phcpi PRIMARY HEALTH CARE PERFORMANCE INITIATIVE

IMPROVEMENT STRATEGIES MODEL:

ACCESS: GEOGRAPHIC ACCESS

Led by: BILL & MELINDA GATES foundation THE WORLD BANK IBRD • IDA | WORLD BANK GROUP World Health Organization

In partnership with: ARIADNE LABS RESULTS FOR DEVELOPMENT

CORE PRINCIPLES OF ACCESS

This subdomain measures whether patients have affordable, timely access to a PHC facility that is geographically convenient.(1) The basic structural availability of facilities is a starting point for understanding effective service delivery and is measured under inputs. By contrast, this subdomain is considered from the point of view of the patient when trying to access care or at the point of care. By this definition, in order for services to be considered accessible, patients must face no actual or perceived barriers to receiving services. Ensuring access from the users' perspective can help enable patients to receive the right care at the right place at the right time. Access is a linchpin in improving primary health care; even if services are present and high quality at the point of care, if users experience barriers to accessing and using it, outcomes will not improve. The delivery of high quality and appropriate care is discussed in provider competence. The component of access which relates to issues of equity, stigma and acceptability of care are also critical but addressed within patient-provider respect and trust and person-centered care (forthcoming).

Here we consider three elements of access: financial access; geographic access; and timeliness. Each of these components of access may be impacted by a wide array of individual and/or community socioeconomic characteristics—including poverty, gender, sex or sexual identity, caste, ethnicity, age, and race. These social determinants may have a significant impact on access within or between countries, and improvement may require concomitant efforts to improve social disparities. Another important element of access that is frequently overlooked is the role of language, particularly among indigenous populations. Global health interventions that fail to incorporate linguistic access for indigenous populations may contribute to widening health disparities.(2) Thus, while social determinants and context – political, social, demographic, and socioeconomic – underlie all aspects of the PHCPI framework, they are particularly salient within access.

FINANICAL ACCESS

Financial access means that there are no or few cost barriers to receipt of care, including prohibitive user fees, out-of-pocket (OOP) payments, or other costs associated with care seeking such as transportation or childcare costs. Ensuring financial access can be addressed by a number of approaches ranging from community to national-level interventions. Financial access is distinct from financial coverage. While financial coverage means having adequate financial protection, financial access focuses on the local success of interventions to ensure financial access from the patient perspective. An individual may have financial coverage through health insurance, but if he or she must use significant financial resources to access care in practice, financial access is not achieved.

GEOGRAPHIC ACCESS

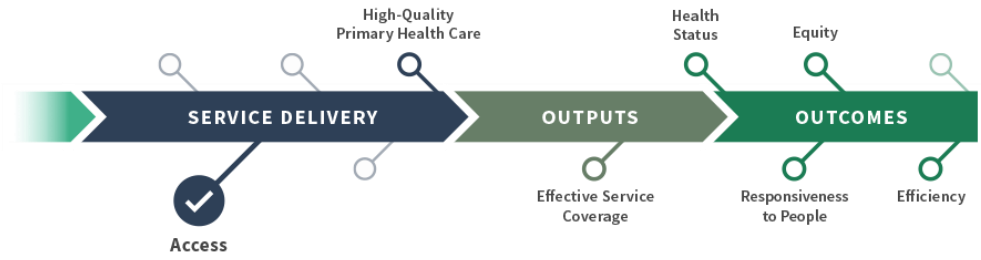
Geographic access is defined as the absence of barriers including distance, transportation, and other physical challenges in accessing care when needed. This is influenced in part by decisions made in allocation of resources, equity, and investments into infrastructure.

TIMELINESS

Timeliness of care includes two elements. First, patients should be able to physically access care with acceptable and reasonable waiting times. Second, hours and days of facility operation should be such that patients can find a time to visit facilities without sacrificing other obligations and duties such as work or childcare and can access care for emergent needs, including on nights and weekends.

WHAT COULD YOUR COUNTRY ACHIEVE BY FOCUSING ON ACCESS?

When done effectively, improved access can contribute to an array of downstream effects:



ACCESS: WHAT ARE THE FIRST STEPS?

STEP 1: ENSURE FINANCIAL AND GEOGRAPHIC ACCESS

In order for patients to be able to receive care when needed, services must be *both* within a reasonable geographic distance – in regard to travel time from patients' homes -- and not prohibitively expensive. Thus, financial and geographic access should be prioritized and addressed at the same time.

STEP 2: ENSURE TIMELY ACCESS

Timely access will not vastly improve utilization of care if financial and geographic access are not first in place. As such, timely care may be a follow-up consideration after financial and geographic access are ensured for all sub-populations.

AT THE SAME TIME, ENSURE ATTENTION TO HIGH-QUALITY CARE AND SOCIAL DETERMINANTS

While it is outside of the scope of this domain, it is important to note that perceived and actual service quality and provider competence are closely linked to access. Even easily accessible care may be underutilized if patients do not believe they will receive appropriate and high-quality services. Thus, accessible but poor-quality services will also do little to improve outcomes. This phenomenon is well documented in childbirth where women's perceptions of quality of care are often more salient than both distance or cost in decisions to bypass a facility.(3)

Finally, it is important to reiterate the strong impact that social factors can have on access to care. In order to improve equity and reduce discrimination it is imperative that "accessibility" means "accessibility for all." To achieve this, access must be assessed not just overall in a particular area but by disaggregated sub-groups, including but not limited to gender, sex, sexual orientation, class, caste, race, ethnicity, religion, and age. A useful tool for evaluating disparities in access is the WHO Health Equity Assessment Toolkit (HEAT). HEAT is a software that can help stakeholders explore within-country inequalities.

TOOLS & FRAMEWORKS

As already noted, this subdomain focuses on access to care from the perspective of the patient. However, there are a number of upstream system-level factors that affect patient access to care. Many of these components, including availability of drugs and supplies, infrastructure, workforce, and health financing, are discussed in other modules (forthcoming). When considering access from the patient perspective, it is necessary to conduct a thorough evaluation of the barriers and facilitators patients face when seeking care. The tools and frameworks discussed below are only a few examples of myriad methods for assessing access and can be used to evaluate financial, geographic, or timely access.

