kits, identity cards, and support for ASHA workers by the primary health center and the ASHA supervisor (facilitator). This amount did not, however, include the cost of ASHA worker remuneration, which was supposed to come from the budgets of various other MOHFW initiatives such as the *Janani Suraksha Yojana* Program to support institutional delivery in rural areas.<sup>22</sup>

The program has consistently absorbed less than 50% of its allocated budget because of lack of support structures and other support activities, limited internal capacity, and reluctance to provide support for entities outside of the public sectors, such as NGOs.<sup>22</sup> Absorption varies across states, ranging from 20% in Delhi to 96% in Chhattisgarh, depending on the status of the support structure and the state's commitment to the program (R. Ved, personal communication). From 2005 to 2011, the program spent only 48% of the total funds available, amounting to 5,400 rupees (approximately \$88) per ASHA worker.

### What Are the Program's Demonstrated Impact and Continuing Challenges?

**AWWs:** Although early evaluations of ICDS were promising, more recent assessments have been less encouraging. In Lokshin et al.'s study,<sup>64</sup> anthropometric measures of children obtained from the National Family Health Survey were compared in villages covered by ICDS and in matched villages not covered by ICDS. Their analysis found little overall effect of ICDS on nutritional outcomes. Deolalikar found that the presence of an ICDS Centre is associated with a 5% reduction in the probability of being underweight for boys, but not for girls.<sup>65</sup> Another study by Bredenkamp and Akin found that the presence of an ICDS Centre has no significant effect on the nutritional status of children.<sup>66</sup>

Since its inception, ICDS has been implemented with uniform norms, giving rise to critiques of inflexibility and incapacity to adjust to address pockets of more severe malnutrition.<sup>67</sup> The top-down implementation of the program has left very little space for community involvement and has resulted in many ICDS workers (including AWWs) having very little accountability to the communities in which they operate.<sup>12</sup> Many studies have identified implementation problems with ICDS in general, and have specifically identified insufficient AWW training and support as a major barrier to program success.<sup>12,66,68-70</sup> AWW duties require detailed understanding of child nutrition, maternal health and preschool education. "Supply leakage," particularly related to pilfering and resale of food grains from ICDS program stocks, has severely undermined nutrition supplementation efforts. What food does get distributed has been found to focus on children between the ages of four and six years, which is actually too late to optimally influence growth.<sup>68</sup> Greiner and Pyle identified low community involvement in ICDS as a central barrier to program success.<sup>12</sup> Although community selection and support of the AWW are featured in government documents, communities often have little to do with the AWW; similarly, ICDS employees may feel low affinity for the communities in which ICDS operates.

**ANMs:** There is surprisingly little published evidence of ANM effectiveness. In a placebo-controlled trial from 2002 to 2005, Derman et al. found that ANMs could effectively administer oral misoprostol to reduce rates of acute postpartum hemorrhage and acute severe postpartum hemorrhage.<sup>71</sup> Agrawal et al. found that coverage of antenatal home visits and newborn care practices were positively correlated with the knowledge level of AWWs and ANMs.<sup>72</sup> Specifically, when comparing women visited by AWWs or ANMs who had better knowledge compared with those with poor knowledge, initiation of breastfeeding in the first hour of life, clean cord care, and thermal care were significantly higher among women visited by ANMs or AWWs with better knowledge.

Challenges within the ANM program include a lack of meaningful supervision and mentoring.<sup>73</sup> Mavalankar and Vora also note that an ANM can become an LHV after five years of experience and a six-month training course; however, this six months of training does not include any focus

on supervision or human resource management.<sup>1</sup> Medical officers in particular are often serving a population of over 15,000 people—and more than 30,000 people in the frequent cases where posts are vacant, leaving them very little time to support ANMs.<sup>5</sup> ANMs are thus often left to manage the subcenters largely on their own. Security is another primary concern to ANMs. Iyer and Jesani report how stories of ANMs being called out to homes on false pretenses and sexually assaulted circulated among ANMs in their case study areas.<sup>5</sup> ANMs may be placed at remote subcenters and are often unmarried. Many refuse to go out at night to medical emergencies; some even choose to live away from the subcenter so they are not available for night calls. Unmarried ANMs have reported being verbally harassed by young men in the village and having had stones thrown at them.<sup>74</sup> Furthermore, ANMs are transferred every four years on average, which can often place strain on their family and social lives.<sup>74</sup> Many ANMs end up living away from their husbands and children at some points in their careers.<sup>74</sup>

Mavalankar and Vora highlight the problem of “nonresident” ANMs, citing a 2007<sup>†††</sup> study that found less than one-quarter of all ANMs actually living at the subcenter.<sup>1</sup> If ANMs do not make the subcenter their primary residence, they are unable to provide 24-hour medical assistance and are more likely to be absent due to commutes or extended leave times to visit family. It is not surprising that ANMs choose to live away from the subcenter. Beyond the security concerns mentioned above, living at subcenters places ANMs “on call” at all times. Moreover, subcenters are often little more than concrete rooms and often lack electricity and water.

**ASHA workers:** The National Health Services Research Centre released ASHA updates in 2009, 2010, and 2011, detailing finances and the status of ASHA training and selection. It is still somewhat early to assess the impact of the program on health indicators. In many states, ASHA selection has only recently been completed. The evaluation report entitled *Improving the Performance of Accredited Social Health Activists in India*, prepared for the International Advisory Panel by the Earth Institute of Columbia University and the Indian Institute of Management, focuses on ASHA functionality rather than impact.<sup>63</sup> The evaluation carried out by the NHSRC entitled *ASHA: Which Way Forward?* found a wide range of functionality for all ASHA tasks.<sup>21</sup> For example, the percentage of all women with children younger than 6 months of age who had received a service from their ASHA ranged from 50% to 70%. Considering that ASHAs are supposed to provide postnatal counseling and encourage breastfeeding after all births, this finding indicates limited functionality. The study also found that it was not the ASHA’s educational level (whether or not an ASHA has passed 8th grade) but the number of days of training and the quality of this training that had an impact on the ASHA’s knowledge and skills. The report cited evidence that ASHAs increased institutional deliveries, although the rollout of the ASHA program coincided with the introduction of financial incentives for institutional birth for both the ASHA and mother, making it hard to disentangle the actual effect of ASHAs. The report cited no evidence that ASHAs had influenced immunization levels, but also pointed out that the main limiting factor was the availability of vaccines, over which ASHAs had no control. Although at least 70% of ASHAs were found to have been consulted about sick children, few were able to provide appropriate care because they lacked drugs, skills, or support. For example, ASHAs were able to supply ORS in only 27% of diarrhea cases in Bihar for which they were consulted. There have been concerns expressed about a lack of clarity on roles and responsibilities. Many ASHAs are unable to specify their job responsibilities.<sup>63</sup>

The ASHA payment system fails to reflect the amount and type of work expected; although ASHAs are tasked with a wide range of activities, including developing and implementing Village Health Plans, they receive remuneration for only a few activities (primarily bringing in women for institutional deliveries). Understandably, ASHAs tend to focus on the tasks they are

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<sup>†††</sup> The URL to access this data was no longer operational when the authors sought to check it, on 8 April 2013. The reference given was: Key Indicators, India, Facility Survey. 2003. [http://www.rchindia.org/sr/ki\\_india.pdf](http://www.rchindia.org/sr/ki_india.pdf). Accessed September 5, 2007.

paid for. Moreover, many ASHAs are dissatisfied with the current level of remuneration, reporting that they work far more hours than is sustainable for a volunteer position.<sup>63</sup> There are also major concerns about the adequacy and quality of training.<sup>21,63</sup> The training process and manuals have been criticized as dense, knowledge based rather than skills based, and irrelevant to many day-to-day ASHA activities. The ASHA training period is very short (and few ASHAs even receive the requisite 23 days) and assessments of ASHA knowledge and retention have indicated that the training is highly insufficient.<sup>21</sup>

A central challenge at the heart of the ASHA program is supervision and feedback. Despite detailed national guidelines on ASHA supervision, in most states, support structures are weak and were set up several years after ASHAs were to have been selected and trained, almost as an afterthought rather than as a priority activity.<sup>21</sup> However, at the end of 2013, all but three states had at least two levels of support structures and intact payment systems (R. Ved, personal communication).

Although ASHAs are supposed to be representatives of and accountable to the people, they receive their payments through the ANM at the primary health center and are often treated as extensions of the health system. ANMs consider ASHAs their assistants, which diminishes the ASHA's her "social health activist role."<sup>45</sup> In addition, ANMs provide mentoring and support for the ASHAs linked to their primary health centers, yet have no official supervisory position.<sup>63</sup>

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# INDONESIA'S COMMUNITY HEALTH WORKERS (KADERS)<sup>+++</sup>



## Summary

### Background

Built on the national women's Family Welfare Movement (PKK) movement of the 1970s, volunteers called *kaders* were trained to conduct health and nutrition promotion activities in each village. In the mid-1980s, the *Posyandu* Program was formally recognized by the MOH. The program's goal was to decrease infant and child mortality, improve FP acceptance, improve nutrition, and empower the community through community health activities.<sup>1</sup>



### Implementation

A *posyandu* is a health post in the community that is staffed by *kaders*. *Kaders* are almost exclusively women and are chosen by and from within the community to support services at the *posyandu*. Each *posyandu* serves approximately 100 children younger than 5 years of age or about 700 persons in the community.<sup>1</sup> There are an estimated 1 to 1.5 million *kaders*, and there are 4–5 *kaders* who volunteer at each *posyandu*. Sessions of the *posyandu* are held monthly, at which time mothers and infants receive services at a series of five tables for registration, weighing, result recording, advice or counseling on growth and development, and health services (such as immunization or FP).<sup>1</sup>

### Training

*Kaders* receive one week of training and over time accumulate the skills and equipment necessary to carry out a set of tasks, including growth monitoring and promotion, treating common illnesses such as diarrhea, and preventing disease and malnutrition.

### Roles/Responsibilities

*Kaders* conduct the *posyandu* sessions, where their basic roles include registration and recording on mother-infant cards, weighing, growth monitoring, providing nutrition advice, and counseling on FP. Outside of the monthly *posyandu* sessions, the *kaders* carry out follow-up visits in the community, attend community committee meetings, and update *posyandu* target and utilization data.<sup>2</sup> *Kaders* work about 8–10 hours monthly.<sup>3</sup>

### Incentives

The *kaders* provide voluntary service without financial compensation. However, *kaders* may receive informal types of compensation, such as free medical treatment from higher levels in the

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<sup>+++</sup> This case study was written by Katharine Shelley, Novia Afdhila, and Jon Rohde. Ms. Shelley and Ms. Afdhila are students in the Johns Hopkins Bloomberg School of Public Health; Ms. Afdhila is from Indonesia and has worked with the CHW program. Dr. Rohde was instrumental in the formation of the Indonesia CHW program in the 1970s.

health system.<sup>3</sup> There is a high cultural value placed on doing something for one's neighbors, so volunteering as a *kader* is highly esteemed.

## Supervision

While the nearest subdistrict-level health center (*puskesmas*) provides technical guidance and support, the real accountability of the *kaders* is to the village committee that appointed and supports them in their work. *Kaders* undertake to do “welfare work” for their community, and the monthly *posyandu* session is seen as an important function and contribution to the welfare of the community.

## What Is the Historical Context of Indonesia's Community Health Program?

The National Nutrition Survey in 1973 highlighted the prevalence of malnutrition in Indonesia. At that time, over half of the children were undernourished.<sup>4</sup> Throughout the 1970s, various program approaches were undertaken to improve nutrition at the village level. The well-established PKK organization was endorsed by the Ministry of Home Affairs and active in thousands of villages throughout Java promoting self-help activities.<sup>4</sup> Working with local health departments, university departments of pediatrics, and the national FP organization (BKKBN), the PKK became the locus of a set of monthly activities, including resupply of FP commodities, weighing of children, and discussions of improving child health centered around the cooking of a common nutritious meal, all organized and carried out by volunteers, called *kader gizi* (nutrition workers) from the PKK. The point at which women gathered for these services came to be called a *posyandu*, which is an Indonesian abbreviation for *post pelayanan terpadu* (*PosYanDu*).

At the time of the *posyandu* session, these women were given brief training and simple health education aids and followed standard prescribed activities during their monthly meeting focused on family health and child nutrition. The KB-*Gizi* (FP/nutrition) Program grew dramatically during the Third Five-Year Plan (1979–1984), at which time it reached over 30,000 villages.<sup>5</sup> By 1984, over 80,000 *posyandus* in 34,000 villages, run entirely by *kaders*, were providing basic nutrition and growth monitoring services.<sup>4</sup> The MOH began to use these monthly gatherings as a convenient means to expand immunization coverage as well as to provide medical consultations. The MOH subsequently took over these “integrated service delivery posts” and renamed them *posyandus*.<sup>5</sup> After only a decade, the *posyandu* and *kader* program covered 86% of villages in Indonesia with 200,000 *posyandus*.<sup>3</sup>

The National Nutrition Section of the MOH started the Program *Gizi* (UPGK). Initially it depended upon costly food supplements. Monthly weighing sessions started in response to PKK mothers asking how they would know if their children were healthy and growing well. Traditional weighing scales called *dacin* for market commerce were used, along with growth charts that displayed multiple green channels getting greener at the top (like rice that grows greener as it is fertilized) to demonstrate where children were located based on their weight for age and whether their weight was increasing. Finally, the sessions focused on “wisdom of mothers” (*kebijaksanaan ibu*) rather than on “nutrition science” (*ilmu gizi*) as the teaching/learning method.

