



IMPROVEMENT STRATEGIES MODEL: WORKFORCE

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CORE PRINCIPLES OF WORKFORCE

A country's ability to meet the goal of universal health coverage will require a competent, motivated, and equitably distributed primary health care (PHC) workforce that is “aligned with population and community health needs and which is capable of adjusting to the growing demand for health care driven by rapid demographic, epidemiological, economic, social and political changes.” (1,2) The term PHC workforce refers to all occupations of health professionals responsible for organizing and delivering PHC. (1-3)

This module focuses on how to ensure that there is a [sufficient number, appropriate skill mix, and equitable distribution](#) of a trained and regulated PHC workforce that is qualified, motivated, and empowered to meet population health needs and promote equitable access to comprehensive, [high-quality PHC](#). The module also addresses mechanisms that support in-country capacity to implement, assess, and improve workforce education, deployment, retention, and performance management through evidence-informed planning and policymaking. (2,3) The concepts in this module are primarily informed by four documents from the World Health Organization (WHO) that embody the global community's vision for sustainable health workforce development in the 21st century:

- [Global strategy on human resources for health: workforce 2030](#)
- [Building the primary health care workforce of the 21st century: a technical series on primary health care](#)
- [Guideline on health policy and system support to optimize community health worker programs](#)
- [A vision for primary health care in the 21st century: towards universal health coverage and the sustainable development goals](#)

More information on these documents, as well as other helpful tools and resources, can be found in the [tools and resources](#) section of this module.

WHAT IS AN EFFECTIVE PHC WORKFORCE?

In order to achieve effective coverage of high-quality PHC, the PHC workforce must be available, accessible, acceptable, and high-quality. (1,3) To achieve this, the PHC workforce should be equipped with the necessary **competencies** to deliver comprehensive, high-quality PHC and made up of the appropriate number and **skill mix** of occupations to meet population health needs and ensure that all communities have equitable access to the right care at the right time. (2,4)

- **Competencies** are the observable abilities--including knowledge, skills, and behaviors--of individual health workers that relate to specific work activities. Competencies are durable, trainable, and measurable. (5,6) All members of the PHC workforce should have competencies related to people-centeredness, communication, decision-making, collaboration, evidence-informed practice, and personal conduct to enable them to provide comprehensive PHC services which meet the majority of people's needs. (5) Competencies should be evidence-based and adapted to the country-context to reflect the list of interventions at the PHC level and structure of the PHC workforce in-country. (4-9) Standards for workforce education, training, and practice should be based on these defined competencies and instituted for all occupations of the PHC workforce.

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- [Skill mix](#) describes the combination of different occupations of health workers delivering PHC in terms of numbers, diversity, and competencies. (10) PHC services are best provided by coordinated, multidisciplinary teams with the wide range of knowledge, skills, and expertise needed to provide comprehensive, holistic care that is accessible and acceptable to the local community. (4,11-13) The different occupations of providers that make up a country’s PHC workforce may include family medicine doctors, nurses, midwives, community health workers, physician assistants, social workers, or others depending on the local context. The optimal skill mix of the PHC workforce will depend on the needs of the population and the best way to meet those needs within the context of the health system. (2,9-14) Some occupations of health workers, such as [family medicine providers](#) and some designations of general practitioners, are specifically trained in PHC and some countries have found having an approved medical specialty dedicated to comprehensive PHC to be a valuable and effective strategy. (14,15) Additionally, integrating a diverse range of occupations, including mid-range and/or community-based workers, can help to support the realization of a diverse, sustainable workforce with the skills and reach needed to meet a comprehensive set of population health needs. (3,4) For example, given that PHC is often delivered in both communities and facilities, community-based health care workers may be integrated into the workforce plan to support [proactive population outreach](#). (16) (2) For more information on the characteristics of effective community health worker programs, see resources [here](#) and [here](#).

To effectively meet the needs of the population, the skill mix, competencies, and distribution of the PHC workforce should be defined in relation to the needs of the population, taking into consideration dimensions such as access, population health needs, acceptability, and the context of the health system, including the service delivery model and health sector goals.

In addition, the PHC workforce must be [motivated](#) and empowered to deliver high-quality care that is acceptable to the needs and expectations of the population. (3) Health systems should promote working conditions that enhance both the capacity and motivation of the health workforce to deliver quality care and continuously improve their performance, such as through appropriate **remuneration** and **incentives**, merit-based professional development opportunities, and occupational health and safety standards. (3)

HOW CAN AN EFFECTIVE PHC WORKFORCE BE ACHIEVED?

Countries should strive to align their workforce development strategy with an integrated, person-centered PHC delivery model that achieves “a diverse, sustainable skill mix... and harnesses the potential of community-based and mid-level health workers in interprofessional primary care teams” (3) in order to ensure that the workforce is cost-effective and responsive to community needs. Countries will need to continuously assess the ability of the PHC workforce to deliver on their defined competencies, addressing any challenges with skill mix imbalance, maldistribution, and interprofessional collaboration (see [performance management](#) section below).

Building an efficient and effective PHC workforce in practice relies on strong in-country capacity (systems, evidence, policies, and investments) to implement, assess, and improve effective strategies and policies for PHC workforce education, recruitment and deployment, retention, and quality assurance and regulation. (3)

- **Education:** Appropriate education is essential for ensuring that the PHC workforce has and can demonstrate the competencies necessary for delivering high-quality PHC, including competencies related to evidence-informed practice, person-centeredness, and collaboration. (3,17) Achieving this requires that the relevant competencies for each PHC occupation are identified, that

education standards are established based on these competencies, and that quality assurance systems are in place to ensure that educational institutions are adequately training on these competencies, for example by accrediting training institutions and/or licensing or certifying graduates. (5) It is critical that these quality assurance mechanisms be integrated into the overall workforce quality assurance system as described below to ensure consistency in quality standards from education through practice. (5) Additionally, in-service educational programs should be deployed to ensure [continuous professional development](#) and ongoing training as needed. (18)