TANAHASHI FRAMEWORK

The Tanahashi Framework examines health service coverage as an interactive process between a health service (a specific service intended to meet a health need of a population, in this case primary care) and its target population through five successive dimensions: **availability, accessibility, acceptability, contact**, and **effectiveness**.(4,5) The percentage of the target population with effective coverage depends on coverage reached in the earlier dimensions.(4) Effective coverage depends on the health service's level and quality of interaction with the target population at each dimension and its ability to transform these interactions into a successful health intervention.(4) While some dimensions of the Tanahashi Framework overlap with other components of the PHCPI framework, it is a useful conceptual model for assessing patient-perceived access to care and pathways to comprehensive primary care delivery for all. Using population-specific analysis, the Framework evaluates the bottlenecks and facilitators that subpopulations experience as a way to help identify why some subpopulations access and benefit from the health system and why others do not.(4) These barriers and facilitators are influenced by health system barriers and wider contextual issues in which people live, work, and age.(5) In this way, the Framework highlights the importance of evaluating access experiences of different sub-populations, including those related to socioeconomic or cultural factors.

Evaluating barriers and facilitators at each dimension helps to identify operational bottlenecks, the constraining factors responsible for creating these bottlenecks, and ways forward for effective primary care delivery (WHO 2016d; Tanahashi 1978). For example, implementers can use the Tanahashi framework to understand how different health system and contextual barriers may preclude access to high-quality care. Implementers might consider the following barriers to effective coverage at each dimension:

- Availability: **subpopulation for whom the service is available**, consider availability of resources (adequately skilled personnel, availability of services and health education for different diseases, necessary inputs)
- Accessibility: **subpopulation who can use the service**, consider opportunity-costs lost (e.g. child-care, work), limited autonomy, decision making capacity, transport cost and availability, schedules and opening times
- Acceptability: **subpopulation willing to use the service**, consider cultural beliefs (are these at odds with the service and the ability of a subpopulation to access effective coverage), gender responsiveness of services (e.g. same-sex provider where desired), risk of social stigmatization or discrimination from the provider, family, or community
- Contact: **subpopulation using the service**, consider utilization
- Effectiveness: **subpopulation receiving effective care**, consider capacity for treatment adherence (patient compliance ability, poor patient-provider relationships, gender roles and

social conditions preventing follow up and management), barriers in diagnostic accuracy (linked to knowledge of the condition and inputs), barriers in health service delivery (poor provider training, poor accountability systems, weak referral systems)

While this example focuses on barriers to accessing effective coverage, it is also important to also note the facilitators that certain subpopulations experience relative to others, to better analyze disparities in comprehensive and equitable health primary care coverage.

INNOV8

Although not specific to financial, geographic, or timely access, the WHO has developed an approach for evaluating inequities in national health programs, called Innov8.(6) In this model, a multidisciplinary team of stakeholders reviews a national health program with attention to barriers and inequities. The eight-step review process includes:

- Step 1: Complete diagnostic checklist
- Step 2: Understand the program theory
- Step 3: Identify who is being left out by the program
- Step 4: Identify the barriers and facilitating factors that subpopulations experience
- Step 5: Identify mechanisms generating health inequities
- Step 6: Consider intersectoral action and social participation as central elements
- Step 7: Produce a redesign proposal to act on review findings
- Step 8: Strengthen monitoring and evaluation

The eight steps, their development, specific tools to complete the steps, and examples of application are discussed in greater detail in the technical handbook. This method may be useful for stakeholders to understand the landscape of inequities of access before implementing or adapting a health program. Attention to inequities in access from the start will result in a more comprehensive and accessible program and help countries achieve universal and equitable health coverage.(6)

TRIANGULATION

When assessing barriers to care, it is important to triangulate using both qualitative and quantitative data. Together, these two forms of data can provide a more nuanced understanding than either one alone.(7) The order in which evaluators collect qualitative and quantitative data will yield different information. If community engagement has been prioritized in the health system and stakeholders already have baseline understanding of the type of barriers patients face, it may be useful to collect quantitative data specific to those barriers first and then use qualitative methods such as focus groups of in-depth interviews to understand unexpected data or gain a more nuanced understanding of particularly salient quantitative data. Alternatively, if stakeholders do not have a strong baseline understanding of access barriers, starting with qualitative methods may help them understand what kind of quantitative indicators to subsequently collect and assess. Additionally, using qualitative methods that engage the community can help community members feel that they are contributing to decision-making and that their concerns are being heard. A brief discussion on the value of mixed-methods can be found here.

GEOGRAPHIC ACCESS

Geographic access is defined as the absence of barriers including distance, transportation, and other physical challenges in accessing care when needed. This is influenced in part by decisions made in allocation of resources, equity, and investments into infrastructure.

WHAT SHOULD I KNOW BEFORE BEGINNING IMPLEMENTATION?

As with any barriers to care, stakeholders must first ask who is not accessing care due to geographic barriers and why in order to develop implementation strategies that address contextual realities.

WHO IS NOT ACCESSING CARE DUE TO GEOGRAPHIC BARRIERS?

It is important to note that geographic barriers are best measured and discussed by the amount of *time* it takes to travel to services rather than physical distance; travel time can account for terrain and transportation availability. Most often, individuals who live in hard to reach areas, rural areas, or conflict zones face the greatest barriers in geographic access to care. However, it is also possible that access reforms target these groups specifically, leaving gaps elsewhere. Access barriers may also align with social characteristics. If there are restrictions on the movement of groups of people, – for instance, if women are unable to travel without accompaniment – geography may disproportionately disfavor these groups.

WHY ARE THEY NOT COVERED UNDER EXISTING SYSTEMS?

