

Global strategy  
on human  
resources for  
health:

**Workforce  
2030**

DRAFT 1.0

submitted to the Executive  
Board (138th Session)



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To be read in conjunction with EB138-36: Draft global strategy on human resources for health: workforce 2030. Report by the Secretariat.

This version will be translated to inform discussions by Member States at the Executive Board in January 2016.

# Introduction

1. In May 2014, the Sixty-seventh World Health Assembly adopted resolution WHA67.24 on Follow-up of the Recife Political Declaration on Human Resources for Health: renewed commitments towards universal health coverage. In paragraph 4(2) of that resolution, Member States requested the Director-General of the World Health Organization (WHO) to develop and submit a new global strategy for human resources for health (HRH) for consideration by the Sixty-ninth World Health Assembly.
2. Development of the draft Global Strategy was informed by a process launched in late 2013 by Member States and constituencies represented on the Board of the Global Health Workforce Alliance, a hosted partnership within WHO. Over 200 experts from all WHO regions contributed to consolidating the evidence around a comprehensive health labour market framework for universal health coverage (UHC). A synthesis paper was published in February 2015<sup>(1)</sup> and informed the initial version of the draft Global Strategy.
3. An extensive consultation process on the draft version was launched in March 2015. This resulted in inputs from Member States and relevant constituencies such as civil society and health care professional associations. The process also benefited from discussions in the WHO regional committees, technical consultations, online forums and a briefing session to Member States' permanent missions to the United Nations (UN) in Geneva. Feedback and guidance from the consultation process are reflected in the draft Global Strategy, which was also aligned with, and informed by the draft framework on integrated people-centred health services.<sup>(2)</sup>
4. The Global Strategy on Human Resources for Health: Workforce 2030 is primarily aimed at planners and policy-makers of WHO Member States, but its contents are of value to all relevant stakeholders in the health workforce area, including public and private sector employers, professional associations, education and training institutions, labour unions, bilateral and multilateral development partners, international organizations, and civil society.
5. Throughout this document, it is recognized that the concept of universal health coverage may have different connotations in countries and regions of the world. In particular, in the WHO Regional Office for the Americas, universal health coverage is part of the broader concept of universal access to health care.

# Global Strategy on Human Resources for

## VISION

Accelerate progress towards universal health coverage and the UN Sustainable Development Goals by ensuring universal access to health workers.

## OVERALL GOAL

To improve health and socioeconomic development outcomes by ensuring universal availability, accessibility, acceptability and quality of the health workforce through

## PRINCIPLES

- Promote the **right to health**
- Provide integrated, **people-centred health services**
- Foster empowered and engaged **communities**
- Uphold the personal, employment and professional **rights of all health workers**, including safe and decent working environments and freedom from all kinds of violence
- Eliminate **gender-based violence**, discrimination and harassment
- Promote **international collaboration and solidarity**, in alignment with national priorities
- Ensure **ethical recruitment practices** in conformity with the provisions of the WHO Global Code of Practice on the International Recruitment of Health Personnel
- Mobilize and sustain **political and financial commitment and foster inclusiveness** and collaboration across sectors and constituencies
- Promote **innovation and the use of evidence**

## OBJECTIVES

**1.** To optimize performance, quality and impact of the health workforce through evidence-informed policies on human resources for health, contributing to healthy lives and well-being, effective universal health coverage, resilience and health security at all levels.

**2.** To align investment in human resources for health with the current and future needs of the population taking account of labour market dynamics, to enable maximum improvements in health outcomes, employment creation and economic growth.

## GLOBAL MILESTONES (BY 2020)

- All countries have inclusive institutional mechanisms in place to coordinate an intersectoral health workforce agenda.
- All countries have a human resources for health unit with responsibility for development and monitoring of policies and plans on human resources for health.
- All countries have regulatory mechanisms to promote patient safety and adequate oversight of the private sector.
- All countries have established accreditation mechanisms for health training institutions.
- All countries are making progress on health workforce registries to track health workforce stock, distribution, flows, demand, supply, capacity and remuneration.
- All countries are making progress on sharing data on human resources for health through national health workforce accounts and submit core indicators to the WHO.
- All bilateral and multilateral agencies are strengthening health workforce assessment and information exchange.

## GLOBAL MILESTONES (BY 2030)

- All countries are making progress towards halving inequalities in access to a health worker.
- All countries have reduced to 20% or less the prequalification attrition rates in medical, nursing and allied health professionals training institutions.
- All countries are making progress towards halving their dependency on foreign-trained health professionals, implementing the WHO Global Code of Practice on the International Recruitment of Health Personnel.
- All bilateral and multilateral agencies are increasing synergies in official development assistance for education, employment, gender and health, in support of the health workforce.
- As partners in the UN Sustainable Development Goals, to create, fill and sustain at least 10 million additional full-time jobs in health and social care sectors in low- and middle-income countries.

## CORE WHO SECRETARIAT ACTIVITIES IN SUPPORT OF IMPLEMENTATION OF THE STRATEGY

Develop normative guidance; set the agenda for operations research to identify evidence-based policy options; facilitate the sharing of best practices; and provide technical cooperation – on health workforce education, optimizing the scope of practice of different cadres, evidence-based deployment and retention strategies, gender mainstreaming, quality control and performance enhancement approaches, including regulation.

Facilitate the collection of evidence and data on attacks on health workers.

Provide normative guidance and technical cooperation, and facilitate the sharing of best practices on health workforce planning and projections, health labour market analyses, and costing of national strategies on human resources for health.

Strengthen evidence on, and the adoption of macroeconomic and funding policies conducive to greater and more strategically targeted investments in human resources for health.

<sup>a</sup> Policy and actions at “country” or “national” level should be understood as relevant in each country in accordance with subnational and national responsibilities.

# Health: Workforce 2030 – Summary

with adequate investments and the implementation of effective policies at national,<sup>a</sup> regional and global levels.

forms of discrimination, coercion and violence

personnel

**3.** To build the capacity of institutions at sub-national, national and international levels for effective leadership and governance of actions on human resources for health.

**4.** To strengthen data on human resources for health, for monitoring of and ensuring accountability for the implementation of both national strategies and the Global Strategy.

tion.  
to the WHO Secretariat annually.

of national health employment and economic growth priorities.  
in low- and middle-income countries.

## THE STRATEGY

Provide technical cooperation and capacity-building to develop core competency in policy, planning and management of human resources for health.

Foster effective coordination, alignment and accountability of the global agenda on human resources for health by facilitating a network of international stakeholders.

Systematically assess the health workforce implications resulting from technical or policy recommendations presented at the World Health Assembly and regional committees.

Provide technical cooperation to develop health system capacities and workforce competency to manage the risks of emergencies and disasters.

Develop, review the utility of, and update tools, guidelines and databases relating to data and evidence on human resources for health for routine and emergency settings.

Facilitate yearly reporting by countries to the WHO Secretariat on a minimum set of core indicators of human resources for health, for monitoring of and accountability for this Strategy.

Support countries to strengthen and standardize the quality and completeness of national health workforce data.

Streamline and integrate all requirements for reporting on human resources for health by WHO Member States.

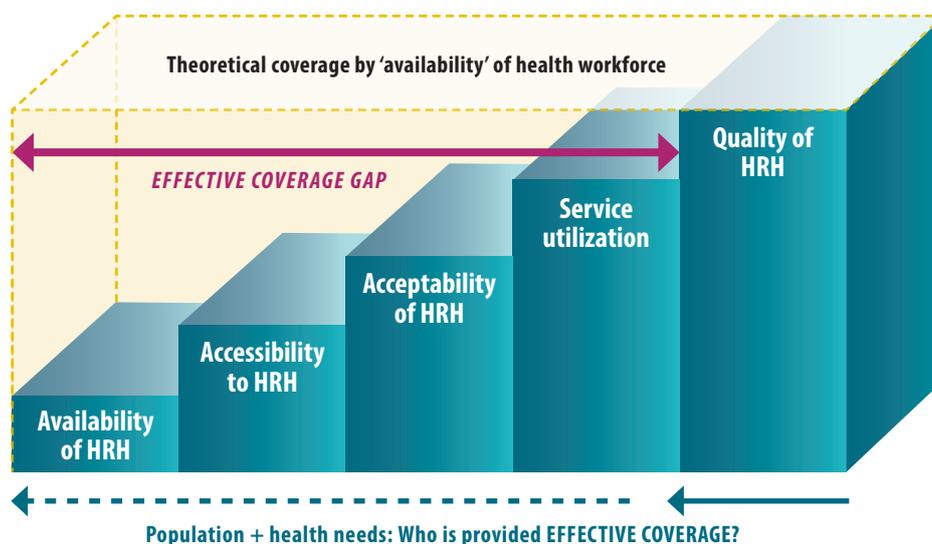
Adapt, integrate and link the monitoring of targets in the Global Strategy on human resources for health to the emerging accountability framework of the UN Sustainable Development Goals.

# Background

## The 21st century context for a progressive health workforce agenda

6. **Health systems can only function with health workers; improving health service coverage and health outcomes is dependent on their availability, accessibility, and capacity to deliver accepted and quality services.** (3) Mere availability of health workers is not sufficient: only when they are equitably distributed and accessible by the population, when they possess the required competency, and are motivated and empowered to deliver quality care that is appropriate and acceptable to the sociocultural expectations of the population, can theoretical coverage translate into effective service coverage (Figure 1). However, countries at all levels of socioeconomic development face, to varying degrees, difficulties in the education, deployment, retention, and performance of their workforce. Health priorities of the post-2015 agenda for sustainable development – such as ending AIDS, tuberculosis and malaria; achieving drastic reductions in maternal mortality; ending preventable deaths of newborns and children under-5; reducing premature mortality from noncommunicable diseases; promoting mental health and guaranteeing UHC – will remain aspirational unless accompanied by strategies involving transformational efforts on health workforce capability. Countries in, or emerging from conflict, natural or man-made disasters, those hosting refugees, and those with climate change vulnerability, present specific challenges that should be taken into account and addressed. Furthermore, every Member State should have the ability to protect the health of their populations, manage risks associated with emergencies and disasters from local to global levels, and fulfil their obligations towards collective global health security envisaged in the International Health Regulations (2005). (4) This requires a skilled, trained and supported health workforce. (5)

**Figure 1. Human resources for health: availability, accessibility, acceptability, quality and effective coverage**



Source: Campbell et al., 2013.

