5 Primary health care in low- and middle-income countries

Primary health care has been identified as a crucial health system component, and universal health coverage is now a top priority for the countries. This chapter highlights the major contributors to and components of the primary health care landscape in low- and middle-income countries, and the key strategic approaches to address these fundamental challenges with the aim of ensuring the continued development towards high-quality primary health care systems. The enabling factors of governance in primary health care systems frame the discussion, while a deep dive into primary health care measurement highlights its importance in improving systems. The chapter then discusses how the strengthening of service delivery quality requires considerations of safety, knowledge, and patient perspectives, and how effective financing of primary health care includes the leveraging of the current understanding of primary health care expenditures and the financial tools available. Finally, the chapter shows how with the incorporation of cross-country learning, engagement with the private sector, and leveraging of innovations, primary health care systems can continue to strengthen and advance towards universal health coverage.

Key findings

- The Alma-Ata Declaration promoted the primacy of primary health care (PHC) in the creation of effective and responsive health systems (Declaration of Alma Ata International Conference of Primary Health Care, 1978[1]; The Lancet, 2018[2]), highlighting the importance of a holistic health system development approach
  - In the years and decades following this declaration, vertical and disease-specific approaches continued to be the focal point of the majority of global health service and investment efforts in low- and middle-income countries (LMICs). These approaches led to resources being leveraged for specific diseases, resulting in a series of targeted clinical transformations that saved millions of lives.
  - While an important model of achievement in focused health gains, this was just an early first step in an evolution towards realising Universal Health Coverage (UHC). Now, we are moving forward with the endeavor of promoting comprehensive health and addressing all basic health care needs for populations through PHC (Das et al., 2018[3]).
  - Nearly two decades into the 21st century, major progress cutting deaths from infectious diseases, childhood illnesses, and complications of pregnancy and childbirth has translated into ageing populations and a growing burden of morbidity that make health care needs more complex, and requiring more integrated solutions (Das et al., 2018[3]). PHC serves an important role as a tool to deliver integrated solutions for health, and to deliver on the UHC promise.
- Primary health care has been identified as a major priority across many LMICs, and has been seen to fulfil the functions that play a central role in this report: prioritising the delivery of efficient primary health care, strengthening effective and patient-centred care and reducing inequalities in health care.
- LMICs have the need for a nationally agreed-upon package of PHC services, defined as the guaranteed minimum public health and clinical services provided at the primary level (Rohde et al., 2008[4]).
  - It is crucial that stakeholders are committed to implementing the package, and attention needs to be directed to district management systems with consistent investments in frontline primary health care community health workers.
  - Primary health care systems often lack sufficiently comprehensive data to target weaknesses, understand their causes, and strategically direct resources to address them. Good measurement will be needed to inform understanding of service delivery quality and decisions around PHC financing; to provide the baseline for removing inequalities in care and strengthen provision of evidence-based care.
  - Countries need to mobilise sufficient financial resources to provide or purchase essential primary health care services for their populations, to reduce inequalities in the ability to pay for those services, and to provide financial protection against impoverishment from catastrophic health care costs through three basic health financing functions (revenue generation, resource pooling, and services/goods purchasing).
  - Ensuring high-quality PHC delivery across populations includes improved learning between health care systems and integrated care, developing strategies for engaging the private sector in PHC delivery, and developing and improving technologies aimed at creating opportunities for countries to “leapfrog”.

5.1. PHC Governance: Efforts should be stepped up to strengthen PHC governance in LMICs

Strong PHC regulatory frameworks are important contributors to ensuring the essential service delivery mechanisms of PHC. The organisation and delivery of the public primary health care system, and the regulation and accountability components, are key elements of strong governance. Good governance of health system practices also takes shape around the democratic, financial, and performance accountability processes to create transparency. In systems with strong governance – those that are responsible, accountable, transparent, and empowering – national and global PHC goals can be achieved faster, more completely, and more sustainably (USAID, 2017[5]). In these systems, good governance is embedded early in the design phase, and is used to reinforce priorities, deepen a country's sense of ownership, and allow for implementation with a higher likelihood of sustained improvement (Vaz et al., 2018[6]).

In LMIC health systems, the single largest actors are the governments, and in this section, we focus on the role of governments in governance. We describe important aspects of not just the organisation and delivery of the public primary health care system, but of regulation and accountability. We additionally touch on the importance of civil society participation and the role of patient voice, which are major gaps identified by the three recent quality reports (see section 5.3).

5.1.1. The architecture of the health care system can affect the ability of primary health care systems to function effectively

Health system architecture varies across countries, and governance of these health systems – and the delivery of primary health care services – depends on country-specific government roles, mandates, and actions. For example, Uganda has local political councils that appoint a Health Unit Management Committee to oversee the budget, workplan, performance, and other aspects of a Level II facility. Similarly, in Nigeria, Ward Development Committees are designed to govern frontline facilities. Broadly speaking, and especially in decentralised systems like Nigeria or Kenya, PHC is the responsibility of the state.

While this provides each state with flexibility to respond to local needs, it can create challenges for addressing failures around referrals and the care continuum because providers at higher-level facilities do not share the same reporting structure than those at lower-level facilities. Because workers at community, PHC, and district levels often report through and up to different leadership than secondary or tertiary hospitals, referrals and care pathways may be incomplete, suboptimal, and fragmented. The architecture of the system can impact the ability of primary health care systems to function effectively: primary health care systems often include coverage of large territories in rural areas, and local budgets often lack accurate funds to enable managers to conduct adequate routine management of the facility or collaboration with village groups.

5.1.2. Donor-funded projects can accelerate good governance by encouraging oversight, but support for institutional development is required

For donors, higher-functioning systems often include a basket fund and technical assistance collaborations to support the PHC system. The basket funds frequently represent the essential, recurring, fundamental services needed to deliver care. Donors may contribute to this basket fund with the expectation that over time, governments increase the fiscal space to cover these services. Through participation in this basket, donors may have oversight of the essential services. In addition to the basket fund, donors regularly fund technical assistance to address a variety of gaps in service delivery. However, donors can also burden the health system and exacerbate governance challenges with reporting requirements and priorities that may be different and conflicting across donors. Fragmented donors with poorly integrated programs can optimise individual outcomes yet sub-optimise the PHC system. From a governance perspective, this can create strong headwinds for community oversight.