- Recruitment and deployment:** Policies and systems for recruitment and deployment should aim to ensure that the right people are placed in the right positions in order to ensure equitable access to quality care for all. (3,17) Evidence shows that in many countries there is a maldistribution of health workers, with too few serving in the public sector and/or rural areas or marginalized communities. This maldistribution often results from poor translation of policies and systems for recruitment and deployment into effective *posting and transfer* practice. (19) Reasons for ineffective posting and transfer include the politicization of the process, individual provider preferences for postings that are associated with greater income, prestige or personal convenience, and a lack of accurate and detailed data on the health workforce. (19) There has been a recent increase in efforts to better diagnose the underlying reasons for poor recruitment and deployment in order to identify solutions to support improvement. (20-23) For example, evidence has shown that one way to address the shortage of health workers in rural or underserved areas is to recruit students and workers directly from these communities, as these individuals are more likely to desire returning to practice in their home areas and provide services that are accepted and trusted by the communities they serve. (16,21,24,25) You can find more information about these issues in underserved communities [here](#) and policy options for improving health worker deployment [here](#).
- Retention:** Retaining a qualified workforce--whether at the country level, within the public sector, or within underserved areas--is essential to ensure that investments made in workforce education and deployment yield the expected benefits to service delivery quality and population health. Too often, though, PHC workers in general and particularly those in underserved areas often lack access to the training and resources needed to deliver up-to-date, effective care, build their skills and competencies, and advance their careers. (26) Many health workers then leave underserved areas for urban areas with better working conditions, access to professional development, and sufficient resources. (26) National and institutional policies and regulations can support retention by promoting job security and providing pathways for professional growth and [supportive supervision](#), improving living conditions, promoting work-life balance, providing appropriate **remuneration** and **incentives** such as loan repayment, and ensuring a positive, non-discriminatory practice environment. (3,17,21-23,27,28)
- Quality assurance and regulation:** Quality assurance and regulatory systems are essential to ensure that the PHC workforce has and demonstrates the necessary competencies and is delivering high-quality care. There are three primary goals for such systems: to ensure that the practicing PHC workforce has the appropriate training and qualifications, that records of appropriately trained and qualified workforce are collected and maintained, and that appropriate measures are taken with respect to workforce members who do not meet the established standards. (5) Mechanisms for meeting these goals include ensuring that all practicing workforce be licensed and/or accredited, establishing systems for issuing and investigating complaints, instituting continuing professional development and periodic re-validation of credentials/registration/licensing, and creating systems for course correcting members of the workforce who fail to meet standards--including removal if no improvements are

made. (5,29) All occupations of the PHC workforce should be covered through such systems. (5) In addition, users can find more information about systems for monitoring and improving the performance of the health workforce, including supportive supervision, in [Performance Measurement and Management](#) while specifics around measuring and improving [provider competence](#) and [motivation](#) are addressed in [Availability of Effective Primary Health Care Services](#).

Achieving the above will require sufficient and appropriately targeted financing for the PHC workforce. (1,3,30,31) Users can learn more about workforce financing [here](#).

To support sustainable investments, policies, and systems for health workforce development, countries need robust workforce-related data--including workforce characteristics, remuneration patterns, workforce competence, performance, absenteeism, etc.--from the public and private sectors as well as in-country capacity to analyze and use this data to inform policy making and planning. (32) [National Health Workforce Accounts \(NHWA\)](#) is a system for supporting countries to produce and use quality health workforce data and evidence in order to guide evidence-based policymaking and planning. (31) The NHWA includes a set of indicators for monitoring education, labor market dynamics, financing, governance, policies, and regulations, and is accompanied by an [implementation guide](#) and an online platform to support data management, analysis, visualization, and reporting.

RELEVANCE TO PHC

The PHC workforce is the primary implementer of primary health care; without a strong workforce it is impossible to deliver high-quality PHC services for all. (12,33) To develop a [skilled](#) and [motivated](#) workforce, countries will need to ensure alignment of [policies](#), goals, and resources with the PHC service delivery model, alongside concentrated efforts to align workforce education and practice to embody the core principles of [high-quality PHC](#): first-contact accessibility, continuity, comprehensiveness, coordination, and person-centeredness. (3) By reorienting health systems toward person-centered integrated care models made up of interprofessional primary health [care teams](#) with a diverse skills-mix, countries have the potential to strengthen the quality of PHC service delivery and achieve better population health outcomes for all. (3)

KEY TERMS

Accreditation [of a training institution or program]: Accreditation is a form of quality assurance in which a training institution or program is assessed to determine whether it meets predetermined and agreed-upon standards. If so, the institution or program is given accredited status. (34)

Certification [of a profession or occupation]: Certification is, “the process whereby a profession or occupation voluntarily establishes competency standards for itself.” It is particularly useful in cases where the government has not regulated the profession or occupation through licensure. (34)

Community Health Workers: Community health workers are a type of community-based health worker whose primary responsibility is to conduct proactive outreach in the community to meet local population health needs. (16)

Competencies: “Competencies are the observable abilities of individual health workers relating to specified activities of work that integrate knowledge, skills, and behaviors. Competencies are durable, trainable and measurable.” (6)

Density [of the skilled workforce]: Density is measured as the ratio of active skilled health professionals to the total population. The World Health Organization has defined a required density of doctors, nurses, and midwives for meeting basic health needs and for achieving high coverage across the broad range of services that are targeted by universal health coverage as > 44.5 per 10,000 population. (3,35)

Incentives: Incentives refer to, “a particular form of payment which is intended to achieve some specific change in behaviour. Incentives come in a variety of forms, and can be either monetary or non-monetary.” (36)

Licensure [of an individual health worker]: Licensure is a process in which a governmental authority determines the competency of an individual health worker seeking to perform certain services and grants that individual the authority to engage in specific area(s) of practice based on demonstrated education, experience, and examination. Licensure also typically means that governments have the authority to both discipline licensees who fail to comply with statutes and regulations as well as to take disciplinary action against unlicensed individuals who practice within the scope of a licensed profession or occupation. (34)

Posting and transfer: Posting and transfer refers to geographic deployment of health workers. It encompasses both initial health worker posting and subsequent transfers of staff between health facilities. (19,37)

Quality assurance: Quality assurance of the health workforce refers to systems for ensuring that the practicing primary health care workforce has the appropriate training and qualifications, that lists of those appropriately trained and qualified providers are maintained, and that appropriate measures are taken with respect to providers who do not meet established standards. (5)

Remuneration: Remuneration is traditionally seen as the total income of an individual that may take different forms, such as salary, stipend, honorarium, and/or monetary incentives. (3,16) A remuneration strategy determines this particular configuration or bundling of payments that make up an individual’s total income. (36) The World Health Organization recommends that all occupations of the health workforce be remunerated with a financial package in accordance with the employment status and applicable laws and regulations in the jurisdiction. (3,16)