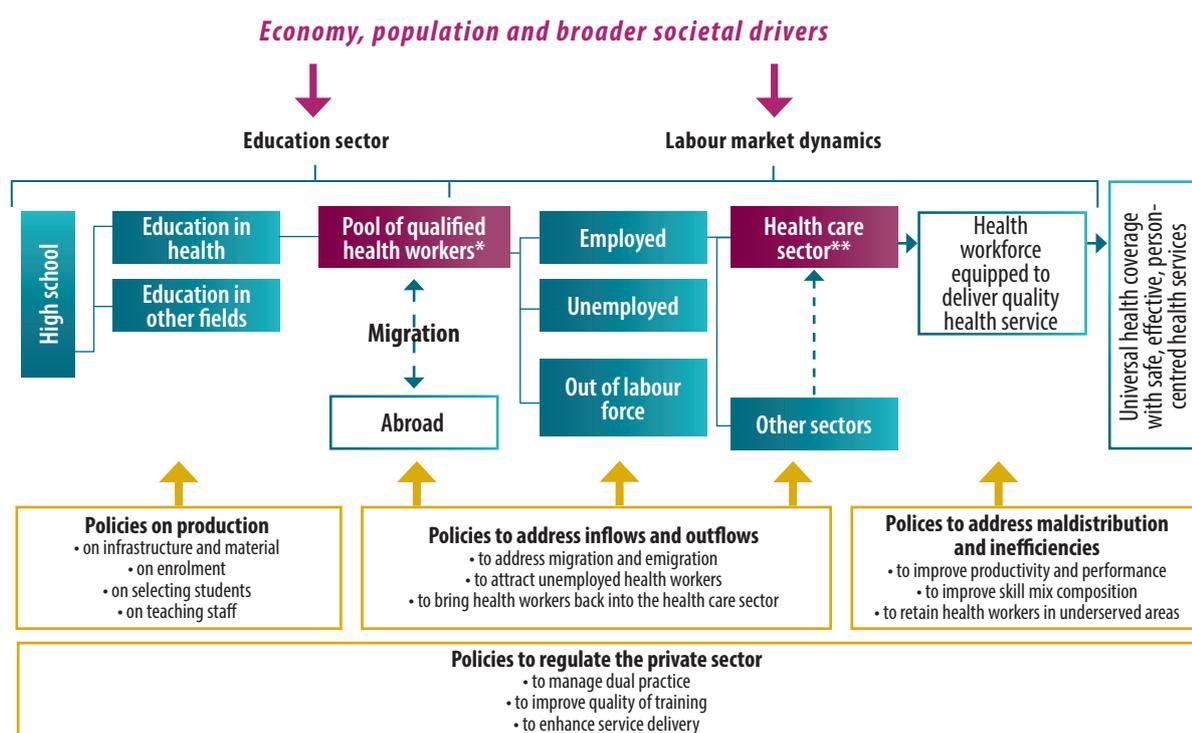
7. **The health workforce has a vital role in building the resilience of communities and countries to respond to emergencies and disasters.** The health consequences of these events are often devastating, including high numbers of deaths, injuries, illnesses, disabilities, and major disruption of health systems. Such events can set back development gains by decades. They interfere with health service delivery through loss of health staff, damage to health facilities, interruption of health programmes, and overburdening of

clinical services. Investment in the health workforce, in improving health service coverage and in emergency and disaster risk management not only builds health resilience and health security, it also reduces health vulnerability and provides the human resources required to prevent, prepare for, respond to, and recover from emergencies. Greater focus is required on the various roles of the entire health workforce in emergencies, for example in planning for staffing requirements (including surge capacity for emergency response), training and protection, and involving them in preparedness and response.

8. **Despite significant progress, there is a need to boost political will and mobilize resources for the workforce agenda** as part of broader efforts to strengthen and adequately finance health systems. Past efforts in health workforce development have yielded significant results: examples abound of countries that, by addressing their health workforce challenges, have improved health outcomes.<sup>(6,7)</sup> In addition, at the aggregate level, health workforce availability is improving for the majority of countries for which data are available, although often not rapidly enough to keep pace with population growth.<sup>(3)</sup> However, progress has not been fast enough or deep enough. Shortages, skill-mix imbalances, maldistribution, barriers to inter-professional collaboration, inefficient use of resources, poor working conditions, a skewed gender distribution, limited availability of health workforce data – all these persist, with an ageing workforce further complicating the picture in many cases. In contexts characterized by conflict and civil unrest, health workers are particularly vulnerable to attacks and violence. Reviewing past efforts in implementing national, regional and global strategies and frameworks, the key challenge is how to mobilize political will and financial resources for the health system and its critical HRH component in the longer term.<sup>(8,9)</sup>
9. The health workforce will be critical to achieve health and wider development objectives in the next decades. The UN General Assembly has adopted a new set of Sustainable Development Goals (SDGs) for 2016–2030. The SDGs follow the Millennium Development Goals of the period 2000–2015, with a call to action to people and leaders across the world to ensure a life of dignity for all.<sup>(10)</sup> The health workforce underpins the proposed health goal, with a target, 3c, to “substantially increase health financing, and the recruitment, development and training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States”. In 2014, the World Health Assembly recognized that the health goal and its 13 health targets – including a renewed focus on equity and UHC – will only be attained through substantive and strategic investment in the global health workforce. In resolution WHA67.24, Member States requested the WHO Director-General to develop a global strategy on HRH and submit this to the Sixty-ninth World Health Assembly in May 2016.<sup>(11)</sup>
10. **Globally, investment in the health workforce is lower than is often assumed,<sup>(12)</sup> reducing the sustainability of the workforce and health systems.** The chronic under-investment in education and training of health workers in some high-income countries and the mismatch between education strategies in relation to health systems and population needs are resulting in continuous shortages and deficits. These are compounded by difficulties in deploying domestic-trained health workers to rural, remote and underserved areas. Deficits and distribution challenges contribute to global labour mobility and the international recruitment of health workers from low-resource settings. In low- and middle-income countries, in addition to major under-investment in education, particularly in underserved areas, imbalances between supply capacity and the market-based demand determined by fiscal space, and between demand and population needs, result in challenges in providing equitable and effective coverage of essential health services, and even the paradox of health worker unemployment co-existing with major unmet health needs.
11. **The foundation for a strong and effective health workforce, able to respond to the 21st century priorities, requires matching effectively the supply and skills of health workers to population needs, now and in the future.** Evolving epidemiologic profiles and population structures are increasing the burden of noncommunicable diseases and chronic conditions on health systems throughout the world. <sup>(13)</sup> The health workforce also needs to respond to man-made and public health crises. This is accompanied by a progressive shift in the demand for patient-centred care, community-based health services, and personalized long-term care.<sup>(2)</sup> At the same time, emerging economies are undergoing an economic transition that will

increase their health resource envelope, and a demographic transition that will see hundreds of millions of potential new entrants into the active workforce. The demand for the global health workforce is therefore expected to grow substantially. Attaining the necessary quantity, quality and relevance of the health workforce will require that policy and funding decisions on both the education and health labour market are aligned with these evolving needs (Figure 2).

**Figure 2. Policy levers to shape health labour markets**



\*Supply of health workers= pool of qualified health workers willing to work in the health-care sector.

\*\*Demand of health workers= public and private institutions that constitute the health-care sector.

Source: Sousa A, Scheffler M R, Nyoni J, Boerma T "A comprehensive health labour market framework for universal health coverage" Bull World Health Organ 2013;91:892– 894.

12. **Persistent health workforce challenges, combined with these broader macro-trends, require the global community to reappraise the effectiveness of past strategies and adopt a paradigm shift in how to plan, educate, deploy, manage and reward health workers.** Transformative advances alongside a more effective use of existing health workers are both needed and possible through: the adoption of inclusive models of care encompassing promotive, preventive, curative, rehabilitative and palliative services; by reorienting health systems towards a collaborative primary care approach built on team-based care; and by fully harnessing the potential of technological innovation. In parallel, much-needed investment and reform in the health workforce can be leveraged to create qualified employment opportunities, in particular for women and youth. These prospects represent an unprecedented occasion to design and implement health workforce strategies that address the equity and coverage gaps faced by health systems, while also unlocking economic growth potential. Realizing this potential hinges on the mobilization of political will and building institutional and human capacity for the effective implementation of this agenda.
13. **The vision that by 2030 all communities have universal access to health workers requires combining the adoption of effective policies at national, regional and global levels with adequate investment to address unmet needs.** Realistically, the scale-up required in the coming decades to meet increasing demand, address existing gaps and counter expected turnover is greater than all previous estimates. Projections developed by WHO and the World Bank (Annex 1) on the HRH requirements to attain

high and effective coverage of the broad range of health services necessary to ensure healthy lives for all imply the need to train and deploy 40–50 million new health and social care workers globally.<sup>(14)</sup> This includes at least 18 million additional health workers in low- and middle-income countries.

14. **It has long been known what needs to be done to address critical health workforce bottlenecks; now there is better evidence than ever on how to do it.** The draft WHO Global Strategy on Human Resources for Health: Workforce 2030 considers contemporary evidence on what works in health workforce development across different aspects. These range from assessment, planning and education, across management, retention, incentives and productivity, and refer to the tools and guidelines that can support policy development, implementation and evaluation in these areas (Annex 2). The Global Strategy addresses all these aspects in an integrated way in order to inspire and inform more incisive action by all relevant sectors of government and all key stakeholders. It is based on new evidence and best practices, at national level by planners and policy-makers, and at regional and global level by the international community. Given the intersectoral nature and potential impacts of health workforce development, the Global Strategy aims to stimulate not only the development of national health and HRH strategies, but also the broader socioeconomic development frameworks that countries adopt.
15. **As human resources for health represent an enabler to many service delivery priorities, this Strategy complements and reinforces a range of related strategies** developed by WHO and the United Nations. The Strategy reaffirms in particular the importance of the WHO Global Code of Practice on the International Recruitment of Health Personnel,<sup>(15)</sup> which calls upon countries to strive to use their own HRH to meet their needs, to collaborate towards more ethical and fair international recruitment practices, and to respect the rights of migrant health workers. The Strategy also supports, among others, the goals and principles of the UN Global Strategy for Women's, Children's and Adolescents' Health,<sup>(16)</sup> the WHO Strategy for People-Centred and Integrated Health Services,<sup>2</sup> the Every Newborn Action Plan,<sup>(17)</sup> the Family Planning 2020 objectives,<sup>(18)</sup> the Global Plan towards the Elimination of New HIV Infections,<sup>(19)</sup> the emerging UNAIDS 2016–2021 strategy,<sup>(20)</sup> the Global Action Plan for the Prevention and Control of Noncommunicable Diseases,<sup>(21)</sup> the WHO Disability Action Plan,<sup>(22)</sup> and the Sendai Framework for Disaster Risk Reduction 2015–2030.<sup>(23)</sup>
16. **This is a cross-cutting agenda that represents the critical pathway to attain coverage targets across all service delivery priorities.** It affects not only the better known cadres of midwives, nurses and physicians, but all health workers, from community to specialist levels, including but not limited to: community-based and mid-level practitioners, dentists and oral health professionals, hearing care and eye care workers, laboratory technicians, pharmacists, physical therapists and chiropractors, public health professionals and health managers, supply chain managers, and other allied health professions and support workers. The Strategy recognizes that diversity in the health workforce is an opportunity to be harnessed through strengthened collaborative approaches to social accountability, inter-professional education and practice, and closer integration of the health and social services workforces to improve long-term care for ageing populations.
17. **The Global Strategy on Human Resources for Health outlines policy options for WHO Member States, responsibilities of the WHO Secretariat and recommendations for other stakeholders** on how to:
  - optimize the health workforce to accelerate progress towards UHC and the SDG (objective 1);
  - understand and prepare for future needs of health systems, harnessing the growth in health labour markets to maximize job creation and economic growth (objective 2);
  - build the institutional capacity to implement this agenda (objective 3); and
  - strengthen data on HRH for monitoring and ensuring accountability of implementation of both national strategies and the Global Strategy itself (objective 4).

