

REIMAGING PRIMARY HEALTH CARE WORKFORCE IN RURAL AND UNDERSERVED SETTINGS

DISCUSSION PAPER

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WORLD BANK GROUP
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Health, Nutrition, and Population (HNP) Discussion Paper

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Health, Nutrition, and Population (HNP) Discussion Paper

Reimagining Primary Health Care Workforce in Rural and Underserved Settings

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Abstract

This Discussion Paper starts at the local level and reimagines primary health care (PHC) and the PHC workforce from the perspective of people living in rural and underserved urban areas of low- and middle-income countries (LMICs). Drawing on research evidence and successful examples, it presents a “start local” health service delivery model, health system design framework, and financing models intended to ensure high-quality local comprehensive PHC is available and accessible to all. Core PHC team members (community health workers, registered nurses, specialist family physicians, and administrators) and other health practitioners are generalists in their disciplines, working together in collaborative practice as the frontline providers of care that responds to the health needs of the population they serve. The most successful model of education and training for local comprehensive PHC is socially accountable, immersive community-engaged education woven into a facilitated education and training pathway starting with recruiting local students from rural and underserved communities. Successful attraction, recruitment, and retention of PHC team members results from the systematic approach of the Workforce Stability Framework with the three main tasks of plan, recruit, and retain supported by a long-term strategy and five conditions for success. High-quality local comprehensive PHC is successful in improving local population health when it is part of an integrated health system that connects clusters of autonomous local health service delivery organizations through partnerships with regional referral centers and other specialist service organizations that value the expertise of local PHC providers. All levels of the health system (local, regional, and national) are enhanced by intersectoral collaboration with active participation of all Partnership Pentagon members (policy makers, health administrators, health professionals, academics, and communities), underpinned by a local health needs-focused national health strategy, up-front local investments in PHC infrastructure and personnel, and funding models that reward achieving health outcomes.

Keywords: Primary health care, fit-for-purpose health workforce, social accountability, “start local” integrated health system, rural and underserved populations.

Disclaimer: The findings, interpretations, and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

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PREFACE

We moved from rural Australia to Northern Ontario, Canada, in 2002 because the Ontario government had been persuaded that a new, stand-alone medical school would succeed where other programs had failed. Northern Ontario is a vast, remote, rural, chronically underresourced and underserved region of Canada that had known only shortages of doctors and other health workforce, and a worse health status than the general Canadian population. From the beginning, hopes were high and expectations were low. Our first challenge was to persuade people in Northern Ontario that there really would be a Northern Ontario School of Medicine (NOSM) (Tesson et al. 2009). It is the common experience of people living in remote rural areas, certainly Northern Ontario, that the government makes an announcement and then nothing happens. Subsequently, the government makes the same announcement again, and then nothing happens. Eventually, nothing happens. Why was this time different? The fact that we had moved with our five children from the other side of the world was noticed, but did not instill confidence that NOSM would actually happen this time.

In addition, the people who thought they knew among the medical profession and medical education establishment saw the idea of a medical school in Northern Ontario as a complete nonsense that was certain to fail. From their perspective, the hospitals in the Northern Ontario cities of Sudbury and Thunder Bay looked nothing like the teaching hospitals they knew where the conventional model of medical education takes place.

Today, NOSM is recognized as a world leader in socially accountable health professional education because of its outstanding success in producing doctors and other health professionals who not only provide enhanced access to and quality of care in Northern Ontario, but also are faculty members and are increasingly taking on NOSM academic leadership roles (see Annex 1). Distributed Community Engaged Learning (DCEL), NOSM's distinctive model of medical education and health research was developed through a combination of active community participation (community engagement) and research evidence, plus practical experiences of other academic institutions in Canada and the world. Every element of NOSM programs had been tried and proven elsewhere, but the package that is the Northern Ontario School of Medicine only occurs in Northern Ontario.

The same principle holds true for this Discussion Paper. All aspects of the “start local” approach to reimagining primary health care (PHC) workforce is based on research evidence and practical experiences somewhere in the world, including low- and middle-income countries (LMICs). This is not wishful thinking. It is reality based and written in the spirit of embracing a fresh approach to implementing high-quality local comprehensive PHC. The unfortunate current reality is that many of the investments in initiatives and interventions of the last four decades have not achieved the desired outcomes, neither universal health coverage (UHC) nor health equity. Many people living in rural and underserved communities, especially in LMICs, continue to have relatively limited access to any health care, let alone high-quality comprehensive PHC. Recognizing this, we challenge you to read, reflect on, and try out these models for yourself. The success in Northern Ontario resulted from taking the risk of starting in a different place (in the local context) and staying true to the NOSM social accountability mandate. You too can achieve this success in your own context.

Roger and Sarah Strasser

EXECUTIVE SUMMARY

Whereas health policy analysts and decision makers in low- and middle-income countries (LMICs) commonly employ centralized health workforce management and planning strategies, this reimagining of primary health care (PHC) workforce begins at the local level. It presents local comprehensive PHC delivered by autonomous local health service delivery organizations networked as part of an evidence-informed, integrated health system to deliver universal health coverage (UHC).

This Discussion Paper contributes to the World Bank Group (WBG) Health, Nutrition, and Population (HNP) Global Practice (GP) strategy refresh that aims to strengthen capacity building for high-quality, affordable health systems founded on reimagined PHC. Local comprehensive PHC is how people are helped to live healthy, fulfilling, and productive lives, with access to health care that meets their needs when required. Primary health care combines the public health focus on education, health promotion, and illness prevention with access to the clinical services that meet the health needs of the local population. These clinical services encompass the treatment of acute illnesses and injuries, of chronic conditions, and of mental health issues facilitated by ongoing relationships among providers, patients, and the broader community. Delivering high-quality local comprehensive PHC requires health workers who are generalists and have a broad range of knowledge and clinical skills, who work closely together in a cohesive team, and who develop long-term community engagement.

In Part I, the section entitled ***PHC in Context*** explores the situation for people living in rural and underserved urban settings in LMICs, including health service utilization; the place of hospital and specialist services; the interplay between vertical, narrow-focused programs; the broad horizontal approach characterized by local comprehensive PHC; and the contribution of community engagement.

In Part II's Section 2.1, entitled ***The PHC Team***, the underlying assumption is that the provision of health care should be designed and delivered to address the health needs of the population being served by the local PHC team. A fit-for-purpose health workforce has the right skills, provides the right care, in the right place, at the right time. Core members of the PHC team are community health workers (CHWs), registered nurses (RNs), specialist family physicians (FPs), and administrators. The expanded PHC team involves RNs and FPs with enhanced skills, and may include pharmacists, dentists, psychologists and other mental health workers, lab technicians, and a range of other health care providers whose services may be enhanced by the use of information and communications technology (ICT).

Section 2.2 entitled ***PHC Provider Skills*** presents the broad range of knowledge and skills required of PHC team members whether they are general practice/family physicians, registered nurses, community health workers, administrators, or other health practitioners. Particularly in rural and underserved settings, all PHC team members are required to be generalists in their discipline, working together in teams as the frontline providers of care to respond to the health needs of the population they serve. Rural Generalist Medicine (RGM) has been described in detail for all rural medical practitioners and provides an indication of the scope of practice required of generalists in all disciplines for rural and underserved practice. In addition, all PHC team members require a range of nontechnical and leadership skills to be successful in fostering community engagement, person-centered comprehensive care, and health equity.

In Part III, Section 3.1, entitled **Formal Education and Training**, the conventional model of health workforce education is described and then contrasted with socially accountable, immersive community engaged education (ICEE) that features contextualized learning, longitudinal learning, and integrated clinical learning for both undergraduate (preservice) education and postgraduate (in-service) training. The section then describes continuing professional development (CPD) and graduate studies as important contributors to career progression and stability of the PHC team. Facilitated generalist education and training pathways are described, prior to Section 3.2, which outlines how to succeed in **Implementing Education and Training for Local Comprehensive PHC Workforce**: starting with local partnerships founded on community engagement; selection and admissions processes to recruit local students; and providing immersive community-engaged education and training for a career as a PHC team member. Implementing CPD, graduate studies and research are described, as well as practical issues in accreditation of education and training programs, and the need for an alternative international standard for health workforce graduates including licensing, recertification, and credentialing.

Part IV entitled **Attract, Recruit, and Retain the PHC Workforce** presents the **PHC Workforce Stability Framework** with the three main tasks of plan, recruit, and retain supported by a long-term strategy and five conditions for success. Section 4.2 describes how each participant in the system contributes to implementing the Workforce Stability Framework. This is founded on strong local partnerships involving the local health service delivery organizations, local health care providers, and local government to ensure genuine community engagement. Academic institutions, the wider health system, and health workforce organizations (HWOs) also contribute to recruitment and retention success.

In Part V entitled **Fit for Purpose PHC and Integrated Health System**, there is an outline of the “start local” model of health service delivery by local health service delivery organizations networked with regional referral centers, urban hospitals, and other specialist services in the integrated health system. Recognizing that health systems in countries with comprehensive PHC are the most efficient and effective both in terms of lower overall costs and generally healthier populations, targeted health service delivery models are developed based on local health needs assessments that draw on available data and local community perspectives. Section 5.2 entitled **Implementing the Integrated Health System** outlines the contributions of all key participants in the system (see Annex 3), starting with local partnerships and including local health service delivery organizations, local government, other organizations and the health system, academic institutions, health workforce organizations, health service accreditation, nonpublic sector health services, as well as policy makers and central government. Policy makers and central government have a key role in implementing compensation models that support and enhance high-quality local comprehensive PHC.

Part VI, the final section of this Discussion Paper before the Conclusion, entitled **Broader Policy Considerations** highlights the importance of a focus on the health needs of local populations as the basis for a national health strategy. It also presents the importance of up-front investments, local expenditure in rural and underserved settings, PHC career pathways, resource allocation for essential PHC infrastructure, and systemwide integrity.

PART I – CONTEXT

1.1 INTRODUCTION

There was a traveler in the countryside in Ireland who wanted to go to Dublin but didn't know the way there. He saw a farmer in the field, and asked the farmer, "How do I get to Dublin from here?" The farmer paused for a moment and then turned to the traveler.

"If you want to get to Dublin, I wouldn't start from here."

This Discussion Paper starts in a different place. Wherever they are in the world, people have a local context living in a home, family, community environment with their past history and future aspirations. In addition, there are many who are homeless, disconnected from social and cultural relationships and/or incarcerated. This Discussion Paper starts at the local level and reimagines primary health care (PHC) and the PHC workforce from the perspective of people living in rural and underserved urban areas of low- and middle-income countries (LMICs). Drawing on research evidence and successful examples, it presents a "start local" health service delivery model, health system design framework, and financing models intended to ensure high-quality local comprehensive PHC is available and accessible to all.

It is common in LMICs for health policy analysts and decision makers to employ centralized health workforce management and planning strategies that rely on frameworks and models of countries with different social, political, economic, institutional, cultural, and geographic contexts from their own country (Soucat and Scheffler 2013). The reality is that LMICs are a diverse set of countries in which the health policy climate, resource availability, and workforce realities vary greatly. "One-size-fits-all" policies developed in well-resourced parts of cities cannot be effective in addressing jurisdictionally specific health workforce issues and the health needs of diverse populations (Bateman 2012). To achieve health equity, LMICs require policies and programs that ensure delivery of available, accessible, acceptable, affordable, high-quality health services at the local level. In the 1978 Declaration of Alma-Ata, this approach was characterized as "health for all" (WHO 1978; Lawn et al. 2008.).

High-quality local comprehensive primary health care (PHC) is the means by which people are helped to live healthy, fulfilling, and productive lives, with access to health care that meets their needs when required. Primary health care combines the public health focus on education, health promotion, and illness prevention with access to the clinical services that meet the health needs of the local population. These clinical services encompass the treatment of acute illnesses and injuries, of chronic conditions, and of mental health issues facilitated by ongoing relationships among providers, patients, and the broader community (WHO 1978, 2008; Watkins et al. 2018). Delivering high-quality PHC requires health workers who are generalists and have a broad range of knowledge and clinical skills, to work closely together as a cohesive team and to develop long-term community engagement. The team dimension is particularly important because community-level health workers, whether they are doctors, nurses, community health workers, or others, often function independently of each other, such that people experience local health care as fragmented and confusing. This situation is often the result of different employment and payment arrangements for each health care provider (WBG, HNP 2018a).

After exploring the context of PHC workforce, this Discussion Paper is structured to describe the PHC service providers and their skills, before outlining the production of the PHC workforce through pre-education and in-service training. The next section introduces the *PHC Workforce Stability Framework* and its implementation as the means of ensuring attraction, recruitment, and retention of the PHC workforce. Delivery of fit-for-purpose PHC services in an integrated health system is the final major focus of this Discussion Paper, which is rounded out by identifying broader policy considerations. The Annexes to this Discussion Paper describe successful PHC workforce case examples, key concepts presented in the Discussion Paper, and participants in the integrated education and health systems.

COVID-19 has exacerbated inequalities and inequities, including health disparities and health system fragility within and between countries. For example, rural and underserved communities' limited resources and access to health care triggered appeals for people to stay in cities during the pandemic because existing services lack the capacity to care for their own let alone a visiting population. At the same time, there has been much greater valuing of local social connectedness, self-reliance, and self-sufficiency in relation to equipment and supplies, as well as to food security and to health workforce. The COVID-19 experience has reinforced the importance of reimagining high-quality local comprehensive PHC services and workforce so that there is local capacity ready to provide early intervention to manage the next crisis (Worley 2020).

1.2 POLICY BACKGROUND

The Alma-Ata Declaration stressed the importance of creating health care systems that provide primary health care within a community setting (WHO 1978). More recently, the message that community involvement is crucial to health service delivery was renewed in a special edition of the *Lancet* that commemorated the 30th anniversary of the Declaration (Lawn et al. 2008; Lewin et al. 2008), as well as in a World Health Organization (WHO) report on the social determinants of health and health equity, both published in 2008. Health systems that adopt PHC approaches experience better overall population health, fewer health inequalities, lower health care expenditures, and enhanced quality of care. The 2008 World Health Report, *Primary Health Care: Now More Than Ever* called for four sets of reforms in universal health coverage (UHC), service delivery, public policy, and leadership with an emphasis on participatory models (WHO 2008).

Since 2008, there have been many other developments: in 2010, the WHO launched global policy recommendations in *Increasing Access to Health Workers in Remote and Rural Areas through Improved Retention* (WHO 2010b); the WHO Report *A Universal Truth: No Health without a Workforce* in 2014 (WHO 2014); the WHO *Global Strategy on People-Centred and Integrated Health Services* in 2013 (WHO 2013); the global commitment to United Nations Sustainable Development Goals (SDGs) also in 2015 (United Nations 2015); the *Global Strategy Human Resources for Health (GSHRH) 2030* in 2016 (WHO 2016a); and the report of the High-Level Commission on Health Employment and Economic Growth, also in 2016 (WHO 2016c), which presented the case for investment in health employment as a contributor to economic development rather than simply a drain on the finances of the country. In 2015, the Bill and Melinda Gates Foundation partnered with the World Bank Group (WBG), the World Health Organization (WHO), and the United Nations Children's Fund (UNICEF), and others to establish Primary Health Care Performance Initiative (PHCPI), "a partnership of country

policy makers, health systems managers, advocates, and others who are passionate about catalyzing primary health care improvements in low- and middle-income countries” (PHCPI 2015). In 2018, the 40th anniversary of the Alma-Ata Declaration was marked by the Global Conference on Primary Health Care: From Alma-Ata towards Universal Health Coverage and the Sustainable Development Goals in Astana, Kazakhstan, hosted jointly by the WHO and UNICEF. The Declaration of Astana recommitted the world to implementing primary health care (WHO 2019; Binagwaho and Ghebreyesus 2019).

Over the past 15 years, the WBG Health, Nutrition, and Population (HNP) Global Practice (GP) has been focused on strengthening health systems with an emphasis on PHC. Specific programs have addressed reproductive, maternal, newborn and child health (RMNCH) services, establishment of insurance systems, and essential benefits packages. In addition, the HNP GP has focused on the health workforce, particularly in LMICs, exploring health and education labor markets and health financing models (Soucat and Scheffler 2013; Araujo and Maeda 2013; McPake et al. 2015; Scheffler et al. 2016; Evans et al. 2016).

In October 2019, the WBG HNP GP embarked on a strategy refresh exercise with a clear narrative on how the Bank can strengthen its support to countries to build high-quality, affordable health systems, with reimagined primary health care as the foundation for achieving universal health coverage. There are many barriers and counterforces, as well as success facilitators that require consideration in developing a new framework to achieve PHC and UHC. This Discussion Paper aims to contribute to the strategy refresh with a particular emphasis on practical, evidence-informed approaches to implement high-quality local comprehensive PHC with a fit-for-purpose health workforce that will assist jurisdictions within countries and countries as a whole to successfully achieve health equity.

1.3 PHC IN CONTEXT

1.3.1 *Rural and Underserved Populations*

This Discussion Paper has a specific focus on implementing local comprehensive PHC for rural and underserved urban populations in LMICs. Although the WBG has specific definitions for low- and middle-income economies (see Box 1), there are no generally accepted definitions of rural or underserved urban populations (Muula 2007; RHAP 2014). The 2015 Cochrane systematic review of interventions for increasing the proportion of health professionals practicing in rural and other underserved areas found that “There are no internationally agreed definitions for what constitutes ‘rural underserved’ and ‘urban underserved’ areas” (Grobler, Marais, and Mabunda 2015).

Box 1. World Bank Definitions of LMICs

For the 2020 fiscal year, WBG defines low-income economies as those with a gross national income (GNI) per capita, calculated using the World Bank Atlas method, of US\$1,025 or less in 2018; lower-middle-income economies are those with a GNI per capita between \$1,026 and \$3,995; upper-middle-income economies have a GNI per capita between \$3,996 and \$12,375; and high-income economies are those with a GNI per capita of \$12,376 or more. There is much to learn from the experiences of all these countries in relation to PHC and UHC.

Source: World Bank Country and Lending Groups (WBG 2019).

For the purposes of this paper, rural regions are characterized by low population density and relatively small communities separated by relatively large distances, and local economies that feature farming, fishing, resource extraction including forestry and mining, and/or tourism. Compared to large cities, rural communities typically have limited access to health care with insufficient health workforce to address the health needs of the local population (OECD 1994, 2010; Strasser, Kam, and Regalado 2016).

Underserved urban settings are characterized by high-density populations in or near large cities with many people who have relocated from rural areas. Employment, if available, is generally in low pay manufacturing and service industries, and living conditions typically consist of overcrowded, substandard housing with limited infrastructure and services. Generally, there is limited access to health care with insufficient health workforce to address health needs of the local population. Delivering services in underserved urban settings is particularly challenging because of the lack of established community connectedness among people living in close proximity, yet coming from different geographic, social, cultural, and family backgrounds.

Even though rural and underserved urban settings are distinctive, they have many commonalities, particularly in relation to the development and delivery of high-quality local comprehensive PHC services. Although the physical distances in urban underserved environments are not as large as in rural areas, the financial, social, cultural, and psychological barriers to accessing care are just as great in underserved urban settings, such as shantytowns or slums.

1.3.2 Health Service Utilization

The pattern of health service utilization is contingent on many factors, such as the availability of local health care options. For example, substandard infrastructure, such as poor roads and limited transportation options, make health facilities, personnel, and clinics hard to reach (Awoonor-Williams et al. 2004). If individuals cannot access a vehicle, such as a car or bicycle, they must walk and consequently delay their access to care. This process can consume an entire day or more, which may not be feasible for individuals who are ill or in poor health (Kruk et al. 2010). Travel and transportation challenges due to the distance from health facilities pose significant access barriers and adversely impact their use (LISGIS 2008). Reliable transportation for patients and providers is crucial for health care access, particularly for the delivery of visiting services. Available and functional health service vehicles might not always be accessible to all members of the health care team. As a result, health workers who do not have or are unwilling to use their own vehicle are unable to provide necessary services to their clientele in a timely manner (Bateman 2012).

Furthermore, unanticipated monetary costs can adversely influence whether health care is sought. For example, the hesitation to leave one's home or business unattended, the need to borrow money, the need for child or animal care, and the use of private services may require individuals to seek social or financial support that might not be available (Adogu et al. 2014; Kahabuka et al. 2011). On the other hand, individuals may choose to travel further distances if local services are perceived unacceptable because of poor reputation, concerns about privacy and confidentiality, costs, foreign care providers, or generally poor staff attitudes toward patients (such as discrimination) or insensitivity to the local customs (Adogu et al. 2014; Kahabuka et al. 2011 Mashego and Peltzer 2005). These perceptions can also result in delays in obtaining health care services, which

causes an underutilization of those services and may mean serious conditions are not treated in a timely manner.

