

REVIEW OF THE UTILISATION AND EFFECTIVENESS OF COMMUNITY-BASED HEALTH WORKERS IN AFRICA

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1 Overview

This review examines the use of various categories of Community Health Workers (CHWs) as first line health workers in dealing, for example, with maternal and child health, tuberculosis, HIV/AIDS, malaria and other issues throughout Africa. It attempts to address key questions such as: What has happened to Community Health Worker programs over the past two decades in Africa? What models are being used? What type of work do CHWs undertake? In which countries is work being undertaken? How are programs structured and managed? What kind of training are CHWs given? How effective are CHWs? What problems, challenges and obstacles have they faced?

Case studies have been included to illustrate success stories and experiences. These provide vivid insight into the types of CHW models being used, the relevance of CHWs, their recruitment, training, and roles. They illuminate issues related to their supervision and accountability, and types of incentives or remuneration offered and how these are impacting on sustainability, tenure of service and career path, obstacles, problems and challenges encountered, etc.

Although the role of traditional, faith and complementary healers is important, and acknowledged in one section of the review, the remit was already so wide that it was decided not to include a review of activities of this group. A separate review paper would be necessary to deal with the topic.

In the short time available it has not been possible to undertake a comprehensive review of the whole field. Principally what we have done is review a representative selection of the considerable published literature in journals, supplemented by some articles from books, reports and other accessible publications. Information from the vast amount of grey literature is regrettably lacking.

One of the major shortcomings noted in reviewing the available literature has been the preponderance of evaluations of short-term research intervention projects rather than systematic descriptions of ongoing programs. This means that there is a relative paucity of information on the organizational and training aspects of existing community health worker programs, whether facilitated by NGOs or government. Considerable work is still required to develop the aspects ignored in the published literature. This review must therefore not be considered as definitive, but rather a work in progress.

2 Definitions of terms related to CHWs

The umbrella term 'Community Health Worker' (CHW) embraces a variety of community health aides who are selected, trained and work in the communities from which they come. A widely accepted definition was proposed by a WHO Study Group (WHO 1989):

Community health workers should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers

CHWs include the most generic type of community based workers, including cadres such as village health workers (VHWs), community resource persons (CORPs) or workers known by local names such as the South African *Onompilo*. In addition to generalist CHWs there are also a range of more specialised cadres such as community rehabilitation facilitators (CRFs), community-based directly observed therapy short-course (DOTS) supporters, HIV/AIDS communicators (HACS), home-based care (HBC) workers, first aid workers, lay health workers etc. All these types of CHWs carry out one or more functions related to health care delivery, are trained in some way in the context of the intervention, but usually have no formal professional or paraprofessional certificated or degreed tertiary education. Not included, for example, are formally trained nurse aides, medical assistants, physician assistants, paramedical workers in emergency and fire services and others who are auxiliaries, mid-level workers and self-defined health professionals or health paraprofessionals. CHWs may receive training, which is recognized by the health services and national certification authority, but this training does not form part of a tertiary education certificate or degree.

Some would include in this group Traditional, Faith and Complementary Healers, which we will not deal with in this article, as these important groups warrant separate and quite detailed treatment in their own right.

In general terms, the role of CHWs is to act as agents of health promotion and health development. They also provide local outreach of health services that might otherwise be unavailable and often provide a link between communities and formal health services.

3 CHWs in Context

The rationale for and practice of using community or village health workers (VHWs) has a number of different 'cradles', all of them probably related, but evolving in different ways. This section will focus on some of their key technical and political influences.

The theory and practice of community or village health workers has an almost 40-year history in the developing world. Partly in response to the inability of conventional health services to deliver basic health care, and partly in response to the successes of the barefoot doctor movement in China, a number of countries began to experiment with the village health worker concept (Sanders, 1985). Sanders quotes David Werner, who was involved for many years in helping establish a primary health care network in a remote mountainous region of Mexico, who summed up the differences between medical professionals and VHWs as follows (as quoted by Sanders):

“The VHW we describe and suggest as a means of increasing the impact of the people within the health sector is distinguished from the auxiliary in the following crucial respects. The VHW:

1. Should be selected by the people from among themselves and should be responsible primarily to them, not to the health professionals.
2. Should be part-time and able therefore to subsist by performing agricultural or other work, possibly receiving a subsidy from either the local community or the national health service.
3. May be someone who has already been a traditional healer or birth attendant and should preferably be trained in the community in not only curative but also preventive and promotive functions.”

The early literature emphasised the role of the VHW as not only (and possibly not even primarily) a health care provider, but also as an advocate for the community and an agent of social change, functioning as a community mouthpiece to fight against inequities and advocating community rights and needs to government structures.

Sanders (1985: 208) summarised that “this ideal, the liberating potential of the VHW, the people’s representative, is quite the opposite of the negative potential of many health professionals who transmit the idea that social conditions causing ill health are natural and unchangeable and that any solutions rest with the individual”.

Examples of VHW initiatives in Africa driven by this rationale include Tanzania’s and Zimbabwe’s VHW programs in its early phase (see below). Both were set in the political context of wholesale systemic transformation (decolonisation and the Ujamaa movement in Tanzania, and the liberation struggle in Zimbabwe), and both focussed on self-reliance, rural development and the eradication of poverty and societal inequities.

This view of VHWs as advocates and agents of change and liberation for rural communities shifted as the focus on liberation, decolonisation, democratisation and self-reliance was replaced by World Bank driven policies of structural adjustment and its successors. In many respects this shift may have been subtle, as the following quote from a WHO publication on CHWs illustrates:

“CHW programs have a role to play that can be fulfilled neither by formal health services nor by communities alone. Ideally, the CHW combines service functions and developmental/promotional functions that are, also ideally, not just in the field of health....Perhaps the most important developmental or promotional role of the CHW is to act as a bridge between the community and the formal health services in all aspects of health development....the bridging activities of CHWs may provide opportunities to increase both the effectiveness of curative and preventive services and, perhaps more importantly, community management and ownership of health-related programs... CHWs may be the only feasible and acceptable link between the health sector and the community that can be developed to meet the goal of improved health in the near term “ (Kahssay, Taylor et al. 1998)

This definition of CHWs continues to focus on their role in community development and bridging the gap between communities and formal health services, but their role as advocates for social change has been replaced by a predominantly technical and community management function.

Over the years, and within the prevailing political climate, this pragmatic approach to CHWs has gained currency, and undoubtedly today constitutes the dominant approach. However, when discussing the successes and challenges of the CHW initiative, as well as their potential in tackling issues of health and poverty today, a

reflection on these two different rationales may hold important clues to possible solutions.

A third 'cradle' of CHW initiatives are faith-based organisations, which, over the years and decades, have combined missionary work with practical work to improve the health, education and social conditions of communities. By their very nature, these initiatives are driven by a different rationale, and the challenges they confront are often somewhat different. An interrogation of their specific successes and failures provides further material for reflection on the CHW concept.

4 The establishment of CHW programs

The previous section described the different roots and rationales for the development of CHW programs. Not surprisingly the paths followed in establishing such programs reflect this diversity. Programs have come about as a result of dramatic political transformation, as part of health sector reform processes, or at the initiative of NGO and faith-based organisations.

Examples of the first type of process can be found in Tanzania, Zimbabwe and Mozambique.

The earliest origin of the Zimbabwe national program stemmed from a time, when comrades (guerrillas) in the Zimbabwe African National Union who were fighting a war to liberate their country helped to establish a community-based public health program in Masvingo Province in the south of the country, which included home visiting. When the ceasefire came about and the people in the area realised that the program might end, they turned to the Bondolfi Mission to assist. This developed into a non-governmental VHW program. Based on the idea that there should be an unpaid VHW for every 1-3 villages, 293 VHWs were trained, 35 from other districts.

Soon after Independence the Government committed itself to establishing a National Village Health Worker Program. Although centrally planned and initiated it was strikingly similar to the Bondolfi project in its technical aspects (Sanders, 1992).

In Tanzania (as in Mozambique) CHW programs, under different names, were introduced as part of the process of decolonisation, as both countries dramatically redefined their political approach and philosophy. In Tanzania after 1967, government set out to promote rural development and mobilise the country's resources to eliminate poverty, ignorance and disease. It focussed on local contribution (self-reliance) with the goal of state ownership and control of the major means of production to ensure equity. Three levels of administration were introduced: central, regional and district. The district was further divided into divisions, in turn comprising administrative wards made up of ten "cells" each with 10 households. Viable villages or "Ujamaa" of 100-500 households were encouraged.

In dealing with the major health problems, primarily infectious and parasitic diseases, typified by malaria which was the leading cause of hospital admissions, the Health Ministry developed a decentralised health system comprising district hospitals, health centres, dispensaries and village health posts in each Ujamaa village. These village health posts were to provide treatment for minor ailments, first aid for more serious illness and injury and a base for health campaigns such as "Mtu ni Afya – Man is Health" and "Chkula ni Uhai – Food is Life" (Newell, 1975).

In all three countries CHW programs came about as one aspect of much broader political, 'revolutionary' transformation, with a focus on liberation, democracy and self-reliance.

Ghana, Niger and Somalia are examples of countries that introduced CHWs as part of health sector reform initiatives, aiming to enhance accessibility and affordability of health services to rural and poor communities within a PHC approach.

In Ghana, the Ministry of Health introduced substantial numbers of community or village health workers in the late 1970s as part of a substantial review and reorganisation of MoH activities aimed at implementing PHC strategies (Morrow 1983). The initiative was driven by the MoH, and integrated into the national health service structure, with the MoH providing training, technical supervision and necessary supplies.

In Niger, CHW programs evolved from the work of volunteer health workers whose work started in the late nineteen sixties in the primarily agricultural Maradi Department, along the Nigerian frontier with a population of 730,000 people (Fournier & Djermakoye, 1975). Since 1963 Niger had a rural extension service (*animation rurale*) which promoted community development schemes characterised by voluntary participation. In the Ministry of Health, a 10 year plan from 1965-1974 set out the principles governing the training of village health workers and traditional birth attendants.

Bentley (1990) reports on a fascinating initiative in the northwest of Somalia in the mid-1980s, which provided access to basic health care to large numbers of rural communities, including nomads, before it fell victim to the civil war after 1988. Before 1980 the health status in Somalia was among the worst in the world, with a child mortality rate of 257/1,000 live births and maternal mortality of 1,100 per 100,000 live births. A project to introduce a PHC approach was started by government in the semi-arid and semi-nomadic northwest, with technical and financial support from UNICEF in 1982.

While emphasizing community ownership and participation, all of these projects were initiated and driven by central government.

Sauerborn et al. (1989) report on a CHW initiative in Burkina Faso in the mid-1980s, which was started by the doctor at the local medical centre. While again the program emphasised community participation in the selection and management of CHWs, the authors found that the program had a low utilisation rate due to the fact that communities had not been part of setting up the structures, and political tensions had quickly emerged between traditional hierarchies and the structures set up under the new regime.

There are innumerable examples of projects established by NGOs and faith-based organisations. As a rule, these came about as a result of local or church initiatives. While the former often pursue a specific developmental aim (eg. reproductive health), the latter usually combine a missionary agenda with health-oriented work. Two examples representing both types of initiatives are the project of the *Baha'i International Community* and the *Women's Health Organisation of Nigeria (WHON)* (see boxes below).