LACK OF HUMAN RESOURCES TO MEET DEMAND

Worldwide, there is a substantial shortage of health workers to provide comprehensive primary care services to all populations.(8) An adequately sized and competent health workforce is a precondition for ensuring geographic access to health services. Providers must exist and be appropriately distributed both in quantity and cadre. Strategies for strengthening the health workforce will be discussed in more detail in Improvement Strategies in the Inputs domain (forthcoming). However, there are certain workforce considerations that are particularly salient to geographic access. There are three ways that a country may be experiencing a shortage of providers that would contribute to geographic inaccessibility:

- A national shortage characterized by an overall low provider to population ratio across all geographic regions
- A shortage specific to certain geographic areas of a country where the provider to population ratio is substantially lower than other areas—often seen in remote and rural regions
- A shortage or misdistribution of certain cadres where the ratio of physicians to that specific cadre (such as doctors, nurses, or community health workers) is inadequate to meet demand or to provide specific services

All of these workforce concerns may impact patients' experiences with geographic access to care, and adequate attention to distribution of the health workforce can increase patients' trust in the health system and its governing structures.(9)

INADEQUATE FACILITIES

Geographic access is also characterized by the physical availability and distribution of clinics. While certain health activities can be provided in community centers or homes, others require supplies, equipment, and/or technology that must be housed within a physical clinic. In areas with very low

population densities, it may be logical to rely more heavily on community-based health services with systems for ready access to emergency care and referral systems for ensuring access to higher levels of care when needed. Mobile clinics are also often used to meet gaps in the availability of facilities. However, it is important to note that by nature of being mobile, these clinics will not contribute to the formation of continuous relationships between patients and providers.

TRANSPORTATION BARRIERS

Geographic accessibility may also be constrained by inadequate transportation. Even in areas where clinics are close to communities, if there is not adequate transportation to reach them, accessibility is compromised. The same barriers experienced by patients may also apply to providers and influence their ability to access facilities to provide care. For instance, in Iraq, one study found that doctors faced many transportation barriers including checkpoints, curfews, and inadequate transportation, resulting in widespread absenteeism.(10) Similar to areas with inadequate facility distribution, transportation barriers can be mitigated through implementation of community-based services - often delivered by CHWs – for non-acute care. Community-based care is discussed briefly in "service delivery activities" below and in greater detail in the Proactive Population Outreach module.

HOW CAN GEOGRAPHIC ACCESS BE IMPROVED FOR THESE POPULATIONS?

HUMAN RESOURCES

Strategies to effectively and equitably retain, recruit, and station providers – commonly called Posting and Transfer (P&T) - include: expanding medical education and in-service training targeted at specific cadres or regions; strengthening primary and rural care programs in existing institutions; providing incentives and support for providers to work in rural areas, public facilities, or primary care settings; instituting mandatory civil service in these same areas; training facility-based providers from underserved areas who are more likely to return or remain in these areas; and developing methods for improving provider motivation and satisfaction such as supportive supervision, career development, adequate workload and facility infrastructure, and continuing education, so as to promote provider retention.(11–14) More information on provider motivation is included in the provider motivation module.

Despite P&T being an important consideration for operations of a health system, delegation of roles and responsibilities and methods for provider deployment is vastly understudied in the LMIC literature. Formal responsibility for P&T is often included in policies in public administration structures or various levels of the Ministry of Health within a given country. However, there are often informal norms or practices that also govern the placement and distribution of providers such as preferential treatment for specific cadres, bribery, nepotism, or gendered delegation of responsibilities.(9) When instituting systems and policies for P&T, it is important that stakeholders explore some of these informal practices that influence provider distribution through qualitative or participatory evaluation and research to inform policies and interventions.

It is also important for stakeholders to consider incentives or specific training that can help providers more successfully carry out their responsibilities in underserved areas. For instance, if countries are struggling with posting and/or retention in rural areas, they could increase salaries or institute loan repayment for providers who serve in these areas. Non-financial support that is important to consider may include cultural or language training and systems for providing in-service training and professional growth.(15)

Community health workers (CHWs) can be a valuable resource for increasing geographic access to health services. CHWs require less training than doctors or nurses and thus can be deployed quickly and are quite cost effective. Additionally, they have been shown to effectively provide high quality preventative and some curative care in remote areas where access to facilities is challenging (see proactive population

outreach below and in the Population Health Management module). While CHW-based care is not a substitute for comprehensive primary care, and CHWs should have a clear and limited set of responsibilities, CHWs can play an important role in the health system. In addition to improving health outcomes, bolstering the CHW workforce can have an intersectoral impact, creating job opportunities and ultimately reducing unemployment and strengthening economies. While CHWs may be cost-effective in terms of salary and training, it is important to note that they often require additional resources such as transportation or communication technology in order to be effective, and these inputs should be considered during program planning and budgeting.

A successful CHW program must include a comprehensive plan considered from a whole health system perspective. UNAIDS has developed a report calling for increased CHW training and deployment across Africa. Within the report, they highlight key barriers that may arise when scaling-up CHW programs. These include inadequate political commitment, insufficient funding, policy and regulatory gaps, and lack of partnership with other health professionals.(8) Although they are framed as challenges, they can also be considered opportunities for collaboration during initial planning and implementation.

In addition to many individual countries' programs, there are several large CHW-initiatives such as the African Union's 2 million CHW Initiative, which has committed to bolstering the health workforce throughout African settings by training two million new CHWs.(8) The new CHW Academy will also focus on training and development of global best practice standards for CHWs. Additional information on the potential of CHW programs – including a report synthesizing implementation considerations from six high-performing CHW programs - can be found at CHW Impact.