The *Posyandu* Program thrived during the 14-year period from 1984 to 1998 under President Suharto's rule,<sup>6</sup> expanding to more than 65,000 villages with some 250,000 *posyandus* run by over 1 million *kaders*. Initial skepticism around volunteerism and worry about attrition of *kaders* gave way to pride and recognition for the important community service they provided. Women wishing to retire from their role recruited and trained their replacements, thereby developing a self-perpetuating system of local health and nutrition care. However, the economic crisis during 1997 significantly impacted *posyandu* performance. Some reports indicated that up to 70% of the *posyandus* stopped functioning.<sup>7</sup>

In 2001, the Indonesian Ministry of Home Affairs, through a ministerial letter, called for a revitalization of the *Posyandu* Program. It requested that the government (1) ensure the sustainability of regular *posyandu* activities; (2) ensure the empowerment of local leaders and *kaders* through advocacy, orientation, and training; and (3) institutionalize the *posyandus* by maintaining them both as a physical structure and as a sociopolitical structure within the village system that is accountable to the community. Due to limited resources, the revitalization effort has focused on inactive *posyandus* and those in low-income communities.<sup>2</sup>

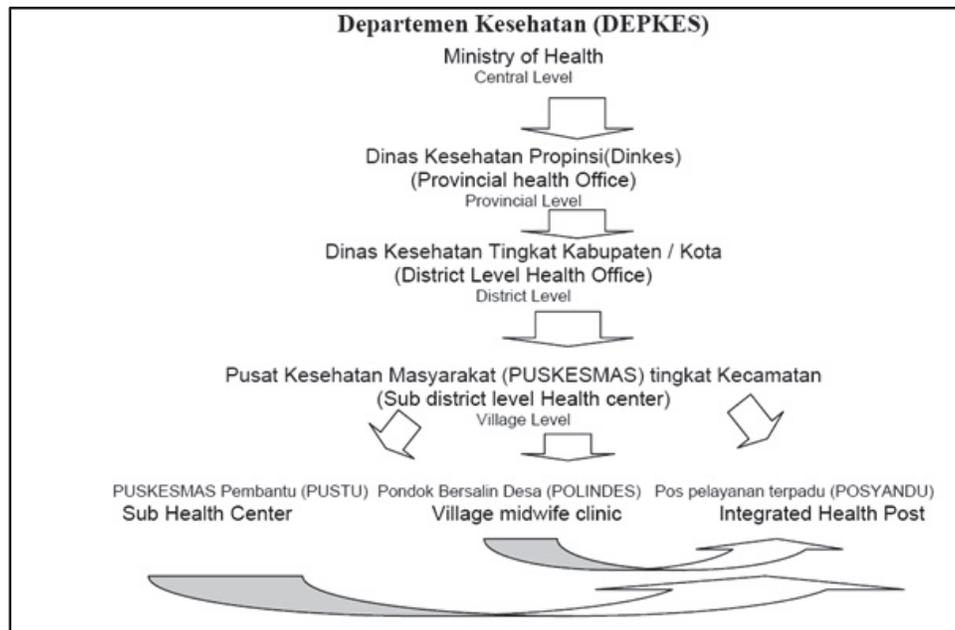
### What Are Indonesia's Health Needs?

The *kader* program was primarily developed as a response to addressing malnutrition, which was identified as the greatest threat to Indonesian children in the 1970s.<sup>4</sup> Over the next two decades, with regular attention to monthly monitoring of child growth and use of locally grown foods and recipes, malnutrition was halved without food supplementation programs, so popular at that time in many other countries.<sup>4</sup> Today, malnutrition remains a significant health challenge in Indonesia, but it is far less severe: among under-5 children, 18% are undernourished and 36% are stunted.<sup>8</sup> Indonesia has recorded steadily declining rates of infant mortality over the last 40 years, from 142 deaths per 1,000 live births in 1967, to 68 deaths per 1,000 live births in 1990, to 32 deaths per 1,000 live births in 2012.<sup>9</sup> While in the 1970s, diarrhea was the most prevalent cause of child deaths, the availability of oral rehydration at the *posyandu* and the monthly attention to nutrition and hygiene along with early rehydration in the home for diarrhea cases reduced diarrhea to the 4th or 5th leading cause of death. Now one-third of infant deaths occur within the first month of life, an indication that increased quality of delivery and PNC is needed. Acute respiratory infections, perinatal complications, and diarrhea remain important to address, especially in rural settings.<sup>10</sup>

### What Is the Existing Health Infrastructure?

Indonesia's public health system includes facilities at the central, provincial, district, subdistrict, and village levels, largely managed through a decentralized system responsible to the provincial and district levels of government. Indonesia underwent government decentralization in 1999–2000, at which time most health functions and budgets were transferred to the districts, with the national and provincial levels largely setting norms and providing guidance.<sup>11</sup> Referral hospitals are located in the larger cities and provincial centers. District hospitals are present in each of the 580 districts, and community health centers (*puskesmas*) each cover a catchment of approximately 30,000 people. Below the *puskesmas*, at the village level, there is a network of low-level facilities, including *pustus* (sub-health centers), *polindes* (village midwife clinics), and *posyandus* (health posts) (see Figure 1).<sup>11,12</sup>

Figure 1. The health care system in Indonesia, including the *posyandu* (health post) at the community level.<sup>12</sup>



### What Type of Program Has Been Implemented?

Community health activities are carried out at the *posyandu*, which is an integrated health post staffed by various community health *kaders*. The *posyandu* links people at the village level with the formal health center and the health care system.<sup>3</sup> Each *posyandu* serves approximately 100 under-5 children or about 700 persons in the community.<sup>1</sup> There are an estimated 1 to 1.5 million *kaders* in Indonesia, based on four to five *kaders* stationed at each *posyandu*. The various types of community health *kaders* include: the *gizi kader* (who works in nutrition); the *kesehatan kader* (who works in health); the *KB kader* (who works in FP); the first aid *kader*; the non-communicable/chronic disease *kader*; and the mental health *kader*. The original idea was to have one *kader* for every 10–20 families.<sup>3</sup> By 2009 there were more than 250,000 *posyandus*, and an average of 3.6 *posyandus* per village.<sup>2,13</sup>

*Posyandu* sessions are conducted on at least a monthly basis by the five or more *kaders* present at each session.<sup>2</sup> *Kaders* typically work about 8–10 hours monthly.<sup>3</sup> At the *posyandu* session, four tables are set up with at least one *kader* stationed per table. The first table is for registration, the second for weighing of children, the third for marking the growth card graph with the weight outcomes; at the fourth table, the mother is given advice based on the weighing and growth monitoring data. A fifth table was later added to provide immunizations and curative services.

Outside of the *posyandu* sessions, *kaders* are responsible for (1) updating a register with names of pregnant women, postpartum and breastfeeding mothers, infants, and under-5 children); (2) updating the statistics describing *posyandu* session utilization; (3) carrying out follow-up visits to houses of absent participants and participants who need further health education; and (4) attending community committee meetings.<sup>2</sup> Growth monitoring, FP, mental health counseling, general MCH care, guidance on the prevention of diarrhea, and immunization are all provided at the *posyandu* sessions.<sup>13</sup> Infant health care includes immunizations, promotion of early stimulation, growth monitoring, disease detection, and basic curative care. In 2010, coverage of infant health care was 84%, and the monthly *posyandu* session is considered a key reason why

the coverage level is high. The *posyandu* is an important access point for families to bring their infants for routine care.<sup>13</sup>

*Posyandu* activities are divided into core and optional activities. By offering additional optional activities, a *posyandu* becomes designated as an integrated *posyandu*.<sup>2</sup>

Core activities carried out by *kaders* and their *posyandu*:

- MCH care
- FP
- Immunization
- Nutrition
- Diarrhea prevention and treatment

Optional additional activities:

- *Bina Keluarga Balita* (empowerment of families with children younger than 5 years of age)
- *Tanaman Obat Keluarga* (family herbal farm)
- *Bina Keluarga Lansia* (program for the elderly)
- Pregnancy savings (encouraging women to save in preparation for delivery and for the newborn's needs)

### What about the Community's Role?

The *posyandu* and its *kaders* serve as a community empowerment unit on health-related issues that is supervised institutionally by a village committee. Medical and technical supervision is provided by the clinical staff at the *puskesmas*, where a physician, 5–8 nurses, and several midwives work.<sup>2</sup> The selection of the supervising village committee and *kaders* is based on consensus reached within a village-level meeting conducted by staff from the *puskesmas* and attended by village leaders, other respected people in the village, and selected members of committee.<sup>2</sup>

### How Does Indonesia Select, Train, and Retain *Kaders*?

The community plays an integral role in selection of *kaders*. Selection criteria include the following:

- Able to read and write
- Social in spirit and willing to work voluntarily
- Knowledgeable about the customs and habits of local people
- Willing to commit the time required
- Residing in the village
- Friendly and sympathetic
- Accepted by the local community

Training of *kaders* lasts less than one week, meaning that only a few technical skills can be learned during that short duration of training.<sup>3</sup> *Kaders* are taught to do very few things, but importantly, the training focuses on learning one task at a time. *Kaders* are given the skills and

equipment needed to carry out that task, and two or three months later they may be trained on the next skill. Many of the skills can be passed on from one *kader* to another, such as preparing and using ORS and zinc, vitamin A distribution, and folic acid and iron distribution for pregnant women.

Evaluations conducted in the 1980s estimated that the annual dropout rate for *kaders* was 20%, and the average length of service for each *kader* was 3–5 years.<sup>3</sup> As *kaders* drop out, new ones are selected and begin to work even if they have not been formally trained.<sup>3</sup> A *kader* who drops out is sometimes responsible for finding and training her replacement.

### How Does Indonesia Supervise the *Kaders* and *Posyandus*?

The *posyandu* is a community-driven health service managed and run from, by, for, and with the community. It also receives technical supervision from the staff at *puskesmas*.<sup>2</sup> Each *puskesmas* has at least one general doctor alongside nurses and midwives. At least one *puskesmas* is located in each subdistrict, and someone from the *puskesmas* staff makes a visit to each *posyandu* session. Supervision of the *kaders* is minimal. Health facility staff members who attend *posyandu* sessions are not expected to supervise *kaders*. Rather, they attend the *posyandu* session as respected colleagues, and they incorporate statistics of services provided at the *posyandu* session as the first layer of data used in the district health information system.

### How Is the Program Financed?

There is almost no finance requirement after it gets started. Any money is a bonus and used to do what the committee decides on. Financing for the program serves to fund operational activities, nutritional foods for children under 5, *kader* transportation costs, start-up capital for *posyandu* commercial activities, and costs for transport for patients requiring referral. The program is financed through a variety of sources, including:

- Community members, attendee donations, community health savings, donations from community members, and donations from social or religious groups;
- Private commercial sources, such as some companies that adopt a *posyandu* and provide sponsorship;
- Commercial activities undertaken by the *posyandu* itself (such as selling herbal medicine); and
- Government sources (mainly for the early stage of *posyandu* development, particularly for establishing facilities and infrastructure).<sup>2</sup>

### What Are the Program’s Demonstrated Impact and Continuing Challenges?

The community-level monitoring system is called SKDN and is used in some *posyandus*, depending on the initiative of the local committee, in order to monitor progress. It consists of four indicators which were designed to be simple and easy enough to use for community-level feedback and tracking of progress, but also to provide useful coverage information for the formal health care system.<sup>3</sup> The simple monitoring system was designed to be used at the community level by the people who are collecting the data. The initials SKDN are used to represent the key data points: S for “all”—the number of under-5 children; K for “growth charts”—the number enrolled in weighing; D for the number of children “weighed” during the month; and N for the number of children who “gained weight” during the month. Key indicators are (1) the proportion of children reached (e.g., given growth cards) (K/S); (2) the proportion of children with growth cards who were weighed (D/K); and the proportion of children weighed who gained weight (N/D). A wall chart is then constructed at the community level to track a village’s progress.<sup>3</sup>

Measuring impact through these SKDN indicators requires an accurate estimate of the total number of children in the target age group, which is often difficult to ascertain. The latest 2010

figures from the Indonesia MOH indicate that 68% of under-5 children were weighed.<sup>13</sup> The MOH has stated that the decrease in maternal and child mortality as well as the increase in life expectancy in Indonesia are partly attributable to the work of the *posyandus* and *kaders* in the community.<sup>2</sup>

Lack of funding, political support, and new volunteers have been cited as challenges. Some critics say that over half of the *posyandus* are inactive, but others claim this is overstated. The head of the Demographic Institute at the University of Indonesia in Jakarta says, “Times have changed. People no longer take pride in being *posyandu* volunteers [*kaders*]. People also prefer to go to clinics [more] than [to a] *posyandu*.”<sup>14</sup> In spite of these vulnerabilities, the *posyandu* system in Indonesia, run by volunteer women for more than 30 years, is probably the largest and longest continuous community-based volunteer health and nutrition program in the world. Driven by women who honestly want to know, “How is my child doing?” and are willing to serve their neighbors by devoting one day a month to a common welfare activity, the *kader gizi* (and other *kaders*) have brought a level of universal health and nutrition care to a huge and diverse population in one of the poorest countries of the world. The *posyandu* and its *kaders* provide a foundation for health in modern Indonesia.

The quality, coverage, and impact of *posyandus* varies by region. The quality of FP services provided at the *posyandu* is heavily dependent on the midwife from the *puskesmas* being present for the *posyandu* session. If she is not able to attend, then women who need replenishment of supplies or an injection will be without protection.<sup>15</sup>

The trend for increased utilization at the *puskesmas* will continue, particularly since a national health insurance scheme went into effect in early 2014 and over the next 5 years will cover everyone in the country. However, the need for the *posyandu* will continue—for growth monitoring of children, for attention to mental health issues, for chronic disease management, and for many other services that can be effectively provided at that level.

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# IRAN'S COMMUNITY HEALTH WORKER PROGRAM<sup>§§§</sup>

## Summary

### Background

Currently, 90% of health services in Iran are provided by the public sector, and a large portion of basic health services are provided by the over 30,000 village health workers (VHWs), called *behvarzs*, who focus on the health needs of the rural population and specifically on MCH.<sup>1</sup>



### Implementation

Following health care reforms in the early 1980s, Iran built Health Houses, each of which was meant to serve approximately 1,500 people living within a 1-hour walking distance. Each Health House (*Khaneh Behdasht*) is staffed by one man and one or more women who provide preventive and basic care.<sup>2</sup> Today 17,000 Health Houses serve 23 million rural Iranians.<sup>2</sup>

### Training

The *Behvarz* Training Centers provide pre-service as well as in-service training programs that consist of coursework divided into three grades over a 2-year period.

### Roles/Responsibilities

*Behvarzs'* responsibilities include MCH care, communicable and non-communicable disease management and detection, care of the elderly, oral health care, health care in schools, environmental and occupational health, annual population census, completion of reports and forms, attendance at in-service training sessions, and membership on the *Behvarz* Council.

### Incentives

Because the CHW program is an integral component of Iran's PHC system, financing of these workers is regulated into national health planning. The *behvarz* workers are paid a fixed salary approximately one-sixth that of physicians.

### Supervision

Regular supervisory visits to Health Houses are planned and performed by rural health centers. Provincial and national teams also evaluate program effectiveness and quality of care.

### Impact

Iran has built a strong PHC system, and the *behvarz* CHW program has been a fundamental element of it. The strong progress that Iran has made in improving the health of its population and in narrowing the rural-urban gap in health status since the 1970s is due in large part to the performance of its community-friendly health workers and the PHC system more broadly.

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<sup>§§§</sup> This case study was written by Zayna Chowdhury and Dena Javadi, students at the Johns Hopkins Bloomberg School of Public Health.

## What Is the Historical Context of Iran’s Community Health Worker Program?

The *Behdar* (healer) Training Project in 1942, the West Azerbaijan Project in 1972, and the Village *Behdar* Training Scheme of Shiraz University are all earlier examples in Iran of utilizing local health workers to address health concerns of the rural poor.<sup>3,4</sup> Following the Alma Ata Declaration of 1978, Iran established a network for PHC with a new CHW program that refined and expanded on projects such as the *Behdar* Training Project.<sup>5</sup> The West Azerbaijan Project, developed in one province in Iran, aimed to expand medical and health services by establishing a comprehensive health delivery system and training auxiliary health personnel, which was the translation of a PHC approach into practice. In the same years as the West Azerbaijan Project, similar experiments in the use of auxiliary health personnel to deliver health services were also conducted in other parts of Iran. The PHC program in Iran has expanded beyond MCH services and now also provides services pertaining to elder health, youth health, and non-communicable diseases.