Skill mix: Skill mix describes the combination of different occupations of health workers (i.e. doctors, nurses, and midwives) in a primary care practice in terms of numbers, diversity, and competencies. (10)

WHAT OTHERS HAVE DONE: WHAT HAS BEEN DONE ELSEWHERE TO IMPROVE WORKFORCE

NEPAL: BUILDING A SUSTAINABLE COMMUNITY-BASED HEALTH WORKFORCE

Why reforms were needed

Throughout Nepal, guaranteeing access to high-quality health care has been a continual struggle for the public sector. Human resources for health are particularly challenging for the government, most especially in rural areas. To help address access barriers, Nepal created a cadre of community-based health workers called the Female Community Health Volunteers. (38) However, due to lack of formal training and their volunteer status, they have not reliably been able to provide comprehensive community-based services to the population. (39)

Nepal's approach:

Through a PPP formed with the non-governmental organization *Possible*, Nepal has been able to expand service coverage of high-quality care, particularly in rural and remote areas. Their CHW program is one aspect of the partnership's integrated service delivery model that has helped to drive progress toward broader health goals, including the development of a diverse, sustainable, community health workforce.

Overview:

Since 2009, the Government of Nepal has been working in a public-private partnership (PPP) with the non-governmental organization *Possible* to expand access to high-quality health care in remote areas throughout the country. The partnership has developed a novel community health worker (CHW) program, to strengthen human resources for health and accelerate progress toward universal health coverage.

History

Nepal is a low-income country with complex geography, limited administrative capacity, and acute fiscal constraints that limit effective and equitable service delivery. (38,40,31) While the country has made great progress in health in the past 20 years, many Nepali people, especially those in rural areas and mountainous regions, live hours or days from health facilities. Poor or non-existent road infrastructure exacerbates the problem, making it difficult for the government to provide [high-quality, comprehensive](#) care that is [continuously](#) available in a [first-contact](#) and [longitudinal manner](#). (38,42,43)

The private sector makes up a large portion of health care delivery in Nepal. In 2011, the private sector included more than 60% of doctors and over two-thirds of hospital beds. (44) However, poor regulation and integration of the private sector into the public health system has created various challenges to effective service coverage in Nepal, especially in disadvantaged, rural areas. (45) Consequently, issues of quality, affordability, accessibility, and fragmentation in both the private and public sector have led to the erosion of public trust in health care institutions and providers. (44,46)

However, the private sector has also provided an opportunity to drive [innovations and improvements in health](#) in the form of public-private partnerships (PPPs) - partnerships between the government and private sector entities that can help to fund, deliver, and scale health services and infrastructure in order to improve [access](#), equity, and quality of care. (44) The Ministry of Health's PPP with the non-governmental organization *Possible* is one promising example of how PPPs can be used to strengthen service delivery in an integrated, [person-centered manner](#). (46,47) The partnership manages several programs, including an innovative CHW program, which is helping to strengthen Nepal's community-based

health workforce with the [competencies](#) required to meet population health needs, especially in rural and remote areas. (41)

The Possible Community Health Worker Program

The PPP between the Ministry of Health and *Possible* has developed a cadre of full-time, salaried CHWs who are trained to provide longitudinal home-based care, integrated into the local health facility system. This program employs full-time, salaried CHWs who are trained to provide integrated, longitudinal home-based care for reproductive, maternal and child health, and non-communicable diseases. The program is designed in line with the [WHO's global best practices for community health programs](#) (16) and the [core principles of PHC](#). Their trained competencies involve: active and passive community-based disease [surveillance](#); home-based diagnosis, treatment, and counseling; triage and referral care to local health facilities; and continual data collection and feedback loops for care follow-up. (42,46,48)

To address challenges in workforce recruitment, retention, and [motivation](#), the program's CHWs are full-time salaried employees of the public private partnership who receive on-going training and professional development. (41,42) They are recruited via a formal application process, which engages the local municipality governance body to approve all hires. All CHWs are required to live in the communities they serve, and must be literate, with a high school education. At the time of hiring, they undergo a standardized one-month initial training conducted by *Possible* community health leadership, and subsequently have regularly-scheduled ongoing professional development and refresher trainings at both the municipality and district levels. (41)

CHWs are supervised by one local supervisor at the level of the municipality, who are in turn supervised by supervisors at the district level to ensure proper performance management. These supervisors are all employed by *Possible*, via the public private partnership, and thus are ultimately accountable to the government. (41) To ensure the quality of service provision, *Possible* uses a digital and in-person performance management system to track all CHWs' performance, providing structured feedback and targeted improvement training for any CHWs not meeting quality standards. (41) Through these functions, the program is working to develop a community-based health workforce that has the appropriate competencies to meet local needs, in line with an integrated, person-centered PHC delivery model. (42)

Next steps

While the partnership's integrated, community-based service delivery model has led to improvements in health outcomes (41,49,50), it is currently only serving a small proportion of Nepal's overall population. (41) More work needs to be done to integrate and scale this program nationally in order to build a stronger health workforce at the community level for all Nepali people. Nonetheless, this partnership has already set a new precedent within Nepal and globally, demonstrating how PPPs can strengthen human resources for health, particularly at the community level, and providing insights into how public sectors can better deliver high-quality PHC in order to achieve universal health coverage. (49)

VIETNAM: INTEGRATED, PERSON CENTERED WORKFORCE MODEL

Why reforms were needed

Before the reforms, Vietnam had a hospital-based and decentralized health system with poor management capacity across different levels of care which contributed to:

- Overutilization of hospital-based and specialist care, contributing to overcrowding and long wait times in hospitals for conditions that should be addressed at the PHC level
- Severe shortages of qualified PHC health workforce in rural and remote areas

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- Poor public perceptions of quality, resulting in the use of private, specialty-based care and high out-of-pocket (OOP) expenditure

Vietnam's approach:

The Health Professionals Education and Training for Health Systems Reform Project (HPET) has helped to strengthen the PHC workforce in Vietnam through:

- Improvements in the quality of health professionals' education and training
- Improvements in the competencies of PHC teams at the local level

Overview:

In 2013, the Ministry of Health of Vietnam launched the Health Professionals Education and Training for Health Systems Reform Project (HPET) for Health Systems Reform Project to execute a more sustainable and effective human resources for health development strategy. In particular, the project has made targeted efforts to improve the quality of workforce education and training to strengthen PHC capacity at the local level.

