
Technical Brief: Strategic Support for Human Resources for Health

30 SEPTEMBER 2019

Table of Contents

Abbreviations and acronyms	3
Executive summary	4
1. Introduction	6
2. General principles for applications including HRH support	7
2.1 Consider sustainability	
2.2 Invest according to robust evidence about the HRH labor market	
2.3 Invest in integrated, people-centered HRH approaches	
2.4 Engage in strategic partnerships	
3. Types of HRH investments supported by the Global Fund	16
3.1 Education and production of new health workers	
3.2 Remuneration and deployment of health workers	
3.3 In-service training	
3.4 HRH policies, governance and workforce planning/management	
4. Monitoring of Global Fund HRH investments	23
5. HRH investments in different country contexts	24
6. Conclusion	25
Annex 1: Global Fund HRH impact assessment tool	27
Annex 2: Annotated list of HRH resources	29
References	31

Abbreviations and acronyms

AIDS = acquired immune deficiency syndrome
CHA = community health assistant
CHW = community health worker
COE = challenging operating environment
CSO = civil society organization
HEW = health extension worker
HIV = human immunodeficiency virus
HMIS = health management information system
HRH = human resources for health
HRIS = human resources information system
ICT = information and communications technology
IPCHS = Integrated People-Centered Health Services
IRT = integrated refresher training
LFA = local funding agent
M&E = monitoring and evaluation
MoH = ministry of health
NGO = non-governmental organization
NHWA = national health workforce accounts
PBF = performance-based financing
PEPFAR = President's emergency plan for AIDS relief
PHC = primary health care
PR = principal recipient
RSSH = resilient and sustainable systems for health
RMNCAH = reproductive, maternal, newborn, child and adolescent health
SRMNCAH = sexual, reproductive, maternal, newborn, child and adolescent health
SDG = sustainable development goal
SRN = state registered nurse
TB = tuberculosis
TLCA = TB-leprosy community assistant
UHC = universal health coverage
UNDP = United Nations Development Program
UNFPA = United Nations Population Fund
UNICEF = United Nations Children's Emergency Fund
WHO = World Health Organization
WISN = workforce indicators for staffing need

Executive summary

Most countries supported by the Global Fund face challenges in relation to human resources for health (HRH), including shortages, inequitable distribution, high turnover, inadequate education and training, poor working conditions and lack of reliable health workforce data to support effective workforce planning and management. Such challenges represent a critical bottleneck to the availability, accessibility, acceptability and quality of health services, including for HIV/AIDS, tuberculosis and malaria.

Although the Global Fund is not expected to take the lead on HRH initiatives, it does work with countries to identify and address HRH gaps which affect efforts to tackle the three diseases and related health services. It aims to make ethical HRH investments, which makes it important for grant applications to adhere as far as possible to four key principles:

1. **Consider sustainability** by working towards embedding HRH interventions within a sound, costed, national strategic plan and taking care not to distort existing HRH systems;
2. Ensure investments are supported by **robust evidence** about the country's HRH labor market, and supporting the production of such evidence if it does not already exist;
3. Invest in equipping HRH with the competencies and work environment to provide **integrated, people-centered** approaches, especially at the primary health care and community levels, and involving community health workers (CHWs) as appropriate; and
4. Engage in **strategic partnerships** with other global health initiatives, UN agencies, governments, funders and health service providers to ensure harmonization and alignment of HRH efforts and avoid distortions and duplication of effort.

The Global Fund typically supports four main types of HRH investment (but will consider other types if appropriate to the context and supported by robust evidence):

1. Increasing the supply of HRH through education and production of new health workers;
2. Support to remuneration and deployment of existing and new health workers including retention and motivation mechanisms;
3. Increasing the competencies of health workers through in-service training and integrated supportive supervision; and
4. Strengthening capacity for effective policy-making, governance and workforce planning/management, including strengthening data systems and supporting HRH performance monitoring.

The purpose of this note is to inform the strategic design and implementation of health workforce elements of Global Fund proposals and grants.^a It should be used as a basis for discussion and negotiation with stakeholders when developing applications. Applicants are encouraged to familiarize themselves with the entire technical brief, but the following points are fundamental:

- If requesting HRH investments, applicants should demonstrate an understanding of the underlying conditions of the HRH labor market (see section 2.2), and state clearly how the investments will be sustainable and strategic within the context of the labor market and the broader primary health care (PHC) system (see sections 2.1 and 2.4).

^a The contents of this document were developed in close collaboration with the World Health Organization, Health Workforce Department.

- For maximum sustainability, investment in HRH education and training should prioritize inclusion of relevant competencies in pre-service education and integrated continuing professional development, including management training (see section 3.1). Disease-specific, in-service training has potentially distortionary effects and may have limited effectiveness if implemented in isolation; requests for support should be adequately justified (see section 3.3).
- In line with the WHO Global Strategy on HRH, and in compliance with Global Fund budgeting guidelines, the Global Fund will invest in both capital and recurrent expenditure (including salaries) of general service staff, where required for the delivery of TB, malaria and/or HIV services (see section 3.2).
- Reliance on disease-specific financial incentives should be progressively reduced as they have distortionary effects. Salary top ups are no longer eligible. Other types of retention and motivation mechanisms, including more general financial incentives, have greater potential for sustainability and should be given higher priority, especially when linked to performance of grants and attainment of deliverables (see section 3.2).
- Where national HRH policies, plans and strategies exist, requests for HRH investments should be aligned with these policies, plans and strategies. If they do not exist, the Global Fund will consider providing support to develop them. Support should aim at building or strengthening capacities for HRH management and planning, including development of HRH information systems (see section 3.4).
- The Global Fund's approach will be tailored to the country context (see section 5).

1. Introduction

Human resources for health (HRH) challenges have been recognized as a critical bottleneck to the scale-up and quality improvement of health services, including for HIV/AIDS, tuberculosis (TB) and malaria services.¹ The links between the availability and accessibility of HRH and subsequent service coverage and health outcomes are well established.^{2,3,4,5} Most countries supported by the Global Fund face HRH challenges, including shortages and inequitable distribution of HRH, high turnover, inadequate education and training, poor working conditions and lack of reliable health workforce data. In addition, human resources manage and make decisions about the use of all the other inputs to the health system. HRH are, therefore, a fundamental part of the effort to achieve universal health coverage (UHC) and the health-related sustainable development goals (SDGs),⁶ and to build resilient and sustainable systems for health (RSSH).^b This is a key objective of the Global Fund's strategy for 2017-2022.⁷ One sub-objective critical to achieving this aim is ensuring that the Global Fund leverages critical resources for HRH.

The Global Fund, together with ministries of health and technical partners, also has the responsibility to assess the HRH implications of its investments and to ensure that HRH are strengthened in a sustainable way. This responsibility has been formalized in the World Health Organization (WHO) Global Strategy on HRH⁸ and is supported by this technical briefing note and a Global Fund checklist for use when applying for HRH support (see Annex 1).

For the purposes of this document, the terms 'HRH' and 'health workforce' include both health workers with clinical responsibilities (e.g. doctors, nurses, midwives, laboratory technicians, pharmacists and community health workers [CHWs]), as well as those who support their work (e.g. health service managers, program staff, administrative workers, social workers, environmental health workers, and community health workers such as peer educators). Thus, all human resources supported through Global Fund financing are included. Annex 2 provides a list of useful HRH resources and tools.

Because its mandate is to fight AIDS, TB and malaria, the Global Fund is not expected to take the lead on overarching initiatives to grow or improve a country's health workforce. Rather, its strategy is to work with countries to identify and help address gaps in HRH that affect efforts to tackle the three diseases and related services (e.g. integrated reproductive, maternal, newborn, child and adolescent health services). The Global Fund aims to make ethical and sustainable investments in HRH, which necessarily places limitations on the types of support that will be offered, especially in countries without relevant national policies and strategies to guide HRH investments. This briefing note aims to clarify the Global Fund's approach to HRH investments by outlining the following:

- general principles which underpin Global Fund's HRH investments (section 2),
- different types of HRH investments that may be supported by the Global Fund (section 3),
- monitoring requirements for HRH investments (section 4), and
- how the HRH support offered by the Global Fund may vary according to the country context (section 5).

The purpose of this note is to guide countries preparing funding requests to the Global Fund. It should be used as a basis for discussion and negotiation with stakeholders when developing applications. To assist with the structured consideration of HRH issues during country dialog and grant making, an HRH investment checklist is provided in Annex 1. Applicants should consider completing the checklist for all funding requests that contain substantive HRH investments. This

^b For more information about the RSSH approach see the [RSSH Information Note](#).

should be done at an early stage in the grant application cycle, so that HRH issues are considered from the outset.

Since the last edition (dated December 2016), the overall strategic direction of this technical brief is unchanged, but the following specific changes should be noted: (1) greater emphasis on investments in integrated, people-centered HRH approaches (section 2.3), (2) alignment with recent World Health Organization (WHO) guidance on investment in CHWs (section 2.3), (3) a new section 4 on monitoring, and (4) a new checklist tool for assessing and addressing the HRH implications of stand-alone RSSH grants and matching funding requests (Annex 1).

2. General principles for applications including HRH support

HRH investments can be prioritized if health workforce challenges represent a barrier to the availability, accessibility, acceptability or quality of services for prevention, diagnosis, treatment and care of HIV, TB and malaria. This may be particularly relevant in fragile contexts and countries with high disease burden and low economic capacity.

General principles to consider when developing funding requests for HRH are summarized in Box 1 and discussed in more detail in the following sections.