## What Are Iran’s Health Needs?

CHW programs in Iran are focused on the health needs of the rural population, specifically in terms of infant mortality, maternal mortality, and childhood illnesses such as diarrhea. The content of CHW training is adapted according to changing rural health care needs. For example, midwifery programs in rural areas have been added relatively recently. Needs addressed beyond maternal health include non-communicable diseases, immunization, personal hygiene issues, acute respiratory infection, and FP.<sup>5</sup>

## What Is the Existing Health Infrastructure?

There are four levels of health workers: the family, informal and traditional workers, CHWs, and professionals. Health system reform, focusing more on primary care, coincided with the Iranian revolution in 1979. The new health system also integrated medical education and health care services. A goal of the new health system has been the reduction of urban-rural disparities in health outcomes.

## What Type of Program Has Been Implemented?

The Health House is the first contact between the rural population and health providers in the PHC network. Each Health House provides MCH care, FP services, health education, environmental and occupational health services, and disease control activities. CHWs conduct home visits. The Health House facilitates referrals to higher levels of care. An annual census of the population is also conducted.<sup>5</sup>

Specific CHW roles and responsibilities include vaccination, growth monitoring, IMCI, breastfeeding promotion, and nutrition support for infants and children. ANC and PNC are provided along with FP services, treatment of minor illnesses, and first aid. CHWs provide care for the elderly, oral health care, care of young people at school, and occupational health. CHWs receive a salary that is approximately one-sixth of a physician’s salary.<sup>6</sup>

## What About the Community’s Role?

Community engagement in health promotion activities became part of the policy agenda in 2004.<sup>5</sup> Promotion of community participation and promotion of collaboration at the local level of other social sector programs with health programs is part of the role of CHWs.

## How Does Iran Select, Train, and Retain the Community Health Workers?

Selection and recruitment of CHWs (*behvarzs*) in Iran strongly reflects the WHO definition of CHWs as “members of the communities where they work [who] are selected by their communities.”<sup>7</sup> Local people, including religious leaders and families, are involved in the

selection of *behvarzs*. By 2004, a more formal process involving *behvarz* recruitment committees had been established in each district to assess vacancies and to find the most appropriate candidates using local media. A written examination and interview with the candidates are the final steps of *behvarz* recruitment.

Qualifications for *behvarz* candidates include a high school degree. Since 2005, more and more are being selected who have undergraduate university degrees in a health-related field. Both men and women are eligible. *Behvarz* candidates have to be resident in the rural area for at least 1 year. If there is no applicant from the main village, applicants from neighboring villages can be recruited.<sup>5</sup> Moreover, to promote long-term retention of *behvarzs* in rural areas, priority is given to the local candidates or to female candidates whose husbands have a permanent job in the village. The appointment of *behvarzs* should be confirmed by a committee consisting of representatives of the *Behvarz* Training Center, the district PHC division, and the local rural council.

District *Behvarz* Training Centers, which are part of the district health system, provide pre-service as well as in-service training to *behvarzs*.<sup>8</sup> The *behvarz* training program consists of theoretical and practical coursework over a 2-year period as well as clinical placements in Health Houses and rural health centers. *Behvarz* trainers have university degrees in family health, disease management, environmental health, midwifery, and nursing. Training courses are held twice a year for 7–15 *behvarzs*. Students receive free training and financial support (free accommodation, meals, transport) throughout the 2-year period of their training. In return, they are formally obliged to remain in and serve at the village for a minimum of 4 years after the completion of their study.

An important policy change has been the inclusion of *behvarz* training at the university level. The rationales for this change were the following:

- Provision of *behvarz* training at the university level will encourage a larger number of rural high school graduates to choose *behvarz* as their future job.
- A better-educated *behvarz* is more accepted by the community and can provide higher-quality health care to rural families.

The course is still 2 years long and leads to an undergraduate degree. Course topics are constantly under review. In 2006, several new topics—including health education, oral health, elderly health, research methods and problem solving, introduction to statistics, intersectoral collaboration, and natural disasters—were added to the training material. Other new topics include the health system and rural communities, social determinants of health and well-being, communication skills, human rights, and cultural beliefs. These new topics demonstrate a policy shift toward a more comprehensive notion of PHC in Iran.

### How Does Iran Supervise Its *behvarzs*?

Regular supervisory visits to Health Houses are planned and performed by staff from rural primary health centers. In addition, provincial and national teams evaluate program effectiveness and quality of care. A number of checklists which are designed by provincial and national health deputies are used to check

- Data recording,
- The *behvarz's* knowledge,
- Drug supplies and equipment, and
- Work-related problems and suggestions identified by the *behvarzs* themselves.

A recent approach to CHW collaboration in Iran is the *behvarz* council, established in 2006 with the aim of engaging *behvarzs* in problem identification, problem solving, knowledge transfer, and policymaking. *Behvarz* councils have been established at different levels of the health system, from the local health center to the district, provincial, and national levels. *Behvarz* council meetings are held on a regular basis to discuss a broad range of issues concerning the *behvarzs*' work, such as recent policies, *behvarzs*' viewpoints about in-service trainings, work-related problems, and recommendations to overcome problems. Meeting minutes and the final report are submitted to the higher-level council for further follow-up. *Behvarzs*' representatives are responsible for transferring ideas and solutions to other team members and for following up on issues raised in the meeting.

### How Is the Program Financed?

Because the CHW program is an integral component of Iran's PHC system, financing of these workers is stipulated by national health planning regulations.<sup>5</sup>

### What Are the Program's Demonstrated Impact and Continuing Challenges?

After almost 3 decades, the *behvarz* program in Iran has contributed to significant progress for many health indicators. In particular, the gap between rural and urban areas in terms of various morbidity and mortality indicators has narrowed considerably. IMR per 1,000 live births in 1976 was at 60.4 in urban Iran and 123.7 in rural Iran. Since the development of PHC and the *behvarz* program, the IMR per 1,000 live births in 2000 was at 27.7 in urban Iran and 30.2 in rural Iran, showing a distinct improvement.<sup>9</sup>

Studies have examined the job satisfaction of *behvarzs* and the contribution of *behvarzs* to rural health outcomes.<sup>10-14</sup> It has been suggested that the significant improvement in rural health outcomes is strongly related to the performance of community-friendly health workers, although these improvements are unlikely to have been achieved through PHC alone; the period also saw economic growth, a rise in literacy rate, and improvement in environmental services such as access to safe water and sanitation.<sup>11</sup> Common challenges cited by *behvarzs* included insufficient support systems; inadequate infrastructural support such as Health House facilities, physical space, and maintenance; lack of recognition by higher authorities; and the level of incentives.<sup>5</sup> Despite formal supervisory mechanisms being in place, as revealed in policy documents, poor-quality supervision was one of the barriers reported by *behvarzs*. In most cases, supervisory teams do not provide sufficient technical and emotional support and give too much attention to deficiencies.

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# NEPAL'S FRONTLINE HEALTH WORKERS\*\*\*\*

## Summary

### Background

The first Nepal Health Sector Program (NHSP) was implemented in 2004 to 2009. It worked to provide equitable access to free basic health services.



### Implementation

Each health facility has, in addition to one professional health worker, one VHW, one MCH Worker (MCHW), and usually nine (but sometimes more) Female CHVs (FCHVs) to serve a catchment population of 5,000–10,000 people.

### Roles/Responsibilities

Each of the three types of CHWs has a defined scope of work. The MCHWs are full-time employees who offer reproductive services for women. The VHWs are also full-time workers, and they offer family-oriented services such as immunizations and management of newborn infections. The FCHVs are part-time volunteers who provide basic services and health education.

### Incentives

MCHWs and VHWs are formally employed and paid by the government for their services. Motivating factors for FCHVs include nonfinancial incentives like a clothing allowance and community recognition.

### Supervision

VHWs and MCHWs supervise the FCHVs who work in their catchment areas. VHWs and MCHWs are responsible for resupplying the FCHVs and for providing support, advice, and feedback during monthly supervision visits.

### Impact

Among low-income countries, Nepal has been a global leader in reducing its under-5 mortality rate, its MMR, and its fertility rate. In fact, it achieved the MDGs for child health and for maternal health in 2010. There is widespread agreement that CHWs in Nepal, particularly the FCHVs, have played an important role in achieving these important goals.

## What Is the Historical Context of Nepal's Community Health Worker Program?

The FCHV Program began in 1988, but faced early difficulties such as a lack of well-trained volunteers, a lack of supplies, and an inability to provide locally desired services, not to mention the challenges of working in mountainous areas with a highly dispersed rural population often reachable only by foot.<sup>1</sup> In the 1990s, the National Vitamin A Program began to work with FCHVs to distribute vitamin A to all children 6–59 months of age.<sup>2</sup> The FCHVs' role was further

\*\*\*\* This case study was written by Rose Zulliger, a student in the Johns Hopkins Bloomberg School of Public Health.

solidified in 1991 with the development of the first National Health Policy under democratic rule. The policy restructured the health system to bring health services closer to the people through health posts and sub-posts, vertically integrated programs, and the development of a new cadre of frontline workers, the MCHWs.<sup>3</sup>

The first NHSP from 2004 to 2009 was developed to increase equality of access and to improve health outcomes. It also sought to coordinate external donors to improve aid effectiveness. In 2006, an Interim Constitution was developed that defined the rights of Nepalis to “free basic health services,” among other rights.<sup>4</sup>

Following the success of the first NHSP, Nepal developed a second NHSP for 2010–2015, which set forth the following goals:<sup>4</sup>

- To increase access to and utilization of quality essential health care services
- To reduce cultural and economic barriers to accessing health care services and harmful cultural practices, in partnership with non-state actors
- To improve the health system to achieve universal coverage of essential health services

The second NHSP describes the need to scale up FCHV services and to increase the demand for formal health services such as institutional delivery. A broad range of goals are also described to improve overall health service functionality, such as improved financial management, increased timeliness of procurement, and increased governmental financing of health services.

## **What Are Nepal’s Health Needs?**

Nepal is a country with immense health needs and substantial barriers to service delivery. It is a very poor country and most rural inhabitants live in mountainous areas. Service delivery within Nepal is complex given the country’s geography. For example, 40% of individuals in the Mountain Region have to travel 1–4 hours to reach their closest health facility.

Nonetheless, substantial progress has been made in health outcomes over the past 20 years, such as an under-5 mortality rate of 48 per 1,000 live births in 2011 compared to 135 in 1990, but challenges remain. For example, nearly half (41%) of all children younger than 5 years of age are stunted from chronic malnutrition. Although health outcomes and service usage have become more equitable across castes, ethnic groups, and wealth quintiles, major disparities still remain. For example, women in the highest income quintile are 12 times more likely to have a trained health worker attend their delivery than women in the poorest quintile.<sup>4</sup>

TB is an additional challenge in Nepal: approximately 45% of the population has latent TB and 40,000 people each year develop active disease.<sup>4</sup> There is also a chronic shortage of health workers in Nepal.<sup>5</sup>

As mentioned previously, the National Health Policy of 1991 restructured the health system to bring health services closer to the people by constructing health posts and sub-posts and introducing a new cadre of workers, the MCHWs.<sup>6</sup> An effort was also made to integrate vertical programs (e.g., immunization and FP) at the district level. The health system in Nepal continues to be centralized and confronts many challenges regarding human resources, including low worker retention, low productivity and morale, and high turnover.<sup>5</sup>

## **What Type of Program Has Been Implemented?**

VHWs, MCHWs, and FCHVs are all based out of local health facilities that serve catchment populations of 5,000–10,000 people. Each health facility has one professional health worker, one VHW, one MCHW, and usually nine (but sometimes more than nine) FCHVs.<sup>7</sup> These cadres

work closely together, supporting one another's scope of work. For example, FCHVs mobilize the communities for immunization by VHWs while FCHVs distribute vitamin A with the logistical support of the other cadres.<sup>7</sup>

FCHVs are frontline, part-time service providers who work an average of 8 hours each week.<sup>8</sup> They receive some financial compensation for certain functions, but they are predominantly volunteers. There is, however, currently discussion regarding provision of cash incentives and some FCHVs are asking for salaries (Sabina Pradham, personal communication, 2012). MCHWs are full-time salaried government employees (R Shesthra, personal communication).

FCHVs primarily promote healthy behavior through motivation and health education,<sup>4</sup> but they also mobilize communities to participate in immunization campaigns, detect and treat common childhood illnesses, provide medications for DOT for TB, distribute ORS packets and zinc for treatment of childhood diarrhea, and treat children with symptoms of pneumonia with cotrimoxazole tablets.<sup>1,2,4,9</sup>

Furthermore, FCHVs are now involved in reproductive and maternal health care through distribution of FP supplies and the dispensation of misoprostol, a tablet taken immediately after childbirth to reduce the risk of postpartum hemorrhage. FCHVs also provide community education and counseling to facilitate healthy practices and generate demand for maternal, neonatal, and child health services.<sup>6</sup> FCHVs are currently being trained to place an antiseptic on the umbilical cord immediately after birth as well as to resuscitate newborns who have birth asphyxia.<sup>4</sup>

MCHWs are full-time workers whose services include FP, treatment of patients at outreach clinics, clinical case management of childhood illnesses, health education/promotion, and participation in immunization and vitamin A campaigns. They also facilitate referrals and are responsible for the supervision of FCHVs.<sup>6</sup>

VHWs are also full-time workers whose services are similar to those offered by MCHWs.<sup>7</sup> These include provision of immunizations, management of newborn infections, and supervision of FCHVs.<sup>6</sup>

### **What About the Community's Role?**

Women's groups and local Village Development Committees (VDCs) are highly involved in the selection and oversight of FCHVs. Women's groups are also expected to discuss FP and to provide information to other women who are not in the groups. There have been challenges with some women's groups that did not function well, though, so guidelines were developed on how to strengthen women's groups. Following the development of these guidelines, a pilot program was implemented that improved the functioning of women's groups and provided increased support to FCHVs. These groups also became more aware of their authority to remove FCHVs. New guidelines have now been finalized and are being implemented in the western part of the country; they will later be scaled up nationally (S Pradhan, personal communication, 2012).

There should be a VDC everywhere FCHVs work. There are at least nine FCHVs associated with every VDC, but at times there may be as many as 50, depending on the population for which the VDC is responsible (S Pradhan, personal communication, 2012). There are also local FCHV associations, but none of these are fully representative of all FCHVs or national in scale.<sup>10</sup> There are local health committees in Nepal that assist with FCHV selection and oversight, but they are not involved with MCHW selection.