History

Vietnam is a lower-middle-income country that has achieved impressive gains in economic growth and poverty reduction in the past 20 years, claiming one of Asia's fastest-growing economic growth rates in recent years. Broader socioeconomic development and in-country efforts to accelerate progress toward universal health coverage (UHC) have led to increased investments in the health sector and improvements in health outcomes across the country. (51,52-54) With these economic gains, Vietnam has shifted from an agricultural to an industrial and service economy. Like many lower-middle-income countries undergoing industrialization and urbanization, Vietnam faces the challenges of the dual burden of both communicable and non-communicable disease, a large aging population, and poor access to care in disadvantaged rural and remote areas (51,52)

Prior to reforms, primary health care professionals in Vietnam were often ill-equipped to provide high-quality care that was accessible, acceptable, and available to the population. This led to high rates of out-of-pocket spending, low satisfaction with PHC and district hospital services, and high utilization of specialty and hospital-based care. (52) This situation was the result of many interrelated factors, including:

- Limited governmental ability to fund and regulate the composition and distribution of the health workforce leading to an imbalance in the distribution of health workforce across regions, with the most disadvantaged regions facing a severe shortage of qualified health professionals (51,55)
- Further challenges to equitable distribution and retention arising from low production capacity, restricted capacity for employment of graduates in remote areas, and low pay in the public sector (55)
- Inefficient management of patient care by the health workforce, in part due to a medical education system that focused primarily on hospital-based care, with little emphasis on fostering the development of the skills and competencies needed to deliver high-quality PHC at the front lines of care (commune health stations and health centers) (52,53,56,57)
- Deficient facility infrastructure at commune health stations, which contribute to poor perception of the quality of services by patients (52)

Working toward an integrated, person-centered PHC workforce model

To address these challenges, Vietnam increased investments in the health sector to implement a series of PHC-oriented workforce reforms that aimed to improve the quality of education and training for the health workforce and strengthen PHC capacity across 15 of the poorest provinces. (53,58) In particular, in 2013 the Ministry of Health partnered with the World Bank and the European Union to implement a sustainable and effective human resource for health development strategy - the Health Professionals Education and Training for Health Systems Reform Project (HPET). (52,53,56,57)

To improve the quality of health professionals' education the project has focused on making targeted improvements in the quality of health professional's education through mechanisms related to quality assurance and [supportive supervision](#). This has involved the creation of a quality assurance task force responsible for the establishment of standards for health professionals' education, peer review assessments for professional education programs, and a standardized examination system for medical nursing students. To better align the **competencies** of existing health workers with local community needs, HPET supports a combination of short and long-term modular training programs and on the job training for diverse PHC teams, spanning physicians, nurses, midwives, village health workers, assistant pharmacists, and laboratory technicians. The training programs focus on ensuring that the workforce has the appropriate competencies in the core principles of high-quality PHC and family medicine (52,53,56,57) To support the sustainability and accessibility of these training programs at the community level, they are designed to be built into existing education, training, and management structures and continue beyond the HPET project period as a part of continuing professional development programs. Finally, to ensure that the PHC workforce has the resources needed to deliver appropriate care, HPET financed the purchasing of modernized equipment for select beneficiary provinces. (52,53,56,57)

Progress and next steps

As of 2017, HPET had built and updated six training programs for PHC teams based on the core principles of PHC and by the end of 2018, approximately 9,000 local health professionals had enrolled in long- or short-term training courses, including 7,800 commune health station staff. (53) To support the scale of a PHC service delivery model beyond the beneficiary provinces, HPET has worked with the Ministry of Health to develop its existing commune health station service delivery model in 26 communes through guidance on appropriate training, resources, and the facilitation of various conferences, workshops, and study tours in line with the core principles of PHC and family medicine. (53) Additionally, HPET has helped to boost awareness and support for PHC through various public outreach and awareness campaigns. (53) Collectively, these efforts have helped to accelerate progress toward a stronger, grassroots workforce trained in the core competencies of PHC and raise public awareness and understanding of the importance of a quality grassroots health system. (53,59) To support broader improvements workforce education and practice and PHC capacity at the local level, the Ministry is considering expanding HPET training to other provinces in Vietnam. (53) In the meantime, HPET plans to update its education and training model this year to include teaching curriculum and on-the-job training on non-communicable diseases. It will also conduct post-training assessments of PHC teams in collaboration with the [Health Strategy and Policy Strategy Institute](#) in Hanoi and improve workers' skills in the use of information technology to better manage patient care. (53) Updates on and results of this assessment can be found [here](#).

WHAT TO ASK: WHAT QUESTIONS SHOULD BE CONSIDERED TO BEGIN IMPROVEMENTS?

The questions below may be a useful starting place to assess Workforce in your context, determine whether it is an appropriate area of focus, and how one might begin to plan and enact reforms.

DO THE COMPETENCIES AND SKILL MIX OF YOUR PHC WORKFORCE MEET POPULATION HEALTH NEEDS?

The competencies and skill mix of the PHC workforce should be defined in relation to the comprehensive needs of the population, taking into consideration dimensions such as access, population health needs, acceptability, the service delivery model, and health sector goals. You might consider the following questions to determine whether PHC workforce competencies and skill mix meet population health needs:

- What are the different occupations of health workers that deliver PHC? How are these different occupations of providers organized and coordinated at the service delivery level?
- Is there a defined set of competencies for all PHC workforce that emphasizes that skills needed to provide comprehensive, coordinated, continuous, and person-centered care?
- Are these competencies used to inform pre- and in-service education standards?
- Is there an occupation of health worker in the country that provides proactive outreach and care to communities? If yes, are they integrated into care teams at the service delivery level?
- Is there an approved medical specialty dedicated to comprehensive primary care, for example family medicine, specialized general practitioners, etc?
- Collectively, is the PHC workforce able to meet the majority of population health needs? One way to know this is to determine whether or not large numbers of PHC-sensitive cases are being referred to specialty care due to a lack of competency and capacity at the PHC level.

HOW EQUITABLY IS YOUR PHC WORKFORCE DISTRIBUTED?