Each objective is described in detail in the following sections.

# Objective 1

Optimize performance, quality and impact of the health workforce through evidence-informed policies on human resources for health, contributing to healthy lives and well-being, effective universal health coverage, resilience and health security at all levels

## MILESTONES:

- **1.1: By 2020, all countries will have established accreditation mechanisms for health training institutions.**
- **1.2: By 2030, all countries will have made progress towards halving inequalities in access to a health worker.**
- **1.3: By 2030, all countries will have reduced to 20% or less the prequalification attrition rates in medical, nursing and allied health professionals training institutions.**

18. **Addressing population needs for the SDGs, UHC and universal access to health care requires making the best possible use of limited resources, and ensuring they are employed strategically through adoption and implementation of evidence-based health workforce policies tailored to the local context.** The ongoing challenges of health workforce deficits and imbalances, combined with ageing populations and epidemiologic transformations, require a new, contemporary agenda with an unprecedented level of ambition if health goals are to be met. Better alignment to population needs, while improving cost-effectiveness, depends on recognition that integrated and people-centred health-care services can benefit from team-based care at the primary level.<sup>(24,25)</sup> This approach exploits the potential contribution of different typologies of health worker, operating in closer collaboration and according to a more rational scope of practice. Realizing this agenda requires the following: adoption of more effective and efficient strategies and appropriate regulation for health workforce education; a more sustainable and responsive skill mix; improved deployment strategies and working conditions; incentive systems; enhanced social accountability; inter-professional collaboration; and continuous professional development opportunities and career pathways tailored to gender-specific needs in order to enhance both capacity and motivation for improved performance.
19. **Dramatic improvement in efficiency can be attained by strengthening the ability of national institutions to devise and implement more effective strategies and appropriate regulation for the health workforce.** There are major opportunities to ensure a more effective and efficient use of resources and a better alignment with community needs. This can be achieved by adopting a health-care delivery model and a diverse, sustainable skill mix geared to primary health care and supported by effective links to the social services workforce and referral to secondary care. Similarly, major gains are possible in performance and productivity by improving management systems and working conditions for HRH, and by using the full potential of collaboration with the private for-profit, voluntary and independent sectors. These sectors should be regulated, and incentives elaborated for closer alignment of their operations and service delivery profiles with public sector health goals. Realizing these efficiency gains requires institutional capacity to implement, assess and improve HRH planning, education and management policies.

## Policy options for WHO Member States

20. Most of the proposed policy options in this and subsequent sections are of general relevance and may be considered by countries at all levels of socioeconomic development. Policy options that might be particularly pertinent to countries in specific income groups or in fragile contexts are explicitly indicated. This distinction is not rigid, given that the situation of countries can change over time, and that income levels do not always directly correspond to the status of health workforce policies. Furthermore, similar health workforce and health systems challenges may apply in different settings, albeit with context-specific implications on funding, employment and labour market dynamics. Ultimately the relevance and applicability of policy options must be determined and tailored to the specific reality of each WHO Member State.

### All countries

21. **Strengthen the content and implementation of HRH plans as part of long-term national health and broader development strategies**, ensuring consistency between health, education, employment, gender, migration, development cooperation and fiscal policies. This will benefit from intersectoral dialogue and alignment among relevant ministries (health, labour, education, finance, etc.), professional associations, labour unions, civil society, employers, the private sector, local government authorities, and other constituencies. Planning should take into account workforce needs as a whole, rather than treating each profession separately. Only such an integrated approach can ensure adjusting investment volumes, education policies on the intake of trainees, and incentive systems to redress prevalent labour market failures – such as unemployment of health workers co-existing with unmet health needs. HRH development is a continuous process that requires regular appraisal of results and feedback loops to inform and adjust priorities.
22. **Promote decent working conditions in all settings**. Ministries of health, civil service commissions and employers should adopt gender-sensitive employment conditions, remuneration and non-financial incentives. They should cooperate to ensure fair terms for health workers, merit-based career development opportunities and a positive practice environment to enable their effective deployment, retention and adequate motivation to deliver quality care and build a positive relationship with patients. Harm to health workers, together with gender-based discrimination, violence and harassment during training, recruitment/employment and in the work place, should be eliminated. It is particularly important to find pragmatic solutions to overcome deeply entrenched rigidities in public sector rules and practices that hinder the adoption of adequate reward systems, working conditions and career structures for health workers, with appropriate levels of flexibility and autonomy.
23. **Ensure the effective use of available resources**. Globally, 20 to 40% of all health spending is wasted, largely due to health workforce inefficiencies and weaknesses in governance and oversight.<sup>(26)</sup> Accountability systems should be put in place to improve efficiency of health and HRH spending. In addition to measures such as removing ghost workers from the payroll,<sup>(27)</sup> it is critical to adopt appropriate, cost-effective and equitable population health approaches to provide community-based, person-centred, continuous and integrated care. This entails implementing health care delivery models with an appropriate and sustainable skills mix in order to equitably meet population health needs. Health systems should thus align market forces and population expectations with primary health care, UHC and people-centred integrated service delivery, supported by effective referral to secondary and specialized care, while avoiding over-medicalization. There is a need to modify and correct the configuration and supply of specialists and generalists, advanced practitioners, the nursing and midwifery workforce, and other mid-level and community-based cadres. Enabling regulation is needed to recognize formally all these positions and allow them to practice to their full scope; appropriate planning and education strategies and incentives, adequate investment in the primary health care workforce, including general practice and family medicine, are required to provide community-based, person-centred, continuous and integrated care .

24. **Adopt transformative strategies in the scale-up of health worker education.** Public and private sector investments in health personnel education should be linked with population needs and health system demands. Education strategies should prioritize investment in trainers, for which there is good evidence of a high social rate of return. Priority should also focus on regulating curricula to balance the pressure to train for international markets, and on producing professionals capable of meeting local needs.<sup>(28)</sup> A coordinated approach is needed to link HRH planning and education (including an adequate and gender-balanced pipeline of qualified trainees from rural areas), and encouraging inter-professional education and collaborative practice. Education standards and funding should be established and monitored in national policies: radical improvements in the quality of the workforce are possible if the higher education and health sector collaborate by implementing a transformative education agenda<sup>(29)</sup> grounded in competency-based learning. This approach should equip health workers with skills to work collaboratively and effectively in inter-professional teams and with knowledge on social determinants of health and public health. This must include epidemic preparedness and response to advance the global health security agenda and implementation of the International Health Regulations (2005). Equally critical is nurturing in health workers the public service ethics, professional values and social accountability attitudes requisite to deliver responsive and respectful care. Particular account should be taken of the needs of vulnerable groups such as children, adolescents and people with disabilities; ethnic or linguistic minorities and indigenous populations; as well as the need to eliminate discrimination related to gender, ageing, mental health, sexual and reproductive health, and HIV and AIDS. Opportunities should be considered for North–South and South–South collaboration, as well as public–private partnerships on training and investment, including advances in e-learning; mechanisms should also be in place to track and manage education investments in individual health workers and their continuing professional development.
25. **Optimize health worker motivation, satisfaction, retention, equitable distribution and performance.** While urbanization trends and the potential of telemedicine may, in some contexts, reduce the acute challenge of geographical maldistribution, in the majority of settings access to health workers remains inequitable. The ‘decent employment’ agenda entails similar strategies to improve both performance and equitable distribution of health workers. Such an integrated package of gender-sensitive attraction and retention policies includes: job security, a manageable workload, supportive supervision and organizational management, continuing education and professional development opportunities, enhanced career development pathways (including rotation schemes where appropriate), family and lifestyle incentives, hardship allowances, housing and education allowances and grants, adequate facilities and working tools, and a working environment free from any type of violence, discrimination and harassment. The adoption of specific measures in a given country context has to be determined in relation to cost-effectiveness and sustainability considerations, and may be aided by employee satisfaction surveys to adapt working conditions to health worker feedback. Critical to ensuring equitable deployment of health workers are the selection of trainees from, and delivery of training in rural and underserved areas, financial and non-financial incentives, and regulatory measures or service delivery reorganization.<sup>(30)</sup>
26. **Harness – where feasible, cost-effective and beneficial to patients’ health outcomes – information and communication technology (ICT) opportunities,** in particular in relation to e-learning, electronic health records, clinical decision-making tools, links among professionals and between professionals and patients, supply chain management, performance management and feedback loops, patient safety,<sup>(31)</sup> service quality control, and the promotion of patient autonomy.<sup>(32)</sup> New professional qualifications, skills and competency are needed to harness the potential of ICT solutions to health-care delivery.<sup>(33)</sup> Standards and accreditation procedures should be established to certify training delivered through blended approaches that include e-learning; appropriate regulations should also be established for the provision of mobile health (m-health) services, and for handling workforce data that respects confidentiality requirements.<sup>(34)</sup>
27. **Build greater resilience and self-reliance in communities.** Engage them in shared decisions and choice through better patient-provider relations. Invest in health literacy, and empower patients and their families with knowledge and skill; this will encourage them to become key stakeholders and assets to a

health system, and to collaborate actively in the production and quality assurance of care, rather than being passive recipients of services.

28. **Strengthen capacities of the health workforce in emergency and disaster risk management for greater resilience and health security.** Prepare health systems to develop and draw upon the capacities of the workforce in risk assessments, prevention, preparedness, response and recovery. Provide resources, training and equipment for the health workforce and include them in policy, planning and operations for all types of emergencies at local, national and international levels.