## How Does Nepal Select, Train, and Retain Its Community Health Workers?

The selection criteria for FCHVs are that they should be women aged 25–45 who are married with children, and preference is given to those who are literate and who are from or residing in the local community. In practice, FCHVs are often illiterate.<sup>11</sup> FCHVs undergo an initial 18 days of training with 5 days of refresher training every 5 years.<sup>4</sup>

MCHWs are women from or residing in the local community who have a 10th-grade education. VHWs can be male or female, but they must be literate, and they are recruited locally. MCHWs and VHWs both have an initial training of about 3 months.<sup>7</sup>

Compensation of FCHVs has been a very controversial component of the program because "there is a balance to be struck between compensating the women for the real financial and time costs that they incur in carrying out their duties, without losing the spirit of voluntary service to the community."<sup>12</sup> Initially, FCHVs were paid a monthly stipend, but this was not sustainable and the stipend was discontinued.<sup>10</sup>

FCHVs receive an incentive for timely retirement at the age of 60 (although many do not want to retire). They also receive free services from Nepal's Ex-Servicemen Contributory Health Scheme, which provides medical insurance for all ex-service personnel eligible for pension, as well as the serviceperson's spouse and dependent children.<sup>12</sup> In addition, FCHVs are given an identification card and an annual day of honor in recognition of their service to the community.<sup>10</sup> They are currently requesting access to income-generation schemes, free schooling for their children, and health insurance (S Pradhan, personal communication, 2012). A 2010 study by Glenton and colleagues explored policymakers', program managers', and FCHVs' perceptions of motivation and incentives. The study highlighted the need for "context-specific incentives" for FCHVs.<sup>10</sup> Despite being staffed by volunteers, the program has very low attrition rates, with less than 5% turnover each year.

A fund was developed by the Nepalese government in 2008–2009 that provided 50,000 Nepalese rupees (approximately US\$600) for each of the 3,914 VDCs. The government is contributing an additional 10,000 rupees (approximately \$120) to each of these funds every year. The interest from this endowment fund can be accessed by the FCHVs to support income-generation activities. Early evidence shows the program to be successful, although there are challenges with accounting at the village level (S Pradhan, personal communication, 2012).<sup>4</sup> MCHWs and VHWs are formally employed and paid by the government for their services.<sup>13</sup>

## How Does Nepal Supervise Its Female Community Health Volunteers?

VHWs and MCHWs supervise the FCHVs that work in their catchment areas. They are responsible for providing the FCHVs with the supplies they need and for providing support, advice, and feedback during monthly supervision visits. Additionally, all FCHVs meet with their respective VDCs every 4 months to review progress.<sup>4</sup> Although the FCHVs receive commodities from their supervisors, there are many challenges with the supply system and the demand for commodities often exceeds the supply.<sup>7</sup>

Data, particularly program evaluations and research in the field, are highly influential in programmatic policy development and implementation. There are, however, many challenges with the current HMIS. The current registers are complicated and have 30–40 indicators, representing a burden for FCHVs. This burden, coupled with the low levels of literacy among FCHVs, have led to concerns regarding the quality of the data collected (S Pradhan, personal communication, 2012).

## How Is the Community Health Worker Program Financed?

VHWs and MCHWs are salaried staff of the MOH, so they receive their salary and benefits according to government rules and regulations. The costs of the FCHV program (basic training, refresher training, training materials, in-kind incentives, and so forth) are financed by donor agencies. Generally, the US Agency for International Development pays for the cost of training through its implementing partners (John Snow, Save the Children, Plan International, and others) and the United Nations Children's Fund (UNICEF) provides materials for training and patient education (R Shrestha, personal communication, 2013).

## What Are the Program's Demonstrated Impact and Continuing Challenges?

Nepal has made important progress in the past 20 years in improving health outcomes, particularly those related to the MDGs. The MMR has decreased from 539 deaths per 100,000 live births in 1991 to 229 in 2009, and the total fertility rate has decreased from 5.3 in 1991 to 2.9 in 2009. The under-5 mortality rate has had a similarly dramatic reduction, from 158 per 1,000 live births in 1991 to 50 in 2009.<sup>4</sup> A number of factors have contributed to the improved health outcomes, but there is widespread agreement that CHWs have made important contributions to these achievements.

Challenges faced by the FCHV program include growing expectations that FCHVs will provide more services without increased support or incentives; this may compromise retention and recruitment of new FCHVs.<sup>3</sup> Further, there are concerns that FCHV services are hampered by political affiliations and an aging workforce, problems with the supply chain, and a lack of human resources.<sup>3,14</sup>

Another challenge is the current process of gradually phasing out the VHW cadre, who are traditionally responsible for first-line supervision of FCHVs. The VHWs will be replaced with better-qualified Auxiliary Health Workers; however, the latter may be less likely to be local to the area they serve.<sup>4</sup>

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# PAKISTAN'S LADY HEALTH WORKER PROGRAM<sup>††††</sup>

## Summary

### Background

The Lady Health Worker Program (LHWP) was established in 1994, with the goal of providing primary care services to underserved populations in rural and urban areas. In 2003, the national strategic plan set two goals: (1) improving quality of services and (2) expanding coverage of the LHWP through the deployment of 100,000 Lady Health Workers (LHWs) by 2005.



### Implementation

LHWs are deployed throughout all five provinces<sup>####</sup> of Pakistan. These workers are attached to a local health facility, but they are primarily community based, working from their homes.

### Training

LHWs are trained in classrooms for 3 months and then have 1 year of on-the-job training. This should include 1 week of training per month for a period of 12 months as well as 15 days of refresher training each year, although there is substantial variation in training patterns across provinces.

### Roles/Responsibilities

The scope of services provided by LHWs has grown from an initial focus on MCH to include participation in large health campaigns, newborn care, community management of TB, and health education on HIV/AIDS. LHWs visit an average of 27 households a week, providing advice and conducting consultations with an average of 22 individuals each week.

### Incentives

LHWs receive a salary of about \$343 per year. They are not supposed to engage in any other paid activity, although some do. The LHW stipend is often the only source of family income and is a critical family support.

### Supervision

Supervision is highly organized and tiered in the Pakistani LHWP. LHWs are each attached to a public health clinic and are supervised on a monthly basis by an LHW Supervisor (LHS). LHWs should have community-based supervision at least once a month in which LHSs meet with clients and with the LHWs, review the LHWs' work, and make a work plan for the next month.

<sup>††††</sup> This case study was written by Rose Zulliger, a student in the Johns Hopkins Bloomberg School of Public Health. Zulfikar Khan, Coordinator (Health System Strengthening), WHO, Pakistan, provided helpful comments on an earlier draft.

<sup>####</sup> Officially, Pakistan has four provinces, one territory, and one capital province. For the purpose of our discussion here, we will refer to all as provinces.

## Impact

Pakistan is lagging behind in its efforts to achieve the MDGs for MCH. Although the LHW Program has many positive aspects, the number of LHWs is still not sufficient to provide adequate coverage of services nationally. Thus, expansion of the program and continued efforts at program strengthening will be required to achieve a stronger impact.

## What Is the Historical Context of Pakistan's Community Health Worker Program?

Pakistan's support for PHC dates back to the country's signing of the 1978 Alma Ata Declaration.<sup>1</sup> In 1993, Pakistan established the Prime Minister's Program for Family Planning and Primary Health Care, which employed CHWs to provide PHC services in their communities. The program subsequently employed only female CHWs, and the LHWP was introduced in 1994.<sup>2</sup> The goal of the program was to reach rural areas and urban slums with a set of essential PHC services, including promotive, preventive, and curative services; to improve patient-provider interactions; to facilitate timely access to services; to increase contraceptive uptake; and, ultimately, to reduce poverty.<sup>1,3,4</sup> In 2000, the program was renamed the National Program for Family Planning and Primary Health Care, but it is still commonly called the Lady Health Worker Program (LHWP).<sup>5</sup>

The 2003–2011 Strategic Plan set two goals: (1) improving quality of services and (2) expanding coverage of the LHWP through the deployment of 100,000 LHWs by 2005. Key determinants of provision of high-quality service by LHWs include the following: selection based on merit; provision of professional knowledge and skills; supply with necessary medicines and other supplies; and adequate remuneration, performance management, and supervision. A management information system was also essential to assess and encourage quality performance and to facilitate informed programmatic decision-making.<sup>6</sup> The 2001–2011 National Health Policy described “investment in the health sector as a cornerstone of the government's poverty reduction plan.”<sup>3</sup>

The LHWP has evolved over time. The scope of services provided by LHWs has grown from an initial focus on MCH to now include participation in large health campaigns, newborn care, community management of TB, and health education on HIV/AIDS. LHWP activities have also been advertised in a series of mass media campaigns that promote community uptake of and respect for LHW services.<sup>7</sup>

## What Are Pakistan's Health Needs?

MCH indicators in Pakistan have lagged behind the same indicators in other South Asian countries. In 1991, the under-5 mortality rate was 117 deaths per 1,000 live births and the MMR was 533 maternal deaths per 100,000 live births.<sup>8</sup> Since then, Pakistan has made insufficient progress toward meeting MDG 4 (reducing under-5 mortality). The average annual rate of reduction from 1990 to 2010 was only 1.8% and there were 87 under-5 deaths per 1,000 live births in 2010. Pakistan is, however, making progress in meeting MDG 5 (for reducing maternal mortality) and the MMR has had an annual reduction of 3% from 1990 to 2010. In 2010, the MMR was 260 deaths per 100,000 live births.<sup>9</sup> Part of the high maternal mortality earlier was attributable to the high total fertility rate (5.4 children in 1991) and low access to health services; only 15% of women reported at least one ANC visit during their most recent pregnancy.<sup>8</sup> (The total fertility rate measures the average number of children a woman would have if she lived through her entire reproductive life at the age-specific rates of fertility in her country.) Health care access in Pakistan is further restricted by social and cultural barriers such as women's limited mobility outside of the home without an escort.<sup>10</sup>

## What Is the Existing Health Infrastructure?

There are three tiers of governance in the Pakistani public health system: federal, provincial, and district. The federal government historically was responsible for broader policies, planning, and budgeting as well as the HMIS. However, in 2011, the FMOH was dissolved and responsibility for health services was delegated to provinces, with the exception of a national Ministry of Regulation.<sup>11</sup>

Provinces are responsible for LHW allotment, training, and performance. The district level is responsible for allocation and supervision of LHWs.<sup>4,6</sup> All tiers of government are involved in the LHWP and LHWs are integral to service delivery of most community health initiatives in the country.<sup>8</sup>

There has been tremendous growth in the number of health care providers in Pakistan. For example, the number of physicians increased from 70,692 in 1995 to 127,859 in 2007, according to data from the Pakistan Medical and Dental Council and Pakistan Nursing Council.<sup>3</sup> There is also a private health care system in Pakistan that provides services for wealthier inhabitants.<sup>5</sup>

## What Type of Program Has Been Implemented?

LHWs are deployed across the nation in all five provinces of Pakistan.<sup>12</sup> These workers are attached to a local health facility, but they are primarily community based, working from their homes.<sup>3</sup> The homes of LHWs are called Health Houses; emergency treatment and care are provided therein.<sup>1</sup> An LHW is responsible for approximately 1,000 people, with priority given to couples of reproductive age and children younger than 5 years.

An external evaluation of the LHWP was carried out in 2008 and reported the following in 2009:

- LHWs visit an average of 27 households a week.
- LHWs provide advice and conduct consultations with an average of 22 individuals each week.
- 85% of households reported that they were visited by an LHW in the previous 3 months.
- 80% of LHWs reported that they worked 6–7 days a week.
- Most LHWs worked an average of 5 hours a day.<sup>2</sup>

The LHWP offers professional advancement opportunities for LHWs. LHWs can receive additional training to serve as an LHS, which is an incentive for good performance.<sup>5</sup>

LHWs have a broad scope of work that includes 22 different tasks.<sup>1</sup> These include promotion of use of contraceptives, provision of FP services (distribution of oral contraceptives and condoms and provision of injectable contraceptives), ANC (alongside traditional and formal medical birth attendants), treatment of illnesses (such as diarrhea, malaria, acute respiratory tract infection, and intestinal worms), and referral of community members with more serious illnesses.<sup>3,4,8,10</sup> In addition, LHWs are expected to provide DOT for TB patients, carry out surveillance for cases of polio, and keep comprehensive records for all of their patients.<sup>1</sup>

The most frequent LHW services, as reported by the 2008 survey of clients, were hygiene promotion, vaccination promotion, and FP services.<sup>2</sup> Seventeen percent of households reported that they consulted with an LHW for curative services.<sup>2</sup> LHWs also frequently support other health campaigns such as polio campaigns.<sup>8</sup>

A 2000 evaluation estimated that 150,000 LHWs were needed to obtain optimal coverage in the country.<sup>3</sup> This led to a strategic plan in 2003 to have 100,000 functioning LHWs by 2005. This

goal was still not achieved by 2008. In 2003, there were a total of 75,038 LHWs working or in training and the number grew to 83,280 in 2005 and 90,074 in 2008.<sup>6</sup>

The expansion of the program from 2000 to 2008 increased LHW coverage in more rural and poorer areas, but the program still does not reach the most disadvantaged areas. Coverage rates have, however, improved.<sup>2</sup> In 2006, the LHWP covered 60% to 70% of Pakistanis in rural areas.<sup>4</sup> There are now plans to double the number of LHWs.<sup>8</sup>

### **What About the Local Community's Role?**

There is a community member on each LHW selection committee and on each LHS selection committee. The community is also involved in programmatic decision-making, planning, and M&E. LHWs are expected to link the community to formal health services and to be members of the community where they work. LHWs also provide a range of community development services and participate in community meetings.<sup>5</sup> LHWs are expected to establish a village health committee, which has two parts—a women's health committee and a men's health committee.