The cultural context is important to understand whether, by whom, and to what extent PHC services are accessible. Social and cultural norms and values, including gender roles and power dynamics within the home or broader community have the potential to create and remove barriers to access at the community level (Awoonor-Williams et al. 2004; Baatiema et al. 2013). Community engagement is a means to identify and address these issues in a locally responsive manner.

1.3.3 Hospital and Specialist Services

In addition to individual and community-level barriers, there are many system-level impediments to successful delivery of comprehensive PHC. Over the last 50 years, there has been a growing trend whereby most new developments in health care have been in hospitals associated with increasing use of technology and specialization to the point where it is common for people to think of health care as hospital care. This contributes to a lack of understanding that PHC is about personalized care, which is a different paradigm than for specialist hospital care. Within health systems, major investments have been directed to support new technology and subspecialized treatments (Watkins et al. 2018). Associated health system funding models prioritize hospital-based and physician services rather than community-based services including PHC. This trend has been encouraged by the emphasis on “lifesaving” interventions that target specific diseases and uncommon medical problems, particularly where pharmaceutical and medical device manufacturers are focused on new treatments that may provide substantial financial return and short-term political gain.

1.3.4 Vertical Programs

For LMICs, the specific disease focus is also evident with aid funding of “vertical programs.” These programs may or may not reduce the prevalence of the disease; however, they can potentially distort the balanced development of interconnected “horizontal programs” in that country, including local comprehensive PHC services (Maeseneer et al. 2008). Since 2000, there have been substantial increases in investments by governments and private groups, including the US President’s Emergency Plan for AIDS Relief (PEPFAR), the World Bank, the Gates Foundation, and the GAVI Alliance, to improve the health of developing countries. Health aid currently contributes 25 to 30 percent of all health care spending in LMICs (Blaauw et al. 2010; Richter 2014). This aid and domestic investments have focused primarily on vertical programming that targets specific diseases, such as HIV/AIDS, malaria, and tuberculosis, eradicating their spread, or providing and allocating services to diminish their effects (Penfold and Fourie 2014).

The potential of integration of vertical programs into health systems may be limited by requirements that disease control programs have their own bureaucratic structures, which may result in gaps in the health care dispensed to patients with multiple comorbidities. Moreover, vertical programming may redirect human, infrastructural, technological, financial, or transportation resources away from health systems whose resources are already limited. Externally funded vertical programs often provide attractive pay and work conditions and can recruit available health workforce away from the government/publicly funded health services with consequent reduction in access to care for people in communities (Maeseneer et al. 2008; Penfold and Fourie 2014). An example of an extreme scenario is individuals in LMICs who deliberately infect themselves with HIV to qualify for accessible health care. Vertical programs appear

more attractive to governments, private groups, and other donors because the results and systems generated are easier to manage and report to funding agencies (Penfold and Fourie 2014).

Additionally, the institutions involved, whether they are hospitals/health service networks or commercial enterprises that produce pharmaceuticals or medical equipment/devices, have a vested interest in the promotion and dissemination of their products in all countries including LMICs. At the community level, an example of vested interests distorting or undermining PHC is apparent where community health workers (CHWs) do not have employment, and pharmaceutical companies provide them with medications to sell to their clientele as a source of income. This scenario may contribute to overdiagnosis and overtreatment and/or use of expensive medications when low-cost alternatives may be more beneficial. This scenario may be worsened still if patients forgo food or other essentials to pay for the medications.

1.3.5 Horizontal Programs

By comparison, horizontal programming entails a more integrated systems and comprehensive health care approach, aimed at achieving general improvements in population health (Maeseneer et al. 2008). This includes directing investments toward PHC and the broader system in which this care is delivered; specifically, the development of the health workforce, infrastructure, health facilities, and access to medicines. Thus, there exist fundamental philosophical and practical differences between vertical and horizontal programming and health care investments.

The integrated systems and comprehensive care horizontal approach, also known as comprehensive PHC, is characterized by a long-term outlook. It aims to address health issues by establishing publicly funded, sustainable infrastructure for a country's health services. Horizontal programming focuses on prevention and treatment via community-directed strategies. This approach is attractive to policy makers because of its potential for public sector integration, long-term cost-effectiveness, stability, and ability to deliver preventive health care to those unable to afford privately dispensed services. Horizontal systems of care are most effective in stable environments with strong infrastructure and adequate resources that can result in a comprehensive, integrated health system (Penfold and Fourie 2014). The challenge is always to achieve the most effective balance, capitalizing on the advantages of vertical programs that are interconnected with horizontal programs at the local level through comprehensive PHC.

1.3.6 Community Engagement

A key characteristic of PHC that distinguishes it from health care in general is community engagement (Baatiema et al. 2013). Active community participation and communications are increasingly viewed as essential for health service development and utilization and have been highlighted as particularly important during the COVID-19 crisis. The potential benefits of community engagement include community empowerment in relation to local health service delivery organizations, promotion of locally relevant services to reflect community needs (Baatiema et al. 2013), enhanced health service access and health outcomes, and promotion of health-improving behaviors (Kilpatrick 2009).

There are many potential impediments to effective community engagement. These include the competing interests/goals of different community factions (even pursuing self-interest to the detriment of others); lack of continuous commitment to engagement at the local, regional, and countrywide levels; lack of recognition that local knowledge constitutes expert knowledge that should contribute to health policy decisions; and top-

down hierarchical community and health service management structures (Angwenyi et al. 2014; Baatiema et al. 2013). In the interest of health equity, it is imperative that all community members' voices are heard as part of health service decision-making processes. It is only then that health service delivery truly addresses the health needs of the entire population.

PART II – PHC SERVICE PROVIDERS

2.1 THE PHC TEAM

High-quality comprehensive PHC requires a PHC team with a fit-for-purpose mix of well-trained health workers who fulfill key competencies of interprofessional collaborative practice (CIHC 2010). Ultimately, who and how many health workers serve as members of the PHC team at the local level depends on the health needs of the population being served and on the availability of resources. Consequently, the skill mix of PHC team members is more important than their cadre designation. Although, core members of the PHC team are community health workers, registered nurses, doctors (specialist family physicians), and administrators, capacity building in low-resource settings may begin with upgrading the skills of existing workers such as health assistants and certificate nurses.

2.1.1 PHC Team Members

At the local level, the “core PHC team” may be seen to have at least four categories of members: community health workers (CHWs), registered nurses (RNs), general practice/family physicians (FPs), and administrative personnel (WHO 2010a):

2.1.1.1 CHWs are health workers who have been trained to some extent, do not necessarily possess a formal professional certificate, and live and work in the community. Frequently, they are members of the communities they serve, have been selected by the communities, are answerable to the communities for their activities, and are supported by the health system. They provide health education, referral and follow-up, case management, and basic preventive health care and home visiting services, as well as support and assistance to individuals and families in navigating the health and social services system (WHO 2010a; Perry, Zullinger, and Rogers 2014). It is important that CHWs are employed and paid as members of the PHC team, rather than seen as unpaid volunteers.

2.1.1.2 RNs play a vital role in providing, leading, and coordinating care that is compassionate, evidence-based, and person-centered. They are accountable for their own practice and may work autonomously, or as equal partners with a range of other professionals and in interdisciplinary teams. Nursing encompasses care of individuals of all ages, families, groups, and communities, sick or well, and in all settings, and includes health promotion and prevention of illness, and the care of ill, disabled, and dying people (WHO 2010a, 2020).

2.1.1.3 Family physicians (FPs) are trained generalist medical practitioners who prevent, diagnose, and treat illness, disease, injury, and other physical and mental conditions, and maintain general health in humans through application of the knowledge, principles, and procedures of scientific medicine. They do not limit their practice to certain disease categories or methods of treatment, and they do assume responsibility for the provision of continuing and comprehensive care, health education, and promotion of health and well-being to individuals, families, and communities. In addition, FPs plan, supervise, and evaluate implementation of care and treatment plans by other health care providers (WHO. 2010a; Strasser 1991; McWhinney 1989; Van Weel and Howe 2019).

2.1.1.4 Administrative personnel may have many roles ranging from health service delivery organization chief executive officer (CEO) to clinic manager to

receptionist/scheduler to maintenance of buildings and equipment to transportation driver/coordinator (WHO 2010a).

The 2006 World Health Report identified a minimum health worker density of 2.3 skilled health workers (physicians and nurses/midwives) per 1,000 population, which was considered necessary to attain high coverage (80 percent) of skilled birth attendance (WHO 2006). In 2010, the WHO reported that 44 member countries were below this benchmark. A WHO background document for the 2016 Global Strategy Human Resources for Health (GSHRH) proposes the “SDG index threshold” of 4.45 doctors, nurses, and midwives per 1,000 population (WHO 2016b). A rule-of-thumb approach for a notional catchment population of 3,000 would mean a minimum requirement of six CHWs, four community-based RNs, three FPs, and one administrator—all generalists who support each other in the PHC team and are supported by distant specialists including via information and communications technology (ICT), and patient transfer services. Widely dispersed rural and remote populations may require a variation of this mix, potentially with more local CHWs in each community.

2.1.2 Local and Expanded PHC Team

The PHC team works together in a community clinic setting that provides the full range of ongoing community-level care including public health programs (immunizations, screening, health promotion, and preventive care), as well as all first contact health care for all community members of all ages with all acute and chronic health problems, including mental health and first response to emergencies for the entire empaneled population. Ordinarily, access to specialized services is available only by referral from the PHC team. Maternity care beyond pre- and post-natal care would require PHC doctors and nurses to have enhanced midwifery skills and a birthing room in the clinic. Cesarean section capability is required either locally or within two hours travel time.

Other surgical services require FPs and RNs with enhanced skills in general surgery and anesthesia, such as advanced practice nurses or nurse practitioners, as well as other support staff and service capacity including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities. A common model in many LMICs is a “district hospital,” where the generalist FPs with a range of enhanced skills are based, and staff includes RNs and other trained health personnel that support a network of village clinics staffed by CHWs and RNs who may be local or visiting from the district hospital (Fields, Sibanda, and Couper 2020; Chu et al. 2020). The district hospital and community clinics are in effect the “expanded PHC team” that provides continuing comprehensive care for almost all common health problems supported by specialists based in regional hospitals and larger population centers. Key principles in staffing local and expanded PHC teams are that there are sufficient numbers for all team members to have a minimum of one-in-three after-hours on call, planned and funded professional development time, and vacation. These arrangements work best when there is an explicit written agreement with local community participation that specifies time frames and service commitments (Strasser 2001).

Where available, the expanded PHC team is enhanced by other health care providers like pharmacists, dentists, psychologists and other mental health workers, physiotherapist, occupational therapists, speech-language pathologists, audiologists, and optometrists. Particularly in LMICs, these other health care providers may not be available, in which case core local PHC team members may be required to extend their generalist skills. In the context of workforce shortages, the core PHC team may be

supplemented by physician extenders like physician assistants/associates or clinical officers, now referred to collectively as advanced/accelerated medically trained clinicians (AMTCs), nursing assistants, pharmacy assistants, etc (Palsdottir et al. 2017).

AMTCs are trained in regionally specific, compressed medical models at a lower cost than traditional physicians. They make critical contributions to service delivery in several countries, including in sub-Saharan Africa. Evidence is mounting that they produce impressive patient outcomes and are more likely to remain in rural areas than physicians. Also, their services can be more cost-effective. For example, in Mozambique, the cost of a cesarean section is US\$513 if performed by an obstetrician, \$207 if performed by a generalist physician, and \$193 if performed by a clinical officer (Palsdottir et al. 2017).

2.1.3 Fit-for-Purpose Health Workforce

A fit-for-purpose health workforce has the right skills, providing the right care, in the right place, at the right time, and with skillsets that include leadership skills, communication expertise, and the ability to work within teams. The underlying assumption is that the provision of health care should be designed and delivered to provide optimal care that addresses the health needs of the population being served (Campbell 2013; Strasser 2018). This assumption is consistent with social accountability, which the World Bank describes as “an approach toward building accountability that relies on civic engagement, in which citizens participate directly or indirectly in demanding accountability from service providers and public officials” (Agarwal, Heltberg, and Diachok 2009). For academic institutions, the WHO defines social accountability as “the obligation to direct their education, research, and service activities toward addressing the priority health concerns of the community, region and the nation that they have a mandate to serve” (Boelen and Heck 1995).

In this context, there is a need for a health workforce with the right mix and distribution within and between health disciplines, as well as between urban and rural settings. Within medical disciplines, a key consideration is the mix of generalists and specialists. The Royal College of Physicians and Surgeons of Canada, which represents all medical disciplines except general practice/family medicine, defines generalism as “a philosophy of care that is distinguished by a commitment to the breadth of practice within each discipline and collaboration with the larger health care team to respond to patient and community needs” (RCPSC 2013). From this perspective, generalist skills and practitioners are required in all medical disciplines, not just family medicine/general practice and not only in remote, rural, and regional communities.

Another consideration is the mix between primary care and other levels of medical care. Barbara Starfield and colleagues demonstrated that health systems in countries with comprehensive PHC are the most efficient and effective both in terms of lower overall costs and generally healthier populations (Starfield, Shi, and Macinko 2005). Within countries, Starfield showed that areas with higher primary care physician availability and less specialist availability have healthier populations; and greater primary care physician availability reduces adverse effects of social inequalities. In addition, Starfield and colleagues found that primary care (in contrast to specialty care) is associated with a more equitable distribution of health in populations, a finding that holds true both across and within national studies.

2.1.4 Information and Communications Technologies

Information and communications technologies (ICTs), whether audio or video, real-time or asynchronous, provide evolving opportunities to enhance care in community settings (WHO 2018; Wonca Rural 2002). Examples include intensive care unit (ICU) specialists supporting rural emergency care; patients accessing specialists via video; digital photos of skin rashes sent for advice from dermatologists; tele-homecare whereby patients monitor and transmit health data to their care team; tele-stroke rehabilitation; and Project ECHO (Extension for Community Healthcare Outcomes), described as “a collaborative model of medical education and care management that empowers clinicians everywhere to provide better care to more people, right where they live” (Arora et al. 2011; UNM 2020). This is a true consultant process whereby the subspecialists are helped to understand the different contexts in which community-based health workers and their patients live and provide support to local PHC teams as the frontline providers of care.

In LMICs, “leapfrogging” of wireless technologies with the mobile phone networks and satellite communications contribute to the substantial potential of ICT to enhance local health care in the context of limited numbers and capacity of medical and other specialists. Mobile phones also provide opportunities for regular contact between patients and their health care providers, including for monitoring chronic diseases. To realize this potential, countries must invest not only in broadband ICT, but also in comprehensive PHC, particularly a strong PHC workforce that determines which ICT services are used and how they contribute to enhancing the quality and effectiveness of local health care. Specifically, it is important that local health care providers, health service administrators, and community members are actively involved in the design and implementation of local ICT applications (Wonca Rural 2002). In the past, ICT initiatives has been implemented by hospital-based technological enthusiasts, who have little or no understanding of the local community context. Consequently, many previous investments have failed to realize the promised cost savings or health outcomes.

2.2 PHC PROVIDER SKILLS

As mentioned previously, developing a fit-for-purpose PHC workforce may begin, especially in low-income countries, with upgrading the skills of existing workers and with task-shifting or task-sharing, whereby health workers provide services that in well-resourced settings are delivered by members of other cadres. Task-shifting/sharing is consistent with the notion of generalism, whereby PHC team members deliver a wide range of services responding to the changing health needs of the local population over time.

2.2.1 Generalist PHC Skills

High-quality local comprehensive PHC requires FPs, RNs, CHWs, administrators, and other health practitioners who have a broad range of knowledge and skills to provide care responsive to the health needs of the population they serve. As the frontline providers of care, they are generalists within their disciplines.

In addition to technical knowledge and skills, PHC team members require a range of nontechnical skills grounded in the patient-provider relationship and in the community context. A mutually trusting and respectful relationship is central to high-quality care, no matter the setting or discipline. Generalist practitioners require adaptive expertise that involves innovation in addressing uncertain, complex, and novel situations, balanced with efficiency that draws on routine knowledge. Clinical decision making requires skills

different from those needed in most large acute hospitals. Geographic distance and long travel times from tertiary care centers, inequities in the availability of human and institutional resources, and the expectation of high-quality comprehensive care in economically constrained environments create circumstances that necessitate approaches to diagnosis and treatment that require clinical courage and are at once flexible and innovative, drawing on self-reliance as well as efficient and effective use and reuse of resources.

Through community engagement, PHC team members also require broader skills as leaders. Leadership skills involve inspiring trust and respect, as well as motivating action among team and community members. More specifically, leaders communicate clearly, effectively, and in a timely manner; allocate role responsibilities unambiguously; train, practice, and implement for effective backup and cross-coverage; monitor team members' performance; resolve conflicts efficiently; use well-designed and regularly reviewed protocols and procedures; and implement continuous quality improvement. To establish trusting, enduring relationships, community engagement skills must encompass role modeling mutual respect; always asking and listening; challenging assumptions; embracing geographic, social, linguistic, and cultural diversity; encouraging and empowering; formalizing roles and functions; and reconnecting regularly.

2.2.2 Rural Generalist Medicine

Rural practitioners, when compared to their metropolitan counterparts, are “extended generalists” providing a wider range of services, sustaining a heavier workload, and carrying a higher level of clinical responsibility in relative professional isolation. These characteristics hold true for all rural practitioners whether they are doctors, nurses, CHWs, administrators, pharmacists, or other frontline (primary care) health care providers (Strasser et al. 2018b).

Recognition of rural medical practitioners as extended generalists spawned the development of “Rural Generalist Medicine,” defined as the provision of a broad scope of medical care by a doctor in the rural context that encompasses:

- Comprehensive primary medical care for individuals, families, and communities
- Patient-centered care in the institutional, home, or ambulatory setting
- Emergency care
- Extended and evolving service in one or more focused cognitive and/or procedural service, as required to sustain local health services in collaboration with colleagues
- A population health approach relevant to the community, including indigenous and other marginalized populations
- Working as part of a multiprofessional and multidisciplinary team, both local and distant, to provide services within a health system that is aligned and responsive to community needs

Rural Generalist Medicine (RGM) practitioners in rural PHC teams are predominantly extended generalist FPs; nevertheless, regional referral centers require generalists in other medical specialties such as general surgeons, general pediatricians, and general internists (ACRRM 2013; Schubert et al. 2018)

RGM must be an essential component of health care if rural communities are to be assured of access to local comprehensive PHC that is integrated with secondary and

tertiary health care services. The strength of RGM is the ability to deliver high-quality, personalized, and contextual care across the continuum of health services and from cradle to grave. From a rural patient and community perspective, RGM has many specific advantages: ready access to skilled, culturally competent, and locally informed practitioners; continuity-of-care and follow-up; a high-quality patient experience through familiarity, trust, personal relationships, and patient-centered care; strong integration with visiting consultant specialist services including via ICT; reduced health care costs; and less personal and economic disruption associated with missing work, transport to, and accommodation costs associated with accessing distant services.

2.2.3 Nontechnical Skills

In addition to technical knowledge and skills, PHC practitioners require a range of nontechnical skills grounded in the patient-provider relationship and in the community context. A mutually trusting and respectful patient-provider relationship is central to all high-quality health care, no matter the setting or discipline. A central premise of this principle is that practitioners are never objective observers but always work relationally with patients, both to define problems and to find pathways forward. The focus of these relationships is on caring for people in their local context rather than simply on organ system health problems. This requires compassion and empathy within clearly set boundaries that are context specific, particularly in treating difficult-to-serve populations with dignity and respect.

The essence of family medicine/general practice as a medical specialty is the patient-doctor relationship. McWhinney in his *A Textbook of Family Medicine* outlines nine principles of family medicine that flesh out the role of FPs as medical generalists who provide primary, continuing, comprehensive, community-based, patient-centered, and preventive care. These principles emphasize FPs' commitment to the person, rather than a body of knowledge, group of diseases or special technique; focus on understanding illnesses in context; orientation to health promotion and preventive care; participation in a community-wide network of supportive and other health care services; sharing of the same environment as their patients, including seeing patients in their homes; and recognition of the subjective aspects of medicine (McWhinney 1989).

The patient-centered clinical method, as described by McWhinney and colleagues, provides a framework for doctors to learn to work in partnership with their patients. The components of this method include (1) exploring health, disease, and the illness experience; (2) understanding the whole person, family, and context; (3) finding common ground; and (4) enhancing the patient-doctor relationship (Stewart et al. 2014).