Community health workers in Kenya stir broad changes¹

A project of the Baha'i International Community, active in more than 200 communities in Western Kenya "to promote vaccinations and to build a new level of intersectoral and interfaith collaboration by stimulating the construction of latrines and helping create better access to clean water". The project makes use of 98 CHWs.

The project follows a model used with great success by Bahá'í communities in other African countries. (Similar projects exist in Burkina Faso, Chad, Uganda and Zambia.) Drawing on a strong base of local Bahá'í communities in a region, volunteers for the program are sought. They are then given several weeks of training in basic health care techniques at a regional Bahá'í institute. Based in part on the UNICEF/WHO/UNESCO "Facts for Life" program, the training focuses on simple things like promoting hygiene and breast-feeding, understanding elementary nutrition, the importance of immunization, and stopping infantile diarrhea.

After the training, the volunteers are sent back to their communities, having been asked give 10 hours a week of their time as community health workers. Project administrators continue with regular visits to give encouragement and support; follow-up training is also offered.

While many other non-governmental organizations and government agencies run similar programs to train and support community health care workers, the Bahá'í-run programs have been especially effective because of their low dropout rate, the emphasis on service to everyone in the community, and the manifest volunteerism of the workers.

Ms. Soita, who started with the program in 1986, has now become one of the project's field supervisors. She has seen how the Bahá'í emphasis on inclusion has contributed to the project's success.

"I think that one of the reasons people in the villages respect and support us, is the way the Bahá'í Community Health Workers serve the people," said Ms. Soita. "During mobile clinic visits and one-day seminars, our community health workers help and serve everybody without any discrimination. It doesn't matter which tribe, religion, young or old, we give them the same amount of care."

"When I started with this project as a community health worker in 1986, most people in my village and nearby villages didn't know the causes of diseases and how they could prevent them," said Ms. Soita. "But today, after attending awareness-raising seminars and through personal contact with the health workers, most of the villagers can and will prevent many sicknesses such as diarrhea and malaria.

"I am a good example," Ms. Soita concluded. "The diet in our family has changed. I learned about nutrition and different food categories, such as carbohydrates, proteins, vegetables, fruits and grains. In my family, I make sure we eat enough of all of them."

WHON - Women's health organisation of Nigeria

This NGO, set up in 1992 is implementing projects addressing reproductive health. It is involved in the training of volunteer reproductive health workers and has developed training materials for them. Beyond reproductive health, their scope of activities includes treatment of minor ailments and dispensing of essential drugs.

The case study below is a detailed report of access to the Health and Development activity in one of the groups. -

THE NTYANG WOMEN'S GROUP IN RAZEK, FAN VILLAGE Fan District is one of the remote areas in Nigeria in Plateau State. The group was founded in 1991 and has a membership of 170 rural women. The group has 9 officials who have run their various posts for more than three years. These were elected after the leadership training provided by WHON. The training discussed elements of running groups democratically and taking collective decisions, conflict resolution etc. The group meets once a month during which they have reproductive health education, health talks, and participate in weaving, knitting, plating, making pomade, and baking and making mud pots. These are sold to generate income. The group, in alliance with WHON, set up a volunteer reproductive health worker's program, provided essential drugs for the management of reproductive health problems and minor ailments, and also provided non-chemical family planning devices, all in the primary health care context. Services are rendered to the community members through the community drug store located in a strategic place in the district, which is easily accessible by the community members. The group attended to a total number of 1,193 adults and children in a period of eighteen months (1995-1996): 812 adults and children in 1997. In 1998 the group attended to at least 374 clients.

5 Profiling community health workers

5.1 Recruitment and selection

While there has only rarely been direct community participation in the establishment of CHW programs, its central importance in the selection and recruitment of community health workers has been widely acknowledged. The most common approach employed by organisations to initiate CHW selection has been the setting up of *Village Health Committees (VHCs)*, which would then be tasked with the selection of VHW/CHW candidates. Little detail is available on the finer details of the selection process and how the VHCs were constituted. In some cases, like in Somalia, existing village committees were used to play the role of VHC. However, most studies only report that CHWs were chosen or selected "by the community themselves".

There is more information, however, on the selection criteria for choosing health workers.

Mature age (between 20 and 45 years) - and often married status - is a criterion in a large number of cases, such as the Church of the Brethren initiative in Nigeria (Hilton, 1983), the Somalia VHW program (Bentley, 1989), a Safe Motherhood initiative in Uganda (Kasolo, 1993), and numerous others.

There are different practices concerning whether the CHWs have to be literate. In Somalia and Uganda, literacy was a prerequisite (Bentley, 1989 and Kasolo 1993), while the Tanzanian VHW program and Kenyan AMREF programs required seven years of primary education as a pre-requisite (Chagula and Tarimo, 1975; Johnson et al., 1989). The Church of the Brethren project in Eastern Nigeria (Hilton, 1983) required the ability to read and write in Hausa, the local language, as well as good communication skills. However, in the community self-help health development program in Sarididi, Kenya, literacy was not considered a selection criterion (Kaseje & Sempebwa, 1989).

There are different approaches to gender choice in selection processes. Streefland and Chabot (1990) asserted that "in Africa, village health workers are generally of two types:

- The young, male and literate VHW, trained in curative and preventive work; and
- The elderly, illiterate female traditional birth attendant (TBA), who deals with childbirth."

This typology is not quite borne out by the case study literature we consulted, although in many cases this observation is probably correct. While it is true that TBAs are usually mature and female, community/village health workers exhibit greater variation. In the Church of the Brethren project in Nigeria for example (Hilton, 1983), "one of the first tasks of the [village health] committee was to select three men and three women from the community as potential VHWs". In the VHW program in Somalia (Bentley, 1989), the candidates were generally male, while in Saradidi, Kenya, 97% of selected candidates were women. Sauerborn et al. (1989) report a practice commensurate with Streefland and Chabot's observation: the selection of two men as CHWs and two women to become TBAs.

In the Somali VHW program (Bentley, 1989), where most VHWs were male, an interesting gender problem emerged in that (male) CHWs had little contact with women. "When children had diarrhoea, frequently it was the husband who came to the centre to collect medicine. Oral rehydration salts were provided, but apparently little information transfer was occurring from husband to wife. The CHW had no direct

contact with the mother so as to be able to advise and help. In a new strategy, each community elected a woman helper. This person became the key informant for the CHW in that community. She was trained in the use of oral rehydration therapy and preparation of oral rehydration salts and in the importance and methods of preventing anaemia in pregnancy. This woman, who was often also the TBA, was supplied with ORS, iron and chloroquine by the CHW".

Many authors, however, do not report on the gender composition of CHW cohorts. Clearly, the gender issue is to a very large extent influenced by wider societal practices and beliefs, and gender relations more generally.

5.2 Qualifications

We reported above that, with a few exceptions, CHWs are expected to have several years of primary school education, being able to read and write, either in English or in the local language.

In addition, Sanders (1985) raises the debate of whether CHWs could or should be traditional healers. He says that "this is probably the most useful way of integrating traditional medicine with Western techniques". But he also quotes a commentator, talking of Mozambique: "The currently fashionable debate in international health and academic circles tends to make the romantic assumption that if practitioners are 'traditional' then they are 'of the people'. In an idealised classless rural community, the *curandeiro* is envisaged as a kind of people's doctor, standing ready for instant transformation into a village health worker. In reality, though, these traditional healers are able to charge high fees for their services, their practice thus running contrary to the CHW philosophy, at least in its early forms."

6 Initial and ongoing training

There is not a large amount of detailed information available on the length and depth of training given to CHWs, although the literature does provide some sense of the variety of approaches.

At Maradi in Niger, for example, courses of seven to ten days (7 days medical training, 3 days literacy) were provided at the rural dispensary base to which the project was attached. The courses were simple and offered in the local vernacular. They covered: "general health concepts, emergencies and referrals, epidemic diseases, health education (including nutrition), elementary health care, environmental sanitation and some record keeping" (Sanders, 1985). Each year the VHWs were sent to a ten-day refresher course, where they would be introduced to new items such as the treatment of malnutrition and the preparation of weaning foods.

Fournier and Djermakoye (1975) report about the same project that traditional birth attendants were also trained. They would be taught simple skills to improve their current practice in a 10-15 day program in the district maternity clinic. If deemed suitable they were given a record book to enter birth data and a kit (UNICEF type) containing simple materials which could be restocked locally or from the village pharmacy.

In Tanzania, VHWs would undergo 3 - 6 months (Chagula and Tarimo, 1975), while in Nigeria, VHWs were trained for three months in groups of twenty, and sent for refresher courses twice a year subsequently (Hilton, 1983).

Bentley's article (1990) on the Somalia VHW initiative provides more insight on the content and structure of training. Here the newly appointed CHWs were trained over a period of seven weeks, with four to six months of practical on-site application in between and one-week refresher courses being offered subsequently every six months. The training made extensive use of role-plays, drama and song. Course notes, although not easily understood initially, proved very helpful in the long run.

Somalia CHW training - the curriculum (Bentley 1990):

"The final design divided the training as follows:

- First course, duration three weeks:
 - Week 1: orientation
 - Week 2: clinical topics
 - Week 3: practical application of new knowledge.
- In-service work, four to six months;
- Second course, duration four weeks:
 - Week 1: refresher course and problem-solving;
 - Week 2-3: new clinical topics;
 - Week 4: practical application of new knowledge.
- Refresher course, one week every six months

The orientation addressed PHC concepts, CHW role, structure of the community, germ theory of disease and the wider definition of health. (...). In the first course, clinical content was restricted to three to four subjects, selected on the basis of priority need expressed by communities. The commonest topics were anaemia, malaria, diarrhoea/dehydration and vaccination. This combination was felt to contain a good balance of education, prevention and simple treatments. (...). Respiratory infections, eye and skin diseases and first aid were taught in the longer second course, when CHWs were intent on absorbing as much knowledge as possible to meet community expectations. Some basics of nutrition and personal, domestic and environmental hygiene were taught in both courses. The final week of the first course attempted to prepare students for the realities of the job, examining what their theoretical knowledge was to mean in the field. Field visits, secondment to a refugee camp, a maternal and child health clinic, a hospital ward and participation in vaccination sessions served to 'throw them in the deep end' while help was still at hand".

The motivation of CHWs through continuing education can be enhanced by determining their needs, providing supportive workplace supervision, and providing refresher courses and different forms of assessment. In a training program in Nigeria, continuing education is an integral part of the training and support for traditional birth attendants (TBAs). Supervisors provide monthly updates and reviews, and 3-5 day refresher courses are scheduled annually. The supervisors encourage and monitor TBAs to maintain safe and hygienic work practices and refer complex cases to health facilities, solve problems, attend meetings, attend refresher courses and evaluate their work (Kortmann 1994).

The importance of educational follow-up through refresher courses is emphasised in many case studies, pointing to the fact that CHWs need on-going support and contact, an issue which will be raised again under the section on supervision.

In Kibwezi, Kenya, it was found that inviting village elders to training sessions "greatly enhanced their support of their CHWs. As a result, there has been no drop-out from the group in 1985 and 1986" (Johnson et al., 1989).

It is clear that training needs to include both the medical and technical aspects of health, but also cover knowledge of environmental, psychological, economic, cultural and social factors that affect health. This implies that there must be a study of social and behavioural sciences as well as the life sciences. The resulting approach should

be to create an perspective that is not just orientated to curing disease but should see health promotion and provision as a social, as much as a biological science.

