HEALTH SYSTEMS AND POLICY ANALYSIS

POLICY BRIEF 54

What steps can improve and promote investment in the health and care workforce?

Enhancing efficiency of spending and rethinking domestic and international financing

Barbara McPake
Prarthna Dayal
Julia Zimmermann
Gemma A Williams

World Health Organization

European Observatory on Health Systems and Policies
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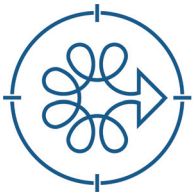
Authors

Barbara McPake – Nossal Institute for Global Health at the Melbourne School of Population and Global Health

Prarthna Dayal – Nossal Institute for Global Health at the Melbourne School of Population and Global Health

Julia Zimmermann – European Observatory on Health Systems and Policies

Gemma A Williams – European Observatory on Health Systems and Policies



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Editors
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List of abbreviations

APSS	Asia Pacific Spine Society
COVID-19	coronavirus disease 2019
CPD	continuing professional development
EU	European Union
FHT	Family Health Team
GCNO	Government Chief Nursing Officer
GoG	Government of Ghana
HCWF	health and care workforce
HNP	health, nutrition and population
HRH	human resources for health
HCWs	health and care workers
IADB	Inter-American Development Bank
IPE	interprofessional education
IMF	International Monetary Fund
LMICs	low- and middle-income countries
MOU	memorandum of understanding
NCD	noncommunicable diseases
OECD	Organisation for Economic Co-operation and Development
PCT	primary care team
PFM	public financial management
PFP	pay-for-performance
PPE	personal protective equipment
SDG	Sustainable Development Goals
SDR	Special Drawing Rights
STEM	science, technology, engineering and mathematics
UHC	universal health coverage
W4H	Working for Health
WHO	World Health Organization

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Towards an evidence-informed statement of intent: key messages on investing in workforce development

The lessons of resource mobilization during the COVID-19 pandemic show what is possible. There is an urgent need for countries and international actors to apply those lessons to secure sufficient funding for health and care workforce (HCWF) education, employment and retention. Investment needs to 2030 are negligible in comparison to government spending during COVID-19. There is powerful evidence that developing a sustainable HCWF will help deliver on the ambitions of universal health coverage (UHC), health security and the Sustainable Development Goals (SDGs) and generate exceptional dividends and co-benefits.

If governments are to take forward the policies and practices that work, they should know the following.

1. Oversupply of health and care workers is the only solution to current challenges and only top-level political leaders' commitment can secure investment in the HCWF on the scale needed

- Political leaders proved during COVID-19 that remarkable things are possible.
- Now only top-level **political leadership can ensure the financial commitment necessary to break the cycle** of shortages and attrition. Leaders need to recognize:
  - decades of underinvestment have led to a workforce crisis that requires urgent action;
  - low- and middle-income countries (LMICs) face significant shortages and high-income countries with rising population demand are a long way from self-sufficiency;
  - the macroeconomic outlook and threat of **economic stagnation in many countries is a challenge but cannot be allowed to undermine collective action.**
- The evidence from the pandemic – that the HCWF generates invaluable contributions to the economy, decent employment, gender rights, societal health and well-being and health security – needs to be used to convince finance ministries that the HCWF matters.
- Health must be at the decision-making table when finances are allocated to get investments to where they need to be.

2. Investing in education supports the HCWF, creates human capital and expands access

- The pandemic showed how adaptable the HCWF can be and how important it is to develop their competencies, skills and adaptability.
- Societies need to **invest in education and training that develops health systems' capacity for** health and care services and public health functions, **and that drives wider benefits in health sciences, technologies and research.** Key measures include investing in:
  - secondary education and in science and technology skills, particularly for girls, to provide candidates for the HCWF and create human capital;
  - education infrastructure, faculty, competency-based education models and online learning to support HCWF development and economies more widely;
  - continuing professional development (CPD) and lifelong learning, aligned with international standards to respond to changing needs;
  - the multidisciplinary teams and skills necessary to deliver primary care and fill gaps in underserved and hard-to-reach areas efficiently and effectively.

3. Investment will be wasted if the HCWF is not supported and protected and workers leave the sector

- The pandemic demonstrated that a range of measures can effectively protect the HCWF and sustain them.
- **Investing in the protection of all existing workers is crucial if the HCWF is to be retained**, which means:
  - paying for decent working conditions;
  - taking steps to support the mental and physical health of the HCWF;
  - managing staff performance and supporting career development;
  - removing the gender pay gap, where it exists, delivering equal pay and targeting gender inequalities.
- **The HCWF is not sustainable if adequate employment opportunities are not available.**
- At the half-way point of the SDGs there are inequities and paradoxes:
  - the HCWF accounts for 10% of total employment in high-income countries (but only a little over 1% in LMICs);
  - LMICs experience both a shortage of HCWF relative to population needs, and unemployment or underemployment of health and care workers (HCWs)
- **Coordinated investments – both domestic and international are needed to stimulate health labour markets and HCW employment opportunities including by:**
  - adjusting labour market investments to stimulate job creation.
  - initiatives to offset demand issues;
  - fair remuneration.
- Adequate financial and non-financial incentives need to be combined with policies that support and protect HCWs, especially women and youth.

4. Solidarity and cooperation at the multilateral, regional and domestic levels is needed to secure sufficient and sustained investment

- Securing long-term domestic financing for recurrent HCWF costs relies on demonstrating efficiency, but an underfunded HCWF cannot be effective and optimize performance.

- **Policy-makers at all levels need to mobilize sufficient resources to attract, retain and motivate the HCWF and allow them to perform** and this requires:
  - All governments to consider the cross-cutting benefits of effective education and retention policies for the HCWF in their spending decisions, (recognizing their contribution to gender equality, managing migration, economic participation and rural economies).
  - Governments to recognize the counter cyclical value of health employment.
  - Development assistance for the HCWF to be increased (from just 5%), including through intersectoral allocations from education, gender and job creation budgets.
  - Investment, including international development funding, should focus on creating a sustainable HCWF, with ideas to scale-up revenue for education and employment including more extensive debt cancellation and greater use of blended financing options.

Executive summary

COVID-19 has exposed chronic underfunding in the health and care workforce and shown the urgent need to protect and increase investment in education, recruitment and retention

Decades of underinvestment in education, employment and retention has left a global undersupply of health and care workers (HCWs). By 2030 there will be an estimated shortage of some 10 million HCWs worldwide. While low- and middle-income countries (LMICs) will be most affected, the majority of high-income countries have not yet built a self-sufficient health and care workforce (HCWF); many are experiencing chronic shortages and skills mismatches, and some are reliant on recruiting foreign-trained workers to fill gaps. Despite progress, most countries are not yet supplying enough graduates for replacement and there is sometimes not enough economic demand to create jobs and pay wages. In some countries, there is a growing reliance on the private sector – who are not incentivized to keep costs in the health sector down – to fund education and recruitment, contributing to rising out-of-pocket spending.

The COVID-19 pandemic has exposed insufficient investment in the HCWF and shown how unprepared health systems were to respond to a global health crisis. There is an urgent need for countries and international actors to prioritize investment in the HCWF and to ensure funding is used well. Without the right people and infrastructure, it is not possible for health systems to deliver high-quality and efficient care that is responsive to population health needs. An adequately trained and staffed HCWF is at the core of functional health systems that can respond to shocks and can support progress towards universal health coverage (UHC), health security and the Sustainable Development Goals (SDGs).

Even as economic growth slows, education, employment and retention of HCWs needs to be a priority in public expenditure to increase supply, protect the existing workforce and plan ahead to address future challenges. With the estimated economic costs of COVID-19 amounting to US$47.7 trillion in lost output between 2020–2030, more than 17 times the estimated cost of making progress towards health-related SDG targets, the cost of failing to invest in the HCWF is likely to outweigh the cost of action. The case for investing in the HCWF is compelling. Political leadership has to ensure the HCWF is properly funded.

Transforming education and training is an effective investment that can improve the quantity, skills and diversity of HCWs

Insufficient investment in health professional education and training has led to an undersupply of HCWs globally and a lack of workforce capacity when needed during COVID-19. Greater investment in developing education and training capacity and improving quality is needed to produce HCWs in sufficient numbers and with required skills. While replenishing stock will likely require producing an oversupply of HCWs to overcome attrition issues, this will be a stimulant for human capital and skills development in all countries, irrespective of whether they end up in the health economy.

Investment to increase the quantity, quality and diversity of the available HCWF needs to expand the pool of people qualified for careers in the health sector. This requires investment in young people not least by improving primary and secondary education, and promoting the varied careers health sectors can offer. The systems that educate health professional also need to be reformed, including by delivering interprofessional education (IPE), shifting towards competency-based curricula, greater use of online learning tools, aligning educational pathways and promoting stronger transitions from education to practice. More investment is also needed to ensure the availability of faculty and fit-for-purpose infrastructure and to develop appropriate regulation and accreditation, where feasible. Finally, investing in pathway programmes, mentorship and recruitment practices, can promote HCWF diversity, which is important for improving patient outcomes and for reaching underserved groups.

Investing to produce sufficient graduates is not enough, action is also needed to enable them to find employment within the health sector, and to stay in health careers

There is a large gap in the proportion of total jobs in the health and care sector between high-income countries and LMICs. The HCWF accounts for 10% of the total employment in high-income countries and a little over 1% in LMICs. Many LMICs face a paradox. On the one hand there is a shortage of HCWF relative to population needs, and on the other, health workers are unemployed or underemployed. This situation occurs when (government or private sector) purchasers' willingness to pay is so low that there is insufficient demand for health workers. Coordinated investments will be required – both domestic and international – to stimulate the health labour markets in these countries and increase HCW employment opportunities.

Financing the existing workforce is one of the best investments that can be made. If HCW are not supported, are burnt-out, overworked and feel undervalued, they will not be able to perform optimally and may drop out of the workforce entirely. This is a failure on behalf of employers. Investing in recruitment and retention strategies can help reduce attrition, protecting earlier investments in education. Investing in fair pay, decent working conditions, protection and support measures, and promoting career opportunities are important in retaining HCWs. This is especially so for women who make up a disproportionate share of the HCWF globally, but experience a substantial gender pay gap and are underrepresented in leadership roles. Managing performance also has a key role in motivating and retaining staff, and can be promoted through continuing professional development (CPD) and a mix of other incentives. Securing and mobilizing long-term, sustained levels of domestic financing for recurrent HCWF costs relies on demonstrating efficiencies of spending on initiatives such as those to enhance working environments and promote decent work, that may otherwise remain underfunded.

Investment to reskill and optimize the HCWF will help deliver quality primary care and public health, and improve service delivery in underserved areas

An efficient and equitable health system is founded on strong primary health care and public health principles. Ageing populations in many regions, increasing chronic conditions globally and growing inequality mean the old skill mix is no longer fit for purpose. A preventive model of health care is needed with a focus on the "right" kinds of health workers. This requires investment in a new mix of skills and disciplines such as physiotherapy, speech therapists, dietetics, optometry, and many others, and to upscale use of digital health technologies.

There is also a need for investment strategies that encourage HCWs to stay in country, in rural and remote areas, and in health sector jobs. Roles need to be made attractive to the right people, and this does not mean simply increasing salaries; job characteristics and career opportunities can be made attractive too. Non-financial as well as financial incentives are important to help address the negative impacts of maldistribution in rural and other underserved areas, and dual practice – where HCWs work in both the private and public sectors – can also reduce push factors for outward migration. It should nevertheless be emphasized that countries where health workers are first educated ("origin countries") do not control many of the policy levers driving health professional migration, so destination countries need to play their part when recruiting internationally and should invest in strengthening their own education, recruitment and retention systems.

The funding available for HCWF initiatives needs to be protected and may require additional resources

There are many opportunities for countries to invest strategically in the HCWF and to ensure resources are used efficiently. Funding these options means protecting current investment and raising additional investment where needed. Every government needs to explore how to accelerate the use of domestic, regional and international financing towards the HCWF.

Protecting public revenues will be particularly challenging in the post-pandemic economic climate, especially in LMICs. Creating fiscal space for investment in the HCWF should nevertheless be possible for most countries. However, some countries, particularly those in the global south, face constraints on their monetary sovereignty which limit their ability to act. Rethinking internally and externally imposed limitations on public spending by governments and multilateral organizations could allow countries to raise public revenues for much needed investment.

The health sector needs to understand and be able to make the economic case for the HCWF to secure political leadership for investment

Political leadership is a key condition to raising domestic resources. However, there is often pervasive underinvestment in the public sector as a whole, and especially in sectors such as health that employ large numbers of women and are consequently often undervalued by society. A narrative that presents the HCWF as an investment and not a cost can help argue for budgets for health and human resources for health (HRH) to be prioritized. There are many evidence-based arguments that may appeal to policy-makers and help make the economic case for greater investment in the HCWF. Stable and sufficient funding for the HCWF can drive inclusive economic growth. It creates jobs – especially for women, young people and in rural areas. It can drive innovation in productive industries such as pharmaceuticals, research and development and manufacturing and promote health and human capital development, social cohesion, social protection and health security. Greater monitoring and evaluation is needed to quantify how HCWF investment supports health, societal and economic outputs and attaining SDGs.

There needs to be effective engagement with stakeholders across sectors to agree to prioritize and plan public investments in the HCWF

Not only must health policy-makers be able to communicate effectively to ministries of finance, they need to collaborate with other domestic and external actors, especially as much of the funding to strengthen the HCWF sits within the education sector. Ministries of Health must be able to share the measurable benefits of workforce development to convince other sectors, which requires strong leadership and capacity. Improved intersectoral governance processes are also crucial in bringing together public, private and other stakeholders to plan and co-finance HRH investment plans.

Inefficiencies in health sector budget cycle processes are often seen as undermining efficiency and the case for investment. In many countries a reliance on input-based or line-item budgeting using historic trends disconnects health budgets from actual health sector needs. While countries have been putting in place policies and systems to reform their public management systems, this is not an easy task and will take time.

International organizations and governments should work together to increase available funding from external sources to develop the HCWF in LMICs

Development assistance for the HCWF has traditionally made up a relatively low share of total development assistance (just over 5% prior to the pandemic) and has been skewed towards alleviating immediate skills gaps. It has tended not to tackle major issues such as the high costs of educating and employing HCWs, mobility or gender inequalities. An increase in the external source of funding in the short-to-medium term could help many countries reach HCWF-related goals. Funds need to support country priorities such as better remuneration, sustainable recruitment practices, strengthening HRH information systems and management capabilities. This requires countries to be able to identify their short- and long-term HCWF needs. It also depends on strong engagement and alignment of priorities between donors and recipient governments and between donors themselves. Development assistance should support long-term HCWF objectives and facilitate additional and sustained increases in domestic resourcing for the recurrent cost of developing and maintaining the HCWF.