Generalist practitioners require adaptive expertise that involves innovation in addressing uncertain, complex, and novel situations, balanced with efficiency that draws on routine knowledge (Croskerry 2018). In rural or underserved urban communities, adaptive expertise is important in negotiating diagnostic plans with anxious or otherwise reluctant patients; coming to shared understandings about adherence to medication regimens and other treatment plans; and demonstrating competency in procedures that in other situations might warrant referral.

Clinical decision making requires different skills than those needed in most major teaching hospitals. Geographic distance from regional hospitals and other specialist services, inequities in the availability of human and institutional resources, and the expectation of high-quality comprehensive care in economically constrained environments create circumstances that necessitate approaches to diagnosis and

treatment that are at once flexible and innovative, drawing on self-reliance as well as efficient and effective use and reuse of resources.

Increasing attention is being given to historical, economic, and cultural issues and their links to health and health outcomes. Over the course of the past 50 years, concepts including explanatory models of illness, cultural competence, the social determinants of health, and adverse childhood experiences have become commonplace across the breadth of medical education. Such concepts are critically important for those working both in rural and underserved urban areas, where working across boundaries of understanding, whether borne of geography, ethnicity, education, language, or income distribution, is a constant fact of daily practice.

Clinicians in rural and underserved urban settings learn to use clinical courage as a means of attending to patient problems in these environments. They must be able to attend to a variety of patient presentations, across all age groups, diagnostic categories, and levels of acuity; comfortable assessing and managing patients in situations with high levels of uncertainty; aware of their professional limits while simultaneously being willing to extend those limits as necessary; confident in sharing the challenges of clinical care with other health care workers, both in moments of acute need and when reflecting upon past clinical interventions; and creative in managing presenting problems in the moment at hand, with whatever resources are available (McWhinney 1989).

2.2.4 Leadership Skills

Through community engagement and PHC team participation, PHC physicians also require broader skills as leaders and managers. Leadership skills involve inspiring trust and respect, as well as motivating action among team and community members. More specifically, leaders communicate clearly, effectively, and in a timely manner; allocate role responsibilities unambiguously; train, practice, and implement for effective backup and cross-coverage; monitor team members' performance; resolve conflicts efficiently; use well-designed and reviewed protocols and procedures to execute flawlessly; and implement continuous quality improvement. Community engagement skills encompass always asking and listening; challenging assumptions; embracing geographic, social, linguistic, and cultural diversity; encouraging and empowering; formalizing roles and functions; and reconnecting regularly. Management skills include human resources, small-scale procurement, budgeting and stock management, and bold role modeling the behavior expected of all team members (West et al. 2014).

PART III – EDUCATION AND TRAINING FOR PHC

3.1 FORMAL EDUCATION AND TRAINING

A major hindrance to instituting comprehensive PHC within a UHC system in LMICs is the number and rate at which the health workforce is being produced. Education is the cornerstone for producing a competent health workforce for rural and underserved urban populations. Currently, most undergraduate health workforce education (preservice education) and in-service training is conducted in hospitals and settings that do not reflect rural or underserved urban practice realities and service conditions (Frenk et al. 2010). This leaves health workers ill-prepared to deal with situations they had not encountered during their training. To prepare students for rural and underserved urban community practice, it is important to match curricula with the health needs in these communities. Rural and underserved urban health topics and an emphasis on PHC and generalist practice should be included and continuously reviewed in undergraduate and postgraduate curricula. Generalist PHC providers require training that prepares them for their broad scopes of practice, which may include providing enhanced skills training in emergency medicine, surgery, anesthesia, maternity care, mental health, public health, aged care, and infectious diseases.

The first section of Part III presents the key elements of the formal education and training pathway, including continuing professional development and graduate studies. The second section provides guidance on how to implement formal education and training for high-quality local comprehensive PHC.

3.1.1 The Flexner Model

Studies in many countries have shown that the three factors most strongly associated with entering rural practice after education and training are (1) a rural upbringing; (2) positive clinical and educational experiences in rural settings as part of undergraduate education; (3) targeted training for rural practice at the postgraduate level (Strasser et al. 2016). Despite this evidence, most education programs are located in large population centers with clinical education occurring predominantly in large acute teaching hospitals. This dominant education model began over 100 years ago in 1910 when the Flexner Report recommended that medical schools should be university-based and that their education programs should be grounded in scientific knowledge (Flexner 1910). Since then, the first half of undergraduate medical education programs has been largely classroom-based with a focus on basic sciences, and the second half has involved students learning clinical medicine in teaching hospitals where they are taught by physicians who use the scientific method in patient care and research (Frenk et al. 2010; Prislin, Saultz, and Geyman 2010).

By the latter half of the 20th century, growing concern that doctors were too focused on the "body machine" scientific model led to innovations in medical education, including problem-based learning (PBL) and community-oriented medical education (COME). Community rotations became more common, although from the student viewpoint they were considered rather like high school excursions—they were enjoyable but “didn't count for anything of substance.” (Strasser et al. 2015) This situation became problematic as teaching hospitals became increasingly subspecialized, with a patient population dominated by serious illness, rare conditions, or the need for highly technological interventions (Green et al. 2001). Consequently, the range of clinical problems to which medical students were exposed became progressively limited, and

academic subspecialists became the role models with whom medical students increasingly engaged. Essentially, medical students had limited exposure to common clinical problems in community settings and to generalist practitioners as role models. Another consequence of the expanding subspecialty focus in medical education has been that most medical graduates feel disinclined to provide care to vulnerable populations and ill-prepared to attend to those affected by poverty and social deprivation, as well as to indigenous, minority groups, and other marginalized peoples. The impact of this trend is the large number of rural and underserved urban communities that have limited access to skilled generalist medical care.

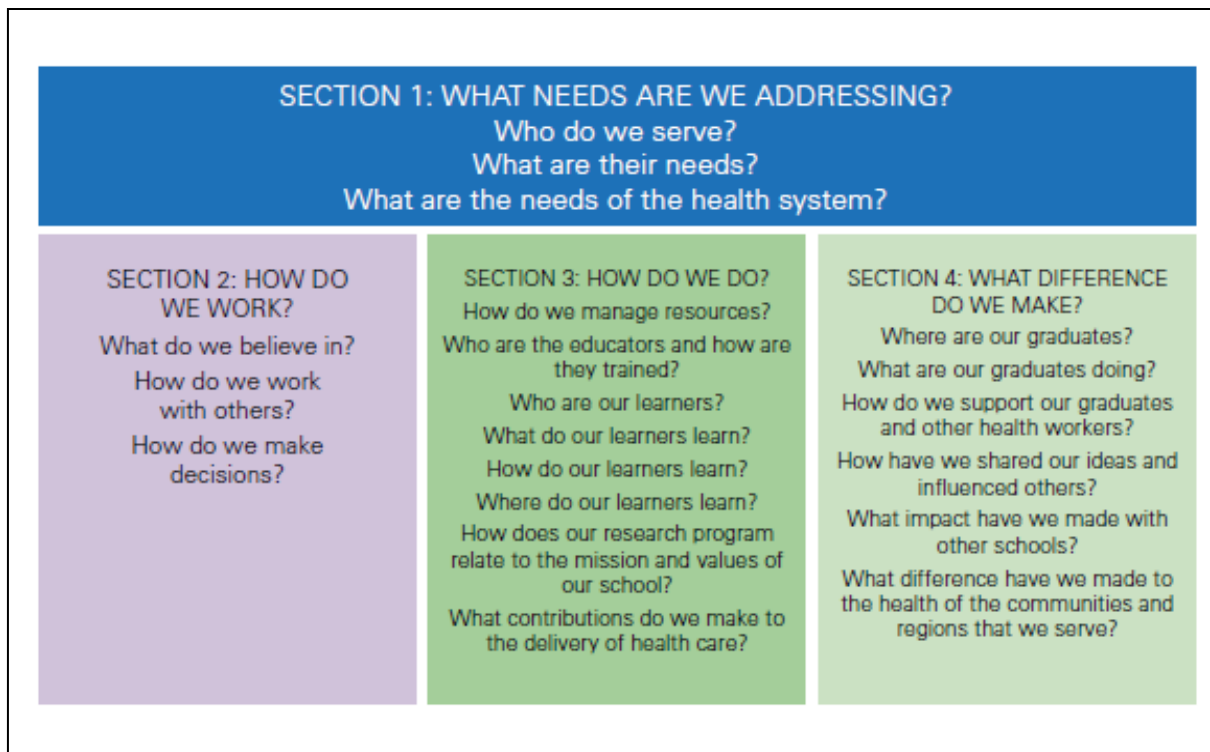
3.1.2 Socially Accountable Education

It is important that students preparing for PHC practice learn to engage in a meaningful way with the communities in which they practice. Thus, health workforce education should be both “community-based” and “community-engaged” to account for community dimensions of health and health care. Community engagement places student learning at the center of partnerships between the communities in which they learn and the academic institutions (Strasser et al. 2015). This is consistent with the 2010 Lancet Commission on Education of Health Professionals in the 21st Century recommendations that partnerships be formed between academic institutions and communities such that health workforce education programs focus on achieving greater health equity (Frenk et al. 2010). It is also consistent with the WHO’s model of social accountability in medical education (Boelen and Heck 1995).

There are resources that schools may draw upon, such as the Training for Health Equity network (THEnet) *Framework for Socially Accountable Health Professional Education* (see Figure 1), to assist with implementing socially accountable health workforce education. *THEnet Framework* (Palsdottir et al. 2017) is based on ten core educational and social principles:

1. Health and social needs of targeted communities guide education, research, and service programs
2. Students are recruited from the communities with the greatest health care needs
3. Programs are located within or in close proximity to the communities they serve
4. Much of the learning takes place in the community instead of predominantly in university and tertiary hospital settings
5. Curriculum integrates basic and clinical sciences with population health and social sciences; and early clinical contact increases the relevance and value of theoretical learning
6. Pedagogical methodologies are student-, patient-, and population-centered; service-based and assisted by information and communications technology
7. Community-based practitioners are recruited and trained as teachers and mentors
8. Education is embedded in the health system partnering with health system actors to produce locally relevant competencies
9. Faculty and programs emphasize and model commitment to public service
10. Whole school approach, across all departments, and commitment from the leadership

Figure 1. THEnet Social Accountability Framework



Source: Training for Health Equity network (www.thenetcommunity.org)

3.1.3 Immersive Community Engaged Education

An important aspect of these programs is that clinical education occurs through immersion in the rural and underserved community clinical settings with the generalist PHC health care providers as the principal clinical teachers and role models. Through immersion in community settings, students can observe seasoned clinicians and can participate fully in providing care, whether in clinics, hospitals, emergency facilities, long-term care settings, patients' homes, or in other community settings. Moreover, only through immersion in communities can students appreciate the context of care—the sociocultural history of individuals and groups, the impact of intergenerational trauma and poverty, and the challenges that exist due to the geographic differences in the availability of health care services with associated impact on health and well-being (Strasser et al. 2018a; Dube, Schinke, and Strasser 2019).

3.1.4 Longitudinal Learning

There is substantial evidence that suggests “the longer the better” for immersive community education in terms of educational outcomes and career choices of graduates. Many schools around the world have implemented yearlong “longitudinal integrated clerkships” (LICs), whereby students participate in the comprehensive care of patients over time; learn by means of ongoing educational relationships with community-based physicians; and simultaneously meet core clinical competencies across multiple disciplines (Strasser and Hirsh 2011). A rapidly growing number of research publications

demonstrate many positive benefits of LICs for students, communities, and clinical teachers. Students achieve higher levels of clinical knowledge and skills, along with heightened confidence and competence. They also experience authentic assessment and feedback, becoming progressively more responsible for participation in patient care; appreciate community support and relationships; grow in professional identity; and develop interest in careers in family practice. Communities gain in the short term through active participation in medical education, including students expanding the health team; subsequently they profit through local recruitment of LIC graduates. The benefits of LICs for clinical teachers include personal and professional growth and development; recognition and kudos; and succession planning/future recruitment. With few exceptions, patients are very receptive to being attended to by medical students on LICs (Walters et al. 2012; Konkin and Suddards 2012; Strasser 2016b).

A critical aspect of ICEE is the fact that students are learning in the community and clinical settings, where they are expected to pursue their careers after education and training (Strasser 2016a; Strasser et al. 2016; Strasser and Neusy 2010). This contrasts substantially with the conventional Flexner model of education in which clinical education occurs in a single context, the academic health center or teaching hospital. From an educational perspective, learning in context is recognized as important with a growing literature on “workplace integrated learning” and “service learning,” as well as “socially accountable education” (Strasser 2016b). From the workforce perspective, there is growing evidence that graduates who have undertaken immersive community education are much more likely to choose careers in family medicine/general practice or other generalist disciplines (Strasser 2016b; Palsdottir et al. 2016; McGrail, O’Sullivan, and Russell 2018).

Community engagement is another important aspect of ICEE. Specifically, active community participation in the development and delivery of education programs assists students and trainees to appreciate the social determinants of health at the local level and to contribute to the “service learning” aspects of the program. In addition, the community plays a critical role in hosting students and trainees. There is a substantial future recruitment opportunity through community engagement. If the students/trainees and their families feel at home in the community and valued by the community, they are much more likely to decide to return to this community to join the local PHC team after completion of education and training (Strasser et al. 2018a).

3.1.5 Integrated Clinical Learning

It is important that immersive community education involves students and trainees having practical experience of interprofessional collaborative practice by participating as members of the local PHC team. Integrated clinical learning (ICL) involves team teaching and team learning with a team of clinical teachers, particularly local PHC team members, and a team of learners that includes a mix of students and trainees in a range of health care disciplines and at different stages of their education and training. This collaborative learning environment enriches the experience for all involved and imbeds teamwork in the professional identity of future PHC team members (Berry and Pavelich 2009).

3.1.6 Postgraduate Training

The immersive approach is important for postgraduate (in-service) training as well. Specifically, rural-based family medicine/general practice training programs are much more likely to produce FPs who choose careers as rural generalist practitioners. As at the undergraduate level, it is important that the principal clinical teachers and role

models are the local community-based rural generalist FPs who will be colleagues for the trainees following their completion of training (Strasser 2016b).

Box 2. Local Context (see Annex 2)

Start local: Whereas health policy analysts and decision makers in low- and middle-income countries (LMICs) commonly employ centralized health workforce management and planning strategies, this reimagining of primary health care (PHC) workforce begins at the local level. It presents local comprehensive PHC delivered by autonomous local health service delivery organizations networked as part of an integrated health system to deliver universal health coverage (UHC).

Value local expertise: Over the last 100 years, most new developments in health care have occurred in large urban teaching hospitals linked to increasing use of technology and specialization, to the point where it is common for people to think of health care as hospital care. This contributes to a lack of understanding that PHC is about comprehensive personalized care in the local community context and that PHC is a different paradigm from specialist hospital care. In addition, teaching hospital specialists and subspecialists dominate their disciplines as key opinion leaders and advisers to policy makers and governments. Frequently, these individuals have little or no experience or understanding of PHC or community contexts, particularly for rural and underserved populations. They often hold the view that the care teaching hospitals provide is superior to regional referral centers and local PHC delivery organizations, both in terms of status and quality. Although this belief is rarely evidence-based, it often influences the attitudes and decisions of people needing health care, as well as of government policy and decision makers in allocating resources.

Success in implementing reimagined high-quality local comprehensive PHC requires a paradigm shift not only in the health system and health care delivery models, but also in the health workforce education and training. A key to success is valuing, recognizing, and empowering skilled PHC workers as the experts. They know and understand the PHC context so are best placed to set and apply standards for PHC education and training, licensing and certification, and service delivery models.

Social accountability: The start local approach is guided by social accountability, which the World Bank describes as “an approach toward building accountability that relies on civic engagement, in which citizens participate directly or indirectly in demanding accountability from service providers and public officials.” For academic institutions, the World Health Organization (WHO) defines social accountability as “the obligation to direct their education, research, and service activities toward addressing the priority health concerns of the community, region, and the nation that they have a mandate to serve.”

Community engagement: Implementing social accountability requires active community participation or community engagement that constitutes authentic interdependent partnerships involving health service delivery organizations and academic institutions that respect and value the communities’ local knowledge and expertise. The benefits of community engagement include community empowerment in relation to local health service delivery organizations; promotion of locally relevant services to reflect community needs; enhanced health service access and health outcomes; and promotion of health-improving behaviors; as well as development and delivery of education programs that assist students and trainees to appreciate the social determinants of health at the local level; and enhanced health workforce recruitment and retention.

3.1.7 Continuing Professional Development

Continuing professional development (CPD) is of great importance to the PHC team as a whole and for individual team members to keep up-to-date and to ensure their knowledge and skills are responding to population health needs. CPD takes many forms, including local in-person PHC team group learning, discipline-specific education online and in person, and hands-on skills development/updates (AFMC 2019). Funding to support backfilling and travel to specific educational updates and skills training is essential to maintain high-quality local comprehensive PHC services. In addition, the CPD may provide teacher training and faculty development to enhance PHC team members' skills and effectiveness as clinical teachers and researchers.

3.1.8 Graduate Studies

Undertaking graduate studies leading to the award of Graduate Diplomas, Master's, and PhD qualifications are important education opportunities that contribute to career satisfaction and progression. It is important that local PHC team members have the opportunity to pursue graduate studies while staying in the community rather than traveling to the academic institution. The courses of study should be tailored to PHC team members' learning needs and supported by funding for dedicated study time and study leave to ensure completion of studies and to enhance likely retention of the health worker. Local graduate studies also support PHC team members learning to undertake research in the local clinical and community setting, which contributes to improvement in health care and health outcomes.

3.1.9 Facilitated Education and Training Pathways

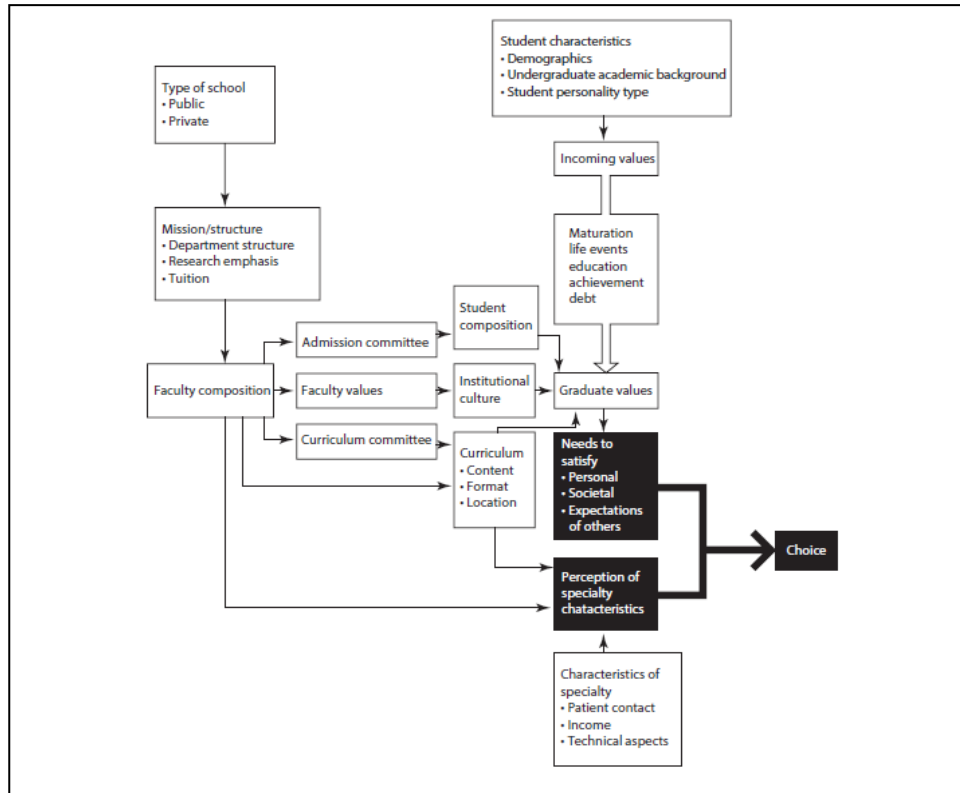
Over the last 20 years, there has been a growing movement in rural education and training to develop and implement the Rural Generalist Pathway. This involves a "cradle to grave" approach, whereby students from rural communities are recruited into rural-based undergraduate education programs and have a facilitated pathway of rural-based postgraduate training and professional development for a career in rural practice (Australian Government 2018, 2020). The WHO has commissioned a checklist, currently in draft form, for implementing rural pathways to train and support the rural health workforce in LMICs (Wonca Rural 2019). The facilitated education and training pathway approach has great potential for improving the supply of members of the local comprehensive PHC teams, not only in rural areas, but in underserved urban communities as well.

