



**World Health
Organization**

REGIONAL OFFICE FOR

Europe

**The toolkit for a
sustainable health
workforce in the WHO
European Region**

Abstract

The toolkit is aimed at policy-makers, human resources for health (HRH) planners and professionals, and other stakeholders, such as education institutions and those implementing policy. It is intended to support *Towards a sustainable health workforce in the WHO European Region: framework for action*, which adapts the *Global strategy on human resources for health: workforce 2030* to the context of the WHO European Region. It is framed around four strategic domains mirroring the themes of the global strategy – education and performance, planning and investment, capacity-building, and analysis and monitoring – and proposes policy options and implementation modalities. The toolkit is formulated to provide Member States with information and signpost to practical materials, such as HRH assessment, policy and planning tools, analytical approaches and case studies, to support their efforts to strengthen HRH in a sustainable way, including through investment in capital and recurrent expenditure. It is not intended to be an exhaustive list or compendium.

Keywords

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FOREWORD

In the WHO European Region, as elsewhere, we face a number of health challenges: a rapidly ageing population; an increased incidence of chronic conditions and multi-comorbidities; environmental, social and economic pressures; large-scale migration; a changing landscape of information technology; and an assertive population active on social media.

We have a shared vision for universal health coverage, to maximize health gains, reduce health inequalities, guarantee financial protection for populations and individuals, and ensure efficient use of societal resources through intersectoral and multisectoral actions consistent with whole-of-society and whole-of-government approaches.

We can achieve this by transforming service delivery. Health 2020, the European policy framework for health and well-being, sets out the required strategic changes for health services, using a people-centred approach through: the adoption of inclusive models of health care; the reorientation of health systems towards a collaborative primary care approach built on team-based care; and the realization of the potential for technological innovation, such as electronic health services (e-health).

Health workers play a critical role in health systems by ensuring sustainability, resilience and the delivery of high-quality services. An effective, well motivated, appropriately skilled and well managed health workforce lies at the very heart of this goal.

In 2017 the WHO Regional Office for Europe developed a framework for action to meet the aims of the global WHO/International Labour Organization/Organisation for Economic Co-operation and Development five-year action plan on health employment and economic growth adopted at the Seventieth World Health Assembly and which was adopted by Member States at the Sixty-seventh session of the WHO Regional Committee for Europe.

This toolkit adapts the Global strategy on human resources for health: workforce 2030 to the context of the WHO European Region and enables Member States to operationalize the framework for action.

It will help Member States to realize that the health workforce is an investment, not a cost, that is essential to the goal of universal health coverage. It sets out key strategic objectives for Member States and proposes policy options and implementation modalities to support Member States to sustainably strengthen their human resources for health (HRH).

The toolkit is framed around four strategic objectives: education and performance, planning and investment, capacity-building, and analysis and monitoring. Member States can use the toolkit to develop homegrown solutions to transform the distribution, skill mix, competencies, education, management and regulation of health workforces to meet their specific HRH challenges.

The toolkit is intended to be a dynamic resource that can be adapted. The Regional Office will work with experts and stakeholders continually to improve it and add guides and tools that support Member States in dealing with specific issues.

Dr Hans Kluge

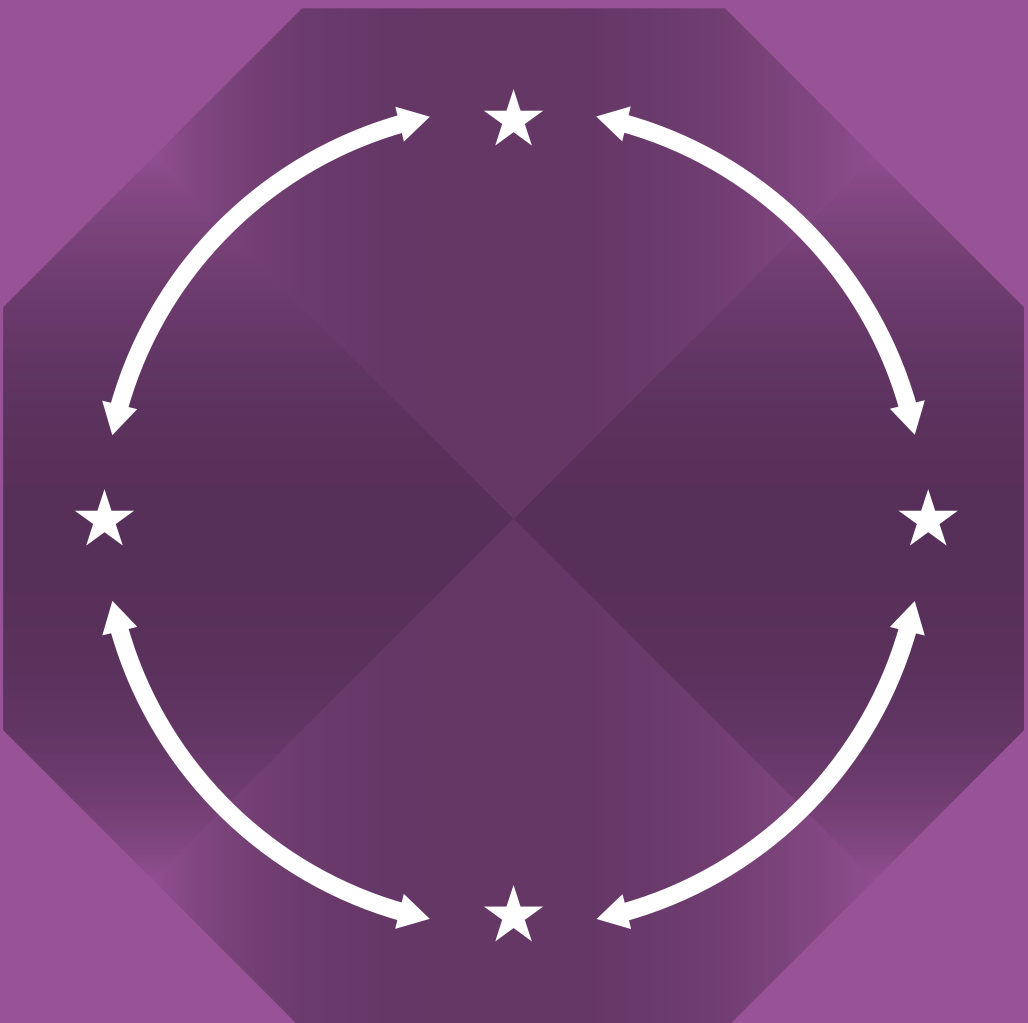
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WHO Regional Office for Europe

ACRONYMS

CPD	continuing professional development
CSO	civil society organization
EU	European Union
GP	general practitioner
HRH	human resources for health
HRM	human resource management
HW4all	HealthWorkers 4all
MUNROS	iMpaCt on praCtice oUtcomes and costs of New ROleS for health professionals
MVSP	Multilingual Virtual Simulated Patient (project)
OECD	Organisation for Economic Co-operation and Development
SMART	specific, measurable, attainable, relevant and timely (objectives)
TEC	technology-enabled care
UHC	universal health coverage
WISN	workload indicators of staffing need

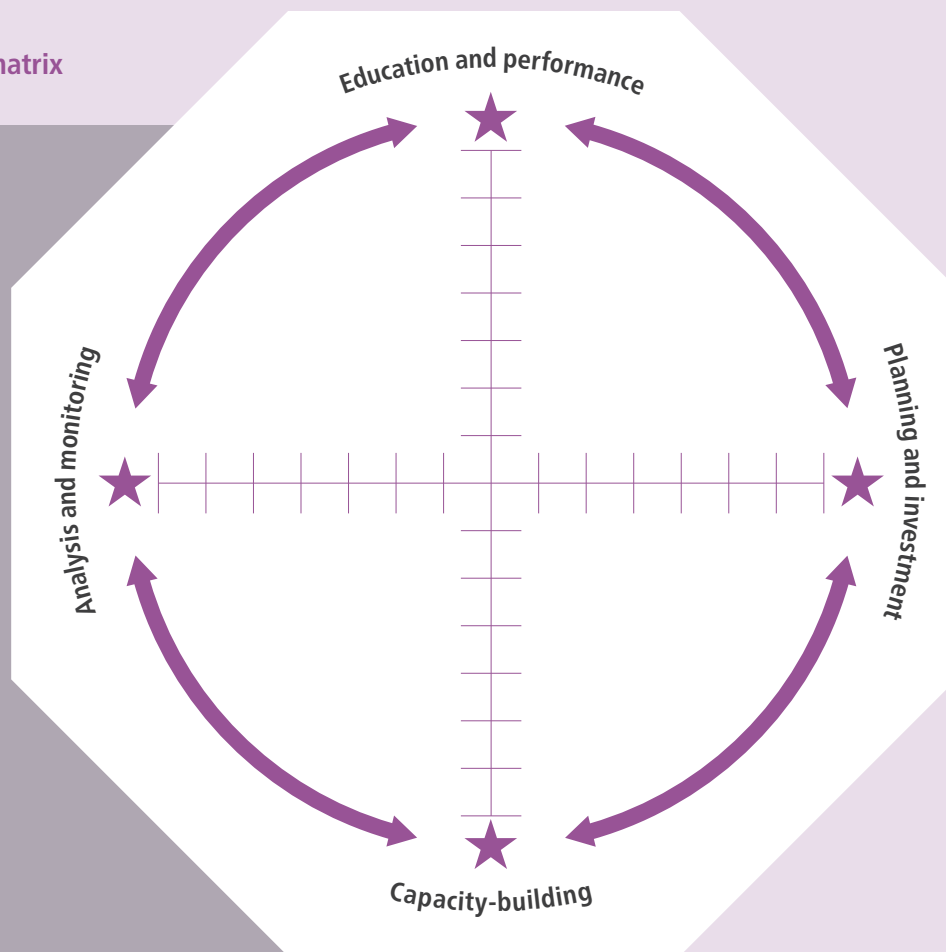
INTRODUCTION TO THE TOOLKIT



1. INTRODUCTION TO THE TOOLKIT

This toolkit uses a policy matrix that presents the global strategic objectives as interdependent components of a policy process (Fig. 1) (for a fuller explanation of the policy matrix, see Annex 1). It supports *Towards a sustainable health workforce in the WHO European Region: framework for action (1)*, which adapts the *Global strategy on human resources for health: workforce 2030 (2)* to the context of the WHO European Region, sets out key strategic objectives for Member States, and proposes policy options and implementation modalities.

Fig. 1. A policy matrix



It is intended to assist Member States in their efforts to strengthen their human resources for health (HRH) in a sustainable way, including through investment in capital and recurrent expenditure.