FACILITY DISTRIBUTION

In addition to improving geographic access to services through community-based care, health system stakeholders may also choose to engage in partnerships to provide greater access to and quality of primary health care services. In certain areas, public/private partnerships (PPPs) may increase geographic accessibility if private organizations already have adequate physical infrastructure and are set up in such a way to promote partnership.(16) PPPs are sometimes pursued solely for the building of infrastructure; these partnerships often result in faster and more efficient development of facilities. However, PPPs are also pursued in instances where public entities work with private ones to use existing physical facilities and/or service delivery structures. This more comprehensive PPP model is often called an "integrated partnership".(17) In an integrated partnership, governments will contract private organizations for use of existing infrastructure and service delivery in places that lack access to public facilities. This requires a shift in the role of the government from providers of care to managers, regulators, and purchasers. Additionally, these partnerships must entail a formal agreement between the private organization and the government with defined projects and payment contingent upon fulfilment. Thus, there must be effective performance measurement and management systems in place to ensure that goals are achieved. These partnerships should also not increase costs at the point of care, and under the best circumstances, they should improve quality while reducing out of pocket payments.

It is important to note that one method for addressing inadequate facility distribution – particularly in conflict zones where facilities have been destroyed or are inaccessible – is mobile clinics. While there are certainly benefits associated with mobile clinics such as quick access and flexible infrastructure, mobile clinics are not a solution for strengthening a primary care system in the long term. By nature of mobility, patients are unable to form continuous relationships with providers and clinics are not accessible at all times, compromising first contact accessibility.

SERVICE DELIVERY ACTIVITIES

With appropriate human resources and facility infrastructure, stakeholders can optimize geographic access by considering the types of services they provide and how they work with local populations. There are three activities in particular that can have a distinct impact on geographic access: empanelment, proactive population outreach, and e-health. A brief overview of each is described below though more information is included in their respective Improvement Strategies modules.

EMPANELMENT

Empanelment is the active and ongoing assignment of an individual or family to a primary care provider (doctor, nurse, or other clinical provider) and/or care team for the provision of primary health care. It is the organizational foundation for population health management.(18) Empanelment establishes a point of care for individuals and simultaneously holds providers and care teams accountable for actively managing care for an enumerated panels of individuals. There are three methods for establishing panels: geographic, voluntary, and insurance-based.(18) Establishing panels based on pre-established geographic or municipal boundaries may help stakeholders understand where and why certain groups are experiencing geographic barriers to care and begin the process of developing infrastructure to remedy these gaps. Thus, while empanelment itself will not relieve geographic barriers, the structure may be a useful starting point for establishing community –based care and ensuring that all community members are under the purview of a provider. Find more information in the empanelment module.

PROACTIVE POPULATION OUTREACH

Certain health activities can be effectively delivered directly in communities, decreasing geographic barriers to care. Some of these services include: diagnosis, referral, and treatment of certain illnesses; health education; identification of at-risk individuals or families; counseling and/or provision of family planning; and immunization.(19) While these services are not fully comprehensive, they cover basic health needs that may be neglected if individuals are unable to easily access a facility, and preventive and promotive care may effectively decrease the need for some curative care services. Additionally, many of these services can be provided by community health workers (CHW) who can be trained for targeted service provision, in a cost- and time-efficient manner. Community-based care is an effective strategy for increasing access, particularly in areas with low population densities where it is not cost-effective to build and staff facilities. Proactive population outreach may also improve **timeliness (C3.c)** and provider workload in facilities; patients no longer have to visit facilities for certain health services, freeing appointment time for services that must be provided in facilities. Find more information in the proactive population outreach module.

E-HEALTH

Electronic health or mobile health (collectively described as e-health here) can facilitate access to care in areas where clinics are inaccessible but sufficient technological infrastructure is in place. A review of e-health in LMIC by the Center for Health Market Innovations found that 42% of programs using information communication aim to extend geographic access to health.(20) Using computers and phones, patients and providers may access telemedicine videoconferencing or receive consultations via helplines or text messaging. These services are not exclusive to primary care and can also be used to strengthen access to specialty care (see ECHO below). The following costs must be considered for budgeting at the outset of health programs as embedded costs in any program as well as continuing costs after implementation:

- Capital expenditures for hardware at both the facility level (i.e. computers, phones, wiring) and regional/national level (i.e. central services connectivity hardware)
- Ongoing maintenance costs for hardware
- Staffing for technical assistance and maintenance

An important consideration is the sustainability of these programs; 47% of the programs identified in the Center for Health Market Innovations review were donor-funded.(20) Additionally, often free platforms do not generate sufficient profits to sustain the programs, making them less reliable. As with any intervention dependent upon technology, implementers must consider learning curves and technological literacy, language barriers for any automated systems, and access to infrastructure for this technology.(21) Finally, when implementing electronic health interventions, it is important to consider if there are regulatory frameworks in place to govern how clinical care is provided. Find more information in the information systems use module.

TRANSPORTATION

Transportation can pose a barrier to first contact access if patients do not have access to vehicles or if available vehicles are too costly or not appropriate for the terrain. Additionally, transportation barriers may occur when primary care facility refer patients to higher level facilities. Most interventions intended to ease transportation barriers focus on antenatal care and delivery in an effort to increase facility-based births and promote practices that can prevent maternal and neonatal mortality.(22)

As discussed in financial access, transportation vouchers may be a solution when cost is the primary barrier. In situations where there are no available transportation vendors regardless of cost, a multi-faceted intervention may be required. Facilities can work with community members to procure and stock vehicles (these may range from ambulances to motorcycles or carts). However, these transportation systems must be coupled with adequate means of communication so patients can access vehicles and drivers when needed.

It is important to reiterate that transportation to care is only one potential barrier to receiving the right care at the right place at the right time. Aligning with the WHO's three components of emergency care, patients often face delays in seeking care, reaching care, and receiving care once at a facility.(23) Transportation interventions can only address the second delay and must be coupled with appropriate education on when and how patients can seek care as well as high quality services at the point of care.(22) Some examples of transportation interventions are discussed in "What others have done".

WHAT HAS BEEN DONE ELSEWHERE TO IMPROVE GEOGRAPHIC ACCESS?

MAIS MEDICOS – BRAZIL

Beginning in 2013, Brazil addressed geographic disparities in access to health services through a multi-faceted workforce program called *Mais Medicos* (More Doctors). Prior to *Mais Medicos*, the distribution of physicians ranged from 0.71 to 3.09 physicians per 1000 people throughout the country, with significant disparities between states.(24) Brazil had historically experienced challenges retaining doctors due to poor infrastructure and job security as well as the absence of clear career development pathways.