### Low- and middle-income countries

29. **Strengthen the capacity and quality of educational institutions and their faculty through accreditation of training schools and certification of diplomas.** This should meet current and future education requirements to respond to population health needs and changing clinical practice. In some contexts, this may entail redesigning health workforce intake approaches through joint education and health planning mechanisms. Particularly in some low-income countries, there is a need to collaborate with the Ministry of Education and renew focus on primary and secondary education to enhance science teaching. This renewed focus should also ensure an adequate and gender-balanced pool of eligible high-school graduates, reflective of the population's underlying demographic characteristics and distribution, to enter health training programmes. The faculty of health training institutions represent a priority investment area, both in terms of adequate numbers and in relation to building and updating their competency to teach using updated curricula and training methodologies, and to lead research activities independently.
30. **Ensure that the foreseen expansion of the health resource envelope leads to cost-effective resource allocation.** Specifically, prioritize the deployment of inter-professional primary care teams of health workers with broad-based skills, avoiding the pitfalls and cost-escalation of overreliance on specialist and tertiary care. This requires adopting a diverse and sustainable skill mix, and harnessing the potential of community-based and mid-level practitioners to extend service provision to poor and marginalized populations.<sup>(35,36)</sup> In many settings, developing a national policy to integrate, where they exist, community-based health practitioners in the health system can enable these cadres to benefit from adequate system support and to operate more effectively within integrated primary care teams,<sup>(37,38)</sup> a trend already emerging in some countries. Support from national and international partners targeting an expansion of these cadres should be harmonized and aligned to national policies and systems.<sup>(39)</sup> In some contexts, primary health care teams need to identify strategies to collaborate effectively with traditional healers and practitioners.
31. **Optimize health workforce performance through a fair and formalized employment package, within an enabling and gender-sensitive working environment.** This includes providing health workers with clear roles and expectations, guidelines, adequate work processes, opportunities to correct competency gaps, supportive feedback, group problem-solving, and a suitable work environment and incentives.<sup>(40)</sup> In addition – and crucially – the package should comprise a fair wage appropriate to skills and contributions, with timely and regular payment as a basic principle, meritocratic reward systems and opportunities for career advancement.

### Fragile states and countries in chronic emergencies

32. **Protect health workers from attack and harm.**<sup>(41)</sup> In addition to the policy options above, the need to protect health workers is even more acute in situations characterized by fragility, insecurity and political instability. Harm may be gender-based violence and/or physical, verbal and psychological abuse. Health workers must be provided with the tools and supplies needed to carry out their roles and enabled to fulfil and adapt their public health roles in these settings.

33. **Implement early in the recovery process key measures that can improve efficiency, such as excising, where applicable, ghost workers.** This priority requires the creation of a register of the practicing workforce linked to the payroll (see also objective 4).(42)

## Responsibilities of the WHO Secretariat

34. **Develop normative guidance, support operations research to identify evidence-based policy options, and facilitate technical cooperation** – as may be relevant to the needs of Member States. These responsibilities may cover: health workforce education; optimizing the scope of practice of different cadres; evidence-based deployment and retention strategies; gender mainstreaming; and quality control and performance enhancement approaches, including regulation. WHO should also facilitate the systematic collection of evidence and data on attacks on health workers, in collaboration with relevant stakeholders.(43)

## Recommendations to other stakeholders and international partners

35. **Education institutions to adapt their institutional set-up and modalities of instruction to respond to transformative education needs.** These should be aligned with country accreditation systems, standards and needs, and promote social accountability, inter-professional education and collaborative practice. Reflecting the growth in private education establishments, it is critical that quality standards are harmonized across public and private training institutes. Both public and private education institutions need to overcome gender discrimination in admissions and teaching, and more generally to contribute to national education and student recruitment objectives.
36. **Professional councils, other regulatory authorities, or – where relevant to the national institutional context – departments of line ministries, to adopt “right touch” regulation<sup>1</sup>** that is transparent, accountable, proportionate, consistent and targeted. Advancing this agenda requires building the capacity of regulatory and accreditation authorities; this may take different forms in different countries, depending on whether they are governmental, quasi-governmental or independent self-governing entities. Regulatory bodies play a central role in ensuring that public and private sector professionals are competent, sufficiently experienced and adhere to agreed standards relative to the scope of practice and competency enshrined in regulation and legislative norms; countries should be supported in establishing or strengthening them to provide continuous updates to accreditation and credentialing. Regulatory bodies should also be actively engaged in policy-setting processes to improve the development and enforcement of standards and regulations, and in introducing competency-based national licensing and relicensing assessments for graduates from both public and private institutions. To avoid potential conflicts of interest, professional councils and associations should create appropriate mechanisms to separate their role as guarantor of the quality of practice from that of representing the interests of their members, where there are no clear boundaries between these functions.(3) Regulators should assume the following key roles: keep a live register of the health workforce; oversee accreditation of pre-service education programmes; implement mechanisms to assure continuing competence, including accreditation of post-licensure education providers; operate fair and transparent processes that support practitioner mobility and simultaneously protect the public; and facilitate a range of conduct and competence approaches that are proportionate to risk, and are efficient and effective to operate. Professional councils and associations should work together to develop appropriate task-sharing models and inter-professional collaboration, and ensure that all cadres with a clinical role, beyond dentists, midwives, nurses, pharmacists and physicians, also benefit in a systematic manner from accreditation and regulation processes.

<sup>1</sup> “Right-touch regulation means always asking what risks we are trying to address, being proportionate and targeted in regulating that risk or finding ways other than regulation to address it. It is the minimum regulatory force required to achieve the desired result.” United Kingdom Professional Standards Authority.

## Objective 2

Align investment in human resources for health with the current and future needs of the population, taking account of labour market dynamics, to enable maximum improvements in health outcomes, employment creation and economic growth

### MILESTONES:

- **2.1: By 2030, all countries will have made progress towards halving their dependency on foreign-trained health professionals, implementing the WHO Global Code of Practice on the International Recruitment of Health Personnel.**
- **2.2: By 2030, all bilateral and multilateral agencies will have increased synergies in official development assistance for education, employment, gender and health, in support of national health employment and economic growth priorities.**
- **2.3: By 2030, partners in the Sustainable Development Goals will have made progress to create, fill and sustain at least 10 million additional full-time jobs in health and social care sectors in low- and middle-income countries.**

37. **The demand for, and size of the global health workforce are forecasted to grow substantially in the next decades as a consequence of population and economic growth, combined with demographic and epidemiologic transitions.** Health-care provision will also change in nature in order to cover a growing range of patient services such as community care. There are, however, significant mismatches in the needs of, demand for and supply of health workers nationally, subnationally and globally, leading to inequitable distribution and deployment of health workers. Efforts to scale up essential interventions to achieve the health-related targets of the SDGs and UHC might be compromised by a massive shortage of health workers in low- and middle-income countries (Annex 1). This shortage is, in turn, also leading to an overreliance and burden on mid-level and community-based practitioners. In parallel, many high-income countries struggle to match supply and demand of health workers under affordability and sustainability constraints, experiencing periodic swings between shortage and over-supply. These trends, sometimes exacerbated by ageing populations, often result in underproduction and/or maldistribution of health workers, and disproportionate recruitment of foreign-trained health personnel.<sup>(45)</sup>
38. **Public sector intervention is needed to recast the insufficient provision of health workers, their inequitable deployment or poor motivation and performance.** Implementing an HRH agenda conducive to attaining the health goals in the post-2015 period will require greater availability and more efficient use of resources. Domestic spending on HRH averages 33.6% of total government expenditure on health in countries with available data;<sup>(72)</sup> in many low- and middle-income countries, greater efforts to mobilize domestic resources are both necessary and possible, and should be supported by appropriate macroeconomic policies at national and global levels. Funding levels should reflect the value of effective HRH to the country's economy by factoring the potential for improved worker productivity in other sectors. <sup>(46)</sup> But several low-income countries and fragile states will require overseas development assistance for a few more decades to ensure an adequate fiscal space for the necessary HRH investments. In this context, a high-level policy dialogue is warranted to explore how to make international mechanisms for development assistance (across education, employment, gender and health) fit-for-purpose, and allow them to provide sustained investment in both capital and recurrent costs for HRH.

39. **Evidence is starting to emerge on the broader socioeconomic impacts of health workforce investment.** Health-care employment has a significant growth-inducing effect on other sectors:<sup>(47)</sup> this, together with the expected growth in health labour markets, means that investing in health-care education and employment will increasingly represent a strategy for countries at all levels of socioeconomic development to create qualified jobs in the formal sector.<sup>(48)</sup> This opportunity is likely to be harnessed in particular by women due to the trend of feminization of the health workforce. To exploit these opportunities fully, it will be critical to remove broader societal barriers that prevent women from joining the health workforce or confine them to its lower tiers. Such barriers include higher illiteracy levels, violence and sexual harassment in the workplace, traditional customs that require women to have permission from a male family member to work or be trained in a different location than their habitual residence, traditional social role expectations that translate in a greater burden of family responsibilities, and limited provisions for life course events such as maternity and paternity leave.

## Policy options for WHO Member States

### All countries

40. **Build planning capacity to develop or improve HRH policy and strategies that quantify health workforce needs, demands and supply** under different future scenarios. This should be carried out in order to manage health workforce labour markets and devise effective and efficient policies that respond to today's needs while anticipating tomorrow's expectations. HRH needs should be quantified in terms of predicted workloads rather than by population or facility-based norms. HRH plans should be costed, financed, implemented and continually refined to address:
- (a) the estimated number and category of health workers required to meet public health goals and population health needs in routine and emergency situations;
  - (b) the capacity to produce sufficient qualified workers (education policies); and
  - (c) the labour market capacity to recruit, deploy and retain health workers (economic and fiscal capacity, and workforce deployment, remuneration and retention through financial and non-financial strategies).
- Estimates should be based on full-time equivalents – rather than simple head counts – to reflect flexibility (job sharing, part-time engagements) in work arrangements; this is particularly important to allow and plan for equality of opportunities for male and female health workers.
41. **Catalyse multisectoral action on health workforce** issues to generate the required support from ministries of finance, education and labour (or equivalent). This will also ensure alignment of different sectors, constituencies and stakeholders with the national health workforce strategies and plans, harnessing benefits for job creation, economic growth and gender empowerment.
42. **Invest in decent conditions of employment through long-term (10–15 years) public policy stewardship and strategies.** Such strategies should respect the rights of male and female workers,<sup>(49)</sup> promote better working environments, and include at the very least provision of a living wage (including for community-based practitioners) and incentives for equitable deployment and retention, in line with the SDG Goal on Decent Work and Economic Growth. This should also develop and promote the elimination of stigma and discrimination by health workers and towards health workers.