### **How Does Pakistan Select, Train, and Retain Lady Health Workers?**

LHWs are women who have a minimum of 8 years of education. This requirement has been a challenge in some areas where there are no or few women with this level of education.<sup>8</sup> They also must be between 18 and 50 years old; reside in, be accepted by, and be recommended by the communities they serve; and preferably be married with children. LHWs must also be willing to work from their homes. Preference is given to women who have experience in community development.<sup>6</sup> Of LHWs included in a 2008 external evaluation of the program, 66% were younger than 35 years of age, 97% resided in the community where they worked, 66% were currently married, and the average education level was 9.9 years of schooling.<sup>2</sup>

LHWs are selected using a clearly delineated process. LHW posts are advertised; applicants are then interviewed and selected based on the above criteria by a selection committee. The committee is expected to comprise the following members: a Medical-Officer-In-Charge who is the chairman, a female Medical Officer, a Lady Health Visitor (female medical technician), a Dispenser (male health technician), and a community member. They also must be recommended by the councilor, who is a local elected official, and provide a written affidavit that they will perform their duties for at least 1 year after the completion of their training.<sup>12</sup> The selected LHW is then formally appointed by the District Health Officer.<sup>6</sup> LHWs are then initially employed for 1 year, although many continue the work long after the first year.<sup>5</sup>

LHWs receive 3 months of classroom training in PHC and then have 1 year of on-the-job training. This should include 1 week of training per month for a period of 12 months, followed by 15 days of refresher training each year, although there is substantial variation in training patterns across provinces.<sup>1,2,6</sup> The Federal Project Implementation Unit is responsible for approval of all LHW training and, with the FMOH, develops the training curriculum, organizes and coordinates training, and trains master trainers; Provincial and District Project Implementation Units are responsible for the local trainings.<sup>6</sup>

The fourth external programmatic review reported in 2009 that 100% of the LHWs had attended the initial training and 96% had some kind of refresher training in 2008. Eighty percent of LHWs had attended training on child health in the previous year. Seventy-two percent had obtained training on counseling cards, 70% on optimal birth spacing intervals, and 62% on injectable contraceptives during 2008. Eighty-eight percent reported receiving training by male medical doctors and 67% reported receiving training by Lady Health Visitors. Eighty-two percent of LHWs had at least one female trainer.<sup>2</sup>

Recently, training has focused more on counseling skills and competency, although challenges persist. LHW knowledge increased between the third and fourth external programmatic evaluations, but according to the findings of the 2008 survey, there were very low levels of knowledge on certain subjects. For example, only 9% of LHWs stated the correct dosage of chloroquine for children despite having access to manuals and medicine boxes, and only 50% could determine the appropriate weight of a child from a standard-growth monitoring card.<sup>2</sup> Additionally, some LHWs felt they had insufficient communication skills, particularly for addressing difficult topics such as communication with men on FP, establishment of village health committees, and discussion of sexually transmitted infections. These LHWs felt they needed additional training through role plays as well as additional information, education, and communication materials.<sup>7</sup>

LHWs receive a salary of about \$343 per year and are not supposed to engage in any other paid activity, although some do.<sup>3</sup> The LHW stipend is often the only source of family income and is a critical family support.<sup>8</sup> Salaries are paid monthly into the LHWs' personal bank accounts, but delays in LHW remuneration are common. Additionally, 9% of patients reported that they paid their LHW for services, which are supposed to be free.<sup>2</sup>

### **How Are Lady Health Workers Supervised?**

Supervision is highly organized and tiered in the Pakistani LHWP. LHWs are each attached to a public health clinic and are supervised on a monthly basis by an LHS.<sup>3</sup> LHSs are then regularly supervised by the LHWP district coordinator and assistant coordinator. LHWs should have supervision take place in the community at least once a month, at which time LHSs meet with clients and with the LHWs, review the LHWs' work, and make a work plan for the next month.<sup>2</sup>

The evaluation of the LHWP found that 80% of LHWs had had a supervision meeting in the previous month. Ninety percent of supervision occurred in the village, and in 59% of the cases, the supervisor met with clients of the LHW. Ninety-one percent of LHWs also reported that they had had meetings in the health facility within the previous 30 days, and 98% reported that they had produced a work plan for the previous month. Supervisors frequently used checklists during the meetings and scored LHW performance, although often LHWs were not told their score.<sup>2</sup>

This same evaluation also assessed the characteristics and knowledge of the LHSs. LHSs are required to have passed 12th grade, but 66% had achieved a higher level by completely graduating or even obtaining some postgraduate education. The LHSs are, on average, 32.5 years old; 69% are currently married. LHSs receive 3 months of full-time basic training at the District Health Office, followed by 1 week per month of classes for the next 9 months. According to the evaluation, 100% of LHSs had attended the 3-month training and 79% had received at least some additional training. They generally had high levels of knowledge, although on a few subjects, their level of knowledge was quite low. LHSs were each responsible for 23 LHWs on average. Sixty percent had full-time access to a vehicle, although not all receive their petrol, oil, and lubricants allowance.<sup>2</sup>

LHW performance is monitored by provincial and district coordinators, and the LHWP also has its own monitoring system.<sup>3</sup> The Monitoring Information System is the monitoring system implemented by the LHWP using standardized monthly reports.<sup>6</sup> LHWs keep comprehensive health records on their community and track individual care and community health indicators.<sup>1</sup> This information is consolidated in monthly reports, and data are presented by managers and inspectors at regular meetings held at all levels to assess programmatic performance and to facilitate discussion of possible resolutions to identified barriers hindering successful program implementation.<sup>6</sup>

A 2006 rapid assessment of the monitoring system by the World Bank found that there were substantial issues with the system, including irregular and inappropriate quality checks, inaccuracies in the aggregation of LHW reports, and poor understanding and analysis of the data. The 2008 external review found that key indicators such as annual recruitment of LHWs were not collected, internal inconsistencies in the data persisted, and there was little demand for quality information from program managers. The review did find that progress had been made in monthly reporting.<sup>6</sup>

### **How Is the Lady Health Worker Program Financed?**

The Pakistani government is the largest funder of the LHWP, but the program has been underfunded since its inception. The LHWP cost \$155 million in its first 8 years (through 2003) and was largely supported by government funding, with only 11% provided by external donors. In 2004, \$356.6 million was approved for extension of the program from 2003 to 2008. Overall, the program spent approximately \$570 per LHW per year between 2003 and 2008.<sup>3</sup>

Approximately 70% of LHWP costs are for LHW stipends, drugs, and contraceptives; and additional 4% are for training.<sup>6,13</sup> LHW salary costs increased 31% between 2003 and 2008, leading to a reduction in other expenditures, especially for LHW kit supplies.<sup>13</sup> Other estimates indicate that the cost per LHW (including her salary, supplies, training, supervision, and administration) is approximately \$745 per year (or 75 cents per person served per year).<sup>3</sup>

### **What Are the Program's Demonstrated Impact and Continuing Challenges?**

The LHWP has undergone four external evaluations since its inception, most recently in 2008. The 2008 evaluation included a nationally representative survey of 554 LHWs. There was also a survey of 5,752 households with varying levels of exposure to LHWs (ranging from unexposed households to those that had extensive exposure to LHWs) and extensive qualitative interviews with programmatic supervisors and managers, medical staff, and community groups. The evaluation found that overall LHW performance, defined as the percentage of households who received services from LHWs, improved between 2000 and 2008. Coverage was similar in rural and urban areas. Higher LHW performance was associated with longer LHW experience, increased hours worked in the previous week, and LHW reports indicating that LHWs had a higher level of autonomy in the home, attendance at training, regular meetings with supervisors, and work in communities with Women's Health Committees, among other factors.<sup>2</sup> Ninety percent of community members surveyed indicated that there were health improvements associated with the LHWs' work.<sup>6</sup>

The 2008 evaluation assessed improvements in health indicators and found improvements in tetanus toxoid coverage, percentage of deliveries attended, percentage of children fully immunized, awareness in mothers of how to prepare ORS, and levels of exclusive breastfeeding. There were, however, some negative trends from 2000 to 2008, such as decreases in maternal knowledge of how to prevent diarrhea and a persistently low prevalence (less than 10%) of certain important health-related behaviors such as purifying water prior to drinking it.<sup>2</sup>

The LHWP is highly accepted, and the LHWs have proven adept at taking on additional tasks.<sup>1</sup> The population served by LHWs had substantially better health than the population without LHWs, including an 11% increased likelihood of using modern FP and a 15% increase in immunization coverage among children younger than 3 years of age. The effect of LHW services was generally greatest in poorer households. The program has, however, had little impact on skilled attendance at delivery, growth monitoring, and incidence of diarrhea and respiratory infections in children.<sup>2</sup>

The effect of LHW services has also been demonstrated in smaller, intervention studies. In 2008, Bhutta and colleagues assessed the feasibility of a package of perinatal health care

interventions delivered by LHWs and TBAs.<sup>14</sup> The researchers found that the villages where LHWs and TBAs were linked and received a brief training on newborn care and service delivery had significant reductions in the number of stillbirths and in the neonatal mortality rate. A different study of the impact of the LHWP on contraceptive use found that women in LHW service areas were 50% more likely to use modern reversible contraceptives than those who did not receive LHW services.<sup>10</sup>

Some of the challenges facing the Pakistan LHWP are underfunding and insufficient coverage, with up to 40% of eligible families still not being served by an LHW.<sup>3</sup> Other challenges include low-quality LHW training, poor supervision, inadequate supply systems (especially for drugs and contraceptives), and lack of timely payment of salary. Broader health system challenges include shortages and misdistribution of human resources for health (HRH), weak management, absence of quality-control systems, and a lack of coordination across HRH stakeholders.<sup>11</sup>

There has also been dissatisfaction from LHWs, leading to increased organization of LHWs and demands for additional formalization and benefits. LHWs also have become resistant to participating in intermittent campaigns—such as the polio eradication campaigns—because they had become vulnerable to violence; 11 LHWs were abducted and beaten when they were participating in a 2007 vaccination campaign. LHW boycotts of a 2010 campaign led to a subsequent Supreme Court order for a higher salary (7,000 Pakistani rupees each month).<sup>8</sup> There are concerns, though, that the expansion in LHWs' responsibilities has increased their job-related stress.<sup>15</sup>

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# RWANDA'S COMMUNITY HEALTH WORKER PROGRAM<sup>§§§§</sup>



## Summary

### Background

The Rwanda CHW Program was established in 1995, aiming at increasing uptake of essential maternal and child clinical services through education of pregnant women, promotion of healthy behaviors, and follow-up and linkages to health services.<sup>1</sup> An estimated 45,000 CHWs operating at the village level provide the first line of health service delivery. There are three CHWs in each village: a male-female CHW pair (called *binômes*) providing basic care and integrated community case management (iCCM) of childhood illness, and a CHW in charge of maternal health, called an ASM (*Agent de Sante Maternelle*).<sup>1</sup>



### Implementation

When the MOH endorsed the program in 1995, there were approximately 12,000 CHWs. By 2005, the program had grown to over 45,000 CHWs. From 2005, after the decentralization policy had been implemented nationally, the MOH increased efforts to improve MCH services, and between 2008 and 2011, Rwanda introduced iCCM of childhood illness (for childhood pneumonia, diarrhea, and malaria). In 2010, the Government of Rwanda introduced FP as a component of the national community health policy.

### Training

Although it is acknowledged in the Community Health Development Strategy that the CHWs in Rwanda should be appropriately trained,<sup>1</sup> documentation detailing the duration, format, and content of overall training is difficult to find. However, in-depth information is available about CHW training for specific programs such as community-based provision of FP and community-based IMCI.

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<sup>§§§§</sup> Lauren Crigler is the author of this case study.

## Roles/Responsibilities

Three CHWs, with clearly defined roles and responsibilities, operate in each village of approximately 100–150 households.<sup>1</sup> The ASM identifies pregnant women, makes regular follow-ups during and after pregnancy, and ensures deliveries in health facilities where skilled health workers are available. *Binômes* provide iCCM (assessment, classification, and treatment or referral of diarrhea, pneumonia, malaria, and malnutrition in children younger than 5 years of age), community-based provision of contraceptives, DOT for TB, prevention of NCDs, and preventive and behavior change activities.

## Incentives

Although CHWs in Rwanda are volunteers, in 2009, the MOH introduced community performance-based financing (CPBF) as a way to motivate CHWs.<sup>2</sup> CHW Cooperatives are organized groups of CHWs that receive and share funds from the MOH based on the achievement of specific targets established by the MOH. By linking incentives to performance, the MOH hoped to improve quality and utilization of health services.<sup>2</sup>

## Supervision

Cell coordinators, sometimes assisted by an assistant cell coordinator, visit CHWs to monitor activities, monitor supplies and drugs, and compile all reports from CHWs and submit the information to the In-Charge of Community Health on a quarterly basis. As part of this supervision, cell coordinators also make house visits to see how the CHWs are performing their activities there and verify reports that have been sent by CHWs using mobile phone text messaging (SMS) to the health center.<sup>1</sup> In addition to this line of supervision, the CHW cooperatives also perform an evaluative function and CHWs are incentivized based on the performance of the cooperative.

## Impact

Rwanda is close to being on track to achieving its MDGs for MCH by 2015. Its CHW program has played an important role in expanding coverage of basic services, particularly community-based FP services and treatment of childhood malaria and pneumonia.

## What Is the Historical Context of Rwanda's Community Health Worker Program?

Rwanda started its community health program in 1995 after the genocide. There are four main objectives of the program: (1) strengthen the capacity of decentralized structures to allow community health service delivery; (2) strengthen the participation of community members in community health activities; (3) strengthen CHW motivation through CPBF to improve health service delivery; and (4) strengthen coordination of community health services at the central, district, health center, and community levels.<sup>1</sup>

When the MOH endorsed the program in 1995, there were approximately 12,000 CHWs. By 2005, the program had grown to over 45,000 CHWs. From 2005, after the decentralization policy had been implemented nationally, the MOH increased efforts to train and provide supplies to CHWs to deliver MCH services. The program has since grown to include an integrated service package that includes malnutrition screening, treatment of TB patients with DOT, prevention of NCDs, community-based provision of contraceptives, and promotion of healthy behaviors and practices including hygiene, sanitation, and family gardens.<sup>1</sup>

## What Are Rwanda's Health Needs?

Overall, the Government of Rwanda has demonstrated commitment to the MDGs through its health sector programs and various policies. Notable improvements have been achieved in maternal health: 69% of deliveries are now assisted by a skilled provider, up from 39% in 2005; maternal mortality has declined from one of the highest in the world (1,071 deaths per 100,000

live births) in 2000 to 487 in 2010; and contraceptive use has increased from 10% in 2000 to 45% in 2010.<sup>3</sup> In addition, there has been a vast improvement in the nutritional status of children: between 2005 and 2010, the percentage of children who were underweight declined from 18% to 11% and the percentage of children who were stunted declined from 51% to 44%.<sup>3</sup> Infectious diseases—mainly malaria, ARIs, and intestinal parasites—remain the primary cause of outpatient morbidity.<sup>3</sup>

Although Rwanda has achieved great success in its health sector, it still faces major challenges that include reaching the most vulnerable populations, supporting adequately its CHWs, improving community participation, strengthening programs for NCD prevention, and expanding the financial contribution of the private sector to ensure financial self-reliance of health services.<sup>4</sup>

### What Is the Existing Health Infrastructure?

Health sector decentralization laws were implemented in 2005–2006. This led to health personnel and financial resources being decentralized to the district level and the MOH changing its role to a technical supervisor while district governments controlled health program implementation.<sup>3</sup> Significant authority and resources have been transferred from the district level to the health centers and posts within the district.<sup>3</sup> Health services are provided in communities, at health posts (HPs), health centers (HCs), district hospitals (DHs), and referral hospitals. Currently in Rwanda there are four referral hospitals, 42 district hospitals in 30 districts, and 438 health centers.<sup>3</sup> At the lowest level, those in charge of community health activities in the catchment areas of health centers supervise CHWs. The CHWs receive financial compensation through performance-based financing (PBF), determined by the number of essential health services provided. Thirty percent of the total PBF funds is shared among individual CHW members while 70% is deposited in the collective funds of CHW cooperatives. Within each district there are Health Center Committees that provide oversight of community health work, which is directly supervised by various units in each health center. These units include outreach, supervision, and financial control.<sup>1</sup>

### What Type of Program Has Been Implemented?

In each village of approximately 100–150 households, there is one maternal health CHW (ASM) and two multidisciplinary CHWs (*binômes*, or the man and woman working as a pair). CHWs are full-time, voluntary workers who play a very key role in extending services to Rwanda's village communities. The CHWs are supervised most directly by the cell coordinator and the in-charge of community services at the catchment-area health center. CHWs now use RapidSMS to submit reports and communicate alerts to the district level and to hospitals or health centers regarding any maternal or infant deaths, referrals, newly identified pregnant women, and newborns in the community.