The first component of *Mais Medicos* involved increased recruitment of primary care physicians, many from Cuba. Physicians were provided incentives, lodging, and three-year work contracts, and all municipalities were invited to take part although priority was given to regions with extreme poverty, those that were historically deprived, or areas with indigenous populations.(24) Within two years, the government of Brazil had recruited more than 18,000 physicians, mostly through a collaboration with the Pan-American Health Organization and the Government of Cuba.(25) To further expand access, Brazil coupled these efforts with two other reforms. The first focused on increased infrastructure. Municipalities were invited to apply for funds to improve facilities or secure necessary equipment. The second – and long-term - strategy within the *Mais Medicos* program was the development of medical school programs in rural regions or regions with few doctors. Priority for this program was given to areas more than 75km from a medical school. Through these three components of *Mais Medicos*, Brazil doubled the number of municipalities with greater than 1 doctor for every 1000 individuals between 2013 and 2015 and increased coverage of PHC services from 77.9% to 86.3% in the same time period.(24) While the strategy of recruiting foreign physicians successfully improved geographic access to care in this context, it remains to be seen whether this strategy is sustainable over time.

PUBLIC PRIVATE PARTNERSHIPS (PPPS) – AFGHANISTAN & LESOTHO

After the collapse of the Taliban in 2001, Afghanistan's health system was in state of crisis. The maternal mortality ratio was 1600 deaths per 100,000 live births, the highest ever recorded, and less than 10% of the population lived within a one hour walking distance to a health facility.(16) In conjunction with other stakeholders, the Ministry of Public Health drafted a Basic Package of Health Services (BPHS) to strengthen the health system. The services incorporated in the BPHS included maternal and newborn health, child care and immunization, public nutrition, communicable diseases, mental health, disability, and regular supply of essential drugs. However, the MOPH lacked the facility infrastructure necessary to provide these services, and its capacity was insufficient to deliver the breadth and dose of care needed to improve access and outcomes. To remedy this gap, the MOPH partnered with NGOs to provide the BPHS. NGOs were chosen through a bidding process after which the selected organizations received 1-3 year contracts with payment contingent upon meeting pre-specified goals. In addition to these partnerships, the MOPH instituted community-based care delivered by CHWs at rural health posts. These efforts resulted in enhanced access and utilization, with a marked increase in annual patient visits from 2.0 million to 44.8 million.(16)

In 2008 the government of Lesotho, recognizing the need to rebuild the only tertiary hospital in the country, entered a public-private integrated partnership with the goal of improving quality of care without compromising patient cost.(17) Through a competitive bidding process, the government selected the organization Tsepong to design and build a hospital and gateway clinic, update filter clinics, and provide all services for an 18 year contract. Central to the commitment was improving quality and access, specifically to accomplish the goals of a 24% increase in outpatient visits and a 21% increase in inpatient visits. Tsepong comprises community groups, funders, and providers and as such has been committed to

social accountability.(26) Local businesses, women's groups, and physicians comprise 40% of Tsepong, ensuring that service delivery is accountable to patient needs and that adequate working conditions and career development are in place. Additionally, the Government of Lesotho has worked to ensure that services are high-quality through quarterly audits conducted by an independent management company and required accreditation of all providers. The hospital has been serving patients since 2011.

EHEALTH/TELEMEDICINE – PROJECT ECHO & GHANA

Various telemedicine projects have demonstrated potential in increasing geographic access to higher levels of care without substantial investments in workforce or infrastructure. Project ECHO is a telemedicine initiative that was launched in the United States in 2003 and now operates in 23 countries.(27) Project ECHO supports primary care providers in the treatment and management of complex conditions and is particularly beneficial in areas with limited access to specialized or tertiary care.(28) The services provided through Project ECHO differ according to the burden of disease, need, and access in each location. For instance, in Namibia, Project ECHO was instituted in 2014 to improve HIV care and currently facilitates 30 weekly HIV clinics for providers at ten sites across the country. While this technology has the potential to improve access to care, the success of this initiative depends upon adequate **facility infrastructure** to support telecommunication, availability of primary care providers to administer care as directed, availability of specialized providers to direct care via telecommunication, and availability of **drugs and equipment** for treatment. A similar use of telemedicine is utilized in Alaska where the Southcentral Foundation's Nuka System of Care regularly sends care teams to rural areas. During these consultations, primary care providers can use telecommunication to discuss complex care treatment with specialists stationed in larger cities, as needed.(29) This use of telemedicine for access to specialized care promotes **continuity** and **coordination** with a primary care provider as they are needed to connect patients with specialists and administer care.

Telehealth can also be used to support direct communication between providers and patients in homes or facilities. In Ghana, a joint provider and patient mobile health program was designed to improve the recording of antenatal and postnatal patient data while also making patients aware of appointments or pregnancy-related consideration.(30) The demand-side program, called Mobile Midwife, delivered voice recorded messages to patients according to their gestational age or the age of their infant. Voice recording helped overcome limitations related to low literacy, and messages were recorded in the local language and attuned to specific local values or beliefs. As with many mobile health interventions, availability of mobile phones and connectivity were limitations in effective use of this technology.

MOBILE CLINICS – MULTIPLE COUNTRIES

Mobile clinics are often used to provide primary care in crises where access to services has been severed due to widespread infrastructural damage, safety concerns, or inadequate capacity to address specific higher-level care services such as HIV. Recently, the WHO has implemented clinics in Iraq, Jordan, Syria, Ukraine, and Yemen. In each setting, the supply of vans and equipment as well as partnerships with local providers differs according to existing infrastructure.(31) However, mobile clinics have also been implemented in non-acute settings to provide continuous access to care in places where geographic access poses a barrier to PHC. In Kazakhstan, the Ministry of Health partnered with the Committee of Emergency Situations within the Ministry of Internal Affairs to develop three train-based clinics. Each train comprises eight wagons with clinical, diagnostic, and radiology equipment. Thirty-six medical staff including 18 specialists work in conjunction with 44 operations personnel to provide care in 832 stations on a rotation of approximately 20 days.(32) Between 2010 and 2014, the trains have provided care to nearly 37,000 individuals who would otherwise have limited access to primary health care. This intervention demonstrates creative use of existing infrastructure to deliver care to remote populations. While mobile clinics are commonly implemented in crises, and – as in the Kazakhstan case study – may be

capable of providing pre-scheduled and non-urgent care, a mobile and thus intermittent system is unable to provide first-contact, continuous, and comprehensive care and may not be a reasonable option for sustainable PHC system strengthening.