To effectively meet population health needs, the health workforce must be equitably distributed to be able to deliver the appropriate care at the right place and right time. To assess the distribution of your workforce, you might consider:

- Does the distribution of PHC workforce mirror the distribution of your population, so that both rural and urban populations have equitable access to PHC?
- Are there variations in workforce distribution by geographic regions, types of facilities, types of occupations, and/or gender of providers?
- Is the current health workforce available, acceptable, and accessible to the population it serves? If patients are not utilizing services, is this related to a lack of trust in services, geographic or financial access barriers, workforce shortages and/or absenteeism, or other factors?
- If there issues with workforce shortages and maldistribution in your country, are there mechanisms in place to improve future recruitment, distribution, and retention?

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HOW STRONG ARE THE PHC WORKFORCE QUALITY ASSURANCE MECHANISMS IN YOUR COUNTRY?

Quality assurance mechanisms that span from education to practice are critical to ensure that the PHC workforce is equipped with and demonstrates the knowledge and skills needed to deliver high-quality PHC services. As described above, mechanisms should ensure that education standards are established and enforced based on predefined PHC-specific workforce competencies, that all actively practicing workforce are qualified to do so, and that quality standards are being met in practice. To assess the strength of these mechanisms, you might consider:

- Do the mechanisms cover all occupations of the PHC workforce?
- Do the mechanisms consistently and reliably function as intended?
- Do the responsible regulatory bodies have the staff and funding they need to perform their role?

ARE YOU INVESTING ENOUGH IN THE PHC WORKFORCE?

Achieving a high-quality PHC workforce requires significant financial investment. (1,30,31,60) To assess whether sufficient funds have been invested in the PHC workforce, you might consider:

- In the context of competing demands for limited resources, do policies and plans target substantive and strategic investments in PHC?
- Are educational and training institutions able to enroll enough students to meet demand? Are they appropriately resourced such that instructors are well paid and delivering up-to-date curricula and facilities meet student/trainee needs?
- Are there sufficient funds available to hire the number and skill mix of providers needed to meet community and population health needs?
- Are provider payments and incentives aligned with labor market dynamics? Are there dependably sufficient funds available to ensure job security and that providers are paid in a manner that is reliable and consistent to maintain motivation and retention?
- Are regulatory bodies sufficiently staffed to be able to consistently carry out their essential functions?
- Are facilities sufficiently resourced to ensure safe working conditions?

WHAT DATA DO YOU HAVE ABOUT YOUR WORKFORCE?

Health To support sustainable investments, policies, and systems for health workforce development, countries need robust workforce-related data--including on workforce characteristics, remuneration patterns, workforce competence, performance, absenteeism, etc.--from the public and private sectors as well as in-country capacity to analyze and use this data for local decision-making. To assess the quality and reliability of data on the health workforce in your country, you might consider:

- What types of data are needed and collected on the health workforce?
- How comprehensive and timely is this data?
 - Does it include workforce characteristics, remuneration patterns, performance data, and lists of certified/accredited workforce?
 - Is it collected from both the private and public sector?
 - Can it be disaggregated by sector, geography, and sex and age of the workforce?
- How up to date is this data?

- How is workforce-related data collected, analyzed, reported, and used?



RELEVANT TOOLS & RESOURCES

Tags: Key principles, Competencies, Skill mix, Quality assurance and regulation, Recruitment, deployment, and retention, Education and training, Financing and policy, Data and evidence

GLOBAL STRATEGY ON HUMAN RESOURCES FOR HEALTH: WORKFORCE 2030 (WHO, 2016)

Overview: This resource from the Global Health Workforce Alliance lays out a policy agenda for member states on how to drive progress toward a global strategy on human resources for health for all. The agenda is organized into four objectives, under which countries can find a series of intersectoral policy options for taking action and milestones to help assess progress toward each objective. In particular, the agenda includes recommendations on how to build the institutional capacity and strengthen data to optimize the health workforce and accelerate progress towards UHC and the SDGs.

Tags: Key principles, Competencies, Skill mix, Quality assurance and regulation, Recruitment, deployment, and retention, Education and training

WHO GUIDELINES ON HEALTH POLICY AND SYSTEM SUPPORT TO OPTIMIZE COMMUNITY HEALTH WORKER PROGRAMS (WHO, 2018)

Overview: This guideline was developed to provide countries with the best global evidence on optimizing community health workers programs as part of a comprehensive PHC workforce. It contains practical guidance on how to effectively improve the design, implementation, performance, and evaluation of community health worker programs. In particular, it details policy and system enablers required to strengthen education, deployment, performance, and integration into the broader health system.

Tags: Key principles, Competencies, Skill mix, Quality assurance and regulation, Recruitment, deployment, and retention, Education and training

PRACTITIONER EXPERTISE TO OPTIMIZE COMMUNITY HEALTH SYSTEMS: HARNESSING OPERATIONAL INSIGHT (COMMUNITY HEALTH IMPACT COALITION, 2017)

Overview: This report examines a series of case studies from six organizations - Hope Through Health, Last Mile Health, Living Goods, Muso, Partners in Health, and Possible - and proposes a set of best principles for how CHWs can be successfully integrated into national health systems.

Tags: Skill mix, Education and training, Recruitment, deployment, and retention

GLOBAL HEALTH WORKFORCE NETWORK (WHO)

Overview: The Global Health Workforce Network was established as a global platform for stakeholders to work collaboratively toward the effective implementation of comprehensive and coherent workforce policies in line with global best practices. In particular, the network focuses on the development and dissemination of products that facilitate better alignment of workforce education and deployment with population, health systems, and health labour market needs and the scale up of socially accountable education.

Tags: Key principles, Quality assurance and regulation, Education and training, Recruitment, deployment, and retention

[HUMAN RESOURCES FOR HEALTH 2030 PROGRAMME \(HRH2030, USAID, AND PEPFAR\)](#)

Overview: This website is the home of USAID and PEPFAR's Human Resources for Health 2030 initiative, created to support countries in developing a workforce that is capacitated to improve health outcomes in their country context. It contains practical lessons and evidence-based solutions to workforce challenges in four areas: performance and productivity of the health workforce; number, skill mix, and competency of the health workforce; human resources for health leadership and governance capacity; and sustainability of investment in human resources for health.