There is no such thing as a simple solution in HRH planning, nor a so-called silver bullet that will solve all problems in all situations. HRH planning is beset by competing values and objectives, multiple but invariably long lead times in producing fully trained health professionals, and often conflicting political and professional agendas. Effective HRH planning requires basic consensus and cooperation among stakeholders to ensure appropriate availability of HRH.

This toolkit is aimed at policy-makers, HRH planners and professionals, and other stakeholders, such as education institutions and those implementing policy. It contains information and signposts to practical materials such as HRH assessment, policy and planning tools, analytical approaches and case studies (Annex 2). It is not intended to be an exhaustive list or compendium. Users of the toolkit

are encouraged to use the examples described in the case studies, links and research results to develop their own solutions to their specific HRH challenges.

The toolkit is framed around four strategic objectives: education and performance, planning and investment, capacity-building, and analysis and monitoring. These mirror the themes of the global strategy but are adapted to the regional context.

Box 1 provides a summary of key contextual documents underpinning the toolkit.

Box 1. Contextual documents

The toolkit supports *Towards a sustainable health workforce in the WHO European Region: framework for action* (1) (reproduced in Annex 3), which aims to achieve a sustainable health workforce in the WHO European Region. The overall goal of the framework is to accelerate progress towards achieving the population health objectives of the European health policy framework, Health 2020 (3), and longer-term health goals for Member States by sustaining a transformed and effective health workforce within strengthened health systems. It outlines four key strategic objectives, enablers for action and cross-cutting considerations.

The *Global strategy on human resources for health: workforce 2030* (2) addresses all aspects of HRH to inform incisive and multisectoral action based on new evidence and best practices.

Health 2020 (3) aims to support action to achieve set goals through fulfilling two strategic objectives – improving health for all and reducing health inequalities, and improving leadership and participatory governance for health.

The Tallinn Charter: Health Systems for Health and Wealth (4) provides guidance and a strategic framework for strengthening health systems in the WHO European Region.

The *Final report of the expert group to the High-Level Commission on Health Employment and Economic Growth* (5) recognizes that investing in new jobs in the health and social workforce generates economic growth. The Commission developed innovative ways to address health labour shortages and ensure a good match between the skills of health workers and job requirements, to enhance the efficiency of the health sector and its contribution to inclusive growth.

1.1 Health systems and policy

WHO describes health systems as “comprising all the organizations, institutions and resources that are devoted to producing health actions” (6). The WHO health-system framework (7) comprises six system building blocks (service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership and governance (stewardship)) that contribute to the delivery of four overall goals and outcomes (improved health (level and equity); responsiveness; financial risk protection; and improved efficiency).

Health systems across the European Region vary greatly in design, organization and effectiveness, but all face similar core challenges (demographic, epidemiological, fiscal, technological, changing professional practice and others) that affect HRH.

Health policy involves the achievement of health-system goals through control, regulation and influence over the various system elements involved in health-care delivery. This includes a need to take into account the influence that other areas, such as education, public administration, finance, environment, transport and social security, have on the health and well-being of the population.

In the WHO European Region, *The Tallinn Charter: Health Systems for Health and Wealth* (4) identifies that, “Within the political and institutional framework of each country, a health system is the ensemble of all public and private organizations, institutions and resources mandated to improve or restore health”. It notes that health systems encompass personal and population services and activities to influence policy and actions of other sectors to address wider social, economic and environmental determinants of health.

Policy levers and tools used to influence the performance of a health system in relation to health workforce policy typically include institutional design, financial resources, payment mechanisms and incentives systems, regulation, the provision of public goods (such as immunization programmes, public health measures or research), and data collection, analysis and dissemination (Fig. 2).

Above all, the availability of a qualified or skilled, motivated and well supported workforce is key to system performance and to the development or strengthening of people-centred health systems, public health capacity, and emergency preparedness, surveillance and responses, which are key elements of Health 2020 priority area 3 (3). The provision of high-quality care also requires financial sustainability, a prerequisite to achieving universal coverage.

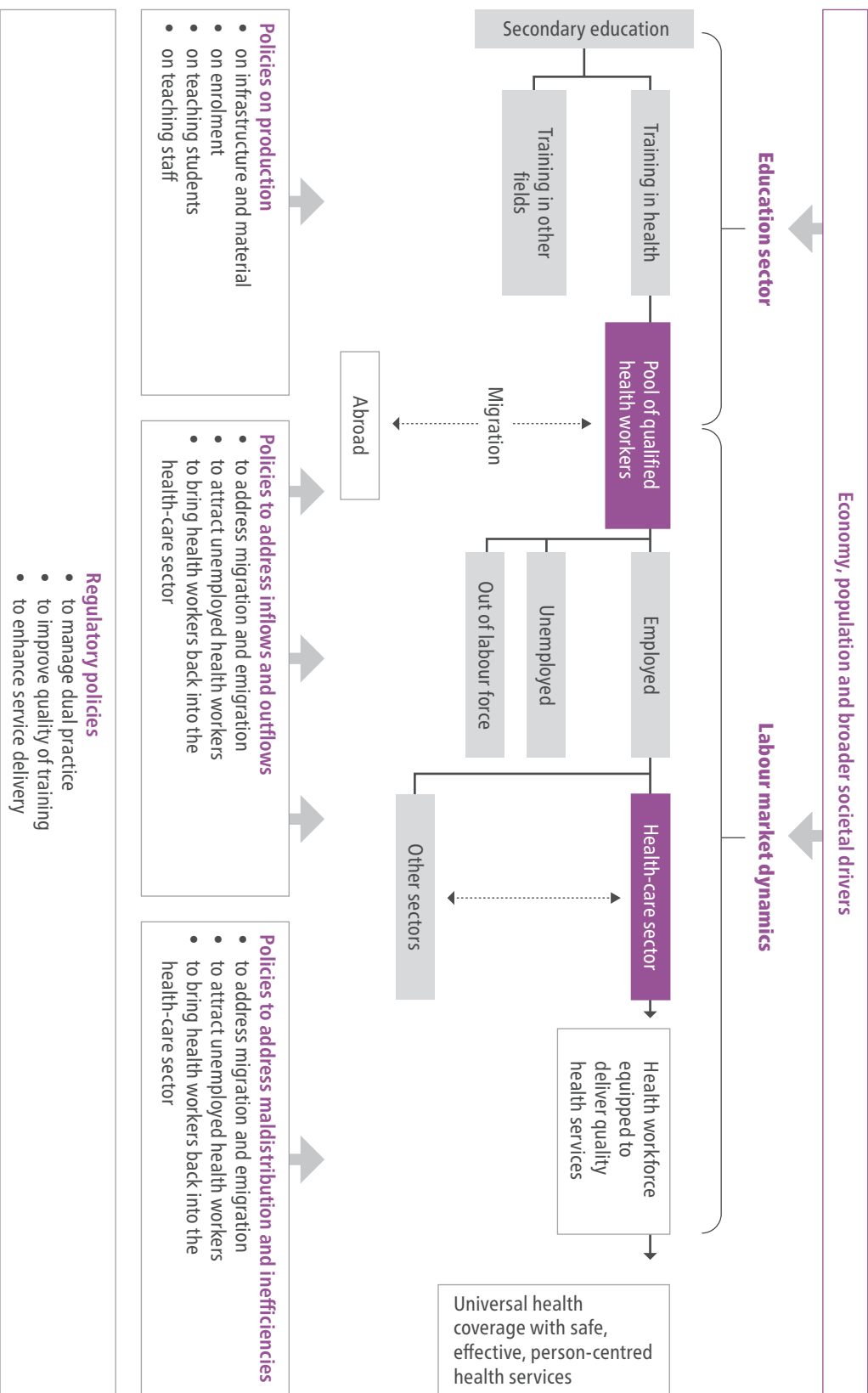
For a health workforce to be sustainable, a range of organizations needs to be mobilized and convinced that a strong health workforce is a critical investment that contributes not only to improving the well-being of the population, but also to economic prosperity. These include public and private sector providers, civil society representatives, regulatory bodies, professional associations, trade unions and education institutions, international technical and financial agencies, and students and their families.

1.2 Using the toolkit

Policy-makers using the policy matrix can enter the process at any point dependent on need and context, as it does not represent a sequential model but rather attempts to illustrate the dynamics that link the elements. The development of priorities and policies requires an understanding of the HRH challenges that need to be met to move towards a sustainable health workforce (Fig. 3), which will vary in nature and scale for each Member State.

A Member State may define a specific set of policies in relation to the four strategic objectives and the outcome of the implementation of these policies in a set of statements for each of the strategic objectives (represented pictorially in the matrix as a star, situation B). The current state of provision can also be assessed, both quantitatively and qualitatively (situation A). By doing this, Member States can understand the gap between policy goals and their current state. This mechanism will allow those implementing policy to determine what initiatives and/or changes need to be made and where, and to track progress against them. As noted earlier, the policy matrices are dynamic. The objective state will change over time: objectives will shift in line with changes to policy and any changes or inactivity that have an impact on a current state (position A) relative to the policy intent.

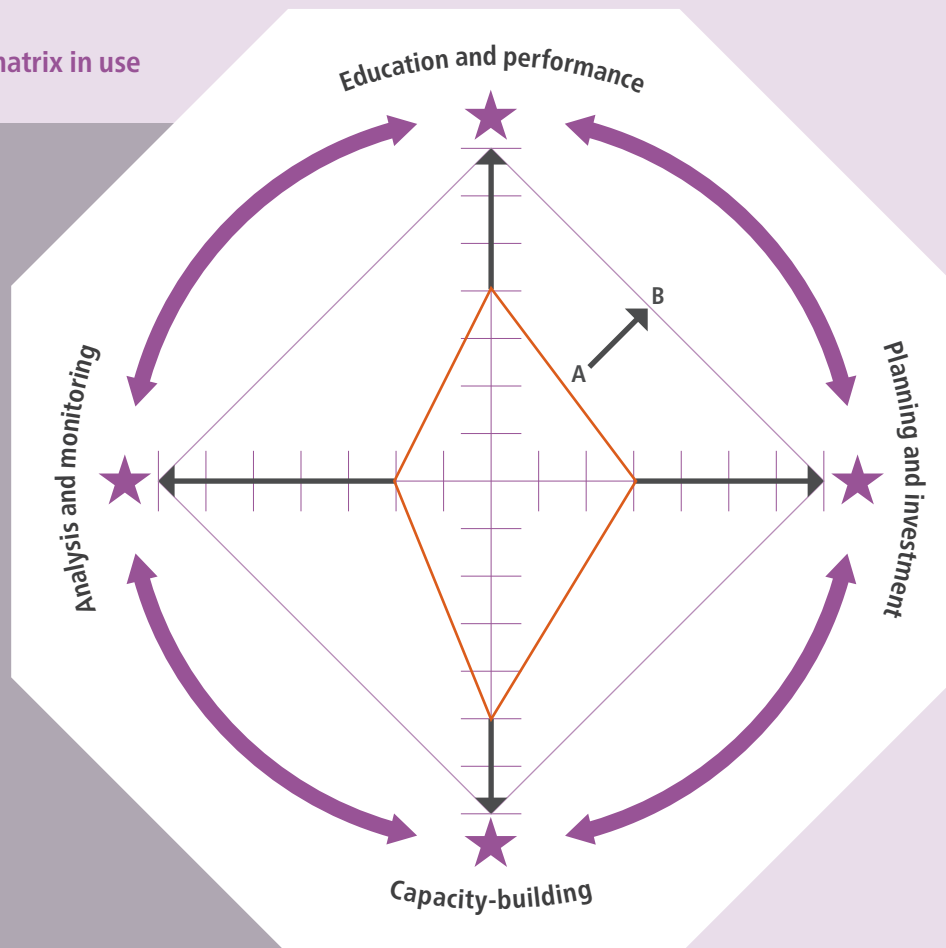
Fig. 2. Health workforce policy entry points, as defined by a labour-market dynamics framework



Source: WHO (2).