Quality assurance and accreditation programs play important roles in regulating the private sectors

In many LMICs, the private sector is characterised by extreme fragmentation and lack of regulation. It is common for numerous, small-sized private providers to operate clinics, offering a limited number of services at variable levels of quality. Quality assurance and accreditation programs play important roles in regulating private facilities, pharmacies, and non-delivery settings like drug manufacturers, and are among LMIC governments' most effective tools for governing the private sector. It is however a challenge to create systems that can accredit private sector health insurance and other purchasing schemes, as contracting and claims management from numerous small private facilities pose an administrative burden for insurance agencies and government purchasers (Chan et al., 2019[7]). Licensure, performance measurement, monitoring of contractual processes, establishment of public complaints systems, and health insurance schemes are all tools for bringing private sector PHC services and providers into alignment with national policies and minimum standards (Berwick et al., 2018[8]; Ozano et al., 2019[9]). Private sector organisations can be required to demonstrate competence, adhere to minimum standards, and report data on the quality of services delivered in order to be licensed and allowed to operate. Government stewardship of these efforts can be influential (see Box 5.1). For example, in Egypt, a family health fund was established to contract with public and private PHC providers and purchase services for both insured and uninsured users. The fund established accreditation rules and criteria for health facilities, including assessments of patient care and services conducted by the Ministry of Health. Facilities that scored too low on the assessments could not be accredited (Ozano et al., 2019[9]). Increasingly, private sector organisations may also contribute to the development and implementation of national quality strategies (Chan et al., 2019[7]).

Box 5.1. Government stewardship of the for-profit private health sector in Afghanistan

From 2003-08, Afghanistan's private sector for-profit health services went largely unregulated and grew rapidly. Out-of-pocket spending for private sector health services accounted for nearly three-quarters (73.3%) of total Afghan health expenditures by 2011-12, with nearly half of all outpatient visits made to private providers that year. Yet, a 2008 private sector survey showed poor infrastructure, limited formal medical training, and low perceptions of quality among users.

Beginning in 2008, the Ministry of Public Health undertook a long-term stewardship initiative to oversee the sector and bring it into alignment with the country's national health priorities.

Essential stewardship functions:

- *Establish strategic policy directions*: Between 2004 and 2015, national strategies and policies began to define the vision, guiding principles, and detailed plans and objectives for growing and regulating the private sector.
- *Ensure system structures align with strategy and policy goals*: In 2009, an Office of Private Sector Coordination was established to oversee for-profit entities, helping implement policies, facilitate public – private engagement and communication, and advocate within the Ministry of Public Health and other ministries. Efforts to simplify and increase transparency of licensing procedures were undertaken, and relevant staff grew in numbers and training.
- *Establish legal and regulatory policy instruments to guide performance*: For-profit-related regulations and operational policies and procedures were developed, as well as mechanisms for protecting the rights of consumers and providers. Establishment, licensure, and operation of private health care providers came under regulation beginning in 2012, with guidance on minimum required standards covering hospital, clinic, and facility operations issued the following year.

- *Build and sustain partnerships*: The Ministry of Public Health developed inter- and intra-governmental relationships including with the Ministry of Finance; established a permanent Public Private Dialogue Forum that meets quarterly to review legislative, regulatory, and operational issues; and promoted partnerships with several private sector associations including the Afghanistan Private Hospitals Association and the Afghanistan Medicines Services Union.
- *Ensure accountability and transparency:* These components were built into the steps taken towards the other stewardship functions. For example, through the creation of an Information and Communications Desk for the Private Sector, within the Ministry of Public Health, the task force and working group materials are posted online, which increased awareness of and participation in the Public Private Dialogue Forum.
- *Generate actionable intelligence*: The Afghanistan Private Hospitals Association has worked with the Ministry of Public Health and technical experts to develop a functioning Health Management Information System for private hospitals, with a common set of 14 priority indicators to be reported to the Afghanistan Private Hospitals Association and the Ministry of Public Health. Data from 60 hospitals had been reported at least once to the Ministry of Public Health by the end of 2014.

While still at a relatively early stage, the Afghanistan Ministry of Public Health stewardship initiative for the private health sector has been considered a success in part because of its strong policy framework, ongoing political commitment of the government and donors, and efforts to build institutions and systems that focused on increasing the quality of private services.

Source: Cross et al (2017[10]), "Government stewardship of the for-profit private health sector in Afghanistan", https://doi.org/10.1093/heapol/czw130.

Increasing accountability of PHC services requires institutional development

Strong accountability mechanisms are crucial for discouraging corruption, ensuring managers are held responsible to their organisations and the public, and that money meant for delivering quality care does not get diverted (Chan et al., 2019[7]). Performance accountability includes public reporting through monthly or annual scorecards, citizen-provider committees, publication of district and leadership performance, and media coverage. Accountability mechanisms for performance can also include horizontal practices such as performance-based mechanisms (including results-based payment), accreditation, and regulation. Mutual accountability and community engagement play valuable roles in maintaining transparency and accountability in performance (Chan et al., 2019[7]; Brinkerhoff et al., 2017[11]). Specifically, the incorporation of performance management policies into human resources for health systems provides evidence-based insight and accountability for these systems.

In Rwanda for example, the Imihigo system is a strong example of leveraging data for accountability. A performance-based contract is signed between each of the country's mayors and the President, with the goal of using data to hold the mayors accountable to delivering quality primary health care services to their constituents. This Imihigo system is complemented by a nation-wide system to train managers at the national School of Public Health. These data-driven performance tracking efforts accompanied by increased access to management training provide an important example of performance accountability for the health system.

In LMICs, one important route to further strengthening PHC accountability is through supporting the development of legal frameworks of governments, and regulatory measures that protect both the public as well as local-level authorities (Ozano et al., 2019[9]). As complements to legal frameworks, participation, voice, and empowerment of the public are known to increase accountability of PHC services in LMICs. Routes to increased public participation include social accountability efforts, participatory approaches to policy dialogues, decentralisation, performance-based mechanisms, and public financial management tactics (Health Finance and Governance Project, 2018[12]), in addition to social accountability efforts such as citizen scorecards, and user committees (Brinkerhoff et al., 2017[11]).

5.2. Measurement of PHC: A more coordinated approach towards measurement of PHC is needed in LMICs

Measurement is a powerful tool for focusing efforts on improving PHC systems, tracking progress, and creating comparability for peers to learn from. When measurement is lacking – or overly burdensome – it can constrain such progress. Good measurement informs understanding of service delivery quality and decisions around PHC financing; it can provide the baseline for removing inequalities in care and strengthening provision of evidence-based care. The development of PHC systems over the past decades has highlighted the power of measurement and its ability to focus and coordinate effort, track and trend progress, create feedback loops to drive improvement, and create accountability for achieving performance. Significant data gaps remain for key measures, and the absence of clear measures constrains improvement efforts, limits accountability, and limits the ability to focus efforts. As the world's attention turned again to PHC with the Astana Declaration, the critical challenge of quality measurement of PHC systems became acutely evident. However, the global health research community is still determining reliable and validated indicators for measuring key aspects of PHC and, some initiatives, like the Primary Health Care Performance Initiative (PHCPI), are aiming to fill the performance measurement gap and catalyse improvements in LMIC PHC systems to accelerate progress to UHC. Going forward, these efforts will increase in importance as PHC systems aim to strengthen their measurement mechanisms and systems, but a more coordinated approach is needed.