Tags: Key principles, Skill mix, Recruitment, deployment, and retention, Education and training

[WONCA GLOBAL STANDARDS FOR POSTGRADUATE MEDICAL EDUCATION \(WONCA, 2013\)](#)

Overview: This document provides a set of global standards for postgraduate family medicine education. While countries will need to adapt these global standards to their local environment and to meet local needs, they may be used by institutions and education programs to support quality improvement in family medicine postgraduate education, including self-assessment and program quality improvement; new program development; peer review; and recognition and accreditation.

Tags: Quality assurance and regulation, Competencies, Education and training

[WONCA RURAL MEDICAL EDUCATION GUIDEBOOK \(WONCA, 2014\)](#)

Overview: The World Organization of Family Doctors (WONCA) launched the Rural Medical Education Guidebook to provide a resource for stakeholders to obtain practical strategies and ideas for training health care workers for rural education and practice. In particular, the guide provides detailed information and implementation guidance related to resourcing rural medical education and practice, providing professional and technical support and development, and undergraduate and postgraduate medical education training and development models.

Tags: Quality assurance and regulation, Competencies, Education and training

[HEALTH WORKFORCE. MONITORING THE BUILDING BLOCKS OF HEALTH SYSTEMS: A HANDBOOK OF INDICATORS AND THEIR MEASUREMENT STRATEGIES \(WHO, 2010\)](#)

Overview: This document provides countries with a monitoring strategy to track progress and performance, evaluate impact, and ensure accountability for strengthening the health workforce using a set of core indicators and related measurement strategies. It also guides countries through a series of plans and actions for assessing and strengthening workforce recruitment, distribution, retention, and productivity that are paired with indicators for monitoring progress toward these goals.

Tags: Key principles, Quality assurance and regulation, Recruitment, deployment, and retention, Education and training

[THE LABOR MARKET FOR HEALTH WORKERS IN AFRICA: A NEW LOOK AT THE CRISIS \(THE WORLD BANK, 2013\)](#)

Overview: This book draws on the lessons, knowledge, and data gathered by the World Bank's Africa Region Human Resources for Health Program to examine the health human resource crisis in the context of Africa's labor markets. The book's four parts provide information and tools on health workforce

analysis, the distribution of health workforce, performance of the health workforce, and education and training of health workers. The featured case studies offer tangible lessons from a variety of countries in the region that have achieved improvements in human resources for health.

Tags: Competencies, Quality assurance and regulation, Recruitment, deployment, and retention, Education and training

[HANDBOOK ON MONITORING AND EVALUATION OF HUMAN RESOURCES FOR HEALTH WITH SPECIAL APPLICATIONS FOR LOW-AND MIDDLE-INCOME COUNTRIES \(WHO, THE WORLD BANK, AND USAID, 2009\)](#)

Overview: This handbook provides managers, researchers, and policymakers with a comprehensive and standardized reference for monitoring and evaluating human resources for health. Using an analytical framework, the handbook presents countries with strategic options for improving the health workforce information and evidence base, and uses country experiences to highlight approaches that have worked.

Tags: Key principles, Quality assurance and regulation

[HUMAN RESOURCES FOR HEALTH AND UNIVERSAL HEALTH COVERAGE: FOSTERING EQUITY AND EFFECTIVE COVERAGE \(BULLETIN OF THE WHO, 2013\)](#)

Overview: This paper examines human resources for health policy lessons from four countries that have achieved sustained improvements in accelerating progress toward universal health coverage - Brazil, Ghana, Mexico, and Thailand. For each country, the paper identifies the key actions and lessons that helped to accelerate progress toward universal health coverage through the lens of health workforce availability, accessibility, acceptability, and quality. The paper uses country experiences to demonstrate actions that support improvements in human resources for health, with special attention to equity and efficiency.

Tags: Key principles, Quality assurance and regulation, Recruitment, deployment, and retention

[FIVE-YEAR ACTION PLAN FOR HEALTH EMPLOYMENT AND INCLUSIVE ECONOMIC GROWTH \(2017-2021\) \(WHO, 2018\)](#)

Overview: This action plan was developed as a part of a joint intersectoral programme of work across the International Labor Organization, the Organization for Economic Cooperation and Development, and the World Health Organization to support countries in the effective implementation of the WHO's global strategy on human resources for health. It provides detailed information and guidance related to the implementation of intersectoral, collaborative and integrated approaches and country-driven action for sustainable investments, institutional-capacity building, and transformative policy action and practice.

Tags: Key principles, Recruitment, deployment, and retention, Financing and policy, Data and evidence

[DELIVERED BY WOMEN, LED BY MEN: A GENDER AND EQUITY ANALYSIS OF THE GLOBAL HEALTH AND SOCIAL WORKFORCE \(WHO, 2019\)](#)

Overview: This report, produced by the WHO Global Health Workforce Network's Gender Equity Hub, examines gender and equity in the health workforce. Four thematic areas guide countries in identifying and addressing issues of leadership; decent work free from all forms of discrimination, harassment, including sexual harassment; gender pay gap; and occupational segregation using gender-transformative policies and measures. The report concludes with key messages and policy recommendations that may be

used to address gender inequity in the health workforce and support progress toward global targets such as UHC.

Tags: Key principles, Recruitment, deployment, and retention

[WORKING FOR HEALTH AND GROWTH: INVESTING IN THE HEALTH WORKFORCE \(WHO, 2016\)](#)

Overview: This report, produced by the High-Level Commission on Health Employment and Economic Growth, was developed to call attention to the social and economic benefits of the health workforce. It proposes ten recommendations and five immediate actions to transform the health and social workforce and enable change for the achievement of the 2030 Agenda for Sustainable Development.

Tags: Key principles, Financing and policy

[BUILDING THE PRIMARY HEALTH CARE WORKFORCE OF THE 21ST CENTURY - TECHNICAL SERIES ON PHC \(WHO, 2018\)](#)

Overview: This report was released as part of the Technical Series accompanying the Astana Declaration of 2018. It provides an updated definition for PHC workforce, describes the current state of the PHC workforce globally, outlines the challenges facing the workforce, and proposes a series of policy directions and levers for improving the PHC workforce. The document also includes a series of case studies highlight PHC workforce improvements in various countries.

