BOSTON UNIVERSITY

The Case for Primary Health Care Investment

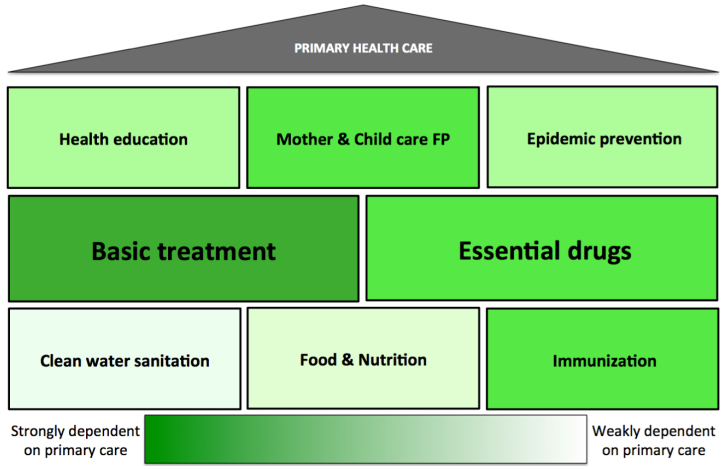
The Global Health Collaborative in the Department of Family Medicine
Boston University School of Medicine

"Family doctors are our rising stars for the future. Out of the ashes built up by highly specialized, dehumanized, and commercialized medical care, family medicine rises like a phoenix, and takes flight, spreading its comprehensive spectrum of light, with the promise of a rainbow."
– Dr. Margaret Chan, former WHO Director General[1]

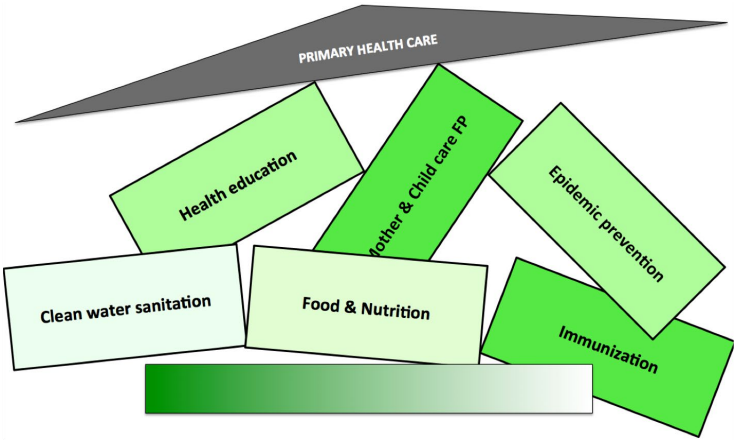
THE CASE FOR FAMILY MEDICINE & PRIMARY HEALTH CARE

It is clear that health care systems based on primary health care (PHC) have better health outcomes and are more equitable and cost effective than systems based on specialist care,[1] and we know from numerous studies that family medicine physicians and PHC nurses are the foundation of a well-functioning, coordinated health care system. Reflecting this consensus, the World Health Organization (WHO) has made training and retaining these primary care providers one of its highest priorities.[2]

Ideally, health systems around the world would be constructed of **eight core primary health care elements:**



Unfortunately, **most systems lack effective provision of the core primary care elements** of both **basic treatment** and **essential drugs**, resulting in health systems that look more like this:



[1] Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and health. *Milbank Q,* 83:457–502.

[2] World Health Organization (WHO) (2009). Sixty-second World Health Assembly. Geneva: WHA62/2009/REC/1. Available at: http://apps.who.int/gb/ebwha/pdf_files/WHA62-REC1/WHA62_REC1-en.pdf.

The primary care provider as the focal point of a coordinated system

Core public health elements may be present, however primary care components are often neglected, resulting in an uncoordinated and less effective system. The WHO has previously outlined how **global inequities have been exacerbated by an underappreciation of and inadequate support for primary care.**

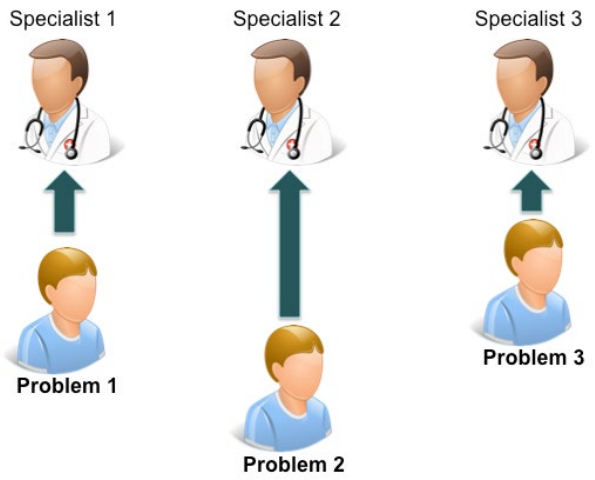
Box 2 What has been considered primary care in well-resourced contexts has been dangerously oversimplified in resource-constrained settings

Primary care has been defined, described and studied extensively in well-resourced contexts, often with reference to physicians with a specialization in family medicine or general practice. These descriptions provide a far more ambitious agenda than the unacceptably restrictive and off-putting primary-care recipes that have been touted for low-income countries[27,28]:

- primary care provides a place to which people can bring a wide range of health problems – it is not acceptable that in low-income countries primary care would only deal with a few "priority diseases";
- primary care is a hub from which patients are guided through the health system – it is not acceptable that, in low-income countries, primary care would be reduced to a stand-alone health post or isolated community-health worker;
- primary care facilitates ongoing relationships between patients and clinicians, within which patients participate in decision-making about their health and health care; it builds bridges between personal health care and patients' families and communities – it is not acceptable that, in low-income countries, primary care would be restricted to a one-way delivery channel for priority health interventions;
- primary care opens opportunities for disease prevention and health promotion as well as early detection of disease – it is not acceptable that, in low-income countries, primary care would just be about treating common ailments;
- primary care requires teams of health professionals: physicians, nurse practitioners, and assistants with specific and sophisticated biomedical and social skills – it is not acceptable that, in low-income countries, primary care would be synonymous with low-tech, non-professional care for the rural poor who cannot afford any better;
- primary care requires adequate resources and investment, and can then provide much better value for money than its alternatives – it is not acceptable that, in low-income countries, primary care would have to be financed through out-of-pocket payments on the erroneous assumption that it is cheap and the poor should be able to afford it.

From WHO's 2008 report, *Primary Care: now more than ever.*

Compounding this issue, **most systems are designed as if each patient has one medical problem, each requiring a subspecialist to manage that problem**:



The reality, however, is that **a wide variety of illnesses contribute to overall mortality**, and typically it is the comorbidity of multiple problems that is most harmful. Considering child

mortality in Africa[3], one can see that while well-known infectious diseases such as HIV and malaria do contribute, more routine illnesses such as **pneumonia, diarrhea and preterm birth account for nearly half of all mortality** with **malnutrition as a major contributor to more than half of total mortality.**

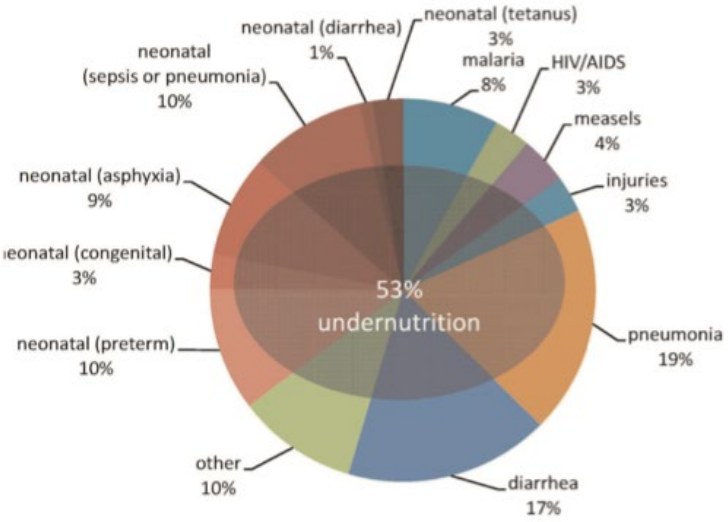
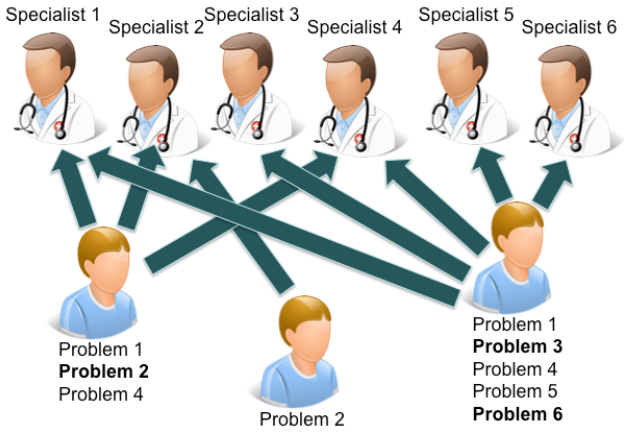


Figure 1—Malnutrition is a contributing cause of the majority of childhood deaths.[16,32] In Africa, 45% of deaths occur in children under 14.[33]

From Egilman et al. Int J Occ Env Health 2011

In actual front-line practice, **each patient has an average of *three* problems**, and only a few of those problems (shown here in **bold** type) require the expertise of a subspecialist. However, in systems where numerous **subspecialists operate in parallel, patients seeking comprehensive care have to make separate health care visits for each problem:**



A more rational and patient-centered model would be designed around a local primary care provider as a familiar entryway to the health system, such as **a well-trained family doctor who typically can manage up to 90% of the problems that present at the grassroots level:**

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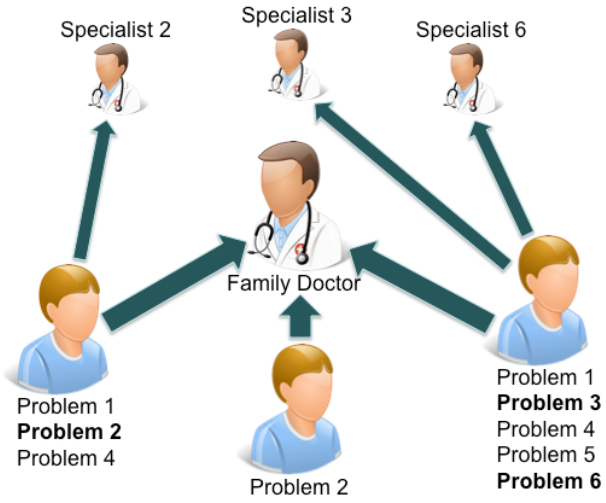
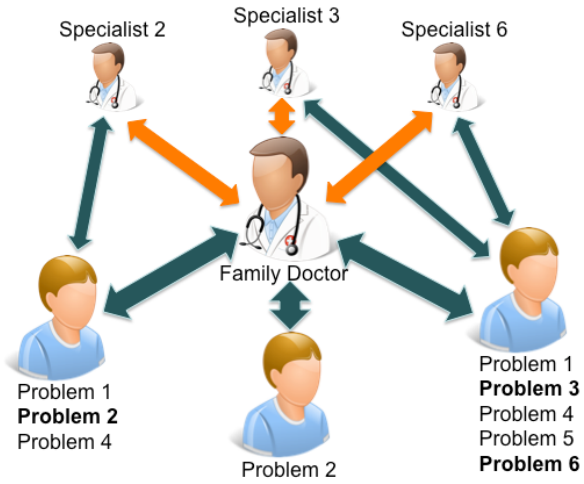
[3] Egilman et al. *Get AIDS and Survive? The "Perverse" Effects of Aid: Addressing the Social and Environmental Determinants of Health, Promoting Sustainable Primary Care, and Rethinking Global Health Aid.* Int J Occup Environ Health 2011