Box 1: Four general principles for applications including HRH support

Consider sustainability by: aligning HRH interventions with the relevant national strategic plan(s) and/or supporting the development of such plans; ensuring a long-term financing strategy is in place; prioritizing investment in areas likely to have long-term impact such as pre-service education and health worker retention; and taking care not to distort existing HRH systems.

Ensure investments are supported by robust evidence about the country's HRH labor market by: strengthening HRH data systems; supporting and/or using detailed health labor market analyses, as well as health facility assessments (HFAs) to track health worker satisfaction, payment of salaries, quality of supervision and in-service training, amongst other factors.

Invest in integrated, gender-responsive, people-centered HRH approaches by: integrating services and HRH at the primary health care and community levels; and coordinating the education, training, deployment and remuneration of HRH to enable them to work across disciplinary and/or geographical boundaries. Such inter-disciplinary working should include CHWs where appropriate.

Engage in strategic partnerships, by: identifying and working together with the appropriate global, national and sub-national organizations to address identified gaps in service and HRH coverage and ensure alignment of HRH's terms and conditions of employment.

It should be noted that these principles and the guidance in the rest of this briefing note should be interpreted and adapted to the country context. Ultimately, it is the HRH situation in a country that should inform HRH investments, supported by underlying analyses, such as labor market and health workforce assessments. When there is evidence to support deviation from these principles, the Global Fund will consider well-justified funding requests for other HRH approaches.

2.1 Consider sustainability

The Global Fund defines the sustainability of its programs in relation to their capacity to maintain service coverage at a level that will provide continuing control of a disease even after the removal of external funding. The focus should be on the sustainability of improved epidemiological outcomes through a sustained commitment to fighting AIDS, TB and malaria. For more information, refer to the Global Fund's policy and guidance note on Sustainability, Transition and Co-financing.^c

A key element of programmatic sustainability is to embed the HRH interventions within a sound, costed, national strategic plan for HRH which is budgeted on a yearly basis and has legal standing. Funding applications should clearly demonstrate how the proposed interventions align with national policies, strategies and plans, and how they will contribute to the achievement of stated outcomes.

If HRH policies, strategies and plans based on validated HRH data do not exist or are weak, Global Fund support should be offered to develop and implement them, in collaboration with other development partners when appropriate. Sound HRH governance and management however, requires more than a plan, so Global Fund support may include activities to establish or strengthen the capacity of relevant institutions at national or sub-national level capable of carrying out core functions and tasks related to HRH and health labor market analysis, planning, policy setting, monitoring and evaluation (see also section 3.4).

Sustainability depends on increased domestic financial investments in health as soon as a country has the political will and fiscal space to make such investments. When appropriate, the Global Fund will incentivize this financial commitment through co-financing requirements, especially when countries are ready to prepare for transition away from Global Fund support. The Global Fund can also support the provision of technical assistance to ensure that countries have comprehensive national health financing strategies underlying their HRH strategic plans, which include the private sector where appropriate.

Countries can work towards the sustainability of evidence-based HRH investments by prioritizing interventions and approaches that lead to cost savings or to cost-effective use of resources. Examples include:

- priority focus on PHC-oriented health workers, including community health workers (see sections 2.3, 3.1 and 3.3);
- investments in integrated, people-centered approaches, including integrated supportive supervision (see section 2.3);
- coordinating HRH efforts with other donors and stakeholders (see section 2.4);
- incentives and subsidies to reduce attrition rates from health education institutions (see section 3.1);
- investment in pre-service education of HRH which is often a more cost-effective and sustainable solution than a focus on repeated short-term, disease-specific, in-service training.⁹¹⁰ (see section 3.1);
- non-financial incentives to improve health worker motivation, performance and retention (see section 3.2);
- improved transparency and efficiency in payroll and other HRH financial management systems (see section 3.4).

HRH investments can have long 'lead times' due to the time it takes to recruit and deploy health workers. When preparing a funding request that includes support for HRH, applicants should state how this process will be expedited, for example by having a deployment plan in place from the outset. Even when the process is expedited, the Global Fund acknowledges that some HRH

^c See the [Sustainability, Transition and Co-financing \(STC\) policy](#), and the [STC guidance note](#).

investments will involve a timeframe which is longer than a single three-year funding period. This should be noted, and a phased plan for sustainability should be included that estimates and justifies the likely timeframe for the investment.

Many countries face sustainability challenges due to having funded large numbers of HRH positions with Global Fund support in the past. Their experiences emphasize the importance of building sustainability into grants from the outset, even in low income countries. The continued relevance of positions created with Global Fund support should be demonstrated through health labor market analyses (see section 2.2). Good data on the numbers, types, locations and remuneration of HRH being supported will also allow evidence-based decisions about transition and sustainability planning.

Finally, more innovative approaches should be considered to address HRH challenges in a sustainable manner. These include improved integrated supervision and management training at facility level (section 2.3); performance-based financing and decentralized facility financing to give health workers autonomy and ability to deliver services (section 3.2); and community-based monitoring.^d

Box 2: Examples of sustainable HRH investments

In **Bangladesh**, the Global Fund used to pay salaries for 200 TB-leprosy community assistants (TLCAs). The Ministry of Health and Family Welfare committed to take over this responsibility within two years and fulfilled this commitment. The successful transition from Global Fund to domestic funding of these salaries was facilitated by the existence of an HRH strategy as part of the program, and by low turnover of staff in the national TB program so the political commitment remained in place. Additionally, the timing was right: the transfer took place shortly after a review of the operational plan budget, so it was possible to transfer the TLCA salaries seamlessly into the new budget.

In **Benin**, the RSSH stand-alone grant includes a contribution to the salaries for 17 pharmacists, 18 logisticians and 19 information and communications technology (ICT) specialists, with an agreement that these costs will gradually be transferred to the government within the life of the grant. The government had already committed to fund such positions, but the Global Fund contribution allowed them to be recruited earlier than would otherwise have been possible.

In **South Africa**, the Global Fund used to support an orphans and vulnerable children program which included salaries for social workers. The program continued in several provinces after Global Fund support for it ended, because the government absorbed the recurrent costs in provinces where the need was greatest.

2.2 Invest according to robust evidence about the HRH labor market

A strong and effective health workforce that is able to respond to current priorities can only be achieved by effectively matching the supply and skills of health workers to population needs, both now and in the future. The presentation of robust and reliable evidence and data which clearly demonstrate why an investment is needed will strengthen any application for Global Fund support for HRH. In countries with effective data systems in the health and related sectors (e.g. health management information systems (HMIS), human resources information systems (HRIS), national statistics, professional association and regulatory authority records), much of the required data can be obtained from these sources, especially if the data are collated within the national health workforce accounts (NHWA) platform.¹¹ However, many countries supported by the Global Fund either do not have the necessary information systems or have systems that require strengthening.

^d For more information on community-based monitoring please refer to the [Community Systems Technical Brief](#).

In such cases, the Global Fund will consider funding initiatives to create or strengthen the relevant data systems, including the NHWA platform (see section 3.4).

Improved systems for the collection, quality assurance, collation, analysis, dissemination and use of HRH data have the potential to: enable more strategic decision-making, improve efficiency (e.g. by identifying 'ghost workers'), and contribute towards effective monitoring and evaluation (M&E) of the Global Fund's HRH investments, in line with the Global Fund's M&E Framework^e and towards country commitments to report on the health workforce via NHWA.

Funding requests should demonstrate an understanding of the underlying conditions of the HRH labor market (both public and private sector). A robust health labor market analysis is essential if there are to be adequate policy responses to HRH challenges. For example, if there is a shortage of HRH, the appropriate response will depend on whether the shortage is supply-based or demand-based, or both. A supply-based shortage occurs when insufficient HRH are being produced/imported and retained. A demand-based shortage occurs when a country would not be able to meet the recurrent costs of meeting the demand for HRH. Considerations for Global Fund support within this context include the following:

- If there is a labor shortage (i.e., more funded positions or economic demand than can be met by the current supply of health workers), the Global Fund will consider supporting pre-service education to increase the number of health workers to the level required to meet population needs for the three diseases. Investments in pre-service should be accompanied by a recruitment and deployment plan following the graduation of pre-service trainees
- Conversely, if there are more health workers than public-sector funded positions (i.e., under- or unemployment of health workers), the Global Fund will consider funding additional positions if there is evidence to show that this is necessary to increase service coverage for the three diseases and the funding request includes a sustainability plan.
- In most low-income countries, both supply of health workers and economic demand fall short of population needs. In such situations a combined approach is required, investing both in funding additional positions and in scaling up pre-service education of health workers.
- In settings where a labor market analysis indicates that health worker remuneration is too low to achieve the delivery of services, the Global Fund will consider providing support to improve remuneration to achieve better retention and geographical distribution of health workers.

If a suitable health labor market analysis does not already exist, the Global Fund may support its development, e.g. by funding technical assistance to collate and analyze the necessary data. This analysis will lead to investment decisions that are informed by understanding of financing gaps, fiscal space and capacity to absorb HRH in the future. In addition to labor market analyses, HFAs can be used to track health worker satisfaction, payment of salaries, quality of supervision and in-service training, amongst other factors.

Box 3: Examples of investing according to an understanding of the HRH labor market

In **Georgia**, the Global Fund supported an assessment of the availability and distribution of TB specialists. The assessment found that there were not enough specialists to staff all 65 district TB units, and that the system was not generating enough new TB specialists to counteract the shortage. The Global Fund then funded the design and delivery of a 3-month training course to equip other medical specialists working at PHC level (e.g. family doctors, gastroenterologists, cardiologists) with the skills to manage TB cases. Incentives to participate include credit under the

^e For more information, see the [Global Fund monitoring and evaluation framework](#).

country's continuing professional development program and additional remuneration (paid by the Global Fund).