5.2.1. Improvement in primary health care quality is dependent on measurement tools

The evolution from the primary health care-focused Alma-Ata Declaration in 1978 to the vertical- and disease-focused approaches in subsequent years can be traced to an important underlying dilemma: measurement of PHC systems has been a persistent challenge for countries, limiting the ability to monitor progress and create accountability for results. This lack of clear measurement led in part to the global health community prioritising vertical programs where key interventions could be tracked over time and results proven. The Millennium Development Goals grew out of this approach and drove remarkable achievements in specific health areas, but led to a legacy of often fragmented health systems focused on treating specific diseases rather than promotion of comprehensive health. Today, decision makers, researchers, and health providers are still attempting to discern what makes strong, comprehensive PHC health systems, and how to measure and improve on them.

Two lessons have emerged from this global experience:

- The first lesson is the power of measurement and its ability to focus and coordinate efforts, track and trend progress, create feedback loops to drive improvement, and create accountability for achieving performance.
- The second lesson is the inverse of the first: the absence of clear measures constrains improvement efforts, limits accountability, and limits the ability to focus efforts.

These lessons have contributed to a cycle of underinvestment in PHC, as donors and governments have been unable to clearly detect a return on investment in the PHC system, making disease-focused investments much more attractive.

Box 5.2. The Salud Mesoamerica Initiative

The Salud Mesoamerica Initiative, a public-private partnership including the Bill & Melinda Gates Foundation, the Carlos Slim Health Institute, Spain's Cooperation Agency for International Development, and the Inter-American Development Bank (IDB), is an example of a programmethat has made equitable health gains through PHC system investments where measurement played a central role. The initiative, which is a partnership with all eight countries in the region, was built on a national level performance-based financing scheme. The scheme required the donors and country governments to sign onto a performance framework consisting of a short list of population level, time-bound health targets focused on maternal and child health. To receive a performance tranche, the country was required to reach 80% or more of these targets in each phase, which grew in difficulty as phases progressed. This meant that success in only one or two disease areas would result in failure in the programme. This paradigm shift galvanised country efforts to improve the PHC system as the only pathway to achieving the array of health targets – by investing in supply chain improvements, community health platforms, provider competence, and team-based care. Salud Mesoamerica Initiative completed its second phase in 2018 and saw the majority of countries achieve 80% or more of their health targets, as well as increasing government investment in PHC systems. A healthy competition between national governments to achieve the targets introduced additional incentives for improvement. The success of this effort and the central role of measurement highlight the opportunity of having financial incentives linked back to improving the way countries collect their data, leading to the longevity and sustainability of evidence-based policy-making.

5.2.2. There is a crucial lack of data for PHC systems in LMICs

Countries around the world often lack sufficient data on PHC performance; however, in some LMICs, the absence of data is even more severe, given that in some cases there are no basic data on vital registration (such as births, deaths, and pregnancies). Most acutely in LMICs, there is broad agreement that the data necessary for countries to assess their PHC systems, compare their systems across time and to similar countries, and make evidence-informed planning decisions are lacking (Veillard et al., 2017[13]; Kruk et al., 2018[14]).

One legacy of the Millennium Development Goals era that exacerbates this challenge is fragmented data management systems that were developed for specific health programs – such as malaria, HIV, tuberculosis, immunisation – and which often operate in isolation from a comprehensive national data system (Health Data Collaborative, 2019[15]). The current reality is that the global health research community is still shifting away from this vertical approach, and aiming to determine reliable, validated, and comparable indicators for measuring key aspects of PHC in LMICs (Veillard et al., 2017[13]). Further, many interventions are poorly understood, so "even when countries decide to prioritise PHC, they often lack the necessary information to pinpoint weaknesses, identify strengths, and improve their PHC systems" (Veillard et al., 2017[13]).

Data gaps that impact clarity into PHC systems can be found at any level of the health system, including aspects of governance, leadership, and population health management; from the facility level including facility organisation and management, information system existence/use, and local operating funds; and at the outcome level including concepts of responsiveness and resilience. There are both upstream and downstream challenges that can lead to these data gaps:

- First, some phenomena are harder to measure than others or have been generally neglected, therefore new research and development is necessary to create novel indicators and validate tools for their collection.

- Second, some measures exist in developed countries or in similar but separate sectors but have not been adapted for developing countries, so investments are needed to modify and adapt measurement tools to fit new contexts.
- Third, there is a multitude of measurement tools used to collect similar PHC data but are often not harmonised, which results in data that are not comparable. This limits the ability to benchmark and learn across borders, which requires the global measurement community to work together to harmonise and standardise measurement whenever possible.
- Fourth, PHC has not been a visible priority in global health, and therefore corresponding data have often not been collected. As the importance of PHC elevates, so too should the demand for PHC measurement and support to countries to collect the most meaningful and actionable data.

In addition to identifying gaps in data availability, another major concern with PHC measurement is collecting too much data, but not the appropriate type of data needed for improvement. Health system data collection is costly, and often uncoordinated and disconnected from decision-making. For example, according to the Lancet HQSS Commission[1] Report, "26 different bilateral, multilateral, governmental, and non-governmental organisations fund health information systems in Kenya, resulting in duplication of efforts and uneven distribution of resources within the country" (Kruk et al., 2018[14]). Closing these data gaps with appropriate data will require a combination of new investments, and importantly, collaboration between countries, development partners, NGOs, donors, civil society, and others to demand more and better PHC data.

5.2.3. Collecting actionable indicators for performance improvement

There is broad agreement that any new measurements and data collection efforts should not be to generate *more* measures, but rather to create *better* measures, reducing reliance on irrelevant or non-actionable indicators for performance improvement (Veillard et al., 2017[13]). Strategies and new initiatives for PHC measurement and data capacity include shaping internationally comparable datasets such as the System of Health Accounts (see Section 5, Financing PHC); helping to strengthen countries' routine health information systems to produce comparable information; finding acceptable substitute indicators from routine health reporting systems; and imputing data where it is missing (Veillard et al., 2017[13]).

One of the most vexing challenges of measurement for PHC is that of how to appropriately measure service delivery, considered the 'black box' of primary health care. In OECD countries, the black box is more directed on the outcomes of care: we often have visibility into the service delivery, but lack visibility into the outcomes after the services are delivered. In LMICs, the black box encompasses service delivery because of the lack of visibility into the factors influencing the quality of care by providers to patients. Service delivery in LMICs is not well understood, in part because it has received little attention, but it is a critical component to ensuring the PHC system guarantees people receive the care they need, and drives improvements when needed (PHCPI, 2018[16]). Given the causal chain between inputs and outputs in primary health care service delivery, more evidence to better understand PHC patterns and progress mechanisms will help illuminate the process of service delivery, and better allow for planning and implementing whole system interventions and reforms (Randhawa, 2015[17]).