While we do not know much about the didactic approaches of training programs, most of them seem to have embraced at least some of the principles of adult education:

- ❑ Learner-centred
- ❑ Experiential/adult
- ❑ Community-based
- ❑ Problem-orientated
- ❑ Self-discovery
- ❑ Analytical emphasis
- ❑ Context-appropriate.

A particularly innovative approach to training is presented by Hilton in describing the Church of the Brethren CHW project. Hilton explains that "the distinctive feature of the training program is its extensive use of stories, drama and song. These methods are used not only in the training course, but also by the VHWs themselves in their community work".

"Daily clinic work begins with the VHW telling an educative story for the people - many of them mothers and children - who have gathered at the health post. (...) The group teaching is followed by individual consultations and treatment. Providing on-the-spot curative care not only helps people overcome the most common diseases, but also gives credibility to the health messages, which the VHW tries to convey. It also provides some income for the VHC to replenish medical supplies, keep the health post in good repair and contribute to the VHW's salary. Patients whose symptoms are outside the scope of the VHWs training or whose condition does not improve after a few days are referred to the nearest dispensary".

For example, one popular educative story tells of a woman who lost two babies from neonatal tetanus, due to the harmful local practice of cutting the umbilical cord with a corn stalk and applying dirt to stop the bleeding. Her third child, however, survived because the midwife had been trained - she washed her hands, used a clean cloth on the floor, severed the umbilical cord with a razor blade and piece of string previously sterilised by boiling. Neonatal tetanus has been virtually eliminated in the villages where VHWs have used this story to motivate and educate women.

In villages where this method was used immunisation coverage improved, and there has been a marked decrease in a range of common illnesses."

Formal curricula and training materials are not easily accessible. A comparative study of educational materials would be an urgent and fascinating research priority.

South Africa's Institute of Urban Primary Health Care at Alexandra Health Centre in Johannesburg, for example, has developed a variety of separate training modules for community health workers and specialized community workers (e.g., geriatric care, mental health, acquired immunodeficiency syndrome) (Cornielje and Ferrinho 1995). And the WHO developed guidelines for *Primary Health Workers* in 1980 in the spirit of PHC and Alma Ata which focus on teaching and learning techniques, aspects of community entry, prioritising health problems, as well as a wide range of clinical and

communication skills. The WHO guidelines also contain substantial learning materials in the form of a working guide. (WHO, 1980), which introduce clinical skills as well as topics on 'village and home sanitation' and 'community development'.

7 Types of CHWs and their range of activities

It is evident that there is a wide range of different community health workers, performing an even wider range of tasks. A typology is therefore not easy. One simple distinction, however, is that between generalist and specialist CHWs.

7.1 Generalist CHWs

Generalist village health workers have been working in African health programs from before the Alma Ata declaration. Some of these models have been described above and in books like *Health by the People* (Newell 1975) and *Practising Health for All* (Morley et al. 1983).

It would appear that generalist CHWs can be found particularly, though not exclusively, in early CHW initiatives such as Niger, Ghana, Tanzania, Mozambique and a little later in Zimbabwe and Somalia, where they performed not only health-related, but also developmental functions

The typical range of activities included:

- Treatment of diarrhoea.
- Simple wound treatment
- Identification and referral of problem cases (eg. high-risk pregnancies)
- Immunisation
- Family planning
- Health education, including nutrition
- Malaria control
- Environmental sanitation

In Niger, VHWs were able to treat nearly 50% of their patients with soap and mercurochrome, for wounds and skin conditions; methylene blue for oral infections; silver proteinate eyedrops for conjunctivitis; sulfaguanidine (against payment), for infective diarrhoea; amodiaquine or chloroquine (against payment) for malaria. To these basic drugs was sometimes added gomenol, ethanolic solutions of boric acid, aureomycin eye ointment and aspirin (Fournier and Djermakoye, 1975).

In Saradidi, Kenya, CHWs were additionally responsible for health education in schools, weighing of new-borns, recording of births and deaths and first aid (Kaseje & Sempebwa (1989).

But while these lower-level health services are crucial to many communities and provide basic access to health where before there was none, Sanders (1985) argues that the tasks of CHWs need not necessarily be limited to these services. He argues

that "equipping VHWs with curative skills does not simply provide health care to more people, more quickly and more cheaply, but it also gives the VHW greater credibility in the eyes of the community". This argument is borne out by experiences in several countries where CHW programs floundered due to disappointment among the community about the range of health services the CHWs could provide. One such example is documented by Sauerborn et al (1989) in Burkina Faso. They report that two thirds of ailments had to be referred to the next level of care, rendering CHWs largely ineffectual.

But not only does a wide range of activities and skills lend greater credibility to a CHW, it also breaks down the mystified position of the doctor, thus building community capacity to tackle health issues progressively and proactively, not waiting for salvation from 'the god in white'.

Sanders quotes Werner, who in a survey of VHWs found that:

"... the skills which village health workers actually performed varied enormously from program to program. In some, local health workers with minimal formal education were able to perform with remarkable competence a wide variety of skills, embracing both curative and preventive medicine as well as agricultural extension, village co-operatives and other aspects of community education and mobilization. In other programs - often sponsored by Health Departments - village workers were permitted to do discouragingly little. Safeguarding the medical profession's monopoly on curative medicine by using the standard argument that prevention is more important than cure (which it may be to us but clearly not to a mother when her child is sick) instructors often taught these health workers fewer skills than many villagers had already mastered for themselves. This sometimes so reduced the people's respect for their health worker that he (or usually she) became less effective, even in preventive measures".

7.2 Specialist CHWs

There are innumerable examples of specialist CHW programs throughout Africa. Particular focus areas are in maternal, child & reproductive health and family planning, malaria, food security and nutrition, community rehabilitation and, more recently, HIV/AIDS related home-based care. Below are a number of examples under the different categories.

7.2.1 Maternal & child health, reproductive health and family planning

7.2.1.1 Greater Soweto Maternal Child Project

The Greater Soweto Maternal Child Project project provides an example of a local non-government initiative undertaken in an urban environment. Eight trained community health workers were centered at Chiawelo Clinic and provided home based and neighbourhood health care such as supervised Tuberculosis treatment, tracing of immunisation defaulters, and health education based on GOBI FFF (Grant JP, UNICEF:1985;94) and "Facts for Life" (UNICEF 1989-1993). They formed a link between the community and government health care services and also other available resources, providing health services, undertaking home visits and making referrals to clinics or other relevant agencies. As community health workers they had the approval and support of the Local Soweto Health Authority, the Civic Association and the communities they served. On completion of the project, all were redeployed

into local health service posts where it was intended that they form the nucleus of an expanding service. (Ramontja, Wagstaff et al. 1998).

7.2.1.2 Reproductive health in Nigeria

In Nigeria, community workers have been agents for promoting social change in CEDPA's ENABLE community empowerment project. The project relied on a comprehensive approach to address barriers to women's control over their reproductive health. Community health workers did more than just distribute contraceptives. They also encouraged exclusive breast-feeding for better nutrition and birth spacing and advocated for reproductive rights in communities ("New project meets women's needs", 1998).

7.2.1.3 Health mummies in Ghana

Ghana's approach to family planning through the consistent provision of health services in clinics and community visits has built trust between rural populations and health. The Integrated Family Planning, Nutrition and Parasite Control Project (IP), a Planned Parenthood of Ghana (PPAG) program, has promoted birth spacing after improving health, nutrition, and environmental sanitation. In the Central region of Ghana, 4 PPAG field staff members have worked with the 15,000 people of the 9 villages, and they have become so popular and loved by the communities that they have come to be known as the "health mummies." Largely due to the work of the "health mummies," the community health development project that integrates family planning and health services has enjoyed wide success.

Having earned the trust of the community, the 4 women are consulted on family and village problems. Villagers have asked the health mummies to become permanent members of the communities, and some villages plan to build houses for them. Evident from the enthusiasm, the community health program has had a profound effect on the attitude and behavior of the villagers, and impressive results have been achieved (Integration 1990).

In general terms each field worker was in charge of 1-4 communities with community populations ranging from 200 to 5,000. They would meet with people in their houses to discuss health and family planning, and advise and teach Local Steering Committee members.

For example, Agnes Boakye visits Ojobi (population; 3,800) and Bontrase (population; 4,300) 2 days every week. She meets her supervisor Cecilia Colcraft and manager Nii Adote Addo every week to receive help in planning weekly programs and to receive comment on her work. Once a month the Local Steering Committee meets with her. Even though Boakye's work week is Monday through Friday, she visits with the community on Sunday. The villagers love her and find her trustworthy, helpful, and resourceful for their many problems, including marital ones, because she takes care to be nice, respectful, and is convinced her work helps the community. The 3 field workers travel in 1 car together Tuesday through Friday to the villages and use the time to advise and consult each other. The car sometimes serves as an ambulance to transport serious cases which they are unable to treat to Awutu or Accra. Villagers are asked to pay at least the cost of medicine, although income-generating activities are necessary so that most of the villagers can afford the family planning and health services. This field worker maintains that with encouragement, villagers are motivated to keep their children clean, clear rubbish and sources of mosquitoes, collect safe water, and control soil-transmitted helminths. Health worker trust, developed during

worm treatment, insures that villagers will be receptive to family planning. (Hara 1990).

7.2.1.4 Pregnancy monitors in Uganda

Pregnancy monitors were used in Uganda by the Safe Motherhood Initiative establishing a pregnancy monitoring system to promote safe motherhood in the community, provide basic information and counselling on health and family planning to women; maintain records on selected pregnancy-related indicators; identify pregnant women at risk and refer them to the health units; and to increase availability of health care services (Kasolo 1993).

7.2.1.5 Family planning volunteers in Tanzania

The Tanzania Family Planning Association runs a community based distribution (CBD) program which uses volunteers who have been chosen by their villages and trained as distributors of health and family planning services and information. Around Iringa town in the southern highlands there were 48 villages that were part of the program. More than 60% of the population was Catholic. Because of Catholic missionary schools and Tanzania's education program, the literacy rate was high.

One of the volunteers was Tobias Makendi, a 30-year-old husband, father and a farmer in Ibangamoyo. He had previously worked in the rural development bank in Iringa. After a 3-week training program, Tobias had registered 19 clients (two of whom were 15-year-old girls, one of whom was married and had a child) within two weeks. He had also discussed high-risk sexual behavior with a married, middle-aged man who had been taking several partners in order to father a child. Tobias's goals included reduction of the number of women dying due to childbirth, assistance in family planning of wanted children, and prevention of AIDS. He worked long hours and had met with resistance from the local priest (Haspel 1994) .

7.2.1.6 Lay family planning couples in Rwanda

Rwanda's National Office of Population was created in 1981 to increase awareness of the nation's demographic problems through various types of educational programs and to help the population make informed and responsible family planning decisions. From 1981-86 a mass communications strategy was emphasized using radio, print materials, theater, cinema, meetings and seminars. This approach changed from 1987-91 to stress interpersonal communication. Lay couples were selected by communes and trained in family planning. Their function was to inform other couples, using techniques of interpersonal communication believed to be in keeping with the importance of oral tradition in Rwandan society (Kamanzi, Avutsekubwimana et al. 1990).