3.2 IMPLEMENTING EDUCATION AND TRAINING FOR PHC

The following subsections present an outline of how to succeed in implementing a facilitated generalist education and training pathway for local comprehensive PHC workforce. This begins with local intersectoral partnerships and relies on intersectoral partnerships at the regional and national levels, as well as collaborative relationships between the levels.

The facilitated generalist pathway approach is consistent with the Bland-Meurer Model of Primary Care Career Choice for Physicians (see Figure 2) (McPake et al. 2015) and with recommendations in the World Bank Special Report, *Addressing the Challenges of Health Professional Education* (Evans et al. 2016.)

Figure 2. Bland-Meurer Model of Primary Care Career Choice for Physicians



Source: Bland, Meurer, Maldonado. 1995, 365

3.2.1 Local Partnerships

Implementing education and training for high-quality local comprehensive PHC begins with strong local partnerships involving an academic institution (university or college) located in a underserved rural or urban community or the local branch of an urban institution, collaborating with the local health service delivery organization, local health care providers, and local government ensuring active community participation that includes the local private sector and underrepresented voices. The role of policy makers and central government is to ensure a supportive legislative/regulatory environment and financial resources to maximize the likelihood of success. It is essential that there is a formal written agreement between the partners that specifies the contributions and the commitments made by each partner. As part of this contract, there should be established a local steering committee involving all partners as equal participants. This steering committee provides the mechanism by which the academic institution/education program is a part of the community and the community is a part of the institution/program.

There are many barriers and counterforces to successful establishment and implementation of strong local partnerships with meaningful community engagement. Most commonly, academic institutions are “ivory towers” with no direct connection to or interest in communities, particularly underserved urban communities and remote rural communities. When academic institutions approach communities, it is the common experience that the institutions are expecting the communities to help the institutions achieve their goals without any consideration of the communities’ interests.

Consequently, it is essential that the institutions demonstrate their commitment to a partnership of equals with the communities by genuinely valuing of the community contribution and codevelopment of education, training, and research programs.

Local partnerships that implement successful local immersive community engaged education (ICEE) are built on mutual trust and respect between all participants, with sharing of resources to achieve agreed common goals. The local partnerships and the academic institutions' participation must be long term. Success in ensuring a sustained supply of suitably skilled PHC team members and stable local comprehensive PHC services requires determination and persistence over decades, not years. This is not a short-term "project." It is an ongoing program that must ultimately be self-sustaining because of the social, health, and economic value for all involved.

From the beginning, it is important that all partners explore and agree on values and qualities that are important to the local community in their health care providers. These characteristics of desired local health care providers guide the selection and admissions process into the education programs, as well as the curriculum content and pedagogy for education and training programs.

3.2.2 Selection and Admissions

The first critical stage in developing and implementing an immersive community-engaged undergraduate education program is selection of the right candidates into the program (Righetti et al. 2013). It is essential that the admissions processes and procedures favor local applicants from underserved urban or rural communities that the institution has a social accountability mandate to serve. A practical mechanism for favoring local applicants is to allocate each applicant a context score. Essentially, applicants who are truly local or from similar underserved, disadvantaged backgrounds are allocated the highest context score, and applicants from well-resourced urban settings have the lowest score. In addition to being local, suitable candidates should have the academic ability and the personal commitment to serve their own or similar communities (Konkin 2009; Mian et al. 2019).

Standardized aptitude tests, like the Medical College Admission Test (MCAT), generally have been developed and tested for applicants from well-resourced family and community backgrounds and not validated for applicants from backgrounds with limited educational opportunities or different ethnic or cultural origins. Consequently, these standardized tests should not be utilized, to avoid potential bias against applicants from rural, underserved, indigenous, or other disadvantaged backgrounds. The applicants' academic scores should be standardized with due acknowledgement of variable educational opportunities and recognition of the relevance of previous studies in non-science as well as science subjects (Mian et al. 2019).

The best predictor of future behavior is past behavior. Consequently, it is important to require that applicants provide a self-statement potentially in the form of an application questionnaire in which they describe who they are, what motivates their interest in a health career, and what choices they have made in past extracurricular and volunteer activities. This self-statement may be assessed independently by at least two community volunteers as a means of community engagement, as well as having community members contribute to choosing their future health care providers.

There is value also in calling applicants for interviews in which they are tested not only on being team players, and their approach to problem-solving and to moral and ethical issues, but also their understanding of the rural/underserved context. The multiple mini

interview (MMI) developed by McMaster University in Canada has been shown to be more valid and reliable than a standard single interview. A common pattern of MMIs is for each applicant to respond to 10 single question interviews, each lasting 10 minutes. There is an advantage in socially accountable institutions developing their own questions and scenarios for MMIs so there is testing of “fit” with the specific local context and program, as well as assessing applicants on being team players, and their approach to problem-solving. MMIs also provide an opportunity for further community engagement with community members participating as interviewers, along with faculty, staff, and students who also participate in organizing interviews and managing logistics (Konkin 2009).

3.2.3 Promoting Health Careers

This selection and admissions process is predicated on receiving a substantial pool of qualified applicants. It is essential that communities and academic institutions work together to encourage young people in the rural and underserved urban settings to see a future for themselves that may include a health career. This requires considerable effort and dedicated resources to promote health careers in local primary and secondary schools, potentially associated with health careers camps, whereby high school students spend time at the academic institution mixing with current students and faculty members to foster motivation and commitment among those high school students to achieve the academic requirements for admission to the health program.

3.2.4 Student Financial Aid

For the students, pursuing education is both intensive and expensive in terms of living costs and tuition fees. Particularly in LMICs, financial support for students from rural and underserved communities is essential. Students are most likely to be successful if they do not have to undertake part-time work to support themselves and their families while pursuing their studies.

3.2.5 Undergraduate Education

Development of a contextualized curriculum and program begins in the local context, so that the program is developed in the communities, by the communities, and for the communities. A productive approach is to call together anyone and everyone who has an interest to work together in developing the local dimensions of the program. The Partnership Pentagonam (Boelen 2000, see Figure 5) provides guidance as to who should be involved, particularly a diverse range of different community members, as well as health care providers, academics, health service administrators, and policy makers. It is important that this gathering occurs at the very beginning of developing the program to demonstrate that the institution is genuinely committed to full community engagement. Also, it is important that all participants contribute to developing a collective description of the characteristics of the health workforce that the local communities need, as well as beginning to describe the key local curriculum content and mode of delivery (Tesson et al. 2009; Strasser et al 2009; Strasser et al. 2013).

Although locally contextualized, the curriculum should adhere to the highest educational standards, drawing on research, evidence, and experience from around the world. There are many resources and organizations available to share their experiences and to provide assistance, including members of global networks like THEnet and The Network: Towards Unity for Health (TUFH) (THEnet. 2020; The Network: TUFH 2020). Successful development of a robust curriculum and education program will be facilitated through partnerships with institutions that have experience delivering education programs in

comparable rural and underserved community settings, particularly in LMICs (WHO 2011).

Socially accountable ICEE involves a pedagogy that emphasizes active participatory learning in context, even in the classroom. Case-based learning is a form of small group discovery learning whereby students explore case scenarios set in real community settings like those in which they will practice in the future. Longitudinal learning is important as well, with major themes woven through the multiyear program so that students appreciate both the contextual and the content knowledge required for local comprehensive PHC. As mentioned previously, the LIC is a well-established prolonged clinical education model, whereby students acquire their core clinical knowledge and skills in community settings with skilled PHC team members as their principal clinical teachers and role models, enhanced by ICL. Early in the LIC, students become members of the health team and focus their efforts on doing the best they can for their patients. Essentially it is the intense interaction with patients that motivates students to study hard and helps with their professional identity formation, which is also guided by social accountability.

As mentioned previously, comprehensive PHC in rural and underserved urban communities requires a broad range of knowledge and skills that determine curriculum components. These components range from providing first response when individuals are seriously ill or injured to cultural competency to public health (preventive care and health promotion) to mental health to leadership and followership in team care and community engagement in the local context. These key curriculum components complement the discipline-specific knowledge and skills, and those determined by local sociodemographics, morbidity, and mortality patterns (Strasser and Cheu 2018).

Box 3. Immersive Community Engaged Education (Annex 2)

Immersive Community Engaged Education (ICEE) programs feature clinical education in which students and trainees are immersed in rural and underserved community clinical settings with generalist PHC health care providers as the principal clinical teachers and role models. This contrasts with conventional health workforce programs in which most clinical education occurs in large urban teaching hospitals. ICEE is socially accountable education that is grounded in community engagement and local comprehensive PHC, and fosters authentic relationships focused on improving the health of the local population. ICEE is a major contributor to successful production of skilled PHC team members, particularly within the facilitated education and training pathway that begins with recruiting local students from rural and underserved communities and provides education, training, and professional development throughout their careers.

ICT provides the opportunity for small groups of students to be widely distributed in rural and underserved communities experiencing immersive education at the same time as being connected with each other and the institution for small group learning and other academic sessions. In this sense, ICT supports enhanced classroom and hands-on experiences in a wide range of community and clinical settings, as well as ensuring that students have the same access to information and educational resources as do students in large urban teaching hospitals.

This model of distributed immersive community-engaged learning is predicated on the local care providers being recognized and valued, not only as the frontline providers of

care, but also as the local experts with the knowledge and skills that justify academic appointments. It is important that local PHC team members are involved as classroom teachers including for small-group case-based learning, as well as clinical teachers. Many traditional academic institutions have difficulty with this concept, yet it is essential to ensure success. Faculty status for community care providers demonstrates that the institution sees them as equal to campus and hospital-based faculty members and helps to counter the negative perception that community care providers are second class. This in turn raises their standing in the eyes of students, community members, and themselves. As faculty members, community providers have access to libraries and other institutional resources, and also have the opportunity to develop an academic career pathway without having to leave their community, including through graduate studies. The stimulus provided by teaching and research, as well as through career opportunities of faculty roles and status contribute to workforce retention (Strasser et al. 2018a; Dube, Schinke, and Strasser 2019; Zelek and Goertzen 2018).

3.2.6 Postgraduate Training

The next phase in the education and training pathway is often missing or misplaced. New graduates generally have little or no opportunity to work and train in rural and underserved clinical service settings because most first-year graduate positions are based in large acute urban teaching hospitals. Consequently, potential future PHC practitioners are diverted onto other pathways (Strasser 2018).

To facilitate the generalist PHC training pathway, it is essential that positions are available for new graduates to train in rural and underserved urban settings. As in undergraduate education, trainees require immersive learning in context guided by the health needs of the community members they are serving, supervised by local practitioners. This approach may be described as the “flipped training” model, derived from the “flipped classroom” in education, and refers to the notion that basing trainees in rural or regional clinical settings with some rotations to the cities may lead to better rural workforce outcomes than basing trainees in big cities with occasional rotations to rural/underserved settings. In these circumstances, the trainees see their rural/underserved setting as “home base” for preparing to practice near where they train, with the city rotations as a requirement to complete their postgraduate training.

As the training progresses, the trainees undertake additional specific enhanced skills training relevant to their future practice, such as general surgery, anesthesia, procedural obstetrics, endoscopies, indigenous health, elderly care, and so on. The development and implementation of enhanced skills training in rural and underserved settings requires dedicated funding and personnel to ensure high-quality education and clinical experiences (Strasser 2016b).

There are organizations that have the experience and expertise to partner with rural and underserved local partnerships to develop and implement contextualized training for PHC practice. Wonca (the World Organization of Family Doctors) has published a curriculum framework for family medicine training (Wonca 2013), and Rural Wonca has published a Rural Medical Education Guidebook (Wonca Rural 2014). Constituent national college members of Wonca have specific country-based expertise, and the Australian College of Rural and Remote Medicine (ACRRM) has a primary curriculum for Rural Generalist Medicine training that is used in several countries (ACRRM 2020).

As for undergraduate education, ICT enhances postgraduate training through access to academic sessions and educational resources. In addition, ICT provides the opportunity for remote supervision whereby a trainee’s direct clinical supervisor may live and work

hundreds of kilometers away. Another contributor to successful postgraduate training is the provision of multiyear training appointments whereby trainees have their training program laid out, and they do not have to apply for a new training position each year (Strasser 2016b).

3.2.7 Continuing Professional Development

The first five years after postgraduate training are often the most challenging. Consequently, it is important that support and mentorship is available locally within the PHC team and at a distance with former teachers and colleagues.

Once established in PHC practice, there is a need for individuals and the whole PHC team to undertake professional development. For the team, group CPD sessions strengthen team cohesion, and keep up-to-date and facilitate development of local care protocols. In addition, each provider requires discipline-specific CPD and interprofessional CPD, which may be accessed using ICT, as well as by traveling to relevant face-to-face CPD sessions. Also, CPD programs provide teacher training and faculty development to support the role of PHC team members as teachers and researchers. It is important that all CPD is developed and coordinated by rural and underserved PHC practitioners for rural and underserved PHC practitioners.

All CPD should be supported by paid time allocation and funded travel and accommodation when needed, as well as locum cover or backfill so time away does not place unnecessary extra workload on other team members. In addition, there is likely to be the need for funded up-skilling, whereby team members undertake further training to update their skills or to respond to changing community health needs. Examples might include specific surgical or mental health skills or skills in managing emerging diseases, as with COVID-19.

3.2.8 Graduate Studies

As mentioned previously, graduate studies leading to the award of Graduate Diplomas, Master's, and PhD qualifications are important educational opportunities that contribute to career satisfaction and progression for local PHC team members. Coupled with an academic appointment, graduate studies create potential for academic career advancement without having to relocate to the urban academic institution. It is important that graduate studies programs are targeted to the learning needs of rural and underserved care providers and challenge them academically and professionally. As with undergraduate education, postgraduate training, and CPD, this means contextualized coursework that can be completed by distance education with little or no required travel for face-to-face sessions. Particularly for PhD programs, LMICs may need to develop international partnerships to assist with coursework development and to ensure requisite academic standards.

Participation in graduate studies should be supported by funding for dedicated study time and study leave to ensure completion of the program and to enhance likely retention of the health worker. Completion of graduate studies raises the level of local expertise and contributes to development to local academic capacity, including research in the local clinical and community setting, which contributes to improvement in health care and health outcomes.

3.2.9 Research

Most health research occurs in well-resourced urban settings at universities and academic medical centers. As noted previously, these settings constitute a very different

context to rural and underserved urban communities, and study findings may not be transferrable. Research that does occur in rural and underserved urban communities often is undertaken by researchers who have little or no personal experience or understanding of the local context, which may lead to misunderstanding or misinterpretation of study findings. Consequently, it is very important that investments in developing local comprehensive PHC services include funding to support locally developed and implemented health research addressing research questions that improve the health of the local population, and to monitor health status and outcomes.

3.2.10 Accreditation

Education and training programs are generally subject to periodic assessment and review in the form of accreditation. The purpose of accreditation is to assure the quality and effectiveness of education and training programs. Increasingly, accreditation procedures have moved beyond quality assurance to an emphasis on quality improvement. Accreditation standards for health discipline education and training, continuing professional development, and graduate studies are usually developed by academic leaders in the dominant large urban academic institutions. Consequently, the underlying assumption is that programs are being measured against the usual pedagogy in those settings. Often the standards have been developed with the aim of improving the quality of the program, which may mean changes in the way long-established programs deliver their education. Over the last decade, there has been growing encouragement for social accountability to be included among accreditation standards (Boelen and Woollard 2009, 2010); Canada implemented this in 2015 (CACMS 2020).

Accreditation presents many implications for distributed ICEE programs. In the worst case, the academic institution rejects any contextualized education for fear of fault being found by accreditors and consequent reputational damage. Where the institution does take on distributed education, institutional leaders may be concerned about the reputational risk to the institution, such that they require that education is delivered identically to the major academic center for fear that their accreditation status may be negatively affected. This constraint discourages local initiative and diminishes the effect of contextualization.

Accreditation success is most likely for distributed ICEE programs when the derivation of accreditation standards is understood, and accreditation is embraced as a positive contributor to program improvement. The key is to understand the intent of the standard and then explain to accreditors how the intent is fulfilled even though it is achieved differently than in existing schools. It is important that the accreditation team visit multiple sites so team members experience the different contexts for themselves. Recognizing the significance of accreditation, it is important to allocate dedicated financial and human resources to accreditation of all programs and to support local PHC team members to become accreditors.

3.2.11 Alternative International Standard

The predominance of major academic institutions and teaching hospitals has created a standard that means high-achieving health workforce graduates aspire to work in the teaching hospitals of major cities in North America and Europe. No LMIC wishes to be seen to have substandard health professional education. In effect, a medical or nursing degree is a passport out of the country. This situation exacerbates the country's disadvantage and highlights the need for an alternative international standard for health professional education (Strasser, Kam, and Regalado 2016).

The alternative standard should be premised on social accountability of health workforce education to achieve greater health equity for the population the schools have a mandate to serve. The importance of student selection/admission strategies for the equitable representation of rural and underserved urban populations in the health workforce and their impact on future practice intentions cannot be overstated. Recruiting students from and training them in underserved areas fosters a desire to practice and provide long-term, sustainable services in these communities. Community perspectives within and outside the student body can help health professional schools to better anticipate societal health needs in local contexts; practice responsible governance; adopt outcome-based education; and accept society as an important partner when making health policy and education decisions. Specifically, community perspectives help to ensure that the WHO's health care principles of quality, equity, relevance, and effectiveness are met, and that health determinants are central to the strategic development of health professional schools and curricula (Boelen and Heck 1995).

3.2.12 Licensing, (Re)certification, and Credentialing

Doctors, nurses, and other health care providers generally must fulfill legislated requirements to qualify for registration or a licence to practice in a country or jurisdiction within the country (WHO 2020). These requirements usually consist of attaining a degree or other qualification from an academic institution that is recognized by the jurisdiction and may also include a requirement to complete a licensing examination. Commonly, the legislation provides general descriptions of the approved range of services or permitted scope of practice for the licensed health care provider's discipline. As with other aspects of the education and training system, criteria and decision making about these matters tend to be dominated by organizations and individuals from well-resourced large urban hospital backgrounds who have little or no experience or understanding of rural or underserved urban PHC contexts. When the focus is addressing the health needs of the population, quality of care and scope of practice are always context-dependent. Consequently, it is important that generalist health care providers with rural and underserved urban PHC experience are involved in determining and applying the rules for PHC practice.

There is an increasing trend for licensed practitioners to be required to maintain their licence by participating in regular approved CPD. This usually takes the form of participating in education, training events, or courses and may involve formal assessment including an examination. The most effective CPD and recertification for PHC team members occurs when courses and assessments are developed and implemented by PHC team members for PHC team members.

For an appointment to work for a specific health care organization, health care providers are required by the organization to complete the credentialing or clinical privileging process. This process involves obtaining, verifying, and assessing the qualifications of the practitioner to provide care or services in or for the health care organization. Credentials are documented evidence of licensure, education, training, experience, or other qualifications. As in other examples, it is important that criteria for credentialing are determined and implemented with the input of experienced PHC team members.