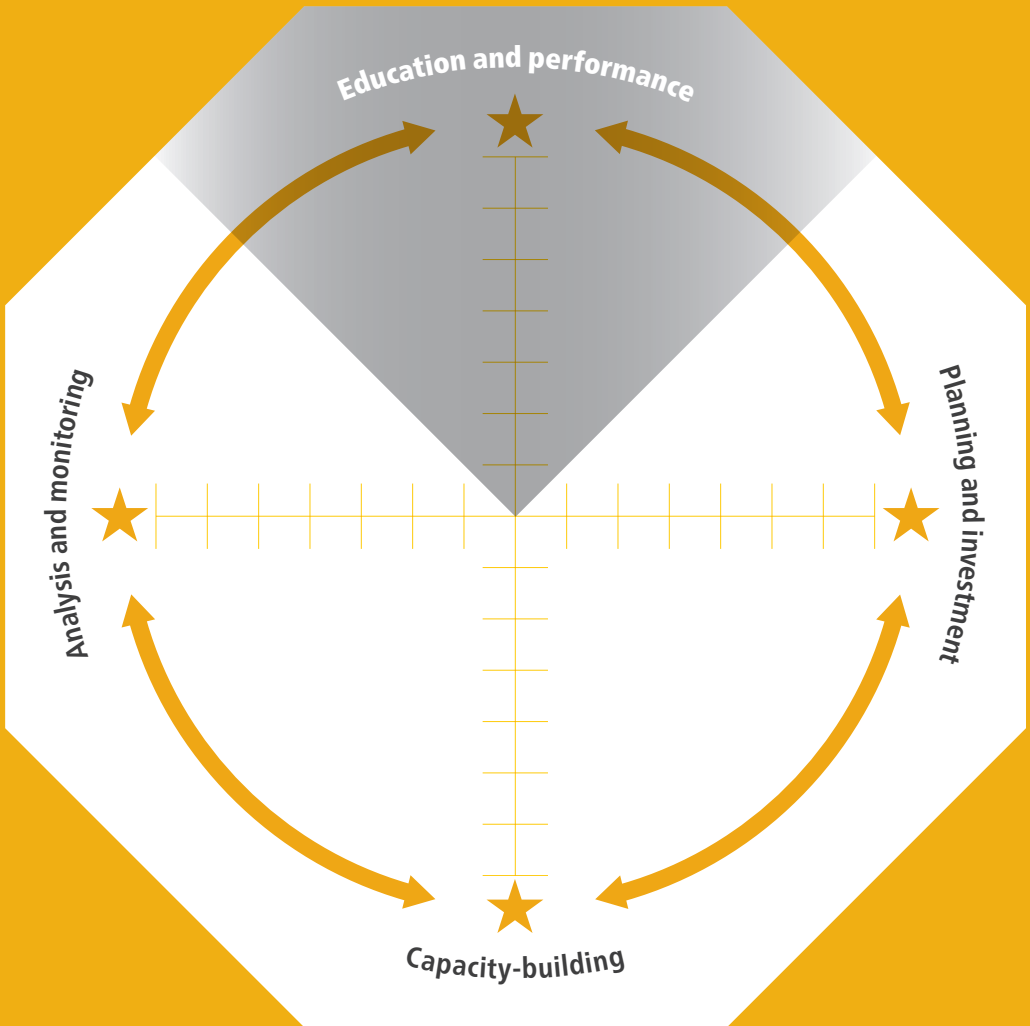
Both the framework and the toolkit have been developed to reflect the context of regional challenges; they can be further contextualized by Member States to deal with their own specific challenges. The toolkit signposts tools and case studies to aid progress and implementation of policies targeting the four strategic objectives outlined in the global strategy, which provides milestones to help Member States track progress by 2020 and 2030 (Annex 4).

Fig. 3. A policy matrix in use



The four strategic objectives are described in the following chapters:

- Chapter 2. Education and performance
- Chapter 3. Planning and investment
- Chapter 4. Capacity-building
- Chapter 5. Analysis and monitoring.

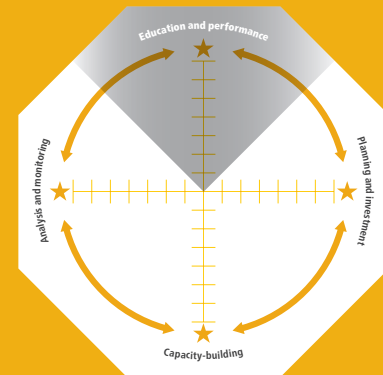


2. EDUCATION AND PERFORMANCE

This chapter considers:

- transformative learning;
- education pathways;
- skill mix;
- technology in health-care service delivery and health education;
- continuing professional development; and
- regulation and accreditation.

Relevant resources are shown in Box 2.



Box 2. Relevant resources

WHO

WHO Regional Office for Europe (2016). From innovation to implementation – eHealth in the WHO European Region. Copenhagen: WHO Regional Office for Europe (<http://www.euro.who.int/en/publications/abstracts/from-innovation-to-implementation-ehealth-in-the-who-european-region-2016>).

World Health Organization (2013). Transforming and scaling up health professionals' education and training: WHO education guidelines. Geneva: World Health Organization (http://www.who.int/hrh/resources/transf_scaling_hpet/en/).

World Health Organization (2015). eLearning for undergraduate health professional education – a systematic review informing a radical transformation of health workforce development. Geneva: World Health Organization (<http://www.whoeducationguidelines.org/sites/default/files/uploads/eLearning-healthprof-report.pdf>).

World Health Organization (2015). Third global survey on eHealth. Geneva: World Health Organization (<http://www.who.int/goe/survey/2015survey/en/>).

World Health Organization (2017). eHealth publications. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/ehealth/publications/en/>).

World Health Organization (2017). Health workforce education and training. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/education/en/>).

European Commission

European Commission (2013). Study concerning the review and mapping of continuous professional development and lifelong learning for health professionals in the EU. Brussels: European Commission (https://ec.europa.eu/health/sites/health/files/workforce/docs/cpd_mapping_report_en.pdf).

European Commission (2015). Recruitment and retention of the health workforce in Europe. Brussels: European Commission (http://www.ec.europa.eu/health/workforce/key_documents/recruitment_retention_en).

University of Aberdeen (2017). MUNROS: Health Care Reform: the iMpact on practice, oUtcomes and costs of New roles for health pROfeSsionals. In: Health Economics Research Unit [website]. Aberdeen: University of Aberdeen (<https://www.abdn.ac.uk/heru/research/worgc/projects/munros/>).

Box 2 contd**Other**

Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T et al. (2010). Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet*.376(9756):1923–58 ([http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(10\)61854-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)61854-5/fulltext)).

Organisation for Economic Co-operation and Development (2017). New health technologies: managing access, value and sustainability. Paris: OECD Publishing (<https://www.oecd.org/publications/managing-new-technologies-in-health-care-9789264266438-en.htm>).

The principal focus of the chapter is the implications of policies and activities that can be taken forward by Member States to improve the effectiveness of education and performance. It looks at the role played by encouraging educational choice, continuing professional development (CPD), regulation and accreditation, transformational learning and technology in developing effective workforces.

Member States can improve the effectiveness of the health workforce and increase capacity and quality through the adoption of policies to strengthen education and performance. Education is fundamental to supporting evidence-informed policies by transforming professional, technical and vocational training, and optimizing the performance, quality and impact of HRH. This policy focus will help Member States improve health-systems delivery to support:

- healthy lives and well-being
- effective universal health coverage (UHC)
- resilient, strengthened health systems.

Improvements in population health outcomes in Member States can be achieved by having a sustainable and resilient health workforce with appropriate knowledge, skills and values. This must be based on robust foundations that ensure the education and training provided to upcoming and current HRH workers is reflective of present and anticipated need, such as ageing populations and increasing prevalence of noncommunicable diseases. The education and training must also be flexible and responsive to the dynamic and changing nature of population health needs.

It is important to note that to be fully effective, Member States' health systems must be able to react and adapt rapidly to technological, social, environmental and economic changes. This may result in growth in the delivery of health-care services by appropriately balancing the workforce's multi- and interdisciplinary skills.

2.1 Transformative learning

The role of transformative learning (or transformative education) for new and existing health professionals (upskilling and CPD) in service improvement has become more evident. Transformative education is defined by Frenk et al. (8) as:

the highest of three successive levels, moving from informative to formative to transformative learning. Informative learning is about acquiring knowledge and skills; its purpose is to

produce experts. Formative learning is about socializing students around values; its purpose is to produce professionals. Transformative learning is about developing leadership attributes; its purpose is to produce enlightened change agents.

Frenk et al. (8) and WHO (9) highlight transformative learning and interdependence between health and education as essential to delivering universal coverage of high-quality comprehensive services that advance opportunity for health equality within and between countries.

Transforming health-care education for the HRH workforce is complex. This section describes a number of approaches that can be adopted; it is not intended to be a definitive list, but identifies some key components and points to further valuable and informative work.

Planning for a health workforce that does not account for the system environment and the interplay between the education and health systems (and their respective capabilities and capacities to deliver transformative learning to those being trained), and which therefore is not driven by a consideration of system demand for skills or the capability and capacity to deliver, can result in an imbalance between the capability of the health system and its cadre of HRH workers, and the actual health-care needs of a population. This can be demonstrated by:

- insular education institutions training health workers who are not appropriately qualified or skilled to provide care to a population; or
- an imbalance in the professional make-up of HRH or of the numbers of HRH worker groups due to lack of monitoring of the intake of students at education institutions.

