CHAPTER 3

Role of Community Health Workers, Family Planning, Mental Health, Pharmacy, Laboratory, and Social Services in the Treatment of Chronic Disease

An effective program for managing chronic disease cannot simply focus on physical ailments and disease states. An effective clinical intervention requires understanding the social background of patients along with their home, family, and financial situations. Disease has rendered many of our patients destitute and unable to pay for health care. Chronic disease has also led to depression in many of our patients, reducing their capacity to seek care. The chronic disease programs implemented through a collaboration between PIH and the Rwanda Ministry of Health work with a range of service providers to give patients the best chance at regaining health and quality of life.

3.1 Community Health Workers

Since 2007, Rwanda has implemented a national community health worker (CHW) program. Every village (around 100–250 households) has four CHWs. Two of these, a man and a woman, are called *binômes*, and they focus primarily on case identification and referral for a variety of diseases, as well as the treatment of childhood diseases like pneumonia, diarrhea, and malaria, and community support for malnutrition. Each village has a maternal health worker responsible for identification of pregnant women, antenatal care visits, and ensuring delivery at health facilities. The final health worker is in charge of social affairs in the community and is responsible for the compilation of performance-based financing reports. CHWs receive performance-based financing through cooperatives.

Districts supported by PIH have also introduced a cadre of community health workers focused on treatment and support for patients with chronic communicable and non-communicable diseases. The government of Rwanda has moved to introduce two of these chronic care CHWs, who work alongside the four mentioned above, in each village.

One key function of chronic care CHWs is to visit patients on a regular (usually daily) basis to provide adherence support. All patients on antiretroviral therapy for HIV or anti-tuberculosis treatment for TB are assigned a chronic care CHW. In the case of NCDs, there is a much

greater range of severity within the chronic conditions. Most patients do not require such intensive support. NCD clinicians currently assign chronic care CHWs only to those patients with advanced conditions such as cancer, heart failure, rheumatic heart disease, or insulin-dependent diabetes. Occasionally patients with hypertension, chronic respiratory disease, or epilepsy may be assigned a CHW during a period when their disease is poorly controlled. CHWs are also used to help identify patients with less severe disease who have been lost to follow-up or who require refills of medications between visits. Among the roughly 2000 patients enrolled in the NCD program, only 500 have a chronic care CHW assigned. Patients with less severe conditions may ultimately need CHWs assigned to give less intensive adherence support.

In comparison with HIV and TB treatment, NCD management often requires more complex medication regimens along with more frequent clinic visits and changes in dosing. As part of comprehensive chronic care training, CHWs must learn about palliative care, proper inhaler technique, subcutaneous insulin administration and monitoring, diuretics, and signs of decompensation, among other topics. Some specific aspects of training for chronic care CHWs are mentioned in disease-specific chapters in this manual. Comprehensive training for chronic care CHWs will be discussed in a forthcoming revision of the *Partners In Health Accompagnateur Training Guide*.[1]

3.2 Housing Assistance

Many of the sickest patients live in marginal housing with dirt floors, inadequate roofing, and poor access to clean water. Post-cardiac surgery patients and patients receiving chemotherapy for cancer are at particular risk of developing life-threatening infections in these conditions. For this group of NCD patients, a social worker evaluates the patient's living situation and refers patients with inadequate housing to the POSER (Program on Social and Economic Rights) program to have their house repaired or rebuilt.

This program is currently available only in districts where there is a partnership between PIH and the Ministry of Health. It is an innovation that will require adaptation in order to be integrated into the national system.

Housing standards have been established at the district level throughout Rwanda, with short- and long-term goals already in place to help reach them. Allocations of housing aid should prioritize residents with chronic diseases as a particularly vulnerable group in need of additional support in order to adhere to new standards.

3.3 Nutritional Support

Malnutrition worsens most disease states. This risk is higher for certain groups of patients. Patients with diabetes who are on insulin may develop life-threatening hypoglycemia if their food supply is irregular. Malnutrition can also worsen severe heart failure and render many medical therapies ineffective. For these reasons, patients with severe heart failure or insulin-dependent diabetes at PIH-supported sites are evaluated by a social worker and, if necessary, are referred to the nutrition department for a therapeutic food supplementation.

This strategy presents several challenges. Direct provision of food is expensive and is likely beyond the budgets of most low-income countries. Furthermore, it does not address the root causes of food insecurity. PIH has adopted this strategy as an emergency stopgap measure, and considers it an essential part of medical therapy for certain chronic diseases. However, longer-term strategies such as promotion of household agricultural practices and income-generating activities are likely to be more helpful and more lasting over the long term.

3.4 Mental Health

This guide does not deal specifically with therapeutic approaches to mental illness. These issues will be addressed in a forthcoming volume on neuropsychiatric illness. Chronic physical illness, however, can be accompanied by chronic mental illness. Loss of functional ability can lead to an inability to work, to provide for a family, and to perform basic functions. Thus illness can result in deepening poverty. Depression and hopelessness can ensue. Stigmatization because of physical ailments and functional disabilities can also result in social isolation. Screening tools have been developed to evaluate for depression among the chronically ill. Patients who are found to have depression will be referred to the mental health clinic for counseling and treatment. Even when they do not meet clinical criteria for a diagnosis of depression, many patients suffering from chronic diseases can benefit from the assistance of a social worker or counselor.