There are a range of options that are outside the control of health sector actors. However, global and national-level health stakeholders could make the "international" case for increased investment in the HCWF and for radical solutions. Ideas that health stakeholders might champion include more extensive debt cancellation; blended financing options; more International Monetary Fund (IMF) SDRs (Special Drawing Rights); changing sovereign credit ratings, and reducing tax avoidance. Bold measures are needed to enable countries to raise resources to spend on health and to tackle the looming HCWF crisis, and health ministries must advocate courageously.

POLICY BRIEF

1. Introduction

Chronic underfunding over years has taken its toll on the health and care workforce (HCWF) and substantial efforts are needed to scale-up investment and improve efficiency of spending

In 2016, the World Health Organization (WHO) published the Global Strategy on Human Resources for Health. It recognized that without adequately available, accessible, acceptable and quality human resources for health (HRH), universal health coverage (UHC) and the Sustainable Development Goals (SDGs) cannot be attained (WHO, 2016a). The coronavirus disease 2019 (COVID-19) pandemic has also highlighted the chronic underfunding of the HCWF and demonstrated how unprepared health systems were to respond to a global health crisis (Deussom et al., 2022). The pandemic has underscored the critical importance of ensuring an adequately trained and sufficiently staffed HCWF is in place for functional and resilient health systems that can manage a pandemic, prevent and respond to future shocks to health systems, and meet growing and changing population health needs (Guillén, Buissonnière & Lee, 2021; Zapata, Buchan & Azzopardi-Muscat, 2021; Haldane et al., 2021; Czabanowska & Kuhlmann, 2021).

Decades of underinvestment in education, employment and retention has left a global undersupply of health and care workers (HCWs). The Global Strategy projected a global shortage of 18 million health workers by 2030, which has recently been revised to 10 million (Boniol et al., 2022). Yet even this growth in HRH since 2013 has been uneven and countries with the poorest health outcomes and greatest inequity have shown the least growth. While low- and middle-income countries (LMICs) are most affected by shortages, high-income countries have not yet built a self-sufficient HCWF; many are experiencing chronic shortages and skills mismatches, and some recruit foreign-trained workers to fill gaps. Countries globally are not supplying enough graduates for replacement and there is sometimes not enough economic demand to create jobs and pay wages, especially in LMIC. In some countries, this has contributed to a growing reliance on the private sector – who are not incentivized to keep costs in the health sector down – to fund education and recruitment, contributing to rising out-of-pocket spending.

Chronic underinvestment in health and other social sectors is universal across high-middle- and low-income countries. A reluctance to prioritize and adequately fund the HCWF is in part due to a belief that the health sector consumes more resources than socially optimal and does not contribute to achieving economic and fiscal objectives (Cylus et al., 2018; Cometto & Campbell, 2016). The report of the High-Level Commission on Health Employment and Economic Growth challenged this belief and made a strong case for investing in the HCWF globally, to help strengthen health systems, economies and societies (WHO, 2016b). The COVID-19 pandemic has only made the need for this investment more urgent, and has emphasised that the cost of inaction is much larger than the cost of action (WHO, 2016b). It is estimated that the cumulative cost of the COVID-19 pandemic over 2020–2030 in lost output alone is $47.7 trillion, not counting the value of lives lost (WHO Council on the Economics of Health for All, 2021). This is more than 17 times the estimated cost of making progress towards SDG 3 targets (Stenberg et al., 2017). Moreover, global poverty has also risen for the first time in over 25 years, with an estimated 88 to 115 million people pushed into extreme poverty in 2020 (World Bank, 2022b).

With slowing economic growth in the aftermath of the COVID-19 crisis, countries and the global health community need to work together to prioritize investment in HCWF education, employment and retention and to ensure funding is used well. Investing strategically through reforms that demonstrate value for money and where efficiency of spending is maximized can cost-effectively help build a HCWF that is fit for purpose. Strategic investing requires efforts to protect and support the existing workforce, as well as funding health labour market reforms to stimulate employment and to drive improvements in education.

Countries also need to move beyond a focus on numbers of doctors, nurses, midwives alone and closely examine the wider range of disciplines required in the future to deliver high-quality health care (Maier, 2022). HCWF needs are changing as health systems undergo various transitions – economic, demographic, epidemiological and social – which require changes to how health services have been traditionally delivered. With ageing populations, a rise in chronic conditions and growing inequality, it is critical to consider how to ensure an oversupply of graduates to meet health sector needs; what kinds of health workers can deliver the health services needed; are more likely to stay in country, in rural and remote areas, and in health sector jobs; and what support they need to deliver high-quality services effectively.

Addressing current deficiencies in health systems and building a sufficient HCWF that can respond to the evolving health needs requires rethinking of the ways in which the HCWF have traditionally been trained, deployed and managed. It is well understood that an efficient and equitable health system is founded on strong primary health care and public health principles. The objective to strengthen primary health care and focus on a preventative model of health care that substantially reduces out-of-pocket spending and the inefficient use of public funds at higher levels of the system, and increases the quality, accessibility and continuity of care is therefore the challenge which health workforce plans need to align with and support.

Even while highlighting the critical importance of HRH, the COVID-19 pandemic has put unprecedented pressure on government budgets due to the economic fallout. Projections show that the global demand for health workers is due to rise to 80 million workers by 2030 (Liu et al., 2017). At a time of slower economic growth and rising debt, countries will need to make strategic investments in future health workforce development to maximize efficiency of spending, and to protect existing resources and raise additional revenues where needed to fund rising HRH costs.

In this policy brief, we aim to answer two critical questions: 1) What are the best strategic investments that countries can make in education, employment and retention to increase the efficiency of their spending and create an adequate and fit-for-purpose HCWF for the future? 2) How can countries and international actors ensure sufficient resources are in place and are effectively targeted to fund HCWF reforms in a time of increasing constraints on public finances? These two questions are answered in turn in the next two sections, before we offer concluding remarks on the way forward. The methods used in his brief are outlined in Box 1.

Box 1. Methods

A scoping review of peer reviewed and grey literature was conducted across key English-language publications. Databases and online repositories searched include PubMed, Scopus, Web of Science, Google Scholar, WHO data collections and the European Observatory on Health Systems and Policies website. The literature search focused on two areas: 1) current thinking and innovations in the organization, training, deployment and management of the HCWF to provide policy options to countries as they develop HRH strategies and plans; 2) domestic and international financing mechanisms that can be used to help scale-up investment in the health workforce.

Additionally, we drew from case studies compiled across different WHO regions. These case studies were put together by country experts who are listed in the Acknowledgement section of this brief.

2. Where can strategic investments be targeted to help build a more sustainable HCWF?

Financial investments should be strategically targeted towards interventions that can most effectively enhance the sustainability of the HCWF and its ability to meet future health shocks and population health needs. Interventions that can support the achievement of these targets can broadly be grouped into strategies that: 1) aim to increase the quantity, quality and diversity of available HCWs through investments in education; 2) aim to reskill and optimize use of the HCWF through investments in preventative and primary care, skill mix reforms and use of digital technologies; 3) aim to improve employment and retention through labour market interventions and protecting, supporting and managing the HCWF.

Inevitably, achieving efficiency in the allocation of available funds will vary for each country. Moreover, not all interventions will be relevant for all countries and will depend on their health labour markets, health system maturity and structure, population and geographical needs and economic status. However, in almost all countries, addressing HRH challenges will require efforts to target funding across all three areas. For example, a recent Human Resource Action Plan developed by the Province of Manitoba in Canada recognizes that investment in retaining, training and recruiting health care staff would all be necessary to overcome HCWF shortages (Box 2).

Key interventions for targeting strategic investments are introduced in the remainder of this section, according to these three areas. We do not aim to cover all aspects of implementing these interventions, but instead to provide an overview of why they represent areas for strategic investment.

Box 2. A CAN$ 200 million Action Plan to retain, train and recruit HCWs in Manitoba, Canada

The Province of Manitoba, Canada faces a shortage of HCWs and retention challenges that have ben exacerbated by the COVID-19 pandemic. To help strengthen the health system and overcome HRH challenges, the Provincial Government in November 2022 have committed CAN$200 million to fund a Human Resource Action Plan. The Plan is based on three pillars to retain, train and recruit HCWs – focusing initially on doctors and nurses. The Plan adopted a number of strategies recommended by Doctors Manitoba and the Manitoba Nurses Union after a consultation process.

The retention pillar aims to ensure existing staff are supported and protected in order to provide safe and accessible services. Actions include (among others): hourly premiums for working weekends, an end to mandated overtime, support for mental health counselling, reimbursing licensing fees, remote location incentives, enhanced security for emergency departments.The training pillar aims to train staff at all levels. Actions include (among others): expanding undergraduate education to cover nurses returning from retirement and foreign-trained workers; increasing the number of psychiatry and psychology positions; increasing intake for doctor and nursing education.The recruiting pillar aims to reduce barriers to recruitment. Actions include (among others): financial incentives for retired nurses to return; tuition rebates; reforming testing costs for returners; modernizing a Memoradum of Understanding (MOU) with Philippines for international recruitment.

Source: Gordon, 2022

2.1 Investing in education to increase the quantity, quality and diversity of available HCWs

2.1.1 Investing in youth and promoting careers in the health sector

The first step to increase the quantity, quality and diversity of the available HCWF is to invest in expanding the pool of people qualified for careers in the health sector. The HRH2030 Health Worker Life Cycle Approach to build, protect and manage a resilient health workforce in the aftermath of COVID-19 highlights the need to start with investing in young people – with a special focus on women in particular – to engage their interest and create a diverse candidate pool for health professional training programmes (Deussom et al., 2022). While there is not substantial evidence yet on strategies that work in this area, ideas include investing in STEM education both at the primary and secondary school levels and encouraging students, especially students from rural areas and girls, to study these subjects; providing leadership and volunteer opportunities to youth in community public health, internship opportunities in health departments or health facilities; advising on career pathways in health for students from a diverse range of backgrounds that can contribute to the health sector; and providing employment to secondary school graduates in less specialized sectoral work and supporting their upskilling over time (Deussom et al., 2022).

2.1.2 Investing in reforming education systems

Greater investment in education is needed to produce an oversupply of graduates to meet population health needs

Underinvestment in education and training in some countries, including high-income countries, has resulted in inadequate numbers of graduates to meet population health demands (Buchan, Catton & Shaffer, 2022; WHO Regional Office for Africa, 2021; WHO Regional Office for Europe, 2022). While the number of graduates has seen an overall increase over the past several years there is wide variability in the production of HCWs across countries, and declines in midwifery and primary care graduates have been observed in central Asia, Europe and in the United States (IHS Markit, 2021; WHO, 2022a). Regions with the lowest nursing graduation rates (Africa, Eastern Mediterranean, South-East Asian) also have the lowest nurse density. Meanwhile, future projections by Okoroafor et al. (2022) show that in Africa an estimated 6.1 million more physicians, nurse and midwives will be needed to meet population health demands by 2030; however, only 3.1 million will be trained and ready for service if current educational trajectories are maintained.

In 2010, the Lancet Commission on health professional education estimated that global spending on health professional education and training was approximately US$ 100 billion (Frenk et al., 2010). This amounted to just 2% of total health expenditure and was deemed insufficient to meet health system needs. Greater investment in developing education and training capacity and improving quality is needed to produce HCWs in sufficient numbers and required skills. While replenishing stock will likely require producing an oversupply of HCWs to overcome attrition issues, this will be a stimulant for human capital and skills development in all countries, irrespective of whether they end up in the health economy.

Interprofessional education, competency-based learning, curricula reform and using online learning tools can help strengthen health professional education

In 2010, the Lancet Commission on health professional education called for the re-design of professional health education to meet the current challenges of the HCWF, based on a systems approach which recognizes the interdependence between education and health systems and the need to integrate efforts across the two (Frenk et al., 2010). It recommended several strategies to transform health professional education including a shift towards competency-based curricula adapted to local contexts, interprofessional education to promote collaboration, use of IT, strengthening of education resources including faculty, syllabuses, instructional materials and infrastructure, and instilling a culture of critical inquiry as a model of learning, and promotion of culturally competent care (Frenk et al., 2010).

More resources are needed to strengthen the quality of education and train high-quality HCWs

Accreditation is a common mechanism for improving standards in education. However, some countries do not see it as feasible within the constraints of their current capacities and resources, while others that have tried to implement accreditation have found it challenging. While countries work to improve their capacity for relying on accreditation as a means to improve education quality, they will need to look at increasing investments to address the challenges associated with poor quality of training. In many LMICs, lack of proper infrastructure and poor quantity and quality of teaching faculty have been cited as major impediments to improving the quality of health professional education (Efendi et al., 2018; Mullan et al., 2011; Bvumbwe & Mtshali, 2018). Bvumbwe and Mtshali (2018) reported that while many countries in sub-Saharan Africa have nursing councils as regulatory bodies, they lacked the capacity and resources required to be effective. At the same time, where the role of private health training institutions is large and/or growing, it is imperative that regulatory mechanisms focused on the private sector are strengthened. There is also a role for regional cooperation to enhance access to quality education. Asamani et al. (2022) for example, suggest that countries in Africa with capacity to train specialists, such as Kenya, Uganda, Tanzania and South Africa, could help develop programmes and capacity in other countries of the region.

Online learning tools represent a cost-effective way to improve access to education, especially in rural areas

The COVID-19 pandemic underscored the value of online learning tools to improve the reach and quality of health professional education, with medical and nursing colleges across the world quickly adapting to online curricula in the

face of lockdowns. In resource-constrained settings in particular, online learning provides a cost-effective opportunity to address faculty shortages, increase the reach of both pre-service and in-service training, attract a more diverse student base, standardize and update content and encourage cross-institutional collaboration between better resourced and less resourced training institutes (Frehywot et al., 2013). There is a growing body of literature citing both the challenges as well as the lessons learned in maximizing the value of these online tools (Co, Chung & Chu, 2021; Gachanja, Mwangi & Gicheru, 2021; Nimavat et al., 2021). It will be important that countries learn from these emerging and growing experiences when considering the potential of online distance learning tools to meet their future HCWF needs.