While the gap in sufficient measures is substantial, progress is being made. For example, huge investments over the last decade have improved routine facility reporting systems, considered the cornerstone of PHC monitoring. These systems provide the real-time information about programmeperformance essential to improving service delivery (Kasper et al., 2018[18]). Efforts to address data gaps and open up the black box, through the development of strategies and new initiatives for PHC measurement and data capacity include the Health Data Collaborative, the Primary Health Care Performance Initiative, Vital Signs Profiles, and the collection and reporting of patient-reported experience measures (see Box 5.3). Additionally, the new World Health Organization (WHO) Operational Framework has been introduced for measuring progress towards improving primary health care.

Box 5.3. Several initiatives have been implemented to open the black box of PHC

Health Data Collaborative

The Health Data Collaborative was established in 2016 to strengthen country health information systems in anticipation of the monitoring needs associated with the health-related Sustainable Development Goals, aiming to ensure harmonised approaches and methods for data collection in national health information systems (Health Data Collaborative, 2019[15]). The goal is that by 2024, 60 LMICs and supporting donors will have common approaches to strengthening health data systems, and that by 2030, LMICs will no longer need international assistance to sustain strong health data systems (Health Data Collaborative, 2019[15]). One approach the Health Data Collaborative has undertaken is a harmonised survey initiative to reduce the burden of data collection on health workers and improve the efficiency of health investments. A standard toolkit has been developed harmonising disease- and donor-specific data quality tools to assess data quality from routine health information systems with common metrics, methodologies, and tools. This methodology has been integrated into the District Health Information System 2 survey, used in dozens of LMICs (Health Data Collaborative, 2019[15]).

The Primary Health Care Performance Initiative (PHCPI)

PHCPI is a collaboration between the Bill & Melinda Gates Foundation, the World Bank, and WHO, in partnership with Ariadne Labs and Results for Development. Launched in 2015, its aim is to fill the performance measurement gap and catalyse improvements in LMIC PHC systems to accelerate progress to UHC (Veillard et al., 2017[13]). PHCPI works with global institutions to align on common measurement frames, approaches, and tools for PHC. The initiative uses evidence-based approaches to determine what is important to measure, and to identify where important data are missing. PHCPI works with countries, donors, and development partners to develop indicators and measurement tools to begin to fill in some of these data gaps to improve PHC system performance. The overarching objective is to closely align its indicators and methodology with the WHO index on the coverage of essential health services, which will be used to monitor progress toward UHC indicators (Veillard et al., 2017[13]).

The Vital Signs Profiles

The Vital Signs Profile (VSP) is a new integrated measurement tool launched in 2018 to provide a coherent set of indicators for measuring PHC-oriented performance. The goal of this tool is to provide a “snapshot” of PHC in countries, focusing on financing; capacity including governance, inputs, and population health and facility management; performance including access, quality, and coverage; and equity. The tool is meant to allow decision makers and users to better understand where systems are strong and where they need to improve (PHCPI, 2018[19]).

As mentioned in Chapter 3 of the report, there is growing understanding of the importance of collecting patients-reported indicators, such as experience and outcome measures, in order to better understand how patients perceive their own health care and whether it improves the outcomes they value (OECD, 2019[20]). Patient-reported indicators capture functional and quality of life measures from patients themselves, and measures of their experiences with the health care systems. These indicators positions patients, providers, and policy makers to make choices about the care they receive and provide, and helps care to be more efficient and effective (Gurria and Porter, 2018[21]). These indicators are a core element to the delivery of primary health care explored in this report. More countries have begun collecting this type of information, but they are not typically collected in a way that allows comparison across countries, or is representative of whole populations (Gurria and Porter, 2018[21]). The OECD patient-reported indicators surveys (PaRIS) initiative is meant to address some of these information gaps with a goal of developing international benchmarks of health system performance, as reported by patients themselves (OECD, 2019[20]).

5.3. Service Delivery Quality: Efforts must be strengthened to improve service delivery quality

Evidence has shown that service delivery quality is deeply insufficient at both facility and community levels, and three major reports on service quality address the key challenges (Berwick et al., 2018[8]). The recent quality reports, one a joint report by WHO, the World Bank, and OECD (OECD/WHO/World Bank Group, 2018[22]), the second from the Lancet HQSS Commission (Kruk et al., 2018[14]), and the third from the National Academies of Sciences, Engineering, and Medicine (National Academies of Sciences Engineering and Medicine, 2018[23]), were published in 2018. These reports suggest that features of a system providing high quality care include common elements, such as a skilled and empowered workforce, strong and durable attention from public and private health care leaders as well as an engaged public pushing for accountability, common sense health financing strategies to increase affordable access to health facilities and supplies, and an essential focus on updated measurement and transparency processes. Consensus across these reports suggests alignment within the global health community about what health care quality entails, and the urgent need to improve quality in LMICs (Bollyky, Cowling and Schoder, 2018[24]). The reports agree that poor quality care is especially burdensome in LMICs, where people are particularly vulnerable due to resource limitations and poverty-related threats to health (Berwick et al., 2018[8]). Poor quality care leads to millions of unnecessary deaths and trillions of dollars of economic costs – yet, all three reports agree that quality universal health care could be affordable (Bollyky, Cowling and Schoder, 2018[24]). Authors state, in various ways, that for many populations, universal health coverage "will be an empty vessel unless and until quality improvement, for all nations, becomes as central an agenda as universal health coverage itself" (National Academies of Sciences Engineering and Medicine, 2018[23]). For meaningful progress on quality health care, efforts must be country-led, with political will, accountability, and transparency to be meaningful. The reports also highlight quality gaps in patient safety, and the importance of patient experience (Bollyky, Cowling and Schoder, 2018[24]).

5.3.1. There is no access to care without strong quality

Lack of access to health care services is often assumed to be the key deficit to measuring and improving LMIC health care systems – that people are in poor health because they are unable to reach needed medical services in time. Given this expected association, traditionally, quality in LMICs has been (i) focused on providing and counting physical goods such as clinics and medicine and getting doctors to rural communities that are underserved (Das et al., 2018[3]) and (ii) has been measured structurally, often through inputs such as the condition of infrastructure or the presence or absence of certain drugs (Das, Hammer and Leonard, 2008[25]). However, recent evidence demonstrates little correlation between the availability of inputs (such as medicines) or higher utilisation rates with increased quality of medical care (Das et al., 2018[3]; Randhawa, 2015[17]; Das, 2011[26]). Higher utilisation rates and continued poor outcomes clarify the challenge that there is no access to care without quality: measures that show the fuller array of access to providers show that access is not the issue, but rather the quality of care patients receive when they do come in contact with the health care system (Das et al., 2018[3]).