As decentralization occurred beginning in 2005 and MCH is a top priority for the MOH, a huge focus was placed on basic MCH needs. ASMs have been trained to identify pregnant women, make regular follow-ups during and after pregnancy, and encourage deliveries in health facilities where skilled health workers are available. In addition to following up pregnant women and their newborns, the ASM also screens children for malnutrition, provides contraceptives (pills, injectables, cycle beads, and condoms), promotes prevention of NCDs through healthier lifestyles, and carries out household visits.<sup>1</sup> Between 2008 and 2011, Rwanda introduced iCCM of childhood illness (for childhood pneumonia, diarrhea, and malaria) nationwide. *Binômes* were trained and equipped to provide iCCM (including treatment with antibiotics, zinc, and antimalarials), to detect cases of acute illness in need of referral, and to submit monthly reports. In 2010, the Government of Rwanda introduced FP as a component of the national community health policy, and CHWs were trained not only to counsel but also to

provide contraceptive methods including pills, injectables, cycle beads (for use with natural FP), and condoms. This program was first piloted in three districts and later scaled nationwide.

## What About the Community's Role?

Community engagement is a key objective of Rwanda's community health strategy. There are many ways in which communities are involved in improving their health and their access to services; CHWs are but one strategy. Insofar as the CHWs are concerned, however, the community's only role is to recruit CHWs from their villages. Involving the community to a greater degree is a challenge that is documented in Rwanda's new health sector policy documents.<sup>5</sup>

## How Does Rwanda Select, Train, and Retain Its Community Health Workers?

CHWs come from the villages in which they live. They must be able to read and write and be between the ages of 20 and 50 years. They also must be willing to volunteer and be considered by their peers to be honest, reliable, and trustworthy.<sup>1</sup> They are elected by village members<sup>1</sup> in a process that involves gathering the volunteers and villagers on the last Saturday of the month (*Umuganda*, or community service day) and voting "with their feet" in a literal sense. The process has been described (in conversation) as one that involves community members lining up in front of the person they support. The individual with the most support is recruited.

Within each of the villages (*Umdugudu*), *Binômes* are trained in community-based IMCI by preparing them to be first responders to a number of common childhood illnesses, including pneumonia, diarrhea, and malaria. The CHWs are also trained on when and how to refer severe cases to the facility. IMCI refresher training is provided through a supportive supervision model, where the supervisor conducts training to strengthen the CHW's knowledge and skills in providing quality case management services in their communities.<sup>6</sup>

Another example of program-specific training is the ten-day training for community-based provision of FP services.<sup>7</sup> A total of 3,061 CHWs in three districts have received this training, which uses participatory methods, having CHWs brainstorm ideas and practice exercises such as role plays and performing rapid diagnosis tests for malaria.<sup>7</sup>

In 2001, prior to the introduction of performance-based incentives and CHW cooperatives, health workers in Rwanda had very low, fixed salaries that were distributed regardless of performance. This led to a demotivated and low-performing workforce.<sup>4</sup> In 2009, the MOH introduced CPBF as a way to motivate CHWs.<sup>2</sup> CHW Cooperatives are organized groups of CHWs that receive and share funds from the MOH based on the achievement of specific targets established by the MOH. Currently, 449 CHW cooperatives exist in Rwanda, with approximately half of these being formally registered and legally recognized.<sup>2</sup> Each health center in Rwanda supervises the CHWs that make up one CHW cooperative. By linking incentives to performance, the MOH hoped to improve quality and utilization of health services.<sup>2</sup> In 2009–2010, the Government of Rwanda piloted the CPBF, and saw a dramatic improvement in maternal health indicators. This demand-side model, which uses CHWs to ensure that women seek appropriate maternal care, led to marked improvements in reported indicators such as the number of deliveries attended by a trained provider and the number of ANC visits.<sup>2</sup>

## How Is the Program Financed?

Rwanda's health system financing originates from two main sources. On the supply side, the central treasury transfers funds to districts and health facilities. On the demand side, the system provides health insurance payments for documented services.<sup>3</sup> In recent years, much of the total health expenditures of the Government of Rwanda have come from external sources

such as the Global Fund to Fight AIDS, Tuberculosis and Malaria; PEPFAR (the President's Emergency Plan for AIDS Relief); and the President's Malaria Initiative. In 2011, 47% of the government's total health expenditures (\$407 million) was supplied by donors.<sup>3</sup>

However, the Government of Rwanda has increased its own spending on essential health services since 2005; spending is projected to reach 15% of the government's total budget by 2015.<sup>3</sup> Community-based health insurance schemes have allowed for 92% of the population to be insured. This has greatly increased access to health care service and drugs.<sup>3</sup>

### **What Are the Program's Demonstrated Impact and Continuing Challenges?**

The most notable achievements in the health sector include an increase in facility-based deliveries (from 45% to 69%), the introduction of maternal and child death audits at all health facilities, an increase in vaccination coverage (from 80% to 90% for coverage of the complete vaccination scheme), CHW follow-up of all pregnant women, and provision of community-based FP services.<sup>3</sup> CHWs are currently testing all suspected cases of malaria with a rapid diagnostic test and providing treatment when indicated, making it possible now to treat 91% of children younger than 5 years of age who have malaria within 24 hours.<sup>3</sup>

The challenges faced by the Rwanda CHW program are similar to challenges faced by CHW programs in other countries. These include (1) the financial and administrative difficulties in supporting and continuing to build the capacity of CHWs as they increase in number and as the scope of their work expands; (2) the challenge of supervising and effectively equipping CHWs to perform their duties; and (3) low community participation in the health sector and the strong influence of traditional beliefs and traditional medicines. As the number of CHWs has risen rapidly in Rwanda and as their tasks have increased, the Government of Rwanda faces a constant battle to increase the capacity of CHWs and to provide them with the equipment and supplies they need. Refresher trainings are too few and provision of essential equipment is delayed due to insufficient financial resources.<sup>4</sup> Field supervision of CHWs and the transfer of skills and knowledge to the communities to foster ownership and enhance sustainability is a continuing challenge.<sup>3</sup> Each CHW is supposed to be supervised by either the In-Charge of Community Health or the cell coordinator on monthly basis. However, recent findings show that supervisory visits occur only quarterly, if that.<sup>7</sup>

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## ZAMBIA'S COMMUNITY HEALTH ASSISTANT PROGRAM\*\*\*\*

### Summary

#### Background

The community HA program is an emerging national initiative to bring PHC as close to the home as possible. The first community HAs were trained during 2011–12 and deployed in late 2012. The Government of the Republic of Zambia (GRZ) aims to scale the program nationally to over 5,000 community HAs using a phased approach.<sup>1</sup>



#### Implementation

Community HAs are expected to split their time between the health post (20%) and community (80%) for household visits, community education, and health promotion activities.

#### Training

Community HAs attend one year of formalized pre-service training on prevention, health promotion, and curative care. The 12 training modules include theoretical and practical training components. The tutors at the community HA training school consist of well-experienced health professionals.

#### Roles/Responsibilities

The main responsibilities of the community HAs are health promotion and disease prevention. Community HAs are also trained in basic curative services that they can provide at the health post and in the community. In addition, they are responsible for identifying patients who are in need of referral to the next level in the health system, usually a health center.

#### Incentives

Community HAs receive a salary of 2,600 ZMK per month (US\$465) and other civil servant benefits. They are also provided with a bicycle, mobile phone, shoes, an umbrella, a backpack, and a uniform—all of which are GRZ property.

#### Supervision

About half of community HAs are supervised by the in-charge at the nearest rural health center. The remainder of the community HAs work from a health post where one or more additional highly trained staff members are posted. In this case, one of these staff members is designated as the community HA supervisor. Supervision is designed to be conducted at the

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health post and in the community level on a monthly basis using standardized supervisory checklists.

## Impact

Since this is a new program that began only in 2011, there is no evidence yet of impact. An initial independent assessment will be carried out in late 2014.

## What is the Historical Context of Zambia's Community Health Assistant Program?

Zambia is a landlocked country in Southern Africa with a predominantly rurally based population of 14 million.<sup>2</sup> The majority (81%) of Zambia's facilities are within the public sector. Zambia is faced with a severe HRH crisis due to an overall shortage in the number of health care workers (0.93 clinical staff per 1,000 people), an urban/rural misdistribution of the workforce, and an imbalanced skills mix.<sup>3,4</sup> Beginning with the 2006–2010 Zambia National Health Strategic Plan, the HRH crisis was officially recognized as an MOH priority.<sup>5</sup> Zambia estimated it has less than half as many health care workers as are necessary to deliver basic health care services to the population.<sup>5</sup> Over 60% of Zambians live in rural areas,<sup>6</sup> where access to health care is a challenge, in part due to the distances between populations and providers. It is estimated that only half of the rural population lives within five kilometers of a health facility.<sup>7</sup> HRH challenges are exacerbated by the large burden of HIV, malaria, and TB in the population.<sup>8</sup> The serious HRH shortage also makes staffing difficult: an estimated 40% of positions in rural health centers remain vacant.<sup>8</sup>

In light of these HRH challenges, the National Community Health Worker strategy was launched by MOH in 2010.<sup>1</sup> A central aim of the strategy was to formalize the role of a nationally supported community health workforce, called community health assistants (HAs). The key difference between community HAs and existing CHVs is in the length of training (community HAs undergo one year of standardized training), standard remuneration (community HAs are put on the government payroll), regulation (community HAs are registered through a regulatory body), and incorporation into the Zambian health system (community HAs receive drugs from the supervisory health center).<sup>8</sup> Community HAs are supervised by nurses and are expected to relieve nurses from some of their heavy workload through task-sharing. Zambia framed much of its community HA program around the experience of the HEW cadre in Ethiopia. An in-depth analysis of the development of the community HA strategy, which outlines the policy development process, has recently been conducted.<sup>8</sup>

In addition to community HAs, there are an estimated 23,500 CHVs in Zambia.<sup>9</sup> The volunteer network is primarily managed by implementing partners, mostly NGOs. Results from an assessment of the CHV program will be available in mid-2014.

## What are Zambia's Health Needs?

Similar to many other Southern African countries, communicable diseases (HIV/AIDS, TB, malaria) contribute greatly to the overall disease burden in Zambia. Zambia has the 7th highest prevalence of HIV infection in the world, with 12.5% of the population (approximately 1 million people) living with HIV/AIDS.<sup>10</sup> Zambia has among the highest incidences of TB and malaria in the world.<sup>11,12</sup> In addition to the communicable disease burden, in the last decade an increase in the prevalence of NCDs has been observed.<sup>13</sup> During 2008, the top five reasons for visitations to a health facility included: malaria, respiratory infection, diarrhea, trauma, and skin infections.<sup>3</sup>

Zambia is also faced with severe maternal, neonatal, and child health challenges, although the most recent 2007 DHS showed progress in these areas. Since the 2002 DHS survey, the MMR has been reduced from 729 to 591 deaths per 100,000 live births; the IMR has been reduced from 95 to 70 deaths per 1,000 live births; and under-5 mortality has been reduced from 168 to

119 deaths per 1,000 live births.<sup>3</sup> However, Zambia is not expected to reach the health targets for MDG 4 (Reduce Child Mortality) or MDG 5 (Improve Maternal Health) by 2015.<sup>14</sup>

### **What is the Existing Health Infrastructure?**

During the 1980s, health sector reform led to the establishment of semi-autonomous hospital management within hospitals in Zambia.<sup>7</sup> This was followed by further decentralization in the early 1990s, leading to the creation of District Health Boards with increased responsibility for decision-making at the district level.<sup>7,15</sup> In 1995 the National Health Service Act established the Central Board of Health to govern “the executive functions of service provision: commissioning health services in the health sector, performance support, monitoring and evaluation, national human resource development, and national health facilities planning,” while the actual management of service delivery was carried out by the District Health Boards.<sup>15</sup> After the dissolution of the Central Board of Health in the mid-2000s, the MOH reassumed full authority. In 2013, the Zambian health system underwent another reorganization with the creation of a separate Ministry for Community Development, Mother and Child Health (MCDMCH). The MOH is still responsible for all aspects of training the health workforce; however, the operations of the community HA at the community level now fall within the purview of MCDMCH, and specifically under the direction of their district-level counterparts.

The Zambian health system is structured into six tiers: (1) Outreach Services; (2) Health Posts (307 altogether); (3) Health Centers (1,131 rural and 409 urban altogether); (4) First-level District Hospitals (84 altogether); (5) Second-level Provincial Hospitals (19 altogether); and (6) Third-level Referral Hospitals (6 altogether).<sup>5</sup> Of the 1,956 health facilities in Zambia, 81% are government owned, 13% are private, and 6% are faith-based.<sup>4</sup>

### **What Type of Program Has Been Implemented?**

Community HAs are formally recognized as a cadre by the MOH and MCDMCH. Over the next 5 years, significant government and donor support is committed for the scale-up of the community HA program.<sup>16</sup> Community HAs can work side by side and in collaboration with other formally trained health staff at the health posts (who are typically nurses and environmental health technologists) and with community development assistants as well as social welfare volunteers at the community level who work on issues related to gender, environmental health, education, personal finance, and home economics. Community HAs also play a role in coordinating with the CHVs to create monthly work plans. One-half of the graduates of the initial pilot class of the community HA training program are stationed side by side with other, more qualified health care workers—this is the ideal scenario in that community HAs can refer patients from the community to the nurse at the health post. A formalized referral process exists, and community HAs maintain a referral log. In many cases, task-shifting from health care workers to the community HAs relieves time pressures, so much so that the health care staff who are based at health posts have requested that community HAs work at the health post (rather than in the community) more than two days per week.<sup>17</sup>

Following one year of training with a curriculum designed to match Zambia’s disease burden, the community HAs deploy to their home communities to begin working. Community HAs are required to conduct a basic assessment of their communities before engaging in service provision. This includes a community diagnosis (baseline health status of the community through available primary or secondary data sources) and mapping of the catchment area and resources. These initial activities help community HAs determine the priority health-related issues and support the development of a community action plan. Following action planning, community HAs begin service provision both at the health post and at the community/household level with guidance to spend 20% of their time at the health post, for basic curative and referral services, and the remaining 80% for house-to-house visits (during which they can perform basic

curative and referral services) and community educational health talks about disease prevention and control.

The scope of work for community HAs covers a broad array of services within disease control and prevention and family health packages. The key tasks of the community HAs are listed in Table 1 by programmatic area. Community HAs are instructed to refer patients with severe illness or with diseases outside their scope of training to the nearest health center.