2.1.3 Improving diversity of available HCWs to match population needs

Investing to improve the diversity of the HCWF can help improve access to health services for underserved groups

Advancing diversity in the health professions, inclusive of race/ethnicity, gender, socioeconomic status, rural background and other minoritized communities, can help repair trust in health systems and meet population health needs. A developing body of work suggests racial concordance improves communication and patient satisfaction (Shen et al., 2018), and has the potential to improve patient outcomes (Alsa, Garrick & Graziani., 2019). Evidence also suggests diversity can mitigate bias and positively influence practice in high need areas (van Ryn et al., 2015; Phelan et al., 2017; Goodfellow et al., 2016). Evidence-based strategies to improve the diversity of the health workforce include investment in pipeline/pathway programmes to encourage and support future health careers, mentorship, recruitment and admission practices, student support services and financial support, and accreditation standards for diversity (Farrell et al., 2022).

Ensuring diversity of the health workforce remains an ongoing challenge. In the United States, Black, Hispanic and Native American individuals are severely underrepresented in higher income health professions and conversely, overrepresented in lower wage health care occupations (Campbell et al., 2021a; Salsberg et al., 2021). In Canada, only 3.5% of medical students identified themselves as from an Aboriginal background compared with 7.4% of the population and only 6.4% grew up in a rural area whereas 18.7% of the population is rural (Khan et al., 2020). In Australia, there are an estimated 400 Indigenous doctors – less than 0.5% of doctors compared with 3% of the population (SBS News, 2021). The lack of diversity and inequities in the health workforce reflected broader structural injustices that also drove racial, ethnic, and socioeconomic disparities in COVID-19 outcomes and proved a major detriment to the eventual vaccine roll-out (Khanijahani et al., 2021; Willis et al., 2021).

2.2 Reskilling and optimizing the HCWF

Meeting population health needs and progressing towards UHC requires investment to better target who to educate and train. Strengthening primary care and prevention functions and addressing gaps in the range of skills needed for this are a cost-effective investment for many countries. Similarly, developing mid-level cadres instead of just high-level cadres is likely to be less expensive and a more efficient way to meet population health needs. These strategies, in addition to other incentive packages, are likely to be especially effective to address inequities in rural and other underserved areas, which face some of the biggest shortages of HCWs globally.

2.2.1 Strengthening public health and primary health care

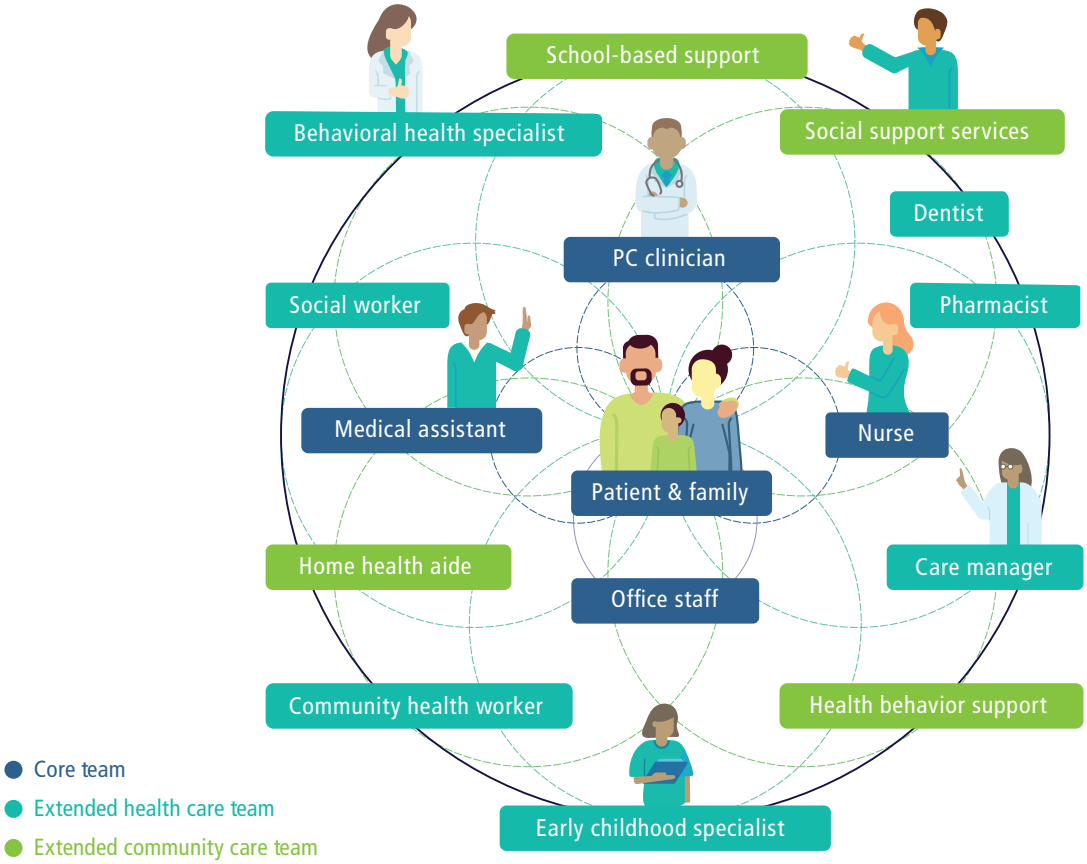
Equitable and efficient health care systems are founded on strong primary care underpinned by team-based approaches to service delivery

Delivering care in the right setting can help improve access and patient outcomes at lower cost. Since the 1978 Alma-Ata Declaration, investing in primary health care has widely been agreed upon as a cost-effective way to improve health outcomes, health system efficiency and health equity.

Global consensus recognizes the gold standard of the primary care team (PCT) approach, especially in the context of epidemiological transition, growing multimorbidity and an ageing population. Efficient, accessible and high-quality primary care is best provided by a team of clinicians and other health professionals. While there is no standardized, or one-size-fits-all, approach, a typical configuration of a PCT (Fig. 1) includes a core team (purple), an extended health care team (blue) and an extended community care team (orange) (McCauley et al., 2021). One extended team may support several core teams.

The PCT approach has been successfully adapted and implemented in communities worldwide, both in urban and rural settings. For example, a project established in Northern Bihar, on the border with Nepal, reported success in the activities of a community health team made up of experienced community health professionals, led by a community medicine specialist and including a registered nurse and several community health workers. This team combined to provide noncommunicable disease (NCD) management and holistic palliative care for those with advanced disease (Munday et al., 2019). Andrade et al. (2018) have described Brazil's approach of Family Health Teams (FHTs) which deliver integrated and comprehensive primary health care, an approach which was launched in 1994. These teams are composed of a family physician, a nurse, a nursing assistant and 4–12 community health agents who are based at Health Units which operate in a geographical area covering a population of approximately 4 000 people. Similarly, Iran has invested in delivering team-based primary care, which has improved access to care and patient outcomes (Box 3).

Fig. 1. A typical configuration of a primary care team



Source: McCauley et al. (2021)

Box 3. Primary health care in Iran has been reformed helping to improve patient outcomes and access

Effective strategies to enable HRH are key to reaching UHC. Over past decades, Iran has used a range of initiatives to empower HRH, one such initiative was the scaling up of primary health care. Three concrete phases ensued to propel this initiative:

First phase: Creation of health houses (Khaneh Behdasht), staffed by Behvarzes (community health workers based in rural health houses), which provide basic health services; each health house serves about 1 500 people within a 1-hour walking distance.

Second phase: Family practices in rural areas and cities with a population of under 20 000 were developed, the quality of services was enhanced through the appointment of new health workers (nutritionists, mental health experts and midwives).

Third phase: Family practices in suburban areas and cities with a population of more than 20 000 were developed. This was made possible through public–private partnerships and the devolution of services to the nongovernmental sector.

The impact of this initiative was substantial and can be grouped into four concrete outcomes: 1) maternal child health disparities between urban and rural populations were reduced; 2) noncommunicable disease outcomes improved; 3) the population's life expectancy grew by over 20 years since the creation of the Behvarz programme implemented in the first phase; 4) as a direct result of the increase in service providers during the second and third phases, the coverage of health services in urban areas, and the desire to receive various services including those for nutrition, mental health and NCD, expanded.

A systematic review by O'Reilly et al. (2017) identified the challenges and enabling factors of a PCT approach in high-income countries. Challenges include that physicians are trained to manage patients individually rather than collectively and that traditional hierarchies can be a barrier to multidisciplinary care. Common enabling factors included clarity of roles and division of labour, frequent and respectful communication and being co-located. Similar challenges to team-based primary care were found in south India by Lall and colleagues (2020).

2.2.2 Investing in diversifying HCWF roles and skills

More HCWs are needed in many contexts, and the mix of HCWs required is radically different from the mix that has been required in the past.

The burden of disease in all regions is increasingly dominated by noncommunicable, chronic diseases shaped by social determinants. This requires health systems to transform from a mode that is responsive to episodes of illness predominantly in children, women of reproductive age and older adults, to one that maintains health and prevents the onset and progression of chronic illness, addresses risk factors across the life-cycle and takes a population perspective. Channelling resources into public health, prevention and early diagnosis can yield important

productivity improvements and economic benefits, demonstrating an efficient use of investment. For example, it has been estimated that childhood immunizations in LMICs led to a return on investment of $44 for each $1 spent (Ozawa et al., 2016). Moreover, there was an estimated $10 return on investment for every $1 spent on community health workers in sub-Saharan Africa (Dahn et al., 2015).

Moving towards a preventative model of care inevitably requires a rethinking of the skill mix and the set of disciplines extending from nursing and medicine into physiotherapy, dietetics, optometry, exercise science and many others. The old skill mix is no longer fit for purpose. However, workforce scarcity is a common challenge in many contexts. For example, in Ghana, there were only 55 dentists and 41 optometrists in the country in 2010, most of whom worked in the capital city (Ministry of Health, 2011). Some Asian countries have implemented PCTs with a more limited range of health workers to mitigate the workforce shortage. Overall, dentistry and pharmacy are more likely incorporated in PCTs than rehabilitation, diet and exercise, audiology or optometry professionals. As such, there is evidence that the HCWF as it is currently is unable to meet population needs in many countries (Burton et al, 2021).

Role delegation is an important way to increase access to care given health workforce shortages, and improve efficiency. Different health professionals can be highly effective in delivering a wide range of services that have traditionally been delivered by physicians. For example, a 2013 systematic review suggested "no difference between the effectiveness of care provided by mid-level health workers in the areas of maternal and child health and communicable and noncommunicable diseases, and that provided by higher level health workers". This conclusion is supported by other reviews and analyses (WHO Regional Office for South-East Asia, 2018b; Gajewski et al., 2019). These non-physician clinicians have not only been found to be effective, but also more likely to last in rural placements (Mullan & Frehywot, 2007). Many countries have already taken steps to invest in developing the skills of the non-physician workforce to support role delegation. One such example is Ireland, who have committed additional resources to develop the nursing workforce (Box 4).

While PCTs are an efficient and effective way to deliver primary care, and options exist to mitigate some workforce shortages, more physicians, mid-level cadres and allied health professionals are needed to meet population health needs. This will require greater financial resources, more trainers, as well as the need to address quality and relevance of training (Couper et al., 2018).

Box 4. Investment in nursing in Ireland

In 2014, a Taskforce on Staffing and Skill Mix for Nursing was established in Ireland. The Taskforce was designed with five phases, each to focus on a different care area requiring specific safe staffing input. The core objective of the Taskforce was to develop a framework to support evidence-based determination of safe nurse staffing and skill mix.

Phase 1 focused on Acute medical/surgical inpatient areas in hospital settings, followed by Phase 2: Emergency care settings. Each phase of the Framework provides a systematic, evidenced based approach to calculating the nursing care hours required by patients in the care setting, and was tested through a pilot programme to demonstrate impact. The research looked at patient, staff and organizational outcomes pre- and post-implementation of safe staffing recommendations. Improved outcomes across all three categories were demonstrated and sustained over time. The final reports for Phases 1 and 2 (The Framework for safe nurse staffing and skill mix in general and specialist medical and surgical care settings in Ireland and The Framework for safe nurse staffing and skill mix in adult emergency care settings in Ireland) have been published (Department of Health, 2018), and Phase 3 has commenced in the non-acute general setting of long-term residential care settings for older persons.

The Safe Staffing Framework (Phases 1 and 2) is now government policy and the responsibility for further development of the Framework (including Phase 3) is with the Government Chief Nursing Officer (GCNO). The GCNO is also responsible for securing funding to ensure completed phases are implemented nationally. To date €25 million new funding has been allocated to the implementation of Phase 1 and €3.8 million new funding has been allocated to the implementation of Phase 2. The allocated funding provides for additional staff required to implement the Framework, and for costs associated with information technology and education. The continued evidence of better patient, staff and organizational outcomes demonstrated through implementation of the Framework is critical for securing ongoing investment.

2.2.3 Use of digital health tools

Digital health tools offer enormous potential for all countries to cost-effectively strengthen primary care and public health and to respond effectively to emergency health threats

Digital health applications such as telehealth, ePrescriptions, electronic health records, mHealth devices and artificial intelligence offer huge opportunities to improve the efficiency of the HCWF and to improve working conditions and outcomes for providers. Digital health tools can also promote patient empowerment, improve patient outcomes, accessibility, efficiency and quality of care delivery and the administration of the health system more widely (Fahy, Williams & COVID-19 Health System Response Monitor Network, 2021).

The value of digital health tools in meeting various health system goals has been demonstrated during the COVID-19 pandemic, where they have been used to support surveillance and monitoring, provision of communication and information, supporting health care provision, and to help deliver vaccination programmes (see Fahy, Williams & COVID-19 Health System Response Monitor Network, 2021 and see the companion policy brief *Global Health Workforce responses to address the COVID-19 pandemic* by Ziemann et al., 2023 for more details). It will be important for countries

to build on this experience and put in place an enabling environment to support expanded use – such as necessary infrastructure, clear legal frameworks governing use, financial incentives to support uptake and developing digital strategies. Importantly, there is also a critical need to invest in upskilling and reskilling to ensure HCWs have the necessary competencies and motivation to use existing and emerging digital health technologies (Fahy et al., 2021). Rapid innovations in digital health technologies are also driving the need for new and emerging roles across clinical (e.g. in clinical informatics of cancer immunology), technical (e.g. digital specialist, systems architect) and future-oriented areas (e.g. AI experts, bioprinting experts). While developing these roles may not yet represent strategic areas for investment for many countries, for others, it may enable health systems to harness the huge efficiency gains and health improvements promised by digital technologies.