The education and training provided by health and education systems can be fragmented, outdated and static, lack accreditation, and have clear definitional disparities within and between countries (8). Transformative learning can deal with these challenges at local, national and global levels.

It has been suggested that education must evolve for systems to produce an appropriate health workforce that is able to deliver the required people-centred health-care services for the population (9):

it is widely recognized that it is not sufficient to adapt the curricula in line with the changing environment and technologies, but what is more critical today, is that health professionals must be able to adapt to cultural variations and values, as well as attitudes to the different health problems of populations.

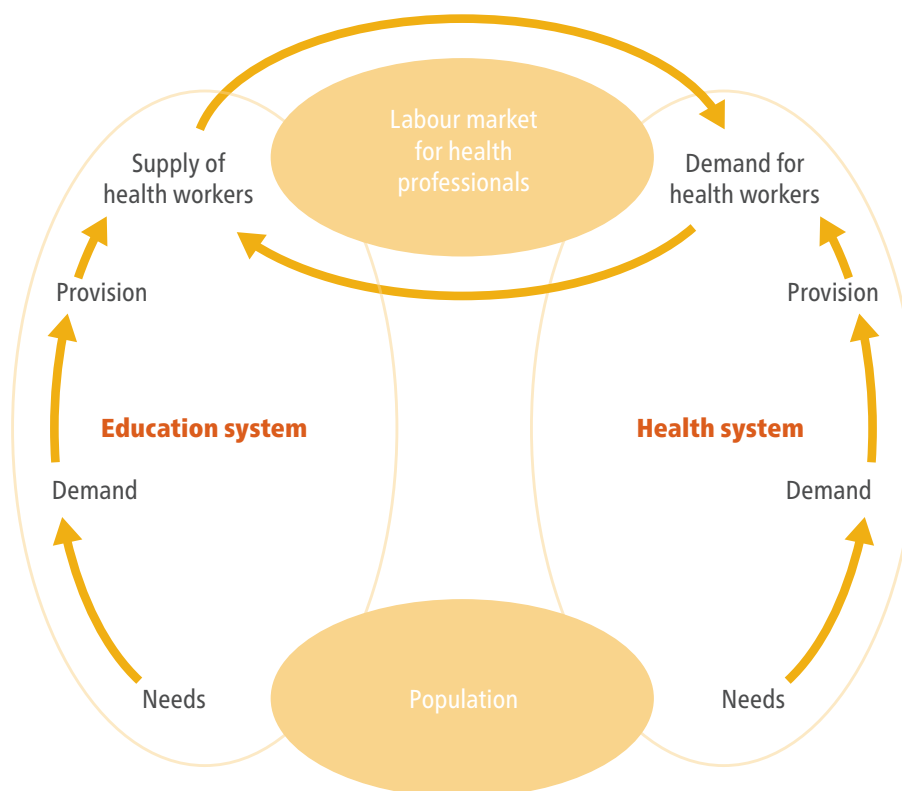
Building on earlier work (10,11), WHO launched its first guidelines for transforming and scaling up health professionals' education and training (9) at the Third Global Forum on Human Resources for Health in 2014. The guidelines identify nine areas for action supported by good governance and planning recommendations:

- faculty development;
- curriculum development;
- simulation methods;
- direct entry of graduates;
- admission procedures;

- streamlined educational pathways and ladder programmes;
- interprofessional education;
- CPD; and
- good governance and planning (political commitment, ministerial collaboration, national planning, and capacity-strengthening and capacity-building).

There is an identifiable link between education and health systems (Fig.2); demand for health-care services provided by a health system generates a demand for HRH workers that should be met by the education system (both professional and general) (8). This demand is catered for within an integrated system (Fig. 4), which is driven by the wider demands¹ of the general population (in this case, defined as the population reliant on the services provided by the health system). The general population is also the source of the HRH requirement, in competition with other users of human resources; planners therefore should be aware of the importance of employee attraction and retention strategies.

Fig. 4. Integrated systems framework



Source: Frenk et al. (8). Reprinted from The Lancet, 376, Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T et al., Health professionals for a new century: transforming education to strengthen health systems in an interdependent world, 1923–58, © (2010), with permission from Elsevier.

¹ These wider demands are in reality tempered by realpolitik (that is, affordability), wider politics and policies that determine resource allocation.

2.2 Education pathways

The training and development of effective and well equipped HRH workforces takes time. To create robust health systems, policy-makers must ensure that workforce planning takes into account the environment in which it will operate; this must include stakeholders and define a lead-time over which planning must operate (see section 5.1 on HRH analysis: assessing the current position and future need).

It therefore is important for all stakeholders to understand how many people with what skills are needed for education and training programmes to deliver health-care services in the future, and to identify factors that will affect this process (see Fig. 4).

Effective planning for recruitment must begin with attracting candidates early and, where possible, by encouraging students to take the appropriate choice of learning paths, illustrated by case study 1 (12). It is important also to ensure that selection does not only rely on education performance as evidenced by qualifications, but also selects for aptitude and fitness for medical and non-medical education. Evidence from the National Health Service in the United Kingdom (England) and the Mid Staffordshire NHS Foundation Trust Public Inquiry (13) noted the importance of skills other than purely educational performance.

Case study 1. The role of targeted actions to improve recruitment

It has been predicted that Belgium will need 31.1% more nurses in 2020 than it did in 2010, while the number of additional carers needed in 2020 is predicted to rise by 57.9%. This is compounded by the negative image of working in the health-care sector. Belgium introduced an action plan in 2010 to tackle these issues and meet expected health-care staff shortages.

The action plan focused on the recruitment of health workers and included enhanced coordination of various promotion campaigns for health workers across the Flemish Region to achieve higher efficiency and effectiveness. To achieve this goal, the function of Zorgambassadeur [Care Ambassador] was created.

The initiative is focused primarily on increasing recruitment among young people and enhancing quality by developing and running a coordinated campaign that promotes health-care jobs. The focus is on recruitment of nurses, carers and nursing auxiliaries.

The outcome of the initiative needs to be assessed in the context of other variables, such as the post-2008 economic crisis, that may have had a significant impact: in times of economic crisis, people tend to choose relatively secure job markets, such as health care. While it is impossible to separate these effects completely from those that the Care Ambassador and related actions have had on recruitment into health care since the introduction of the role in 2010, recruitment and enrolment numbers into health-care education and jobs have improved significantly; this is at least partly due to the efforts of the Care Ambassador and the associated recruitment campaigns.

Source: European Commission (12).

Health-system leaders must understand that health systems exist in a competitive environment and that an important driver (though not the only one) of the individual choices that potential or existing HRH workers have to make is the availability of other employment opportunities. The study on recruitment and retention of the health workforce in Europe (12) contains a number of examples from Germany, Belgium, Denmark, the Netherlands and the United Kingdom that are targeted specifically at younger people.

2.3 Skill mix

Skill-mix changes make an important potential contribution to the efficient use of the health workforce. The term tends to denote the mix of staff in the workforce or the demarcation of roles and activities among different categories of staff, not just the mix between physicians and nurses. Buchan & Calman (14) describe it as follows.

Skill mix changes may involve a variety of developments including enhancement of skills among a particular group of staff, substitution between different groups, delegation up and down a uni-disciplinary ladder, and innovation in roles. Such changes may be driven by a variety of motives including service innovation, shortages of particular categories of workers (especially in inner cities or rural areas), quality improvement, and a desire to improve the cost-effectiveness of service delivery.

Many Member States across Europe are reforming health systems to improve delivery. Some are seeking to achieve this by examining the potential of varying the skill mix in teams delivering health-care services by extending their impact and introducing new roles for existing health-care professions (see case study 2 (12) and 3 (15)).

Case study 2. Extending the impact of professionals delivering care

The Huhtasuo Health Centre (Finland), which offers primary care, had experienced a shortage of doctors and nurses for over a decade. The situation became so critical that in 2012, the municipality agreed to a change in staff composition. The care pathway was changed at the same time, with the health centre becoming nurse-led.

Assessment of patients' needs are now made by registered nurses who have undergone extensive training. Nurses decide whether a patient should go to the health centre and, if so, whether he or she is seen by a general practitioner (GP) or nurse. Currently, most patients are seen only by nurses.

The Huhtasuo Haltuun project was implemented by the staff of the Huhtasuo Health Centre. There was almost no extra money spent, with costs mainly being met through recycled savings.

Staff deemed the project a success. Nurses felt their skills and capabilities were better used, which contributed to enhanced job satisfaction. The overall patient perception was also positive, with patients feeling that services had improved. Process and patient outcomes improved significantly between 2012 – before the project started – and 2013, when the project was underway.

Source: European Commission (12).

Case study 3. Impact of community-based nurse-led clinics on outcomes, satisfaction, access and cost-effectiveness

Nursing practice has evolved in response to the dynamic needs of individuals, communities and health-care services. There is increased focus on maintaining people in their communities and keeping them out of hospital where possible to increase patient access to care and provide a cost-effective and high-quality streamlined service.

A recent review of 15 studies with 3965 participants aimed to identify the impact of nurse-led clinics in relation to patient outcomes, patient satisfaction, impact on patient access to services and cost-effectiveness. The review

Case study 3 contd

concluded that nurse-led clinics have generally positive impacts on patient outcomes, patient satisfaction and access to care, and mixed results on cost–effectiveness. Future research evaluating nurse-led clinics needs to adopt a standardized structure to provide rigorous evaluations that can rationalize further efforts to set up community-based nurse-led clinical services.

Source: Randall et al. (15).

The European Union (EU)-funded MUNROS (iMpaCt on practice oUtcomes and costs of New ROleS for health professionals) project undertook a systematic evaluation of the impact of these new professional roles on practice, outcomes and costs in a range of health and care settings within the EU and Associate Countries. The project looked to detail the nature, scope and contribution of new professional roles. It evaluated their clinical impact, identified their scope to improve care integration and looked at their cost–effectiveness, and considered the consequences of these on management of HRH requirements and workforce planning. The findings of the research (16) suggest that:

- skill-mix changes are important for a future sustainable health workforce;
- changing skill mix can occur without major increases in workforce hours and may reduce costs;
- patients will accept changes and outcomes could improve;
- change requires time and support from leaders and workers in health systems;
- workforce planning must be based on competencies required, not uniprofessional approaches; and
- anticipated increases in demand can be met if the wider health-care team is used.