High quality health care involves the right care, at the right time, in the right place, and by the right care provider, while minimising harm and resource waste and leaving no one behind (Das et al., 2018[3]; Veillard et al., 2018[27]). Getting the right care is at least equal in importance to ensuring access to care is achieved. Available research findings suggest that service delivery quality is deeply insufficient at both facility and community levels, challenging the assumption that qualified providers in well-resourced clinics guarantee quality (Das et al., 2018[3]). Instead, studies find weak links between qualifications and knowledge, and between knowledge and practice. Even fully trained providers with adequate access to infrastructure often fail to deliver high quality care, and approaches such as training doctors have a minimal impact: in Tanzania, three years of medical school were associated with only a 1 percentage point increase in the probability of a correct diagnosis (Das, Hammer and Leonard, 2008[25]). This gap between what providers

know to do and how they actually treat patients means that providers with no formal medical training might provide higher quality care than a fully trained doctor (Das et al., 2018[3]); the greater effort of an untrained provider could make up for their lower level of skill (Das, Hammer and Leonard, 2008[25]). These gaps suggest opportunities to dive deep into what constitutes quality for health systems beyond access, and to explore the path forward to improve the quality of service delivery.

5.3.2. Patient safety is a significant concern

The three quality reports reviewed above each highlight quality gaps in patient safety, citing estimates that injuries from failures in patient safety kill as many people as tuberculosis or malaria globally, and that safety failures account for 15% of hospital costs in OECD countries (Berwick et al., 2018[8]). The Lancet Global Health Quality Commission found 15.6 million excess deaths from 61 conditions occurred in LMICs in 2016 (Kruk et al., 2018[14]). After excluding deaths that could be prevented through public health measures, 8.6 million excess deaths were amenable to health care of which 5.0 million were estimated to be due to receipt of poor-quality care and 3.6 million were due to non-utilisation of health care (Kruk et al., 2018[14]). Poor quality of health care was a major driver of excess mortality across conditions, from cardiovascular disease and injuries to neonatal and communicable disorders (Berwick et al., 2018[8]; Kruk et al., 2018[14]). Substandard drugs are estimated to be responsible for hundreds of thousands of deaths each year (Kasper et al., 2018[18]), with costs associated with unsafe medication practices and medical errors estimated to be USD 42 billion annually – or about 1% of all global health expenditure (WHO, 2018[28]; OECD/WHO/World Bank Group, 2018[22]). Estimates suggest that as many as 20% (developed countries) to 25% (developing countries) of the general population experience harm in the PHC setting; yet, up to 80% of harm in primary and ambulatory settings can be avoided (OECD/WHO/World Bank Group, 2018[22]). PHC providers play an important role in promoting patient safety, through steps like preventing inappropriate use of medicines (Nejad, Abrampah and Neilson, 2018[29]).

While patient safety is a universal issue, it poses special challenges for LMICs, where systems face inadequate allocation and use of resources, infrastructure and human resources challenges, lack of respect for patients' rights, and non-compliance with patient safety standards (German Federal Ministry of Health/World Health Organization, 2017[30]). The third WHO Global Patient Safety Challenge – Medication Without Harm – was launched in 2017 with the aim of reducing severe, avoidable medication-related harm by 50% globally in the next five years (WHO, 2017[31]). Ambitious efforts must continue to highlight the threat of safety issues to quality health care.

5.4. Financing PHC: There are too many gaps in the current understanding of PHC financing in LMICs

PHC is recognised as the foundation of any health system and as the most effective, efficient, and equitable approach for delivering essential health services to the majority of the population. In the Astana Declaration, the global community committed to ensuring adequate funding sources for PHC to limit peoples' exposure to financial hardship resulting from lack of access to PHC services (The Lancet, 2018[2]). However, there are massive gaps in the current understanding of PHC financing in LMICs, including how much countries have invested in PHC, how much countries should invest in PHC, and how to address the funding gap if it exists. In addition, the global community has realised that the "mere availability of resources is not enough; conscious and continuous effort is needed to ensure that they are used in ways that are effective, safe and individually tailored to patients' needs" (OECD/WHO/World Bank Group, 2018[22]). However, there is little guidance globally to assist countries to better use their scarce health resources to improve the development and performance of their PHC systems to maximise the health gains of the population.

The financing of health care is composed of three basic functions: revenue generation, resource pooling, and services/goods purchasing. Countries need to mobilise sufficient financial resources to provide or purchase essential health services – most of which are PHC services – for their populations, to reduce inequalities in the ability to pay for those services, and to provide financial protection against impoverishment from catastrophic health care costs through these three basic health financing functions. However, many LMICs, especially those countries in Africa, face tremendous challenges in financing their health systems. These challenges include raising sufficient and sustainable revenues in an efficient and equitable manner to provide individuals with both essential health services and financial protection against unpredictable catastrophic financial losses caused by illness and injury; managing these revenues in a way that pools health risks equitably and efficiently; and ensuring the purchase of health services in an allocatively and technically efficient manner.

5.4.1. Raising sufficient and sustainable revenues for PHC

Measuring PHC expenditure in a comparative and standard manner is a critical first step to understanding why some countries are doing better than others and where extra efforts can be made to perform better.

Recently, the WHO published a paper on PHC expenditure in 27 LMICs (Vande Maele et al., 2019[32]). The data used in this analysis come from the data collected in LMICs using the System of Health Accounts 2011, with funding support from the Bill & Melinda Gates Foundation. The results showed that PHC services compose 54% of total current health care expenditure. Annual per capita PHC expenditure is on average USD 36/year (median of USD 23.8). Of this, about 21% comes from the government, 24% from external resources (i.e. donors), and the remaining 55% from other sources, most of which is from out-of-pocket expenses at the point of services from patients directly. Governments in these LMICs allocate 36% of their total health investment to PHC (Vande Maele et al., 2019[32]). Among the 12 low-income countries, about 60% of their health care expenditure is spent on PHC services. For these countries, annual per capita PHC expenditure is on average USD 22.5/year (median of USD 19.8), with about 15% coming from the government, 39% from external resources, and 46% from other sources (i.e. out-of-pocket). The government allocates on average (mean) about 40% of its health investment to PHC. Across both LMICs and LICs, there are sustainability challenges in this financing, with most of the funding for PHC coming from non-government sources, including substantial out-of-pocket requirements.

In 2017, the WHO financing team estimated the total investment needed to meet the SDGs (Stenberg et al., 2017[33]). The results indicated that an additional USD 3.9 trillion health investment is needed by the 67 LMICs over the next 15 years in order to meet the SDGs. This is about USD 58 per capita per year, which is the average figure during 2026-30[2] (The Lancet, 2018[2]). Estimations show that over two-thirds of the estimated additional resources needs for SDGs are for PHC services, which is an additional (approximately) USD 38 per capita per year during 2026-30, in these 67 LMICs (Stenberg, 2019[34]).