ADDRESSING TRANSPORTATION BARRIERS – GHANA

The Ghana Health Service launched the Sustainable Emergency Referral Care (SERC) program in the Bongo District in 2012, and it was subsequently extended to a 12 district pilot in 2013.(22) The primary purpose of SERC was to enable a community and sub-district level emergency transport system which was supported by communication technology and community education. SERC was planned and implemented with substantial community input. The expanded pilot was supported by a fleet of 24 three-wheel motorcycles that were appropriately modified to include necessary medical and maintenance equipment. These motorcycles – called Motorkings – were distributed among the 12 districts using geographic information systems (GIS) data, and each was supported by two volunteer drivers. Health facilities, volunteer drivers, and community health officers were given mobile phones to ensure that all communities had communication capabilities. While payments were not required for pregnant women and children under five, other patients were charged a small fee determined by the District Health Management Team. Finally, awareness activities were planned during pre-existing community meetings called durbars. SERC was able to direct emergency care patients to facilities that had the capabilities to manage their acute needs, reducing facility-based mortality and accident-related mortality. However, in places where competent facilities were far from communities, patients often neglected to use SERC.(22) Thus, emergency transport systems should be coupled with efforts to improve capacity in first contact facilities, and this challenge may be more acute in countries where the quality of care is weaker than Ghana.

WHAT QUESTIONS SHOULD BE CONSIDERED TO BEGIN IMPROVEMENTS?

The questions below may be a useful starting place for determining if timeliness is an appropriate area of focus for a given context and how one might begin to plan and enact reforms:

HOW DOES GEOGRAPHIC ACCESS TO CARE DIFFER ACROSS THE COUNTRY AND DOES ACCESS ALIGN WITH POPULATION CHARACTERISTICS?

For instance, geographic access may be worst among poor populations, rural areas, and/or among certain ethnic or religious groups. This question is a starting point for stakeholders to understand areas of weakness specific to geographic access. Tools and frameworks for assessing access to care can be found on the Access homepage. Note that geographic access may be enhanced through empanelment, discussed in Population Health Management. Through geographic empanelment, patients will be linked with a provider or care team who are responsible for their care.

HOW IS THE HEALTH WORKFORCE DISTRIBUTED BY SPECIALTY, GEOGRAPHY, AND CADRE?

It is important to understand the composition of the workforce and if certain geographic areas lack any needed cadres, both in number and in specialty. This can help inform targeted strategies to bolster human resources as described in "What it is".

IN AREAS WHERE THE POPULATION DOES NOT LIVE WITHIN AN APPROPRIATE DISTANCE (BEST MEASURED BY TRAVEL TIME) TO THE FACILITY, WOULD IT BE EFFICIENT TO BUILD A FACILITY? IS THERE AN ADEQUATE WORKFORCE TO STAFF THE FACILITY? ARE THERE ENOUGH INDIVIDUALS IN THE CATCHMENT AREA TO ACCESS THE FACILITY?

In certain geographic areas with especially small populations, it may not be efficient to establish a permanent facility staffed with a provider or care team. However, there should be outreach activities and systems in place to ensure that these populations still have access to care. Community Health Workers (CHWs) are commonly deployed to communities to provide community-based care and education. CHW programs can help bolster the health workforce, but they do have a limited scope and must be linked to doctors or more robust care teams through pre-established referral processes. Additionally, public-private partnerships (PPPs) or more robust transportation infrastructure – or better availability to existing transportation through vouchers - may be an efficient way to provide services in areas without public facility infrastructure.

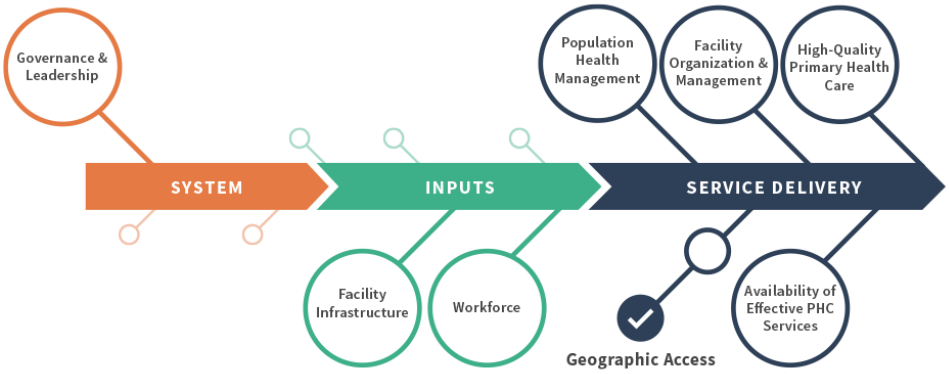
WHAT ORGANIZATIONAL STRUCTURES AND PHYSICAL INFRASTRUCTURE ARE IN PLACE OR AVAILABLE TO SUPPORT ACTIVITIES TO IMPROVE GEOGRAPHIC ACCESS TO PHC SERVICES? FOR INSTANCE, IF THERE ARE EXISTING FORMAL OR INFORMAL SYSTEMS OF EMPANELMENT, AND ARE THERE OPPORTUNITIES TO PROVIDE COMMUNITY-BASED SERVICES TO INDIVIDUALS WHO ARE NOT ACCESSING CARE?