2.2.4 Improving the distribution of the HCWF in rural and other underserved areas

Shortfalls in HRH and mismatches between available human resources and need for their services are substantial in many countries, especially in rural areas. Scheil-Adlung (2015) estimated that 77% of the rural population in Africa, 56% in the Middle East and 75% in Asia and the Pacific (excluding India and China) had no access to health care due to health worker shortages. This number was half or less than half in most regions for their urban counterparts.

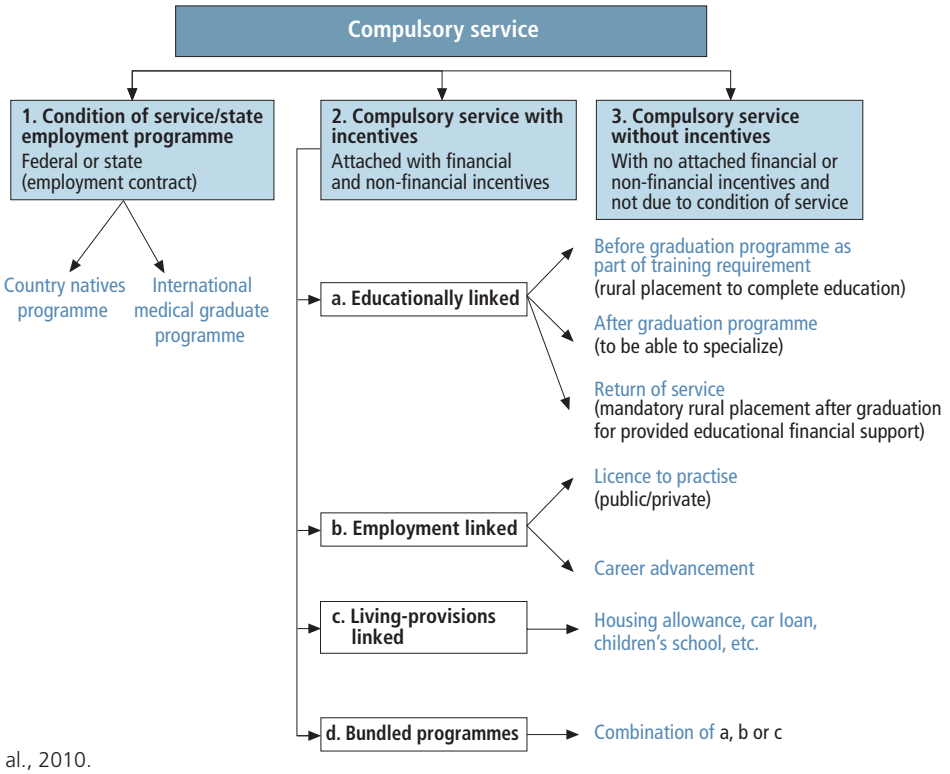
In 2021, WHO updated its guidelines on health workforce development, attraction, recruitment and retention in rural and remote areas. Strategies covered the areas of education, regulation, incentives and support.

Random allocation systems miss the opportunity to post those who are happiest to serve in rural or remote positions

Many countries use the practice of "posting" new graduates, which involves allocating new graduates to jobs without a recruitment or application process. Frehywot et al. (2010) provide a categorization of compulsory service programmes showing that "compulsory can be premised as a condition of service or employment, education programmes, license to practice, or can be attached to financial and non-financial incentives" (Fig. 2). Where no explicit national policy exists, some posting systems are non-transparent and not systematic (Purohit, Martineau & Sheikh, 2016), conducted solely at the discretion of local managers or have considerable variation between states and local government (Abimbola et al., 2017).

Random allocation systems miss the opportunity to post those who are happiest to serve in rural or remote positions and who in turn are likely to have higher morale, better performance, less absenteeism and a lower rate of attrition once posted to them. For example, a Cochrane systematic review concludes that rural background is the factor most strongly associated with rural practice, lending strong support for HCWF development programmes that target rural trainees (Grobler et al., 2009; Ziemann et al., 2022). There is also evidence, including from the United States, the Democratic Republic of Congo (Fagan et al., 2015; Phillips, Petterson & Bazemore, 2013), Norway (reported in WHO, 2018), Bangladesh, China, India, Thailand and Viet Nam (Pudpong et al., 2017) that HCWs end up practicing close to their training sites, offering support for investments in community-based and rural training sites.

Fig. 2 Classification of compulsory service programmes



Source: Frehywot et al., 2010.

Non-financial incentives can be more important than financial incentives in attracting HCWs to rural settings

Alternatives to posting systems focus on the use of financial and non-financial incentives. There is inconclusive evidence surrounding financial incentives as the quality of the studies is generally considered poor. A common finding is that financial incentives need to be combined with other measures for positive impact (WHO, 2018). Non-financial incentives can be provided through preferential access to education, training and professional development opportunities. These have been considered more important than financial incentives in several settings including Thailand (Wibulpolprasert & Pengpaibon, 2003), but were not considered effective in Bangladesh (Rawal et al., 2015; Joarder et al., 2018). Other non-financial incentives that can be offered include housing and career advancement.

HCWs in rural and remote areas will benefit from enhanced scopes of practice and continued training opportunities and psychosocial support

Given the shortage of HCWFs in rural and remote areas, there is some emerging evidence that enhancing scopes of practice with proper training and regulation can assist HCWFs perform better and have greater job satisfaction. Often in rural areas the limited HCWF is called upon to deliver services that go beyond their formal training. WHO has recommended that governments formally recognize this role and provide proper support and compensation (WHO, 2021c). Further investing in rural health systems to raise the profile of health workers by social recognition programmes, facilitating collaboration and knowledge exchange and intentionally providing career pathways are all strategies to enhance the development and retention of rural health workers (WHO, 2021c).

2.3 Investing in employment and retention initiatives

The Report of the United Nation's High Level Commission on Health Employment and Economic Growth (WHO, 2016b) made 10 recommendations to transform the health workforce to achieve the SDGs, of which the first was urgent action to develop labour market policies to stimulate employment opportunities for the HCWF with a special focus on women and youth. Producing sufficient graduates is not enough, they need to be able to find employment within the health sector, and stay in health careers. Retention not only requires adequate financial and non-financial incentives but also policies that support and protect HCWs. Decent working conditions are important not only to attract people to work in the health sector; but also to ensure they can perform at their optimal potential.

2.3.1 Investing in the labour market to stimulate demand to employ HCWs

There is a large gap between high-income countries and LMICs in the proportion of total jobs in the health and care sector – the HCWF accounts for 10% of the total employment in high-income countries and a little over 1% in LMICs (WHO & ILO, 2022). Many LMIC in particular face the paradoxical situation where there is a shortage of HCWF on the one hand relative to population needs, and unemployment or underemployment of health workers on the other (McPake et al., 2013). This situation occurs when there is insufficient demand for health workers as determined by the willingness to pay by the purchasers – government or private sector (Liu et al., 2017). In LMICs where the health sector continues to be dominated by the government sector, this gap in the willingness to pay is largely determined by the government's fiscal capacity and ability to employ qualified health professionals. While the demand for the HCWF is projected to rise in high- and middle-income countries, in low-income countries this demand is estimated to remain stagnant, even though population needs are growing. This situation can also lead to outmigration of the HCWF from settings where they are needed the most to higher income countries with better pay and work conditions (Liu et al., 2017). Therefore coordinated investments will be required – both domestic and international – to stimulate the health labour markets in these countries and increase employment opportunities for the HCWF. These investments should be coordinated and coherent across multiple sectors – education, health, labour, trade, immigration – to ensure sufficient employment with good pay and working conditions, including for women and young people to be attracted as well as to stay in these jobs (WHO, 2016b).

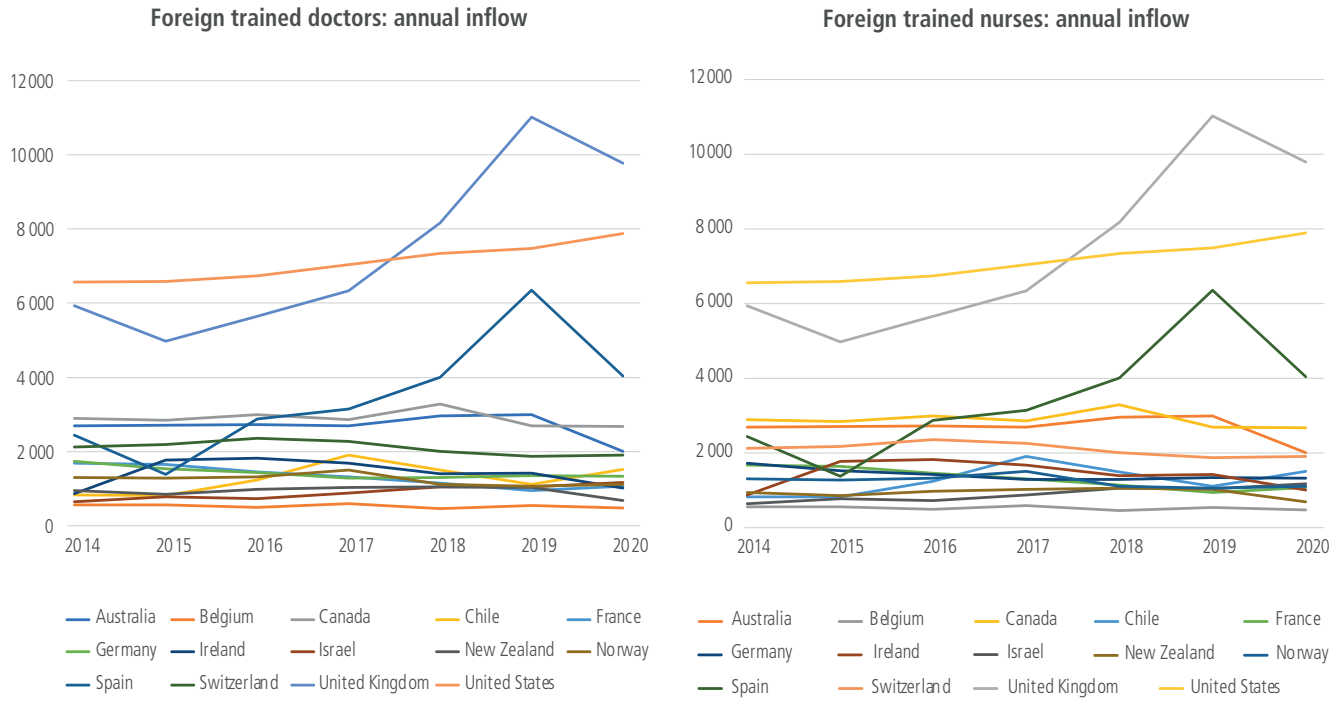
2.3.2 Investing to address HCWF migration

HCW migration results in substantial lost returns from educational investments

Health professional migration is associated with worldwide shortages of HCWs (Aluttis, 2014), and lost returns on investment from outward migration are estimated to be substantial for source countries. For instance, the migration of doctors from Ethiopia, Kenya, Malawi, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe was estimated to accumulate lost returns from investment in education of $2.17bn (Mills et al., 2011). Substantial outward migration is an indicator of weak labour market absorptive capacity (Govindaraj, 2018).

Low- and lower-middle-income countries produce about one third of foreign-trained HCWs. An OECD report found that in 10 African and Latin American countries, the emigration rates for native-born doctors exceeded 50% (OECD, 2020). However, when looking at emigration rates (ratio of domestically trained physicians abroad and total domestically trained physicians), four of the top 20 countries are in Europe (Estonia, Iceland, Ireland and Malta), five are in sub-Saharan Africa (Congo, Ethiopia, Ghana, Liberia and Zimbabwe) and the rest are in the Caribbean (Adovor et al., 2021). Data from the OECD show that inflows of foreign-trained doctors and nurses to OECD countries had plateaued to most countries between 2010 and 2018, rising in recent years (Fig. 3). The recent rise in health professional emigration can possibly be attributed to the COVID-19 pandemic.

Fig. 3. The annual inflows of foreign-trained doctors and nurses in selected OECD countries has slightly increased in recent years



Source: Author's analysis based on data from OECD.Stat.

Some countries have implemented policies to restrict HCW migration, while others capitalize on the advantages

Some countries have also implemented a range of policies to restrict HCW migration or encourage return. For example, China has introduced a policy known as the "Young Thousand Talents" to attract highly educated Chinese nationals abroad back to the country (Marini & Yang, 2021). In Thailand, government-sponsored medical students trained overseas are required to return home (Tangcharoensathien et al., 2018a, 2018b).

However, international migration of health workers offers career opportunities for HCWs and may benefit origin countries. For example, those who train with the intention of migration may not migrate immediately or at all, adding to the domestic HCWF. These professionals may have chosen a different career in the absence of opportunities to migrate. International migration of health professionals provides economic benefits to families who stay behind but benefit from remittances, and there are macroeconomic benefits associated through gross flow of remittances on aggregate demand. Philippines has been particularly opportunistic in capitalizing on these advantages and is the world's largest supplier of nurses and remittances, which comprises nearly 10% of national GDP (World Bank, 2022a). Philippines, and other countries such as India, have favoured expanding access to health professional education with the expectation of serving both domestic and international needs (Thompson & Walton-Roberts, 2019).

Investment is needed to address push factors for migration but destination countries need fair and mutually beneficial recruitment practices

There is a "medical carousel" of international HCW migration (Bundred & Levitt, 2000), which might be better recognized as a ladder by which health professionals seek to migrate to countries with pay and conditions at least one rung up from where they are and more secure job conditions, and leave those countries at the bottom of the ladder denuded of health professionals (Doshmangir et al., 2022). This suggests a distribution of responsibility at all points on the ladder. In countries of destination, addressing push factors of migration in countries of origin, such as by improving working conditions, pay and providing career opportunities among others, are key areas for strategic investment to tackle migration-related challenges.

Migration of health professionals is likely most responsive to policy in destination rather than origin countries, such as visa restrictions, diploma recognition, points-based migration systems, tax breaks and the availability of permanent residence status, hence the advocacy of restraint on the part of such countries in draining health workforce from the countries with the greatest shortfalls (Adovor et al., 2021; Drennan & Ross, 2019). Recruitment of international personnel should align with the WHO Global Code of Practice on International Recruitment of Health Personnel, which aims to ensure fair treatment of migrating health professionals, stop recruitment that would result in HCWF shortage in origin countries and encourages mutually beneficial government-to-government agreements (Clemens & Dempster, 2021).