5.4.2. There is a lack of pooled financial resources to cover essential health services equitably across populations

A resource pooling function deals with accumulating and managing prepaid financial resources from individuals so that members who are in a pooled fund can share the health risks collectively, thereby protecting individual pooled members from large, unpredictable health expenditures. In many LMICs, this pooling function is carried out by the government through its health budget. For example, many African countries have embarked on defining or revising an essential package of health care interventions, based on epidemiological analyses of their beneficiary populations. The governments allocate certain proportions of their general revenue to the health budget in order to support government facilities to provide these services to their populations free of charge or at reduced cost, or purchase these services for their populations through some nongovernmental organisations, such as faith-based institutions (Bank, 2016[35]). However, this type of government budgetary pooling mechanism can suffer a series of problems

including poor management, lack of accountability, corruption, inappropriate incentives, underfunding to cover the total cost of services and to cover necessary services (resulting in the need for user fees), misallocation of resources, weaker capacity to translate resources into high quality services, challenges reaching the poorest of the poor, and others (Wagstaff and Claeson, 2004[36]). An additional important challenge is that control of government revenue and health allocation is often outside of the control of ministries of health.

In addition to the pooled fund through the government health budgets, many African countries have developed some form of a health insurance scheme. However, only very few countries are building schemes that are able to provide universal coverage for at least a majority of their residents. While Rwanda is one of best examples for providing comprehensive health insurance to its citizens, its system was largely funded through foreign aid in its inception phase. Subsequently, the government of Rwanda has been making great strides to reduce its donor dependency and continue its effort of gradually shifting its funding sources to domestic funding support through premium contributions and government subsidies.

Ghana is another important example of introducing a national health insurance scheme, using employee contributions and national health insurance levies to cover the majority of its citizens with comprehensive health care services. However, this scheme has not been able to reach the entire population, with the issue known as the 'missing middle', where the voluntary enrollment of the informal but non-poor results leaves a gap of coverage. To target this challenge, several countries, such as Nigeria, Tanzania, and Kenya, have introduced a social health insurance scheme. These schemes however only cover public sector workers, who pay monthly premiums. Nongovernment workers in those nations typically do not have, or cannot afford, health insurance except, of course, for the very wealthy in the private sector (Fenny, Yates and Thompson, 2018[37]). Additionally, some of these schemes, such as the Kenya National Hospital Insurance Fund, only focus on hospital services rather than PHC services.

There are additional approaches for insurance schemes, including with community-based health insurance (CBHI) and private insurance. Many African countries, including Nigeria, Tanzania, Kenya, Uganda, Cameroon, DRC, Senegal, Mali, and Burundi, have developed community-based health insurance schemes that cover essential health services and offer financial protection to the people who are in the informal sector. But many of these schemes are small in scale, with limited resources that are not able to avoid catastrophic health spending. There are also challenges with sustainability of these models, as the poorest populations are unable to contribute enough premiums to maintain the schemes. Ethiopia, however, provides an exceptional example. With substantial government subsidies and tireless efforts from local governments and communities, Ethiopia has been able to expand its CBHI scheme coverage from 1% of woredas in 2012/13 to 25% of woredas in 2015/16. The population coverage increased from less than 1% of the population to 13% of its population during the same period (Zelelew, 2017[38]). Additionally, private insurance is another option for pooling; however, there are challenges with coverage and affordability. South Africa is a typical example with private health insurance plans that cover about 16% of the population, although this private insurance is not affordable for the most of population in the country (Crawford and Sachdev, 2018[39]).

In summary, evidence demonstrates that pooled funding mechanisms such as health insurance schemes have strong potential to improve financial protections and enhance utilisation among their enrolled populations, while fostering social inclusion. However, many LMICs, especially those in Africa, are still suffering from a lack of pooled financial resources to cover essential health services equitably across populations.

5.4.3. Purchasing for PHC service is a central component of good public financial management for health

The goal of provider payment mechanisms should be to "help achieve health policy objectives by encouraging access to necessary health services for patients, high quality of care, and improved equity,

while promoting the effective and efficient use of resources and, where appropriate, cost containment (Langenbrunner and Cashin, 2009[40]). The three main types of PHC payment methods include line-item or population-based budgeting, fee-for-service, and per-capita or capitation. Although line-item or population-based budget and fee-for-service are still the dominating provider payment methods in LMICs, the capitation payment method has been suggested as the preferred approach, though it is challenging to implement. The Joint Learning Network (see Section 5.5, PHC System Design) has launched a facilitated Learning Exchange on Financing and Payment Models for Primary Health Care in order for countries to share experiences, including technical details and challenges of implementation, for the different models and approaches in their respective country contexts. This process will lead to the development of more deliberative materials that countries will be able to use and learn from (Joint Learning Network, 2019[41]).

Strategic purchasing has been considered as an important approach to guaranteeing high-quality and efficiently allocated service delivery to populations. In general, strategic purchasing needs to identify what and how purchases are made, and by whom, with the goal of assuring the pooled resources of health services are used in an allocatively and technically efficient manner. Purchasers include national health insurance programs, private insurance companies, ministries of health, and other agencies or institutions buying services and medicines on behalf of a population (Cashin, 2017[42]). Strategic purchasing involves active consideration of and transparent decisions about what the purchaser will buy, who will provide those services, and how the services and medicines will be purchased – as well as questions of provider payment methods, rates, and how provider performance will be monitored (R4D, 2019[43]). In addition to national-level purchasers, state-level efforts are also important decision-makers for strategic purchasing. For example, in Nigeria, the design and implementation of prepayment/strategic purchasing schemes for PHC services are managed at the state level in Kaduna and Niger states. In general, strategic purchasing is considered to be a central component of good public financial management for health and efforts toward UHC and, when implemented successfully, creates the right incentives in health systems for quality and efficiency to prevail (R4D, 2019[43]) (see Box 5.4).

Box 5.4. Creating the right incentives through payment systems in Myanmar

PSI, a health-focused non-profit that works with local governments, ministries of health, and local organisations to implement health solutions, piloted a strategic purchasing initiative as part of an implementation research project in Myanmar in 2017. Out-of-pocket expenses for consumers in the pilot location were as high as 70%, resulting in significant financial burden on the poor as well as chronic under-utilisation of health services (Joint Learning Network, 2017[44]).

In the strategic purchasing pilot, PSI simulated the role of purchaser with the expectation, in alignment with the National Health Plan, of eventually being replaced by a national purchaser (Joint Learning Network, 2017[44]). The intervention involved a package of PHC services that would be provided by a local network of GPs serving a population of 2 500 low-income households in two townships in southern Myanmar.