**Table 1. Key tasks within the community health assistant's scope of work**

<p><b>Disease prevention and control</b></p> <ul style="list-style-type: none"> <li>▪ Identify and immediately inform health authorities of outbreaks and notifiable diseases in the community</li> <li>▪ Collect, compile, and report monthly data on community and health post health-related activity</li> </ul>
<p><b>Behavioral health</b></p> <ul style="list-style-type: none"> <li>▪ Identify at-risk persons and refer them</li> <li>▪ Provide basic mental health counseling</li> </ul>
<p><b>Environmental health</b></p> <ul style="list-style-type: none"> <li>▪ Promote hand washing and advise on principles of good housing and proper sanitation</li> <li>▪ Inspect construction of latrines and promote good management of latrines</li> <li>▪ Conduct health education talks on food hygiene and safety</li> <li>▪ Distribute ITNs and provide information, education, and counseling (IEC) on insect control</li> <li>▪ Provide IEC on the importance of clean water and water purification techniques</li> <li>▪ Participate in community-led total sanitation efforts</li> </ul>
<p><b>Reproductive health/safe motherhood</b></p> <ul style="list-style-type: none"> <li>▪ Provide pregnancy testing, HIV testing, and counseling</li> <li>▪ Promote at least 4 ANC visits; follow up to ensure timely visits</li> <li>▪ Promote PMTCT treatment for pregnant women who are HIV-positive and follow up with PMTCT clients</li> <li>▪ Refill prescriptions for folic acid and vitamins</li> <li>▪ Provide IEC on breastfeeding, tetanus toxoid vaccine, diet, self-care, and substance abuse</li> <li>▪ Attend emergency deliveries at home or before the pregnant woman reaches a facility</li> <li>▪ Manage postpartum hemorrhage with misoprostol</li> <li>▪ Provide the Essential Newborn Care package, including “Helping Babies Breathe” in cases of asphyxia during delivery</li> <li>▪ Promote postnatal visit to health facility among newly delivered mothers; visit the mother-baby pair 48 hours after delivery if they cannot go to a health facility</li> <li>▪ Detect postpartum (puerperal) sepsis in mothers and neonatal sepsis in the newborn and refer cases detected</li> <li>▪ Counsel and provide oral contraceptives</li> <li>▪ Promote and provide long-term hormonal contraception (e.g. Depo-Provera injections)</li> </ul>

<p><b>Child health</b></p> <ul style="list-style-type: none"> <li>▪ Refer clients to the health center for immunizations; organize outreach sessions in the community for immunization days</li> <li>▪ Identify and refer cases of neonatal sepsis</li> <li>▪ Provide ORS and zinc to children with diarrhea</li> <li>▪ Utilize the iCCM approach in providing care to the sick child aged 2–60 months</li> <li>▪ Recognize signs of and refer cases of pneumonia, diarrhea with dehydration, measles, cancer, meningitis, mumps, tetanus, and leprosy</li> <li>▪ Administer deworming medication</li> <li>▪ Promote appropriate complementary feeding for babies</li> <li>▪ Administer vitamin and/or iron supplementation</li> </ul>
<p><b>Medical and surgical conditions</b></p> <ul style="list-style-type: none"> <li>▪ Carry out rapid diagnostic testing for and treatment of malaria</li> <li>▪ Distribute condoms, provide HIV testing, promote adherence to antiretroviral therapy (for HIV), provide IEC to reduce HIV stigma</li> <li>▪ Provide IEC and behavior change communication regarding the spread of TB, recognition of symptoms, and case management</li> <li>▪ Collect and transport sputum for TB diagnosis</li> <li>▪ Administer amoxicillin for non-severe childhood pneumonia</li> <li>▪ Administer praziquantel to persons infected with schistosomiasis</li> <li>▪ Provide IEC for common chronic diseases; measure blood pressure to identify hypertension and perform urine glucose testing to identify diabetes</li> </ul>
<p><b>General</b></p> <ul style="list-style-type: none"> <li>▪ Take a history and perform a physical examination for sick patients</li> <li>▪ Measure vital signs, height, and weight</li> <li>▪ Provide basic first aid</li> <li>▪ Provide palliative care</li> </ul>

## What about the Community’s Role?

The Neighborhood Health Committee (NHC) plays an active role as part of the recruiting panel, alongside the District Community Medical Officer (DCMO) and a representative from the supervising health facility. The NHC assists with recruiting and selecting the community HA as well as liaising with the community HA and CHVs. CHVs often accompany the community HA to assist with household visits. CHVs also sensitize the community, assist community-based malaria agents with the diagnosis and treatment of malaria at the community level, and assist community-based distributors of FP by providing counseling.

## How Does Zambia Select, Train, and Retain Community Health Assistants?

The MOH alerts provinces and the MCDMCH alerts respective DCMOs about how many recruits to send from their district to the community HA training school. The DCMO works with the NHCs to distribute recruitment flyers in catchment areas that need community HAs. Each recruit is screened by a panel of NHC members, health center staff, and a DCMO representative—and this panel is responsible for making the final selection of community HA candidates. Recruitment preference is given to women who meet the criteria listed below, particularly if they have previously served as a CHV. In the first and second classes of community HAs recruited in 2011 and 2012, approximately half of the trainees were female.

Community HA recruits must meet the following criteria in order to be selected for training:<sup>1</sup>

- Have completed Minimum Grade 12 and 2 “O” levels (one should be in English)
- Be 18–38 years of age
- Be a Zambian citizen, living in the recruitment catchment area for at least 6 months
- Be endorsed by the NHC
- Have passed a personal interview with a panel of NHC members, health center staff, and a member of the District Community Medical Office
- Have previous experience with community health work

Community HA recruits attend one year of formal pre-service training at one of two training schools in the country. A team of 10 tutors teach the community HA recruits in rotating modules with both theoretical and practical components. The practical component involves rotating recruits to local clinics near the training schools. The training modules focus on prevention, promotion, and basic curative care. The curriculum covers the following topical areas: (1) behavioral health sciences; (2) disease prevention and control and PHC; (3) environmental health; (4) reproductive health; (5) child health; (6) medical/surgical conditions; (7) provision of health care at the health post and in the community (including basic diagnostic procedures and provision of a small number of drugs).

The initial pilot class of community HAs also attended a 2-week in-service training for additional skills that had been added later to the community HA scope of work. The skills included, for instance, injecting medication and attending emergency deliveries. Construction of a second community HA training school began in July 2013; upon completion, it will provide the ability to train an additional 208 community HAs per year. Enrollment of the first class is expected in early 2014, thereby increasing Zambia’s total community HA training capacity to roughly 500 students per year.

The key retention strategy is recruiting community HAs from their home communities, to which they will return following their training, so they will not have a desire to move elsewhere.

### **How Does Zambia Supervise Its Community Health Assistants?**

Community HA supervisors and district community HA coordinators attend a five-day training at the provincial level for orientation on the community HA program and their key supervisory duties. Supervisors are equipped with a supervision manual and monthly supervision tools to facilitate routine supervision. Each community HA is supervised by the in-charge at the nearest “parent” health facility. In facilities where community HAs work alongside additional qualified staff, the supervisor is located on-site. Otherwise, the supervisor generally comes from the nearest health center. Supervision is designed to be conducted at the health post and in the community. In practice, supervision out in the community rarely happens due to competing needs of the supervisor. The official supervisory visit is intended to occur on a monthly basis.

### **How Is the Community Health Assistant Program Financed?**

Financing to date for the community HA program has been through a multi-stakeholder collaborative process. The British Department for International Development supported the planning and development, pilot implementation, and M&E, and intends to support scale-up through 2018. USAID financed the Zambia Integrated Systems Strengthening Program to provide initial support for training of community HA supervisors and for the salaries of community HA trainers. UNICEF provided support for some of the community HA training materials. The GRZ also contributes financially by supporting recurrent costs to run the

community HA training school, and it now covers the cost for the community HA trainers. In July 2013, the MCDMCH took over financial responsibility for paying community HA salaries.

### **What Are the Program's Demonstrated Impact and Continuing Challenges?**

Results from two impact evaluations are expected later in 2014. Boston University and its local in-country representative partner, the Zambia Center for Applied Health Research and Development, are conducting an evaluation of the impact of community HAs on community access to health care as measured by proportion of children who receive treatment for malaria, pneumonia, and diarrhea. The Clinton Health Access Initiative (CHAI) is conducting a task-shifting study to assess how the introduction of community HAs affects the types and volumes of patients seeking care at the health post and supervising health center. Results from both studies are expected to help inform GRZ policy and decision-making about the community HA program going forward.

In addition to impact evaluations, there is an M&E component of the National Community Health Assistant Program, with specific indicators and registers developed by the MOH and partners for tracking community-level health. A relatively new data reporting system, called District Health Information System Version 2.0 (DHIS2), was incorporated into the program; community HAs are trained on the tools and procedures for utilizing the DHIS2 mobile health reporting platform. Each health post with community HAs received a mobile phone plus copies of registers to support monthly data summarization and reporting. Community HAs are responsible for submitting monthly aggregated data via paper reports to their supervisors and via mobile reports to the national level. At present, mobile data reported by community HAs are not being routinely analyzed, but discussions were under way on how best to utilize the data and how to ensure the data were received at the district level as well as nationally. In the future, this mobile data reporting system may provide key information on the impact of community HAs and their contribution to Zambia's health services.

Finally, a qualitative process evaluation of the rollout of the community HA program was conducted in 2012–13. The evaluation identified several challenges, including (1) lack of regular supervision visits, partially due to transportation challenges; (2) delays in salary payments; (3) inadequate drug supply stocks and/or unwillingness of facility staff to release drugs for community- and household-level use; (4) large catchment areas (more than the originally estimated catchment size of 3,500 persons) and long travel time between villages; (5) communication challenges between the national and district levels; and (6) lack of a clear role differentiation between community HAs and CHVs.<sup>17</sup>

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# ZIMBABWE'S VILLAGE HEALTH WORKER PROGRAM†††††



## Summary

### Background

The VHW program began in the 1980s as part of Zimbabwe's transition toward PHC. VHWs focus on disease prevention and provide community care at the primary level in rural and peri-urban wards, where they serve as a key link from the community to the formal health system.



### Implementation

VHWs collaborate with other community-based workers, such as traditional healers, tTBAs, and community-based distributors of FP.

### Training

The Ministry of Health and Child Welfare (MOHCW) conducts an initial 8-week VHW training. This consists of a period of classroom training followed by a period of practical training. Refresher trainings are conducted as needed and when funds are available.

### Roles/Responsibilities

VHWs have a broad range of roles and responsibilities from prevention and health promotion to treating common conditions (including diarrhea and malaria) and identifying and referring complicated cases to higher levels of the health system.

### Incentives

VHWs receive a quarterly allowance of \$42, though remuneration is often irregular. They are also provided with a bicycle and a medical supply kit.

### Supervision

VHWs are directly supervised by the nurse-in-charge at the health center within their ward. In addition, they are broadly supported by the ward health team at the community level.<sup>1</sup>

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††††† Katharine Shelley, a student at the Johns Hopkins Bloomberg School of Public Health, wrote this case study. We are grateful to David Sanders for his comments on an earlier draft of this.

## Impact

There is no information available about the impact of this program.

## What is the Historical Context of Zimbabwe's Village Health Worker Program?

Following Zimbabwe's independence from Britain in 1980, Zimbabwe's health sector adopted a strong focus on PHC.<sup>2</sup> Zimbabwe moved from a "curative, urban-based and minority-focused health care system to one which emphasized health promotion and prevention and provided some acceptable level of health care to the majority rural population."<sup>3</sup> As part of the shift toward PHC, the National Village Health Worker Program was formally launched in 1981 with a goal of training 15,000 village-based basic health workers and extending health care coverage to people who would otherwise have no access.<sup>2</sup> This program was influenced by a VHW program introduced in 1980 by the Bondolfi Mission in Masvingo, a southern province of Zimbabwe, where over the course of six months, 293 VHWs were selected and trained.<sup>2</sup>

From 1982 to 1987, the government trained 900–1,000 VHWs annually, so that by 1987 there were 7,000 VHWs.<sup>4</sup> The selection of VHWs was supposed to be driven by the community in consultation with the District Council. In contrast to the Bondolfi VHWs, the national VHW cadre received more formal training and less compensation, and they had to cover a comparatively larger catchment area. Bondolfi VHWs were selected by village committee and remained accountable to the community, whereas the government VHWs were selected by the local government structure, through which they were remunerated (David Sanders, personal communication). Bondolfi VHWs did not receive remuneration, and some were recruited into the government program while others resigned over time (David Sanders, personal communication). The VHWs were not considered to be extensions of the formal government health service, but rather were envisioned to be stewards of the community's commitment to health promotion.<sup>4</sup> In 1984, the VHWs were transferred to the Ministry of Women's Affairs, Cooperatives and Community Development and renamed "Village Community Workers".<sup>1</sup> The Village Community Workers took on a broader set of development activities and, as a result, had little time for health and health promotion activities.<sup>1</sup>

Over the course of a decade, the share of the health budget dedicated to preventive services rose from 6.7% in 1980 to 14.4% in 1989.<sup>2</sup> Unfortunately, economic deterioration in the mid-1990s led to a rapid decline in the health system and health status of Zimbabweans, including a collapse of the VHW program.<sup>5</sup>

A 1999 Review Commission of the Health Sector called for the reintroduction of VHWs into the MOHCW; in 2000, the VHW program was reinstated under the Nursing Directorate of MOHCW.<sup>1</sup> Since 2009, efforts have been under way to revitalize the VHW program, partially through support from the Global Fund to Fight AIDS, Tuberculosis and Malaria and various partner organizations. VHWs are expected to be key players in efforts to reach the MDGs, and they are also now viewed as an essential element of the health system decentralization process.<sup>1</sup> The remainder of this case study describes the current status of the VHW program in Zimbabwe.

## What are Zimbabwe's Health Needs?

There has been a dramatic deterioration in Zimbabwe's key health indicators since the early 1990s. Life expectancy fell from 62 years in 1990 to 44 years in 2008,<sup>5</sup> and has since partially recovered to 54 years.<sup>6</sup> The MMR rose from 284 per 100,000 live births in 1994 to 960 in 2010.<sup>7</sup> While the prevalence of HIV has dropped in the last decade from 26% in 2000 to 15% in 2012, there are an estimated 1.2 million Zimbabwean adults living with HIV/AIDS, which places a huge burden on the health system.<sup>8</sup> TB prevalence is 547 per 100,000 population, more than double the average of 243 per 100,000 for Southern Africa, where Zimbabwe is located.<sup>6</sup> The

nutritional status of children is also a key health challenge as indicated by the most recent DHS data: among children under five, 32% were stunted, 3% were wasted, and 10% were underweight.<sup>7</sup>

### What Is the Existing Health Infrastructure?

The health system is divided into four levels of care, including primary, secondary, tertiary, and quaternary.<sup>5</sup> The primary level includes VHWs and the rural health centers or clinics that offer basic maternity, preventive, and curative services. For community members, these facilities are the first point of contact with the formal health system.<sup>5,9</sup> The secondary level includes facilities that receive patients on referral from primary-level facilities, but also provide primary care services to patients within the immediate area surrounding the facility. Tertiary-level facilities include the seven provincial hospitals in Zimbabwe, which have specialist staff on hand to deal with referrals from secondary-level facilities. The most advanced level of care is the quaternary level, which includes six central hospitals that have equipment, staff, and pharmaceuticals for dealing with patients requiring highly specialized care.<sup>5</sup>

### What Type of Program Has Been Implemented?

The MOHCW outlines several key objectives in its document outlining a strategic direction for the VHW program, including the following:

- To equip communities with knowledge and skills to take responsibility for their own health
- To increase the capacity of communities to prevent and control diseases within communities
- To enable communities to manage and take actions on health activities within communities
- To empower communities to value their own health and to take actions that promote positive behavior change for adopting healthy lifestyles<sup>1</sup>

VHWs provide a link from the community to the formal health system. VHWs have a broad scope of work (Table 2), but they primarily focus on prevention. They provide some curative care, including first aid and treatment of common conditions with drugs (including malaria and diarrhea).<sup>5</sup> VHWs collaborate with other community-based workers such as traditional healers, traditional birth assistants, and community-based distributors of FP.<sup>1</sup> VHWs are provided with various drugs and medical supplies to carry out their multiple roles (Table 2).