Tags: Key principles, Financing and policy, Competencies

[NATIONAL HEALTH WORKFORCE ACCOUNTS - HANDBOOK, IMPLEMENTATION GUIDE, AND VIDEO \(WHO, 2016-2018\)](#)

Overview: This set of tools was developed to facilitate the implementation of the National Health Workforce Accounts (NHWA), a system for improving the availability, quality, and use of health workforce data. It contains a set of 78 core indicators that provide a comprehensive overview of the dynamics of a country's health workforce, described in detail in the NWA Handbook, and an implementation guide that offers a series of recommendations for improved use and collection of relevant data.

Tags: Data and evidence

[GENDER EQUITY IN THE HEALTH WORKFORCE: ANALYSIS OF 104 COUNTRIES \(WHO, 2019\)](#)

Overview: This brief examines gender equity in the social and health workforce at the global level based on an analysis of WHO National Health Workforce Accounts data over the last 18 years and highlights key policy options for stakeholders to consider to achieve gender equity in health.

Tags: Key principles, Data and evidence, Financing and policy, Recruitment, deployment, and retention

[INCREASING ACCESS TO HEALTH WORKERS IN REMOTE AND RURAL AREAS THROUGH IMPROVED RETENTION: GLOBAL POLICY RECOMMENDATIONS \(WHO, 2010\)](#)

Overview: To support the recruitment, deployment, and retention of workforce in remote and rural areas, this document outlines a series of 16 evidence-based recommendations. It also provides guidance for policymakers on how to choose and implement the most appropriate interventions for their context and how to monitor and evaluate impact over time.

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Tags: Recruitment, deployment, and retention

HEALTHWISE - WORK IMPROVEMENT IN HEALTH SERVICES ACTION MANUAL (INTERNATIONAL LABOR ORGANIZATION AND WHO, 2014)

Overview: HealthWISE, produced by the International Labor Organization and WHO, is a participatory quality improvement tool for use in health facilities to improve occupational safety and health, personnel management, and environmental health.

Tags: Quality assurance and regulation

WORKLOAD INDICATORS OF STAFFING NEEDS - USER'S MANUAL (WHO, 2015)

Overview: This manual guides users through the methodology and process of applying the Workload Indicators of Staffing Need (WISN) method, a human resource management tool. The manual is designed to provide a wide range of managers with a systematic way to make staffing decisions that optimize management of their human resources. It contains practical guidance on defining the objectives and scope of using WISN, its implementation, and applying WISN to determine optimal staff requirements based on workloads.

Tags: Recruitment, deployment, and retention, Quality assurance and regulation

BETTER EVIDENCE - UPTODATE AND THE GLOBAL HEALTH DELIVERY PROJECT (BETTER EVIDENCE, 2019)

Overview: UpToDate is a clinical-evidence based resource that clinicians can use to improve decision making, care delivery, and patient outcomes. It provides immediate access to key medical education resources, including evidence-based clinical content and actionable recommendations for effective diagnosis and treatment. Users can learn more and apply for a subscription through the Better Evidence Project at Ariadne Labs.

Tags: Competencies, Education and Training, Data and evidence, Quality assurance and regulation

17. HRH2030, USAID, PEPFAR. Objective: Increase Number, Skill Mix, and Competency of the Health Workforce [Internet]. HRH2030. [cited 2019 Aug 14]. Available from: <https://hrh2030program.org/increase-number-skill-mix-and-competency-of-the-health-workforce/>
18. WHO. Health workforce - Education and training [Internet]. WHO Regional Office for Europe: Health Workforce. [cited 2019 Aug 14]. Available from: <http://www.euro.who.int/en/health-topics/Health-systems/health-workforce/activities/education-and-training>
19. Schaaf M, Sheikh K, Freedman L, Juberg A. Chapter 16: a hidden human resources for health challenge: personnel posting and transfer. In: Health Employment and Economic Growth: An Evidence Base. Buchan J, Dhillon I, Campbell J, editors. World Health Organization; 2017.
20. Schaaf M, Freedman LP. Unmasking the open secret of posting and transfer practices in the health sector. Health Policy Plan. 2015 Feb;30(1):121-30.
21. Garimella S, Sheikh K. Health worker posting and transfer at primary level in Tamil Nadu: Governance of a complex health system function. J Family Med Prim Care. 2016 Sep;5(3):663-71.
22. 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. 2015 Oct 13;13:82.
23. El Koussa M, Atun R, Bowser D, Kruk ME. Factors influencing physicians' choice of workplace: systematic review of drivers of attrition and policy interventions to address them. J Glob Health. 2016 Dec;6(2):020403.
24. Mbemba GIC, Gagnon M-P, Hamelin-Brabant L. Factors influencing recruitment and retention of healthcare workers in rural and remote areas in developed and developing countries: an overview. J Public Health Africa. 2016 Dec 31;7(2):565.
25. World Health Organization. A vision for primary health care in the 21st century: towards universal health coverage and the sustainable development goals. 2018
26. Strasser R, Neusy A-J. Context counts: training health workers in and for rural and remote areas. Bull World Health Organ. 2010 Oct 1;88(10):777-82.
27. Verma P, Ford JA, Stuart A, Howe A, Everington S, Steel N. A systematic review of strategies to recruit and retain primary care doctors. BMC Health Serv Res. 2016 Apr 12;16:126.
28. Abdul Rahim R, Mwanri L. Health workforce crisis: recruitment and retention of skilled health workers in the public health sector in malaysia. Asia Pacific Journal of Public Administration. 2012 Dec;34(2):157-70.
29. HRH2030, USAID, PEPFAR. HRH2030 Program | Increase Health Workforce Performance and Productivity [Internet]. HRH2030. [cited 2019 Aug 14]. Available from: <http://hrh2030program.org/increase-health-workforce-performance-and-productivity/>
30. WHO. Working for Health and Growth - Investing in the health workforce. High-Level Commission on Health Employment and Economic Growth, editor. WHO; 2016.
31. WHO. Health Workforce: National Health Workforce Accounts (NHWA) [Internet]. World Health Organization. 2019 [cited 2019 Sep 20]. Available from: <https://www.who.int/hrh/statistics/nhwa/en/>
32. HRH2030, PEPFAR, USAID. HRH2030 Program | Build Sustainability of Investment in the Health Workforce [Internet]. HRH2030. [cited 2019 Aug 14]. Available from: <https://hrh2030program.org/build-sustainability-of-investment-in-the-health-workforce/>
33. WHO. WHO | Health workforce [Internet]. [cited 2019 Jul 26]. Available from: <https://www.who.int/healthsystems/topics/workforce/en/>
34. WHO. Transforming and scaling up health professionals' education and training . World Health Organization; 2013.