7.2.1.7 Adolescent Reproductive Health Services: Kenya and Zimbabwe

A similar model to that in Rwanda developed in Nyeri, Kenya (Population Council, Undated), where young parents who are well known and well respected in their communities are trained to give reproductive health information to young people, a system that effectively replicates the "auntie/uncle" system of sexuality education that

is traditional in Kikuyu culture. These parents refer young people in need of reproductive health services to a specially trained network of service providers through a coupon system, through which young people can obtain services at a subsidized price. In rural Zimbabwe, existing community-based outreach workers such as those involved in community-based distribution of contraception, traditional birth attendants, village health workers, and agricultural extension workers have been trained to give reproductive health information and referrals to young people during their outreach activities.

7.2.2 Food security and nutrition:

7.2.2.1 Community nutrition workers in Madagascar

In Madagascar, a food security project (Balachander 1997) was successfully based on community nutrition workers. It demonstrated the potential of NGOs to work with government in building capacity to improve the quality of service offered by these workers. The community workers were selected from a group of mothers and trained to monitor the growth of all children under 5. Children who were severely malnourished were identified and referred to rehabilitation centers for treatment lasting up to 3 weeks. The program offered support and nutrition education for mothers of sick children, iodine capsules and micro-credit. Since 1993, 28,000 children under age 5 had been weighed each month. These children came from two provinces and belonged to 300,000 families. The monitored children were 66% of the total number of children aged under 5 years. Malnutrition rates decreased from 46% to 37%.

7.2.3 Malaria control

7.2.3.1 Village health workers in Gambia

A malaria chemoprophylaxis program was undertaken over a 5 year period. Maloprim (pyrimethamine and dapsone) was administered fortnightly by village health workers (VHWs) to approximately 1,500 children each year aged 6-59 months resident in 15 primary health care villages in a rural area. Many children maintained reasonable levels of compliance with chemoprophylaxis over this period. This has occurred despite minimal outside supervision and support of the program. Factors that may have affected the level of compliance in individual villages were large villages and those where social or political factionalism were evident. Most VHWs cooperated enthusiastically and kept accurate records of compliance, despite receiving no compensation from the villagers for administering chemoprophylaxis. The administration of a drug to prevent illness in children was complementary to the curative service provided by VHWs. The chemoprophylactic was widely acceptable and nearly all mothers stated that the tablets were good for their children's health. However, knowledge of the specific purpose of chemoprophylaxis in the prevention of malaria was limited (Allen, Snow et al. 1990).

7.2.3.2 Using Community health workers for malaria control: experience in Zaire

The potential for using CHWs for administering timely and effective treatment of presumptive malaria attacks was evaluated in the Katana health zone in Zaire

(Delacoelette et al., 1996). In each of the twelve villages of the intervention area, a CHW selected by the village was trained for two weeks in the use of a simple fever management algorithm. After training, the CHWs started their activities. Since they were also local farmers, they were, in principle, always accessible to the villagers, who had been motivated through health education to consult the CHW for any fever episodes. The CHWs performed their services under the supervision of the nurse in charge of the area's health centre and attended monthly meetings. They received only a symbolic monetary award, as well as the standing in the community. Nevertheless, no CHW dropped out of the program.

Malaria morbidity and mortality trends were monitored over two years in area A (the project area) and in an ecologically comparable control area (area B), where malaria treatment continued to be available at the health centre only. Health care behaviours changed dramatically in the intervention area, and by the end of the observation period 65% of malaria episodes were treated at the community level. Malaria morbidity declined 50% in area A but remained stable in the control area. Malaria-specific mortality rates remained, however, at essentially the same levels in both areas.

Key problems in the project revolved around the limited scope of the CHWs practice and their ambiguous role within the health care system. More specifically, Delacotte et al. (1996) observed that CHWs wanted to be more than symbolically remunerated for their services; they were eager to receive further training so as to expand their scope of practice, and they wanted to become a formal part of the health structures. Furthermore, the project management and supervision placed an increased burden on health centre staff, and communities became increasingly disenchanted with the limited scope of services delivered by the CHWs. This, in the authors' opinion would in the long term compromise the sustainability of the project.

7.2.4 Community Rehabilitation

7.2.4.1 Community rehabilitation workers in South Africa

Community rehabilitation workers (CRWs) were trained by the Wits/Tintswalo community rehabilitation worker training program situated in South Africa's eastern Transvaal Lowveld over a two year period in therapeutic skills. Qualitative and quantitative evidence collected during the first eighteen months in which the CRWs were working full-time (January 1993 - June 1994) suggests that the two-year training program was successful. Key issues raised were whether the coverage of disability was adequate in terms of numbers treated or in terms of categories of disability treated (Dolan, Concha et al. 1995). In Gazankulu a specific cadre of Community Speech and Hearing Therapy Workers were introduced to six hospitals (Schneider 1992).

7.2.5 Refugee work

7.2.5.1 Benaco refugee camp workers in Tanzania

Benaco refugee camp in Tanzania provides a model for early HIV prevention and care in emergency settings. The project's activities include involving political and religious leaders; coordinating activities with other organizations in the camp; setting up a network of AIDS community educators and condom distribution points; providing nursing care for people with AIDS in their camp "home"; holding mass education

activities; and encouraging rape victims to get medical care and counseling ("HIV and refugees" 1999).

7.2.6 Environmental health and sanitation

7.2.6.1 A community-based health and hygiene model in South Africa

"The Pambili Water and Sanitation project is a World Vision initiative with water and sanitation expertise provided by the Mvula Trust. The project spans 15 villages in the Eastern Cape. The project is an integrated water and sanitation intervention. In keeping with The Trust's belief in community based management, rainwater tank, toilet construction and health and hygiene promotion was carried out by community members. Two village health workers per village were selected by the community to carry out health and hygiene promotion in close integration with the tank and toilet construction. Health workers were trained in water, sanitation and health related risks using relevant tools" (Onabolu & Dau, 2002).

7.2.7 Popular edutainment

7.2.7.1 Community entertainers in Zambia

The Zambian Control of Diarrhoeal Diseases Program sought the assistance of 2 popular theatre groups to develop and produce community-based plays on diarrhoea including messages on using oral rehydration therapy (ORT), breast feeding, continued feeding, and using fluids (White 1990).

8 Management, support and supervision

Management, support and supervision are recognised as the key elements which 'make or break' CHW programs. While no studies were found, which specifically dealt with this issue, most case studies presented earlier did comment on the successes and failures of management and support structures.

8.1 Governance and accountability to communities

8.1.1 Village Health Committees

Most reports on CHW initiatives report the use of Village Health Committees (VHCs) to manage and guide the work of community health workers. As a rule, these committees are charged with organising the identification of health priorities, the selection of CHW candidates from the village, the building of necessary structures for reporting, and the remuneration of CHWs.

VHCs were mentioned repeatedly in the previous section. Below is an example from Zaire, which illustrates the role of VHCs in making sense of and creating the link between traditional ways of life and modern health care.

Nickson (1993) describes how people in Zaire, in the Collectivité of Boga, a community of about 10,000 people, mainly of the Bahema tribe, were involved in a cyclical process that gradually led to health improvement with the assistance of a health study team. At the centre of the initiative was a paradox. Despite access to and utilization of what appeared to be adequate and comprehensive PHC services, there was continuing poor health in the community, which local people described as "losing peace". In late 1982 development committees were established in each of 15 villages. Training of VHWs and TBAs commenced. The VHWs initially worked on a voluntary basis although they were able to make a small profit from medicines sold. This was revised in 1983 when it was decided that the Collectivité and respective village would each pay one-third of a given amount as remuneration for the services of the VHW. These services continued through the 1980s, yet the cultural isolation of the villages persisted.

To solve the paradox, the Chief of the Collectivité created a tradition reform committee to examine tradition in the light of contemporary development issues and broadly involved community-elected leaders and resource persons in the dialogue. Although there were no baseline health studies members of the group spent time in the villages talking to people and encouraging them to express their ideas. Over three months they examined people's concepts of health, illness and health care, including inter-related concepts of bereavement, loss or damage to property, misfortune and other cultural concepts such as those involved in decision-making processes and death rites. They told a local version of 'Rakku's Story' to stimulate discussion and debate. All these discussions led to a clearer conceptualisation of the local understanding of health, epitomised in the local word *obusinge*. For a family it meant peace within and between families, parents being alive and free from chronic illness, being educated to at least primary level for all children, resourcefulness in domestic finance, cultivation of at least half a hectare per family member, two or more cooked meals per day, an adequate standard of hygiene, access to water within 200 meters and affordable health care within reach of the village. Each village proudly developed its own subtle variations of this embracing concept and then set out to do a detailed survey of the households in the villages to assess the situation and reasons for shortcoming in achieving *obusinge*. After making a diagnosis each village developed their own action program, which differed widely, depending on the priorities that they identified. These varied from building village roads, school rooms, improved cultivation, reduction of HIV/AIDS risks etc.

But VHCs also play an ambiguous role within CHW initiatives. Streefland and Chabot (1990) argue that "when VHCs were to be elected, this was seldom thoroughly discussed with the community in advance. Consequently, much remained unclear concerning the persons to be elected to the VHC". Furthermore, the position of VHCs within village hierarchies was not always clear and often contested, leading to tensions between VHC members and other community leaders (Sauerborn, 1989) or becoming the site of political contestation (Sanders, 1992).

Streefland and Chabot assert that for a VHC to be successful, it should "adequately reflect the heterogeneity of village society, and particular attention should be given to the representation of vulnerable groups such as women and the poor. Furthermore, the members of the VHC must have the leadership and management qualities necessary to keep the committee together and working as an efficient and effective structure".

The potential for political conflict surrounding the formation and accountability of VHCs in Zambia is discussed by Twumasi & Freund (1985):

"The problem began when the CHW called together a few village headmen, in the absence of the councillor, to discuss the formation of a VHC. The CHW had been informed by the District PHC Coordinator that a VHC was a necessary part of the PHC process and important to his effective functioning as a CHW. However, the councillor, after learning that the meeting had been held, declared it an illegal assembly and that any decisions made would be

null and void. The councillor felt that his authority had been pre-empted because the right to establish such a committee normally resides with him as part of his delegated Party responsibility to monitor all community activities. (...). The perceived potential threat for the CHW's role was another important reason behind many of the councillor's actions. The councillor continued to block the formation of a VHC because he saw it as a vehicle for the CHW to gain power".

In this case the councillor did eventually give in and allowed the formation of a VHC, but he continued to obstruct the activities of the CHW.

The above case illustrates the complexity of locating VHCs within and among existing traditional and modern power structures, highlighting the importance of negotiating democratic accountability of such structures.

Furthermore, experience has shown that even with these forums, the attitudes of health personnel can be undermining and the relationship between communities and health workers deteriorates. For example in Tanzania where rural medical aides and medical assistants were asked to attend meetings, where they could as villagers be elected to committees, they stayed away (Ebrahim, 1988). Chairpersons and members of such committees when interviewed were sharply critical of dispensaries and local health centers. In Zimbabwe rivalry and competition between different arms of government at the top level combined with party-political activities sabotaged the effective functioning of such committees, undermined direct democracy and led to a deterioration in the communication between local health services and communities (Sanders, 1992).

8.2 Relationships with the formal health services

Attitudinal problems arise from different sources such as the condescending and vertical relationship between health personnel and CHWs; the paternalistic relationship between health personnel and communities and the negative responses of communities to both health personnel and CHWs.