2.3.2 Investing to ensure optimal distribution between public and private providers

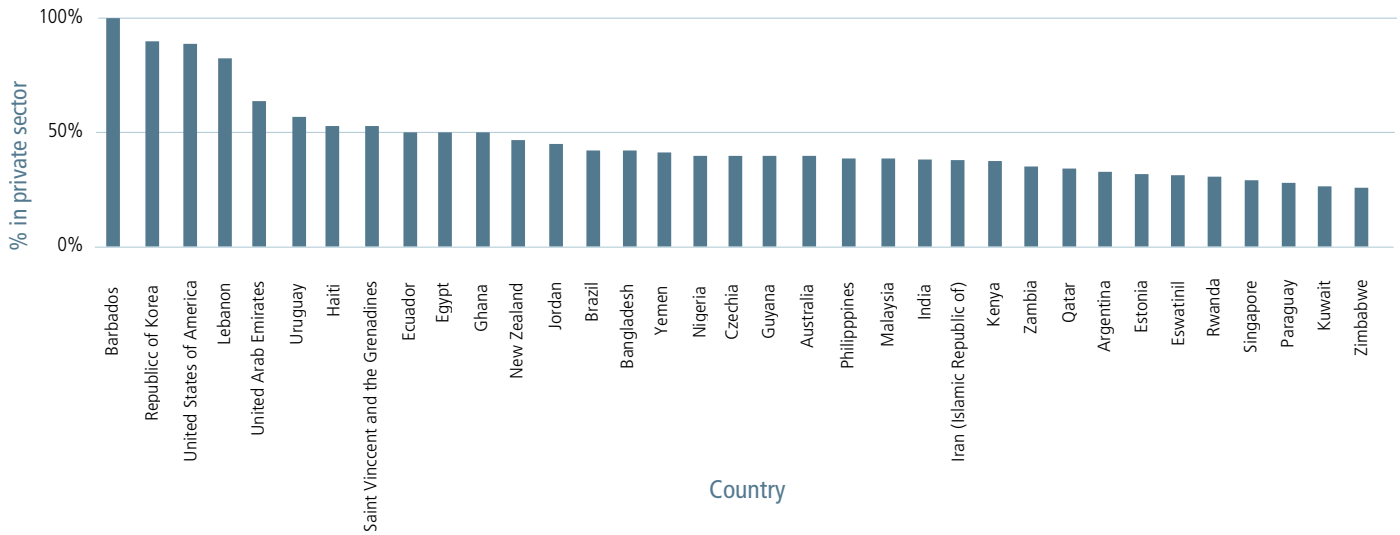
Some countries have sizeable private sectors that influence HCWF challenges

Lack of public investment and absorptive capacity in the public sector in some countries has led to increasing involvement of the private sector in delivering health care and employing HCWs (Govindaraj et al., 2018). While reporting to the National Health Workforce Accounts (WHO, 2023) on this issue is incomplete for the majority of countries, available data from reporting countries suggests the share of physicians and nurses working in private facilities is generally small in Africa and Europe, but several countries in the Americas, South-East Asia and Eastern Mediterranean regions have substantial private sectors that influence human resource challenges (Fig. 4).

Dual practice is a particular form of competition between public and private sectors for the available health professionals in a country's HRH stock

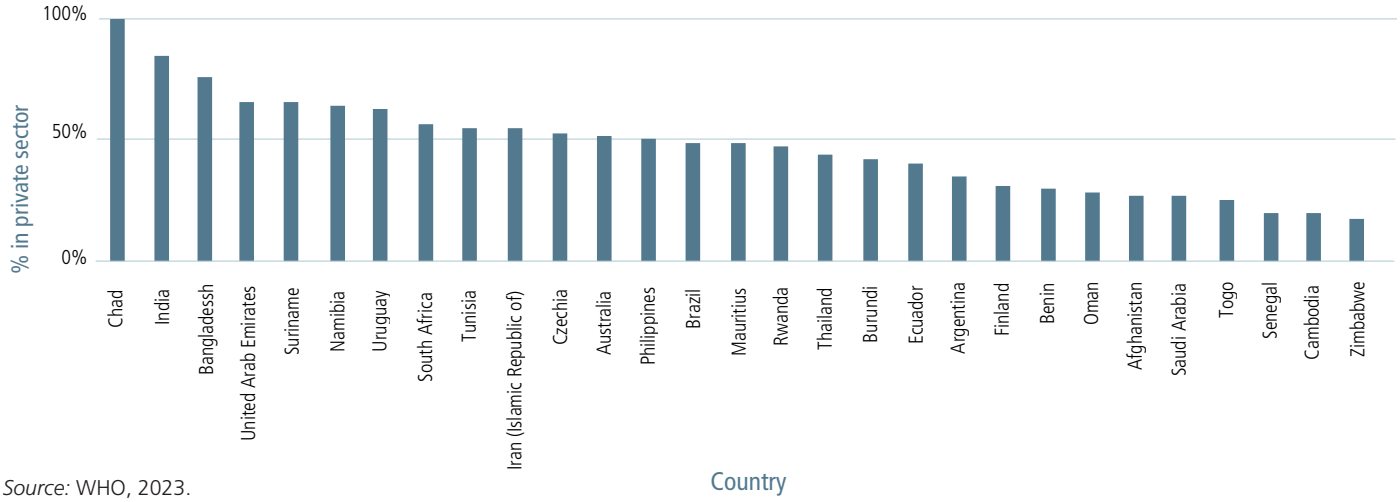
It is well recognized that health professionals are not uniquely employed by either the public or private sector; substantial numbers engage in dual practice involving employment and work assignments in both sectors (McPake et al., 2016). Table 1 show the potential negative consequences of dual practice for reaching UHC and regulatory options to minimize these negative impacts on the public health sector to deliver services effectively.

Fig. 4a Over 25% of nurses work in privately owned facilities in some countries



Notes: Data given for latest available year.

Fig. 4b In a small number of countries over 10% of medical doctors work in privately owned facilities



Source: WHO, 2023.

Table 1. Dual practice typology

Local conditions	Types of dual practice observed	Country example	Potential negative consequences for UHC goal	Type of regulatory options
Limited ability and willingness to pay for health services Limited private sector development Blurred boundaries between public and private, large informal private sector Poor regulation and enforcing capacity	Pervasive and unregulated dual practice, present in all its forms – outside, beside, within, as well as integrated to public services	Bangladesh, Guinea-Bissau, Nepal, Peru	Reduced provision of free-of-charge services Absenteeism and shirking by public sector health workers Illegal charges in public facilities	Introduce top-down regulation limiting health workers' dual practice Inform public patients about fees and charges, including free-of-charge services Separate public and private services
Rising incomes and ability to pay for health services Improved governance, regulatory and implementation capacity Incipient formal private sector clearly separated from the public sector	Dual practice to some extent regulated, and present outside and beside and at times within public services, but not in its integrated form	Cabo Verde, China, Mozambique, South Africa, Thailand	Poor quality public services Diversion of public patients to private practices Public sector personnel disproportionally distributed in facilities or locations in which dual practice is possible Limited range of public health services	Allow regulated dual practice outside and inside public facilities in specific places and times Monitor the implementation of regulation Offer exclusivity contracts Encourage self-regulation by professional bodies
High-income Sophisticated health systems and regulatory capacity Established private sector	Regulated dual practice, allowed outside, and in some instances, beside public services	Australia, Canada, Italy, Portugal, Spain, United Kingdom	Poor quality public services Diversion of public patients to private practices Public sector health workers move to the private sector	Market-based or financial interventions Provide incentives for positive behaviour Regulation by professional bodies Provide incentives to the private sector when outsourcing services Establish contracts with private providers

UHC: universal health coverage.
Source: McPake et al., 2016.

The impacts of dual practice have parallels with the impacts of a growing private sector absorbing a country's available health professional workforce by fully employing them and attracting them away from the public sector. This set of issues appears little recognized as they persist within monopsonistic public sector deployment systems, in which the public sector holds the monopoly purchasing role and health professionals have essentially no choice but to work for the government.

Srinivasan and Chandwani (2014) report on the growing Indian private health sector's human resource innovations that seek to attract the scarce talents needed by its hospitals and clinics with substantial focus on performance management, and reward and recognition systems. Similarly, in Costa Rica the private sector offers much better non-salary incentives to health workers, such as food, housing, legal defence etc., in addition to better working conditions in contrast to the limited nonmonetary incentives in the public sector. While dual practice is permitted as long as it happens outside of public sector work-hours, the reality is that with private practices coming up close to public facilities, it has been difficult to regulate this situation (Carpio & Bench, 2015). This further emphasizes the need to stimulate employment in the public sector and to invest in retention.

2.3.3 Supporting and protecting health workers

Financing the existing workforce is one of the best investments that can be made

If HCWs are not supported, are burnt-out and overworked and feel undervalued, this is a failure on behalf of employers. It means that HCWs will not be able to perform optimally and may drop-out of the workforce entirely. Creating sustainable employment conditions in-line with the ILO's Decent Work Agenda is a critical investment to improve retention and contribute to HCWF development (ILO, 1999).

Competitive salaries and benefits packages, flexible working arrangements,professional development and career advancement opportunities are all important investments to improve retention. It is also vitally important to ensure safe working environments, where health workers can deliver services effectively. This includes ensuring safe staffing, access to proper equipment and supplies, adequate workplace facilities (e.g. for breaks), workplaces free from harassment and discrimination, and support for mental health and well-being. While emergencies can impact the mental health and well-being of the HCWF (see the companion policy brief *Global Health Workforce responses to address the COVID-19 pandemic* by Ziemann et al., 2023), as literature documenting the impact of the COVID-19 pandemic has shown, organizational support can play a large role in mitigating this and improving worker retention and productivity. For example, during the COVID-19 pandemic, studies have found that perceived organizational support such as the supply of personal protective equipment (PPE), training and organizational communication regarding COVID-19 reduced fear and consequently psychological distress among the HCWF (Labrague and de Los Santos, 2020 De Kock et al., 2021).

Women make up a disproportionately large proportion of the HCWF globally, estimated to be 67% of the total workforce (ranging from 63.8% of the sector in LMICs to 75.3% in high-income countries), and yet there is a substantial gender wage gap with women being paid 20% less on average than men (WHO & ILO, 2022). In fact it has been estimated that the gender wage gap in the health sector is greater than that in other sectors. Investing in making health care sector working conditions safer for women, closing the gender pay gap, and providing decent working conditions for women with opportunities to enhance leadership roles will be fundamental to building a sustainable HCWF.

2.3.4 Managing performance

Managing staff performance is a critical human resource function that is a prerequisite of good quality health care (Healy & McKee, 2002). Performance management can be defined as "an interrelated set of policies and practices that, put together, enable the monitoring and enhancement of staff performance" (Martinez & Martineau, 2001). Improved performance management can be achieved by investing in continuing professional development (CPD) (encompassing internal and external peer review, recertification and external assessment), and providing incentives and resources for changing performance (encompassing changing management strategies, information provision, support and peer group influence, and both financial and non-financial incentives). However, success usually relies on combinations or "bundles" of interventions rather than a single one.

Table 2. Continuing medical education compared with continuing professional development as paradigms

Characteristics	Continuing medical education	Continuing professional development	Competency-based continuing professional development
Drivers	Teacher	Self-directed	Self-directed; needs of health care system
Focus	Clinical expertise	All competencies required by medical practitioner	Performance of medical practitioner in clinical practice
Curriculum	No	Yes	Yes
Delivery	Formal lectures in auditoria	Wide range of learning methods; including online and informal,	Wide range of learning methods; including online
Outcome	Improved patient care	Improved patient outcomes	Improved patient outcomes; meets needs of health care
Comment	Decontextualized, fragmented	Self-assessment and reflection are assumed	Performance in practice is measured objectively

Source: Filipe et al. (2017).

Continuing professional development can be used to improve individual and team performance and help HCWs keep up with emerging and evolving practice

Filipe, Mack & Golnik (2017) have suggested that CPD is a paradigm replacing that of continuing (medical or other professional) education (Table 2). CPD uses a broad range of methods and focuses on a broad range of professional attributes. It relies on self-direction on the part of the health professionals, but also oversight and direction from other health sector actors such as regulatory bodies.

The endemic shortage of HCWs poses a serious impediment both in terms of health workers being able to leave their facilities for CPD, or use newly acquired skills. Workers in rural areas suffer the most due to transport challenges as well as lack of Internet to access online CPD in Tanzania, Malawi and South Africa (Feldacker et al., 2017). Similar results have been found in Philippines, where remote health staff have faced difficulties accessing courses that are mainly offered by private companies in cities; and there have been accusations of exploitation due to the high fees charged (Crispino & Rocha, 2021). This has led to exemptions from CPD. During COVID-19 disruptions in 2020–2021, many CPD opportunities migrated to online delivery allowing for some alleviation of these constraints. Some evaluations also identify lack of self-motivation (Feldacker et al., 2017), or demotivation due to different standards between health facilities in the context of lacking national requirements (Shah et al., 2016).

There is very little literature about change management processes and techniques, likely due to a failure to publish rather than a lack of experience

Shaw (2006) emphasizes a range of ways of supporting the human resource contribution to quality improvement. Such documented and published accounts of the use of mechanisms such as internal and external peer review and change management processes are scarce in the literature. This might reflect a failure to write up and publish experience rather than a lack of experience.

Rowe et al. (2018) reviewed effective strategies for improving performance of HCWs in LMICs. They found 2 269 studies from 64 countries, exploring 118 strategies, most with multiple interventions. Strategies fell into the broad categories of community education, patient education, infrastructure strengthening, group problem solving, supervision, training, direct financial incentives, regulation and governance, printed information or job aids, ICT and other management techniques. Very little was reported on management techniques, and the review found almost zero effect size for some strategies such as job aids and printed information, and moderate effect sizes for strategies such as training or supervision when used alone. Their effect sizes were higher when combined. Group problem solving had the largest effect size as did community education when combined with health worker training. However, the quality of evidence of most studies was determined to be low and the differences in context and methods made cross-comparisons difficult.

Financial incentives to improve performance are difficult to implement in settings where health systems are underperforming, may not be cost-effective or achieve desired outcomes.