In **Sierra Leone**, the Directorate of HRH of the Ministry of Health and Sanitation asked WHO to lead a health labor market assessment, funded by the Global Fund. The assessment will focus on areas where there are data gaps, such as the private sector workforce and attrition rates. It will also include a CHW component to ensure it takes into account the entire health workforce. At the same time, the Global Fund has commissioned a detailed evaluation of the CHW program, the results of which will feed into the broader health labor market assessment.

2.3 Invest in integrated, people-centered HRH approaches

The Global Fund's investments in HRH aim to support the retention and scale-up of a health workforce which strengthens the response to the three diseases, but in the context of an integrated PHC approach. A lack of coordination between different disease programs can result in fragmented service delivery, and uncoordinated tasks and approaches for health workers. Sustainability and effectiveness can be enhanced through better integration of services and HRH at the PHC and community levels, as appropriate, in a way that aligns with government strategies (where these exist) and existing service delivery structures. An integrated approach is more efficient and avoids the distortionary effects of disease-specific HRH management, which may compound pre-existing geographical inequities in the accessibility of HRH.

One of the strategic approaches underpinning the WHO Framework on Integrated People-Centered Health Services (IPCHS) is ensuring that the health workforce has "an appropriate skill mix in order equitably and sustainably to meet population health needs. Health workers must be organized around teams and supported with adequate processes of work, clear roles and expectations, guidelines, opportunities to correct competency gaps, supportive feedback, fair wage, and a suitable work environment and incentives".¹²

Integrated care is managed and delivered so that people receive a continuum of: health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services, coordinated across the different levels and sites of care within and outside the health sector, according to their needs.¹³ Moving towards more integrated service delivery does not necessarily mean that everything must be integrated into a single package; nor does an integrated HRH approach mean that a single health worker is responsible for the provision of all services. Instead, it could mean working towards ensuring that health workers have coordinated education, training, integrated supportive supervision, management training at the clinic level, remuneration and career development prospects, to enable them to work across disciplinary and organizational boundaries to respond to service users' needs and preferences. It may require the creation of new roles for the coordination of care across boundaries, and/or the development of new skills and competencies, some of which may be non-clinical in nature (e.g. effective communication with service users, supporting self-management of health conditions).

There are many opportunities for integration across a variety of contexts to ensure that patients' multiple needs are addressed at once. In moving towards more integrated programming, applicants should attempt to identify synergies between disease-specific and other PHC and community HRH investments, particularly reproductive, maternal, newborn, child and adolescent health (RMNCAH) services. Start by considering which interventions should be packaged together, then address how HRH can best be organized to deliver the package within the PHC platform. For more information on integrated approaches, refer to the RSSH Information Note and the supporting technical brief on RMNCAH.^f More information and examples of successful integrated approaches can also be found in WHO publications.^{14 15}

^f For more information see the [RSSH information note](#) and [RMNCAH technical brief](#).

Box 4: Examples of integrated HRH investments that aim to build resilient and sustainable systems for health

In **Afghanistan**, the Global Fund supports two types of integrated health service provision in locations without easy access to a health facility. The Family Health House model deploys a small team of health workers to provide integrated services, including at least one community midwife and at least one community health nurse, both with responsibilities for HIV, TB, malaria and other types of health care. Local women are nominated by their community leaders to be trained to fulfil these roles, which increases their acceptability to the community and the likelihood that they will continue to provide services locally after they are qualified. The Public-Private Partnership model involves the deployment of public-sector midwives within private sector premises such as drug stores in communities without easy access to a public-sector health facility. This approach will be evaluated to assess whether, as anticipated, the presence of community health workers brings in additional business for the private sector provider, and if this will incentivize them to take over the employment of the HRH in the future.

In **Ethiopia**, the Global Fund has supported integrated refresher training (IRT) for health extension workers (HEWs). Following their pre-service education, gaps in HEW skill and service delivery were identified, indicating a need for periodic refresher training to ensure that HEWs retained the core competencies expected by the health extension program. To avoid fragmentation and HEWs being pulled away from their work too often, the Federal Ministry of Health and regional health boards coordinated a modular IRT program covering the training needs of various disease programs including HIV/AIDS, TB and malaria.

In **Zambia**, the Global Fund has invested in integrated HIV, TB and cervical cancer services, including the training of HRH in antiretroviral therapy centers to conduct cervical cancer screening. In this context, the integration of these services makes sense because prevalence of both HIV and invasive cervical cancer is very high (making it important to reduce cervical cancer-related mortality and morbidity among women with HIV).

See also the example on community health workers in Benin in Box 6.

Community health workers (CHWs)

The WHO Global Strategy on HRH calls for innovative, community-based models for health care delivery. Deployment of CHWs can be a cost-effective strategy for the early recognition, reporting and management of priority infectious diseases.¹⁶ They can also increase equity by improving access to and coverage of basic health services, especially if the CHWs provide a range of services across an integrated program.

Evidence shows that CHWs can be effective and cost-effective in delivering a range of promotive, preventive and curative services. For communities, families and individuals, they provide health education; preventive health support and assistance; curative health and social services, as well as referring and facilitating access to higher levels of the health system. They create a bridge between providers of health, social and community services and communities that may have difficulty in accessing these services.¹⁷ CHWs can also be a valuable resource for community engagement activities and routine data collection to inform service delivery improvement (see Section 2.2). The term CHW includes a wide variety of roles, from formally trained providers of health care and education to less formal roles such as peer educators and community treatment and testing workers. CHWs are considered by WHO and the Global Fund to be part of the health workforce, even if they are volunteers and/or not providing clinical care services (e.g. outreach workers or peer educators). CHW plans and policies should be embedded in the broader health workforce and health system agenda; their design and implementation may benefit from alignment with the WHO guideline on health policy and system support to optimize CHW programs (Box 5).¹⁸

If a country has a specific policy framework on CHWs support by the health system, proposed investments in CHWs should be in alignment with that policy or strategy, whether the CHWs are

employed by the government directly or by non-governmental organizations (NGOs). In countries without such policies and strategies, it may be appropriate for the Global Fund to support their development, especially if there is evidence that investment in CHWs would be a cost-effective way to improve outcomes across one or more disease programs as part of a multidisciplinary team approach.

Box 5: Key policy recommendations to optimize CHW programs

Successful delivery of services through CHWs requires evidence-based models for education, deployment and management of these health workers.

The starting point for effective design of CHW programs is a sound situation analysis of population needs, health system requirements and resource implications. The role of CHWs should be considered in relation to other health workers to integrate CHW programs into the general health system and existing community structures in an appropriate manner.

Key recommendations to optimize the design and performance of CHW programs include:

- selecting CHWs for pre-service education, considering minimum education levels appropriate to the tasks to be performed, membership of and acceptance by the local community, promotion of gender equity, and personal attributes and capacity of the candidates;
- determining duration of pre-service education in the local context based on competencies required according to: expected role, pre-existing knowledge and skills, and conditions of practice;
- including in the contents of pre-service education: promotive and preventive services, diagnostic and curative services where relevant, and interpersonal and community mobilization skills;
- balancing theoretical and practical pre-service education, and blending face-to-face and e-learning where feasible, with adequate attention to a positive education environment and faculty;
- using competency-based formal certification for CHWs who have successfully completed pre-service education to improve CHW quality of care, motivation and employment prospects;
- adopting supportive supervision strategies;
- providing practicing CHWs with a financial package commensurate with the job demands, complexity, number of hours worked, training and roles that they undertake;
- providing paid CHWs with a written agreement specifying role and responsibilities, working conditions, remuneration and workers' rights;
- offering a career ladder to well performing CHWs;
- determining an appropriate target population size in relation to expected workloads, frequency, nature and time requirements of contacts required;
- collecting, collating and using health data by CHWs on routine activities, including through relevant mobile health solutions, while respecting data confidentiality and security;
- adopting service delivery models comprising CHWs with general tasks as part of integrated PHC teams, in which CHWs with selective tasks can play a complementary role;

- adopting strategies for CHWs to engage communities, including in CHWs selection processes, and to harness community resources;
- ensuring adequate availability of commodities and consumable supplies to CHWs.

The Global Fund may support CHW education, remuneration, management/supervision and/or support, considering their long-term employability rather than viewing them as a ‘short-term fix’. Therefore, as well as addressing immediate health needs, consideration should be given to how the role of CHWs might evolve in the future to reflect changes in epidemiology and health system requirements. In some countries, the Global Fund will consider funding salaries for CHWs who are employed by NGOs or civil society organizations (CSOs) rather than by government. This may occur for a number of reasons, such as if the work they do is unacceptable in the current political climate or if NGOs/CSOs are important providers of health services but the government does not have a mechanism under which it can contract out health services. CHW remuneration and job titles should be harmonized among donors and aligned with government pay scales and job classification systems, even if the CHWs are not employed directly by the government (taking into account that other benefits such as pensions may not be directly comparable). In such cases, applications should include either an exit strategy which respects the human and employment rights of CHWs, or a plan for the government to absorb the costs, either directly or via the introduction of a mechanism for contracting out to NGOs, even if it is expected to take many years to achieve this plan.

Box 6: Examples of Global Fund investments in community health workers

Benin has a national CHW strategy, which the Global Fund is supporting by funding the recruitment, training and salaries of CHWs to expand and scale up integrated community health services, in accordance with the country’s strategic priorities (HIV/AIDS, TB, malaria, hepatitis and reproductive, maternal, newborn and child health). The CHW role is being expanded to include TB case detection and HIV prevention, follow-up and support, which are being added to the CHW integrated training curriculum. The government has made a commitment to contribute to CHW salaries from funds available at the local government level.