Interactions between CHWs have often been affected by the way that programs have been introduced. CHW programs have commonly been advocated for by enthusiasts with local experience persuading policy makers to scale up initiatives and implement programs on a large scale. This has often resulted in the implementation of inadequately thought-through schemes without the full participation of health personnel at the local level. In many programs, even those personnel who come into most contact with CHWs, are not involved in the planning, implementation, monitoring and evaluation of such programs. It is hardly surprising therefore that they lend little support to these initiatives.

Many health personnel lack the background and orientation to provide a supportive environment for CHW programs. They are socialized into the hierarchical framework of disease-oriented medical care systems and have a poorly developed concept of primary health care. Such paradigms are ill-suited to providing an environment supportive of true partnerships and team work between different health workers, particularly if some cadres are thought of as less important. Health professionals often perceive CHWs as lowly aides (Walt 1992), (WHO 1989), (WHO 1990) who should be deployed as assistants within health facilities, often completely misunderstanding their health promoting and enabling role within communities. The attitude may also partially stem from a lack of understanding of the purposes,

objectives and value of supervising CHWs. A distinction is placed on the relative value of health professionals in comparison to lay workers. CHWs may be particularly a target of this view, given that they are a relatively new category of workers. This sense of superiority of health personnel has been observed as a problem (Sanders 1992) together with some suggestions as to how this was addressed in the training of medical students. (Waterston and Sanders 1987). Surprisingly, the opposite problem has sometimes occurred where a rivalry has developed between nurses and CHWs. This may lead to social feuds, with different groups supporting different workers and retarding access to the services offered. (Kahssay, Taylor et al. 1998)

There is often a wide gulf in the social, economic and cultural background between health personnel and CHWs. Health personnel are usually not trained to seriously consider the health concerns of ordinary people. When coupled with the view that it is inappropriate to involve lay persons in decision-making, health workers may demonstrate a reluctance to view CHWs as proper members of the health team.

When a hierarchical and paternalistic relationship exists between CHWs and health personnel, communication deteriorates because of distrust and a lack of understanding compounded by an increasing lack of respect (Walt, Perera et al. 1989). Without adequate communication the information about people's beliefs, needs and expectations that CHWs hold is lost to the health care system, and this may prejudice clients. Even worse, CHWs may out of fear of their supervisors orientate their service towards maintaining the status quo rather than improving health.

Although training has often been provided for CHWs this has frequently been unrealistic given what CHWs are actually able to achieve in their situation, and this has led to unclear expectations of their performance. Health personnel orientated to more traditional clinical roles may interpret this with negativity and develop a relationship characterized more by cynicism and distrust rather than courtesy and respect.

Health personnel may also take up similar attitudes towards community members and groups in the same way, not understanding the value of participation. Doctors and nurses may look down on village life. Health workers frequently tell village people what to do rather than discussing issues with them. (Chabot and Bremmers 1988)

CHWs may inadvertently adopt some of the values espoused by the health professionals. They may selectively value curative as opposed to preventive and promotive health care. They may undervalue their own worth and seek to emulate professionals.

Although CHWs are supposed to be drawn from and be accountable to their communities, as they take on the values and belief systems of their supervisors, they may distance themselves from their own communities. This tends to be accentuated by further training and professionalization.

Communities may sense these attitudes and in response develop negative attitudes of their own towards the health personnel and the health system; CHWs seen as the advance guard of the health system may be tarred with the same brush. The end result may be a lack of utilization of the services by the community and a failure of promotive and preventive health strategies.

The curricula of the medical and other health science teaching institutions often do not equip health professionals to undertake priority tasks that must be performed to deal with the health problems of communities, (WHO 1985). A study of Nigerian medical students found that community health was one of the subjects that students

disliked most. Some expressed doubts as to its relevance in their training to become physicians, (Otti 1989.) Attitudes to CHWs inevitably suffer as a result

Although community satisfaction with health services may be good, even in the case of facility-based family health educators in Botswana (Walt, Ross et al. 1989), (Knudsen 1988), this is often not the case. Reviews of community satisfaction show that communities are often frustrated with the attitudes of health personnel and disenchanted with the level of health service, especially regarding issues such as shortages of essential drug supplies (Walt 1988). There have even been instances where CHWs and other health personnel have been killed or harassed. On the whole there are few reported examples of ongoing support and encouragement

8.3 Technical support and supervision of CHWs

Although it is widely considered important that the supervision of CHWs be undertaken both by the community and professional health workers, this is often not the case.

Small scale projects are often successful because they manage to establish effective support and supervisory mechanisms for CHWs, often including a significant amount of supervision and oversight by the community itself. National programs are rarely able to achieve this consistently as has been shown in the Zimbabwe experience for example (Sanders 1992). Usually communities are not meaningfully involved in providing supervision, which then generally falls to a member of the health service staff.

Many evaluations have documented the weakness of supervision and support in national programs, which is often irregular or non-existent, (WHO 1990),(Gray and Ciroma 1988). In the worst cases CHWs do not even know who their supervisors are or what they can expect from them.

Social distance between health personnel, CHWs and communities is also a barrier to effective supervision. Health personnel may be reluctant to spend time in communities, particularly on weekends when many community members are more available for meetings. They may also be reluctant to allow communities to participate meaningfully in health decisions.

Civil servants and administrators, like their health counterparts, may poorly understand the value of community participation and may believe that communities have little to contribute to improving their own health. Their attitudes are passed down through the ranks and help to maintain the unresponsive, hierarchical nature of administrative systems

Because health personnel and administrators often devalue the work of CHWs money and other resources such as transport for supervision, support and training are not adequately provided. These activities are simply tacked onto already overstretched activities of personnel burdened by numerous other responsibilities and for whom the work may not be a priority.

Accountability then generally devolves to those who pay them, and this is usually the health service. Supervision then tends to evolve into a system of inspection with supervisors taking on the role of inspectors. Performance may be judged on narrow criteria such as record keeping, tasks related to dispensing drugs, condoms and other activities that can be ticked off on a checklist. Assessment is often perfunctory,

showing little understanding for the need to provide support to CHWs in varied tasks, the most critical of which are empowerment functions such as the building of structures, health education and empowerment of women which are difficult to evaluate from mechanistic checklists.

8.4 Infrastructural support

Infrastructural support, in particular the reliable provision of transport, drug supplies and equipment is another weak link in CHW effectiveness.

While some projects, such as the Somali one, recognised the dependence of the project's success on reliable transport early on and attended to it with the setting up and maintenance of a fleet of vehicles, other projects struggled to maintain regular transport, thus interrupting drug supplies, and in scattered areas the mobility of CHWs.

Drug and equipment supplies were usually organised through district or regional dispensaries, and collected and delivered by CHWs (Sauerborn, 1989; Bentley, 1990).

Management support has been identified as one of the key areas of intervention if CHW programmes are to be strengthened and sustained.

Another key area is the financing of CHW programmes, which took a severe knock in the 1990s, as reduced health service funding led to the collapse of infrastructure and the reduction of outreach activities in many countries, thus weakening existing CHW programmes.

9 Financing CHW programs

Following Alma Ata in 1978 there was initial enthusiasm for the introduction of CHW programs in many countries in Africa. It was assumed that the successful small-scale projects could easily be scaled up to national programs and that the introduction of the programs would improve access to appropriate and equitable services in an affordable way. Affordable meant that the programs would not cost any more because it was assumed that external donors would pay for the high initial startup costs with governments only having to take responsibility for lower maintenance costs. This it was hoped would be funded through cost-savings from the reduction of more expensive medical care. There was also the hope that the participation of communities would result in cash or in kind contributions which would offset any additional costs

In reality there were many hidden costs which were not anticipated as programs scaled up from project level to national scale. Because of widespread poverty and the lack of understanding of how to achieve genuine community involvement, the community contributions hoped for did not materialize. Unfortunately this occurred at a time of a general reduction in the resources available for health care and development as a whole, with many governments being in a position of having to service massive external debts and thus being forced to restructure their economies. Choices had to be made whether to retain the pattern of existing medical services or make the substantial commitment to transform the services. As this became apparent the political commitment to Primary Health Care, including CHW programs, faltered and national programs did not receive the funding that they required. CHW programs

particularly, being on the periphery suffered even more than other aspects of the PHC transformation, even though the overall costs of these programs were only a fraction of the overall costs of health care. The result has been that the national CHW programs have generally languished for many years in a state of unrealized potential. Politicians, health planners and communities alike became disillusioned.

At the same time as national CHW programs remained in the doldrums, numerous intervention trials have clearly demonstrated the cost effectiveness of many different types of CHW programmatic activities. It is clear from this research that CHW programs are not an alternative to the provision of basic medical care; but are instead a highly effective complementary activity. They greatly enhance the value of existing services extending them so that they reach out to improve equitable access to previously marginalized and excluded vulnerable groups.

The challenge remains for African countries to make the investment in CHW programs, understanding that CHWs are not a cheap alternative form of PHC, but are an integral part of the District Health System, necessary if the goal of health for all is to be achieved. They add value to basic medical services extending service coverage in a far more equitable and cost-effective way than would be achieved by adding more medical services. (WHO 1990). They do not however replace the need for such basic medical services and therefore require additional financing not only to finance the high initial costs, but also the recurrent costs for training, management, logistics, supervision and evaluation. (Berman, Gwatkin et al. 1987). Given the realisation that additional resources would be necessary to finance CHW programs, the remuneration of CHWs, the largest component of any program have come under the spot light. It was hoped that cost savings could be achieved in this regard by encouraging voluntarism on a mass scale. This has generated its own massive debate.

9.1 Should CHWs be volunteers or paid?

Whether CHWs ought to be volunteers supported in kind by the community, or paid through community or government funds, has been much debated. In a personal communication (Doherty and Magwaza 2002) reviewed some of the issues pertinent to this issue.

Much of the literature tends to imply that volunteers are the ideal to which most CHW schemes aspire, and assumes that there is a sufficient pool of willingness to conduct voluntary social service in rural areas and informal settlements (Walt 1988).

In a paper examining behavioural perspectives on the issue of whether lay workers in such programs should be paid for their services Kironde and Bajunirwe (2002) argue that that even, for example, in high-burden TB settings, intrinsic motivation (encompassing such feelings as empathy and altruism as well as other factors such as religious and cultural conviction) alone may be inadequate to provide continued motivation for lay worker involvement in health programs. Extrinsic motivators, of which money is the strongest example, are required to keep sustained interest, particularly in resource-limited settings where people expect payment for work done. Research among TB volunteers has shown that they initially offer their assistance without any monetary incentives hoping that there will eventually be remuneration. When this does not materialize, attrition rates are high (22%), with three quarters leaving for this reason. (Kironde and Klaasen 2002). This has serious implications for the sustainability of such community-based programs.

The reality is that most programs pay their CHWs either a salary or an honorarium and almost no examples exist of sustained community financing of CHWs. Even NGOs tend to find ways of financially rewarding their CHWs. Moreover, while there

are programs in Zambia in which CHWs work on a completely voluntary basis, attrition rates are high and the few enthusiastic and reliable volunteers become overloaded with tasks from other agencies and sectors. A WHO draft document concludes that there is little evidence that the mobilisation of volunteers in CHW programs is an effective policy (World Health Organisation 1987).

While numerous volunteer schemes exist in developing countries, worldwide voluntarism may be more feasible in First World countries, as crucial prerequisites to volunteering are time and money. A secure economic and social life makes voluntarism possible, even attractive, and may give volunteers satisfaction they do not get from paid work. Where does this leave developing countries? Women in general are heavily burdened with daily tasks, with survival or subsistence, particularly in poor urban or rural settings. There is little time for voluntary work, although there may be considerable reciprocity between neighbours or families at certain times (Walt 1988). In urban areas where a cash economy rules, subsistence without a salary is difficult, and some form of monetary remuneration for work is mandatory.