Much more has been published about the use of financial incentives to improve performance. Financial incentives arise from the ways health professionals are paid for their work in general – for example whether they are paid by salary, by fee for service or by capitation (Table 3).

Given that no system dominates in terms of its characteristics, many countries have adopted blended systems, often with additional pay-for-performance (PFP) components. OECD country experience suggests that activity-based funding and PFP for hospital reimbursement are complex interventions that require a set of prerequisites including organizational commitment, adequate infrastructure, human, financial and information technology resources, change champions and personal commitment to quality care (Baxter et al., 2015). Experience from Thailand

Table 3. Payment systems to improve performance

	Fee for service	Capitation	Salary
Behavioural response	Increase provision of services to all patients	Keep all patients satisfied (but not necessarily the time consuming ones)	"The patient in front of me shall be my only consideration"
Negative effects	Overprovision of own services Supplier-induced demand (SID)	*Under*provision of own services Cream skimming	Cost-inefficiency ("shirking", "slacking") Waiting time
Cost control within primary	Bad	Good	Very good
Gatekeeping	Good	Bad	Good

Source: Olsen, 2017.

echoes this list of preconditions (Khampang et al., 2016) and experience from China highlights that PFP schemes require substantial institutional capacity and IT systems (Pu et al., 2020). Overall, the cost–effectiveness of PFP approaches is further questioned by reviews that suggest that their performance is mixed and where positive the impact is small (Lagarde, Huicho & Papanicolas, 2019; Borghi et al., 2015; Khan et al., 2019).

3. How can we ensure sufficient funding is available for strategic investments in the HCWF?

During COVID-19, many countries and international organizations mobilized substantial additional funding to ensure the HCWF could respond to emergency demands and continue essential and elective services. However, there is now a danger that funding for the HCWF will be scaled-back as countries aim to restrict growth in public spending due to the economic fallout from the pandemic. This risks repeating mistakes of the past. As noted by the Pan-European Commission on Health and Sustainable Development, sustained underfunding in the HCWF in Europe – often in response to austerity agendas implemented in the aftermath of the economic crisis in 2008/9 – left health care systems in Europe less resilient and less able to respond to COVID-19 (McKee, 2021).

Even with challenging economic circumstances, it is vital that existing funding is protected and additional resources mobilized to help countries reform and strengthen their HCWF. This will require ambition at both the national and international levels and stronger collaborations to plan, prioritize and focus investments where they are most needed. A new approach and a new narrative is needed to ensure financing for the HCWF is not seen as a short-term cost, but rather a strategic long-term investment that can enhance the resilience of health care systems, societies and economies. This section explores how sufficient resources for the HCWF can be made available from domestic and external sources.

3.1 Protecting and increasing public revenues at the national level

3.1.1 Creating fiscal space for public revenues

Specific to the HRH, the creation of fiscal space is the ability "to direct resources towards health workforce investments without unduly compromising the short-to-medium term ability of the government in other functions—substantially crowding out expenditure in other areas of the health sector or other sectors" (Asamani et al., 2022). Common sources of fiscal space for health are outlined in Box 5.

Box 5. There are a number of well-known mechanisms to create fiscal space for health

There are a number of common options for government to raise revenues for health, with most countries using a mix of options:

Promoting economic growth: If the economy grows and the proportion of fiscal revenue allocated to health remains constant, the result is more fiscal space for health (Tandon & Cashin, 2010). The structure of the tax and the health financing system may influence how economic growth translates to increased fiscal space for health. For example, if economic growth results in increased wages, and the health system is primarily funded through an earmarked payroll tax, this would result in a substantial addition to fiscal space for health. On the other hand, the same economic growth would have less of an impact on a system where health is primarily funded from general taxation (PAHO, 2020).

Increased and more efficient domestic revenue collection: Greater taxation and more efficient tax collection are important components to increase fiscal space for health (PAHO, 2020). This may include through VAT; taxing income,assets, multinational companies or industries; earmarked taxes; and so-called sin taxes on items that adversely affect health (usually tobacco or alcohol). Some indirect taxes such VAT and sin taxes are regressive in nature; however, they can play an important role in raising revenues in countries with large informal economies that may take time to build up a sufficient tax base. Policies that increase tax efficiency, for instance by allowing fewer tax exemptions or better tax administration, also help to raise revenue for health.

Prioritizing spending on health and HRH: Reprioritizing funds towards health is defined as increasing the proportion of government budget allocated to the health sector. The potential to expand fiscal space for health through reprioritization is considerable, with few countries spending the recommended 5% proportion of the government budget on health (WHO Global Health Observatory, 2022; Barroy, Sparkes & Dale, 2016). Redistributing expenditure towards health has several challenges. Public expenditure is often already committed either legally, contractually or politically and cannot be repurposed without undesirable consequences. Also, redistributing expenditure often requires delicate trade-offs between expenditure in other sectors and consideration of wider economic consequences

Improving the efficiency of spending: This can be achieved, for example, by reforming: pharmaceutical policies on procurement, distribution, pricing and reimbursement; provider payment systems; HRH policies and management practices; public financial management reforms.

Borrowing can provide governments with additional resources in the short-to-medium term, but may ultimately constrain resources as interest payments and loans are repaid. External overseas development assistance may be necessary for some countries, but should not be thought of as a long-term solution due to the volatility of funding, displacement of domestic funding and absorptive capacity challenges.

Some countries face internally and externally imposed constraints that limit their ability to create fiscal space

Public sector domestic financing is the most important source of funding for the HCWF, both in the short and long-term. Raising additional domestic resources for HRH will be enormously challenging given the deterioration in public finances and increasing levels of debt due to the economic downturn from the COVID-19 pandemic, in particular in LMICs. Creating fiscal space and raising additional domestic revenues for investment in the HCWF is, however, possible for all countries even though support from external sources of funds may also be needed to fund all required reforms.

The WHO Council on the Economics of Health for All (2021) nevertheless highlights that many countries, particularly those in the global south, face constraints on their monetary sovereignty that limit their ability to create fiscal space for health. These constraints include:

1. internally imposed legal limits on the levels of budget deficits, national debt or government expenditure;
2. externally imposed fiscal rules, in the form of austerity recommended or required by supranational groups, such as the European Union (EU), or by international financial institutions such as the International Monetary Fund (IMF), which have historically required governments to limit the size of their budgets or meet debt reduction targets in exchange for financial assistance in the event of an economic, financial or social crisis;
3. concern about the impact on credit rating and ability to access capital. Capital market players tend to have exaggerated concerns with sovereign debt viability, to the extent that even modest increases in fiscal deficits or national debt can lead to sell-offs of government bonds and national currencies;
4. the difficulty of raising tax revenues consistently in proportion to economic activity, owing to low corporate tax rates and corporate tax incentives, reliance on regressive value added taxes, tax avoidance by multinational corporations and high net-worth individuals, and trade and investment treaties that compromise public capacities to raise tax revenue.

A rethink of internally and externally imposed limitations on public spending by governments and multilateral organizations could help create additional options for countries to raise public revenues and invest in public services such as health.

3.1.2 Political leadership and intersectoral collaboration

Strong political leadership is a fundamental condition for increased investment in the health and care workforce

There will be no efficient investment in the HCWF without strong political leadership to prioritize and champion additional funding. This precondition was exemplified during the COVID-19 pandemic, with the mobilization of substantial resource for the HCWF only possible once it became a political priority and top-level government officials agreed upon additional investments (Box 6).

Box 6. Ghana Investment in the HCWF during the COVID-19 pandemic

In response to the COVID-19 pandemic, the Government of Ghana (GoG) announced a strategy to rapidly recruit qualified but unemployed health workers to fill staffing gaps and incentivize all public sector health workers by waiving income taxes on their salaries. To holistically improve the country's health systems performance and resilience, Ghana significantly increased its public sector health workforce (HWF) capacity by recruiting 45 107 new health workers between April and November 2020. Of these new recruits, 44 107 were permanent staff of various categories (including health professionals and graduate unemployed nurses and midwives) and 1 000 were temporary contact tracers.

To incentivize the health workforce, the government waived personal income taxes for all public sector health workers from April to December 2020 and offered 10 001 front-line health workers an additional 50% allowance. The government also committed to paying a 50% base salary bonus to front-line health workers and ensured their protection by providing PPE, training on infection prevention and control, and life insurance cover of up to GHS350 000 (approximately US$ 60 345) per front-line health worker against COVID-19 infection and death.

Conservatively, Ghana spent at least US$ 213.6 million on health workforce recruitment and incentives during the first year of the pandemic. The new recruitments are estimated to have increased the health sector wage bill by 32% compared with that of 2019; 47% of the sector budget came from GoG sources, while the remaining 53% was sourced from internally generated funds of health facilities (24%) and from development partners and donors (29%).

The GoG's significant investments in the health workforce during the pandemic resulted in a 35.5% increase in public sector health workforce capacity. This not only helped to mitigate the impact of the pandemic on the country's health workforce but also provided public sector employment opportunities for health workers who would have otherwise remained unemployed. Additionally, incentives provided to health workers played an essential part in mobilizing the health workforce for emergency response.

Source: Asamani et al., 2022

Intersectoral stakeholder engagement is needed to plan and co-finance strategic investments

Improved intersectoral governance processes are needed to bring together public, private and other stakeholders to plan and co-finance HRH investment plans. This is especially so as much of the funding to strengthen the HCWF falls under the remit of the education sector.

Successful **intersectoral leadership** happens if the Ministry of Health and another ministry, such as education, employment or finance, agree on the importance of investing in the HCWF and, at the same time deem the focus of the investment uncontroversial, which may include expanding, strengthening and innovating training programmes and facilities, and improving working conditions. Where the importance of an investment is agreed upon, intersectoral collaboration will be relatively easy (Greer, 2012). Some of it will be purely technical and the political part may relate to the distribution of investment costs, and the credit for the successful collaboration, to bring the health system and UHC forward.

Very often, however, different sectors assign different priorities to investing in the HCWF. While other sectors may pay lip service to the importance of HCWF development, they will argue that they have more important priorities. Or they may not agree on the focus on investment. Traditionally, medical schools and ministries of education would argue for more specialist training to achieve clinical excellence, while ministries of health are trying to increase the number of general practitioners, nurses and nurse practitioners. All too often the proposal of the Ministry of Health to invest in the HCWF is controversial as the treasury or Ministry of Finance may argue for budget consolidation or austerity policies. For example, in Ireland during the economic and financial crisis, the Ministry of Health avoided substantial cuts in the front-line HCWF but had to introduce staff reduction in non-acute settings (Williams & Thomas, 2017). In 2015, nursing bursaries in the UK were cut under an austerity agenda, leading to a massive drop in student applications. The bursaries were reintroduced in 2020 but with a substantially lower endowment (Foster, 2017).

Top-level leadership, however, is a necessary precondition for successful governance if there is no consensus between the health sector, education, employment and finance. It is then up to the head of state to make it a top priority and to mobilize the cabinet and set the HCWF agenda. The COVID-19 priority has provided plenty of examples for top-level leadership, when decisions on investing in health systems and the health workforce were at the discretion of the head of state. There were in many countries several waves of time-limited centralization of health system and HCWF decision-making (Greer et al., 2022).

A **whole-of-government approach** may also be necessary because in many countries key functions are delegated to arms-length bodies such as health service executives or self-governing bodies such as sickness-funds. In those cases leadership and agenda setting may need to be accompanied by specifying legal mandates.

A **whole-of-society approach** is key because the health system is populated with many civil society organizations and some of them are the most powerful in a country. Medical chambers, professional associations, associations of providers and patient organizations may support, or prevent or divert investment in the HCWF. The power of vested interest must not be underestimated. They may divert monies into the wrong pockets, contributing to inefficient investment.

An example of the potential of intersectoral dialogue to facilitate greater investment in the HCWF can be seen in Niger. Here, the ILO-OECD-WHO (International Labour Organization-Organisation for Economic Cooperation and Development-WHO) Working for Health (W4H) programme enabled Niger to engage with a range of sectors and ministries to develop a National Action Plan for Investment in Health and Social Sector Employment and Growth 2018–2021. The Plan was endorsed by the government and adopted through a presidential decree. In 2019, the programme led to the creation of 2 500 community-based health worker jobs and 5 000 indirect jobs in three regions (UHC2030, 2020).

HRH units in ministries of health are needed to help plan and provide evidence for HCWF investments

To facilitate coherence across sectors, particularly health and education, Human Resources for Health Units have been recommended to be set up to coordinate inter- and intra-ministerial action to support HRH strategy (Cometto et al., 2019). As part of the monitoring of the implementation of that policy, WHO (WHO Regional Office for South-East Asia, 2018a) reported that of 11 countries surveyed, eight had set up such a unit by 2018 while two of the others had developed other institutional mechanisms to serve the same purpose. Further ways to strengthen intersectoral cooperation and planning for the HCWF are discussed in greater detail in the companion policy brief *What can intersectoral governance do to strengthen the health and care workforce?* by Caffrey et al., 2023.

It is important that ministries of health are at the decision-making table when financial decisions are made. For example, HCWF salaries which make up the major

proportion of health budgets in many countries and play a critical role in attracting and retaining health workers, are often outside of Ministry of Health control as pay scales are determined by civil service rules which might be inflexible. Investment decisions in HCWF need to be guided by timely strategic analysis of population health needs, education supply and labour markets. For this, robust health information systems are required which can provide disaggregated data such as by gender and different types of health professionals.

The governance of private investment and public–private partnerships need to be strengthened

There is no adequate replacement for publicly funded health care and public investment in the HCWF. At the same time, it should be acknowledged that private sector for-profit and not-for-profit financing plays a key role in funding health care globally. This type of financing nevertheless brings many challenges as private firms are often looking to maximize profits in the short-to-medium term which may run counter to longer-term health sector goals (WHO, 2021c). Moreover, public–private partnerships can increase the overall cost of projects to the government if not properly managed and monitored. This makes it important that governance of private financing and the design of public–private partnerships are strengthened to ensure they align with public sector aims. As noted by the WHO Council on the Economics of Health for All (2021), this may necessitate better regulation, improved transparency and accountability in decision-making, as well as "redesigning the terms and conditionalities that structure contracts, grants, transfers, loans and partnerships". In addition, incentives such as through explicit and implicit subsidies can be offered to encourage private investment to align with health sector goals.