Myanmar is progressing toward UHC, so the pilot service package aligned with the planned Essential Package of Health Services, and was composed of “high impact but cost-effective curative and preventive care interventions in health areas with a high burden of disease, [meant to] be affordable within the project’s budget envelope” (Crapper et al., 2017[45]). Services included a primary health care package for children under 5, ante-natal care and post-natal care coverage, infectious disease detection and treatment, and limited management of diabetes and hypertension, as well as a few enhanced services, from some providers, including cervical cancer screening, tuberculose and Human Immunodeficiency Virus treatment, and long-term family planning (Crapper et al., 2017[45]).

The pilot introduced a blended payment system mixing capitation payments and performance-based incentives in order to increase the range of services provided by private GPs, decrease out-of-pocket expenses, and decrease the time it took people to seek treatment once symptoms began showing (Crapper et al., 2017[45]). Over the first year of implementation, challenges included lower than expected client registration and service utilisation, in part due to distance from households to the GP where they were to receive care. Implementation of the project is ongoing, but this work will provide important insights for pragmatic strategic purchasing.

5.5. PHC Systems Design: Ensuring strong system design capacities for PHC

Comprehensive PHC systems design capacities are one of the essential components to ensuring evidence-based care, chronic disease management, access to person-centred services, and decreased inequalities in health care systems. This includes improved learning between health care systems and integrated care, developing strategies for engaging the private sector in PHC delivery, and developing and improving technologies aimed at creating opportunities for countries to "leapfrog" – to rapidly scale up PHC delivery and quality capabilities, bypassing many of the development challenges that have been historically faced when such supports are lacking. Technology-enabled PHC systems and improved understanding of how governments and private sector can collaborate to ensure high-quality PHC delivery across populations are important mechanisms to accelerating access to PHC across LMICs.

5.5.1. Building integrated PHC systems based on team

Current approaches to health system planning typically do not consider hard trade-offs in service delivery design and do not consider the available fiscal space and political constraints, resulting in aspirational strategic plans that are difficult or impossible to translate into operational plans. Considerations of how to disrupt health planning practices and functions in LMICs are underway, focusing on service delivery, workforce planning, and facility planning. Strategies include helping LMIC governments to develop facility registers and improve human resource information systems to identify how many facilities and workers there are, where they are located, and how the government can optimally distribute them. Additional efforts align around increasing productivity – both quantity and quality of output – of existing facilities and workers in both public and private sectors, rather than encouraging the addition of incremental facilities and workers. Introducing innovations in technology-enabled PHC systems also provides important opportunities.

Truly integrated systems design includes team-based care (WHO, 2018[46]), strong connectivity between community-based and facility-based care (Pesec et al., 2017[47]; WHO, 2018[48]; WHO, 2018[49]), a simultaneous focus on both preventive and curative service delivery (Langenbrunner and Cashin, 2009[40]; Cashin, 2017[42]), and strong community engagement and patient empowerment (Tangcharoensathien et al., 2018[50]; WHO, 2018[51]). Currently, integration mostly takes place at national levels, but not at global or local levels, and there is minimal integration at the global level among donors. At the national level, governments tend to integrate planning across vertical systems, which often most supports siloed decision-making at the local and district levels.

Integrating a PHC system is a complex effort, and there is no single tool to achieve this. To develop and strengthen integrated systems design, we must strengthen the PHC systems design approach, incorporating human resources for health, financing, facilities, private sector, and demand. Management capacity and buy-in are crucial to support the integration of finance systems, data availability, accountability, and other processes, and donors should share the reporting and accountability requirements with governments, rather than having requirements for governments alone.

China provides a unique case study of an integrated PHC system. In China, the city of Xiamen, the Joint Management by Three Professionals reform aimed at improving chronic disease management and to encourage patients' use of community level resources. The reform established multidisciplinary team of a specialist responsible for determining the diagnosis and treatment plan, a general practitioner responsible for implementing the treatment plan, conducting monitoring on a daily basis and providing referral, and a health manager responsible for health education and interventions on patient behaviour. These teams treated patients at the community level, often by conducting home visits, and they encouraged the use of community health centres as a key source of usual care. Several supporting mechanisms have been implemented to enhance the integration of service provision including a financing scheme to improve care coordination. The Joint Management by Three Professionals reform has helped to decrease the overuse of secondary care systems while improving the management of chronic diseases. The proportion of visits to community health centres has risen from 30% in 2012 to 66.5% in 2016. More than 90% of residents enrolled in community health centres were satisfied with the new health service delivery systems. The Joint Management by Three Professionals reform has also reduced the overall cost of care by improving management of chronic diseases using a team-based approach for PHC (WHO, 2018[46]).

As acknowledged throughout of this report, the use of community health team is also crucial to develop and strengthen integrated primary health care systems. LMICs need to adopt a diverse, sustainable skills mix, harnessing the potential of community-based workers in primary health care teams. Community health workers have been found effective in the delivery of preventive, promotional and curative health service (WHO, 2018[52]). The 'Rural Pipeline" project in Guinea aims at deploying community health teams to reduce maternal and infant mortality, fight epidemics and improve well-being.

5.5.2. Strategically involving the private sector can help meet the demand

It is increasing understood that fully functioning PHC systems will require engagement of the private sector for PHC provision. Currently, private sector initiatives are not consistently delivering care in alignment with countries' health system objectives for a range of reasons, including the lack of rigorous evaluation of private sector initiatives, as well as the lack of expectation that the private sector should be aligned with national health objectives (Wadge et al., 2017[53]).

While PHC is the first investment priority for governments trying to achieve UHC, the private sector is capable of filling in gaps in secondary and tertiary care provision – but must be complementary and integrated with local care systems (Wadge et al., 2017[53]). As it stands, in most LMICs the private sector does not have sufficient accountability to guarantee care for patients and protection for health systems in an equitable way. Some approaches to engaging the private sector include interventions that encourage private providers to improve quality and coverage – while advancing their financial interests – such as incentives and subsidies including training, social marketing, social franchising, and purchasing efforts including contracting arrangements and vouchers (Montagu and Goodman, 2016[54]). Many of these efforts are underway in LMICs. Governments and non-governmental organisations use incentives and subsidies, most commonly through offering training to private providers to encourage the use of standard treatment guidelines; social marketing of commodities to create demand for products with high public health value, such as family planning; recruiting of private providers into social franchise networks to enhance delivery of more complex services (see Box 5.5); and providing targeted tax incentives to encourage investments or reduce end-user prices, or offering subsidies to potential clients (Montagu and Goodman, 2016[54]). Purchasing efforts such as contracting are typically used as a temporary solution to assure public service provision, and can include contracting arrangements to leverage private funds for infrastructure investments aimed at expanding capacity faster than government funds alone allow. Contracting is also utilised when private expertise can fill a specialised need better than a government can (for example, dialysis services or pharmaceutical logistics management), or to allow more rapid expansion of service provision (Montagu and Goodman, 2016[54]).