35. World Health Organization. Working Together for Health: The World Health Report. 2006.
36. WHO. Health workforce incentive and remuneration strategies: a research review. World Health Organization; 2000.
37. Heerdegen ACS, Bonenberger M, Aikins M, Schandorf P, Akweongo P, Wyss K. Health worker transfer processes within the public health sector in Ghana: a study of three districts in the Eastern Region. *Hum Resour Health*. 2019 Jun 24;17(1):45.
38. Zulliger R. Nepal's Frontline Health Workers [Internet]. CHW Central. [cited 2019 Aug 4]. Available from: <https://www.chwcentral.org/blog/nepal%E2%80%99s-frontline-health-workers>
39. Schwarz D, Sharma R, Bashyal C, Schwarz R, Baruwal A, Karelis G, et al. Strengthening Nepal's Female Community Health Volunteer network: a qualitative study of experiences at two years. *BMC Health Serv Res*. 2014 Oct 9;14:473.
40. Mishra SR, Khanal P, Karki DK, Kallestrup P, Enemark U. National health insurance policy in Nepal: challenges for implementation. *Glob Health Action*. 2015 Aug 21;8:28763.
41. Maru S, Nirola I, Thapa A, Thapa P, Kunwar L, Wu W-J, et al. An integrated community health worker intervention in rural Nepal: a type 2 hybrid effectiveness-implementation study protocol. *Implement Sci*. 2018 Mar 29;13(1):53.
42. Citrin D, Thapa P, Nirola I, Pandey S, Kunwar LB, Tenpa J, et al. Developing and deploying a community healthcare worker-driven, digitally- enabled integrated care system for municipalities in rural Nepal. *Healthc (Amst)*. 2018 Sep;6(3):197-204.
43. Global Health Workforce Alliance. Nepal: Strengthening Interrelationship Between Stakeholders. Global Health Workforce Alliance; 2010.
44. Citrin D, Bista H, Mahat A. NGOs, partnerships, and the public-private discontent in Nepal's health care sector. *MAT*. 2018 May 15;5(2):126.
45. Private gain, public pain: does a booming private healthcare industry in Nepal benefit its people? - The BMJ [Internet]. [cited 2019 Aug 5]. Available from: <https://blogs.bmj.com/bmj/2016/09/30/does-a-booming-private-healthcare-industry-in-nepal-benefit-its-people/>
46. Beyeler N, Fewer S, Kajal F, Roach T, Rosenberg E, Trauba E. Public financing partnerships to improve private sector health care: Case studies of intermediary purchasing platforms . UCSF Evidence to Policy Initiative: The Global Health Group; 2018.
47. Possible. Home: Possible [Internet]. Possible. [cited 2019 Aug 19]. Available from: <https://possiblehealth.org/>
48. Harsha Bangura A, Ozonoff A, Citrin D, Thapa P, Nirola I, Maru S, et al. Practical issues in the measurement of child survival in health systems trials: experience developing a digital community-based mortality surveillance programme in rural Nepal. *BMJ Glob Health*. 2016 Dec 19;1(4):e000050.
49. Maru D, Maru S, Nirola I, Gonzalez-Smith J, Thoumi A, Nepal P, et al. Accountable care reforms improve women's and children's health in nepal. *Health Aff (Millwood)*. 2017;36(11):1965-72.
50. Kumar A, Schwarz D, Acharya B, Agrawal P, Aryal A, Choudhury N, et al. Designing and implementing an integrated non-communicable disease primary care intervention in rural Nepal. *BMJ Glob Health*. 2019 Apr 29;4(2):e001343.
51. WHO WPRO. Human Resources for Health Country Profile: Vietnam. World Health Organization; 2016.
52. The World Bank. Health Professionals Education and Training for Health System Reforms (P131825) - Project Appraisal Document. The World Bank - East Asia and Pacific Region; 2014 Jul.

53. Minh HB. Vietnam accelerates universal healthcare drive with EU, WB funding [Internet]. The Voice of Vietnam: Society. 2019 [cited 2019 Jul 29]. Available from: <https://english.vov.vn/society/vietnam-accelerates-universal-healthcare-drive-with-eu-wb-funding-393239.vov>
54. Hoang CK, Hill P, Nguyen HT. Universal health insurance coverage in vietnam: A stakeholder analysis from policy proposal (1989) to implementation (2014). J Public Health Manag Pract. 2018;24 Suppl 2 Supplement, Public Health in Vietnam:552-9.
55. Nguyen MP, Mirzoev T, Le TM. Contribution of health workforce to health outcomes: empirical evidence from Vietnam. Hum Resour Health. 2016 Nov 16;14(1):68.
56. Nguyệt CM. A new approach to improve primary health care at the grass roots level - European External Action Service [Internet]. European External Action Service. 2017 [cited 2019 Jul 30]. Available from: https://eeas.europa.eu/delegations/vietnam_en/26396/A%20new%20approach%20to%20improve%20primary%20health%20care%20at%20the%20grass%20roots%20level
57. Vietnam Ministry of Health - HPET. Ministry of Health: Health Professionals Education and Training for Health System Reforms Project (HPET) [Internet]. Ministry of Health: Health Professionals Education and Training for Health System Reforms Project (HPET). 2015 [cited 2019 Jul 30]. Available from: <http://www.hpvet.vn/Index.aspx?LangId=2>
58. The World Bank. Laughter is The Best Medicine: How Theater Helps Bridge the Gap Between a Vietnamese Commune and Their Health Clinic [Internet]. The World Bank. 2018 [cited 2019 Aug 15]. Available from: <https://www.worldbank.org/en/news/feature/2018/11/05/laughter-is-the-best-medicine>
59. The Government Public Relations Department, Thailand. Foreign-funded project benefits thousands of health workers [Internet]. The Government Public Relations Department, Thailand. [cited 2019 Aug 15]. Available from: https://thailand.prd.go.th/1700/ewt/thailand/ewt_news.php?nid=7724&filename=index
60. WHO. Building the economic case for primary health care: a scoping review. WHO; 2018. Available from: https://www.who.int/docs/default-source/primary-health-care-conference/phc---economic-case.pdf?sfvrsn=8d0105b8_2