### High-income countries

43. **Invest in the education and training, recruitment, deployment and retention of health workers to meet national and subnational needs through domestically trained health workers.** Educational investment strategies should match current and anticipated demand of the health labour market, and take into account challenges related to an ageing workforce. Strategies for destination countries to decrease reliance on foreign-trained health workers may include: increasing investment in domestic health professional education; aligning government educational spending with employment opportunities; adopting innovative financing mechanisms, allowing local and private entities to provide complementary funding to government

subsidies to health worker training; not hiring directly from countries with the lowest health care worker-to-population ratios; encouraging more cost-effective ways to educate health professionals; planning a more diversified skill mix for health teams; and better harnessing the complementarity of different cadres, including mid-level providers.<sup>(50)</sup>

44. **Consider opportunities to strengthen the skills and employment agenda within countries.** This may include re-skilling workers from declining sectors and industries of the economy (e.g. manufacturing, agriculture) to be redeployed in the health and social care sectors, particularly in jobs and roles where the duration of training is short, and entry barriers are relatively low, without compromising the quality of education and care. Actions should also assist newly qualified students to enter the employment market, particularly during times of recession.<sup>14</sup>

### Low- and middle-income countries

45. **Increase investments to boost market-based demand and supply of the health workforce, and align them more closely with population health needs.** This includes appropriate strategies and incentives to deploy health workers in underserved areas. In many upper middle-income countries, this will entail increasing the capacity to supply health workers to cope with rising domestic demand fuelled by economic growth, while containing cost escalation.<sup>(14)</sup> The potential mutual benefits of migration for health systems of source and destination countries is acknowledged. However, education and retention strategies should aim to retain health workers in the country, while respecting the right to mobility of individuals, consistent with the principles of the WHO Global Code of Practice on the International Recruitment of Health Personnel.
46. **Mobilize resources for HRH from both traditional and innovative sources.** These comprise the general budget, progressive taxation, social health insurance, dedicated earmarked funds, ring-fenced excise taxes, and adequate and fair taxation of private corporations, including extractive industries such as mining and petroleum.<sup>(51)</sup> Such investments depend on the Ministry of Finance to allocate adequate resources to the health sector, and should be consistent and aligned with the broader national health and social protection agenda.<sup>(52)</sup>

### Small island developing states

47. **Countries with small or sparse populations, such as small island developing states, require creative strategies to overcome the challenges posed by their population or geographic structure.** These strategies may include: long-term partnerships with other countries to pool health workforce education, accreditation and regulation needs (given the high capital investment and recurrent costs to establish and run domestic health training institutions and/or regulatory authorities); tailored staffing profiles for health-care units responsible for service delivery at the peripheral level; harnessing the potential of telemedicine to complement the services offer by primary health care teams; and enhancing the functionality of referral systems.

### Fragile states and countries in chronic emergencies

48. **Develop national capacity to design, adapt and implement HRH policies and actions, and to absorb and utilize effectively and transparently both domestic and international resources.** In addition to the policy options above, areas characterized by fragility, insecurity and political instability have specific additional needs. HRH support from development partners in these settings should be predictable and long-term.

## Responsibilities of the WHO Secretariat

49. **Provide normative and technical guidance relevant to the needs of Member States.** WHO support under this objective covers health workforce planning and projections, health labour market analysis, costing of national HRH strategies, and tracking of national and international financing for HRH. Acknowledging the continued need for external assistance in some low-income and fragile countries, WHO will also provide estimates of HRH requirements (and the socioeconomic impact of their education and employment) to global and regional financial institutions, development partners and global health initiatives. This should inform the adoption of macroeconomic and funding policies conducive to greater and more strategically targeted investments in HRH. To facilitate a progressive transition towards national ownership and financing of HRH policies and strategies, WHO will also support Member States to identify approaches to mobilize sufficient domestic resources and to allocate them efficiently.

## Recommendations to other stakeholders and international partners

50. **The International Monetary Fund, World Bank, regional development banks and others to recognize investment in the health workforce as a productive sector.** Investment in the health sector has the potential to create millions of new jobs and spur economic growth and broader socioeconomic development. These institutions could harness this opportunity to adapt their macroeconomic policies to allow greater investment in social services.
51. **Global health initiatives to establish governance mechanisms to ensure that all grants and loans include an assessment of health workforce implications.** This involves a deliberate strategy and accountability mechanisms on how specific programming contributes to HRH capacity-building efforts at institutional, organizational and individual levels, beyond disease-specific in-service training and incentives. Emphasis should be given to increasing sustainable investment and support for HRH. The recruitment of general service staff by disease-specific programmes weakens health systems, and should be avoided through integration of disease-specific programmes into primary health care strategies.
52. **Development partners to align their investments for HRH with coordinated, long-term national needs as expressed in national sector plans.** Investments should adhere to the principles of aid effectiveness, the International Health Partnership and related initiatives, and the Third International Conference on Financing for Development.<sup>(53)</sup> In line with the recommendations of the High Level Taskforce for Innovative International Financing of Health Systems, bilateral and multilateral aid mechanisms should make progress towards allocating 25% of their development assistance for health to HRH.<sup>(54)</sup> This support should align education, employment, gender and health with national human resource development strategies. In addition, global health initiatives should realign their support to strengthen HRH in a sustainable way, including the possibility for investment in capital and recurrent expenditure (including salaries) for general service staff, and overcoming the current preferential focus on short-term disease-specific in-service training.<sup>(55,56)</sup> In this respect, development partners might consider establishing a multilateral funding facility to support international investment in health systems<sup>(57)</sup> as a means to support the realization of human rights, global health security, and the SDG Goals. While continuing to advocate for an increase in allocation of domestic resources to HRH, development partners should also support low- and middle-income countries to strengthen their capacity for tax collection.
53. **Relevant institutions should be encouraged to establish mechanisms to track the proportion of development assistance for health allocated to HRH.** The Organisation for Economic Co-operation and Development and the Humanitarian Financial Tracking System, for example, should establish mechanisms to enable tracking the proportion of development assistance for health which is allocated to HRH, as current processes and data requirements for tracking international aid flows to health don't allow capturing reliably and consistently health workforce investments.<sup>(58)</sup>

54. **Regional or subregional bodies can bolster political and financial commitment to implementing this agenda.** Entities such as the African Union, European Union, Arab League, Union of South American Nations, and Association of Southeast Asian Nations play an important role in facilitating policy dialogue and peer review among countries with a comparable socioeconomic structure or cultural background. They also help to generate and sustain the political will that underpins supportive investment and policy decisions. Regional strategies and efforts – such as the Toronto call to Action<sup>(59)</sup> and the African Roadmap on Human Resources for Health<sup>(60)</sup> – provide a solid foundation upon which implementation of the WHO Global Strategy on HRH can build.

# Objective 3

Build the capacity of institutions at subnational, national and international levels for effective leadership and governance of actions on human resources for health

## MILESTONES:

- **3.1: By 2020, all countries will have inclusive institutional mechanisms in place to coordinate an intersectoral health workforce agenda.**
- **3.2: By 2020, all countries will have an HRH unit with responsibility to develop and monitor policies and plans on human resources for health.**
- **3.3: By 2020, all countries will have regulatory mechanisms to promote patient safety and adequate oversight of the private sector.**

55. **Effective governance and strengthening of institutional capacities are required for the implementation of a comprehensive health workforce agenda in countries.** Despite considerable advances in the last decades, progress in the HRH area has not been fast enough, nor deep enough. Health workforce development is partly a technical process, requiring expertise in planning, education and management, and the capacity to root this in long-term vision for the health system. But it is also a political process, depending on the will and power of different sectors and constituencies in society, and different levels of government to coordinate efforts.<sup>(61)</sup> Key challenges are to, simultaneously, ensure effective intersectoral governance and collaboration among stakeholders; strengthen technical capacity; and mobilize financial resources for the contemporary HRH agenda.<sup>(62)</sup> This requires the political will – and accountability of – heads of government.
56. **Technical and management capacities are needed to translate political will and decisions into effective implementation.** Public health workforce planning and management – from the national to local level – must be professionalized, ensuring equal opportunities across gender, race and linguistic/ethnic groups. Just as capable clinicians and health professionals are needed, so are capable professional health managers, HRH scientists, planners and policy-makers. This capability is essential to provide political leaders with solid evidence and technical advice, and to guarantee effective implementation and oversight of policies, norms and guidelines.<sup>(63)</sup> Crucially, this capacity needs to be built alongside accountability mechanisms and be available at the appropriate administrative level. In federal countries, or those with a decentralized health workforce administration, competency, human capital and institutional mechanisms need to be built at the subnational and local levels, including the training of clinicians in management positions.
57. **Appropriate global health governance mechanisms can support the implementation of national HRH agendas.** Political commitment and action at the country level are the foundations of any effective response to health workforce challenges. However, some HRH issues are transnational and require a global approach underpinned by a commitment to international solidarity. These include the creation and sharing of global public goods and evidence; the provision or mobilization of technical and financial assistance; the ethical management of health labour mobility; and the assessment of HRH implications of global health goals and resolutions.

## Policy options for WHO Member States

### All countries

58. **Ensure that all countries have an HRH unit or department reporting to a senior level within the Ministry of Health (Director General or Permanent Secretary).** Such a unit should have the capacity, responsibility and accountability for a standard set of core functions of HRH policy, planning and governance, data management and reporting. These include at a minimum to: advocate HRH development; mobilize and use resources effectively and accountably; champion better working conditions, reward systems and career structures for health workers; lead short- and long-term health workforce planning and development; identify suitable strategies to collaborate with the private sector; analyse workforce data and labour economics; effectively track international mobility of health workers, managing migratory flows to maximize benefits for source countries; monitor and evaluate HRH interventions and trends; and build alliances with data producers and users.
59. **Establish the national case for investment in HRH as a vital component of the SDGs, UHC and universal access to health care.** The national case should be used as a basis for demanding plans and budgets to mobilize adequate resources, supported by necessary regulations and mechanisms for policy coordination and oversight. The effective implementation of a national workforce agenda requires marshalling support from ministries of finance, education and labour, civil service commissions, local government and the private sector, including through sound health-care economics arguments. Coordination among these actors can be enabled by establishing national mechanisms for HRH governance and policy dialogue.<sup>(64)</sup> These mechanisms should accommodate, in the political decision-making process, the legitimate involvement and interests of a range of stakeholders – such as civil society, citizens, health workers, health professionals and their unions or associations, regulatory bodies, employer associations, insurance funds – so as to broaden political ownership and institutional sustainability of HRH policies and strategies without losing sight of public policy objectives.
60. **Strengthen technical and management capacity to develop and implement effective HRH policies, norms and guidelines.** This will encourage innovative processes, technologies, service organization and training delivery modalities, and a more effective use of resources.
61. **Ensure that the public health workforce aligns development efforts with the social services workforce** and wider social determinants of health. This includes access to housing, food, education, employment and local environmental conditions. The clinical health workforce should be educated on the social determinants of health and promote this agenda in their practice.

### High-income countries

62. **Align incentives for health workforce education and health-care provision with public health goals.** This entails balancing the growing needs of the ageing population and new and ever more expensive health technologies with a realistic forecast of the available resource envelope.

### Low- and middle-income countries

63. **Strengthen the institutional environment for health workforce production, deployment, retention and performance management.** This entails building the human and institutional capacity to design, develop and deliver pre-service and in-service education of health workers; develop health professional associations to support effective relationships with health workers; design effective performance management and reward systems; develop collaboration with regulators of private sector educational institutions and health providers. In decentralized contexts, where these functions may be carried out at the subnational or peripheral level, the capacities will need to be built or strengthened at the relevant administrative level.