Recent research (17) notes that many countries have implemented task-shifting reforms to maximize workforce capacity and develop standardized definitions. Minimum educational and practice requirements are important steps to facilitate recognition procedures in increasingly connected labour markets. A recent review of available research (18) indicates that substitution of physicians by nurse practitioners, physician assistants or nurses in long-term care and primary care settings for the ageing population may achieve outcomes and processes at least as good as physician-provided care. Research also suggests, however, that caution is required if adverse impacts are to be avoided (19). Such approaches should not be treated as a technical exercise; planning should consider impacts and engage with stakeholders.

2.4 Technology in health-care service delivery and health education

Technology is influencing the way the health workforce is taught and how health services are delivered. Care services are increasingly being provided through technology such as apps, while education is being transformed by technology through e-learning.

2.4.1 Technology-enabled care

Technology-enabled care (TEC), also known as technology-connected health, is a collective term for telecare, telehealth, telemedicine, m-health, digital health and e-health services, among others.

Digital technology is advancing exponentially, and its real-terms cost is falling. At the same time, the demand for and cost of health care is growing, presenting a common challenge to countries

across the European Region. The adoption and use of technology in the provision of health care nevertheless continues to lag behind other industries (20).

TEC involves the convergence of health technology, digital, media and mobile communications and increasingly is seen as an integral part of a solution to the challenges facing health and social care. Case study 4 (21) highlights an example of cross-border multi-agency collaboration in which TEC has been used to support the delivery of health care by enabling a telemedicine solution to health-worker support and health delivery.

Case study 4. Telemedicine providing health care and education in underserved areas

Collaboration between Nenets Autonomous Okrug in the Russian Federation and the Norwegian Centre for Integrated Care and Telemedicine is improving patient health outcomes and providing distance education for health-care staff.

The Nenets region is 176 000 km² and has a population of 43 000, with many isolated communities. The project aimed to use telemedicine to improve the health of the indigenous populations in Nenets, especially children and pregnant women. Telemedicine was used in cooperation with a multidisciplinary approach combining health, technology and education. The project was jointly funded by both Member States and additionally examined the engagement, recruitment and further education of employees using technology.

Telemedicine was found to be an effective tool for reaching rural populations, engaging employees and reducing costs.

Source: Bye et al. (21).

Murphy et al. (22), commenting on the forecasting of competencies for nurses in the future of connected health, suggest that transformed health and health care can only be supported by “innovative and judicious use of health IT by nurses” in the care of patients and families. The report of the Nursing Informatics Post Conference 2016 (23) provides a useful case study about activity leading to the provision of graduate education for nurses in the Netherlands that includes technology-based health care in the curriculum from 2016.

In the European Region, the regional health policy framework, Health 2020 (3), supports action across government and society for health and well-being. Health 2020 gives European policy-makers a vision, strategic path, priorities and suggestions about how to improve health-care services, address inequalities and ensure the health and care of future generations. WHO has a number of online resources that can be used to support Member States (see Box 2).

The Organisation for Economic Co-operation and Development (OECD) report on new technology (24) provides a useful insight into the need for integrated approaches to managing health technology to mitigate clinical-availability and financial issues (see case study 5 (25) and 6 (26)).

The King’s Fund provides useful sources on the nature and application of technologies and their use predominantly within the National Health Service in the United Kingdom (England), but also in other countries. National e-health programmes are contributing to Health 2020 policy implementation across Member States through approaches to strengthening people-centred health systems and improving public health capacity (see case study 5 (25)).

Case study 5. Telemedicine and tele-education providing health care and education in underserved areas

The Portuguese Alentejo's telemedicine programme addresses challenges faced in providing health care and teletraining to health-care professionals in a geographically large but sparsely populated area. The region comprises a third of the country geographically, but represents only 5% of Portugal's population, with 25% of people in the region over 65 years of age.

Barriers to medical access include lower education and income, low population density, poor public transport, limited options for specialist services and a physician shortage. Telemedicine has had a positive impact on health-care provision, with over 130 000 episodes of telemedicine carried out between 1998 and 2011, including real-time teleconsultations, teleradiology, tele-ultrasound and telepathology.

Free teletraining sessions are run for health-care professionals as part of the programme. The introduction of point-to-multipoint teletraining sessions resulted in a significant increase in participation of health-care professionals from remote locations. Teletraining sessions have proved to be cost- and time-effective due to the reduced need to travel.

The programme has led to a request by the Portuguese Ministry of Health to develop a national telemedicine programme.

Source: Oliveira et al. (25).

Case study 6. The impact of teledentistry on efficiency in a clinic setting

E-dentistry can provide significant support to professionals such as dental specialists, clinical hygienists and dental assistants. A pilot study was conducted at the Department of Community Dentistry, Semmelweis University in Hungary.

In general, studies showed that over a period of six hours, up to 1.67 hours (28%) was unproductive time. Using software solutions, this time was reduced by up to 67% (to 30–35 minutes). Utilizing this difference, an additional 1–2 definitive patients could be treated (depending on the procedures) and waiting times could be reduced significantly. This is equivalent to almost 13 workdays (12.8) per dentist per year.

Using teledentistry techniques, Semmelweis University demonstrated that it is possible to utilize the professional knowledge and expertise of those chairside dentists who are temporarily absent and cannot provide direct medical care. Control examinations were provided by using images from intraoral cameras or smartphones. Consultations and requesting or providing a second opinion can also be managed using the software solution. It was found that this enabled practices to use 25% of the lost practice time of the dentists involved. Dentists involved in the pilot study were highly qualified prior to retirement, or unable to provide direct care due to prolonged absence; dentists on maternity leave would join the professional side of teledentistry.

These methods did not provide dental interventions to patients belonging to any of the 280 vacant posts in Hungary, but could supplement their diagnosis and consultancy.

Source: Nemeth (26).

Information technology in health care improves access, timeliness and storage of health records. Member States' usage and implementation of digitized health records and information vary. For example, prescriptions from GPs to pharmacies in Denmark are digitized (27), which could reduce the frequency of patients needing to visit a doctor for prescription renewal.

2.4.2 E-learning

E-learning, the use of electronic technology for training and education, can improve the quality of education and increase access to learning in geographically isolated locations or those with insufficient local training facilities (illustrated in case study 7) (28). Technology can widen the availability of health education to a broader audience and make better use of existing educational resources.

Case study 7. Multilingual virtual simulated patients

The Multilingual Virtual Simulated Patient (MVSP) is an international collaborative project that includes 11 Member States of the WHO European Region. It aids medical education across Europe under the European Commission's lifelong learning programme. MVSP is designed to provide patient simulations in primary care settings and is available in Bulgarian, English, German, Hungarian, Italian, Portuguese and Spanish.

A further benefit of MVSP is the ability to provide cultural communication education, as patient simulations can simulate a patient not native to the country, representing migrant populations or other patients speaking in a second language.

MVSP also provides economic benefits, as engaging actors to role-play for medical education requires funding and extensive briefing and preparation. Greater flexibility in learning and revision is available to students due to this technological initiative, and MVSP has the potential to be adapted to learning environments outside of primary care settings.

Source: WHO Regional Office for Europe (28).

A systematic literature review commissioned by WHO and carried out by researchers from Imperial College London that aimed to establish the evidence base for e-learning concludes that e-learning is likely to be as effective as traditional education methods for training health professionals (29). The findings, drawn from 108 studies, showed that students acquire knowledge and skills through online and offline e-learning as well as, or better than, they do through traditional teaching.

According to the global action plan for workers' health endorsed by the Sixtieth World Health Assembly in resolution WHA60.26 (30), the world is short of 7.2 million health-care professionals, and the figure is growing. Wider use of e-learning might help to address the need to train more health workers across the globe. WHO provides guidelines for e-learning in *Transforming and scaling up health professionals' education and training* (9).

In WHO's third global survey on e-health (31), the focus of e-learning is defined as equipping health workers with knowledge and skills, but e-learning is also a valuable medium through which patients and individuals can access education. It is growing in presence and popularity around the globe, providing more people with access to educational content and transforming the way existing educational resources are used.

Many countries use e-learning to teach health science students and for continuing training of health professionals. The results show that e-learning is utilized primarily to improve access to, and reduce the costs of, educational content. These results indicate that Member States realize the benefits of employing e-learning and that most are developing and using e-learning in formal health-related educational programmes.

Several trends in the e-learning sector have emerged in recent years, most of which are related to large-scale increases in Internet speed and accessibility, and changes in the ways technology is used. E-learning is available through computers, on mobile devices such as smartphones and tablets (often referred to as m-learning or mobile learning), and through open online courses and social media channels, and is facilitated through open education resources. Other common sources of online learning include videos and educational materials offered through the websites of health-care service providers, public–private partnerships and health-care-related associations and organizations.

In recognizing that digital competence is a fundamental skill for individuals in a knowledge-based society, the European Commission's *Digital agenda for Europe* encourages EU Member States to mainstream e-learning in national policies for education and training (32). In addition, *Opening up education: innovative teaching and learning for all through new technologies and open educational resources* (33), also produced by the European Commission, proposes actions to increase information and communications technology in education to support students, teachers, institutions and professional development, and for job creation and workforce strengthening.

The use of open technologies, methods and education resources to achieve this and foster innovation and research is encouraged. E-learning can be a valuable tool for enabling learning about use of technologies and building digital competency, producing new skills and increasing qualifications for those entering the labour market. When health professionals understand how information and communications technology can be used to support health care, they are more capable of teaching and supporting their patients in using technology for their own health care.

The WHO report *From innovation to implementation – eHealth in the WHO European Region* (28) notes that very few Member States (six) reported that a certificate or degree in health sciences can be gained entirely online, with 19 stating that e-learning courses are accredited as continuing medical education for professionals. E-learning in health care is not utilized in all institutions and evaluations are largely absent. Four countries have evaluated their e-learning for professionals and just three for students.

E-learning is about more than making traditional educational content electronic and requires adjustment of strategies and expansion of skills to organize, present and deliver education in different ways. A lack of funding to develop and support e-learning programmes is the most important barrier in 22 countries. For future adoption, it is important that e-learning incentives and educational advancement goals are incorporated into health-care strategies.

2.5 CPD

Effective CPD has a positive impact on staff quality and staff retention.

Retaining staff is a key element of meeting the challenges surrounding workforce supply. Evidence suggests that retention strategies are enhanced by the use of CPD and that recognition and reward policies alone are not enough (9,12,34,35). The effectiveness of CPD is also increased when it is linked to career progress and other educational interventions (9).

CPD is a means of maintaining competence of HRH through an ongoing, systematic, outcomes-focused approach to learning and professional development (36). CPD, which can include

managerial, social and other skills traditionally outside the curriculum of clinical subjects, ensures HRH workforce effectiveness is enhanced and health-care delivery is more reflective of population need. To be effective, CPD must be consistent, standardized and accredited to ensure it is targeted and appropriate (see example in case study 8 (37)).