In **Morocco**, the Global Fund grant pays salaries for core positions in the implementation team and funds CHW training, especially for peer educators. The scope of practice of CHWs is clearly set out in the national strategic health plan and the grant budget. The CHW program is implemented by a network of civil society organizations, one of which deploys a small number of CHWs to work part-time in the community and part-time in a health facility. This improves links and communication between the formal health system and the CHW network, with the potential to improve trust and continuity of care when service users are referred to the health facility from the community.

2.4 Engage in strategic partnerships

The Global Fund’s strategy in relation to HRH is to work with countries to identify gaps in HRH that affect efforts to tackle the three diseases and related services. Funding requests should explain how the proposed interventions will support countries to address gaps in a sustainable way, until domestic resources are made available.

Many organizations and agencies have responsibilities in relation to HRH and the Global Fund is committed to working in partnership with them. WHO facilitates the development of global policies and guidelines on HRH; other international agencies also have an important role to play on certain specific issues, such as the International Labor Organization (on employment conditions), UNICEF and UNFPA (who are particularly active in issues concerning maternal and child health, including

on some workforce aspects), UNAIDS (e.g. as catalyst of the UN collaboration on the Zero Discrimination in Health Care agenda). National governments are responsible for ensuring that national HRH policies, strategies and plans respond to population needs and citizens' expectations, informed by evidence-based global policies and strategies as relevant and appropriate. The World Bank and UNDP can also be engaged in a policy dialog about creating fiscal space to absorb recurrent HRH costs. WHO has a technical support role in HRH, so WHO country offices, if requested by countries, can support HRH policy dialog and the development or strengthening of HRH plans and health labor market analyses. Finally, it is important to engage with donors, including disease specific ones who may also be funding HRH such as PEPFAR (see Box 7), as well as various alliances, such as Gavi, the Global Partnership for Action to Eliminate All Forms of HIV-Related Stigma and Discrimination, and the Partnership for Maternal, Newborn and Child Health.

In challenging operating environments (COEs), efforts should be made to engage with the humanitarian sector as there is an even greater need for strategic partnerships to ensure coordination due to a wide variety of actors. It may be appropriate to discuss with partners how to coordinate to identify synergies, align strategies and avoid duplication of effort around HRH issues.

It is part of the Global Fund's role to negotiate and agree on specific grant-related issues such as HRH remuneration levels (see section 3.2). Dialog with ministries of health (MoH) is an essential part of this process, but in some contexts, it will also be appropriate to engage with other parts of government, e.g. HRH and planning directorates of other ministries (education, finance, labor), civil service, and/or the private sector to ensure that efforts are harmonized.

Box 7: Examples of engaging in strategic partnerships

Georgia has recently introduced an integrated screening program for active case detection of TB, HIV and hepatitis B at the primary health care level. The Global Fund worked in partnership with the private sector, central and local government on this initiative: the Global Fund supported the design and delivery of training for doctors and nurses on case detection and data management, central government provided test systems and consumables, and local government provided incentive payments for health facilities to participate. Because most PHC services are provided by the private sector, it was necessary to sign a memorandum of understanding with the relevant network of service providers, so that sufficient doctors and nurses could be released from their duties to attend training and provide these additional services. The program was successfully piloted in 8 districts, and it is planned to expand it to other districts from 2019.

In **Eswatini** and **Lesotho**, the Global Fund and PEPFAR are the main donors providing HRH investments. The two organizations jointly supported the preparation of a detailed inventory of the donor-supported health workforce, in recognition of the need for their HRH activities to be aligned with national policy, properly coordinated and based on robust evidence. The inventories documented health worker numbers, locations, salaries and roles. Positions were mapped against a government organogram, so that the salaries paid by donors could be compared against government salary scales¹⁹. In **Eswatini**, the inventory highlighted major discrepancies between the salaries being paid by the government, Global Fund and PEPFAR. Most of these have since been harmonized through an official circular from the MoH and the rest is work in progress. The inventory also found that the CHW training and remuneration given by Global Fund and PEPFAR was not fully comparable, so work is ongoing to align. In **Lesotho**, the inventory enabled the preparation of an interactive HRH planning dashboard which enabled users to alter various parameters and thus estimate the likely costs and impacts of different policy scenarios. The results were shared with representatives of three government ministries: finance, health and public service, to inform their discussions about HRH strategy and transition planning. As a result, the government acknowledged the need for: better HRH data systems, an HRH strategy, better coordination of government requests for HRH support including alignment to national remuneration frameworks, and a sustainability and exit plan from the start of the investment.

3. Types of HRH investments supported by the Global Fund

There are evidence-based interventions and strategies to overcome HRH challenges. For example, radical improvements to the quality of the workforce are possible if the education and health sectors collaborate to implement a transformative education agenda.²⁰ Improvements to health worker motivation, satisfaction, retention, equitable distribution and performance can be achieved through an integrated package of recruitment and retention policies (e.g., financial and non-financial incentives), regulatory measures, and service delivery reorganization.²¹ Efficiency can be improved by working towards a user-centered PHC delivery model. This involves adopting a diverse, sustainable skill mix, and harnessing the potential of community-based and mid-level health workers as part of multi-disciplinary primary care teams.^{22,23}

Depending on the country context, relevant HRH interventions may focus on one or more different elements of the health labor market, including:

- increasing the supply of HRH through education and production of new health workers;
- support to remuneration and deployment of existing and new health workers including retention and motivation mechanisms, consistent with Global Fund budgeting guidelines;⁹
- increasing the competencies of health workers through in-service training; and
- strengthening capacity for effective policy-making, governance and workforce planning/management (including strengthening data and integrated supportive supervision systems), using the Global Strategy on HRH and sufficient to meet the requirements of the International Health Regulations (2005)²⁴.

The successful implementation of the above types of intervention, but especially remuneration, motivation and retention, is highly dependent on the existence of a national platform which facilitates the alignment of all HRH-related activities in the country. If no such platform exists, the Global Fund will consider supporting its development under country ownership.

The relevance of these interventions will be determined by the country context, including both disease burden and the type of support currently provided by the Global Fund and other donors, as well as the existing HRH situation and economic capacity. More detailed guidance differentiated by context is provided in each section below and is summarized in Table 1 in section 5.

3.1 Education and production of new health workers

Increasing the supply and/or competencies of health workers is essential for the delivery of ambitious health goals including those related to HIV, TB and malaria. Therefore, pre-service education interventions are potentially relevant in all countries supported by the Global Fund, although the focus of such action will vary depending on country type and context (see Table 1 in

⁹ See the Global Fund's [Guidelines for Grant Budgeting](#) and [Annual Financial Reporting](#).

section 5). Priority should usually be given to investments in pre-service education over in-service training, depending on context.

The education of PHC workers (e.g. primary care doctors, nurses and midwives, CHWs and outreach workers for key population groups) is particularly important because these occupation groups most commonly deliver integrated services related to the three diseases.

It is important to improve the quality of education and ensure curricula are up to date, especially in countries which do not produce graduates with all the necessary competencies for the prevention, diagnosis, surveillance/reporting and treatment of the three diseases. Pre-service education should also be prioritized in countries where there are insufficient health workers to meet the need for health services, and where lack of capacity in health worker education institutions is a barrier to scaling up production. Relevant interventions may include:

- revising curricula or instruction modalities (for example, to facilitate task-sharing^h initiatives or to include education on human rights issues and specialties such as multiple drug resistant TB);
- training health educators;
- enhancing the capacity and improving the quality of education institutions;
- updating systems for accreditation and quality control of health worker education;
- supporting governments to ensure that quality standards are aligned across the public and private sectors; and/or
- under exceptional circumstances (e.g. a COE where the education system is not functional), supporting students to be educated outside of the area/ country of origin in the context of a framework facilitating their return to practice in the country of origin upon completion of training.

Pre-service education also represents an opportunity to address gender and ethnic imbalances and increase gender- and ethnicity-sensitivity in the health workforce, and to improve the human rights and medical ethics competencies of health workersⁱ. All countries supported by the Global Fund should ensure that gender and ethnicity balance and responsiveness are included in all health workforce policies. Relevant activities may include:

- creating a sufficient supply of female and ethnic minority health care providers in countries where there are cultural barriers to women consulting male health workers or those from a different ethnic group;
- building the capacities of health and community workforces to deliver gender and ethnicity-responsive services, and that take into account human rights and medical ethics; and
- introducing mechanisms to ensure gender and ethnic equity in access to education and training programs.

Similarly, pre-service education presents an opportunity to recruit students from underserved populations and parts of the country, in the anticipation that are more likely to practice in these areas once they are qualified (see also section 3.2).

^h Task sharing involves a more rational allocation of roles, e.g. by moving some specific tasks from highly-qualified health workers to health workers with shorter training durations who can deliver them with equal effectiveness and quality. See http://www.who.int/healthsystems/task_shifting/en/

ⁱ Training healthcare providers on human rights and medical ethics is one of the recommended programs to reduce human rights-related barriers to HIV, TB and malaria services. For further guidance, see: https://www.unaids.org/sites/default/files/media_asset/Key_Human_Rights_Programmes_en_May2012_0.pdf; <https://www.who.int/gender-equity-rights/knowledge/ending-discrimination-healthcare-settings.pdf>. For further details on the human rights capacity building program, see the [Global Fund technical briefs](#) on HIV, human rights and gender equality; TB and human rights; and Malaria, gender and human rights.