## Fragile states and countries in chronic emergencies

64. **Flexible approaches to HRH development must be tailored to the specific reality of the country** in contexts characterized by fragility, insecurity and political instability. In addition to the policy options above, and where the central system of governance may be weak, several modalities of intervention for HRH are possible with different starting points. These will be determined by the type of fragility, the governance structure (centralized or devolved to peripheral authorities), and by entry points that make the most impact. In settings without a strong central system of governance, health workforce interventions may be more effective if they target a decentralized level or are effected through non-state actors, where results and lessons for scale-up can be seen more quickly.
65. **Exploit the window of opportunity – when donor funding and opportunity for reform is greatest – to strengthen institutions.**<sup>(65)</sup> A coordinated mechanism will enable a common understanding of context and interventions, bring all stakeholders together and, with the state in a coordinating role, target interventions with an explicit capacity-building objective.

## Responsibilities of the WHO Secretariat

66. **Provide Member States with technical support and capacity-building to develop core competency in HRH policy, planning, projections, resource mobilization, and management.** Capacity-building efforts may be facilitated by the development of an internationally recognized, postgraduate professional programme on HRH policy and planning, with international mentoring and a professional network to support the implementation of workforce science.
67. **Strengthen global capacity to implement the transnational HRH agenda.** This can be achieved by fostering effective coordination, alignment and accountability through a network of international HRH stakeholders and actors. Building on the experience and achievements of the Global Health Workforce Alliance over its 10 years of existence (2000–2016), WHO will support the establishment of a global mechanism for HRH governance. This mechanism aims to maintain high-level political commitment, facilitate the alignment of global health initiatives to the HRH investment priorities outlined in this Strategy, promote public–private collaboration and inter-sectoral and multilateral policy dialogue, and foster global coordination and mutual accountability, effectively linked with United Nations system processes for monitoring of universal health coverage and the Sustainable Development Goals.
68. **Provide Member States with technical support to develop health system capacities and workforce competency to manage the risks of emergencies and disasters.** This support will facilitate: assessment of HRH availability before, during and after emergencies; integration of emergency risk management into relevant policies, technical programmes and associated workforce development, education and training; support to coordination mechanisms for planning and deployment of personnel for emergencies (including international health teams and the Global Health Cluster); and advocacy for the protection of workforce health and safety in emergency settings.

## Recommendations to other stakeholders and international partners

69. **Parliaments and civil society to contribute to sustained momentum of the HRH agenda.** This can be achieved through oversight of government activities and accountability mechanisms to monitor performance, and by advocating the improvement of both public and private sector education institutions and employers.

70. **The international community, development partners, and global health initiatives to examine systematically the health workforce implications of any health goals that are considered and adopted.** As part of this, the WHO Secretariat should also cooperate with its Governing Bodies mechanisms to create the conditions for all future resolutions presented the World Health Assembly and regional committees to include an assessment of health workforce implications resulting from technical or policy recommendations.<sup>(66)</sup>

# Objective 4

Strengthen data on human resources for health for monitoring and accountability of the both national strategies and the Global Strategy

## MILESTONES:

- **4.1 By 2020, all countries will have made progress to establish registries to track health workforce stock, distribution, flows, demand, supply, capacity and remuneration.**
- **4.2: By 2020, all countries will have made progress on sharing HRH data through national health workforce accounts and submitting core indicators to the WHO Secretariat annually.**
- **4.3: By 2020, all bilateral and multilateral agencies will have strengthened health workforce assessment and information exchange.**

71. **Better HRH data and evidence are required as a critical enabler to enhance advocacy, planning, policy-making, governance and accountability at national and global levels.** The evidence-to-policy feedback loop is an essential feature of resilient health systems, defined as those with the capacity to learn from experience and adapt according to changing needs. Projections of future workforce requirements, informed by reliable and updated health workforce information, labour market analyses, and scanning of scenarios, can inform the development, implementation, monitoring, impact assessment and continuous updating of workforce strategies. The evidence-to-policy field has potential for major improvements in the coming decade. Specific opportunities stem from technological innovation, connectedness, the Internet and the beginning of a “big data” era, characterized by dramatic growth in the types and quantity of data collected by systems, patients and health workers.
72. **The post-2015 development objectives require aligning the public policy agenda on governance, accountability and equity with strategic intelligence on the national and global health labour market.** Demand for, and proactive use of health workforce data in international public policy needs to be stimulated, and global discourse encouraged on assessing the health workforce implications of any public health objective. This, in turn, will trigger demand for, and analysis of workforce data (including in emergency settings), particularly on global health initiatives and programming linked to the health targets of the SDGs and UHC. Improvements in HRH information architecture and interoperability can generate core indicators in support of these processes. Data collected should include a comprehensive overview of workforce characteristics (public and private practice); remuneration patterns (multiple sources, not only public sector payroll); worker competency (e.g. the role of health workers disaggregated across cadres and between different levels of care); performance (systematic data collection on productivity and quality of care); absence, absenteeism and their root causes; labour dynamics of mobility (rural vs urban, public vs private, international mobility); violence or attacks against health workers; and the performance of the HRH management system itself (the average time it takes to fill a vacancy, the attrition rate during education and employment, the outcomes of accreditation programmes, etc.).<sup>(67)</sup>
73. **The Strategy includes an accountability framework to assess progress on its recommendations.** At the country level, policy options identified as most relevant to individual Member States should be embedded in national health and development strategies and plans. Specific HRH targets and indicators should be included in these national policies, strategies and development frameworks, and multisectoral and multiconstituency mechanisms strengthened to reflect the key HRH interventions and accountability points from inputs to impact. Existing processes and mechanisms for health sector review at country level

should include a regular assessment of progress in the health workforce agenda in the national context. Global accountability will include a progressive agenda to implement national health workforce accounts, (67) with annual reporting by countries on core HRH indicators against the targets identified under the four objectives of this Strategy. Reporting requirements for Member States will be streamlined by progressive improvement in HRH data, effectively linking monitoring of the Strategy with that of the WHO Global Code of Practice on the International Recruitment of Health Personnel, other HRH-focused WHA resolutions, and strategic documents and resolutions adopted at regional level. Global monitoring will also be linked and synchronized with the accountability framework of the emerging SDGs.

## Policy options for WHO Member States

### All countries

74. **Invest in analytical capacity of countries for HRH and health system data.** This should be based on policies and guidelines for standardization and interoperability of HRH data, such as the those given in the WHO Minimum Data Set (68) to establish and implement national health workforce accounts. National or regional workforce observatories and similar or related mechanisms can be a useful implementation mechanism for this agenda and serve as a platform to share and advocate best practices. Opportunities for greater efficiency can be exploited by harnessing technological advances, connectedness and the Internet, and the rise in new approaches for health workforce futures in the design of systems for HRH data collection, gathering and use. (69)
75. **Establish national health workforce registries of the competent and practising, rather than those that have simply completed a training programme.** The registries should progressively extend the minimum data set to a comprehensive set of key performance indicators on health worker stock, distribution, flow, demand, supply capacity and remuneration, in both the public and private sector. Data should be disaggregated by age, sex, ethnic or linguistic group, and place of employment, as a prerequisite to understand health labour markets and the design of effective policy solutions. Systems should also be put in place to enable the systematic collection and reporting of data on attacks on and violence against health workers.
76. **Put in place incentives and policies to collect, report, analyse and use reliable and impartial workforce data to inform transparency and accountability, and enable public access to different levels of decision-making.** In particular, countries should facilitate national and subnational collection and reporting of health workforce data through standardized, annual reporting to the WHO Global Health Observatory. All workforce data (respecting personal confidentiality and relevant data protection laws) should be treated as a global public good to be shared in the public domain for the benefit of different branches of government, health care professional associations and development partners.
77. **Embed in national health or HRH strategies the relevant policy options included in this Strategy, and the corresponding monitoring and accountability requirements.** Accountability for HRH at the national level should be accompanied by mechanisms for accountability of HRH at the grassroots level, harnessing the voice and capacity of communities and service users to provide feedback to improve the quality of care and patient safety. Similarly, at the global level countries should request the UN Secretary-General's Office to ensure that the SDG accountability framework includes health workforce targets and indicators.

### High-income countries

78. **Apply "big data" approaches to gain a better understanding of the health workforce,** including its size, characteristics and performance to generate insights into gaps and possibilities for health workforce strengthening. This should be done in compliance with norms and legislative frameworks regulating the collection and use of personal data that will guarantee absolute confidentiality and anonymity of individual health workers.

## Low- and middle-income countries

79. **Strengthen HRH information systems and build the human capital required to operate them** in alignment with broader health management information systems. The capacity to use data effectively for dialogue with policy-makers should also be strengthened.
80. **Exploit “leapfrogging” opportunities through the adoption of ICT solutions** for HRH data collation and storage, avoiding the capital-heavy infrastructure needed in the past.

## Fragile states and countries in chronic emergencies

81. **Professionalize the development of HRH information systems through targeted capacity-building initiatives.** In addition to the policy options above, in contexts characterized by fragility, insecurity and political instability there is a specific need to establish, or strengthen and protect relevant institutions (Government/Ministry of Health and professional councils) at national level.<sup>(43)</sup> In the short term, the fragmentation of health workforce information systems may require working effectively with patchy quantitative data, complemented by qualitative methods.

## Responsibilities of the WHO Secretariat

82. **Develop, review the utility of and update and maintain tools, guidelines and databases relating to data and evidence on HRH for routine and emergency settings.**
83. **Facilitate the progressive implementation of national health workforce accounts** to support countries to strengthen and standardize the quality and completeness of their health workforce data. Improved HRH evidence will contribute to a global digital reporting system for countries to report on a yearly basis on a minimum set of core HRH indicators. This will include information on health workforce production, recruitment, availability, composition, distribution, costing and migratory flows,<sup>(67)</sup> disaggregated by sex, age and place of employment.
84. **Streamline and integrate all requirements for reporting on HRH by WHO Member States.** In their annual report on HRH, Member States would thus integrate progress on implementing: the WHO Global Code of Practice on the International Recruitment of Health Personnel; other HRH-focused WHA resolutions; and the Global Strategy on HRH.
85. **Adapt, integrate and link the monitoring of targets in the Global Strategy** to the emerging accountability framework of the Sustainable Development Goals.

## Recommendations to other stakeholders and international partners

86. **The International Labour Organization to revise the International Standard Classification of Occupations** for greater clarity on delineation of health workers and health professions.<sup>(70)</sup> This will entail a move towards definitions that reflect worker competency together with the tasks they perform. Of particular urgency is the need to streamline and rationalize the categorization and nomenclature of community health workers and other types of community-based practitioners.
87. **Research and academic institutions to address priority evidence gaps.** Examples of areas where further research is required are approaches to regulate effectively dual practice, strategies to optimize quality and performance, and the optimal institutional and regulatory context for task sharing and skills delegation.<sup>(71)</sup> Further, there is a need to leverage strengthened HRH data and measurement for impact evaluations and research on cost-effectiveness and return on investment of health workforce interventions.<sup>(72)</sup> The early involvement of decision-makers and stakeholders in the setting of research priorities can be instrumental in scaling up and utilizing research results.<sup>(73)</sup>

88. **Professional associations and civil society to collaborate with the research community to facilitate the uptake and utilization of evidence in the policy-making process.** The advocacy, communications and accountability functions of these constituencies can play a major role in bridging the evidence-to-policy gap.
89. **Development partners to support national HRH data collection and analysis systems for improved planning and accountability.** This should include a provision that bilateral and multilateral agencies routinely make available in the public domain the health workforce information and evidence collected as part of the initiatives they support.