Case study 8. Regulation of health workers' engagement in CPD

Pharmacists in Croatia are not required to have a learning portfolio, but a regulation tool for their CPD was needed. A points-based system has been developed, with pharmacists submitting the points they have accumulated based on their CPD engagement. The number of points awarded varies and is determined by the Croatian Pharmaceutical Chamber. Examples of CPD activities include participation in pharmaceutical congress e-learning, manuscript publication and teaching.

Since the implementation of the framework in 2013, 30% of pharmacies have engaged in the process, with pharmacists selecting educational activities based on individual perceived need. Current challenges are the variable quality of educational activities, and gaining stakeholder support and industry collaboration. It was recognized that the willingness of all stakeholders and the use of SMART objectives (specific, measurable, attainable, relevant and timely) are key for success.

Renewal of pharmacists' registration every six years has meant pharmacists are engaging in more planned and targeted CPD, the result of which is a more regulated health service that is more appropriate for the population.

Source: International Pharmaceutical Federation (37).

CPD is an investment in the capability and capacity of HRH, and the benefits to a health system outweigh limitations such as the time and cost of engaging in CPD. Regulating bodies and human resource management (HRM) can be responsible for allowing health-care workers access to engage in CPD activity (see section 4.4 on certifying and registering health professionals).

Using a transformative education process (8,9) ensures that CPD is used to upskill professionals and provides appropriate and specific opportunities for systems to benefit from task-shifting in line with the changing health-care needs of a population. In Italy, for example, nurses working in an integrated diabetes unit trained specifically in prevention and management of diabetes-related complications. This facilitates the delivery of diabetes services and reduces HRH costs (38).

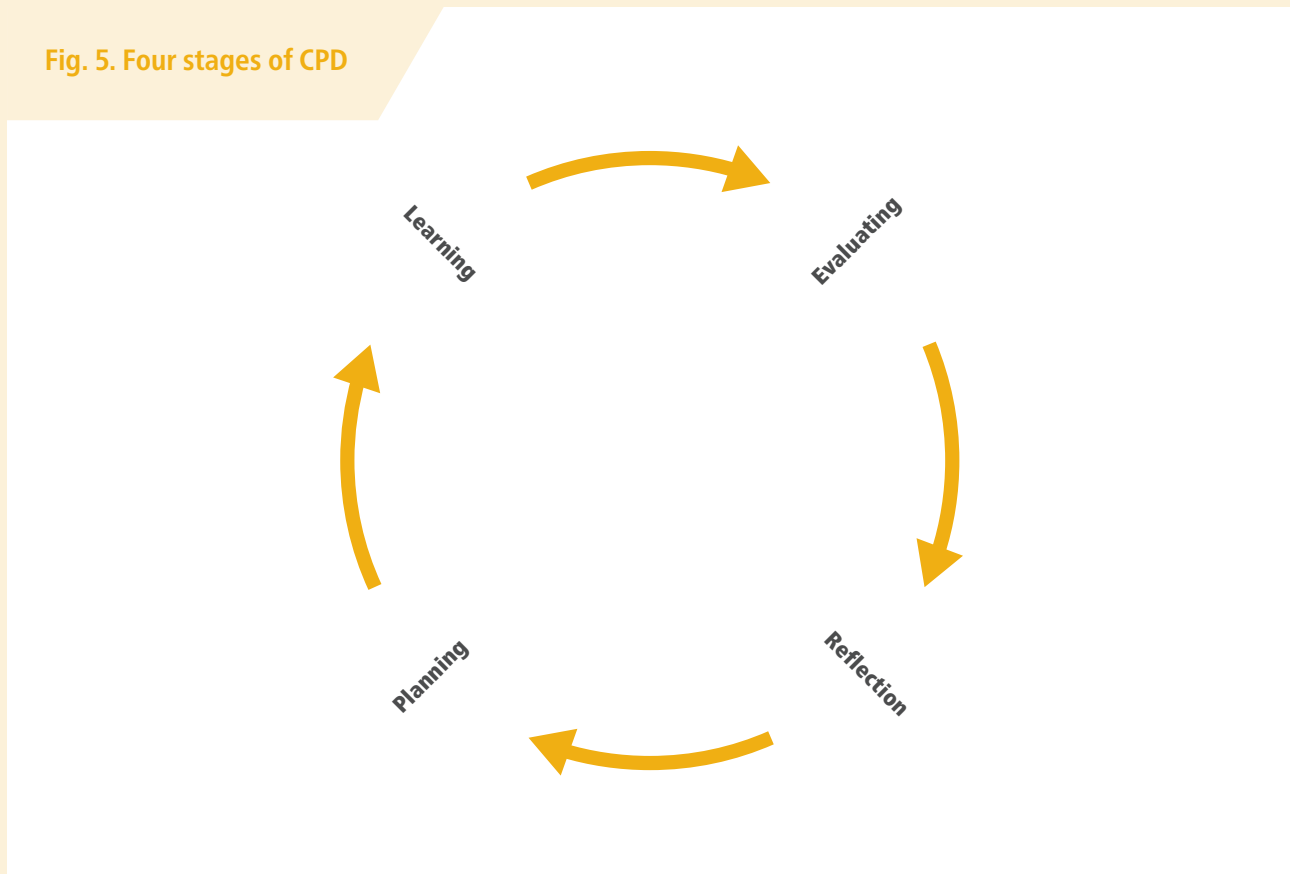
The International Pharmaceutical Federation (37) and many others highlight the Kolb learning cycle for CPD² (Fig. 5) and an online tool that allows people to track their progress, while an assessor from the regulating body can audit or assess people's competency.

2.6 Regulation and accreditation

Current research indicates the potential benefits of online tracked and regulated CPD (37), which is becoming more widespread in the European Region. The regulation systems for each health-care profession in each Member State differ, whether mediated by education institutes, professional councils or boards (9).

² The Kolb learning cycle enables and promotes flexible approaches to delivery to allow for variation in learning styles.

Fig. 5. Four stages of CPD

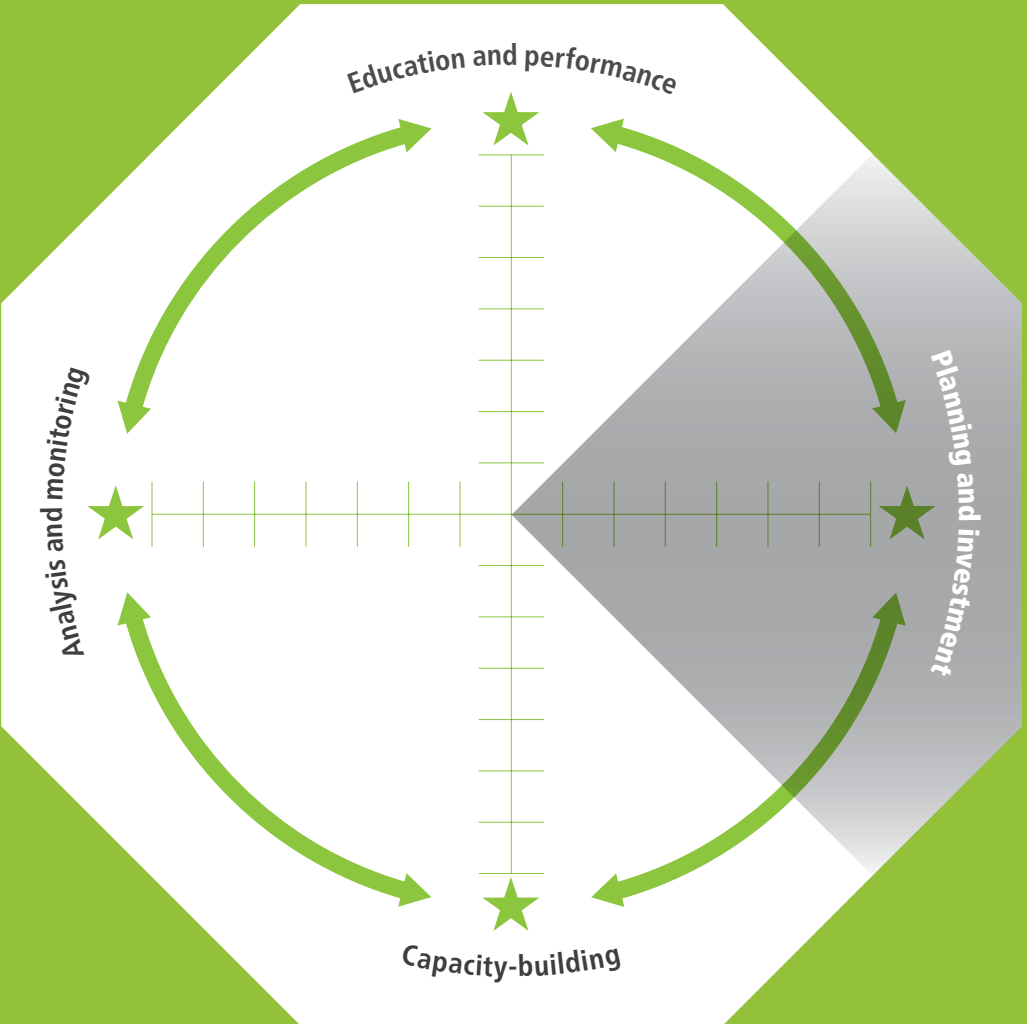


Source: adapted from International Pharmaceutical Federation (37).

The EU health programme study of CPD and lifelong learning (39) compared the CPD engagement of a range of health-care professionals across countries and between professions in the European Economic Area. The study identifies policy recommendations to strengthen cooperation at regional level and highlights the benefits of CPD engagement for all health professionals. CPD comparisons, which can be used as a tool for policy-makers at national and regional levels, are carried out by relevant associations. The Council of Occupational Therapists for the European Countries, for example, updates a summary document annually with information on professional associations and working requirements, as supplied by national associations (40).

Accreditation of the education provided to train health professionals entering the health workforce is integral to ensuring quality and consistency with the skills needed to be able to perform in the relevant professional health role.

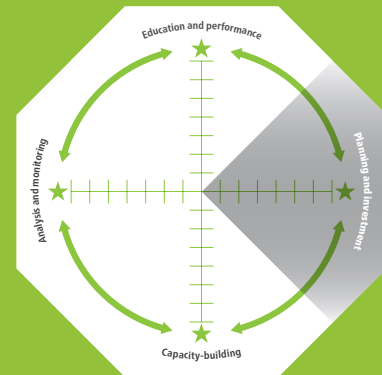
PLANNING AND INVESTMENT



3. PLANNING AND INVESTMENT

This chapter looks into the following areas:

- investment in health and systems;
- health-system planning: context-specific and multidimensional;
- investing in the workforce;
- investing in education for HRH;
- development of training capacity;
- source of investment;
- finance governance;
- value for money;
- equity and UHC; and
- investment sustainability.