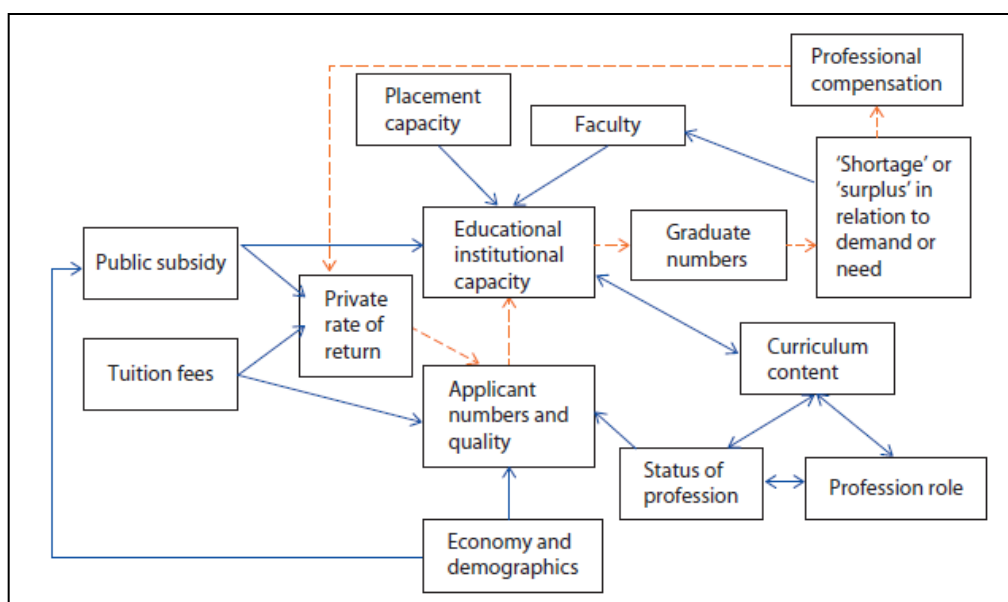
PART IV – ATTRACT, RECRUIT, AND RETAIN THE PHC WORKFORCE

4.1 PHC WORKFORCE STABILITY

Attracting, recruiting, and retaining a skilled health workforce is a common challenge for rural and underserved urban communities worldwide, negatively impacting access to services, and in turn peoples' health. Research literature highlights different factors that facilitate or hinder recruitment and retention of health care workers to rural and underserved areas; however, there are few practical tools to guide local health care organizations in their recruitment and retention struggles (Dussault and Franceschini 2006; Lehmann, Dieleman, and Martineau 2008; WHO 2010b; Buykx et al. 2010; Lemiere et al. 2013; McPake et al. 2015). Most health workforce recruitment and retention research has focused on doctors, nurses, and midwives; however, available evidence suggests that the same difficulties are experienced with recruitment and retention of other cadres in rural and underserved settings.

A previous World Bank HNP Discussion Paper summarized the literature and presented discrete choice experiments as a mechanism to elicit preferences of health workers and determine factors likely to increase the probability of working in rural and underserved settings (Araujo and Maeda 2013). From a financing perspective, health workforce attraction, recruitment, and retention are at the intersection between health labor market and education labor market considerations (see Figure 3) (McPake et al. 2015; Scheffler et al. 2016; Evans et al. 2016). These labor market studies help to explain shortages of health workers in remote rural and underserved settings through market signals that influence training/specialization decisions, as well as employment/career choices (Lemiere et al. 2013; McPake et al. 2015).

Figure 3. Interrelationships between Health Professional Job Market and Health Professional Education Market



Source: McPake et al. 2015

The first section of Part IV presents the key elements of the Remote Rural Workforce Stability Framework including the importance of developing a long-term strategy and the five conditions for success, as well as the three key tasks: plan, recruit, and retain. The second part provides practical guidance on how to implement successful attraction, recruitment, and retention of the local PHC workforce.

4.1.1 Workforce Stability Framework

A Framework for Remote Rural Workforce Stability (Strasser et al. 2019; Abelsen et al.) is the result of a seven-year, five-country (Sweden, Norway, Canada, Iceland, and Scotland) international collaboration combining literature reviews, practical experience, and national case studies in two different European Union–funded projects. It describes the necessary elements of an overall strategy to ensure the recruitment and retention of the right health workforce to provide needed services in rural and remote locations. Although developed with a focus on remote rural communities, this framework and its components are applicable to underserved urban settings as well. The ultimate purpose is to support the health and quality of life of people living in rural and underserved communities, through improved access to high-quality services.

4.1.2 Long-range Strategy

Many rural and underserved organizations are caught in a continuous cycle of recruiting to fill vacancies and often appoint service providers who are not well-prepared for the service requirements or the community context. Service quality and patient experience are often adversely affected when their service providers are largely transient. Management moves from one crisis to the next rather than stepping back and planning ahead. In addition, financial constraints may lead to reallocation of funding for unfilled positions such that, when a suitable applicant is available, there is no budget capacity.

The PHC workforce strategy should include three levels of priorities:

1. Intersectoral investments in training and career promotion. Recruit people from the local community or region and develop cultural relevance of the services provided. This will increase the likelihood that care providers will stay.
2. Creation of desirable workplaces. Emphasis should be on recruiting and retaining people who will make the rural underserved community their home, or at least their principal clinical practice location.
3. Incentives to create and maintain a pool of transient workers who make a long-term commitment to the rural or underserved PHC service. There will always be a need for temporary workers to fill vacations, maternity leaves, and other temporary vacancies. It is preferable to build a pool of returning workers who contribute to the continuity and quality of service.

4.1.3 Five conditions for success

The following conditions are essential to the successful implementation of the framework:

1. Recognition of unique rural and underserved population issues. Policy and program decisions must take into account unique aspects of life and work in rural and underserved urban locations. Remote communities are also generally distinct from

one another, and interventions need to be tailored to specific communities if they are to have the desired impact (Carson, Carson, and Lundmark 2014).

2. Active community participation is an important element of the framework and should be a part of regional and national planning for rural and underserved urban community PHC workforce initiatives so that rural and underserved population perspectives are reflected in policies and programs. The vision must be “nothing about us, without us.”
3. Targeted investments and dedicated resources must be provided. Success is most likely when investments are additional to rather than rearrangement of existing budgets.
4. An annual cycle of key recruitment and retention activities must be identified and undertaken. Building these activities into job descriptions and performance standards ensures that initiatives are future-focused and receive attention.
5. The work must be monitored, evaluated, and modified on a continuous basis, with a strong emphasis on learning from practical experiences and continuous quality improvement.

4.1.4 Nine key strategic elements

Figure 4 illustrates how the strategic elements of the framework are grouped into three main tasks: plan, recruit, retain. The elements are placed around a circle to illustrate that there is no definite starting or endpoint.

4.1.4.1 Plan

These three elements are activities that may be undertaken at a local, regional, and national level.

1. Assess Population Service Needs

A socially accountable organization designs its services to meet the needs of the population it serves. This implies having systems in place to regularly assess the population’s changing needs. Needs assessments typically include analyses of the population’s demographics, the burden of acute and chronic disease, and wait times for various services, as well as distances and barriers to accessing specialized services.

2. Align the Service Model with Population Needs

Successful health service delivery models are explicitly contextualized to the local environment and developed in the community, by the community, for the community. Rural health services are often modeled on well-resourced urban services, which may be counterproductive and threaten workforce stability. When service needs cannot be met by care providers in the existing service model, burnout and job dissatisfaction for even the most committed providers can be the result. It is a misuse of resources to try recruiting and retaining health care personnel into a poorly designed and outdated service model.

3. Develop a Profile of Target Recruits

In rural and underserved urban environments, management and human resource teams may be obliged to hire whoever is readily available and ultimately be disappointed with the outcome. Delivery of safe and effective high-quality local comprehensive PHC requires a specific generalist skillset. PHC team members require ongoing skills

maintenance and continuing education. Organizations are encouraged to seriously consider the characteristics of the personnel that they need and then target promotion and advertising materials to this profile.

Figure 4. Remote Rural Workforce Stability Framework



Source: Abelsen, et al. 2020

4.1.4.2 Recruit

These elements are generally led at the local and/or national level.

4. Emphasize Information-Sharing

Making a move to a rural or remote community, relocating, and living there is a major consideration. Prospective employers should seek to reach recruits with more than just a job advertisement. Prospective recruits require accessible comprehensive information that is likely to influence them in making this major life decision. In LMICs, a safe, well-equipped, and supportive work environment is likely to be a key to attracting clinical staff. Health care providers may have families, including a spouse who needs to find work, and children requiring education and social and recreational activities. Making it easy for recruits to access information about a community through online posts and dedicated personnel answering e-mails and calls for information may help families choose one specific location over another. Personal and positive contact with recruiters, current employees, and community members is an important part of the recruitment process.

5. Community Engagement

Active involvement of communities in defining their recruitment and retention strategy is essential to the development of partnerships that will ensure that the entire suite of interventions work. Having communities involved in defining the approach that will be used in their community ensures that solutions are feasible in their specific environment, and that community members are more likely to sustain them. Involving communities in the planning and development of their own health care and other essential services encourages customized processes using local knowledge and addressing local concerns.

6. Supporting Spouses/Families

Ensuring that the employee and their family is made to feel welcome in the community and supported to become integrated into community social, recreational, and other activities is a key factor in ensuring a positive start and long stay in the community. This can mean involving community partners in meeting with the new recruits and their families, giving tours of the town, health services, and schools to ensure they are able to register in recreational and other programs. Safe and comfortable housing is important everywhere and of particular importance in LMICs. Lack of work opportunities for spouses is known to be a key barrier in the recruitment of personnel to rural locations. It is often one of the most challenging factors to mitigate. Dedicating resources to assisting spouses to learn about work opportunities is a good start to addressing this barrier. Partnering with other employers to secure employment for spouses is more challenging, however, but likely to have a significant impact on recruitment.

[4.1.4.3 Retain](#)

These elements are activities that may be undertaken at a local, regional, and/or national level.

7. Supporting Team Cohesion

In rural and underserved urban communities, health care providers often do not have immediate access to specialist support that they may have enjoyed in previous urban hospital roles or during their training. In a service environment, often with high demands and limited resources, care providers can feel stretched thin and frustrated at their inability to make the system work to meet their patients' needs. Rural and underserved health leaders and managers who have overcome challenges in recruitment and retention of health workforce typically report that they consider supporting team cohesion to be a major part of their role. They involve their team in decisions on whom to recruit to the team, create opportunities for team members to socialize and learn together, and offer them some control over their work environments like shift scheduling, strategic planning, and creation of leadership roles among team members, such as professional development lead.

8. Ensure Relevant Professional Development

Professionals working to deliver safe and effective local comprehensive PHC require a broad range of skills supported by ongoing access to education, training, and skills maintenance that are relevant to their practice context. Consequently, high-quality professional development is a key contributor to successful retention, including local professional development involving the health team, online professional development, and funded travel for specific professional development programs and skills updates.

Unfortunately, rural practitioners often travel to urban centers and undertake training that lacks relevance to their rural practice and the context within which they provide care.

9. Training Future Professionals

Developing an academic/training mandate for an organization and securing funds to allow health care teams to dedicate time to training the professionals of the future will lead to a strong return on investment. There is a clear and substantial body of evidence that confirms that offering health workforce education and training in rural and underserved environments leads to greater retention of those personnel. Furthermore, training in rural and underserved environments ensures that health care providers have the broad range of knowledge and skills that are needed for rural and underserved urban practice.

Rural and underserved urban local health service delivery organizations can strive to become centers of excellence, contributing to strong education and training programs for all PHC staff, or they may wish simply to take the necessary steps to receive students on clinical placements a few times per year. Any effort on this spectrum is likely to have multiple positive impacts on recruitment and retention. The 2010 WHO policy recommendations on Increasing Access to Health Workers in Remote and Rural Areas through Improved Retention (WHO 2010b) emphasizes the importance of education and training as the strongest contributor to successful workforce recruitment and retention.

4.2 IMPLEMENTING THE WORKFORCE STABILITY FRAMEWORK

The following subsections present an outline of how to succeed in implementing the stable attraction, recruitment, and retention of a local comprehensive PHC workforce in LMICs. As for implementing facilitated generalist education and training, success relies on intersectoral collaborations at and between the local, regional, and national levels.

4.2.1 Local Partnerships

Successful attraction, recruitment, and retention of PHC health workforce starts with strong local partnerships involving the local health service delivery organization; local health care providers; and local government ensuring active community participation that includes the local private sector and underrepresented voices. Academic institutions contribute to collaborative local education, training, and research and data analysis. The role of policy makers and central government is to ensure a supportive legislative/regulatory environment and financial resources to maximize the likelihood of success. It is essential that there is a formal written agreement between the partners that specifies the contributions and commitments made by each partner. The local steering committee involving all partners as equal participants has a key role in developing a collective responsibility and long-term systematic program to achieve stable health workforce attraction, recruitment, and retention. The other Pentagonam partners (policy makers and health system managers) have an important role in supporting and fostering local partnerships.

4.2.2 Local Health Service Delivery Organizations

The local health service delivery organization is the autonomous organizational entity that has responsibility, authority, and accountability for delivering local PHC services. With support of the wider health system, the local health service delivery organization has lead responsibility for each of the three main tasks (plan, recruit, retain). Specifically, the health service delivery organization draws on available data and local community

perspectives to determine local population health needs. This provides the basis for defining the specific range of services to be provided by the local PHC team and service delivery models. Recruitment plans then target health workforce who have the required knowledge and skills to complement existing staff and ensure delivery of local comprehensive PHC services.

Another key responsibility of the health service delivery organization is to ensure a desirable and supportive work environment that fosters collaboration among team members to achieve health equity. Recruitment success is enhanced by the health service delivery organization working closely with local community leadership in sharing information about all aspects of living and working in this setting, including information of importance to families of potential recruits, particularly safe and comfortable housing, as well as education, employment, and recreational opportunities.

Retention of the PHC workforce occurs when the health service delivery organization fosters a cohesive team environment and encourages individual and collective professional development, associated with education, training, and research. This cohesive team environment is enhanced by management actively involving health care providers in decision making about all aspects of the organization and in promoting aspirations to be a “center of excellence.” Promoting excellence in service delivery, education, training, and research strengthens the reputation of the health service delivery organization with positive effect for community members choosing to access PHC services and potentially seeking to work for the organization. Workforce retention is further enhanced by the health service delivery organization providing opportunities for promotion and career progression while staying local. It is important to note that comprehensive compensation packages are likely to have a positive impact on attraction, recruitment, and retention of PHC team members in rural and underserved settings (Araujo and Maeda 2013).

4.2.3 Local Government

The municipality has an essential role in providing leadership by bringing together local organizations including businesses to ensure there is genuine community engagement in all aspects of the attraction, recruitment, and retention process. This is a truly continuous process with an annual cycle of activities coordinated by local leadership. Especially in LMICs, health services are often fragile and require dedicated ongoing programs including staff positions to ensure the supply of workforce with the generalist knowledge and skills required for high-quality local comprehensive PHC. Investment in these programs ensures benefits for the whole community, not only in terms of population health but also social and economic development.

4.2.4 Academic Institutions

The local academic institutions contribute to successful attraction, recruitment, and retention of PHC workforce by active involvement in promoting health careers locally and then by recruiting local personnel into education and training programs that feature ICEE, including supporting local CPD and graduate studies. This contribution includes recognizing and supporting local PHC team members as faculty members and developing the health service delivery organizations as academic centers of excellence. In addition, academic institutions assist with identifying population health needs, health service delivery model development, and locally driven research focused on improving local health care and health outcomes.

4.2.5 Health Workforce Organizations

These organizations (colleges, academies, associations) are supposed to represent all doctors, nurses, and other health workforce by discipline, but often provide a strong counterforce to successful attraction, recruitment, and retention of health workforce in rural and underserved communities. Generally, these organizations are dominated by high-profile teaching hospital-based specialists and subspecialists in their fields who generally come from well-resourced family backgrounds and see themselves and the services they provide as superior to rural and underserved services both in terms of status and quality. This belief strongly discourages students and trainees from considering a career in PHC, particularly in rural and underserved settings. It is important that rural and underserved urban practitioners either form their own organizations or establish sections within the larger organizations to provide collegial support for themselves, raise the status and reputation of rural and underserved PHC, contribute the rural and underserved community perspective to standard-setting and accreditation, and provide leadership in national and local programs that promote PHC careers.

4.2.6 Policy Makers and Central Government

As mentioned previously, the role of policy makers and central government is to ensure a supportive legislative/regulatory environment and financial resources to maximize the likelihood of successful attraction, recruitment, and retention of rural and underserved urban PHC workforce. This begins with directing resources to facilitate the formation and function of local partnerships that take a leadership role in planning and implementing health workforce attraction, recruitment, and retention programs. Health service delivery organizations require a policy environment that promotes local comprehensive PHC with targeted funding to support both administrative staffing for health workforce recruitment and retention programs including education, training, and research, and also physical resources to strengthen clinical services including buildings, equipment, and vehicles.

In relation to health workforce, policies and programs with funding that enhance the status of rural and underserved PHC team members are important. These include funded education and training with travel support and housing in rural and underserved communities, and health system regulations that encourage everyone in the population to sign on with a PHC service and only access specialist and subspecialist services on referral from local PHC services. Other policies include targeted incentive funding that rewards PHC team members serving local rural and underserved communities without undertaking private practice and also rewards long service in the form of a retention bonus; recognition and awards for excellence that celebrate quality achievements and exemplary service delivered by PHC services and their workforce; and requiring health workforce organizations to support and encourage rural and underserved PHC team members.

PART V – FIT-FOR-PURPOSE PHC AND INTEGRATED HEALTH SYSTEM

5.1 FIT-FOR-PURPOSE HEALTH SYSTEM

The first section of Part V presents the key elements of the fit-for-purpose PHC-enabled integrated health system, including assessing local health service needs and designing responsive health service delivery models, recognizing that health systems in countries with comprehensive PHC are the most efficient and effective, both in terms of lower overall costs and generally healthier populations (Starfield, Shi, and Macinko 2005). Integration of the health system is important at and between the local, regional, and national levels. The second section provides practical guidance on how to implement the fit-for-purpose health system with high-quality local comprehensive PHC.

Box 4. Fit-for-Purpose PHC Teams (see Annex 2)

Local comprehensive PHC: It is well documented that PHC is the most efficient and effective form of health care that results in lower health care costs and fewer population health inequities; improved access to the right care, in the right place, at the right time; and ultimately, improved health. Local comprehensive PHC encompasses holistic first contact clinical services in context including care of emergencies, acute and chronic illnesses, and mental health issues, as well as local public health services including education, screening, immunizations, preventive care, and health promotion for all people of all ages in the local area. This approach fosters true person-centered care by encouraging people to develop ongoing, trusting, personal relationships with members of the local PHC team so that local PHC clinics provide comprehensive, continuing culturally safe care for all. Local health service delivery organizations are autonomous entities that have responsibility, authority, and accountability for delivering local comprehensive PHC services.

Local and expanded PHC teams: Local comprehensive PHC is delivered by a team that fosters ongoing relationships, engenders confidence among local people, and ensures health care providers have collegial support working together to respond to the health needs of the population. At the local level, the “core PHC team” may be seen to have at least four categories of members—community health workers (CHWs), registered nurses (RNs), general practitioners/family physician specialists (FPs), and administrative personnel, all of whom are generalists within their disciplines. Maternity care beyond pre- and post-natal care would require PHC doctors and nurses to have enhanced midwifery skills and a birthing room in the clinic. Cesarean section capability is required either locally or within two hours travel time.

Other surgical services require FPs and RNs with enhanced skills in general surgery and anesthesia, such as advanced practice nurses or nurse practitioners, as well as other support staff and service capacity including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities. A common model in many LMICs is a “district hospital,” where the generalist FPs with a range of enhanced skills are based, and staff includes RNs and other trained health personnel who support a network of village clinics staffed by CHWs and RNs, who may be local or visit from the district hospital. The district hospital and community clinics are in effect the “expanded PHC team” that provides continuing comprehensive care for almost all common health problems supported by specialists based in the regional referral centers or other hospitals/specialist services.