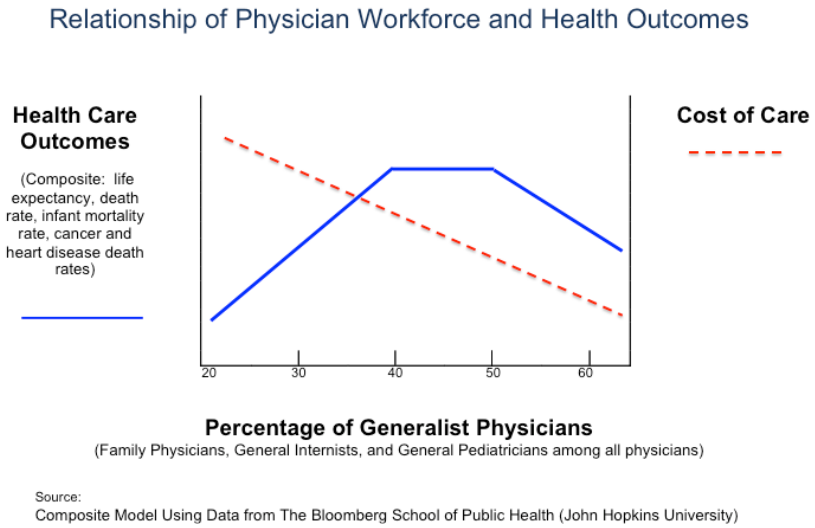
In the optimal model, however, both patients and information should be facilitated in flowing both directions, **vertically and horizontally integrating care throughout the system**, coupled with additional supports by the primary care provider to promote preventive care efforts and many of the other primary health care elements above:



Extensive epidemiologic research backs this up, showing that **basic health needs of populations are best served by highly competent generalists** well-trained in principles of primary care. Robust data indicates that **improving health outcomes correlates best with the density of primary care physicians**, and the effect is greatest when those primary care providers are family doctors. Even better is when the family doctor is functioning as part of a skilled and competent primary care team, including nurses, community-based pharmacists and outreach health workers. Good in-country training that provides doctors with the skills needed to be effective clinicians at the community level and a system that supports primary care providers and services together will result in considerable health gains for the region.

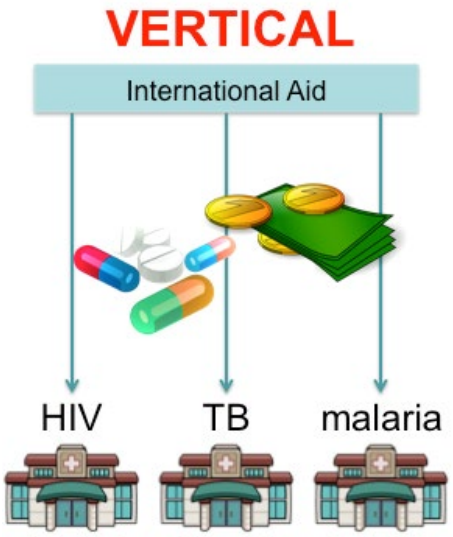
In addition, we have good evidence to show how many providers are needed. It is clear, for example, that **health care outcomes improve with the percentage of primary care physicians**, achieving optimal outcomes when between 40 and 50% of all physicians are

trained generalists. Furthermore, we know health care costs decrease continuously as the percentage of primary care providers increases, thus suggesting a mixture of half primary care and half subspecialists would be ideal. Regrettably, most health systems operate with many more subspecialists.



Family medicine, not disease-specific care, as the foundation of effective, efficient national healthcare systems

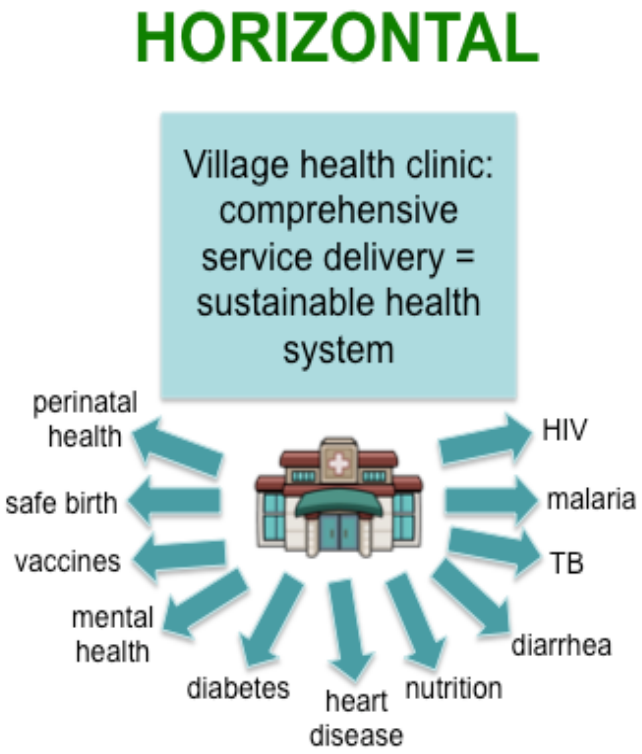
Our model is based on the conviction that there is an **urgent need to shift from traditional vertically-oriented programs toward more horizontally-integrated efforts**. In the traditional model, funds and medications—and in some instances training as well—flow to individual disease-specific entities, setting up redundant and parallel systems of care and requiring patients to go from location to location for their various health needs.