It considers the role of planning and investment in the context of HRH workforce supply and demand, noting the positive economic impact that investing in HRH can have in acting as a stimulus to economic growth. It also looks at the complex multidimensional nature of health systems, the need for effective governance and consideration of true investment³ in HRH to ensure sustainability.

Relevant resources are shown in Box 3.

Box 3. Relevant resources

WHO

Buchan J, Dhillon I, Campbell J, editors (2017). Health employment and economic growth: an evidence base. Geneva: World Health Organization (http://www.who.int/hrh/resources/health_employment-and-economic-growth/en/).

World Health Organization (2014). Making fair choices on the path to universal health coverage: final report of the WHO Consultative Group on Equity and Universal Health Coverage. Geneva: World Health Organization (http://www.who.int/choice/documents/making_fair_choices/en/).

World Health Organization (2017). Health workforce governance and planning. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/governance/en/>).

World Health Organization (2017). Managing health workforce migration – the global code of practice. In: World Health Organization [website]. Geneva: World Health Organization ([http://www.who.int/hrh/migration/code/practice/en/WHO guidelines and documents for governance and planning](http://www.who.int/hrh/migration/code/practice/en/WHO_guidelines_and_documents_for_governance_and_planning)).

³ True investment is investment sufficient to sustain activity over its lifetime. Short-term time-bound investments for programmes that require longer-term investment can be equivalent to zero investment or, worse, a waste of resources.

Box 3 contd**EU/European Commission**

Centre for Workforce Intelligence (2015). Horizon 2035. Future demand for skills: initial results. London: Centre for Workforce Intelligence (<https://www.gov.uk/government/publications/horizon-2035-future-demand-for-skills-initial-results>).

Joint Action on Health Workforce Planning and Forecasting (2016). Joint Action on Health Workforce Planning and Forecasting [website]. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union (<http://portal.healthworkforce.eu/future-skills-and-competences-of-the-health-workforce-in-europe/>).

Other

Figueras J, McKee M, editors (2011). Health systems, health, wealth and societal well-being. Assessing the case for investing in health systems. Maidenhead: Open University Press (<http://apps.who.int/medicinedocs/documents/s19262en/s19262en.pdf>).

International Labour Organization (1996–2018). Decent work [website]. Geneva: International Labour Organization (<http://www.ilo.org/global/topics/decent-work/lang--en/index.htm>).

3.1 Investment in health and systems

The United Nations High-Level Commission on Health Employment and Economic Growth (41) makes clear that investment in health systems and particularly HRH has a significant multiplier effect, inducing economic growth across economies. Importantly, the magnitude of this effect is greater than in other recognized growth sectors. As the Commission comments (41):

First, good health contributes to economic growth. Second, there are important additional pathways by which investments in the health system have spill-over effects that enhance inclusive economic growth, including job creation. Third, new evidence suggests that expenditures on health are not dead-weight drags on the economy, but rather can be associated with productivity gains in other sectors.

The Commission makes 10 recommendations⁴ that should be read in the context of efforts to strengthen health and social protection systems as well as broader initiatives to implement the 2030 Agenda for Sustainable Development and meet the targets of the Sustainable Development Goals.

The *Global strategy on human resources for health: workforce 2030* (2) and other initiatives recognize the importance of HRH and better health-care provision as economic contributors through a number of mechanisms. The health workforce, for instance, contributes to economic growth and acts as a source of secure employment, with evidence that this employment has significant growth impacts on other sectors.

⁴ Recommendations to transform the health workforce for the Sustainable Development Goals relate to: job creation; gender equality and rights; education, training and competencies; health-service delivery and organization; technology; and crises and humanitarian settings. Recommendations to enable change relate to: financing and fiscal space; partnership and cooperation; international migration; and data, information and accountability.

Economic growth and development depends on a healthy population and evidence shows that ill health represents an economic cost to a country and affects educational attainment and productivity (42). As Frenk et al. state (8), “a competent and enlightened professional workforce in health contributes to the larger national and global agendas for economic development and human security”.

Investments in the health system have multiplier effects that enhance inclusive economic growth, including via the creation of decent jobs. Targeted investment in health systems, including in the health workforce, promotes economic growth along other pathways: economic output, social protection and cohesion, innovation and health security. The WHO report *Health employment and economic growth: an evidence base* (43) contains a number of illuminating case studies that point to the positive impact of health policies on economic growth through six key pathways: health system, economic output, social protection, social cohesion, innovation and diversification, and health security. It notes that, “economic growth caused by health employment in turn has a number of knock-on effects whose net result is to promote further growth”.

3.2 Health-system planning: context-specific and multidimensional

Workforce planning is covered in detail in Chapter 4, on capacity-building. This section considers planning in a more global context. The high proportion of recurrent costs in the total costs of scaling up health workers presents a problem for most countries, either because they are financed by short- or fixed-term aid, have long-term implications for affordability, or because of their impact on other government priorities over time. The last of these points is a matter for political decision based on value choices, economic criteria and consideration of the benefits to health outcomes. Environmental factors (Fig. 6) drive the need for constant adjustments to health-care service delivery and the HRH requirement. These in turn have a consequential impact on the mechanisms and modality of health-care delivery, including the growth of the informal workforce and its impact on service requirements and the agents of delivery, the principal constituent of which is the workforce. The interaction between the HRH requirement and its environment is complex and changes in one driver can have an impact on others. Future scenarios need to be understood and planned for and require a measured approach to the assessment of their impact and relative importance (see case study 9) (44).

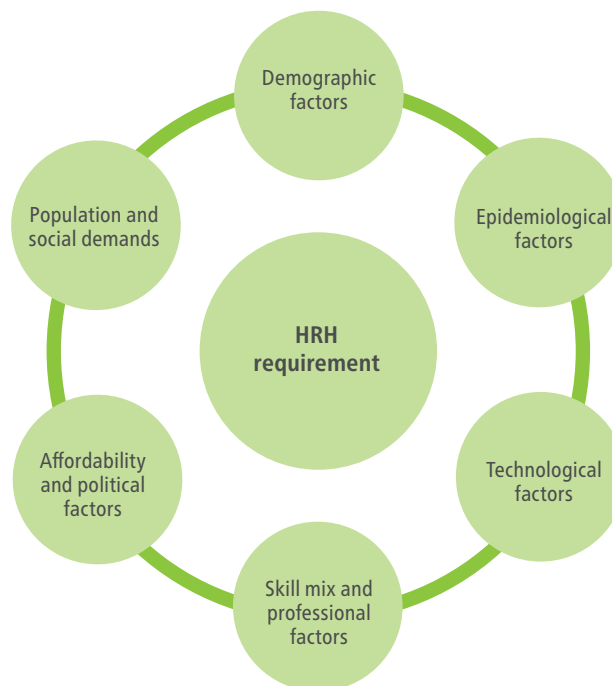
While it is true that each Member State has its own specific issues and complexities that influence and constrain its actions, policy-makers everywhere are faced with the ongoing challenge of meeting demand for health-care provision within a resource envelope that in many cases is shrinking in real terms.

3.3 Investing in the workforce

Employment in health and social care across OECD countries grew by 48% between 2000 and 2014 (45). As populations grow and change, demand for health services (both in terms of the population requirement for services and the financial resources to fund them) will similarly grow and change: global demand for health workers is estimated to almost double by 2030 (46).

Investment in HRH must take into account the dynamics of the health labour market, reflect the current and future needs of the population and of health-care systems, and better align planning

Fig. 6. Environmental considerations



Case study 9. Centre for Workforce Intelligence

The Centre for Workforce Intelligence published *Horizon 2035* in 2015 to assist the Department of Health in United Kingdom (England) to understand plausible scenarios for future health workforce requirements over the next 20 years to support HRH planning.

The scenarios were constructed with expert input and framed key political, social, economic, environmental, social and technological factors. The report and the methodology used are publicly available.

Source: Centre for Workforce Intelligence (44).

and investment in the workforce with service delivery priorities. Investment in production and maintenance of HRH is key to sustainable people-centred health systems.

Investment in the workforce should also include consideration of investment in workforce health. The obvious benefit of having a healthy workforce is that healthier employees are absent less often.

Health-care workers are at risk of acquiring infectious diseases through exposure at work. For example, exposure to blood or bodily fluids from infected patients can lead to infection with hepatitis B and C viruses or HIV. The transmission of diseases leads to absenteeism, morbidity, and in some cases mortality among health-care workers. These ultimately create a reduction in workforce and consequently affect the quality of patient care and safety. There is also a financial burden imposed on hospitals due to occupational exposure to blood-borne diseases, which includes costs related to blood tests, treatment, outpatient visits and lost working hours.

Health-care workers may also suffer from psychological stress, which affects both their work and personal life. According to a report on work-related stress from the European Agency for Safety and Health at Work (47), stress is the second most frequently reported work-related health problem in Europe, after musculoskeletal disorders. Decent work is also a key contributor in achieving the Sustainable Development Goals (highlighted by Goal 8) and is a critical part of action to “promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (48).

Planners and policy-makers should therefore consider investment in worker health as an important element of health systems’ capability and capacity strategies. The EU occupational safety and health strategic framework for 2014–2020 (49) has seven strategic objectives and good practice guides and advice that may be helpful. While they are not health-specific, many of the issues are pertinent.

WHO has produced a global plan of action (30) which, though not specific to the health workforce, deals with all aspects of workers’ health, including primary prevention of occupational hazards, protection and promotion of health at work, employment conditions, and a better response from health systems to workers’ health. It is underpinned by certain common principles.

3.3.1 Investing in education for HRH

If addressing the health needs of the population is considered a priority, then allocating spending appropriately to the education of health professionals is necessary. There are strong arguments for doing so, as evidence shows that strengthening health systems to make them more effective in tackling population needs through stronger primary care services leads to better health outcomes and economic development (50). Care is needed, however, to ensure that the fiscal space is sufficient to cover new expenditure on education and ongoing employment costs.

3.3.2 Development of training capacity

Producing more health workers has an impact on training, recruitment, pay bill (trainees, educators and trainers), additional infrastructure (laboratories, classrooms and dormitories), financial resources and equipment. These costs, which must be considered in planning the expansion of a health workforce, fall into two categories:

- the costs of expanding training capacity, which are a mix of capital costs for additional infrastructure and equipment, and recurrent costs for staff salaries and operating costs; and
- the costs associated with the employment of a workforce, which are largely recurrent.⁵

A strategy to improve the supply of health workers may be appropriate, with controlled circular migration through bilateral agreements between Member States, as described in case study 10 (51–54).⁶ This provides flexibility for the host country to vary the numbers of health-care workers in response to shorter-term requirements (to meet supply–demand gaps, or to respond to reduced short-term demand) while allowing the donor country to benefit from skills enhancement in returning health workers and, in some cases, financial remittances that contribute to the donor countries’ economies.