In order to improve geographic access to care in remote or rural areas, stakeholders must be creative and should consider how they can leverage existing resources and systems. This is highly contextual and will differ between and across countries. Assessments of existing systems, infrastructure, and the

acceptability of new programs should involve robust community input using both qualitative and quantitative methods.

WHAT ELEMENTS SHOULD BE IN PLACE TO SUPPORT EFFECTIVE IMPROVEMENTS?

In order for interventions aimed at improving geographic access to be most successful, the following elements of the PHCPI Conceptual Framework should be in place or pursued simultaneously:



C4.B & C5 PROVIDER COMPETENCE & HIGH-QUALITY PRIMARY HEALTH CARE

Regardless of financial, geographic, and timely access to services, it is unlikely that patients will access care if they perceive that providers lack competence, services are not tailored to their needs, and care is not delivered with trust and respect. Additionally, if patients do seek care that is not high quality, it is unlikely to result in improved outcomes. Thus, if patients are not accessing services, it is important to understand whether it is due to perceived quality of care or accessibility, and if both are lacking, they may have to be addressed in tandem to improve utilization of care and subsequent positive health outcomes and impact.

B4. WORKFORCE

There must be an adequate number of reliable and competent providers to serve a geographic area and provide care both in facilities and communities at convenient and accessible times. As discussed in "What it is", there are numerous strategies that stakeholders can implement to improve provider supply, including recruitment, enhanced and more widespread education, incentives, improved work conditions, and eHealth strategies.

B2. FACILITY INFRASTRUCTURE

In order to provide geographically accessible services, adequate physical facilities must be available. In certain areas, it may not be efficient to build a facility to serve a small or widely dispersed population and health systems may rely more heavily on community-based providers. However, even in these cases, community-based providers must have access to a facility – even if it is relatively far from the community - where they can restock necessary drugs and supplies or refer patients when they require higher levels of care. Stakeholders should focus on ensuring that community members have access to the necessary transportation to these higher-level facilities.

C1.C EMPANELMENT

Empanelment is both an organizational strategy and approach to care that may help alleviate geographic inequities in access to health. Particularly when health systems delineate panels through geographic

assignment, as in Costa Rica,(33) this can serve as a catalyst to ensure that all populations have geographically accessible primary care. Additionally, in areas where there are no physical facilities but populations are empaneled to a provider or care team, service delivery will necessarily be structured and adapted to provide care to these communities through the deliberate allocation of responsibility to a care team.

C1.D PROACTIVE POPULATION OUTREACH

Proactive population outreach may be a strategy to mitigate geographic inaccessibility in certain contexts. Particularly in areas where population density is sparse and physical facilities would not serve a substantial enough population, outreach activities in communities and homes can bridge barriers to care.

C2.B FACILITY MANAGEMENT CAPABILITY AND LEADERSHIP

Certain approaches to improving access require logistical changes within a facility, such as scheduling outreach activities, adopting new appointment systems, or shifting provider schedules to facilitate greater coverage. For all of these changes to be effectively integrated, facilities must have strong leadership and management to communicate, implement, monitor, and adapt necessary changes with internal and external stakeholders.

C2.D PERFORMNACE MEASUREMENT AND MANAGEMENT

As with any changes to a health system, it is important to have a clear system in place to evaluate the efficacy of a given intervention. Performance measurement and management systems with clear targets, measurement activities, and plans for improvement should be designed in conjunction with service delivery changes to monitor changes in access and adapt approaches as needed.

A1.C SOCIAL ACCOUNTABILITY

In addition to engaging community members in the identification of barriers to care and potential interventions to improve access, social accountability mechanisms should be in place to ensure that community members are able to monitor and react to health systems interventions and changes.

Suggested citation: "Access: Geographic Access." *Improvement Strategies*. Primary Health Care Performance Initiative, 2018, https://improvingphc.org/geographic-access. Accessed [insert date].

REFERENCES - ACCESS: GEOGRAPHIC ACCESS

1. Davis K, Stremikis K, Squires D, Schoen C. Mirror, mirror on the wall: How the performance of the U.S. health care system compares internationally [Internet]. The Commonwealth Fund. 2014. Available from: http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/jun/1755_davis_mirror_mirror_2014.pdf
2. Flood D, Rohloff P. Comment Indigenous languages and global health. Lancet Glob Heal [Internet]. 6(2):e134–5. Available from: http://dx.doi.org/10.1016/S2214-109X(17)30493-X
3. Tappis H, Koblinsky M, Doocy S, Warren N, Peters DH. Bypassing Primary Care Facilities for Childbirth: Findings from a Multilevel Analysis of Skilled Birth Attendance Determinants in Afghanistan. J Midwifery Womens Health. 2016;61(2):185–95.
4. Tanahashi T. Health service coverage and its evaluation. Bull World Health Organ. 1978;56(2):295–303.
5. Leaving no one behind in the context of subnational health system strengthening in Mongolia [Internet]. 2016. Available from: http://www.wpro.who.int/mongolia/publications/20171214-mongolia-report-leaving-no-one-behind.pdf
6. World Health Organization (WHO). Innov8 approach for reviewing national health programmes to leave no one behind: technical handbook. 2016;246. Available from: http://www.who.int/life-course/partners/innov8/innov8-technical-handbook/en/
7. Reynolds H. Mixed-Method Evaluations Lend Rigor to Design [Internet]. MEASURE Evaluation. [cited 2018 Sep 19]. Available from: https://www.measureevaluation.org/resources/newsroom/blogs/mixed-method-evaluations-lend-rigor-to-design
8. 2 million African community health workers: harnessing the demographic divdend, ending AIDS and ensuring sustainable health for all in Africa [Internet]. 2017. Available from: http://www.unaids.org/sites/default/files/media_asset/African2mCHW_en.pdf
9. Sheikh K, Freedman L, Ghaffar A, Marchal B, El-Jardali F, McCaffery J, et al. Posting and transfer: key to fostering trust in government health services. Hum Resour Health [Internet]. 2015;13(1):82. Available from: http://human-resources-health.biomedcentral.com/articles/10.1186/s12960-015-0080-9
10. Burnham G, Hoe C, Hung YW, Ferati A, Dyer A, Hifi T Al, et al. Perceptions and Utilization of Primary Healthcare Services in Iraq: Findings from a National Household Survey*. World Health Popul [Internet]. 2012;13(3):68–79. Available from: http://www.longwoods.com/content/22873
11. Pereira LL, Santos LMP, Santos W, Oliveira A, Rattner D. Mais Medicos program: provision of medical doctors in rural, remote and socially vulnerable areas of Brazil, 2013-2014. Rural Remote Health. 2016;16(1):3616.
12. Karunathilake IM. Health changes in Sri Lanka: benefits of primary health care and public health. Asia-Pacific J public Heal. 2012 Jul;24(4):663–71.
13. Dordagva J, Batbaatar E, Svensson M, Dorjsuren B, Batmunkh B kauhanen J. Free and universal,but unequal utilization of primary health care in rural and urban areas of mongolia. Int J Equity Health. 2017;16:73:1–9.
14. WHO. Global strategy on human resources for health: Workforce 2030. 2010;48. Available from: http://www.who.int/hrh/resources/global_strategy_workforce2030_14_print.pdf?ua=1%0Ahttp://who.int/hrh/resources/globstrathrh-2030/en/
15. Kidd M, editor. The contribution of family medicine to improving health systems. 2nd ed. London: Radcliffe Publishing Ltd; 2013.
16. Newbrander W, Ickx P, Feroz F, Stanekzai H. Afghanistan's basic package of health services: its development and effects on rebuilding the health system. Glob Public Health. 2014;9 Suppl 1:S6-28.
17. Sekhri N, Feachem R, Ni A. Public-private integrated partnerships demonstrate the potential to