Adapted from Egilman et al. Int J Occ Env Health 2011

A more rational and efficient system integrates these vertical programs into grassroots facilities capable of caring for a wide variety of common diseases specific to the community they are located in, and integrated into the fabric of the public health and hospital systems.

As USAID and PEPFAR funding diminishes, countries such as Vietnam are now looking to integrate their parallel networks for HIV care into their larger national healthcare systems.



Adapted from Egilman et al. Int J Occ Env Health 2011

Likewise, many leading international NGOs have recognized the gaps and inequities that resulted from this previous approach, and the U.N. has created a new Sustainable Goal for Health: ***Ensure healthy lives and promote well-being for all at all ages***, a clear reflection of shifting priorities in global health.

Two recent articles in *The Economist* summarized the evidence for and benefits from prioritizing primary care as the best strategy for improving health in developing countries around the world.[4] They note that the WHO estimates about 400 million people still have no access to primary care, defined as "the basic form of medicine that should be at the forefront of any well-run health system." This figure, however, also fails to consider that many of those who defined as having "access" are seeing a poorly-trained general practitioner, or worse a semi-trained medic or completely untrained lay-person. In addition, the list of "essential health services" used to determine this lack of access fails to include the increasing non-communicable diseases and also ignores quality, resulting in "a big gap between the care people need and what they get."

[4] August 24, 2017: *Why developing countries must improve primary care* and *In poor countries it is easier than ever to see a medic (but it is still hard to find one who will make you better)*

They concluded that improved care and quality begins first with training of frontline providers, to ensure a competent provider at the first point of care. Once these trained providers are in place, the quality and breadth of services provided can then be expanded through efficient and judicious use of innovative technologies. Finally, better incentives are needed to support these providers and ensure their actions align with desired outcomes.

The impact of one family doctor can far surpass any disease-specific solution

Well-designed epidemiologic studies have shown a substantial reduction in age-standardized all-cause mortality (70 per 100,000) among the general population for every additional family doctor per 10,000 population.[5] This benefit not only reversed a modest *increase* in mortality noted with an increase in subspecialists, but also surpassed the benefits seen from either the addition of a pediatrician or internal medicine physician. A more recent survey of 102 developing countries in 2015 confirmed that those with stronger primary care systems had higher life expectancy and lower infant mortality.[6]

Finding comparable public health interventions is difficult. Most disease-specific interventions (HIV, malaria, cardiac) are typically reported in terms of disease-specific mortality in a target population of those with the disease, suggesting a much greater overall impact than total population figures might support. These programs likely have a smaller impact on all-cause mortality in general populations because a relatively small number will have any particular disease coupled with the fact that disease-specific interventions fail to address common multi-morbidities. Thus the number who actually benefit from any individual disease-specific intervention is ultimately quite limited.

The most useful and relevant comparison might simply be comparing the observed primary care-related mortality reduction to disease-specific mortality figures for the same period. For instance, all-cause mortality reduction in the U.S. (70 per 100,000) resulting from **increasing the number of trained primary care providers far surpassed total age-adjusted mortality from ALL infectious disease** (36 per 100,000) during a period (1980) one might consider comparable to the health care system of modern-day low- and middle-income countries.

Additional disease-specific comparisons can be made. Adding one family doctor per 10,000 population could result in **better outcomes than eliminating deaths from**:

- More than **half of ALL cancer**
- More than **a quarter of all heart disease**
- **ALL kidney disease, liver disease, diabetes, pneumonia, influenza, AND motor vehicle accidents**

Note these only address mortality as total morbidity is difficult to measure. Because family doctors also reduce overall morbidity, including for those with multi-morbidities, benefits to **overall quality of life for both individuals and populations would be even greater**.

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[5] Shi, L et al. *The relationship between primary care, income inequality and mortality in US states, 1980-1995.* JABFP 2003.