3.1.3 Making the economic case for investing in the HCWF

The health sector needs to generate quantifiable evidence on how the HCWF contributes to health system, economic and societal goals

There is often pervasive underinvestment in health and social policies and the public sector as a whole. This is especially so in highly "feminized" sectors such as health that employ large numbers of women who are often undervalued by policy-makers and society more widely (WHO & ILO, 2022). The health sector is also seen as highly labour-intensive and therefore unproductive, reducing desire from some actors to fund it sufficiently. There is therefore often little concerted discussion between connected ministries around financing for HRH and the "negotiating" space is limited. A new narrative is needed to ensure that the HCWF is seen as an investment and not a cost.

Country-specific evidence to quantify and demonstrate how much investment in the HCWF contributes to meeting health, social and economic objectives can help provide evidence to generate political support for greater funding. For example, stable and sufficient funding for the HCWF can drive inclusive economic growth by creating jobs – especially for women, young people and in rural areas. WHO and ILO have calculated that the HCWF directly account for 3.4% of total global employment, ranging from 1% of total employment in LMICs and up to 10% in high-income countries (WHO & ILO, 2022). Investment in the HCWF can also help promote economic diversification, reducing dependence on industries such as tourism or extractive industries that are susceptible to changes in external markets and other shocks such as the COVID-19 pandemic (Lauer et al., 2017).

The health sector also drives job creation and innovation in productive industries such as pharmaceuticals, research and development and manufacturing. While there is limited evidence on effects in LMICs, evidence from high-income countries suggest they are substantial. In Spain, for example, the health technology industry employed 28 500 people in 2020 and generated a turnover of €8.8 billion (Bernal-Delgado & Al Tayara, 2022). In France, digital health start-ups were estimated to have an annual turnover of €800 million in 2019, rising to a projected €40 billion by 2030, while the medical devices sector had a turnover of €30 billion in 2019 and generated 90 000 jobs (Or & Al Tayara, 2022).

Investing in the HCWF can also generate substantial economic benefits by promoting health and human capital development, social cohesion, social protection and health security (Lauer et al., 2017; WHO, 2017). The health sector can therefore support progress in meeting a number of SDGs including: improved health and well-being (SDG 3), decent work and economic growth (SDG 8), poverty alleviation (SDG 1), improved education (SDG 4), gender equality (SDG 5) and reduced inequalities (SDG 10).

It is enormously challenging to determine the overall contribution of the HCWF to the economy due to various multiplier effects. However, estimates of the size of the broader health economy, while still difficult to calculate, give some indication of the importance of the HCWF for economic growth. For example, using data from the OECD and World Bank, Lauer et al. (2017), have estimated that the size of the health economy in 34 OECD countries amounted to almost US$ 10.3 trillion prior to the COVID-19 pandemic; the global health economy was stated to likely be "the second-largest economy in the world, after … the United States". It is therefore likely the returns on investment in the HCWF in terms of promoting inclusive economic growth are considerable in every country.

Securing and mobilizing long-term sustained levels of domestic funding also requires evidence on the efficiencies that can be gained through existing expenditure on recurrent costs that may be underfunded, such as salaries, enhancing working environments and protection and support measures. Evidence on efficiency gains from recurrent spending is limited, and requires improved monitoring and evaluation in countries to show how investment is linked to different health system goals. This requires better data and stronger HRH information systems, as well as necessary institutional capacity in ministries of health.

3.1.4 Improving budget efficiency in the health sector

Budget efficiency in the health sector is important to help prioritize and allocate funds better

Inefficiencies in the health sector budget cycle processes – the prioritization and allocation of funds, the execution of the budget and its evaluation – has been identified as a key challenge to efficient investments in building a resilient health system in LMICs (Barroy et al., 2019). In many countries health budgets are disconnected from health sector needs and planning and costing processes relying on input-based or line-item budgeting using historic trends. There are additional issues in the expenditure of allocated funds due to several factors such as late release of health sector funds, rigidities in ex-ante accountability structures and controls, limited health provider financial autonomy and ability to reallocate funds according to needs. Weak public financial management (PFM) systems in the health sector have led to endemic underspending of health budgets in LMICs which leads to a vicious cycle of reduced funding in subsequent years (UHC2030, 2020). Barroy et al. (2019) estimated that 13 of 26 African countries reported more than 15% of underspending of their annual health budgets.

Budget efficiency in the health sector can be achieved through a number of mechanisms with the specific approach dependent on country context and the specific challenges faced by the health system (Box 7).

Box 7. Budget efficiency in the health sector can be improved through a number of actions

Evidence-based decision-making: Allocating resources based on the best available evidence of what works, such as clinical and cost–effectiveness studies, can help ensure that resources are used effectively and efficiently.

Strategic purchasing: Health systems can leverage their purchasing power to negotiate better prices for essential health products and services.

Increased transparency and accountability to help prevent corruption and mismanagement of health funds, and provide a more accurate picture of where resources are being used.

Improved financial management: Strengthening financial management systems and processes, such as budget planning and forecasting, can help ensure that resources are used effectively and efficiently.

Better health workforce planning and management: Effective planning and management of the health workforce can help reduce the costs associated with staff turnover and absenteeism, and can also help ensure that the right skills and resources are in place to deliver quality care.

Health systems strengthening: Addressing broader systemic issues, such as weak governance and weak health systems, can help ensure that resources are used effectively and efficiently, and that health outcomes are improved.

Some lessons have emerged from COVID-19 on PFM mechanisms that made it easier for countries to quickly respond to the pandemic or caused barriers to an effective response (Barroy H et al., 2020). COVID-19 responses showed that countries with a flexible programme-based budget structure linked to policy objectives and outputs rather than line-item budgets made it easier to quickly reallocate funds. It is important that these structures are paired with robust accountability mechanisms to improve expenditure tracking. Further robust intergovernment transfer mechanisms built on formula-based approaches were key to moving money to the frontlines quickly. While some countries with more robust mechanisms built on these in their PFM response to COVID-19, others with weaker PFM systems introduced changes to their regular systems to allocate and disburse funds in an emergency. Countries should explore how they can sustain these changes to help respond more efficiently to HCWF investments for the future. While countries have been putting in place policies and systems to reform their public management systems, this is not an easy task and will take time.

3.2 Rethinking external sources of funding to support HRH goals

Solidarity and cooperation at the multilateral, regional and domestic levels is needed to secure sufficient and sustained investment

Domestic resource mobilization is key to funding the HCWF. However, creating sufficient fiscal space to meet HCW targets is likely to be challenging for countries with constrained budgetary space, especially low-income countries. External source of funds, such as through regional funding initiatives, direct financing and foreign aid can play a critical role in mobilizing sufficient resources to meet health-sector specific goals. This is especially so as rising levels of debt and fiscal deficit and a fall in remittances curtails the ability of many countries to raise sufficient domestic revenues to fund the health sector and other public services.

3.2.1 Regional funding initiatives for the HCWF

Regional funding initiatives play an important role in providing additional investment for the HCWF

All regions have established their own collaborative funding mechanism, which provide some funding for HCWF employment and education initiatives as part of broader social and economic development programmes. For example, the EU has numerous mechanisms available that can be used by Member States in support of HCWF objectives, with the amount of funding available increasing since COVID-19 (Box 8). Another example is the Inter-American Development Bank (IADB), funded through Member countries' subscriptions and contributions, borrowings from capital markets, equity and co-financing ventures, which provides loans, grants, guarantees and equity investments to Member countries (IADB, 2023). Part of the long-term socioeconomic development funding available can be used to support national objectives for the HCWF, such as developing rural health posts, ensuring the optimal utilization of HRH at the hospital level, and investment in education and training – including infrastructure. These types of regional cooperation mechanisms that pool resources and capacities can help fund education and employment initiatives that would otherwise be cost prohibitive to establish using national financing.

Box 8. The EU has a number of financing mechanisms available to Member States and third countries for HCWF reforms

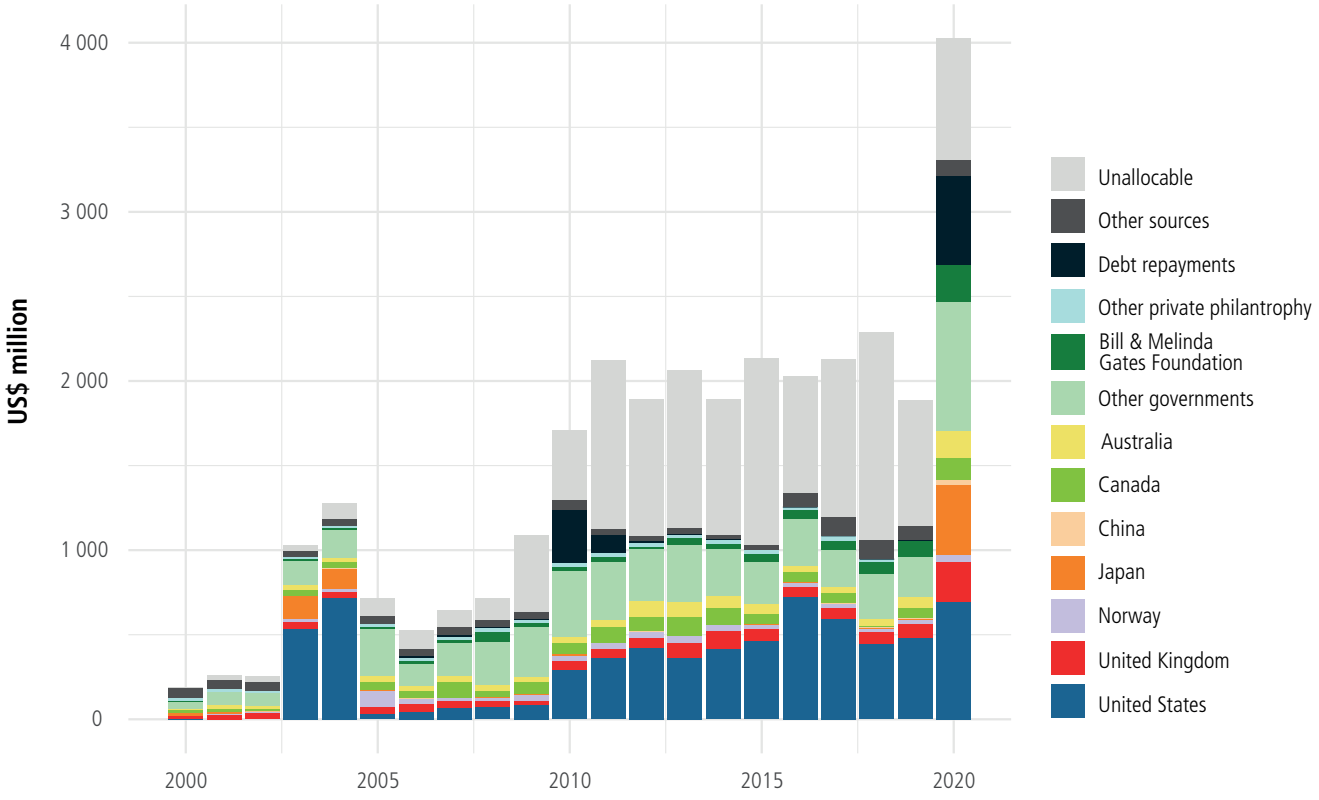
Although the organization and delivery of health care, including health workforce planning, is an EU Member State competence, investment in the retainment, development and training of HCWs is supported through a range of financial instruments at Union-level.

The COVID-19 pandemic has unlocked new funding through the Recovery and Resilience Facility (total budget: €723.8 billion in grants and loans) with a focus on promoting the green and digital transitions, which some Member States have opted to partly invest in training, upskilling and capacity-building in these areas (European Commission, 2021; 2023a). This can be complemented by support from other large financial packages, including the Cohesion Policy funds, which finance a broad range of training, education, employment, and social initiatives through the European Social Fund Plus (ESF+ €99.3 billion).

The EU also contributes to monitoring and developing solutions to tackle workforce challenges, having funded several multi-country projects and joint actions in recent years through its Health Programme (now EU4Health), including the "health workforce projects cluster", covering five different projects focused on task-shifting, retention, and medical deserts (European Commission, 2021c; 2023b; AHEAD, 2023). With a budget over 10 times larger than its predecessor (MFF 2021–2027: €5.3 billion), EU4Health is likely to continue offering similar funding opportunities through a dedicated work strand on health systems and the health care workforce.

The EU also invests in the professional development of HCWs beyond the Union's borders (WHO, 2010). For instance, Horizon Europe (e.g., Marie Sklodowska-Curie Actions for doctoral and postdoctoral training) or Erasmus+ (2021–2027 MFF: €26.2 billion) are primarily EU-based but offer some training and professional development opportunities that are accessible to individuals (and institutions) from third countries (European Commission, n.d.). Global Europe, the EU's umbrella instrument brings previously separate funds under one roof to support its neighbourhood, international cooperation and development policies in third countries. With a total budget of €79.5 billion (2021–2027 MFF) and earmarked funding for human capital development, supporting health workforce skill-building, training and recruitment is featured among its investment priorities.

Fig. 5 The United States has generally been the largest funder of development assistance for HRH, but contributions from other countries and Foundations are growing



Source: Micah et al., 2022.

3.2.2 Multilateral and bilateral funding for the HCWF

The share of development assistance spent on the HCWF has increased over time but remains low and needs to be increased

Tracking of development assistance for the health workforce over time shows it has increased since 2016 (Micah et al., 2022). In 2020, development assistance for the health workforce reached a high of US$ 4.09 billion; this is more than two times the amount in 2016, the year the WHO's Global Strategy on Human Resources for Health was adopted (Micah et al., 2022). Approximately 30% of development assistance for HRH activities was allocated to 47 countries identified by WHO as having the most pressing UHC-related HRH needs. However, Micah and colleagues highlight that development assistance for the health workforce comprises a small proportion of total development assistance, at a share of just over 5% per year since 2016. Moreover, while the growth rate in development assistance for HRH was positive in all regions from 2000 to 2015, the year-on-year growth rate between 2016 to 2020 was negative in North Africa and the Middle East, South Asia and sub-Saharan Africa.

The United States has been the largest individual donor to health workforce related activities since the mid-2000s (Fig. 5). However, contributions from the Bill & Melinda Gates Foundation and from other governments, notably China, Japan, Norway and the United Kingdom, have increased substantially over time (Micah et al., 2022).