Whereas most middle-income countries have the potential to finance the required investment in health worker education through domestic resources, in the short and medium term many low-income countries and many COEs will require additional support. Funding requests must show clearly how the proposed intervention(s) will contribute to national health system and HRH strategies, and explain how the additional/more competent health workers will be employed within the health system (public or private sector).

Box 8: Examples of Global Fund investments in pre-service education

In **Ethiopia**, the Global Fund supports the upskilling of HEWs to give them the additional competencies needed to deliver integrated health services, especially in underserved areas. New categories of HEW (levels 3 and 4) have been created to acknowledge those with these additional competencies and those trained to work in specific environments. The Federal Ministry of Health plans to enroll 18,500 of the country's 38,000 HEWs into level 4 training by 2020: 7,000 on a two-year direct entry course and 11,500 on a one-year bridging course. The Global Fund grant will fund the training and deployment of all those on the bridging course. The process is led by the Federal Ministry of Health, in full alignment with the national strategic plan.

In **Sierra Leone**, a recent health workforce gap analysis highlighted a major shortage of high-level nurses, including state registered nurses (SRNs) and nursing and midwifery educators. The Global Fund is supporting 200 state enrolled community health nurses to pursue a bridging course to become SRNs and supporting 20 SRNs to study to become nurse and midwife educators. This will expand the country's capacity to educate nurses and midwives, support sustainability by reducing dependence on foreign tutors, and help to fill the identified gap in the SRN workforce.

In **Zambia**, the Global Fund is supporting the education of 500 community health assistants (CHAs) per year, and is equipping them with supplies including bicycles, shoes, lab coats and mosquito nets. It is also co-funding their salaries with the government. The newly-qualified CHAs will mainly be deployed to rural areas, with the objectives of improving access to preventive and curative services and reducing the burden on rural nurses by taking on some of the more routine activities currently being performed by them.

3.2 Remuneration and deployment of health workers

In countries facing a demand-based shortage of health workers, simply producing more workers may not be effective. This is because the national budgets of low-income countries and COEs may not be sufficient to cover basic recurrent costs such as salaries in the short- to medium-term, resulting in increased rates of unemployment or international migration, which represents a waste of scarce resources. Where there is evidence that fiscal space and economic demand for health workers is insufficient, but there is great need for more health workers, Global Fund resources may be allocated for salaries (full salaries or contributions to salaries) for relevant health workers, but only with good justification, which should include an assessment of domestic and international sources of HRH financing available to the country.

Funding requests for scaling up the health workforce must comply with current Global Fund budgeting guidelines^j and should include either a short- to medium-term plan to transition salaries to the government payroll (especially important for countries preparing for transition away from Global Fund support) or justify why this is not feasible in the short to medium term. Transition plans should explain how the health system will maintain a larger health workforce over the long term and specify how salary support will be taken over by domestic funding (for example by describing

^j See the Global Fund's [Guidelines for Grant Budgeting](#) and [Annual Financial Reporting](#).

the mechanism(s) to be used to increase health funding and supporting fiscal space and health workforce analyses).

Funding requests must show how requests for support with salaries are in line with national human resources procedures and salary scales (both government^k and non-government), or how the request is part of a deliberate HRH strategy adopted by the government to change the *status quo*. Where no national strategy or pay scale exists (or exceptional circumstances do not permit alignment to it), justification for the proposed remuneration level should be provided (e.g. benchmarking against the most efficient and cost-effective costing structures of countries at a similar level of socio-economic development).

In many countries, the process of setting salaries is complicated by the presence of other donors whose aims overlap with the Global Fund's but whose HRH policy and practice may not be aligned with the country's and the Global Fund's. In these situations, unilateral decisions (for example, to raise or limit health worker remuneration) are likely to have undesirable consequences, and applicants are encouraged to enter into dialog with government, other donors, UN agencies and other relevant actors. If the country has an HRH plan (either stand-alone or as part of a broader health or public-sector strategy), which is based on a robust health labor market analysis or needs assessment, this can be used to facilitate country-led dialog and harmonization between partners. If not, technical assistance can be offered by one or more partners to develop such a plan. Ideally, the government should take the lead on harmonization initiatives to ensure country ownership of the issue, while considering that health workers need decent terms and conditions of employment, and that salary is only one aspect of adequate working conditions.

Examples of Global Fund investments in salaries, as part of a broader support strategy, can be found in: Box 2 (Bangladesh and Benin), Box 4 (Afghanistan), Box 6 (Benin), Box 7 (Eswatini and Lesotho), Box 8 (Zambia) and Box 9 (Mali).

Motivation and retention

Many countries supported by the Global Fund experience challenges relating to retention and motivation of HRH. To ensure that investments in education are not wasted and to ensure that disease programs can be implemented successfully, the Global Fund will consider funding interventions to improve retention and motivation, especially in rural and remote areas of low-income countries and COEs. For instance, retention bonuses and salaries, as well as non-financial incentives can be used for under-served areas to improve access to services, informed by labor market analyses, HFAs and demographic health survey data.

Evidence shows that retention schemes are more effective when different interventions are implemented together as a package, as opposed to being pursued disjointedly.²⁵ Relevant activities may include:

- educational interventions that promote the enrolment of students with rural backgrounds (see section 3.1) and support the expansion of education infrastructure in peripheral areas, including rural internships in training programs;
- regulatory interventions such as implementing task-sharing reforms, introducing new professional and/or lay occupation groups with specific rural oriented professional profiles, introducing voluntary/incentivized rural postings for new employees;
- financial and non-financial incentives, for example, professional development opportunities, hardship allowances, grants for housing, extra holidays, family support, professional support, and tools for improved communication;

^k Alignment with national salary scales is one of the enabling factors that should be in place before a country can begin the process of planning for transition away from Global Fund support. See the Global Fund's [Sustainability, Transition and Co-financing policy](#).

- supportive supervision which is a process which promotes continuous improvements in the quality of care and health worker motivation and performance, by providing the necessary leadership and support for quality improvement processes and by emphasizing mentorship, joint problem solving and two-way communication between supervisors and supervisees. Importantly, the Global Fund strongly encourages an integrated approach, where different diseases are covered under the same supervision visit, as this will help improve efficiency.
- improved working conditions and career development opportunities, for example safe and supportive working environment, outreach support, career development programs, professional networks, public recognition measures, etc.

Strengthening of human resource management capacity (see section 3.4) is also likely to improve HRH motivation and retention.

Salary top-ups will not be supported by the Global Fund under any circumstances. Other types of financial incentive may be considered, but as these can have distortionary effects (such as demotivating workers who do not receive them and unduly shifting priorities), they should be avoided in favor of more comprehensive strategies for public sector reform to improve working conditions (including remuneration) of the existing health workforce.

In some circumstances, however, incentives may be necessary for successful delivery of disease programs in the short term. For example, if health workers are not motivated to provide outreach services to remote areas, it may be appropriate to pay travel and accommodation expenses to ensure that crucial services such as case detection are provided throughout the country. Requests for funding for financial incentives must comply with current Global Fund budgeting guidelines,¹ and where possible should be aligned with the payments made by other donors. Applicants should provide a strong justification for such interventions, an assessment of the implications of these interventions and where appropriate include a plan to phase them out.

Performance-based financing (PBF) is commonly used to provide additional remuneration which is conditional on the achievement of performance targets. It can be applied to individuals as well as organizations or health entities (e.g. health clinics). For management teams, countries should shift from top-ups to performance-based bonuses. At the clinic level, PBF interventions can greatly incentivize performance, but care needs to be taken to avoid: (a) a focus on certain interventions to the detriment of others, (b) supplier-induced increases in demand for services, increasing both the supply of particular health services and the cost of these services, (c) the possibility of false/inflated reporting in contexts with weaker monitoring and contract enforcement capacity, and (d) fraud in settings characterized by weak financial management capacity. Facility based PBF interventions can be accompanied by decentralized facility financing to give health workers autonomy and the ability to actually deliver services (decentralized financing interventions can also be delivered without PBF interventions).

In countries where the national health system has a functioning PBF policy and system in place, Global Fund support may be provided to ensure that the incentives include an appropriate level of focus on the three diseases as part of a broader and balanced package of PHC services. In addition, countries should shift top-ups to performance-based bonuses for the management team.

Box 9: Examples of Global Fund investments in retention and motivation

In **Mali**, CHWs have in the past been demotivated by an unreliable system of payment and a lack of support from the health facilities to which they are attached. To address these issues, the Global Fund is working with the Ministère de la Santé et de l'Hygiène Publique du Mali and the national disease programs to utilize a mobile banking system for improving the reliability with which CHW

¹ See the Global Fund's [Guidelines for Grant Budgeting](#)

salaries are paid and to establish within the health system a new cadre of supervisor, called “dedicated supervisors”, responsible for the supervision of CHWs. It is supporting the recruitment, training, equipment and salaries for 150 dedicated supervisors covering all functional CHWs in the country at a ratio of 1 dedicated supervisor to 18 CHWs. Qualified health workers as well as well-performing CHWs and other community-based actors will be eligible to become a dedicated supervisor, providing a clear career path. The supervision will be supportive, involving regular individual and group supervision meetings during which the supervisors will provide coaching, supply the CHWs with the equipment and commodities they need, and ensure that they are paid. Operational research in Mali provides evidence that this type of investment can be effective. The investment is integrated within the health sector reform currently under way in Mali, and CHW salaries are in line with government pay scales, which bodes well for sustainability. A robust evaluation of the investment will be conducted in 2021-2022, with a view to providing the evidence needed for encouraging the government to absorb the costs of the CHW supervisors.