improve health care access, quality, and efficiency. Health Aff. 2011;30(8):1498–507.

18. Bitton A, Pesec M, Benotti E, Ratcliffe H, Lewis T, Hirschhorn L, et al. Shaping tiered health care delivery system in accordance with People-Centered Integrated Care Model. In: Deepening Health Reform in China : Building High-Quality and Value-Based Service Delivery. World Bank Group; 2016.

19. Black RE, Taylor CE, Arole S, Bang A, Bhutta ZA, Chowdhury AMR, et al. Comprehensive review of the evidence regarding the effectiveness of community–based primary health care in improving maternal, neonatal and child health: 7. shared characteristics of projects with evidence of long-term mortality impact. J Glob Health [Internet]. 2017;7(1):010908. Available from: http://www.ncbi.nlm.nih.gov/pubmed/28685046%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC5475312%0Ahttp://jogh.org/documents/issue201701/jogh-07-010908.pdf

20. Lewis T, Synowiec C, Lagomarsino G, Schweitzer J. E-health in low- and middle-income countries: findings from the Center for Health Market Innovations. Bull World Health Organ. 2012;90(5):332–40.

21. Sundin P, Callan J, Mehta K. Why do entrepreneurial mHealth ventures in the developing world fail to scale? J Med Eng Technol [Internet]. 2016;40(7–8):444–57. Available from: https://www.tandfonline.com/doi/full/10.1080/03091902.2016.1213901

22. Patel S, Koku Awoonor-Williams J, Asuru R, Boyer CB, Awopole Yepakeh Tiah J, Sheff MC, et al. Benefits and Limitations of a Community-Engaged Emergency Referral System in a Remote, Impoverished Setting of Northern Ghana. Glob Heal Sci Pract. 2016 Dec;4(4):552–67.

23. Thaddeus ' S, Maine D. Too Far To Walk: Maternal Mortality in Context. Sm Sci Med [Internet]. 1994;38(8):1091–110. Available from: https://s3.amazonaws.com/academia.edu.documents/46150686/0277-9536_2894_2990226-720160601-31443-183rwhw.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1513570226&Signature=SM%2FoLPiH77HVMQgb%2FG8%2FLCyB6xQ%3D&response-content-disposition=inline%3B filena

24. Santos LMP, Oliveira A, Trindade JS, Barreto IC, Palmeira PA, Comes Y, et al. Implementation research: towards universal health coverage with more doctors in Brazil. Bull World Health Organ. 2017 Feb;95(2):103–12.

25. Campos GW de S, Pereira NJ. Primary care in Brazil, and the Mais Medicos (More Doctors) Program in the Unified Health System: achievements and limits. Cien Saude Colet. 2016 Sep;21(9):2655–63.

26. The Global Health Group. Design and early operations of the Maseru public-private integrated partnership. 2013;(1):1–10. Available from: PWC

27. Project ECHO: Our Story [Internet]. 2017 [cited 2017 Aug 23]. Available from: https://echo.unm.edu/about-echo/our-story/

28. Hostetter M, Klein S, Mccarthy D. Project ECHO's Complex Care Initiative: Building Capacity to Help "Superutilizers" in Underserved Communities. 2016;22. Available from: http://www.commonwealthfund.org/publications/case-studies/2016/aug/project-echo

29. Gottlieb K. The Nuka System of Care: Improving health through ownership and relationships. Int J Circumpolar Health. 2013;72(SUPPL.1):1–6.

30. LeFevre AE, Mohan D, Hutchful D, Jennings L, Mehl G, Labrique A, et al. Mobile Technology for Community Health in Ghana: what happens when technical functionality threatens the effectiveness of digital health programs? BMC Med Inform Decis Mak [Internet]. 2017;17(1):27. Available from: http://bmcmedinformdecismak.biomedcentral.com/articles/10.1186/s12911-017-0421-9

31. Mobile clinics provide health care to people in some of the world's worst crises. The World Health Organization.

32. Kulkayeva G. Using medical trains to improve access to health services across Kazakhstan. WHO collaborating centre for Integrated Health Services based on Primary Care. 2016.

33. Pesec M, Ratcliffe HL, Karlage A, Hirschhorn LR, Gawande A, Bitton A. Primary Health Care That Works: The Costa Rican Experience. Health Aff (Millwood). 2017 Mar;36(3):531–8.