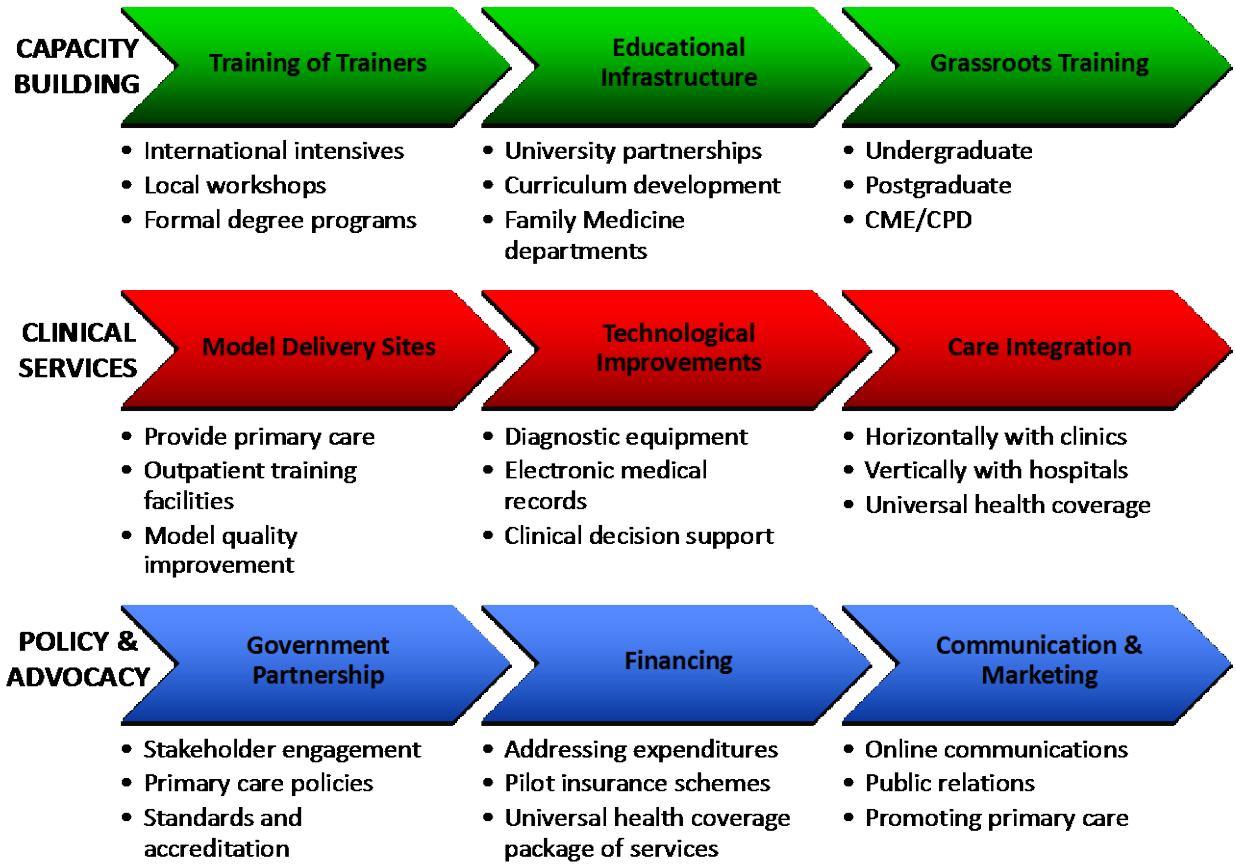
[6] Hsieh, V C-R et al. *Universal coverage for primary health care is a wise investment: evidence from 102 low- and middle-income countries.* Asia-Pacific Journal of Public Health 2015.

The Primary Health Care Playbook

Over the last 20 years, working in Lesotho, Vietnam and elsewhere, the Boston University Global Health Collaborative has established an effective playbook for comprehensive system strengthening in primary health care. While each country has its own unique circumstances, strengths and challenges, the playbook for effective system reform remains similar. Countries may differ in order of implementation or seek to capitalize on different assets within a system, but the overall plan remains similar:

Our program is designed to improve health outcomes by establishing networks for primary care strengthening that advance: (1) high-quality local training programs and faculty, (2) quality outpatient care centers, and (3) supportive national and regional policies and programs.

In promoting system change, it is essential to recognize that each component impacts the others, and so coordinated and comprehensive efforts need to progress simultaneously in order to maximize efficiency and effectiveness. While there are a variety of specific elements within each component and the process begins with a thorough needs assessment to determine assets and challenges of a particular system, each program follows a step-wise and integrated approach to maximize rational system change:



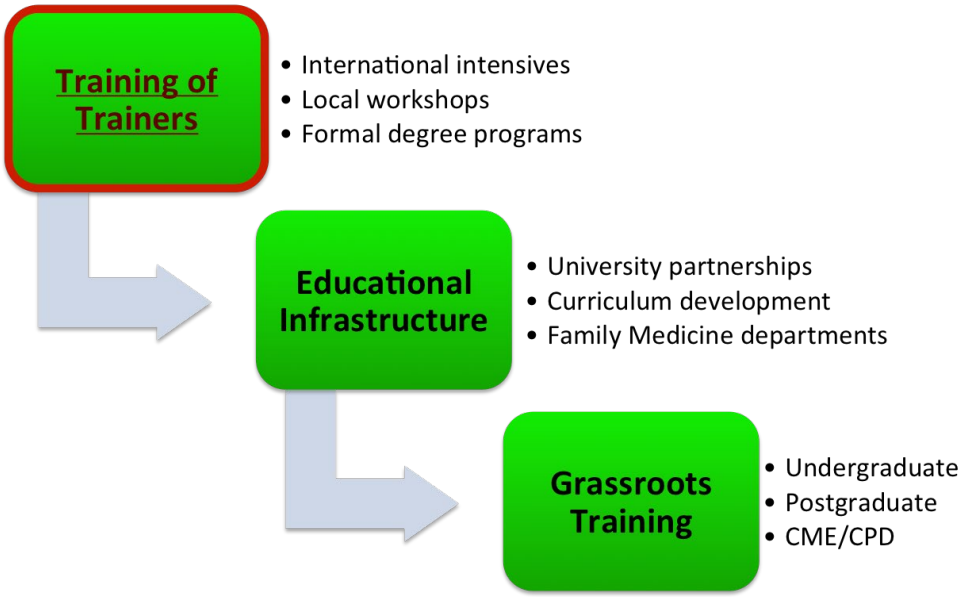
With two decades of experience in PHC development and existing functional individual programs in multiple countries, the needs and gaps are already well determined allowing BU GHC to develop regional programs that can support all countries in accelerating their progress towards full implementation of the playbook.