The tasks assigned to CHWs are commonly time consuming and often difficult. Even when the workload is light and can be fulfilled on a part-time basis, the costs entailed by lost economic opportunities may be too high. It is notable that many CHWs are motivated by a desire for employment. In Sri Lanka, health volunteers are mainly young, well-educated women, who have few job opportunities (Perera 1985). Job-seeking motivation in voluntarism has been noted in CHW schemes in Nigeria (Adeniyi and Olaseha 1987) and India (Jaju 1983) where CHWs are paid a small honorarium.

The use of volunteers has been described as a form of exploitation. Why should they offer their services for free? They may be expected to work under difficult conditions, without pay, while the professional health workers are not ready to do the same. A program is usually at a disadvantage if it relies heavily on volunteers. A high attrition rate contributes to decreased stability of the program and increases training costs because of the need for continuous replacement. It becomes difficult to plan and manage the program. Such troubles caused the abandonment of a program in Botswana (De Zoysa and Cole-King 1983).

In South Africa many CHWs have in the past received a monthly salary, although their number has declined dramatically in recent years due to funds being withdrawn. They are employed by NGOs and work fulltime. In comparison home carers, individuals who are trained specifically to assist ill people at home, do not receive a salary. Home carers, who are employed by organisations such as the Red Cross Society and St John's Ambulance, generally work part time or only a few hours per day. They are reimbursed for transport costs but do not receive a salary. Problems associated with these types of workers are mostly related to exploitation both by the clients and the organisation. Once the home carer is known in the community, expectations rise and they are frequently called upon after hours to assist people. This leads to high attrition rates as the home carers work increasing hours with no pay. On the contrary CHWs generally stay in their jobs for many years as they are remunerated for their experience, and level of responsibility. There are also opportunities for CHWs to undertake continuing education and to progress to positions as co-ordinators and project managers. This contributes to the stability of staff in these projects.

An important lesson for community involvement in health is emerging from experiences in CHW projects - adequate and sustained remuneration is essential to maintain the interest of the CHW and to ensure the stability of a program.

9.2 Sources and mechanisms of funding

There is no simple answer as to who should pay for CHW services. Although donor funding has been useful to set up prototype projects or assist with some startup costs, it is clear that given the current levels of commitment donor funding is not a sustainable way of funding national programs.

Equally while it is desirable that communities contribute in cash or in kind to CHW programs, this is also likely to be problematic for several reasons. The first is that cash contributions for CHW work are likely to degenerate into fee-for-service payments that focus mainly on curative care, the least important element of the health development aspects of CHW Programs which should be focused on health promotion and prevention of disease. The second is that the work of CHWs impacts most profoundly on the marginalized poor, who cannot afford the contributions that would be needed to sustain a program at a cost-effective level.

This leaves the primary responsibility for payment for national programs with government, either at national, provincial or local levels, either paid out directly by government structures or channeled through NGOs. In time, and as community involvement becomes more effective, there is the possibility that direct government financing could be complemented or even ultimately replaced by local contributions similar to health insurance premiums or local taxation. But this should never exclude participation of the most vulnerable population or such a contribution would then become self-defeating in terms of its own goals

10 Cost-effectiveness of CHW programmes¹

Services provided by community health workers are expected to be more appropriate to the health needs of populations than those of clinic-based services, to be less expensive and to foster self-reliance and local participation. Furthermore, because CHWs are more accessible and acceptable to clients in their communities, they are expected to improve the overall coverage of services as well as equity, i.e. increased service use by poorer individuals and households (Berman 1984). In short, these programmes are expected to improve the cost-effectiveness of health care systems by reaching large numbers of previously under-served people with high-impact basic services at low cost (Berman, Gwatkin and Burger 1987). However, there is a dearth of data on the cost-effectiveness of CHW programmes to confirm these views. Nevertheless, we have identified three subject areas which report data: primary health care; vaccination services; and tuberculosis control programmes.

10.1 Comprehensive Primary Health Care

One of the first papers to evaluate the value for money of CHW programmes was published by Wang'ombe in 1984. The project consisted of CHWs, trained for 12 weeks and deployed in two locations in Kenya's Western Province, acting as providers of basic health care and promoters of selected health, sanitation and nutrition practices. A cost-benefit analysis was performed using the willingness-to-pay approach to compare the costs and benefits of the project. The evaluation illustrated a large net present value and a benefit-cost ratio of between 9.36 – 9.85, depending on the choice of discount rate. The authors concluded that the results

¹ The authors gratefully acknowledge the contribution of Damian Walker and Stephen Jan from the London School of Hygiene and Tropical Medicine who wrote the section of cost-effectiveness of CHWs.

were "...strongly in favour of decentralisation of primary health care on similar lines in the rest of the country" (Wang'ombe 1984).

More recently Makan and Bachman (1997) undertook an economic analysis of CHW programmes in the Western Cape Province of South Africa. Their study evaluated the costs of five CHW programmes delivering primary health care services and one CHW training centre. The authors observed that the CHW unit costs were comparable to those of other health services, although they noted that such a comparison fails to account for differences in disease severity and professional training. Unfortunately, a failure to assess the effectiveness of the programmes did not allow for an assessment of cost-effectiveness.

10.2 Vaccination services

In a recent review of the effects and costs of expanding the coverage of immunisation services in developing countries, one of the interventions with the highest impact on full coverage was CHWs (Pegurri, Fox-Rushby and Walker forthcoming). The employment of CHWs in outreach programmes was evaluated in relatively small but diverse communities, vis-à-vis vaccination campaigns offered periodically. In one case, it was the urban areas of Mexico (Calderon Ortiz and Mejia-Mejia 1996) and in the other, it was communities dispersed along a river in the Amazon, Ecuador (San Sebastian et al. 2001). The involvement of communities improved services as it meant that houses were located with precision, they were registered and the days of vaccination chosen in accordance with parents. The paper by San Sebastian et al. (2001) was one of only two papers for which cost-effectiveness was also evaluated. The use of CHWs was reported to be a dominant strategy, i.e. it cost less *and* was more effective than outreach teams by health staff in the Amazon areas of Ecuador. Such comparisons can help to distinguish whether differences in cost-effectiveness are due to the nature of the interventions or to the circumstances of the countries. For example, in this paper, the characteristics of the Amazon area in Ecuador, substantially influenced the effectiveness (due to the extraordinary potential of CHWs in such an isolated community) and cost results (given the peculiarity of transportation by canoe and the possibility of employing volunteers).

10.3 Tuberculosis control programmes

There has been a recent spate of studies comparing the cost and cost-effectiveness of community-based care with other strategies. Wilkinson, Floyd and Gilks (1997) illustrated that the cost to both health service and patient can be substantially reduced by using community-based directly observed therapy (short-course) (DOTS) for tuberculosis (TB) in South Africa. They found that this strategy was more cost-effective than hospitalisation or sanatorium care. Other studies have found similar findings. For example, Floyd et al. (2003) compared strategies for new smear-positive pulmonary patients (two months of hospitalisation at the beginning of treatment and a new decentralised strategy in which patients were given the choice of in- or outpatient care during the first two months of treatment) and for new smear-negative pulmonary patients (the existing strategy in which no DOTS was required and a community-based strategy, which required DOTS by CHWs for the first two months of treatment). The authors concluded that there is a strong economic case for expansion of decentralisation and community-based DOT in Malawi.

Similar findings have been reported from Kenya (Nganda et al. 2003), Uganda (Okello et al. 2003) and South Africa (Sinanovic et al. 2003), as well as from beyond Africa. For example, a recent paper compared the cost-effectiveness of a NGO TB control programme which uses CHWs with the government's programme which does not. The cost per patient cured was \$64 in the NGO area compared to \$96 in the government area, suggesting that the involvement of CHWs represents a more cost-effective use of resources in rural Bangladesh (Islam et al. 2002). Similarly, an economic study was conducted alongside a clinical trial at three sites in Pakistan to establish the cost-effectiveness of different strategies for implementing DOTS (Khan et al. 2002). Patients were randomly allocated to one of three arms: DOTS with direct observation by health workers (at health centres or by CHWs); DOTS with direct observation by family members; and DOTS without direct observation. The clinical trial found no statistically significant difference in cure rate for the different arms. However, the economic analysis found that direct observation by health centre-based health workers (the model recommended by the World Health Organization and International Union against Tuberculosis and Lung Disease) was the least cost-effective of the strategies tested (\$310 per case cured). The self-administered group came out as most cost-effective (\$164 per case cured). However, the CHW sub-group achieved the highest cure rates (67%), with a cost per case only slightly higher than the self-administered group (\$172 per case cured). The authors concluded that this approach should be investigated further, along with other approaches to improving patient compliance.

Case study - The value of Community Health Workers – the case for the cost effectiveness of DOTS undertaken by CHWs or Volunteer Lay Persons (VLPs)

Lay volunteers achieved treatment outcomes equal to or better than other modes of treatment delivery, including self-treatment, in a study in the Northern Cape involving 769 patients with confirmed pulmonary TB who were followed-up over a one-year period by 135 lay volunteers (Kironde and Kahirimbanyi 2002) In separate studies in Sekukuneland in Limpopo Province (Barker, Millard et al. 2002) and Cape Town (Zwarenstein, Schoeman et al. 2000) it was shown that poor treatment outcomes were no more common among patients supervised by unpaid community volunteers than among patients supervised by professional health care workers. It is possible that certain sub-groups such as women and new patients do particularly well under supervision by lay health volunteers.

Since 1991 all patients with tuberculosis in the Hlabisa health district, KwaZulu-Natal have been eligible for community-based directly observed therapy, short course (DOTS). Tuberculosis incidence increased there from 312 cases in 1991 to 1250 cases in 1996 because of the onset of the HIV/AIDS epidemic. Wilkinson, Floyd et al. (1997) conducted an economic analysis of the DOT strategy compared to the costs of three alternative strategies. They found that the DOTS strategy implemented by CHWs in the community (R3799) was the most cost-effective per patient and was less than half of hospitalisation cost at Hlabisa Hospital (R9830), the National Strategy (R9940) or sanatorium care (R11 145). Prolonged hospitalisation was much more expensive (R119 per day), compared to community care which was cheaper (community clinic visit, R28; community health worker visit, R7).

The largest component of the total cost was supervision of treatment. While much cheaper than hospital, supervising a patient in the community was R503, equivalent to 4.2 days in hospital, with the drug costs (R157) being equivalent to just 1.3 days in hospital. The conclusion was that costs to both health service and patient could be substantially reduced by using community-based directly observed therapy for tuberculosis, a strategy that is cheap and cost-effective in Hlabisa.