3.3 In-service training

Increasing the competencies of the existing health workforce may be necessary to ensure capacity to deliver health services in accordance with global or national protocols. As with pre-service education, the in-service training of PHC workers (e.g. primary care doctors, nurses and midwives, community health workers and outreach workers for key population groups) is particularly important (see section 3.1).

In-service training programs can be necessary to update health workers on new procedures and guidelines, or in COEs where the pre-service education system is not functioning adequately. Support for building systems for continuing professional development will also be considered. For instance, in-service training can be provided for managers at the facility and higher levels to improve their management and leadership skills.

Requests for support for in-service training must be justified and clearly articulated. In-service training activities should be designed and organized to minimize health workers’ absence from their duty stations and avoid disruption of service delivery. Whenever possible, in-service training should also be integrated within broader training packages that include at least one of the three diseases, but ideally also go beyond the three diseases (for example, integrated management of childhood illnesses, or integrated community case management). Requests must also identify needs and gaps and indicate: (a) how the proposed training activities align with national in-service training strategies, plans and systems to avoid duplicative/ repeat trainings,²⁶ and (b) plans for embedding the relevant competencies in pre-service education so that it will not be necessary to conduct future in-service trainings on the subject.

3.4 HRH policies, governance and workforce planning/management

Effective governance and management are required for the successful implementation of all types of HRH interventions, so this type of support is potentially relevant in all countries supported by the Global Fund (see Table 1 in section 5), especially to rebuild the foundations of effective HRH management systems in COEs emerging out of a crisis.

Relevant activities may include building or strengthening capacities to:

- lead short- and long-term health workforce planning and development to meet national population and health system needs; global frameworks, such as the Global Strategy on HRH and the International Health Regulations (2005) provide a reference framework to inform identification of relevant policies and targets at national level;
- mobilize and use resources effectively, efficiently, equitably and accountably;

- create better working conditions, performance management systems,^m supportive supervision mechanisms, reward systems and career structures for professional and lay health workers, including for CHWs who identify as, or work with highly marginalized or criminalized populations.
- strengthen in-service training systems to improve links and alignment between continuing professional development and pre-service education;
- set strategic policies on regulation and education/training of health workers;
- identify suitable strategies to engage in a collaborative manner and enter into contractual relations with CSOs and the private sector;
- manage the HRH payroll and other financial management mechanisms to enhance efficiency, accountability, and transparency in managing, monitoring and reporting of HRH spending;
- improve human resource management capacity, including the effective usage of human resource information systems (HRIS);
- obtain, analyze and utilize HRH and labor market data. Under the WHO Global Strategy on HRH,²⁷ there is a call for harmonization of HRH data in terms of definitions, analysis and dissemination, and for the creation of NHWA.²⁸ There is global guidance on a minimum data set for a health workforce registry,²⁹ and on collecting HRH data for workforce planning.³⁰ Countries requesting support for the creation or strengthening of a data system should familiarize themselves with these concepts and ensure that requests for funding for this activity are aligned with these global recommendations; and/or
- formalize new health worker occupation groups (e.g. CHWs), standardizing their education, regulation and integration into the national health system.

In some settings, interventions to scale up the education or employment of the health workforce may be more effective if they target a decentralized level or are affected through non-state actors, where results and lessons for scale-up can be seen more quickly. In these settings, capacity will need to be built or strengthened at the relevant administrative level(s) and in the relevant organizations (for example, public sector, NGO, private sector and/or CSOs).

Strengthening data systems and information and communications technology (ICT) can make investments in HRH more strategic and catalytic. Catalytic interventions are those which will make things happen more quickly and/or with greater impact than would otherwise be the case. In the context of HRH, ICT and data systems can be of relevance in relation to: health workforce planning and deployment, e-learning, electronic health records, telemedicine, clinical decision-making tools, links among health workers and between health workers and patients, supply chain management, payroll management, performance management and feedback loops, patient safety, service quality control, and the promotion of patient autonomy. ICT creates opportunities to enhance HRH support across all the interventions described above, from education to deployment, incentives and performance management. When working in strategic partnerships (see Section 2.4), data collaboration protocols and agreements may be necessary to promote data sharing and avoid duplication of systems. The adoption of ICT elements in the context of Global Fund grants are potentially relevant in all settings but should be accompanied by justification that this represents both a feasible and cost-effective approach in the national context.

Box 10: Examples of Global Fund investments in building capacity for HRH management

^m Performance management is a process of ongoing communication between a worker and a supervisor, which aims to ensure that the worker understands and is motivated to achieve the employer's objectives.

The Global Fund has supported the establishment of an HRH training unit within the **Liberian** MoH. The unit coordinates the training at national level, and delivery of the training is decentralized to county level. The training unit employs several specialist HRH staff including a pre-service education coordinator and an in-service training coordinator. The aim of the unit is to ensure a structured, targeted approach to planning the dates, locations and participants for training sessions such that the necessary training is delivered while avoiding duplication and inefficiency. Training records have been integrated into the HRIS. An accompanying supportive supervision system has been implemented, to identify training needs and gaps at health facility level. Among other training activities, the unit has coordinated a round of integrated training to sensitize health workers to updated clinical guidelines for HIV, TB and malaria. The training unit is supported by a national health workforce technical working group, which helps to coordinate the HRH funding received from different sources.

In **Sierra Leone**, the Global Fund is supporting the introduction of District HRH Officers to ensure effective implementation of HRH management strengthening activities. They will: serve as a link between national- and district-level Ministry of Health and Sanitation, coordinate HRH stakeholders at district level, and facilitate human resource-related requests from health workers.

4. Monitoring of Global Fund HRH investments

Global Fund grants that include a substantial component of HRH investment should routinely include monitoring and reporting on results in terms of strengthening workforce production, availability, remuneration, retention and distribution, as relevant. The Global Fund modular framework handbookⁿ has four main interventions under the RSSH module on HRH: (1) education and production of new health workers, (2) support to remuneration and deployment of existing/new health workers, (3) in-service training, and (4) HRH policy and governance frameworks. More information on each intervention can be found in Section 3 of this technical briefing note, as well as in the handbook.

The HRH indicators in the modular framework align with the broader framework of HRH indicators in the NHTWA platform. The core list of RSSH indicators provides a basis to track progress on the four types of HRH investment listed above, and thus to improve accountability for HRH investments. In addition to the HRH indicators included in the framework, applicants should consider additional HRH indicators as relevant to their request, so that implementation and effects can be properly monitored and evaluated. Possible sources for additional HRH indicators include the NHTWA handbook of HRH indicators.³¹ °

For investments in integrated HRH approaches (see section 2.3), it may also be appropriate to monitor and report on metrics which reflect integrated service delivery, such as integrated supportive supervision. HRH data arising from monitoring of HRH outputs supported by the Global Fund (e.g. number of health workers trained, remunerated, incentivized to serve in rural areas, etc.) can inform the development of country- or grant-specific strategic and policy decisions. In addition, the ongoing development (in collaboration with WHO) of a tool for HRH impact modelling will provide an evidence-based tool to assess the impact of HRH investments made by the Global Fund on service coverage relating to the three diseases and health outcomes.³²

ⁿ See the Global Fund's [Modular framework handbook](#).

^o In addition, metrics for the training of healthcare providers on human rights and medical ethics are also available, including validated indicators on stigma and discrimination in healthcare (<http://www.indicatorregistry.org/export-indicators/23>) and data collection tools (https://www.healthpolicyproject.com/pubs/281_SDQuestionnaireManual.pdf).

5. HRH investments in different country contexts

Table 1 provides high-level, illustrative examples of the types of HRH investments that can be considered in different country contexts. It is divided into four main areas of intervention: cross-cutting interventions for HRH policies, governance and management; education and training; support for demand for health workers through the creation of funded positions; and retention, motivation and performance management of health workers. A '+++' sign in the box indicates that type of investment is highly relevant in that context, a '++' sign indicates relevance, and a '+' sign indicates potential relevance with justification.

Specific considerations for COEs and countries preparing for transition are outlined below.

Challenging operating environments

COEs may be found in countries with chronic weaknesses in capacity and governance as well as countries facing crises such as conflict, disease epidemics or natural disasters. They therefore may occur in countries from across the development continuum. In many COEs, there are severe deficiencies in the availability of HRH and in the quality of services that they can provide. There will therefore be a need to support a wide range of HRH activities, so it is important to be strategic. This is especially important in fragile contexts where government authorities are not able to coordinate HRH efforts. In such contexts, non-governmental Principal Recipients (PRs) are often selected, which need to coordinate the HRH activities of sub-recipients to avoid fragmentation and distortion.

In COEs, building management capacity is necessary to ensure that HRH support is effective. When the acute phase of emergency response is over, there will be a need to recover or rebuild the health system, including HRH. This can represent an opportunity to create a more resilient and sustainable system than existed before the emergency.³³ At this stage, therefore, requests for support should take into account longer-term as well as immediate needs, and also the need to be responsive to opportunities as they arise. Priority will be given to interventions aimed at building and strengthening capacity for HRH education, management and planning (see sections 3.1 and 3.4), in collaboration with other stakeholders if appropriate. In many COEs, salaries are low and/or payroll systems not functioning properly, with obvious implications for HRH retention and motivation. Many will also require support with scaling up of pre-service education (see section 3.1), which may include support for students being educated outside of the country if the country's own education system is not functioning adequately.

Where national budgets are insufficient to cover basic recurrent costs such as salaries, Global Fund resources may be allocated for salaries (see section 3.2), especially if the Global Fund is the only partner with this mandate in a country.