Playbook Objectives

BU GHC focuses on activities supporting common initial elements of each component that are uniformly needed globally in an effort to accelerate the development process in a particular country and rapidly expand the cohort of program champions, trained experts, model facilities and committed policy-makers.

Objective 1: Capacity-Building

Strengthen capacity of local trainers and create quality training opportunities in primary care development.



Training of Trainers

In most low and middle income countries, there are too few primary care providers with the advanced clinical and teaching skills required to deliver quality educational programs. **This is the biggest limitation to advancing primary care education in the region** and therefore must be a top priority. After many years of experience delivering international, in-country, and distance education workshops and courses for new faculty in such countries, propose advanced training programs to strengthen and expand the capacity of faculty and "trainers of trainers" in the region, such as:

- **The International Primary Care Faculty Development Program at Boston University.** This one-month intensive international course equips several carefully selected, highly committed physician champions from a particular country with the skills needed to become leaders in the academic discipline of Family Medicine in their home institutions. These champions are best nominated in part based on their current institutional role and capacity to implement sustainable system change. Learners can directly observe highly functioning primary care delivery and training systems that may not exist in their home countries while simultaneously engaging in aligned educational activities and highly structured mentorship introducing them to core skills for developing

and implementing training programs. It also provides a rare opportunity to gain an "insider" view of the Boston HealthNet system, which is one of the few horizontally AND vertically integrated networks in the world to link community health centers with an academic tertiary care center and provide top-notch academic primary care training through grassroots-based clinics dedicated to caring for underserved populations. Experience in Vietnam and elsewhere suggests that this program delivers a unique and invaluable experience resulting in a cohort of highly-skilled and committed program champions and local experts committed to transformational change.

- **Locally produced and delivered longitudinal training-of-trainers (TOT) courses.** Following an intensive program such as above, core elements of that program should be replicated locally utilizing existing infrastructure, such as health professions schools and affiliated training facilities. Such a program should train faculty on: (1) curriculum development, (2) teaching methods, (3) clinical teaching skills, 4) training program development, and 5) integration with outpatient clinical services. As part of this program, newly trained champions from the initial program work together in further refining their skills and implementing them locally as well as recruitment of additional champions to facilitate their work.
- **Outreach workshops at local institutions in the partner country.** In this next phase, local champions are supported in delivering workshops for trainers and academic leaders within their own institutions. These workshops should be tailored to meet the specific needs identified by these local champions, but based upon the principles covered in the prior trainings.

Educational Infrastructure

Focusing on developing a core group of committed champions with a strong understanding of the training needs in primary care will subsequently facilitate deeper partnerships with universities and create the necessary nucleus for implementing sustainable training programs that can eventually be sufficiently scaled-up to fully meet local, national and regional needs. The joint trainings above coupled with later workshops and conferences supports development of a network to build support for regional collaboration, and permits partner institutions to begin working together to solve their infrastructure challenges.

While these efforts typically begin with physicians as a critical part of the foundation of health systems, it is important to begin similar programs for all disciplines essential to the primary health care team as soon as possible, including nursing, pharmacy, and community health workers. Ideally, interdisciplinary training programs should be developed and implemented as soon as feasible within local financial and human resources limitations.

Grassroots Training

The ultimate goal for each country and institution is to develop and implement grassroots level training for primary care providers. This typically consists of a range of programs, including

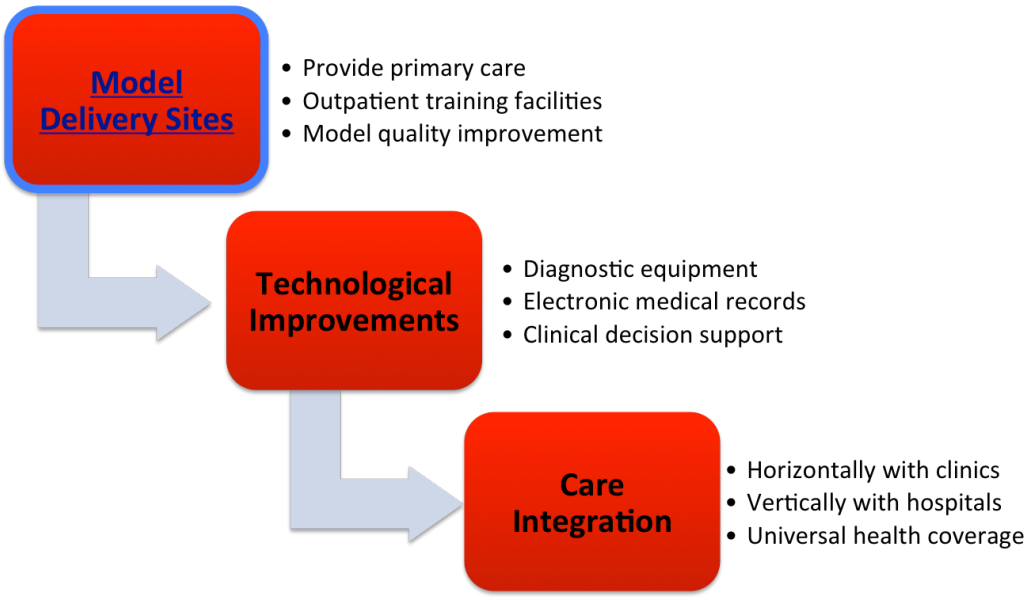
- undergraduate introductory courses in primary care to attract high quality providers

- retraining programs for those already in practice but in need of comprehensive improvements in primary care skills
- postgraduate specialty programs in Family Medicine that match the quality and requirements of subspecialty training typically given to other medical providers

Champions from early programs represent the necessary initial expertise to successfully develop, implement, improve and expand these programs.