# Annex 1

## Health workforce requirements for implementation of the Global Strategy on Human Resources for Health

Note: Since April 2015, WHO has been facilitating a coordinated inter-agency, multi-constituency effort to estimate health workforce requirements to 2030. Annex 1 reflects the status of analysis as at December 2015, and will be finalized for submission to the World Health Assembly in May 2016.

**Table A1.1: Stock of health workers, 2013**

Region	Medical doctors	Nurses/midwives	All other cadres <sup>1</sup>	Total <sup>2</sup>	Medical doctors per 1000	Nurses/midwives per 1000	All other cadres per 1000	Total per 1000 <sup>2</sup>
Africa	225 120	1 039 709	620 315	1 885 144	0.27	1.22	0.73	2.22
Americas	2 025 041	4 692 099	2 637 289	9 354 429	2.09	4.85	2.73	9.68
Eastern Mediterranean	785 629	1 295 020	979 097	3 059 747	1.26	2.08	1.57	4.91
Europe	2 909 051	5 314 157	3 308 690	11 531 897	3.20	5.84	3.64	12.68
South-East Asia	1 062 373	2 776 662	2 093 276	5 932 311	0.57	1.50	1.13	3.20
Western Pacific	2 721 036	4 624 862	2 959 246	10 305 145	1.49	2.54	1.62	5.66
<b>Income<sup>3</sup></b>								
Low	144 826	399 478	323 979	868 284	0.19	0.51	0.41	1.11
Lower-middle	1 977 455	4 475 914	3 543 241	9 996 609	0.77	1.75	1.39	3.91
Upper-middle	3 880 669	6 603 520	4 259 087	14 743 276	1.61	2.74	1.77	6.12
High	3 725 300	8 263 597	4 471 607	16 460 504	2.92	6.48	3.51	12.91
<b>World<sup>4</sup></b>	<b>9 728 249</b>	<b>19 742 509</b>	<b>12 597 914</b>	<b>42 068 673</b>	<b>1.38</b>	<b>2.81</b>	<b>1.79</b>	<b>5.99</b>

<sup>1</sup> Refers to the seven other broad categories of the health workforce as defined by the WHO Global Health Workforce Statistics Database, i.e. dentistry personnel, pharmaceutical personnel, laboratory health workers, environment and public health workers, community and traditional health workers, health management and support workers, and other health workers. A cadre multiplier was determined by taking, for each World Bank income region, with non-missing "all other cadres" values, the average number of "all other cadres" relative to medical doctors/nurses/midwives. This yielded the following workforce multipliers: 0.595 (low); 0.549 (lower-middle); 0.406 (upper-middle); and 0.373 (high). Multiplying the total medical doctors/nurses/midwives by this cadre multiplier yielded the estimated number of "all other cadres" for that region.

<sup>2</sup> Counts and rates may not equal row/column totals due to rounding or to missing data on income or region.

<sup>3</sup> Income-specific "all other cadres" multipliers are as indicated under note (1) above.

<sup>4</sup> Comprises 210 countries for which the United Nations publishes population estimates, at a total estimated population in 2013 of 7 024 094 223.

Table A1.1 estimates that in 2013 (latest available data) the global health workforce was slightly over 42 million, including 9.7 million physicians, 19.7 million nurses/midwives, and approximately 12.6 million other health workers. The global nurse/midwife to physician ratio was 2.07.

### Projected growth in workforce on current trends

If current trends in education and employment continue to 2030, low-income countries will see a significant increase from 2013 in the numbers of all cadres of health workers, including a 27% increase in physicians, a 40% increase in nurses/midwives, and a 36% increase in other health-care workers (Table A1.2).

In contrast, high-income countries are forecasted to have a 5% increase across all cadres, which reflects their already satisfactory health worker densities and low population growth. The aggregate forecasted actual increase in the global health workforce from 2013 to 2030 across all income groups is 11% – or 46.7 million health-care workers – if current trends continue.

**Table A1.2: Forecasted estimate for health workers by cadre and income group in 2030 (and percentage change from 2013)**

Income	Medical doctors			Nurses/midwives			Others			Total workers		
	2013	2030	%*	2013	2030	%*	2013	2030	%*	2013	2030	%*
Low	144 826	183 424	27	399 478	557 475	40	323 979	440 996	36	868 284	1 181 894	36
Lower-middle	1 977 455	2 345 122	19	4 475 914	5 338 845	19	3 543 241	4 218 905	19	9 996 609	11 902 872	19
Upper-middle	3 880 669	4 268 966	10	6 603 520	7 338 691	11	4 259 087	4 715 483	11	14 743 276	16 323 141	11
High	3 725 300	3 925 940	5	8 263 597	8 697 997	5	4 471 607	4 708 463	5	16 460 504	17 332 400	5
<b>World</b>	<b>9 728 249</b>	<b>10 723 452</b>	<b>10</b>	<b>19 742 509</b>	<b>21 933 009</b>	<b>11</b>	<b>12 597 914</b>	<b>14 083 847</b>	<b>12</b>	<b>42 068 673</b>	<b>46 740 308</b>	<b>11</b>

\*Estimated percentage change between 2013 and 2030.

### An updated, needs-based “SDG index” of minimum density of doctors, nurses and midwives

The 2006 World Health Report broke new ground by developing an evidence-based model for health worker need, based on achieving 80% coverage of assisted deliveries. This threshold recommended 2.3 skilled health workers per 1000 population. The threshold has enabled policy advocates to push for goals and for countries to measure their progress. However, the model is clearly limited to one single health service (assisted deliveries).

In considering a new health workforce threshold, the focus must shift to reflect the broader range of services that are targeted by UHC and the SDGs.

### Twelve UHC tracers weighted according to the Global Burden of Disease (SDG index)

Tracers of indicators for UHC were selected to reflect noncommunicable diseases, maternal, newborn and child health, and infectious disease priorities. Table A1.3 lists the 12 indicators and their primary classification (5 indicators for infectious diseases, 3 for maternal, newborn and child health, and 4 for noncommunicable diseases). Coverage data for all countries available for the 12 indicators were combined in an aggregate coverage indicator, which weighted the importance of specific indicators based on the contribution of the diseases to the global burden of diseases.

**Table A1.3: SDG tracer indicators**

Indicator	Classification
Antenatal care	MNCH
Antiretroviral therapy	ID
Cataract	NCD
Diabetes	NCD
DTP3 immunization	ID
Family planning	MNCH
Hypertension	NCD
Potable water	ID
Sanitation	ID
Skilled birth attendance	MNCH
Tobacco smoking	NCD
Tuberculosis	ID

DTP3, third dose of diphtheria-tetanus-pertussis vaccine; ID, infectious diseases; MNCH, maternal, newborn and child health; NCD, noncommunicable diseases.

Countries were then ranked according to the coverage of this composite SDG index, and a regression analysis performed to identify the aggregate density of doctors, nurses and midwives corresponding to the 50th percentile (median) rank. It was not possible to factor into the analysis other health worker cadres (such as community-based and mid-level practitioners, and other allied health professionals) due to extensive data limitations on their availability.

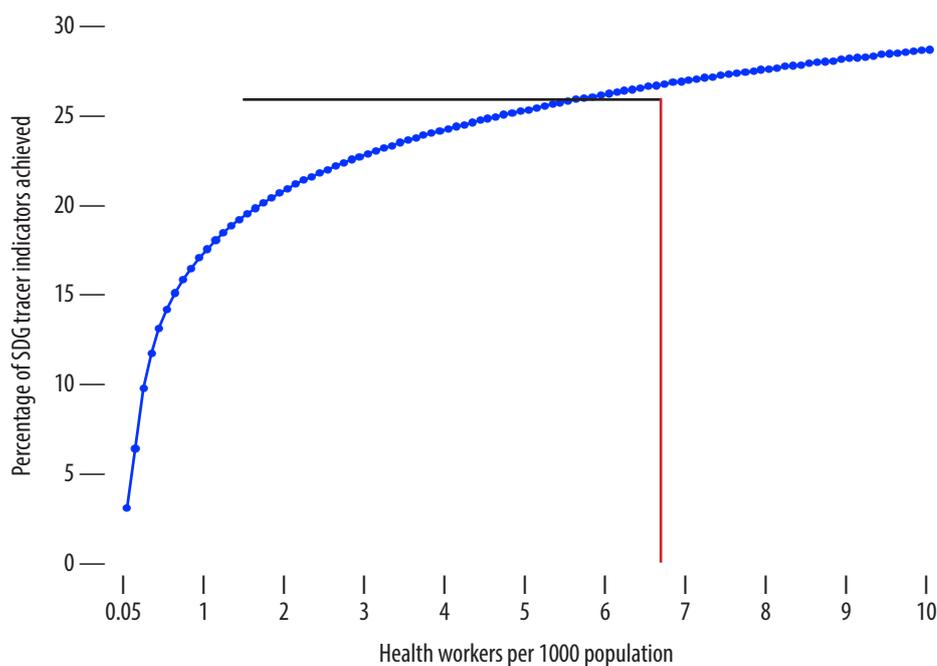
Alternative regression techniques, based on data envelopment analysis and simultaneous equation models, were attempted. However, the gaps in availability of service coverage data made these techniques more vulnerable to evidence gaps, and restricted the applicability of these alternative methodologies to a narrower subset of coverage data indicators that do not reflect the scope of UHC. These alternative estimates of the threshold will be discussed in a forthcoming background paper.

On the basis of the analysis conducted according to the SDG index methodology described above, an indicative threshold of an aggregate density of 4.45 doctors, nurses and midwives per 1000 population was identified, as it corresponds to the median score of SDG tracer indicator attainment (25%). This value has been used for the needs-based estimates in this analysis.

It should be emphasised that this figure does not represent a planning target for countries, nor for the global level; further, it is acknowledged that this threshold reflects only doctors, nurses and midwives, an inherent limitation that it was not possible to overcome given the paucity of data on other cadres, which restricted the scope of this analysis.

Planning targets for countries should rather be set based on national level policy dialogue, taking into account the context-specific needs of the health system, service delivery profile, and labour market conditions. They should reflect a more diverse skill mix, going beyond the cadres of doctors, nurses and midwives to harness the potential contribution of others for a more responsive and cost-effective composition of health-care teams.

**Figure A1.1: SDG composite method: percentage of 12 SDG tracer indicators achieved as a function of aggregate density of doctors, nurses and midwives per 1000 population\***



\*n=210 countries.