Countries preparing for transition

There are also specific considerations for countries focusing on transition preparedness and preparing for transition. For all upper-middle income countries and for low-middle income countries with low and moderate disease burden, strengthening sustainability and transition preparedness should be an integral part of planning and developing funding requests to the Global Fund. In some cases, reductions in allocations may result in countries needing to progressively assume greater roles in the financing of HRH interventions, even multiple allocation periods before the country becomes fully ineligible for Global Fund support. Box 11 provides country examples of how countries have approached transition preparedness, as well as sustainability of HRH interventions more broadly.

Once a country becomes ineligible, it may be eligible for “transition funding” under the Global Fund’s Sustainability, Transition, and Co-Financing policy.^p In general, it is expected that countries submitting funding requests for “transition funding” grants (expected to be the final grant from the Global Fund) will in most cases have secured adequate domestic funding for all HRH support that focuses on service provision (with the exception of support for CSOs and/or temporary human resources engaged in new functions that need to be put in place specifically for transition preparedness activities). Therefore, it is unlikely that these countries will need to request support for core HRH interventions. Where and when the “transition funding” does include support to HRH education, remuneration and other recurrent costs, the country should include within the overall transition plan details outlining how the production and employment of health workers will be transferred to national systems funded by domestic resources by the end of the grant.

Box 11: Country experiences strengthening transition preparedness for HRH

In many countries where the Global Fund is currently paying salaries and other recurrent costs, governments have begun work towards taking up key program costs to strengthen sustainability, transition preparedness, and prepare for eventual transition from external donor financing. Political will to invest in HRH for the three diseases and broader health priorities is a pre-requisite for countries to successfully absorb HRH interventions that are fundamental to the national disease response.

In countries with robust and transparent HRH systems and salary scales, political will and available fiscal space, it has been relatively straightforward for governments to absorb recurrent HRH costs (see Box 2 for examples). In **Peru**, sustainability is facilitated by the country’s well-established system of payment by results. Under this system, if an initiative can be shown to be cost-effective, an application can be made to the Ministry of Finance to fund it from domestic resources.

The issue of sustainability applies to education and training costs as well as to salaries and other recurrent costs. When **Viet Nam**, was preparing for transition, the alignment of in-service training costs with government cost norms made it easier for the government to absorb these costs after Global Fund support ended.

6. Conclusion

Investments in HRH are fundamental to the successful delivery of HIV, TB and malaria initiatives and to achieve related health goals. Countries are encouraged to ensure that their requests for HRH support are strategic and aligned with national policy. Applicants should make full use of the information in this technical briefing note and other relevant Global Fund and WHO strategic and normative documents to ensure that investments in HRH contribute to the building of resilient and sustainable systems for health.

^p See the Global Fund’s Sustainability, Transition, and Co-Financing policy.

Table 1: Prioritizing strategic investments in human resources for health – illustrative examples

TYPE OF HRH INTERVENTION	LOW-INCOME COUNTRIES AND COE	MIDDLE-INCOME COUNTRIES
Increasing availability, acceptability and quality through pre-service education		
Pre-service education to scale up production of PHC workforce*	+++	+
Mainstream/integrate competencies related to the three diseases in pre-service education of health workers (e.g. by revising curricula and instruction modalities, training educators, etc)	+++	+++
Ensure a workforce reflective of target populations and gender equity'	+++	+++
Support to remuneration and deployment, retention and motivation		
Support, in alignment with national systems, health sector employment through salaries/remuneration of PHC workers	+++	+
Incentives for retention schemes in rural and under-served areas aligned with national systems	++	+
Performance-based incentives	++	+
Increasing competencies through in-service training and continuous professional development		
In-service training to enhance competencies of existing health workers	+	+
Cross-cutting interventions for HRH policies, governance and management		
Strengthen governance, HRH policies and strategies, legal frameworks, management systems, effective payroll administration, information systems, national health workforce accounts	+++	++
Harness ICT for improved HRH education, management, support	++	++

Legend:

+++ *highly relevant; ++ relevant; + potentially relevant under certain circumstances, but requires adequate justification;*

* *in countries facing a shortage of health workers in relation to population needs.*

Annex 1: Global Fund HRH impact assessment tool

Q1. Which, if any, of the following types of HRH investment are included within this grant application? (Select all that apply.)

- Pre-service education and production of new health workers
- In-service training
- Remuneration/salary support, including financial or non-financial motivation and retention incentives
- Strengthening HRH policies, governance and workforce planning/management (including investments in ICT and data systems for HRH)
- Other type(s) of HRH investment (please specify) _____

Q2. For each type of investment selected at Q1, read the list of potential HRH impacts in the left-hand column*, then check the box in the middle column if you think this will or could happen as a result of this investment. For each checked impact, ensure the application clearly addresses the issues in the column or columns on the right.

* Green shading indicates a positive impact and red shading indicates a negative impact.

Potential HRH impact	Applies?	Ensure the application addresses:	
Pre-service education and production of new health workers			
Increased number of qualified health workers available to join the health workforce	<input type="checkbox"/>	<ul style="list-style-type: none"> • Evidence that: (a) the additional HRH are needed to address Global Fund strategic priorities, (b) vacancies exist or can be created to employ them, and (c) there is a plan to deploy them equitably according to population need • How this investment will affect equity within the workforce, e.g. gender/ethnic balance 	<ul style="list-style-type: none"> • Alignment with relevant national policies, strategies and plans • If the investment is not in PHC workforce, justification for this • Alignment with WHO CHW guidance if applicable • Alignment with 2016 WHO framework on IPCHS
Increased domestic capacity to educate health workers	<input type="checkbox"/>	<ul style="list-style-type: none"> • Alignment of education curricula with national and global standards for competency-based education • Accreditation, regulation and/or quality assurance of education providers 	
Improved health worker competencies	<input type="checkbox"/>	<ul style="list-style-type: none"> • How these additional competencies are needed to address Global Fund strategic priorities 	
Increased attrition from the workforce	<input type="checkbox"/>	<ul style="list-style-type: none"> • How newly-qualified HRH will be incentivized to provide services in-country. 	

Potential HRH impact	Applies?	Ensure the application addresses:	
Remuneration/salary support, including financial or non-financial motivation and retention initiatives			
Creation of new funded positions for health workers	<input type="checkbox"/>	<ul style="list-style-type: none"> Rationale for why Government cannot directly fund remuneration Alignment of remuneration with government and other donors/service providers 	<ul style="list-style-type: none"> Alignment with relevant national policies, strategies and plans. The extent to which the investment will affect epidemiological outcomes in the short vs. longer term Stakeholder engagement on timeframe of transition to domestic financing Alignment with WHO CHW guidance if applicable Alignment with 2016 WHO framework on IPCHS
Preservation of existing jobs or filling of existing vacancies	<input type="checkbox"/>		
Improved health worker retention	<input type="checkbox"/>		
Job losses or increased attrition from unsupported sections of the health workforce	<input type="checkbox"/>	<ul style="list-style-type: none"> Action that will be taken to avoid job losses and/or attrition, or justification for why they are necessary or unavoidable Whether compensation has been considered for those affected by job losses 	
Competition between donors for the available HRH	<input type="checkbox"/>	<ul style="list-style-type: none"> How the Global Fund will engage in strategic partnerships to avoid distortions 	
In-service training and continuing professional development			
Improved health worker competencies, effectiveness and/or quality of care	<input type="checkbox"/>	<ul style="list-style-type: none"> Why in-service training is more appropriate than pre-service education Plan to embed the competencies in pre-service education (if appropriate) Plan to ensure all eligible HRH are trained 	<ul style="list-style-type: none"> Alignment with relevant national and global standards for competency-based training Accreditation, regulation and/or quality assurance of the training providers Harmonizing training content across all service providers/donors (if applicable) Alignment with WHO CHW guidance if applicable Alignment with 2016 WHO framework on IPCHS
Service provision interrupted by attendance at training	<input type="checkbox"/>	<ul style="list-style-type: none"> Plan to ensure service delivery will not be adversely affected 	
Training does not reach all eligible HRH	<input type="checkbox"/>	<ul style="list-style-type: none"> Plan to ensure that only eligible HRH are trained, and each attends only one training 	
Strengthening HRH policies, governance and workforce planning/management (including ICT/data systems)			
Stronger HRH data systems	<input type="checkbox"/>	<ul style="list-style-type: none"> How the data will be collected and used, and evidence of its robustness 	<ul style="list-style-type: none"> Alignment with relevant national policies, strategies and plans Alignment with NHWA requirements and other data systems (including Government or other donor M&E systems) to avoid duplication
Improved understanding of the health labor market	<input type="checkbox"/>	<ul style="list-style-type: none"> How improved understanding of the labor market will contribute to addressing Global Fund strategic priorities 	
Stronger regulation of HRH	<input type="checkbox"/>	<ul style="list-style-type: none"> How stronger regulation will contribute to addressing Global Fund strategic priorities 	

Annex 2: Annotated list of HRH resources

The following is a list of key resources and tools for HRH. They are mainly drawn from 'Annex 2 - Annotated list of selected WHO tools and guidelines for human resources for health', from the *Global Strategy on Human Resources for Health: Workforce 2030*, WHO, 2016.

Workload indicators of staffing need

The Workload Indicators of Staffing Need (WISN) use business and industry planning principles for the health sector. This tool provides guidance for health managers on how to analyze and calculate the health workers' workload to derive health worker requirements in health-care facilities. The program software is simple to run and is supported by an easy-to-follow instruction manual and WISN case studies.

http://www.who.int/hrh/resources/wisn_user_manual/en/

Transforming and scaling up health professionals' education and training

These guidelines set out a vision of transforming education for health professions, and offer recommendations on how best to achieve the goal of producing graduates that are responsive to the health needs of the populations they serve. The guidelines encourage educational and training institutions to foster institutional and instructional reforms, and to enhance the interaction and planning between education, health and other sectors.