3.5 Family Planning in Chronic Disease

By working to increase health facility–based deliveries and access to prenatal care, Rwanda has decreased its maternal mortality rate from 1400 maternal deaths per 100,000 live births in 2000 to 750 maternal deaths per 100,000 live births in 2005.[2] In spite of these improvements, pregnancy and childbirth still pose a high risk of maternal morbidity and mortality to the women of Rwanda and other poor countries.

Women with chronic diseases face an even greater risk of harm from childbearing. Almost any chronic disease increases the risk of maternal or fetal complications in pregnancy and childbirth. Some conditions, such as heart failure, make pregnancy potentially deadly. Other conditions require medications, such as warfarin and ACE inhibitors, that can lead to serious birth defects.

Every female patient of childbearing age (15–45 years) who presents to the NCD clinic for care is tested for pregnancy and asked about use of birth control. All patients are educated about the availability of family planning services at the health center nearest to where they live. Women at high risk of morbidity or mortality from pregnancy are strongly counseled to avoid pregnancy and are referred to the family planning clinic that day for advice on birth control. At each follow-up visit, clinicians ask patients about their use of birth control. Clinicians also keep track of when patients on long-acting family planning methods such as medroxyprogesterone injections require re-dosing.

All pregnant women are referred to their health center's prenatal clinic for pregnancy-related care. The NCD clinic continues to manage chronic conditions during pregnancy. In some cases, prenatal and NCD clinicians must closely work with each other to manage patients with a chronic illness and a pregnancy complication, such as preeclampsia.

3.6 Pharmacy Services

The pharmacy is an essential component of any health facility. In many resource-poor settings, stock-outs of essential medications leave health care workers helpless to provide appropriate therapies to their patients. Even available medications may be too expensive for impoverished patients to afford if co-payments are high. These problems are magnified when dealing with chronic diseases, which require a steady, uninterrupted supply of medication.

Rwanda has worked to mitigate these problems by improving supply chain organization, and by making medications more affordable through subsidized universal health insurance. Pharmacies have already developed strategies to avoid problems in procurement of ARVs. Treatment of chronic NCDs requires the same level of vigilance in procurement practices. As in the case of ARVs, co-payments for other chronic disease medications may need to be eliminated or minimized in order to reduce barriers to care.

Mistakes at the pharmacy level can be deadly. It is essential that pharmacists receive adequate training on the dangers and appropriate

dosing of the medications they dispense. This becomes even more difficult in dosing medications for children. Many of the medications in this book will need to be crushed and diluted, or cut into halves or quarters to achieve appropriate dosing for children or small adults. Moreover, many of the medications used to treat chronic diseases can be deadly even in small doses. Pharmacists should take an active role in educating patients about these risks and ensuring that adults know to store all medications out of reach of children.

In the early days of new NCD programs, clinicians should double-check all medications dispensed from the pharmacy. NCD programs introduce new medications, often with multiple dosage preparations, that can be easily confused, with deadly consequences.

Pillboxes can be helpful for medication storage. However, they have the disadvantages of being time consuming to fill and leaving drugs unlabeled. Their use requires additional pharmacy staffing and training.

3.7 Laboratory

Many of the protocols in this handbook rely on laboratory testing to make diagnoses or guide treatment. Electrolytes can be particularly difficult to measure accurately. At PIH-supported facilities, we have found point-of-care testing for assessment of metabolic function to be useful at the district level. These machines are portable, can be used in the clinic (saving the patient from having to wait in line at the lab) and provide reliable results at a relatively low cost. The same machines can also be used to check INR in patients who are anticoagulated. Additional point-of-care technologies used at the district level include small, dedicated PT/INR, glucose, and HbA1c machines. In some cases, patients who live or travel far from a health facility may be given their own PT/INR machines to monitor anticoagulation.

3.8 Other Diagnostic Equipment

Ultrasound is becoming increasingly miniaturized and inexpensive. Many of our protocols rely on ultrasound to help guide diagnosis and therapy. Ultrasound is often available at the district level, but is used primarily for obstetric indications. We have found it useful to have a dedicated machine for use in the NCD clinic. This machine should be compatible with both cardiac and abdominal probes and be capable of color Doppler, but not necessarily spectral Doppler. Ideally, images should be archived. This allows an external reviewer to monitor the quality of image acquisition and interpretation, and serves as a teaching tool for clinicians.

Commonly available electrocardiographic (ECG) equipment is often cumbersome to use. Additionally, these machines frequently use consumables that are vulnerable to stock-outs. Portable, single-lead ECG machines may be useful in settings where the primary diagnoses of interest are arrhythmias. These machines typically also allow easy transmission of images to a cardiologist for confirmation of the diagnosis.

Automated blood pressure measurement machines are generally preferred to manual devices. These automated machines have been validated, and are more reliable in practice than manual measurement. They should be equipped with normal and small adult-size cuffs. They should also be able to use electrical power both from an outlet and from batteries. In our experience, semi-automated machines are unreliable and tend to slow down a busy clinic due to frequent inability to generate a reading. Manual machines should be available as a back-up and for small children.

Chapter 3 References

1 Mukherjee J, ed. Partners In Health Accompagnateur Training Guide. First Edition. Boston: Partners In Health; 2008.

2 MEASURE DHS OM. Rwanda Demographic Health Survey III. 2005: Rwanda NISR; 2005.