5.1.1 Cost-Effectiveness of PHC

Investments in PHC are associated with decreased health care costs and population health inequities as well as improved access to the right care, in the right place, at the right time, and ultimately, improved health. Starfield and colleagues (Starfield, Shi, and Macinko 2005) identify six ways in which PHC is shown to be beneficial. Specifically, comprehensive PHC accomplishes the following:

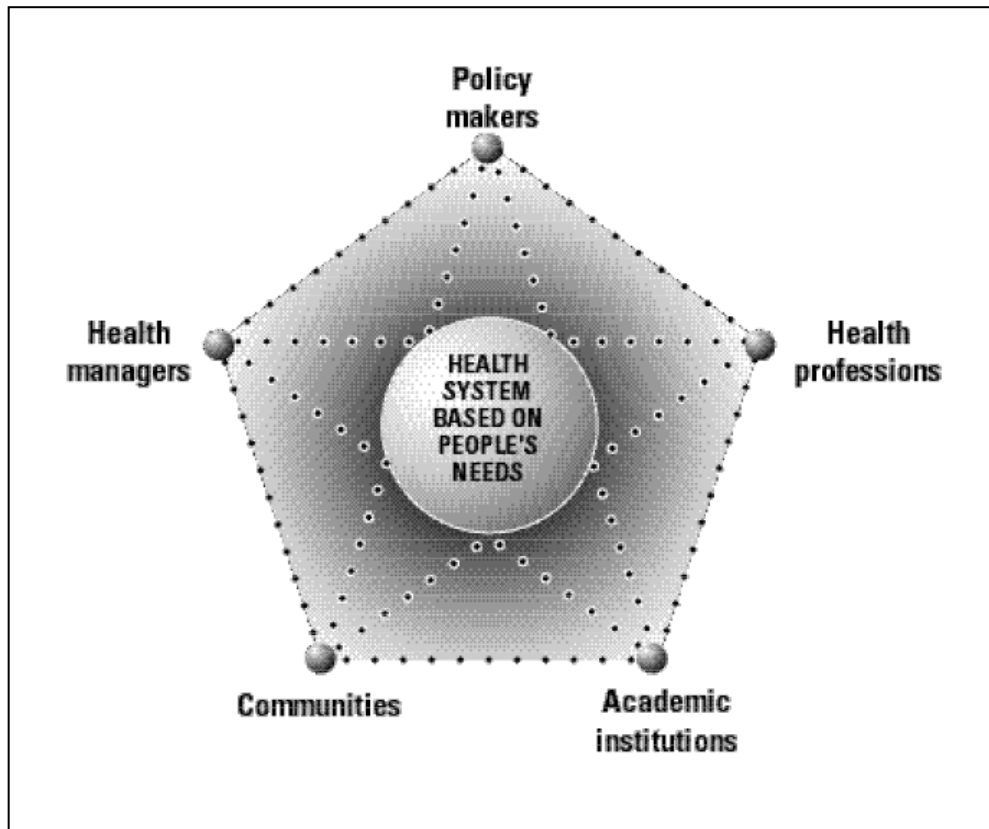
1. Eliminates obstacles that socially excluded populations encounter for regular health service provision
2. Makes important contributions to “the quality of clinical care”—for example, primary care physicians perform as well as, if not better than, medical specialists when diagnosing and treating common diseases
3. Is effective in promoting positive health behaviors and preventive care measures for general health and well-being
4. Contains health issues before emergency or hospital services are needed
5. Aims to produce improved overall health outcomes as opposed to concentrating on specific procedural outcomes for specific conditions
6. Diminishes instances of needless and/or unsuitable specialty care

5.1.2 Health Needs Assessment

Successful PHC requires well-trained health care providers working together in a team. The starting point for determining who and how many health workers are required is to assess health needs of the population to be served. Health service needs assessments typically include an analysis of the population demographics, the burden of acute and chronic disease, as well as accessibility and availability of local and nonlocal services (Murphy, Burge, and Wong 2019). Unfortunately, in rural and underserved areas of LMICs, data are frequently limited, and population needs are often estimated based on data from well-served urban areas. As a result, essential services in rural and underserved environments are often not well-matched to the true needs or practical reality of local populations. To achieve high-quality local comprehensive PHC, an evidence-informed approach is required to develop data sources that accurately assess service needs for the community together with a plan to routinely monitor any changes to specific local health needs over time. Needs assessment should not be based on estimates and extrapolations from incomplete or inadequate data. The PHC Performance Initiative (PHCPI) partnership provides resources on which data to collect and how to monitor the performance of PHC (PHCPI 2020).

Informed by local data, population health needs are determined most effectively with full involvement of the Partnership Pentagram (Boelen 2000; see Figure 3). It is common for policy makers to determine health policy, sometimes involving health service administrators and occasionally seeking input from health care providers as well. Academic institutions may be involved by conducting research, contributing to education, and providing access to resources that would not otherwise be available; however, the fifth member of the Partnership Pentagram, the community, is usually excluded. Successful development of local comprehensive PHC requires active community participation (community engagement).

Figure 5. Partnership Pentagram



Source: Boelen 2000, p. 55.

Community engagement in developing health service models promotes a sense of ownership of the local health service; increases local knowledge, skills, and understanding; and strengthens local relationships and networks. In addition, active community participation contributes to success in recruitment and retention of the health workforce through health care providers' family members feeling at home in and valued by the community, so they want to stay.

Rather than viewing health services as about individuals or "per capita," it is important to view them as essential infrastructure like electricity, water supply, and roads. With this concept in mind, investment in health service facilities is justified to address population needs even when the numbers are small compared to dense population areas (Probst, Ebert, and Crouch 2019). This notion of investing in health infrastructure includes workforce as well as physical facilities, logistics, and equipment. In a sense, this line of thinking moves beyond the notion of health and access to health care as a human right.

5.1.3 Health Service Delivery Models

The most successful health service delivery models are explicitly contextualized to the local environment. For example, transferring and modifying an urban service model to a remote or rural community setting generally is unsatisfactory. The most effective and productive health service models in remote rural communities are those designed in the community, by the community, for the community (Strasser et al. 2018b). This principle holds true for service models in underserved urban environments with the added

challenge of the lack of established community connectedness. Successful development of contextualized health care in underserved urban communities requires an approach “as if” there is community connectedness to help develop local social relationships. Proceeding as if community connectedness exists helps local social relationships and mutual respect to develop among disparate local people and service providers.

Enhancing the sustainability of health services requires a multifaceted and multisectoral approach. Cooperation between ministries of health, education, labor, and finance, among others, and enduring community engagement are required for a successful comprehensive PHC system; investment in horizontal programming consistent with PHC; and the implementation of innovative interventions and partnerships in health workforce education, training, and research to enhance health care and health outcomes and to achieve health equity.

The Partnership Pentagram (see Figure 5) is relevant as a means of ensuring intersectoral collaboration at and between all levels in the system as perspectives and issues are different at the micro (local) level from the meso (regional) level and again from the macro (national) level (Woollard et al. 2016; Markham et al. 2019). At the local level, a “collective impact” framework involving a diverse group of individuals from a variety of health, social service, and municipal sectors contribute to solving complex problems and achieving significant and lasting social change by drawing on local knowledge (Strasser et al. 2018b). Local health service design may have quadruple aims: (1) better health for the local population—through advocacy for enabling policy, education of population in self-care, and coordinated community-wide action with wise use of local resources; (2) better care for patients—through connecting with services that meet their needs, care coordination, and equitable access to multidisciplinary PHC teams, including mental health, public health, and social services, and access to acute care services and other specialty services when needed; (3) better value for the system—through less administration, less duplication and overlap, operating efficiencies, and the right care in the right place at the right time; and (4) better experience for providers—through collaborative networks and peer support, information and communications technology (ICT) solutions, aligned incentives, and a system that is easy to navigate.

5.1.4 PHC Workforce

As described previously, the fit-for-purpose PHC workforce has the right skills to provide the right care, in the right place, at the right time, and with generalism skill sets that include leadership and management, communication expertise, and the ability to work within teams. The underlying assumption is that health services are designed and delivered to address the health needs of the population being served consistent with social accountability (Palsdottir et al. 2016).

The health workforce literature and the labor market literature confirm the importance of investment in socially accountable education and training in producing health care providers with a high likelihood of pursuing PHC careers, particularly in rural and underserved communities (Palsdottir et al. 2016; Palsdottir et al. 2017; Tulenko et al. 2016; Strasser et al. 2019). It is important also that health service delivery organizations and local communities allocate resources to actively support and encourage a PHC-facilitated career pathway (Evans et al. 2016; Strasser et al. 2019).

5.1.5 Integrated Health System

The fit-for-purpose health system is an integrated health system, which is designed from the local level (Strasser et al. 2018b), with local comprehensive PHC providing all first contact clinical services in context, that is, managing emergencies, acute and chronic illnesses, and mental health issues, as well as local public health services—education, screening, immunizations, preventive care, and health promotion. All people of all ages in the local area are required to sign on with the local PHC clinic so that the clinic has empaneled patients that constitute the population it serves. This approach fosters true person-centered care by encouraging people to develop ongoing, trusting, personal relationships with members of the local PHC team so local PHC clinics provide comprehensive, continuing, culturally safe care for all.

Box 5. Enablers of Integrated Health Systems (see Annex 2)

Integrated health system connecting local clusters in collaborative networks:

The integrated health system is designed starting at the local level, with comprehensive PHC delivered at the local PHC clinic with a focus on improving the health of local people, including the specific panel of patients that constitutes the population the clinic serves. Each local comprehensive PHC clinic connects with other clinics in clusters as part of the network that constitutes the health service delivery organization, including a district hospital for expanded PHC services, including inpatient maternity, general surgery, general medicine, child health, and mental health care delivered by generalist PHC practitioners with enhanced skills, as well as support staff and services including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities. Regional/urban hospitals and specialists service providers assist and support the local PHC health teams and health service delivery organizations, with access to the regional hospital and other specialist services available to patients when referred by the local PHC team members with the regional referral center accepting responsibility and accountability for health outcomes in the local settings.

Formal written collaboration agreements: True partnerships between communities and health service delivery organizations; communities and academic institutions; health service delivery organizations participating in the integrated health system; and academic institutions and health service delivery organizations all require formalization with written collaboration agreements that specify the contributions and commitments of each partner. These agreements generally begin with statements of the aims of the collaboration, which generally are that organizations are working together to improve the health of target populations, and then outline mechanisms for communication and implementation of joint programs to achieve specific aims. The collaboration agreement sets out the terms of reference and membership of the steering committee that involves all partners as equal participants and has a key role in ensuring that the partnership functions effectively to the benefit of everyone involved.

Each local comprehensive PHC clinic connects with other clinics in clusters as part of the larger network that constitutes the health service delivery organization, including a district hospital. As part of the PHC service delivery organization, the district hospital provides expanded PHC services, including inpatient maternity, general surgery, general medicine, child health, and mental health care delivered by generalist PHC practitioners

with enhanced skills, as well as support staff and services including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities.

Local health service delivery organizations are part of a larger network of services. Specialized services may be located at different nodes in the network rather than all in one large center, depending on geographic, demographic, epidemiological, and sociological contexts. The role of the regional/urban hospitals and specialist service providers is to assist and support the local PHC health team. There is value in visiting specialist services so long as their role is to collaborate with and support the local PHC team by providing consulting clinical services and education/professional development, and to advocate for local services. These consulting services and CPD are provided principally by ICT complemented by periodic in-person visits to the local clinics.

As part of the network concept, access to the regional hospital and other services is available by referral from the local service. In addition, the regional referral center accepts responsibility and accountability for health outcomes in the local settings. This acceptance is combined with the willingness to receive requests for assistance and transfers when these are judged necessary by local care providers, rather than deflecting the request or denigrating the local provider. This approach fosters respectful and trusting relationships between PHC team members and specialist service providers. It is a true collaborative health system model that endorses the preeminence of cost-effective local comprehensive PHC services and preserves high-cost specialist services for those who need this level of care. It also recognizes and values expertise of local PHC teams and their communities as being of equal value to specialist expertise in the regional referral center.

5.2 IMPLEMENTING PHC IN THE INTEGRATED HEALTH SYSTEM

The following subsections outline how to succeed in implementing the fit-for-purpose integrated health system with local comprehensive PHC services in LMICs.

5.2.1 Local Partnerships

Once again, the core local partners are the local health service delivery organization; local health care providers; and local government ensuring active community participation that includes the local private sector and underrepresented voices. Other health service delivery organizations within the health system are also key collaborators, particularly the regional referral center. Academic institutions contribute to collaborative local education, training, and research, as well as collaborating with both the local health service delivery organization and the regional referral center. The role of policy makers and central government is to ensure a supportive legislative/regulatory environment and financial resources to maximize the likelihood of success. It is essential that there is a formal written agreement between all partners that specifies contributions and commitments made by each partner. The local steering committee involving all partners as equal participants has a key role in identifying local priority health needs, as well as design, delivery, and management of the local health service delivery organization.

5.2.2 Local Health Service Delivery Organizations

With the support of the wider health system, the local health service delivery organization has lead responsibility for planning and implementing local comprehensive PHC services, including employment of PHC team members. Specifically, the health service delivery organization determines local population health needs, drawing on

available data and local community perspectives; defines the specific range of services that are provided and associated service delivery models; recruits and manages PHC team members; delivers high-quality local comprehensive PHC services; and collaborates with other health service delivery organizations, including the regional referral center.

As for the local partnerships, formal written agreements specifying the contributions and commitments of each partner organization are essential for successful collaboration within the health system. These agreements begin with statements of the aims of the collaboration, which generally are that the organizations are working together to improve the health of target populations, and then outline mechanisms for communication and implementation of joint programs to achieve specific aims. The steering committee involving all partners as equal participants has a key role in ensuring that the partnership functions effectively to the benefit of everyone involved.

Successful delivery of high-quality, efficient, and effective health care relies on strong, respectful, trusting, working relationships between leadership, management, and staff of the participating health service delivery organizations. Promoting excellence in service, education, training, and research strengthens the reputation of the health system and engenders trust and confidence among the general population, as well as health care providers, health service administrators, other staff, and all levels of government.

5.2.3 Local Government

The municipality has a key role in working with local businesses and other organizations to ensure there is genuine community engagement in all aspects of planning and implementing local comprehensive PHC services. Especially in LMICs, health services are often fragile and require dedicated ongoing local government and wider local involvement to ensure success of the local health service delivery organization. This involvement including targeted investment in equipment and facilities, as well as workforce recruitment and retention ensures benefits for the whole community, not only in terms of health but also social and economic development.

5.2.4 Other Organizations and the Health System

The success of local comprehensive PHC services relies heavily on collegial support from specialist service delivery organizations and service providers, particularly in the regional referral center. Specifically, they provide consulting clinical services and education/professional development, principally by ICT complemented by periodic in-person visits to the PHC clinics. In addition, the regional referral centers accept responsibility and accountability for health outcomes in local settings combined with the automatic acceptance of requests for assistance and transfers when these are judged to be necessary by local care providers. This collaborative model requires strong, respectful, and effective working relationships between health service delivery organizations and individual care providers, as well as reliable and responsive means of transportation when transfers are required.

5.2.5 Academic Institutions

Academic institutions play a pivotal role by collaborating with local health service delivery organizations and regional referral centers in joint education, training, and research programs undertaken by health care providers who also are faculty members of the academic institutions. In addition, academic institutions contribute to elevating

standards of care, as well as the status and reputation of participating organizations by assisting them to become academic centers of excellence.

5.2.6 Health Workforce Organizations

These organizations (colleges, academies, associations) represent doctors, nurses, and other health workforce who are important contributors to successful integrated health systems. Generally, these organizations are dominated by high-profile teaching hospital-based specialists and subspecialists in their fields who generally come from well-resourced family backgrounds and see themselves and the services they provide as superior to regional referral centers and local PHC health service delivery organizations both in status and quality. Although this belief is rarely evidence-based, it often influences the attitudes and decisions of people needing health care, as well as of government policy and decision makers in allocating resources. Given this situation, it is important that health workforce organizations (HWOs) recognize and value the contribution of all their members to health care and champion evidence-informed health system improvements, including supporting high-quality rural and underserved PHC.

5.2.7 Health Service Accreditation

There is an increasing trend for health service delivery organizations in LMICs to undergo accreditation procedures that certify the services as meeting or exceeding specified accreditation standards. As with education and training accreditation, accreditation authorities are often dominated by the current and former leaders of large urban specialist health service delivery organizations with associated beliefs that services they provide are superior to services provided by regional referral centers and local PHC health service delivery organizations, both in terms of status and quality. Sometimes, accreditation standards are derived from other countries, including high-income countries. Consequently, health service accreditation standards often lack recognition of contextual factors that determine quality of specialist services in regional referral centers and of local PHC services, particularly in rural and underserved urban settings. It is critical therefore that accreditation standards are either adapted to these contexts or that new specific standards are developed by expert service providers and managers in regional referral centers and separately in local PHC services, particularly in rural and underserved urban settings.

5.2.8 Nonpublic Sector Health Services

In many LMICs, there is a range of health service organizations: some are for-profit commercial enterprises; others are not-for-profit, including faith-based organizations; and others are nongovernment organizations (NGOs) that may be funded and administered from outside the country. The health systems in many LMICs allow for health care providers working as “private practitioners,” whereby the provider is paid for services either directly by the patient/client or by an insurance fund or by another nonpublic sector organization. Nonpublic sector health service organizations and private practitioners may contribute a substantial portion of the health services and consequently have a potentially important role in contributing to achieving universal health coverage (UHC) in that country (Ensor, Serneels, and Lievens 2013).

Difficulty arises when activities of these organizations and private practitioners distort or undermine the country’s overall health system. At the individual provider level, this distortion may occur where skilled practitioners are drawn out of the public sector because of higher remuneration paid by nonpublic sector health organizations or where the payment for public sector health services is substantially less than payment for

private practitioner services. In this latter situation, health care providers who divide their time between public and private work may reduce the time and effort they put into delivering public sector–funded services to maximize their income from private practice (Ensor, Serneels, and Lievens 2013).

Consequently, successful local comprehensive PHC in an integrated health system that delivers UHC requires a strong public sector with sufficient funding to attract, recruit, and retain the required numbers of skilled generalist PHC practitioners and specialists in regional referral centers (Evans et al. 2016). The most desirable situation is one of complementarity between the public sector and nonpublic sector organizations and providers in an integrated health system.

5.2.9 Policy Makers and Central Government

Policy makers and central government have critical roles in determining health strategic priorities and ensuring the health system achieves strategic goals. This includes legislation and regulations that encourage efficient and effective contributions of public sector and nonpublic sector organizations and strengthen high-quality local comprehensive PHC as the cornerstone of the health system. These goals are most likely to be achieved with performance-based financing that is focused on local population health outcomes rather than expenditure targets (Berwick 2013).

Box 6. Right Touch Regulation (see Annex 2)

Policy makers and central government play a key role in ensuring a supportive legislative/regulatory environment and financial resources to maximize the likelihood of successful fit-for-purpose PHC services as part of an integrated health system, as well as education and training and workforce recruitment and retention programs that foster high-quality local comprehensive PHC. Similarly, accreditation and licensing authorities create regulations that govern both education and training, the health workforce, and health services delivery. It is critical that these regulations act as facilitators rather than barriers to successful education and training for and delivery of contextualized comprehensive PHC services.

The UK Professional Standards Authority for Health and Social Care developed the concept of right touch regulation that aims for the following:

- **Proportionate:** Regulators should only intervene when necessary. Remedies should be consistent with risk posed, and costs identified and minimized.
- **Consistent:** Rules and standards must be joined up and implemented fairly.
- **Targeted:** Regulation should be focused on the problem and minimize side effects.
- **Transparent:** Regulators should be open and keep regulations simple and user-friendly.
- **Accountable:** Regulators must be able to justify decisions and be subject to public scrutiny.
- **Agile:** Regulation must look forward and be able to adapt to and anticipate change.

Source: Professional Standards Authority for Health and Social Care, UK.

It is important that legislation and regulations are consistent with “Right Touch Regulation” (see Box 6). The role of policy makers and central government is to ensure a supportive legislative/regulatory environment and financial resources to maximize the likelihood of successful fit-for-purpose PHC services as part of an integrated health system. This begins with dedicating resources to facilitate the development and effectiveness of local partnerships that take a leadership role in ensuring genuine community engagement in the development and delivery of local comprehensive PHC services.

Health service delivery organizations require a policy environment that promotes high-quality local comprehensive PHC supported by targeted funding for dedicated health workforce recruitment and retention programs including education, training, and research, and physical resources for delivery of clinical services that include buildings, equipment, and vehicles. In addition, local health service delivery organizations require funding to ensure they have the capacity, including management and data analysis expertise to contribute actively to health service improvement through partnerships with regional referral centers and other specialist service delivery organizations. One mechanism that empowers local health service delivery organizations in the health system is direct funding to local organizations so they contract with the specialist service delivery organizations to deliver high-quality services that improve the health of the organizations’ empaneled patient populations. This mechanism helps to reinforce the requirement that regional referral centers are responsible and accountable for health outcomes of the local populations.

Given that HWOs are so influential, it is important that central government programs and regulations ensure that HWOs foster high-quality local comprehensive PHC, particularly in rural and underserved urban settings. This occurs through targeted program funding for HWOs to work with accreditation and licensing authorities in the development of service standards and training requirements for rural and underserved PHC. This funding to HWOs should be conditional on rural and underserved practitioners providing contextual expertise and leading the development process in collaboration with local health service delivery organizations and community partnerships.

Specific regulations may include the requirement that all trainees and certified specialists have a community service obligation. For trainees, this community service experience sensitizes the trainees to social, cultural, and health issues in communities and may influence some trainees to choose a career delivering or supporting PHC in rural and underserved settings (WHO 2010b). For certified specialists, this obligation serves as a stepping-stone to their future careers, with some specialists providing ongoing services in the form of consultant support or delivering local generalist comprehensive PHC.