In a further study (Wilkinson and Davies 1997) patients were supervised either by a health worker (HW) in a village clinic, or in the community by a community health worker (CHW) or a volunteer lay person (VLP). More patients supervised by VLPs (85%) and CHWs (88%) than

by HWs (79%, $P = 0.0008$) completed treatment. High tuberculosis treatment completion rates were achieved and sustained for several years in a resource-poor setting despite a massively increased caseload. As the caseload increased, however, case-holding started to fall, suggesting the need for more effective defaulter-tracing strategies. (Wilkinson 1999). Geographic information system (GIS) and global positioning system (GPS) technology was able to document the increase in accessibility to treatment after the expansion of the service from health facilities to include community workers and volunteers in the Hlabisa community-based tuberculosis treatment program. (Wilkinson and Tanser 1999)

Patients may be more effectively supervised by voluntary lay people than by health workers under these circumstances without being placed at increased risk. These findings had important national implications, supporting the goals of the new tuberculosis control program, suggesting that community supervisors may be an essential and cost-effective component of any DOTS strategy. However there is no room for complacency. In a follow up (Connolly, Davies et al. 1999) study, it appears that the frequency of treatment interruption from this program has increased recently. The strongest risk factor was year of diagnosis, perhaps reflecting the impact of an increased caseload on program performance. Ensuring adherence to therapy in communities with a high level of migration remains a challenge even within community-based directly observed therapy programs. Stigmatisation of patients with TB as having HIV may also have led to early withdrawal from treatment.

The limited number of studies available suggest that CHWs increase the coverage and equity of service delivery at low cost compared with alternative modes of service organization, i.e. they are cost-effective. However, it should be noted they do not consistently provide services likely to have substantial health impact and the quality of services they provide is sometimes poor (Berman, Gwatkin and Burger 1987). CHWs should be seen as complementary to the formal services and not as cheap substitutes. The particular strengths of CHWs (e.g. accessibility, acceptability, and cultural sensitivity) as well as their limitations (e.g. ability to diagnose and treat serious illnesses) should be considered (Makan and Bachman 1997) although the extent to which they have formally been included in economic evaluations is very low. The economic evaluations that have been undertaken to date tend to be conventional cost-effectiveness studies and thus based on narrowly defined notions of outcomes, namely health gain. Broader forms of economic evaluation such as cost-benefit analysis or institutionalist methodologies could be worth exploring in future. CHWs represent an important health resource whose potential in providing and extending a reasonable level of health care to undeserved populations must be fully tapped (Gilson et al. 1989).

11 Impact effectiveness of CHW programmes

CHWs have “shown that they can effect major changes in mortality and other indices of health status, and that in certain communities they can satisfy prominent health care needs which cannot realistically be met by other means” (WHO 1989)

“There is no longer any question of whether CHWs can be key agents in improving health; the question is how their potential can be realized”(Kahssay, 1998).

The following country and activity specific analyses, sometimes illustrated by case studies provide convincing evidence that additional investments in CHW activities would justify themselves as an alternative to other investments aimed at increasing the provision of services to populations not currently obtaining access to health care.

11.1 Tuberculosis

11.1.1 Tanzania:

In an evaluation of the efficacy of community-based vs. institution-based directly observed short-course treatment for the control of tuberculosis in Kilombero district, Tanzania, researchers found that there was no significant difference in conversion and cure rates between community-based DOT (CBDOT) using a short-course drug regimen with institutional-based DOT (IBDOT). Community-based treatment was therefore no less effective (Lwilla, Schellenberg et al. 2003).

11.2 Health promotion

A train-the-trainer intervention for village leaders showed them how to teach other villagers to improve their health. Health knowledge and reported health practices were compared before and after the educational intervention in 15 villages in Chimutu, Malawi, Africa. The intervention resulted in reported changes in prenatal and postpartum care and in more births occurring in the hospital or clinic. Some positive nutritional changes were reported, although few changes in beliefs about use of herbal medicines or about the use of witchcraft were reported (Gennaro, Thyangathyanga et al. 2001)

11.3 Contraception and family planning

11.3.1 Kenya

Population Council's Africa Operations research/Technical Assistance Project I, developed a program in rural coastal Kenya to gain insight into the relative effectiveness of reaching men with family planning services. The program sent trained teams of men only, women only, and both sexes to 3 comparable sites in Kilifi District, Coast Province, an area with a contraceptive prevalence lower than the national average, to reach out to men in places where they tend to congregate, and to include them in family planning discussions during home visits. The community-based agents were local people recommended by community leaders and aged 30-40 years, married with children, and with at least primary school education. The agents were trained in a 10-day course and the fieldwork program lasted 18 months. Subsequent program evaluation determined that husband-wife communication on family planning improved in all 3 sites, with the most communication between spouses occurring in the program with both male and female agents. The all-male team distributed the most condoms and also did well distributing female methods such as foam tablets and oral pills. The most reported behavior change among men in response to AIDS education was a move toward having sex with only one's wife. Some concern was expressed, especially among men, about male agents making home visits and men were more likely to respond to educational activities when they were specifically targeted to men. Men also reported greater current use of modern contraceptive methods than women and a major positive change in behavior in response to HIV/AIDS education (African Alternatives 1995; Miller 1998) .

11.3.2 Tanzania

In the late 1980s 2 villages were involved in an integrated family planning and community health program and the outcomes compared to a control village. The target villages of Masama and Arusha China, consisting of 10,000 and 8000 people, and the control village of Kisiki with 10,500, were all near Moshi town. The control village was provided with contraceptives, but given no integrated program activities. The program activities consisted of mass examination and deworming of adults and children, nutritional assessment of school children, latrine census and construction, health education, family planning and income generating projects. Traditional birth attendants as well as health clinics provided family planning education and services. Peoples' health committees helped with the latrine surveys and income projects. Some of the popular income projects were raising all animals, especially rabbits, selling condoms, growing vegetable seedlings and making dresses, mats and baskets. Attendance at the clinic for family planning services grew from 20 to 76% of fertile women in Masama, from 25 to 103% in Arusha China, but remained at around 25-30% in the control village (Maro 1988).

In the early 1990s a community based distribution (CBD) system was established to promote the use of contraceptives for a target population of 20,000 people spread over three villages. By 1996 the project was covering a population of 356,000 in 117 villages. The project had increased the contraceptive prevalence rate (CPR) to more than 50% compared to the national average of 11.3% in five years. Even in overwhelmingly Catholic areas in Mgeta, Morogoro Region, the CPR increased from 1.0% in 1990 at the project start to 50.4% in 1994. The flexibility and ready accessibility of CBD personnel have made them more effective in reaching community people than the clinical services (Japanese Organization for International Cooperation in Family Planning (JOICFP) 1996).

11.3.3 Ghana;

The Planned Parenthood Association of Ghana (PPAG's) strategy for helping poor communities, which includes concrete and practical health education; community involvement; encouragement of voluntary activities; use of the skills of the community; self-reliance including family planning has gained wide acceptance. The practice rate of family planning among 9 intervention villages ranged from 24.6%-43.6%, far higher than the national average of 5.2%. And while immunization coverage rates for 9 villages range from 74.7%-87.0%, nearby villages have coverage rate of about 30%. Furthermore, village women have themselves begun promoting maternal and child health and family planning. As the results indicate, the community health project has been successful in improving the living conditions of the villagers by mobilizing local resources (Integration 1990).

11.4 Maternal health

11.4.1 Zimbabwe:

The national Traditional Midwives program improved access to better health care with a 50 and 66% reduction in maternal and infant mortality rates, respectively. A 1988 government survey showed increases in the use of contraceptives and the number of women receiving prenatal care. The components of the program which have contributed to program success and provided similarities to other country's TBA programs are as follows: developing a sense of self esteem and pride among TBAs

for their work, utilizing creative ways to teach the largely illiterate TBA population through role plays and songs, and providing involvement in the health care system which reaffirmed the TBA's importance. In spite of the advances made however, there are still problems to solve. Unsafe practices are resorted to when TBAs forget their training. Disruptions in medical supplies handicap TBAs in carrying out their work. Some of the solutions are to utilize bicycles for transporting supplies to remote areas, or mobile clinics which provide supplies and training. If more countries followed Zimbabwe's lead, other countries would benefit from reduced birth rates and improved infant and maternal mortality in a cost effective and culturally compatible way. (Jacobson 1991)

11.5 Child health

11.5.1 South Africa:

Growth monitoring, oral rehydration, breast-feeding and immunisation--female education, family spacing and food supplementation (GOBI-FFF) are a selective package of World Health Organisation primary health care interventions recommended by UNICEF. Changes over a 1-year period in the implementation of the components of GOBI-FFF were investigated in a rural village in Ciskei, South Africa to detect any changes associated with a newly modified village health-worker (VHW) program. A baseline survey was conducted before the introduction of a modified VHW program and a second survey took place a year later. The principles of GOBI-FFF were already familiar to and have since been increasingly practised by the community and health personnel. Breast-feeding is widespread, most carers know how to make oral rehydration solution and most children have a 'Road to Health' card and are being weighed regularly. However, malnutrition remains a major problem and the food supplementation program is operating poorly. The high coverage of the community by the village health-workers and the clinic suggest that these two channels should be used more intensively to strengthen the GOBI-FFF program in the area. (Kuhn, Zwarenstein et al. 1990) In a separate survey of VHWs it was found that VHW-retained records for the first year of life play a valuable role in ongoing health care evaluation. VHWs generally visit mothers once a month and make contact with most children in their first month of life. VHWs were reaching 70.8% of the target population. An increase in polio immunization coverage was detected but there was a drop in measles immunization coverage. (Kuhn and Zwarenstein 1990) In the predominantly rural Hewu district of Ciskei 54% of infant deaths are diarrhoea-related. A related study set out to determine whether village health workers (VHWs) could teach mothers to safely prepare homemade sugar-salt solutions (SSS). VHWs from 11 villages were selected for training while 11 randomly selected villages acted as controls. VHWs selected for training were taught to prepare SSSs and to teach mothers with children under 5 years about the use of such solutions. A card illustrating the main points was given to all mothers. Six weeks after training, randomly selected mothers in control villages (n = 320) and experimental villages (n = 327) were interviewed and asked to prepare SSS. Experimental and control villages had similar children's diarrhoeal disease rates (using a 2 week recall period). In experimental villages 81.5% of mothers compared to 29.7% in control villages had received SSS cards (i.e. been visited). Of recently occurring diarrhoeal-episodes 76.6% were initially treated with a SSS (correct formula used in 81% of cases) in experimental villages compared to 50.5% (correct formula used in 48% of cases) in control villages (P < 0.05 for SSS use). Greater use of enemas and home remedies occurred in control villages (P < 0.05). Of solutions made in experimental villages 7% had sodium concentrations over 100 mmol/litre

compared to 36% in control villages. Results show that VHWs can effectively train mothers to safely prepare SSS and the VHW program was expanded to other areas (Yach, Hoogendoorn et al. 1987).

11.6 Guinea worm

As eradication programs have developed in endemic countries in recent years (Cairncross, Braide et al. 1996), there has been a shift towards more participatory methods. The approach to surveillance has changed from periodic cross-sectional surveys to monthly village-based reporting of cases by a volunteer village health worker. At the same time, the emphasis regarding control interventions has moved from the provision of safe water supplies to health education. The new approach has proved very effective. The village health volunteers who carry out both surveillance and health education seem to be motivated largely by the social status of their role; still more commitment will be required of them in the final stages of eradication. It is to be hoped that the networks of village health workers established for Guinea worm eradication will find a useful role in health promotion after the worms have gone.

12 Emerging Themes

Despite the rich knowledge and experience gained in CHW programs, a WHO interregional group of project leaders concluded in “Strengthening the performance of CHW programs” (WHO 1990) that CHWs were not achieving their full potential as a pillar of “Health for All”. What then can be done to strengthen and improve the environment within which programs function and the programs themselves? Below are a number of examples of good practice, which focus on community participation and support as well as a re-orientation of health worker training.