From 2016 to 2019, the largest share of development assistance for the HCWF has been allocated to training (42.4%), followed by activities that support the creation of HRH policies and management plans (27.6%), 17.5% allocated to other activities not classified, education (5.3%), staffing costs (4.1%), infrastructure (3.2%) and a negligible amount for health workforce information systems (Micah et al., 2022). As noted by Micah et al., funding skewed towards training can help alleviate immediate skills gaps; however, it may not promote development of a sustainable health workforce as it does not tackle major issues such as the high costs of educating and employing HCWs or managing internal and international mobility. Additionally, under a third of development assistance for the HCWF during this period was targeted towards activities designed to promote gender equality. This is despite women comprising the majority of the HCWF globally and the existence of persistent gender-based inequalities in pay (WHO & ILO, 2022).

Global health financing should support long-term objectives and facilitate additional and sustained increases in domestic resourcing for the HCWF

A substantial increase in external source of funding will likely be necessary to help many countries reach HCWF-related goals. For example, even prior to COVID-19, Stenberg et al. (2017) estimated that an additional US$ 92 billion to US$ 150 billion would be needed annually to help strengthen the HCWF in LMICs.

Initiatives that use blended financing models that combine different sources of funding, such as grants, loans and private sector investments, are likely to become increasingly important in raising additional revenue for the HCWF from international sources. The goal of such initiatives is to leverage different sources of capital to bridge financing gaps and maximize the impact of investments. In blended financing initiatives, concessional loans are offered on terms more attractive than market conditions, helping to de-risk investment for countries and private capital.

One example of a blended financing approach is the Lives and Livelihoods Fund launched by the Islamic Development Bank in 2016, and supported by the Islamic Solidarity Fund for Development, the Bill & Melinda Gates Foundation, the King Salman Humanitarian Aid and Relief Centre, the Qatar Fund for Development, the Abu Dhabi Fund for Development, and the UK Department for International Development. The Fund pools grants from donors together with ordinary (market-based) lending capital from the Islamic Development Bank, allowing concessional loans to be given to low-income Member countries to support essential development projects (LLF, nd). The Fund has supported projects to support education and sustainable employment of HCWs, including in Benin (Box 9).

Box 9. Concessional financing in Benin to improve access to services and progress towards UHC

A situational analysis undertaken by the Ministry of Health in Benin in 2016 identified a shortage of health workers and uneven distribution of staff across provinces. The Government of Benin made addressing these HCWF issues a central pillar of health reforms in the country to contribute to the achievement of the objectives of the National Plan for Economic and Social Development (PNDS).

A Committee was established in the Ministry of Health with representation from various units (e.g. HRH, nutrition and Overseas Development Assistance (ODA)) to develop and cost an investment plan for reforms. The Government took the lead in negotiating co-financing with the Islamic Development Bank, with the Global Fund supporting development of a project plan to ensure all HRH components were in place.

Funding through the Lives and Livelihoods Fund package was agreed in April 2021, for a 5-year programme. The project aims to make health services permanently accessible to the entire population through strengthening community health services, ensuring quality in HRH and nutrition services; and to strengthen the epidemic and infectious disease prevention system through the organization of epidemiological surveillance from the community level, research and adaptive management. Total project funding amounts to $52.8 million, with $22.4 million (42.4% of funding) allocated specifically to the HCWF component. Total funding comprises $32.5 million IDB loan (61.6%), complementary grant from the LLF committee (from donors) of $17.5 million (33.1%) and Government of Benin funding of $2.8 million (5.3%).

Expected project results related to the HCWF include the recruitment, training and deployment of 400 medical doctors, 400 nurses and midwives, and 600 health assistants in rural areas to provide health and nutrition services to communities, and the recruitment and deployment of 4 157 community health workers in their communities to provide home-based health and nutrition services.

The project aims to ensure sustainability in recruitment through public–private partnerships. For example, at the end of their 2-year contract through the project, GPs can set up a private practice in a location where need arises to bring quality care closer to the populations; continue training to become a specialist in an area deemed a priority by the Ministry to reduce long-term shortages; or become a civil servant. This will be financed through a savings plan, where monthly transfers of a specified amount are made to a dedicated individual savings account for the duration of the 2-year contract which are made available to fund the chosen exit option. This mechanism means that the overall number of civil servants in the country will not go above an agreed upon ceiling in the country.

Development assistance should reflect country priorities and help support longer-term HRH objectives. This includes funding for areas such as better remuneration, development of HRH information systems and management capabilities, and improving infrastructure for service delivery, among others. To achieve this, it is important that countries are able to identify their short and long-term HCWF needs to prioritize spending. Donors meanwhile should aim to improve engagement with each other and with countries to strategize and plan HCWF investments (Micah et al., 2022). An honest and rigorous assessment of the impact of external sources of funding, including the conditions tied to loans, would help identify and reform how international sources of funding are used to ensure it better contributes to improving the long-term resilience of the global HCWF.

A number of innovative ways to increase direct financing and monetary reserves of countries have been suggested and could be championed by health sector actors

In acknowledgement of the challenge with global health financing, the G20 High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response has recommended the establishment of a new multilateral financing mechanism (Okonjo-Iweala, Shanmugaratnam & Summers, 2021). One suggestion is for this mechanism to be hosted by the World Bank and take the form of an intermediary fund. The aim would be to raise an additional (above existing financing) $10 billion a year from the international actors community – two thirds of the estimated additional international financing needed to improve emergency preparedness and response and strengthen global health security (Okonjo-Iweala, Shanmugaratnam & Summers, 2021).

In addition, the WHO Council on the Economics of Health for All (2021) identified more extensive debt cancellation, and the issuing of more SDRs (Special Drawing Rights) by the IMF, as potential options that could enable countries to raise additional resources to spend on health without squeezing funding on other public services. Other actions to raise direct financing, include reforming international corporate taxation – such as by reducing tax avoidance and giving national governments some right to tax the profits of multinational companies – and changing sovereign credit ratings to consider investment in health as a way to increase economic resilience and reduce credit risk (WHO Council on the Economics of Health for All, 2021).

Implementation and agreement on these options are of course outside the control of health sector actors and do not by themselves guarantee that more funding for the HCWF will be made available. Global and national-level health stakeholders need to make the "international" case for these radical solutions and for increased investment in the HCWF. Bold measures are needed to enable countries to raise resources to spend on health and to tackle the looming HCWF crisis, and health ministries must advocate courageously.

4. Conclusions and policy considerations for the future

Without the right people and infrastructure, it is not possible for health systems to deliver high-quality and efficient care that is responsive to population health needs. With COVID-19 unlikely to be the last pandemic, especially with threats from climate change growing, it is essential that political leaders at the country, regional and international levels step up and work together to ensure the HCWF is adequately funded. This is not simply a case of protecting and increasing investment, it is ensuring a proper approach to funding by investing in actions that drive efficiency, and can secure additional capital and operational investment to expand capacity of the health system to meet population needs. Even as economic growth slows, education, employment and retention of HCWs needs to be a priority in public expenditure to increase supply, protect the existing workforce and plan ahead to address future challenges.

The paper has covered a wide array of discussion in relation to the development of human resources and much of it is more relevant to the long-term health system development and HRH planning objectives than resolving immediate crises that countries might be facing. It is critically important to be clear about long-term directions and objectives in deciding on short-term measures.

Investing in education supports the HCWF, creates human capital and enables innovation

Societies need to invest in the right HCWF education and training to enable health systems to meet population health needs. In the short run, maintaining the effective functioning of existing public training infrastructure, retaining faculty and supporting engagement with interprofessional education will help steer countries towards an interprofessional training curriculum. Online learning tools represent a cost-effective way to improve access to education, especially in rural areas.

In the long run, investing upstream in secondary education and in science and technology skills can help provide candidates for the HCWF and create human capital. Countries should also focus on opportunities to manage a gradual expansion of training to meet local needs with the right balance of health professions. Gradual expansion allows the growth of training school faculty membership in size and preparedness for the evolving health system both with respect to its team led nature, and the disease burden characteristics post epidemiological transition. It will also ensure that opportunities for placements in which the most important clinical skills can be developed can be enhanced in parallel. The management of gradual expansion can also accommodate realistic increasing financial availabilities. Financing of education has to ensure the oversupply of HCWs to account for attrition to replenish stock. However, this will be a stimulant for human capital and skills development in all countries, irrespective of whether they end up in the health economy.

Investing in training for the primary care HCWF and in developing the right people to fill gaps in underserved and hard-to-reach areas can achieve efficient service delivery

Meeting population health needs and progressing towards UHC requires investment to better target who to educate and train. In relation to long-term directions, the paper suggests the importance of sustaining the implementation of measures to build the primary care system towards a team approach supported by interprofessional education in health workforce formation and using continued professional development according with national standards that reinforces the team as the principal unit of activity. Countries already on this path should look at further developing the mix of clinicians making up PCTs and moving towards specifying the set of non-clinical staff members needed in extended care teams. Developing mid-level cadres instead of just high-level cadres is likely to be less expensive and a more efficient way to meet population health needs.

The discussion on the right skill mix and composition of the HCWF is not new (Maier, 2022). With increasingly ageing populations in many parts of the world and the rise of noncommunicable diseases, health workers with a different mix of skills will be required to support people with chronic conditions and healthy ageing (WHO, 2016b). The COVID-19 pandemic once again highlighted how a resilient health system required different skills – both clinical and non-clinical – to manage the pandemic and deliver high-quality services more generally (van Stralen, Carvallo & Girardi, 2022; Winkelmann et al., 2022). This includes having a HCWF with the necessary competencies to make use of digital technologies, which hold enormous potential to increase the efficiency and quality of health care services. Creating a more flexible health workforce in the future will require consideration of the laws regulating current scopes of practice of different cadres and how these can be made more flexible (van Stralen, Carvallo & Girardi, 2022) (see the companion policy brief *Global Health Workforce responses to address the COVID-19 pandemic* by Ziemann et al., 2023).

Investing in the right people and incentives can fill gaps in underserved and hard-to-reach areas

In developing the strategy for the long-term future health workforce, it will be important to use the tools of market management rather than central planning. Instead of posting professionals to locations of need in rural and other underserved areas, such roles need to be made attractive to those whose preferences are most aligned in order to overcome shortages. This is not all about increasing salary, though adequate salary levels will always be important. Job characteristics can also be shaped to attract graduates in ways that reduce the need for salaries to compensate for their absence. This includes improving working environments, ensuring that family life is supported with housing, transport and schooling and ensuring that career opportunities are enhanced rather than constrained by accepting such postings. The development of rural based professional training schools and the recruitment of students from rural origins will all help to support successful market management.

Market management approaches will also be required to manage the public–private mix in countries with mixed health systems, recognizing that public sector roles compete with private sector roles for the limited health professional staff available. This applies to recruiting staff to positions and retaining their working time in public sector roles by limiting the impact of dual practice on their availability for those roles.

Investment in HCWF education will be wasted if HCWs are not able to find employment or are not protected and leave the sector

In some countries – especially LMICs – insufficient public investment has led to underemployment or unemployment of available HCWs. Greater investment in labour market policies is therefore needed to stimulate employment opportunities for the HCWF, with a special focus on women and youth. Producing sufficient graduates is not enough, they need to be able to find employment within the health sector, and stay in health careers. Coordinated investments – both domestic and international – and across multiple sectors such as education, health, labour and trade, are needed to stimulate the health labour markets and HCW employment.

Urgent investment is also needed to retain existing HCWs, such as by ensuring fair pay and decent working conditions, protecting and supporting health workers and helping them perform to their potential. Managing performance also has a key role in motivating and retaining staff, and can be promoted through CPD and a mix of other incentives.

All countries can learn much from the range of COVID-19 responses for mechanisms to increase the availability of health staff, maintain them in priority roles and reduce attrition, and to upgrade skills where gaps are clear (see the companion policy brief *Global Health Workforce responses to address the COVID-19 pandemic*). Securing and mobilizing long-term sustained levels of domestic financing for recurrent HCWF costs relies on demonstrating efficiencies of spending on initiatives such as those to enhance working environments and promote decent work, that may otherwise remain underfunded. Investment in the right employment reforms can help address many fundamental challenges, such as high outward migration, maldistribution in rural and other underserved areas, and gender inequalities.

Political leaders need to commit to investment in the HCWF to attract, retain and motivate HCWs to continue progress towards UHC and meeting SDGs

Political leaders proved during COVID-19 that remarkable things are possible and that additional funding can be made available for the HCWF when it is a political priority. Only top-level political leadership can secure the financial commitment needed to produce the oversupply of HCWF to break the cycle of shortages and high attrition. Improved intersectoral governance processes are crucial in bringing together public, private and other stakeholders to plan and co-finance HRH investment plans (see the companion policy brief *What can intersectoral governance do to strengthen the health and care workforce?* by Caffrey et al., 2023).

This is especially as so much of the funding to strengthen the HCWF sits within the education sector. Human Resources for Health Units within ministries of health can help coordinate inter and intra-Ministerial action to support HRH strategy and to be at the decision-making table when finances are allocated.

While challenging in the current economic climate, countries can create additional fiscal space for investments in HCWs in the future. The increased recognition during the pandemic – that the HCWF makes an invaluable contribution to the economy, decent employment, health security and societal well-being – needs to be used to convince finance ministries that the HCWF matters. This requires stronger monitoring and evaluation to enable countries to quantify how HCWF investment supports health, societal and economic outputs and attaining SDGs.

Solidarity and cooperation at the multilateral, regional and domestic levels are needed to secure sufficient and sustained investment

Development assistance and other forms of international financing are valuable in many circumstances to help secure funding for HCWF reforms. Nevertheless, countries and international donors need to make sure that it is used to support longer-term objectives for a more resilient and fit-for-purpose health workforce and not just to overcome short-term crises. When used to support long-term objectives, international sources of funds can facilitate additional and sustained increases in domestic resourcing that can be used for the recurrent cost of developing and maintaining the HCWF. Radical options may be needed to raise global health financing. These include more extensive debt cancellation; blended financing options; more IMF SDRs; changing sovereign credit ratings, and reducing tax avoidance. Use of these options are outside the control of health sector actors; however, health stakeholders must champion their adoption on the global stage to help address urgent HCWF challenges and improve global health security and health system resilience.

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World Health Organization
Regional Office for Europe
UN City, Marmorvej 51,
DK-2100 Copenhagen Ø,
Denmark
Tel.: +45 45 33 70 00
Fax: +45 45 33 70 01
E-mail: eurocontact@who.int
Website: www.euro.who.int

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