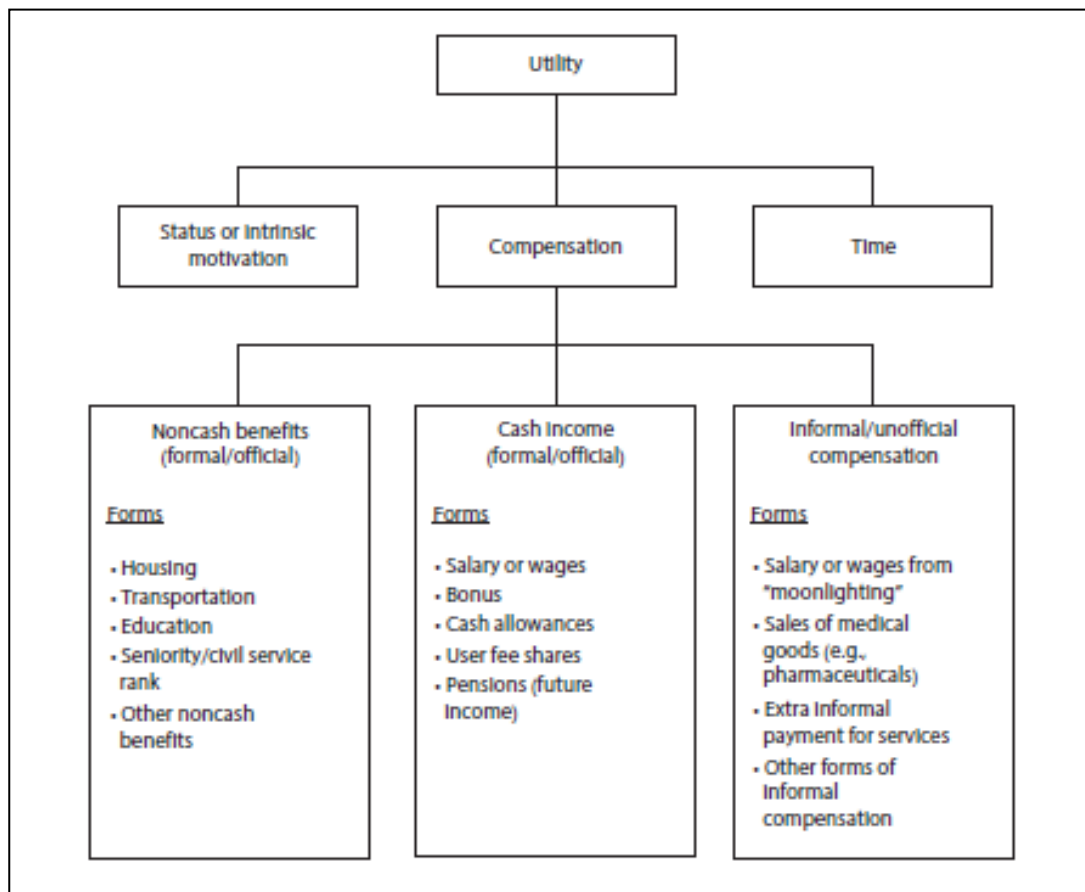
Policy makers and central government have a pivotal role in setting the strategic, regulatory, and funding framework to achieve complementarity between the public and nonpublic sectors to implement an integrated health system that is founded on high-quality local comprehensive PHC to address health needs of all populations. The overall health strategy should be guided by social accountability toward achieving health equity through strategies that strengthen local comprehensive PHC supported by regional referral centers and other specialist service delivery organizations. This requires directing public and private sector investment into local health service capacity building with vertical program funding integrated at the local level through local comprehensive PHC.

It is important that central government sets overall goals drawing on input from all members of the Partnership Pentagram, including communities, and measures success against those goals, rather than accepting funding from external sources that diverts attention and resources (human, financial, physical, and social) away from achieving strategic goals. Although attractive in the short term, accepting external aid funding to build a specialist hospital/health service that is not a strategic priority is likely to be counterproductive and undermine implementation of an integrated health system for the whole country.

5.2.10 Compensation Models

The level of compensation for PHC services delivered by health care providers reflects the degree to which the health system values PHC (Zhao et al. 2013). From this perspective, it is important that PHC team members are paid at levels that are comparable with their discipline colleagues in hospitals and other specialist services, and that CHWs are paid PHC team members rather than unpaid volunteers. However, “the marked differences in return to medical specialization relative to medical generalism and primary care and to serving the rural, remote, and disadvantaged relative to the urban elite for all health professionals exemplify the conflict between health labor market forces and stated policy intentions. Increasing the income levels of generalists, primary care providers, and those serving rural, remote, and disadvantaged populations is constrained by sustainability and affordability issues and, in many cases, by an absence of political will” (McPake et al. 2015).

Figure 6. Common Forms of Individual Incentives and Compensation for Public Sector Health Workers in Low-Income Countries



Source: Jaskiewicz et al. 2016, p. 214.

In LMICs, public sector health workers may receive income from various sources including a base salary and supplemental income such as rural allowances or a share of user fees, as well as nonmonetary benefits. In addition, there may be informal/unofficial sources of income (such as payment for “moonlighting”), sale of medical goods (such as pharmaceuticals), and informal payment for extra services (see Figure 6) (Jaskiewicz et al. 2016). Nonmonetary compensation includes status, time (nonwork leisure time), and intrinsic motivation.

Payment arrangements that focus on health outcomes and reward efforts to achieve health equity are preferred. These compensation models take the form of a base salary for serving a panel of patients with additional payments for achieving specific targets such as immunization and screening test rates. Ideally, patients are required to make no out-of-pocket (OOP) payments to access PHC services, consistent with UHC, and are required to make a payment for hospital and specialist services with the level of that payment reduced or eliminated if the patient’s access to hospital/specialist services is on referral from a PHC team member.

It is important to avoid perverse incentives, including performance-based financing such as pure fee-for-service payments whereby the provider’s income is solely a function of throughput, as this approach creates an unbalanced focus on quantity rather than quality. Another example of perverse incentives occurs where primary care providers receive payments from hospitals or other specialist services, including diagnostic services, based on the number of patient referrals. High-quality local comprehensive PHC is most likely when there is a blended funding model that rewards health outcomes. This enables PHC team members to be guided by community engagement to address local health needs rather than being guided by time spent per patient and the number of patients served in a day or a week.

Compensation for PHC team members is not just about salary or wages (monetary compensation). In fact, many of the most important contributors to successful recruitment and retention are nonmonetary (WHO 2010b). For example, PHC team members should have safe and comfortable living circumstances for themselves and their families. This may take the form of housing that is provided by the local health service delivery organization or a housing subsidy. Similarly, PHC team members require a safe and well-equipped work environment in the clinic and in the form of a vehicle for bringing services to where the patients live. The vehicle may be provided either for the sole use of the PHC team member or as part of a transport fleet maintained by the health service. Broadband Internet access at home and in the clinic, as well as in vehicles, qualifies as essential equipment for high-quality PHC health services. Financial support for local and distant CPD with funded travel and backfill is also an important component of the compensation package.

In addition to guaranteed income, housing, and facilities, the compensation package should reward for special service. This may include serving difficult to access populations and economically, educationally, and socially disadvantaged groups. Such additional rewards may take the form of supplemental payments for service in remote, rural, and underserved urban settings, as well as bonus payments in lieu of private practice, and retention payments for long service that increase over time beginning at three years of continuous service. Overall, comprehensive compensation packages are

likely to have a positive impact on attraction, recruitment, and retention of PHC team members in rural and underserved settings (Araujo and Maeda 2013).

Box 7. Comprehensive Compensation Packages (Annex 2)

Successful attraction, recruitment, and retention of PHC team members in rural and underserved settings is most likely when compensation includes base pay levels that are comparable with those of discipline colleagues in hospitals and other specialist services supplemented by health outcome–focused incentives, rural/underserved allowances, and payments for special service such as retention/long service and in lieu of private practice. Nonmonetary compensation includes safe and well-equipped work environment with broadband Internet and access to well-maintained vehicles, as well as safe and comfortable family living circumstances, plus support for CPD, upskilling and graduate studies, and career progression.

As mentioned, nonmonetary compensation is an important means of demonstrating that local PHC team members and local health service delivery organizations are valued by the health system, central government, and society as a whole. Examples of nonmonetary compensation include academic appointments with associated access to library and other academic institution resources; awards of excellence for outstanding performance in clinical service, education, training, research, leadership, and management; scholarships and fellowships to encourage performance excellence; and support for participation in national and international collaborations (WHO 2010b). For example, Thailand raises the status of rural physicians through annual awards of excellence and recognition of rural physician of the year, and provides financial incentives and rewards for rural practitioners (see Annex 1).

PART VI – BROADER POLICY CONSIDERATIONS

There is a range of policy considerations to achieve successful high-quality local comprehensive PHC within an integrated health system that features UHC.

6.1 LOCAL HEALTH NEEDS

The first priority is always to maintain the preeminent focus on the health and well-being of people living in their local context. The COVID-19 pandemic experience has brought into sharp focus the disadvantaged circumstances of rural and underserved urban communities and highlighted the importance of local self-reliance and self-sufficiency. A lesson for the future from the COVID-19 pandemic is the value of investing substantial resources in local settings to ensure the capacity not only to deliver local comprehensive PHC, but also to manage the next pandemic-like disaster successfully in ways that preserve specialized services for those who really need them. The COVID-19 pandemic experience has also highlighted the importance of intersectoral collaboration at the local level, as well as at and between regional and national levels, with interconnected policies and programs across all ministries.

An important aspect of policy development is to ensure that there is an assessment of the impact of any new policies on rural and underserved communities. In South Africa, the Rural Health Advocacy Project has developed guidelines for “Rural Proofing” that are designed to assess the potential impact on rural and remote communities of new health policies and programs (RHAP 2015).

6.2 NATIONAL HEALTH STRATEGY

People living in their own context, particularly those in rural and underserved urban settings, along with local care providers, local government, and local health service delivery organizations are the experts with knowledge and insights about local population health priorities. Consequently, the development of a national health strategy begins locally with local Partnership Pentagram participation (Markham et al. 2019); then connects to the regional level where the region is a network of local community clusters; and then brings all the regions together to provide the whole of country picture. This “start local” or “bottom-up” rather than the common “top-down” approach maintains the social accountability focus on the health and well-being of people living in their local context (Van Weel and Howe 2019) and recognizes that health systems in countries with comprehensive PHC are the most efficient and effective, both in terms of lower overall costs and generally healthier populations (Starfield, Shi, and Macinko 2005). Also, this “start local” approach helps to balance the influence of large organizations like specialist health service delivery organizations, nonpublic sector organizations, health workforce organizations, and academic institutions with their teaching hospitals because they all tend to pursue self-interest rather than the interests of the population as a whole. In addition, health and education labor market assessments contribute to designing and implementing workforce aspects of the national health strategy for the whole country (Araujo and Maeda 2013; McPake et al. 2015; Evans et al. 2016).

Successful implementation of the national health strategy to deliver PHC and UHC requires whole of government and intersectoral collaboration including the nonpublic sector at all levels (Evans et al. 2016). Financing models should be directed to achieve specific goals, particularly health outcomes, that require cooperation and collaboration between government departments and nonpublic sector organizations, as well as other Pentagon partners at the national, regional, and local levels.

6.3 PHC WORKFORCE CAREER PATHWAYS

Successful development and implementation of a stable and long-term fit-for-purpose workforce to deliver high-quality local comprehensive PHC requires cross-sectoral policies, regulations, and financing models that promote facilitated career pathways for all members of the PHC team. Career pathways begin with recruiting students from rural and underserved community settings into facilitated PHC generalist education and training pathways that feature socially accountable immersive community engaged education (ICEE). They continue with attraction, recruitment, and subsequent retention supported by comprehensive compensation packages that facilitate career progression and satisfaction while remaining PHC team members in rural and underserved urban local health service delivery organizations.

6.4 UP-FRONT LOCAL INVESTMENTS

The COVID-19 pandemic experience featured substantial up-front government investments targeted both at protecting health and preventing avoidable death, and at supporting livelihoods and well-being with a view to future social and economic benefits. Similarly, successful implementation of high-quality local comprehensive PHC requires considerable up-front investment, recognizing that the return-on-investment will not be realized fully for a decade or more. Taking this long-term view requires planning, data analysis, leadership, and management expertise at all levels (local, regional, and national) to set ambitious but achievable short- and medium-term targets and implement continuous quality improvement, monitor progress, and adapt programs, as required.

It is critical that there is dedicated funding to support empowerment of local partnerships to contribute to local education, training, and research; local attraction, recruitment, and retention of health workforce; and the planning and implementation of contextualized local health service delivery. In addition, targeted funding is required for the development and implementation of local PHC clinics and health service delivery organizations, including specific funding for human resources like health workforce and skilled management teams. This requires funding the complete integrated package of interconnected initiatives rather than isolated individual interventions or one-off short-term projects.

6.5 LOCAL EXPENDITURE

In allocating the funding, a key policy feature should be a requirement that most, if not all, of the funding is expended in rural and underserved urban settings, rather than in the regional centers or organizational head offices. This policy should apply to all organizations whether they are health service delivery organizations, academic institutions, or health workforce organizations.

6.6 ESSENTIAL PHC INFRASTRUCTURE

The “start local” approach to developing the national health strategy and the up-front investment in local partnerships and organizations enhances the sense of collective ownership of the health system as a means of encouraging people to take personal responsibility for their own health. Implementing these policies and procedures requires high-quality communications in the sense of information-sharing and public education. It also requires substantial infrastructure investment in ICT so people in rural and underserved urban communities have local access to ICT-delivered specialist services and local PHC practitioners are supported as frontline providers of all care to their panel patients. In addition, investment in transportation infrastructure is essential as well so when the local PHC team sees the need to transfer patients, the system has the capacity for reliable and responsive transportation.

6.7 SYSTEM INTEGRITY

An essential policy stance is setting and expecting the highest standards of behavior by all participants. This includes central government decision making being held to the standard of the best interests of the whole population and all segments of the population including people living in rural and underserved urban settings. As mentioned previously, substantial funding offered by external governments or agencies is attractive in the short term, but unless this funding is directed to achieve strategic health priorities, it may not benefit more than a select group within the population. Similarly, funding from nonpublic sector organizations or individuals should not be accepted unless it is directed to ensure an efficient and effective health system that achieves health strategic goals. This requirement for integrity applies equally at the regional and local levels so there is no decision making based on family or other connections that may not be in the best interests of the whole population.

CONCLUSION

“If you want to get to Dublin, I wouldn’t start from here.”

According to Albert Einstein, “insanity is doing the same thing over and over and expecting different results.” The renewed global commitment to primary health care (PHC) is unlikely to lead to desired results unless a different approach that reimagines PHC is adopted. For the PHC workforce, conventional education and training programs have failed to produce enough health workers who have the skills and commitment to care for people living in rural and underserved urban communities. By contrast, socially accountable immersive community engaged education (ICEE) is successful in producing health workers who are generalists and have the skills and commitment to deliver high-quality local comprehensive PHC in rural and underserved communities.

Rather than starting in the middle, this Discussion Paper has presented the “start local” health service delivery model, integrated health system framework, and financing models designed to ensure high-quality local comprehensive PHC is available and accessible to all. The underlying assumption is that the provision of health care should be designed and delivered to address the health needs of the population being served. This is the premise of the WHO definition of socially accountable education with community engagement as a key implementation mechanism. Fundamentally, a facilitated generalist pathway beginning with recruiting local students from rural and underserved settings and providing most of their undergraduate education and postgraduate training in these communities produces health workers who are ready and able to deliver high-quality local comprehensive PHC. These health workers are most likely to choose to work in rural and underserved PHC clinics and stay long term if the local health service delivery organization demonstrates its commitment to excellence in service delivery, education, training, and research, and provides a supportive, cohesive team environment in a well-equipped and well-organized clinic, plus the community welcomes all family members so they feel a part of the community and want to stay.

LMICs will be successful in delivering high-quality local comprehensive PHC to rural and underserved urban populations if they start by investing in local partnerships that bring together local health service delivery organizations with local academic institutions and local governments to ensure genuine community engagement involving local businesses and underrepresented voices. Local partnerships provide the foundation for local health needs assessments and the design of local health service delivery models, as well as immersive community engaged education, and successful recruitment and retention of the health workforce. This approach is predicated upon valuing local expertise and supporting local health care providers and autonomous health service delivery organizations as equal partners with teaching hospitals, regional referral centers, and other specialist services to develop and implement the integrated health system with UHC that delivers high-quality local comprehensive PHC.

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ANNEX 1: PHC WORKFORCE CASE EXAMPLES

THEnet: There is a growing body of evidence indicating that socially accountable health workforce education is effective in LMICs. The [Training for Health Equity network \(THEnet\)](#)¹ is an international community of practice led by health workforce education institutions with social accountability mandates to address health inequities and local health priorities. The following cases are member schools of THEnet.

1. The **Walter Sisulu Faculty of Health Sciences (WSUFHS)**² was established in 1985 to address severe health professional shortages and to meet care needs in rural, predominantly black communities in apartheid **South Africa**. Since its inception 35 years ago, WSUFHS has become a leader in innovative, contextually relevant approaches to health education, adopting a “people first” philosophy to deliver socially responsible health care. The WSUFHS admissions process favors applicants from its surrounding region and provides community-engaged problem-based learning (PBL) for its students. Among the school’s graduates, 72 percent are black Africans, and 80 percent have stayed within the region, including 36 percent practicing in small rural communities.³
2. Another member of THEnet is the **Ateneo de Zamboanga University (ADZU)**⁴⁻⁷ School of Medicine (SOM) in **the Philippines**. Zamboanga is an extremely low-resource politically unstable region with many historically doctorless communities. ADZU SOM began in 1994 as a community movement with a working capital of US\$550 and is successful in producing a rural workforce with volunteer local clinician instructors. Since its first graduating class in 1999, more than 80 percent of its graduates practice locally in underserved communities, and the number of municipalities with a physician has increased by 55 percent. Additionally, the region’s infant mortality rate has decreased by close to 90 percent, down from nearly 80 per 1,000 live births to approximately 8 per 1,000 live births. The success of medical education in Zamboanga adds support to the notion that socially accountable application processes, privileging local students, immersive community engaged education leads to positive returns on government and community investments when educating health workforce.
3. The socially accountable “stepladder” program of **the School of Health Sciences, University of the Philippines, Manila (UPM-SHS)**,⁷⁻⁸ was developed in 1976 to educate a broad range of the health workforce, including CHW/midwives with a Certificate in Community Health Work, nurses with a Bachelor of Science in Nursing, and Doctors of Medicine, in one sequential and continuous community-based curriculum. At least 50 percent of their training takes place in primary care settings, and between each program level the students return home to their sponsoring communities to deliver service. Targeted recruitment strategies, needs-based curriculum, partnerships with communities and health system authorities, and extensive community-engaged service learning have contributed significantly to recruitment of UPM-SHS graduates to and their retention in rural areas and areas of economic disadvantage. One recent study shows UPM-SHS medical graduates are 10

times more likely to practice in towns of below 50,000 population than medical graduates of traditional medical schools in the same region and 8 times more likely to practice in lower-income towns, and more than 80 percent remain in underserved regions.

4. **UPM-SHS** also builds local capacity by implementing a one-year, two-module program for mayors and municipal health officers. Municipalities are selected in collaboration with the Department of Health and require the commitment of the mayor to support health reforms. The program offers training and coaching in local health system development, with a focus on the six building blocks of the WHO Health Systems Framework—leadership/governance, health care financing, health workforce, medical products and technologies, information and research, and service delivery.
5. When a massive earthquake rocked **Nepal** in April 2015, students and faculty from **Patan Academy of Health Sciences (PAHS)**⁹ were prepared to save lives, treat injuries, and reduce the suffering of the community as much as possible. In line with the school's community-engaged approach to health workforce education, students undertook a series of training sessions just months before the earthquake hit, involving students, hospital staff, and the surrounding community. The most challenging training scenario compelled the team to evacuate patients and create a field hospital with its own water supply, sanitation, electricity, and refrigeration system. They also had to practice transferring patients to the improvised facility. When the real earthquake hit, the PAHS team was as prepared as humanly possible. With strong ties to local NGOs and the community-based networks, PAHS students and faculty were able to respond quickly, efficiently, and compassionately because they were already an integral part of the community.
6. The **Northern Ontario School of Medicine (NOSM)**^{10–12} opened in 2005 with a social accountability mandate focused on improving the health of people in Northern Ontario, a vast, remote, rural, chronically underresourced and underserved region of **Canada**. Consistent with social accountability, NOSM developed Distributed Community Engaged Learning (DCEL) as its distinctive model of medical education and health research, involving over 90 sites. Community engagement guided the development of NOSM's comprehensive life-cycle approach, beginning in high school and extending through to continuing professional development and graduate studies. NOSM's admissions process seeks to reflect the population distribution of Northern Ontario in each class, specifically promoting applicants from Northern Ontario or those with similar backgrounds. Community members play a vital role in selecting students for the four-year MD program; educating students by serving as standardized patients; and providing local support for students during their community placements. Fifteen years since the official opening of the school, NOSM is recognized for its success in fulfilling its social accountability mandate: 92 percent of all NOSM medical students grew up in Northern Ontario with the remaining 8 percent coming from remote and rural parts of the rest of Canada; 62 percent of NOSM graduates (almost double the Canadian average) have chosen predominantly

rural family practice training; and 92 percent of NOSM-trained family physicians who completed undergraduate and postgraduate education with NOSM are practicing in Northern Ontario. Many NOSM graduates are now faculty members, and an increasing number have taken on academic leadership roles.