Objective 2: Clinical Services

Develop model outpatient clinical service delivery sites and training centers.



Replication: establishing Model Delivery Sites

To effectively deliver training targeted at providers working in outpatient settings, programs need optimized models for this type of clinical service delivery as well as functioning clinics to serve as outpatient training sites that effectively replicate the anticipated work experience upon completion. Throughout the region, however, functioning models of high quality primary care are extremely limited, and clinical training is almost entirely offered exclusively in an inpatient setting.

Outpatient clinics are common, however, throughout many low and middle income countries and economic expansion is growing the demand for high quality primary care services. With new investments being made, **this becomes a critical time to develop a collection of practical outpatient training facilities** where quality primary care can be modeled, and trainees can learn the necessary skills to provide it. As many programs look for ways to develop their own locally-optimized clinics in conjunction with other institutional partners, flagship training centers should be developed with the intention of becoming a gold standard for primary care innovation in clinical service delivery, training, management and financing models, with the ability to act as a "home base" to support all of the above training initiatives proposed.

Proposed training center activities include:

- **Institute a formal rotation program of technical asssitance to optimize the model of care and support regional activities.** Model centers should be designed with specific space to provide a home-base for a variety of educational medical exchange activities, including faculty, resident, and student exchanges in a variety of areas. Ongoing, regular engagement of international faculty, fellows, residents, and students, especially in early years, will help to ensure the quality of care and teaching that is delivered. Visiting faculty can participate in capacity-building programs as outlined above as well as deliver special training on key areas relating to clinical care (e.g. clinical pathways for chronic disease management, techniques for thorough clinical history taking and physical examination) outpatient center operations (e.g. writing good policies and procedures, maintaining patient records, continuous process improvement), and policy development.
- **Showcase the model of care and support leaders from throughout the region to develop similar gold-standard clinical care and training centers.** Leaders from partner organizations involved in developing outpatient care demonstration and training centers will visit the model center in structured visitations and workshops to apply lessons to their own centers. Technical assistance can support each organization in identifying site(s) (if not already established), creating a comprehensive plan for building and/or improving the center(s), and establishing on-site precepting and consultation. Sites should be responsible for securing independent country-specific funding for developing and operating these centers, such as through philanthropy, outside development aid or government support. Model centers should work towards establishing accreditation for their their facilities. In many countries where such accreditations do not exist, this will involve establishing a local accreditation system or alternatively pursuing international accreditation such as from the Joint Commission International (JCI) with the aim of becoming the first ambulatory facilities in these countries to achieve such status.

Technological Improvements

Capacity-building must reach beyond simply improving human resources for health, and ensure that systems are adequately resourced with essential equipment and technology to allow newly-competent primary care providers to fully practice their craft. In the modern health care environment, this also means maximizing the use of technology to assist with diagnosis, management, patient tracking, and population monitoring. In addition to applying the latest in high technology and low maintenance point-of-care testing devices, electronic health records (EHRs) are increasingly becoming an essential tool for the frontline primary care practitioner. Not all EHRs are equal however, and to date, most of those implemented in the region are either designed for inpatient or public health use. The needs of grassroots primary care providers straddle both these functions however, and therefore they require a record designed to support both outpatient clinical service delivery and assist with population health management. Ideally, these tools should also include point-of-care clinical decision support tools to enhance the diagnostic and management capabilities of frontline providers. In Vietnam

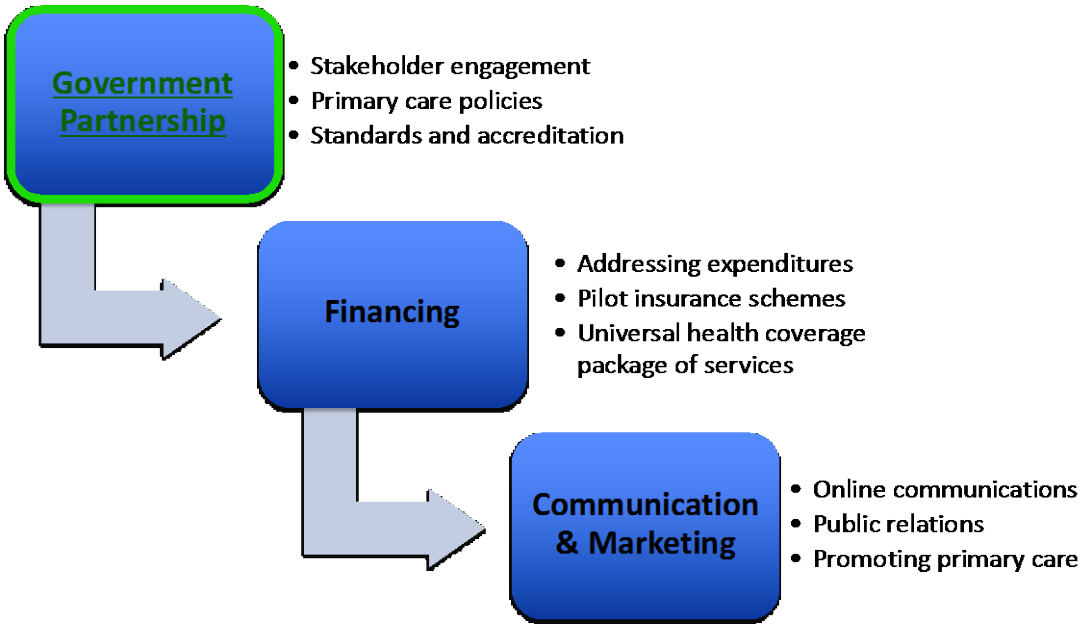
for example, partners have developed local primary care-oriented EHRs, and incorporation in model centers provides practical laboratories to promote local innovation with such technologies.