**Table 2. Village Health Worker Scope of Work and Supply Kit<sup>1</sup>**

<b>Scope of work</b>
<ul style="list-style-type: none"> <li>▪ Identifying and referring clients that need treatment at health facilities</li> <li>▪ Collecting community-based health information, which is then shared with the rural health center and subsequently included in the national health information system</li> <li>▪ General health education and health promotion about water and sanitation, diseases of public health importance, pregnancy and maternal health, and FP</li> <li>▪ Providing salt and sugar solution or ORS during cholera outbreaks</li> <li>▪ Providing prophylaxis for malaria</li> <li>▪ Conducting growth monitoring and giving guidance on breastfeeding and infant nutrition</li> <li>▪ Following up with HIV-exposed infants and their mothers</li> <li>▪ Promoting immunization</li> <li>▪ Participating in IMCI campaigns</li> <li>▪ Promoting HIV voluntary counseling and testing</li> <li>▪ Supervising TB patients on DOT</li> <li>▪ Caring for patients with chronic conditions (hypertension, diabetes, stroke, epilepsy, and so forth)</li> <li>▪ Conducting outreach events for nutritional monitoring and provision of health services for schoolchildren</li> </ul>

<ul style="list-style-type: none"> <li>▪ Treating minor ailments</li> <li>▪ Promoting oral and mental health</li> <li>▪ Collaborating with other community stakeholders and community-based cadres</li> </ul>	
<p><b>Drugs and medical supplies:</b></p> <ul style="list-style-type: none"> <li>▪ Paracetamol tablets</li> <li>▪ Antimalarial drugs</li> <li>▪ Alcohol (for cleansing)</li> <li>▪ Betadine solution</li> <li>▪ ORS sachets</li> <li>▪ Tetracycline eye ointment</li> <li>▪ Bandages (crepe, gauze, triangular)</li> <li>▪ Scissors</li> <li>▪ Latex gloves</li> <li>▪ Salter weighing scale, weighing bag</li> <li>▪ Mid-upper arm circumference measuring tape</li> <li>▪ Tape measure</li> <li>▪ Soap</li> <li>▪ Aqua tabs</li> <li>▪ Thermometer</li> <li>▪ Cord clamps or ligatures</li> </ul>	<p><b>Other supplies:</b></p> <ul style="list-style-type: none"> <li>▪ Condoms (male and female)</li> <li>▪ Uniform, sunhat, badge, raincoat</li> <li>▪ Tennis shoes</li> <li>▪ Canvas bag for carrying supplies</li> <li>▪ Plastic apron</li> <li>▪ Teaspoon and tablespoon for dispensing liquid medications</li> <li>▪ Pen, register book, and referral slips</li> <li>▪ Bicycle, with repair kit</li> <li>▪ Flashlight and batteries</li> <li>▪ Timer (for counting respiratory rate)</li> </ul>

## What about the Community's Role?

According to government documents describing the program, local leaders, including qualified health care workers, teachers, traditional and religious leaders, women leaders, and youth leaders, support the VHWs in a variety of ways, including (1) mobilizing the community around health issues; (2) supporting planning, implementation, and monitoring of VHW activities; (3) mobilizing resources to support VHW activities; and (4) advising the VHWs.<sup>1</sup> In addition, the community plays an essential role in the selection of VHWs as described below.

## How Does Zimbabwe Select, Train, and Retain Village Health Workers?

The VHW selection process starts when a clinic or hospital communicates with the community that it needs voluntary workers. The clinic development committee and the political leaders then take the lead in choosing suitable candidates to become VHWs. Persons selected as candidates usually have a proven commitment to the community such as previous volunteer work at their local clinic (CHAI, personal communication). Relying on community input for selection is essential because the community members must have trust and confidence in the VHWs.<sup>1</sup> The community's participation in the selection process differentiates VHWs from auxiliary health workers in that the VHWs answer to the community, while the auxiliary workers answer to the formal health system.<sup>4</sup> The VHW selection criteria include the following:<sup>1</sup>

- Aged 25 years or older
- Mature, married resident of the village
- Able to read and write
- Possessing strong communication skills
- Respected in the community
- Interested in health and development issues

- Willing to work at the community level and on a volunteer basis
- Able to maintain confidentiality of health information

The MOHCW conducts an initial VHW training that lasts 8 weeks. The classroom training is organized into two sessions that are separated by a period of practical training. Refresher trainings are conducted as needed and when funds are available, but new skills and knowledge sharing are generally just taught on the job (CHAI, personal communication). Topics covered in the VHW training include PHC; roles and responsibilities of VHWs in the community; reporting responsibilities of VHWs; the community as the client; communicable and non-communicable diseases; communication, advocacy, social mobilization, and community mobilization; environmental health, water supplies, sanitation, and cholera; malaria; personal hygiene, hand washing, zoonotic conditions; IMCI; nutrition and infant feeding; HIV/AIDS, TB, PMTCT of HIV, voluntary HIV counseling and testing; treatment of minor ailments; first aid and wound care; mental health (stress, burnout, child abuse, hazardous substances); community-based rehabilitation; emergency preparedness and response; collaboration and coordination; contents of the VHW kit; health promotion and education; teaching methods; communication network and technology system; M&E and data management; and dental health promotion and hygiene.<sup>1</sup>

### **How Does Zimbabwe Supervise Its Village Health Workers?**

At the national level, the MOHCW's Director for Nursing Services oversees the VHW program. Responsibilities are further delegated to the Provincial Nursing Officers, District Nursing Officer, and finally to clinic staff (CHAI, personal communication). VHWs are directly supervised by the Nurse-in-Charge at the rural health center within their ward. VHWs are also supported by the ward health team at the community level.<sup>1</sup> VHWs are expected to attend monthly meetings at the rural health center.<sup>1</sup>

### **How Is the Community Health Assistant Program Financed?**

The MOHCW provides funding to a small proportion of VHWs through support obtained from the Global Fund to Fight AIDs, Tuberculosis and Malaria. This funding provides for three weeks of VHW refresher trainings. As of 2010, development partners were supporting VHWs in 24 of Zimbabwe's 60 rural districts. These partners include UNICEF, the WHO, the United Nations Development Program, the Central Emergency Relief Fund of the United Nations, and various NGOs including Merlin, World Vision International, Save the Children, and the Zimbabwe Vitamin A for Mothers and Babies Project.<sup>1</sup>

The VHW role is not supposed to be one of "professionalized" full-time work. Rather, VHWs should work part-time while remaining engaged in normal day-to-day family and village activities.<sup>4</sup> When the VHW program began, it was envisioned that the communities would take over the responsibility of providing compensation to VHWs after one to two years, thereby making the program more community owned and community driven.<sup>4</sup> However, this has not been the case, and compensation has generally come from the government or partners. During 2010, VHWs received a quarterly allowance of \$42 from the MOHCW. Some VHWs also received a bicycle provided through the Global Fund.<sup>1</sup>

### **What Are the Program's Demonstrated Impact and Continuing Challenges?**

Several evaluations of the VHW program were carried out in the early 1980s,<sup>4</sup> but data on the impact of the present-day VHW program are not available. Data on routine community activities are maintained by VHWs in a domiciliary visit register. Information from this register is periodically shared with the supervising health facility. Some community-based data are included in the national health information system.<sup>1</sup>

The current number of VHWs is not documented. The goal of the VHW program is to achieve national coverage with 15,000 VHWs.<sup>10</sup> However, only an estimated 19% of villages have currently active VHWs, and a 2009 household survey revealed that fewer than half of the respondents had access to a VHW in their ward.<sup>9</sup> The program faces many challenges. VHW training programs have been closed down in many districts. Remuneration is inadequate and irregular. And shortages of the drug supply are common.<sup>9</sup>

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# Acknowledgments

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## IMAGES/PHOTOS

All global maps were created by others using Generic Mapping Tools (<http://gmt.soest.hawaii.edu/>).

Many photos were obtained through the Photoshare website (<http://www.photoshare.org/>) or WHO.

### Afghanistan

Left: CHW Ozara Husseini (left) talks to Najiba, who has five children, about the advantages of FP and Najiba's decisions to start taking the pill at Najiba's home in Katasank near Bamyán, Afghanistan, on June 8, 2010.

Photo by Kate Holt, Jhpiego

Right: A CHW provides basic information on newborn care.

<http://www.usaid.gov/results-data/success-stories/saving-newborns-rural-afghanistan> (Accessed March 14, 2014)

### Bangladesh (BRAC)

Left: An SS leaving a home following a visit.

Right: In the Korail slum of Dhaka where BRAC CHWs are implementing a maternal, neonatal, and child health program called Manoshi, an SS visits a mother at home.

Photographs by Henry Perry

### Bangladesh (Government)

Left: HAs and FWAs learning how to counsel women in the household using a netbook with digital resources.

Right: FWA with her daily logbook, used for recording health events of her clients.

### Brazil

Left: In Ribeirao Preto, Brazil, a mother holds her infant child at a weekly breastfeeding class held at a charity hospital. Social stigma and misinformation continue to plague efforts to promote breastfeeding in Brazil. However, this class was slowly but surely educating and empowering an entire community through the promotion of breastfeeding.

© 2000 Alex Zusman, Courtesy of Photoshare

Middle: Redençao Health Center, one of the clinics in Brazil that achieved accreditation in the PROQUALI Project for reproductive health services.

© 1997 Center for Communication Programs, Courtesy of Photoshare

Right: Brazilian children learn about healthy lifestyles in a local church as part of a program initiated by Lutheran World Relief to raise awareness about the vulnerability of women and children to the AIDS epidemic.

© 1995 Lutheran World Relief, Courtesy of Photoshare

### Ethiopia

Left: A CHV in Benishangul, Ethiopia, refers a child to a district health facility.

© 2011 Yolanda Barbera Lainez/IRC, Courtesy of Photoshare

Middle: A health worker holds up artemisinin-based combination therapy pills (ACTs) for malaria treatment in Ethiopia.

© 2007 Bonnie Gillespie, Courtesy of Photoshare

Right: A young mother and her infant in her village near Shashememe in the Oromiya Region of Ethiopia. She is attending a village gathering to discuss FP led by the local community leader, who is also a community-based distribution agent.

© 2005 Virginia Lamprecht, Courtesy of Photoshare

## India

Top left: An ANM helps a mother learn kangaroo mother care—important for newborn growth—at District Hospital, Shivpuri district, Madhya Pradesh, India.

© 2012 Anil Gulati, Courtesy of Photoshare

Top right: An AWW feeds a group of children at an Integrated Child Development Services Centre in Bagnan, India.

© 2012 PAB, Kolkata, Courtesy of Photoshare

Bottom left: Women in India work to become ASHAs.

© 2008 Meenakshi Dikshit, Courtesy of Photoshare

Bottom right: A group of ASHAs in India.

© 2008 Meenakshi Dikshit, Courtesy of Photoshare

## Indonesia

Left: CHW counsels mother.

Aid in Action. [http://ec.europa.eu/echo/aid/stories/asia13\\_en.htm](http://ec.europa.eu/echo/aid/stories/asia13_en.htm). (Accessed March 14, 2014.)

Right: Brigida, a community volunteer, weighs 2-month old Mima at a health center supported by Plan in Indonesia.

Plan in Indonesia. [https://www.plan.org.au/Our-Work/Countries-we-work-in/Asia/Indonesia.aspx#prettyPhoto\[pp\\_gal\]/1/](https://www.plan.org.au/Our-Work/Countries-we-work-in/Asia/Indonesia.aspx#prettyPhoto[pp_gal]/1/). (Accessed March 14, 2014.)

## Iran

Left: Javanparast S, Heidari G, Baum F. Contribution of Community Health Workers to the implementation of Comprehensive Primary Health Care in rural settings. Poster presented at: 138th American Public Health Association Annual Meeting; November 2010; Denver, CO.

Available at:

<http://www.globalhealthequity.ca/electronic%20library/Iran%20Poster%20English.pdf>

Middle: How Obamacare Will Help Mississippi (and America) Implement Lessons Learned from Iranian Health Care

<http://thinkprogress.org/health/2012/07/29/602691/aca-mississippi-community-health-iran/>

Right: Regular medical checkups by CHWs, Islamic Republic of Iran.

<http://www.emro.who.int/cbi/information-resources/health-development-services.html>

## Nepal

Left: A CHW counts the respiratory rate of a young child in Dhanusha, Nepal.

© 2007 Dilip Chandra Poudel, Courtesy of Photoshare

Middle: Women in Nepal receive HIV prevention information.

© 2004 Rebecca Callahan, Courtesy of Photoshare

Right: An FCHV in Nepal counts the respiratory rate of a young child using ARI Sound Timer to diagnose pneumonia.

© 2010 Dilip Chandra Poudel, Courtesy of Photoshare

## Pakistan

Left: At a Basic Health Unit in Punjab province, Pakistan, 23-year-old Tahira Rashid receives counseling from Dr. Fauzia Amin, a female medical officer.

© 2012 Derek Brown for USAID, Courtesy of Photoshare

Middle: A health worker attends to an infant at a free medical camp in a flood-affected area of Larkana district, Sindh, Pakistan.

© 2010 Population Welfare Department Sindh, Courtesy of Photoshare

Right: Women attend a free IUD and medical camp at Udani village in Sindh, Pakistan.

© 2009 Population Welfare Department Sindh, Courtesy of Photoshare

## **Rwanda**

Left: CHW assesses child for presence of malnutrition.

<http://gadpcrwanda.blogspot.com/2012/07/community-health-workers-by-alma.html> (Accessed March 14, 2014)

Right: CHW records child nutrition information

Partners in Health. <http://www.pih.org/priority-programs/community-health-workers/about>. (Accessed March 14, 2014.)

## **Zambia**

Left: Two CHAs (blue coats) and one volunteer CHW (a malaria agent) at a health post in western Zambia.

Photo by Katharine Shelley

Right: A CHW visits a client.

Poverty Action Lab.

[http://www.povertyactionlab.org/sites/default/files/Recruiting\\_and\\_Motivating\\_CHWs\\_Zambia.png?1368559148](http://www.povertyactionlab.org/sites/default/files/Recruiting_and_Motivating_CHWs_Zambia.png?1368559148). (Accessed March 13, 2014.)

## **Zimbabwe**

Left: CHWs from Zimbabwe.

Source: MCHIP/Jhpiego

Right: Community-based distribution workers review information in Zimbabwe.

© 2011 Center for Communication Programs, Courtesy of Photoshare