7. The **University of New Mexico Health Sciences Center** developed **Health Extension Rural Offices (HEROs)**¹³ as a vehicle for its model of health extension. Health extension agents are located in rural communities across the state and work with different sectors of the community in identifying high-priority health needs and linking those needs with university resources in education, clinical service, and research. Community needs, interventions, and outcomes are monitored by county health report cards. The Health Sciences Center is a large and varied resource, the breadth and accessibility of which are mostly unknown to communities. Agents serve a broader purpose beyond immediate, strictly medical needs by addressing underlying social determinants of disease, such as school retention, food insecurity, and local economic development. Developing local capacity to address local needs has become an overriding goal.

Problem-based, student-centered learning at the **Faculty of Health Sciences, Unilorin, Nigeria**¹⁴ were incorporated in the overall objectives of producing students with a sense of service and a strong inclination toward broad community care and preventive medicine. The educational program reflecting this concept was called **COBES (community-based experience and service)**. Twice a year groups of between seven and fourteen students, each accompanied by two to three staff members, settled in a village or other community for one month. Each group first assessed the size of its community (population, areal map). Malnutrition and infectious diseases were selected as the two health problems that were to be studied in depth during the first two COBES placements. Students came to appreciate the influence that the local food situation had on the state of nutrition of the children; they themselves perceived the hazard infected people created for the community when they waded into the pool from which water was drawn for drinking. The COBES program set a pattern of medical education that specifically suits Nigerian needs and those of other African countries.

In **Norway, Decentralized Nursing Education (DNE)**, which targets rural students for part-time studies, was established at **Tromsø University College** in 1990.¹⁵ A survey of the 315 former students who graduated from the DNE program from 1994 to 2011 showed the DNE successfully recruited students from rural areas of northern Norway with nearly 87.5 percent having their first employment in community health care services. These nurses continued to work in rural areas, and 85 percent still worked as nurses after 18 years.

In **South Africa**, Dr Harry Surtie Hospital in the **town of Upington**,¹⁶ which serves the western half of the **rural Northern Cape Province**, has struggled to recruit and retain local doctors, nurses, and other health workforce, and thus to provide adequate health care. Stellenbosch University responded to a call to collaborate with the local health service. The resulting partnership led to the placement of students in a range of health disciplines including medicine, occupational therapy, and physiotherapy, in Upington,

with distant support from the Stellenbosch Ukwanda Centre for Rural Health. Through this initiative, students have not only supported better access to health care for local people in Uppington, including visiting PHC services, but their presence has also been associated with reported improvements in staff morale and professional development, and increased interest among health care professionals to work in the facility.

Also in **South Africa**, the **Umthombo Youth Development Foundation (UYDF)** was established in 1999 to assist in addressing shortages of health care providers (HCPs) in rural areas of **KwaZulu-Natal** Province.^{17, 18} The UYDF program involves an integrated model of recruitment at high school level, selection by a local rural hospital, comprehensive financial support, a compulsory structured academic and social mentoring program, and experiential holiday work at the hospitals. Upon completion of their degrees, graduates are absorbed into the hospitals where they were initially interviewed for the scholarship. The selected students sign a year-for-year return-of-service contract with UYDF. The program commenced with four students and by the end of 2017 had produced 336 graduates and was supporting 251 students with an annual pass rate of over 90 percent, compared with the national average of 42 percent after four years of studies. UYDF graduates include not only doctors and nurses but also rehabilitation service providers, including audiologists, occupational therapists, speech-language pathologists, and dietitians, as well as optometrists and psychologists. In many cases, UYDF graduates were the first providers of services in their field at their rural hospital.

UYDF graduates have the advantage of knowing the area well and understanding the language, which makes them better able to communicate with patients and to take on outreach work. Importantly, UYDF graduates are more likely to be retained, thus stabilizing hospital services. There are, however, constraints to their effectiveness, including lack of essential equipment, poor accommodation for doctors on call, long distances between hospitals and outreach clinics, and poor roads connecting them.

The UYDF scheme also contributes to the general development of communities where it operates. Young people who would otherwise have added to the larger numbers of unemployed people in the area are gainfully employed, supporting their families and acting as role models to learners at school, encouraging them to choose school subjects wisely, to work harder and be more ambitious in their choice of career. Because they are likely to remain in the area, UYDF graduates are more committed to community development.

The financial aspects of the UYDF are also impressive. An average of R17 million is spent every year on the students or R102,015 per student per year. The internal rate of return (IRR) is 63 percent, which is higher than interest rates on commercial loans. These graduates are expected to generate an estimated R15 billion in lifetime earnings, which would be equal to R4 billion at current prices. The UYDF scheme has relieved the shortage of HCPs in rural hospitals, and the hospitals have been able to retain the service of many of the locally sourced HCPs. The costs of implementing the UYDF scheme are outweighed by the income generated from salaries, and taxes contributed to the country's economic development.

Funded by the Norwegian government, **Rural Health for Peace in Colombia** is developing **local comprehensive PHC in rural and remote areas**. The Remote Rural

Workforce Stability Framework is being used as the basis for collaborating with local small communities, local health service delivery organizations, and academic institutions to enhance the quality, effectiveness, and sustainability of health care in Tolima Province.¹⁹ The framework has been translated into Spanish and adapted to the Colombian context and is guiding specific research and development initiatives. Community engagement is a key feature of Rural Health for Peace, actively involving local communities including former FARC—Revolutionary Armed Forces of Colombia (People's Army) combatants.

Thailand^{20, 21} is one LMIC that is making great strides to **strengthen rural practice within PHC systems** and achieve greater health equity. Over the past three decades, Thailand has increased the proportion of rural physicians within its physician workforce; the number of generalists has increased from 5 to nearly 15 percent, or approximately 5,000 physicians. It has made these gains by offering extensive and complete UHC with no copayments at the point of service. Also, Thailand compensates physicians who do not have private practices to offer their services in the public sector. In addition to a basic civil servant salary, Thai rural physicians receive between two to seven times additional income from various allowances (i.e., hardship, on call, nonprivate practice, and board certification).

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ANNEX 2: KEY CONCEPTS

Start local: Whereas health policy analysts and decision makers in low- and middle-income countries (LMICs) commonly employ centralized health workforce management and planning strategies, this reimagining of primary health care (PHC) workforce begins at the local level. It presents local comprehensive PHC delivered by autonomous local health service delivery organizations networked as part of an integrated health system to deliver universal health coverage (UHC).

Value local expertise: Over the last 100 years, most new developments in health care have occurred in large urban teaching hospitals linked to increasing use of technology and specialization to the point where it is common for people to think of health care as hospital care. This contributes to a lack of understanding that PHC is about comprehensive personalized care in the local community context and that PHC is a different paradigm from specialist hospital care. In addition, teaching hospital specialists and subspecialists dominate their disciplines as key opinion leaders and advisers to policy makers and governments. Frequently, these individuals have little or no experience or understanding of PHC or community contexts, particularly for rural and underserved populations. They often hold the view that the care teaching hospitals provide is superior to regional referral centers and local PHC delivery organizations both in terms of status and quality. Although this belief is rarely evidence-based, it often influences the attitudes and decisions of people needing health care, as well as of government policy and decision makers in allocating resources. Success in implementing reimagined high-quality local comprehensive PHC requires a paradigm shift not only in the health system and health care delivery models, but also in the health workforce education and training. A key to success is valuing, recognizing, and empowering skilled PHC workers as the experts. They know and understand the PHC context so are best placed to set and apply standards for PHC education and training, licensing and certification, and service delivery models.

Social accountability: The “start local” approach is guided by social accountability, which the World Bank describes as “an approach toward building accountability that relies on civic engagement, in which citizens participate directly or indirectly in demanding accountability from service providers and public officials.” For academic institutions, the World Health Organization (WHO) defines social accountability as “the obligation to direct their education, research, and service activities toward addressing the priority health concerns of the community, region, and the nation that they have a mandate to serve.”

Community engagement: Implementing social accountability requires active community participation or community engagement that constitutes authentic interdependent partnerships involving health service delivery organizations and academic institutions that respect and value the communities’ local knowledge and expertise. The benefits of community engagement include community empowerment in relation to local health service delivery organizations; promotion of locally relevant services to reflect community needs; enhanced health service access and health outcomes; and promotion of health-improving behaviors; as well as development and delivery of education programs that assist students and trainees to appreciate social determinants of health at the local level; and enhanced health workforce recruitment and retention.

Local comprehensive PHC: It is well-documented that PHC is the most efficient and effective form of health care that results in lower health care costs and fewer population health inequities; improved access to the right care, in the right place, at the right time; and ultimately, improved health. Local comprehensive PHC encompasses holistic first contact clinical services in context, including care of emergencies, acute and chronic illnesses, and mental health issues, as well as local public health services including education, screening, immunizations, preventive care, and health promotion for all people of all ages in the local area. This approach fosters true person-centered care by encouraging people to develop ongoing, trusting, personal relationships with members of the local PHC team so that local PHC clinics provide comprehensive, continuing, culturally safe care for all. Local health service delivery organizations are autonomous entities that have responsibility, authority, and accountability to deliver local comprehensive PHC services.

Local and expanded PHC teams: Local comprehensive PHC is delivered by a team that fosters ongoing relationships, engenders confidence among local people, and ensures that health care providers have collegial support working together to respond to the health needs of the population. At the local level, the “core PHC team” may be seen to have at least four categories of members—community health workers (CHWs), registered nurses (RNs), general practitioners/family physician specialists (FPs), and administrative personnel, all of whom are generalists within their disciplines. Maternity care beyond pre- and post-natal care would require the PHC doctors and nurses to have enhanced midwifery skills and a birthing room in the clinic. Cesarean section capability is required either locally or within two hours travel time.

Other surgical services require FPs and RNs with enhanced skills in general surgery and anesthesia, as well as other support staff and service capacity including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities. A common model in many LMICs is a “district hospital,” where the generalist FPs with a range of enhanced skills are based, and staff includes RNs and other trained health personnel that support a network of village clinics staffed by CHWs and RNs who may be local or visit from the district hospital. The district hospital and community clinics are in effect the “expanded PHC team” that provides continuing comprehensive care for almost all common health problems supported by specialists based in the regional referral centers or other hospitals/specialist services.

Integrated health system connecting local clusters in collaborative networks: The integrated health system is designed starting at the local level, with comprehensive PHC delivered at the local PHC clinic with a focus on improving the health of local people, including the specific panel of patients that constitutes the population that the clinic serves. Each local comprehensive PHC clinic connects with other clinics in clusters as part of the network that constitutes the health service delivery organization, including a district hospital for expanded PHC services including inpatient maternity, general surgery, general medicine, child health and mental health care delivered by generalist PHC practitioners with enhanced skills, as well as support staff and services including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities. Regional/urban hospitals and specialist service providers assist and support the local PHC health teams and health service delivery organizations, with access to the regional hospital and other specialist services available to patients when referred by the local PHC team members with the regional referral center accepting responsibility and accountability for the health outcomes in the local settings.

Formal written collaboration agreements: True partnerships between communities and health service delivery organizations; communities and academic institutions; health service delivery organizations participating in the integrated health system; and academic institutions and health service delivery organizations all require formalization with written collaboration agreements that specify the contributions and commitments of each partner. These agreements generally begin with statements of the aims of collaboration, which generally are that the organizations are working together to improve the health of the target populations, and then outline mechanisms for communication and implementation of joint programs to achieve the specific aims. The collaboration agreement sets out the terms of reference and membership of the steering committee that involves all partners as equal participants and has a key role in ensuring that the partnership functions effectively to the benefit of everyone involved.

Immersive Community Engaged Education (ICEE): ICEE programs feature clinical education in which students and trainees are immersed in the rural and underserved community clinical settings with the generalist PHC health care providers as the principal clinical teachers and role models. This contrasts with conventional health workforce programs in which most clinical education occurs in large urban teaching hospitals. ICEE is socially accountable education that is grounded in community engagement and local comprehensive PHC, and fosters authentic relationships focused on improving the health of the local population. ICEE is a major contributor to successful production of skilled PHC team members, particularly within the facilitated education and training pathway that begins with recruiting local students from rural and underserved communities and provides education, training, and professional development throughout their careers.

Right touch regulation: Policy makers and central government have a key role to ensure a supportive legislative/regulatory environment and financial resources to maximize the likelihood of successful fit-for-purpose PHC services as part of an integrated health system, as well as education and training, plus workforce recruitment and retention programs that foster high-quality local comprehensive PHC. Similarly, accreditation and licensing authorities create regulations that govern both education and training, the health workforce and health services delivery. It is critical that these regulations act as facilitators rather than barriers to successful education and training for and delivery of contextualized comprehensive PHC services. The UK Professional Standards Authority for Health and Social Care developed the concept of right touch regulation that aims to be, as follows:

- *Proportionate:* Regulators should only intervene when necessary. Remedies should be appropriate to the risk posed, and costs identified and minimized.
- *Consistent:* Rules and standards must be joined up and implemented fairly.
- *Targeted:* Regulation should be focused on the problem and minimize side effects.
- *Transparent:* Regulators should be open and keep regulations simple and user-friendly.
- *Accountable:* Regulators must be able to justify decisions, and be subject to public scrutiny.
- *Agile:* Regulation must look forward and be able to adapt to and anticipate change.

Comprehensive compensation packages: Successful attraction, recruitment, and retention of PHC team members in rural and underserved settings is most likely when compensation includes base pay levels that are comparable with those of discipline

colleagues in hospitals and other specialist services supplemented by health outcomes–focused incentives, rural/underserved allowances, and payments for special service such as retention/long service and in lieu of private practice. Nonmonetary compensation includes safe and well-equipped work environment with broadband Internet and access to well-maintained vehicles, as well as safe and comfortable family living circumstances, plus support for CPD, upskilling and graduate studies, and career progression.

ANNEX 3: SYSTEM PARTICIPANTS

1. **Local Partnerships** are enabled by various formal agreements that may involve local health service delivery organizations, local government, other health service delivery organizations and health systems, academic institutions, health workforce organizations, and nonpublic sector health services and are facilitated by policy makers and central government. These partnerships constitute the mechanism for genuine interdependent partnerships that enable community engagement for implementing local education, training, and research, as well as attracting, recruiting, and retaining health workforce and local PHC service development, and delivery.
2. **Local Health Service Delivery Organizations** are autonomous health care organizations that have responsibility, authority, and accountability for planning and delivering local comprehensive PHC services and have the lead role in the local partnership focused on attraction, recruitment, and retention of the PHC workforce. Generally, these health service delivery organizations consist of networks of local comprehensive PHC clinics connected in clusters with each other and with a district hospital that provides expanded PHC services, including inpatient maternity, general surgery, general medicine, child health and mental health care delivered by generalist PHC practitioners with enhanced skills, as well as support staff and services including laboratory medicine, diagnostic imaging, and pharmacy with associated equipment and facilities.
3. **Local Government** has an important role in local partnerships to ensure genuine community engagement that involves local businesses and otherwise underrepresented voices in health and social care, particularly the community contribution to planning and implementing PHC services, promoting health careers for local people, and contributing to health workforce planning, recruitment, and retention.
4. **Academic Institutions** in the form of colleges or universities provide postsecondary education and may be based in rural and underserved communities or have campuses in those settings. These institutions contribute to local partnerships, particularly leading to the development and implementation of local health workforce education, training, professional development, and graduate studies, as well as research and data analysis that promotes local health care excellence. In addition, these academic institutions collaborate with regional referral centers, teaching hospitals, and other specialist services in ways that help to build bridges between the various health care organizations.
5. **Health Workforce Organizations** in the form of colleges, academies, and associations represent doctors, nurses, and other health workforce. Often these organizations are dominated by high-profile teaching hospital-based specialists and subspecialists in their disciplines who generally come from well-resourced family backgrounds and see themselves and the services they provide as superior to rural and underserved services both in terms of status and quality. Successful implementation of reimagined high-quality local comprehensive PHC requires that these health workforce organizations recognize and value the

contribution of all their members, including those in rural and underserved communities, and that they champion evidence-informed health system improvements.

6. **Other Health Service Delivery Organizations and the Health System** are the hospitals, other specialist service delivery organizations, and specialist service providers, particularly in the regional referral center that provides the collegial support upon which the success of local comprehensive PHC services relies. Specifically, they provide consulting clinical services and education/professional development principally by ICT and complemented by periodic in-person visits to the PHC clinics. In addition, the regional referral centers accept responsibility and accountability for health outcomes in local settings combined with the automatic acceptance of requests for assistance and transfers when these are judged to be necessary by local PHC team members. This collaborative model requires strong, respectful, and effective working relationships between all health care organizations and individual health care providers, as well as reliable and responsive means of transportation when transfers are required.
7. **Nonpublic Sector Health Services** include for-profit commercial enterprises; not-for-profit organizations, including faith-based organizations; and nongovernment organizations (NGOs) that may be funded and administered from another country. These nonpublic sector health service organizations often employ health care providers and administrators as “private practitioners” who may contribute a substantial portion of health services, particularly in the cities.
8. **Policy Makers and Central Government** have a critical role to ensure a supportive legislative and right touch regulatory environment with requisite financial resources to maximize the likelihood of successful implementation of high-quality local comprehensive PHC services, including local partnerships with authentic community engagement; an integrated health system; planning, recruitment, and retention of PHC workforce supported by a facilitated education and training pathway for PHC practice; and local centers of excellence in PHC education, training, and research.
9. **Compensation Models** are financing mechanisms required to implement high-quality local comprehensive PHC and an integrated health system. It is important that PHC team members are paid at levels comparable to those of discipline colleagues in hospitals and other specialist services with payment arrangements that focus on health outcomes and reward efforts to achieve health equity complemented by safe and comfortable living circumstances for PHC team members and their families; safe and well-equipped work environment in the clinic; a vehicle for bringing services to where patients live; broadband Internet in the clinic, in the vehicle, and at home; and funding for CPD, graduate studies, and other professional development. Successful implementation of reimagined local comprehensive PHC will be more likely if patients are required to make no out-of-pocket payments to access PHC services and are required to make a payment for hospital and specialist services with the level of that payment reduced or eliminated if the patient’s access to hospital/specialist services is on referral from a PHC team member.

This Discussion Paper starts at the local level and reimagines primary health care (PHC) and the PHC workforce from the perspective of people living in rural and underserved urban areas of low- and middle-income countries (LMICs). Drawing on research evidence and successful examples, it presents a “start local” health service delivery model, health system design framework, and financing models intended to ensure high-quality local comprehensive PHC is available and accessible to all. Core PHC team members (community health workers, registered nurses, specialist family physicians, and administrators) and other health practitioners are generalists in their disciplines, working together in collaborative practice as the frontline providers of care that responds to the health needs of the population they serve. The most successful model of education and training for local comprehensive PHC is socially accountable, immersive community-engaged education woven into a facilitated education and training pathway starting with recruiting local students from rural and underserved communities. Successful attraction, recruitment, and retention of PHC team members results from the systematic approach of the Workforce Stability Framework with the three main tasks of plan, recruit, and retain supported by a long-term strategy and five conditions for success. High-quality local comprehensive PHC is successful in improving local population health when it is part of an integrated health system that connects clusters of autonomous local health service delivery organizations through partnerships with regional referral centers and other specialist service organizations that value the expertise of local PHC providers. All levels of the health system (local, regional, and national) are enhanced by intersectoral collaboration with active participation of all Partnership Pentagram members (policy makers, health administrators, health professionals, academics, and communities), underpinned by a local health needs–focused national health strategy, up-front local investments in PHC infrastructure and personnel, and funding models that reward achieving health outcomes.

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