Care Integration

Ultimately, these new training centers will need to be meaningfully integrated with their local hospital networks. Taking lessons from the Boston HealthNet model, model centers may become regional referral centers for local grassroots health centers, and be vertically integrated with more advanced hospital facilities as a point for helping patients navigate referrals. Technical support can help in refining this model so it can act as a reference point for other local institutions as they seek to achieve similar levels of integration.

Objective 3: Policy & Advocacy

Advance regional and national policies and programs that will support and improve primary care.



Even if each country created an endless supply of primary care providers trained in well-resourced model clinics, **public policies to support primary care providers and encourage utilization by patients remain vital** to realizing transformational system change. Each country has a unique context and associated set of challenges to consider in working towards universal access to primary care and making primary care a building block in the transformation of each health system. And while it is important for each country to set country-specific strategic priorities, there are also advantages to sharing resources and information, benefits to aligning policy reforms, and efficiencies of scale in terms of certification procedures for provider qualifications and accreditation systems for specialty training programs.

Government Partnership

When promoting primary care improvements, it is important to recognize that much of the outpatient provision of primary care occurs in the private sector. To achieve long term sustainability, however, it is essential that capacity-building systems and clinical service delivery regulations are supported by government policies that promote primary care as a priority in developing human resources for health and encourage utilization of services at the grassroots level. Supporting local PHC champions in working closely with government partners to align strategic priorities in health with the various elements involved in primary care system strengthening can assist in developing public policy provisions that advance this agenda.

Building on past successful activities in advocating for primary care system reform, efforts to stimulate government partnership and engagement can include:

- **Regional or international policy delegations engaging in primary care capacity-building and policy development.** Sponsoring carefully selected delegations of representatives from ministries of health, universities, and relevant civil society organizations and institutions to lead strategic planning and advocacy for primary care education and service delivery reforms can build institutional support for primary health care. These delegations should be designed to foster meaningful dialogue amongst key stakeholders and promote local primary care champions as available experts to policy makers seeking to promote primary care. Initial delegations should convene in settings with functioning integrated primary care models, similar to those in the intensive training program. Delegates should be given an opportunity to tour relevant hospital and university-based units that operate as academic hubs and referral centers for community-based primary care facilities, as well as explore model training and clinical service delivery units. Delegates should be provided the opportunity to interact with local leaders as well as community-based health center staff and management. No system can or should be imported wholesale from one region or country to another, however, and so delegates are encouraged to work together in determining the elements that might be most effectively utilized in their own local settings, as well as those elements that are better disregarded or substantially modified for optimization in their own local settings. Showcasing an integrated organizational structure provides an unparalleled opportunity for delegates to envision how tertiary care delivery, academic training programs, integrated community-based primary care delivery and training, and management and educational networks interact to create a successful health system.

- **Local policy delegations to explore and successes and challenges specific to the region.** Subsequent delegations should convene at local model centers in follow up from any regional or international study tours, where delegates can explore the locally-available model and apply lessons from both settings to their own specific contexts. Focus should be on public policy reforms that have already proven helpful, those that were less successful, and what additional high-priority reforms would be likely to best augment and accelerate primary care system improvements.

- **Regional networking and learning exchanges among partner countries.** A series of local conferences to address country-specific policy issues should be convened with local champions and supported by outside technical assistance. These conferences

should be designed by local primary care champions to bring together key stakeholders from the ministries of health, universities, medical associations and councils, and international NGOs to clearly define goals for individual country programs, build the case for the primacy of PHC in national health care reform, advocate for broad-based support of FM post-graduate training, and most importantly, foster exchange of information and experiences between countries in the region. One focus should include certification of primary care providers and facilities and accreditation of primary care training programs throughout the country and region, including certification of specialists in primary care and regional accreditation and certification standards for educational programs, clinics and providers.

Communication & Marketing

Developing and engaging civil society organizations such as associations of family physicians that are committed to primary care in each individual country is an important part of the playbook for enhancing the voice of local providers and ensuring sustainable mechanisms for continued advocacy for primary care system improvements. Bringing together primary care champions who are already or likely to become leaders in their respective civil society organizations and working with these organizations in partnership with government and other key stakeholders to develop online marketing and communication tools as well as public service campaigns to promote PHC and community-based primary care utilization also remains an important part of the playbook to disseminate news of local primary care improvements to the general public and stimulate greater interest in these services.

Research & Evaluation

As elements of the playbook are implemented, it is essential to measure and monitor progress in order to flexibly adapt activities and implementation to realities on the ground. Well-established research already underlies the core components of this playbook and the overall rationale for primary care system strengthening, however achieving measurable improvements in overall health outcomes from such work typically takes years or even decades. In addition, measuring only individual elements of primary care such as numbers of patients diagnosed with or treated for a particular disease risks the creation of perverse program incentives that distort health care away from the core principles of comprehensive primary care that have been shown to underpin the proven benefits of primary care. As a result, developing mechanisms to effectively monitor progress begins with outputs and process indicators as initial proxies for ultimate improvements in health outcomes.

Throughout program implementation, elements of the playbook must be mapped to measurable outputs and process indicators. It is also important that reasonable outcome measures and relevant tools be developed and applied that meaningfully reflect the comprehensiveness and core principles of primary care known to result in the overall improvements in morbidity and mortality that all stakeholders seek. To date, tools have been developed and validated for measuring primary care improvements, and can be adapted to country-specific contexts.