Box 5.5. SHOPS Plus initiative in South Africa and India

The Sustaining Health Outcomes through the Private Sector (SHOPS) Plus project is a private sector health initiative developed by USAID operating in LMICs in Africa, the Caribbean, Asia, and the Middle East. The goal of SHOPS Plus is to harness the potential of the private sector and catalyse public-private engagement in communities to improve health outcomes in areas including family planning, HIV, and child health (SHOPS Plus Project, 2019[55]).

The aim of SHOPS Plus is to increase use of priority health services by:

- Improving the private health sector's enabling environment;
- Strengthening provision of private sector information, products, and services, with the target of expanded access for underserved populations;
- Increasing the effectiveness of public-private engagement;
- Sharing innovative, emerging, and tested private sector models; and
- Applying a total market approach.

South Africa

In South Africa, SHOPS Plus explored a nurse-led social franchise model, the Unjani Clinic Network, a private health care staffing model supporting workforce growth and retention along the HIV clinical cascade (SHOPS Plus, 2019[56]). As the only nurse-led initiative in South Africa, this model shifts PHC tasks to professional nurses, who own and operate individual clinics in their own communities. Their community-level service delivery helps to build local trust while creating permanent jobs for the nurses (SHOPS Plus, 2019[56]; Dominis et al., 2018[57]). The clinics are sited strategically in low-income communities with high need, with each provider responsible for a standard set of PHC services, including those across the HIV diagnoses and treatment process (SHOPS Plus, 2019[56]). The cost of establishing the clinics was fairly low, and covered by corporate social investments and enterprise development funding focused on small- to medium-sized black-owned businesses in South Africa. The Unjani Clinic Network is working to become a national service provider under the country's National Health Insurance Policy, which is focusing on re-engineering PHC, with a goal of lower costs and improved health outcomes (SHOPS Plus, 2019[56]).

India

In India, SHOPS Plus is implementing evidence-based interventions to change the behaviours of public sector health care providers and beneficiaries in an effort to increase the use of maternal, neonatal and child health, family planning, and tuberculosis treatment products and services (SHOPS Plus, 2019[58]). With a goal of harnessing the potential of the private sector, and catalysing public-private engagement in servicing the health needs among the urban poor, the project is employing four approaches:

1. A media platform to send targeted messaging through diverse channels;
2. Workplace interventions to reach underserved youth populations;
3. Engagement with private and public sector networks to amplify messaging;
4. Use of technology-based systems to improve quality of service provision

5.5.3. Digital technologies have potential to optimise the delivery of PHC

In the development and strengthening of PHC systems, there are promising opportunities to leapfrog by incorporating digital innovations. These opportunities will continue to grow, as mobile health (mHealth) and other innovations are adopted, leveraged, and improved. In particular, mHealth is expected to have a large impact on health care quality and efficiency. As the main targets for mHealth and eHealth initiatives, the Astana operational framework highlights the potential for individuals, health providers, health information systems, and medical devices (Kasper et al., 2018[18]), finding that advances in information and communication technology in particular are having broad-based impacts in the PHC sector.

In health information systems, traditional paper-based records have been partially or fully replaced by electronic systems in many countries, improving both timeliness and accuracy of data collection and reporting systems (Kasper et al., 2018[18]). Electronic health records are being adopted in many places, and "big data" approaches to analysing patterns and trends in PHC are thought to be particularly relevant in the coming years (Kasper et al., 2018[18]). New medical devices increasingly come embedded with technology to increase their precision while recording clinical data – and even providing electronic data to health records, facilitating diagnoses, and enabling systems supporting health care decisions (Kasper et al., 2018[18]).

Digital health technologies are critical to optimising health systems and improving quality of care for individuals and populations but must be used judiciously; these technologies are also capable of deepening inequities among populations if not developed and studied carefully (National Academies of Sciences Engineering and Medicine, 2018[23]). An important aspect of health planning efforts includes planning for infrastructure to be "future-fit," supporting the adoption of innovative service delivery options such as virtual consultations, telemedicine, remote prescriptions, and evaluation of system impacts. Innovation in the hardware (e.g. diagnostics, devices), enablers (e.g. data, HRIS, connectivity, geo data), and software (e.g. triage, EMR, quality) will require new considerations in planning. This has implications for all PHC domains, for example in human resources for health, in terms of planning for training, and in facilities, anticipating smaller, more mobile facilities.

Technology-enabled PHC systems are one route to focusing on innovation to help leapfrog the PHC system. One example of technology-enabled PHC is Babyl Rwanda, which links telemedicine, artificial-intelligence-powered diagnosis and triage, longitudinal care records linking public health centres, a call centre, and labs and pharmacies via remote prescriptions and digital payments. Babyl provides nurse and GP appointments, prescriptions, and referrals to laboratory tests and specialists. The national insurance provider pays (Burki, 2019[59]). As the country has around 1 200 doctors for 12 million people, Rwanda is well placed to take advantage of digital technology. The Rwandan government has invited Babyl to integrate with PHC health centres nationwide, and Babyl and government stakeholders are evaluating the costs and benefits of an integrated digital health throughout the health system. Global partners including the Bill & Melinda Gates Foundation, the Rockefeller Foundation, USAID, the World Bank, and DFID are aligning to support the ecosystem for tech-enabled PHC systems, through alignment on an evidence agenda and policy and regulatory guidance for countries looking to broaden their horizons away from traditional PHC delivery systems.

5.6. Conclusions

Recognising the challenges of the implementation of the original Alma-Ata declaration to realise UHC, the 40th anniversary was a pivotal opportunity for leaders to reconvene and recommit to primary health care as a central path to UHC with the Astana Declaration. Universal health coverage is now the top priority for the World Health Organization[3], with PHC as cornerstone of a sustainable health system for universal health coverage. This chapter highlighted the major contributors to and components of the PHC landscape in LMICs, and the key strategic approaches to address these fundamental challenges with the aim of

ensuring the continued development towards high-quality PHC systems. The enabling factors of governance in LMIC PHC systems are crucial framing, while measurement provides a critical tool for focusing efforts on improving systems. The strengthening of service delivery quality includes the considerations of safety, knowledge, and patient perspectives. The effective financing of PHC includes the leveraging of the current understanding of PHC expenditures and the financial tools available. By incorporating cross-country learning, engagement with the private sector, and leveraging of innovations, PHC systems can continue to strengthen and advance towards universal health coverage.

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Notes

[1] The Lancet Global Health Commission on High Quality Health Systems.

[2] The reason why the WHO team reports the average for 2026-30 is that this is the more mature scale-up phase so it is less dependent on the speed of scale-up for the initial years, where a slower scale-up would mean lower additional costs.

[3] See "Director-General Dr Tedros takes the helm of WHO: address to WHO staff", available at http://www.who.int/dg/speeches/2017/taking-helm-who/en/.