12.1 Re-orienting training

12.1.1 Institutional curriculum reform

Many progressive educational and health service institutions have taken action to enhance primary health care and bring about attitudinal change. New training approaches and curricula have been tested in long-term courses, seminars, workshops and outreach programs.

Although improving attitudes involves a complex process of educational and institutional reform, giving medical and health science students specific experience of working collaboratively can assist in developing positive attitudes towards CHWs. Waterston and Sanders (1987) described how this was undertaken in a community-based program for medical students in Zimbabwe. Similarly at the Jimma School of Health Sciences in Ethiopia, doctors, nurses and other health workers were trained as teams in a community-oriented training program. During the training period, teams lived in villages where they assessed various health and social problems through action-oriented research. Ultimately staff trained in this way developed a new culture of working. As a bonus, even while they were learning, their assistance was supportive to the CHW program (WHO 1989).

An example of how an attempt to re-orientate an entire health service to create new attitudes towards communities and patients can be found in South Africa where public sector reforms programs such as the “Batho Pele – People First” have been

implemented. The Department of Health's has even broadened this further to include a charter of patient rights (Department of Health South Africa 1997).

12.1.2 Revision of selection criteria

Countries and local communities should adapt generic criteria to suit their local circumstance and these need to be developed in a participatory manner with them by the local support personnel. The circumstances of the program are important. If the CHWs are to be part-time volunteers then attributes such as community acceptability and motivation are probably more important than educational attainment. If on the other hand the CHWs will be employed and expected to perform a wide range of complex tasks, then educational attainment would be more important. As CHWs are generally expected to influence the community's health attitudes and practices it is helpful if they are long-standing members of the community with a reputation for integrity and commitment as well as the ability to influence others through both what they say as well as what they do as role models.

In order to make a sound selection, it is important that the community clearly understands the functions and role of CHWs. In the final analysis, however, it is the ideal that the served communities have the democratic right to choose their CHWs. Care must be taken to allow undemocratic elite groups to distort the democratic process and in the end obstruct the effective development of programs. (Sanders 1992)

12.1.3 Use of a teamwork approach

The use of a teamwork approach within the health sector sets the foundations for mutual respect among colleagues both within the clinical as well as community setting. (WHO 1985).

Given the multiplicity of the causes of ill-health and underdevelopment, it is important that collaboration occurs outside of the health service setting in the work of other departments and disciplines. Carrying over the concept of teamwork into health development in general underlines the philosophy of intersectoral collaboration, which together with community participation is one of the pillars of PHC. Community teams should include workers from sectors such as agriculture, education, water supply, housing, social welfare etc. Training exercises for health workers in community based programs to achieve this can be found in (Johnston and Rifkin 1987).

12.1.4 Use student-orientated and interactive teaching approaches

To carry out their tasks in resource-poor environments such as the rural periphery, health professionals need skills in assessing community situations, interacting and negotiating with people in groups as well as with individuals and teaching using participatory techniques. They need to be able to take leadership and provide vision, participating in an empowering manner with the groups whom they are interacting

If health personnel are to be able to do this effectively they need more practice in these communication people-centred skills as opposed to traditional learning where being able to amass vast amounts of information and reproduce this during examinations is emphasized. Students who experience these techniques within their own training contexts are more likely to be able to adopt these innovative approaches when called upon to do so in their own work environment (Sanders et al. 2001). Training institutions need to make greater use of problem-solving teaching

approaches in which students are asked to collect and analyse information and devise relevant and appropriate solutions (Katz and Fulop 1978).

12.1.5 Involve the staff of hospitals, health centers and teaching institutions

Although changing the teaching approach in the tertiary teaching institutions is important, more immediate and sustainable changes can be made in the health service institutions that provide primary health care themselves. If changes are to be made it is important, particularly in the context of decentralization, that district hospitals, health centers and clinics undergo a cultural change

In-service and on-the-job training are probably more valuable than formal training because they provide opportunities to update staff as well as to influence them to make changes in their behaviour to improve quality among other things. It provides the opportunity to apply new knowledge in a practical setting and adapt this to the local situation. Along with knowledge and skills, attitudes are taught, modeled and influenced (Sanders et al. 2001). This provides opportunities within these settings for innovative leaders to influence attitude change through in-house education that emphasizes the vision and values of the institution. They are also able to encourage emulation of their own approach by serving as role models. If the organization's vision reflects positive and enabling attitudes, if this is effectively communicated to its staff in a manner that they can understand, then staff are likely to embody this in the way that they think and act in relation to CHWs and communities.

If small incremental changes can be made, over time quality improvements in the way in which health personnel and administrative staff relate to CHWs and communities occur. In this way strengthening the district health system contributes to strengthening CHW programs.

12.2 Community participation and its organization within the health system

The 1986 Yaounde Conference in Cameroon reiterated widespread agreement that emphasized that the strengthening of district health systems (DHS) based on the PHC approach is key to improving CHW programs. (WHO 1987). The essence of this is that the DHS provides the support framework for CHW programs combining supervision and training with reliable referral, technical assistance, supply and information systems.

The three complementary components of the District Health System are the health service structure, the health management structure and health development structure which all need to be functioning adequately if CHW programs are to be effective.

The health service structure consists of district hospitals, health centers & health posts

The health management structure comprises district health officers, heads of district hospitals, health centers and health posts

The health development structure consists of district councils, health committees, development committees, community/village councils and health committees together with any special interest formal and informal groups such as farmers, labour and women

Most evaluations and studies of the district health system have focused on the first two components, the health service and health management structure. These have focused on issues such as selection, training, supervision, logistics, supply and

remuneration. The third and equally vital component, the health development structure has been relatively ignored. Although many CHW programs striving for sustainability have strengthened elements of the structure, it is this vital last component that has most often been ignored, primarily because it is least understood by administrators.

Building effective partnerships as functional links with communities to strengthen the health development structure is an important key to improving and sustaining CHW programs. Without functional links between the formal structures of the health system and organized civil society as characterized by generic development committees and more specialized health committees the promotion of health and prevention of ill-health is difficult to achieve. The hallmark of small, non-governmental primary health care programs is that they have been able to forge these partnerships so that they are successfully able to manage sustainable CHW programs.

A health development structure is a network of organizations and the people within them. This includes all the civil society organizations that have a bearing on promoting health and well-being in a given community. Strengthening health development structures including the village health committees whose roles range from co-ordination to decision-making is valuable not only for the CHW programs but to strengthen the DHS in general. Studies in many countries including Sudan, Nigeria and Senegal (WHO 1987) have emphasized the need to more explicitly describe these structures and include the organizations that comprise the structure as well as their functions. When considered over the Africa region as a whole there are several key issues to consider in regard to health development structures:

- There are many different models of health development structures;
- Health development structures outside of the formal health sector are an invisible resource for health development that could be utilized to great effect;
- The activities of the health development structure which contribute to health are varied and include health service activity, management of health services, local planning and policy development, the provision of social and physical infrastructure and the encouragement of collaboration across the sectors;
- The operation and effectiveness of the health development structure are influenced by the representativeness of the structure, the level of political and administrative support, resource availability and skills for collaboration among community and health sector personnel

12.3 Improved supervision

Clear strategies and procedures for supervision need to be defined. The skills need to be taught so that health personnel, CHWs and Community Health Committee members know what is expected of them as supervisors.

Supervision should be taught to be undertaken in a participatory manner. Top-down mechanistic supervision which emphasizes the social distance between supervisor and supervisee leads to communication breakdowns and ultimately to program damage.

The guidelines for supervision should include a list of supervisory activities. The most important element of supervision is ensuring the two-way flow of information. It is also vital that the supervisor acts as a role model so that their behaviour can be copied

The biggest challenge in supervision is scaling up from successful small-scale programs to national programs.

12.4 Exchanges between best practice sites and countries

The exchange of experiences and lessons between countries or other areas is a powerful way of strengthening programs. It provides staff the opportunity to visit other sites and exchange information on best practices. They are able to see situations that are similar enough to their own to allow them to learn from them and extrapolate what they have learned to strive for better practices in their own situation. There is also sufficient difference for them not to feel threatened by observing functions and activities which they are handling badly and may be being handled better elsewhere. It also provides a way of validating practices that might already have been instituted, but which might disappear if not reinforced.

Teams from Tanzania and Zambia learn from each other

In 1995 exchange visits were undertaken between teams of five personnel from Tanzania and four from Zambia. For both teams the experience was one of learning and provided insights into different approaches to such areas as logistics, operational strategy, service delivery, organization setup, administration, income-generation and sustainability, data collection, analysis and reporting and cost-effectiveness. The Tanzanian team was impressed with the effective use of the health advisory committees at the village level in Zambia to reach local people, where the steering committee structure ends at the ward level and not the village level as in Tanzania. They also noted the strong involvement of men in the project and the dual existence of clubs for men and women. The Zambian team was impressed with the community based contraceptive distribution system, data collection, analysis and reporting in Tanzania. (JOICFP 1996)

13 Conclusions

Bringing about attitude change in favour of primary health care is not easy. It is slow and for many health professionals it may be a painful experience delegating traditional tasks to health workers with a shorter training. However, there is widespread agreement among most role players, whether politicians, health professionals or managers that a more democratic approach to health care is necessary if a true improvement in the health status of the population is to be achieved. At times this has required moving forward with courageous initiatives to introduce change in areas of health policy, health service structure, training and the delivery of health care. This is particularly true at the moment, as the HIV/AIDS pandemic presents health systems with unprecedented challenges.

Historically, CHW programs have emerged in very different political and societal contexts. There has been a fundamental, almost philosophical, and certainly political difference between an approach which promotes CHWs as community advocates and change agents within a specific developmental discourse and approaches to CHWs as essentially extension workers. This difference has had a profound impact on their structure, organisational location and ultimately effectiveness. Any recommendation for programs would have to be critically aware of the context within which they are situated.

CHW programs were initially seen as the major (and sometimes almost the sole) components of Primary Health Care. Because of the global and national contexts at the time, their 'social' role was at least as important as their 'technical/ health care' role. Because of the changes in the political context and because of an elaboration of strategies for PHC implementation (eg. the DHS), CHWs became seen more as community-level health workers and as only a minor part of PHC. Indeed, certain voices critical of their limitations within national health services, together with the move away from a developmental approach to health, have resulted in the disbanding of CHW programs or to a lack of government support for them.

Yet the empirical evidence – such as it is – points to their importance in increasing coverage of services, and to their cost-effectiveness.

Given the challenges faced, especially in Africa, as a result of economic decline, structural adjustment, HIV/AIDS etc., as well as the loss of professional skills, a renewed role for CHWs is relevant and timely. Among the lessons learnt which should be considered when revisiting CHW programs are the following:

Advocacy and education campaigns play a crucial role in preparing for interventions, as well as community participation in all aspects of programs in order to ensure community ownership of programmes.

A potential tension exists between community expectation (of availability of comprehensive 'service') versus narrow 'scopes of practice'. There is almost universal tension around remuneration and often around full-time versus part-time work. Both require close attention as potential sources of conflict.

Supportive management, including appropriate supervision and availability of infrastructural support are critical issues for program success; yet frequently underestimated and/or not sufficiently attended to.

Given the renewed impetus for CHW programs (esp. HIV/AIDS & TB) it is urgent that monitoring and evaluation of impact becomes integral to their design and management.

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