<http://www.who.int/hrh/education/en/>

Increasing access to health workers in remote and rural areas through improved retention

These policy recommendations examine the evidence base and outline policy options for maximizing retention of health workers in rural and underserved areas. They can be used in conjunction with other WHO resources, such as the WHO Global Code of Practice on the International Recruitment of Health Personnel (see below). To ensure better health worker retention outcomes in countries, the best results will be achieved by choosing and implementing a bundle of contextually relevant recommendations, encompassing interventions on education, regulation, financial incentives, and personal and professional support.

<http://www.who.int/hrh/retention/guidelines/en/>

WHO Global code of practice on the international recruitment of health personnel

In May 2010, the Sixty-third World Health Assembly (WHA63.16) endorsed the Code aiming to establish and promote a comprehensive framework that promotes principles and practices for the ethical management of international migration of health personnel. It also outlines strategies to facilitate the strengthening of the health workforce within national health systems, and the evidence and data requirements for tracking and reporting on international mobility of health personnel. The Code was designed by Member States to serve as a continuous and dynamic framework for global dialog and cooperation.

<http://www.who.int/hrh/migration/code/practice/en/>

National health workforce accounts (NHWA)

The purpose of a NHWA is to standardize the health workforce information architecture and interoperability as well as track HRH policy performance towards universal health coverage. The implementation of NHWAs facilitates a harmonized, integrated approach for regular collection, analysis and use of standardized health workforce information to inform evidence-based policy decisions.

<https://www.who.int/hrh/statistics/nhwa/en/>

Minimum data set for health workforce registry

This tool provides guidance on the minimum information fields required to develop or modify an electronic system for health workers at national or subnational levels. The minimum data set for health workforce registry provided in this document can be used by ministries of health to support the development of standardized health workforce information systems.

http://www.who.int/hrh/statistics/minimun_data_set/en/

Monitoring and evaluation of human resources for health with special applications for low- and middle-income countries

The handbook offers health managers, researchers and policy-makers a comprehensive, standardized and user-friendly reference for monitoring and evaluating human resources for health, including approaches to strengthen relevant technical capacities. It brings together an analytical framework with strategy options for improving the health workforce information and evidence base, as well as country experiences that highlight successful approaches.

<http://www.who.int/workforcealliance/knowledge/toolkit/25/en/>

Analyzing disrupted health sectors

This modular manual supports policymakers in settings characterized by complex humanitarian emergencies to analyze and plan for their health systems. Module 10 of the tool reviews aspects to be considered in the study of a health workforce in these settings. In these irregular contexts, tailored strategies for planning, education, deployment, retention and staff performance management are required.

https://www.who.int/hac/techguidance/tools/disrupted_sectors/en/ Module 10 – Analyzing human resources for health:

https://www.who.int/hac/techguidance/tools/disrupted_sectors/adhsm_mod10_en.pdf?ua=1

WHO guidelines on health policy and system support to optimize community health worker programs

These guidelines encourage countries to adopt a diverse, sustainable skills mix, harnessing the potential of community health workers as part of inter-professional primary care teams. They aim to assist national governments and their partners to improve the design, implementation, performance and evaluation of CHW programs, thereby contributing to the attainment of universal health coverage and the health-related SDGs.

<https://apps.who.int/iris/bitstream/handle/10665/275474/9789241550369-eng.pdf?ua=1>

<https://apps.who.int/iris/bitstream/handle/10665/275501/WHO-HIS-HWF-CHW-2018.1-eng.pdf?ua=1>

References

- ¹ Dräger S, Gedik G, Dal Poz MR. Health workforce issues and the Global Fund to fight AIDS, Tuberculosis and Malaria: An analytical review. *Hum Resour Health* 2006; **4**: DOI: 10.1186/1478-4491 – 4–23.
- ² Anand S, Bärnighausen T. Human resources and health outcomes: Cross-country econometric study. *Lancet* 2004; **364**: 1603–9.
- ³ Anand S, Bärnighausen T. Health workers and vaccination coverage in developing countries: An econometric analysis. *Lancet* 2007; **369**: 1277–85.
- ⁴ Campbell J, Buchan J, Cometto G, *et al.* Human resources for health and universal health coverage: fostering equity and effective coverage. *Bull World Heal Organ* 2013.
- ⁵ Van Lerberghe W, Matthews Z, Achadi E, *et al.* Country experience with strengthening of health systems and deployment of midwives in countries with high maternal mortality. *Lancet* 2014; **384**: 1215–25.
- ⁶ United Nations Department of Economic and Social Affairs. Sustainable Development Goals. 2015. <https://sustainabledevelopment.un.org/?menu=1300> (accessed Apr 9, 2019).
- ⁷ The Global Fund. The Global Fund strategy 2017-2022: Investing to end epidemics. Geneva: The Global Fund, 2016. <https://www.theglobalfund.org/en/strategy/> (accessed Apr 9, 2019)
- ⁸ World Health Organization. Global strategy on human resources for health: Workforce 2030. Geneva: World Health Organization, 2016 https://www.who.int/hrh/resources/pub_globstrathrh-2030/en/ (accessed Apr 9, 2019).
- ⁹ Vujcic M, Weber SE, Nikolic IA, Atun R, Kumar R. An analysis of GAVI, the Global Fund and World Bank support for human resources for health in developing countries. *Health Policy Plan* 2012; **27**: 649–57.
- ¹⁰ Bowser D, Sparkes SP, Mitchell A, *et al.* Global Fund investments in human resources for health: Innovation and missed opportunities for health systems strengthening. *Health Policy Plan* 2014; **29**: 986–97.
- ¹¹ World Health Organization. National health workforce accounts. 2019. <https://www.who.int/hrh/statistics/nhwa/en/> (accessed Apr 9, 2019).
- ¹² World Health Organization. Framework on integrated, people-centred health services. Geneva: WHO, 2016. http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_39-en.pdf?ua=1&ua=1 (accessed Apr 13, 2019)
- ¹³ World Health Organization. World Health Report 2008: Primary health care (now more than ever). Geneva: WHO, 2008.
- ¹⁴ World Health Organization. WHO global strategy on people-centred and integrated health services: Interim report. Geneva: WHO, 2015.
- ¹⁵ World Health Organization. People-centred and integrated health services: An overview of the evidence. Interim report. Geneva: WHO, 2015.
- ¹⁶ World Health Organization. WHO guideline on health policy and system support to optimize community health worker programmes. Geneva: WHO, 2018.
- ¹⁷ ILO. International Standard Classification of Occupations (ISCO). ISCO-08 group definitions: occupations in health. Geneva: ILO, 2008.
- ¹⁸ World Health Organization. WHO guideline on health policy and system support to optimize community health worker programmes. Geneva: WHO, 2018.
- ¹⁹ USAID. Donor-supported Human Resources for Health Inventory Tool. <https://hrh2030program.org/donor-supported-hrh-inventory-tool/> (accessed Aug 21, 2019).
- ²⁰ Frenk J, Chen L, Bhutta ZA, *et al.* Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010; **376**: 1923–58.

-
- ²¹ World Health Organization. Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations. Geneva: World Health Organization, 2010.
- ²² Lewin S, Munabi-Babiqumira S, Glenton C, *et al.* Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases: S. *Cochrane Database Syst Rev* 2010; : doi: 10.1002/14651858.CD004015.pub3.
- ²³ Lassi ZS, Cometto G, Huicho L, Bhutta ZA. Quality of care provided by mid-level health workers: Systematic review and meta-analysis. *Bull World Health Organ* 2013; **91**: 824–33.
- ²⁴ World Health Organization. International Health Regulations: Third edition. Geneva: WHO, 2005.
- ²⁵ World Health Organization. Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations. Geneva: World Health Organization, 2010.
- ²⁶ USAID. A global improvement framework for health worker in-service training: Guidance for improved effectiveness, efficiency and sustainability. 2013. https://www.usaidassist.org/sites/assist/files/inserVICetraining_july2013.11x17spreads.pdf (accessed Apr 9, 2019).
- ²⁷ World Health Organization. Global strategy on human resources for health: Workforce 2030. Geneva: World Health Organization, 2016 https://www.who.int/hrh/resources/pub_globstrathrh-2030/en/ (accessed Apr 9, 2019).
- ²⁸ World Health Organization. National health workforce accounts. 2019. <https://www.who.int/hrh/statistics/nhwa/en/> (accessed Apr 9, 2019).
- ²⁹ World Health Organization. Human resources for health information system: Minimum data set for health workforce registry. Geneva: World Health Organization, 2015 http://www.who.int/hrh/statistics/minimum_data_set.pdf?ua=1 (accessed Apr 9, 2019)
- ³⁰ UNFPA, WHO, ICM. The state of the world's midwifery 2014: A universal pathway. A woman's right to health. New York: United Nations Population Fund, 2014.
- ³¹ World Health Organization. National Health Workforce Accounts: A Handbook. Geneva: WHO, 2017.
- ³² World Health Organization. Methodology for estimating health impact of health workforce investments through increased coverage of HIV, TB, and malaria services. Geneva: World Health Organization, 2019 (forthcoming).
- ³³ UNISDR. Build Back Better in recovery, rehabilitation and reconstruction. Geneva: United Nations Office for Disaster Risk Reduction (UNISDR), 2017.