## Estimating aggregate health workforce requirements to 2030

**Table A1.4: Forecast of needs-based worker supply to 2030 by income group for all cadres and their percentage increase from 2013**

Income	Medical doctors			Nurses/midwives			Others			Total workers		
	2013	2030	%*	2013	2030	%*	2013	2030	%*	2013	2030	%*
Low	988 238	1 387 539	40	2 487 819	3 493 032	40	2 069 054	2 905 064	40	5 545 111	7 785 636	40
Lower-middle	3 234 647	3 993 005	23	8 142 997	10 052 109	23	6 247 070	7 711 685	23	17 624 714	21 756 799	23
Upper-middle	3 049 917	3 382 373	11	7 677 950	8 514 886	11	4 358 176	4 833 239	11	15 086 043	16 730 498	11
High	1 613 380	1 711 006	6	4 061 570	4 307 337	6	2 116 684	2 244 766	6	7 791 634	8 263 108	6
<b>World</b>	<b>8 886 182</b>	<b>10 473 923</b>	<b>10</b>	<b>22 370 335</b>	<b>26 367 363</b>	<b>11</b>	<b>14 790 985</b>	<b>17 694 754</b>	<b>20</b>	<b>46 047 502</b>	<b>54 536 041</b>	<b>18</b>

\*Percentage change from 2013 to 2030.

The index of 4.45 health workers per 1000 population was used to estimate the number of health workers that would be needed in 2030 to reach adequate coverage of the 12 SDG tracer indicators. As shown in Table A1.4, in 2013 the needs-based forecasted estimate in low-income countries was nearly 1 million physicians, 2.5 million nurses, and just over 2 million other health workers, with a total needs-based estimate of 5.6 million. In contrast, in high-income countries, the needs-based estimate in 2013 was just over 1.6 million physicians, 4 million nurses and midwives, and 2.1 million other health-care workers. Globally, the need for health-care workers in 2030 is estimated at 54.5 million, representing an 18% increase over the need in 2013. This increase is not uniform: in high-income countries it is forecasted at 6%, while in low-income countries the increase is estimated to be as high as 40%.

## Health worker deficit (difference between SDG calculated need and supply) in 2013 and 2030 by cadre and country income group

Table A1.5 examines the deficit of health-care workers in 2013 and 2030 by cadre. As defined by the needs-based estimates and supply projections presented above, deficits mean the need for, minus the supply of health-care workers.

**Table A1.5: Estimates of health worker deficits relative to current supply by region and income, 2013**

Region	Deficit*			
	Medical doctors	Nurses/midwives	All other cadres	Total workers
Africa	860 362	1 787 513	1 511 497	4 159 373
Americas	48 050	518 501	214 363	780 913
Eastern Mediterranean	241 115	871 788	605 258	1 718 160
Europe	1 911	362 228	43 313	407 453
South-East Asia	1 283 457	3 129 308	2 448 532	6 861 297
Western Pacific	127 915	2 532 414	1 040 825	3 701 155
<b>Income</b>				
Low	848 770	2 103 387	1 757 220	4 709 378
Lower-middle	1 566 399	4 198 354	3 154 307	8 919 059
Upper-middle	142 927	2 559 092	900 143	3 602 162
High	4 715	340 919	52 118	397 752
<b>World</b>	<b>2 562 811</b>	<b>9 201 752</b>	<b>5 863 788</b>	<b>17 628 351</b>

\*SDG composite method (4.45).

Globally, the deficit of health-care workers in 2013 was estimated to be about 17.6 million, of which a little over 2.5 million were doctors, 9 million were nurses and midwives, and the remainder constituted all other health-care cadres. The larger deficits of health-care workers were in lower-middle income countries, followed by low-income countries. Regionally, the largest deficit of health-care workers was in South-East Asia at 6.9 million followed by Africa with a deficit of 4.2 million.

Using this “SDG Index” (4.45 per 1000), the projected deficits in 2030 were estimated. The deficit of physicians in Africa will be just under a million, nurses and midwives at 2.4 million, and other workers at 2.2 million. In contrast, there will be almost no deficit of physicians in Europe (Table A1.6).

**Table A1.6: Estimates of health worker deficit in 2030 relative to projected supply in 2030, by WHO region and country income group**

Region	Estimated deficit*			
	Medical doctors	Nurses/midwives	All other cadres	Total workers
Africa	963 300	2 425 105	2 204 926	5 593 331
Americas	56 648	142 656	174 825	374 129
Eastern Mediterranean	162 088	408 116	536 537	1 106 741
Europe	1 414	3 564	14 090	19 068
South-East Asia	1 651 921	4 159 017	3 735 904	9 546 842
Western Pacific	128 029	322 340	296 429	746 797
Income				
Low	1 007 506	2 536 415	2 282 424	5 826 346
Lower-middle	1 801 449	4 535 484	4 339 197	10 676 131
Upper-middle	150 495	378 944	321 514	850 953
High	3 950	9 953	19 575	33 479
<b>World</b>	<b>2 963 400</b>	<b>7 460 797</b>	<b>6 962 711</b>	<b>17 386 908</b>

\*SDG composite method (4.45).

Estimates by income group produce similar results, showing that the total health care worker shortage will be 5.8 million, against 10.6 million in lower-middle income countries. Interestingly, the global deficit of health-care workers is projected to be above 17 million in 2030, a value close to the deficit in 2013 (see table A1.5). Hence, current trends of health worker production and employment will have virtually no impact on reducing the needs-based deficit for health-care workers by 2030.

### Assessing market-based demand for health workers in 2030

*Forthcoming from the World Bank – will confirm mismatch between needs and demand at the aggregate level in low- and lower middle-income countries and in Sub-Saharan Africa.*

### Projecting fiscal space and resource requirements

*Forthcoming.*

# Annex 2

## Annotated list of key tools and guidelines for human resources for health

- WHO education guidelines
- WHO retention guidelines
- WHO guidelines: task shifting HIV and optimizing reproductive, maternal, newborn and child health
- Workload indicators for staffing needs
- One Health Tool
- Minimum data sets
- National health workforce accounts
- Human resources for health advocacy toolkit (Health Workforce Advocacy Initiative)
- WHO Global Code of Practice on the International Recruitment of Health Personnel
- The labour market for health workers in Africa (World Bank)
- Handbook on monitoring and evaluation of human resources for health with special applications for low- and middle-income countries
- Human resources for health indicator compendium (United States Agency for International Development)
- International Standard Classification of Occupations (International Labour Organization)
- International Health Regulations (2005) – human resources for health module
- Analysing disrupted health sectors – human resources for health module

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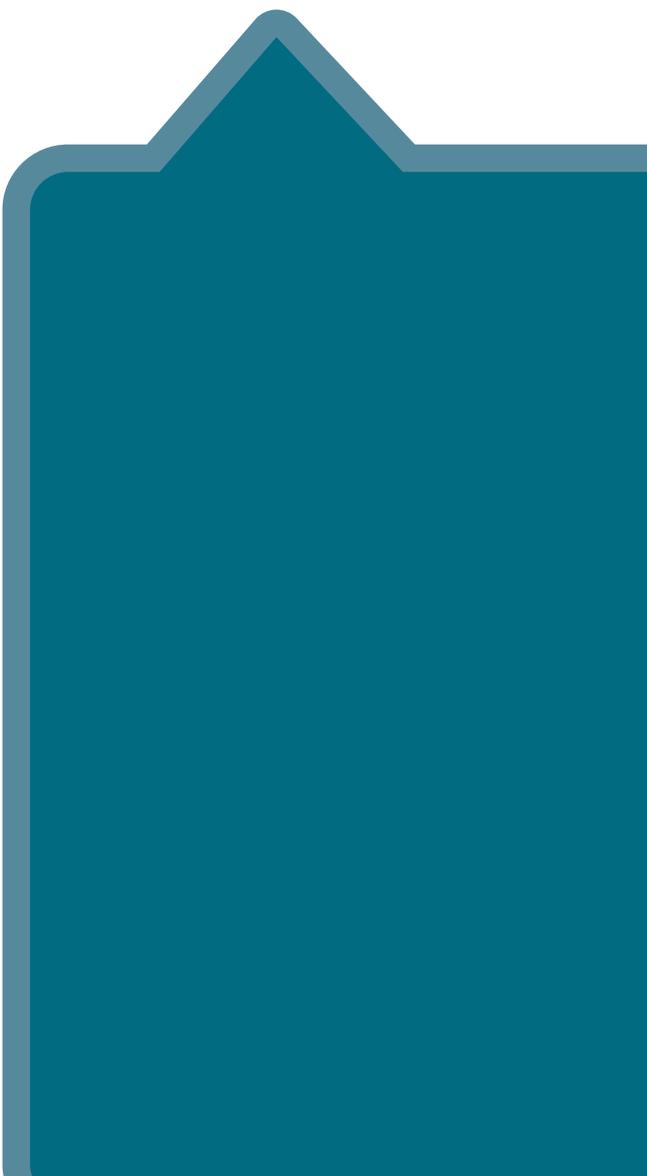
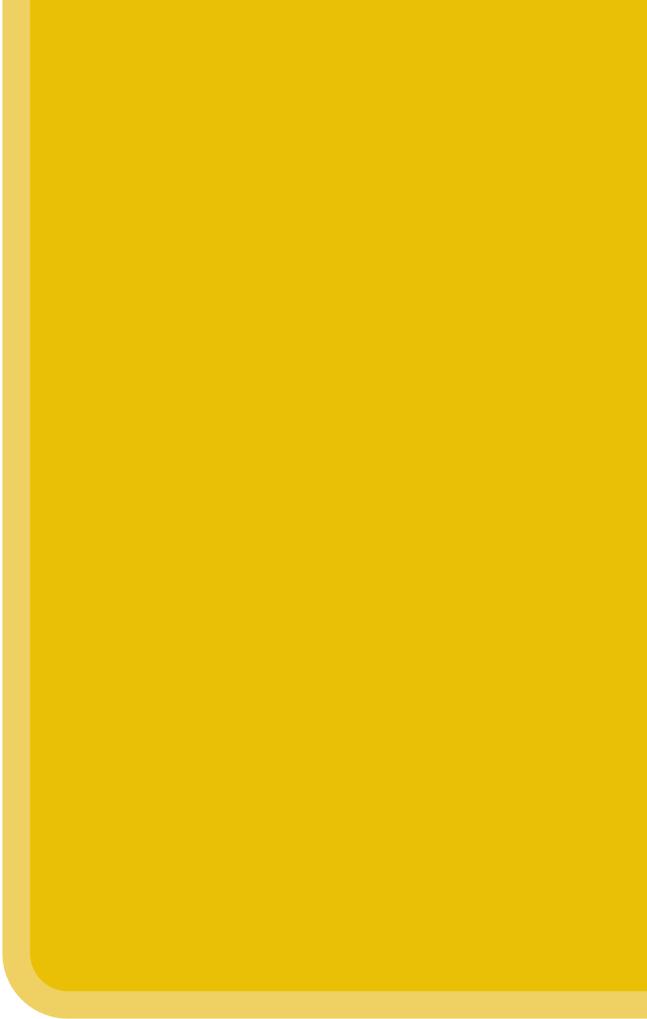
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