⁵ Changing the numbers of specific HRH worker groups may affect the numbers and types of other categories.

⁶ The International Medical Graduate training initiative in Ireland and the Medical Training Initiative in the United Kingdom provide training and education predicated on an understanding that trainees return to their home country on completion. International postgraduate medical trainees engage in a fixed period of active training in clinical services in Ireland or the United Kingdom, enabling access to clinical experiences and training that are unavailable in their own country. They then return home and contribute to their home country health services. The aim of the initiatives is not to promote settlement, but to support the development of doctors from less developed health systems.

Case study 10. Circular migration; country collaboration

Member States can work together on sustainable HRH solutions. Some Member States in the European Region have developed bilateral agreements within the Region and with other regions that meet obligations under the WHO Global Code of Practice.

Germany, for example, has a nursing shortage, while the Philippines has a nursing oversupply. The agreement benefits nurses from the Philippines, who have an opportunity to work and upgrade their skills (brain gain), while Germany ensures that its workforce has appropriately skilled nurses. Germany only negotiates agreements with countries that have excess health workers, consequently preventing brain drain from source countries. Germany has bilateral agreements with Bosnia and Herzegovina, and Serbia.

Other working examples include the International Medical Graduate training initiative in Ireland and the Medical Training Initiative in the United Kingdom.

Sources: Catholic University of Leuven (51); Buchan et al. (52); Health Service Executive (Ireland) (53); Academy of Medical Royal Colleges (United Kingdom) (54).

The HRH plan may call for expansion in training outputs, which is the starting point for the formulation of a plan for developing training capacity. This plan would review existing capacity, including the human resources dimension, and make proposals for the quantitative and qualitative improvements necessary to meet the training outputs specified in the HRH plan, within the available resource envelope.

Case study 11 (55) outlines how improvements to HRH output can be made by a Member State having an understanding of the type of workers required to be able to deliver appropriate health-care services to a population, including delivering health services to underserved areas within context-specific financial constraints.

Case study 11. All our health addressing population health challenges

All our health: personalised care and population health is an approach implemented to maximize the impact the estimated health workforce of 2 million people in United Kingdom (England) can have on improving health outcomes and reducing health inequalities. It was initiated to meet population health challenges, as it is estimated that around two thirds of premature deaths in England could be prevented by addressing key public health issues.

The approach aims to increase the visibility of health workers' practice and leadership, and develop practices that are vital for a sustainable health system by providing services in community settings and improving prevention, early diagnosis and self-care.

All our health is a free online programme focusing on priority health topics. It provides tools, resources, evidence and impact measures to support the provision of health-care services that:

- prevent avoidable illness
- protect health
- promote well-being and resilience.

The programme is being implemented nationwide, aiming to engage approximately 10% of health workers over the next 12 months.

Source: Public Health England (55).

3.4 Source of investment

The issue of financial resources will be addressed differently in accordance with the economic realities prevalent in each Member State. Evidence suggests that Member States must ensure that system planning generally, and HRH planning specifically, consider both the wider environment and the government's relative ability to influence it (56). Policy-makers have a number of options open to them. The following list is an exemplar and not intended to be exhaustive, and the components can be used individually or in combination:

- maximizing the use of existing public funding by reallocating resources within government spending areas (from acute provision to primary care and public health, for example, or shifting education funding to reflect the growing or shrinking needs of specific health-worker groups), or reallocating resources between government areas (from other sectors to the education of health professionals, for example);
- looking for efficiency gains by, for instance, increasing the utilization of workers, adapting care delivery to reduce more costly activity (such as focusing more on prevention), increasing the focus on activities that reduce attrition and improve recruitment and (importantly) retention, and releasing efficiency gains in the current system to increase its productivity;
- generating or better focusing revenue through, for example, taxation; and
- considering the funding of education to focus on required skills or mechanisms of funding, either across a system or to promote specific skills requirements.

3.5 Finance governance

Directing and governing spending of financial resources is important if the quantity, quality and relevance of health workers is to increase, which in turn will create the highest impact on the type and volume of services that Member States need. This is a Member State-specific issue of efficiency in the allocation of available funds and in what proportion the funds should be allocated to training and sustaining HRH workers (7).

Evidence on allocation of resources among training establishments is scarce. Most studies compare the efficiency of different health workers in providing the same type of services, such as midwives, nurses and gynaecologists (57,58). When studies on cost are performed, it is generally found that investing in midwives and nurses is cost-effective, although the evidence is mixed in highly developed health systems.

Bloor & Maynard (59) reviewed human resource planning in five countries. They found evidence that nurses may be effective substitutes for doctors and that it is necessary to break down divisions in the workforce market. Alternatives to physicians paid through fee-for-service models may balance incentive structures and reduce physician resistance. There is a need for investment to collect and utilize data on the activity of health professionals and health outcomes. This will provide opportunities to optimize the current workforce, before considering expansion.

Policy decisions identifying and deciding the specific balance between investing in infrastructure, compensation and working conditions (including continuing education for health professionals, dependent on local and national conditions and policies) are a matter for Member States.

If governments plan inappropriately and produce too many doctors, they may face significant pressure to hire more doctors than they can usefully employ, diverting resources away from more

effective health expenditures. Frenk et al. (60,61) described the pitfalls and impacts on workforce planning, noting that imbalances in the workforce are created if medical student numbers grow too quickly, resulting in costly surpluses or underutilization of HRH.

Within the context of the United Nations Sustainable Development Goal 3 (Ensure healthy lives and promote well-being for all at all ages) and Goal 4 (Ensure inclusive and quality education for all and promote lifelong learning), which aim to promote good health and gender equality, gender-specific strategies may be required to reduce wasted opportunities to capitalize on the skills available across the whole workforce and improve recruitment and retention: for example, there are cases of reduced professional opportunities for female doctors compared to their male counterparts. Policies that deal with gender imbalances and discrimination are required to eliminate the negative effects of wage gaps, sexual and physical violence, informal employment and reduced opportunities for leadership roles (4,61).

3.6 Value for money

One of the major challenges facing health systems and those with responsibility for stewardship is achieving value for expenditure of resources, be it direct financial, or indirect through the use of human or physical resources that have to be financed (see case study 12) (62).

Case study 12. Resource use and the implications of implementing a heart failure programme in Swedish primary health care

Heart failure is a serious condition that results in a significant economic burden on health-care economies. A prospective randomized open-label study included 160 patients with a diagnosis of heart failure from five primary health-care centres in south-eastern Sweden to evaluate the cost and quality-of-life implications of implementing a heart failure management programme in primary health care.

Patients randomized to the intervention group received information from heart failure nurses and a validated computer-based awareness programme. The patients in the control group were followed by their regular GP and received standard treatment according to local management routines.

No significant changes were observed in New York Heart Association class and quality-adjusted life-years, implying that functional class and quality of life were preserved. The costs of hospital care and primary health care, however, reduced by 33%. The results show potential benefits, though they should be confirmed with extended follow up to verify the long-term effects.

Source: Agvall et al. (62).

Measuring value can be a challenge. In most countries, economic evaluation plays a role in decision-making on reimbursement or implementation of a specific intervention (the chief economist of Public Health England, Brian Ferguson, has made revealing comments on the benefits of investing in prevention as an intervention (63)). Policy- and decision-makers generally need information about the effectiveness of an intervention in relation to its costs to assess whether it provides good value for money. Work by Porter et al. (64) and others suggests that patient outcomes are a robust measure of success in health care.

The WHO guidance, *Methodological approaches for cost-effectiveness and cost-utility analysis of injury prevention measures* (65) provides a simple set of guiding principles for estimating the cost-effectiveness of injury prevention measures and making the results of Member States' economic

evaluation studies as comparable as possible. While focused on injury prevention, much is transferable to other contexts, such as cost evaluation of delivery models and skill-mix decisions.

The EU has also provided helpful guidance within the context of the likely impact on health of the application of legislation and policy (66). Again, though not written with the specific context of workforce planning in mind, it is applicable to planning and policy and points to other useful guidance that may be helpful to decision-makers when looking at HRH decisions. Further WHO guidance, including guidance on cost–effectiveness (67) and the toolbox on health impact assessment (68), is available.

WHO notes that as life expectancy increases, measuring population health levels on the basis of mortality rates alone has become less and less relevant in many populations. At the same time, Member States invest substantial resources in promoting healthy life, in addition to preventing premature death.

Measuring the effectiveness of interventions is crucial, as is choice of the appropriate metric to measure healthy life expectancy or the contribution of different diseases and injuries to the potential loss of years of healthy life.

WHO has addressed the various approaches and viewpoints on how mortality and ill health might be combined in a single index to measure overall population health in the publication *Summary measures of population health: concepts, ethics, measurement and applications* (69). The various uses of such summary measures of population health are described, and the appropriate measurement framework and specific ethical and social value choices are discussed and debated. Contributors include leading experts in epidemiological methods, ethics, health economics, health status measurement and the valuation of health states. Summary measures of population health are likely to become increasingly topical: debate around them in this volume will serve as the fundamental reference on their construction and use for scholars across all public health disciplines (69).

3.7 Equity and UHC

The WHO Constitution asserts that the right to health is a fundamental right “of every human being without distinction” (70). This message has repeatedly been reinforced. UHC was endorsed as a central goal in 2005, with WHO stating that health-financing systems must “be further developed in order to guarantee access to necessary services while providing protection against financial risk” (71).

In 2011, the World Health Assembly called on WHO to develop a plan providing support and advice for Member States to pursue UHC. It is part of a 12-point action plan developed by WHO to address the issue of equity, a key issue that cuts across other components of health systems. The WHO Consultative Group on Equity and Universal Health Coverage produced a report in 2014, *Making fair choices on the path to universal health coverage* (72), that addresses the issues of fairness and equity and offers Member States recommendations on how they may be managed.

The rise in prominence of health equity appears as a result of a focus on UHC, a number of reports on inequality in health and health care (72–75) and some methodological advances building on cost-effectiveness analysis. The tools include extended (76) and distributional cost-effectiveness analysis (77), and the Centre for Health Economics at the University of York, United Kingdom, has provided an interesting guide to their utility (78).

3.8 Investment sustainability

A key challenge for Member States when making investment decisions is to ensure sustainability to avoid wasting the initial investment, and therefore achieving no long-lasting change or possibly creating long-term cost consequences. Member States should consider planning for long- and short-term or operational timeframes that consider sustainable funding to circumvent these risks.

HRH planning must derive from:

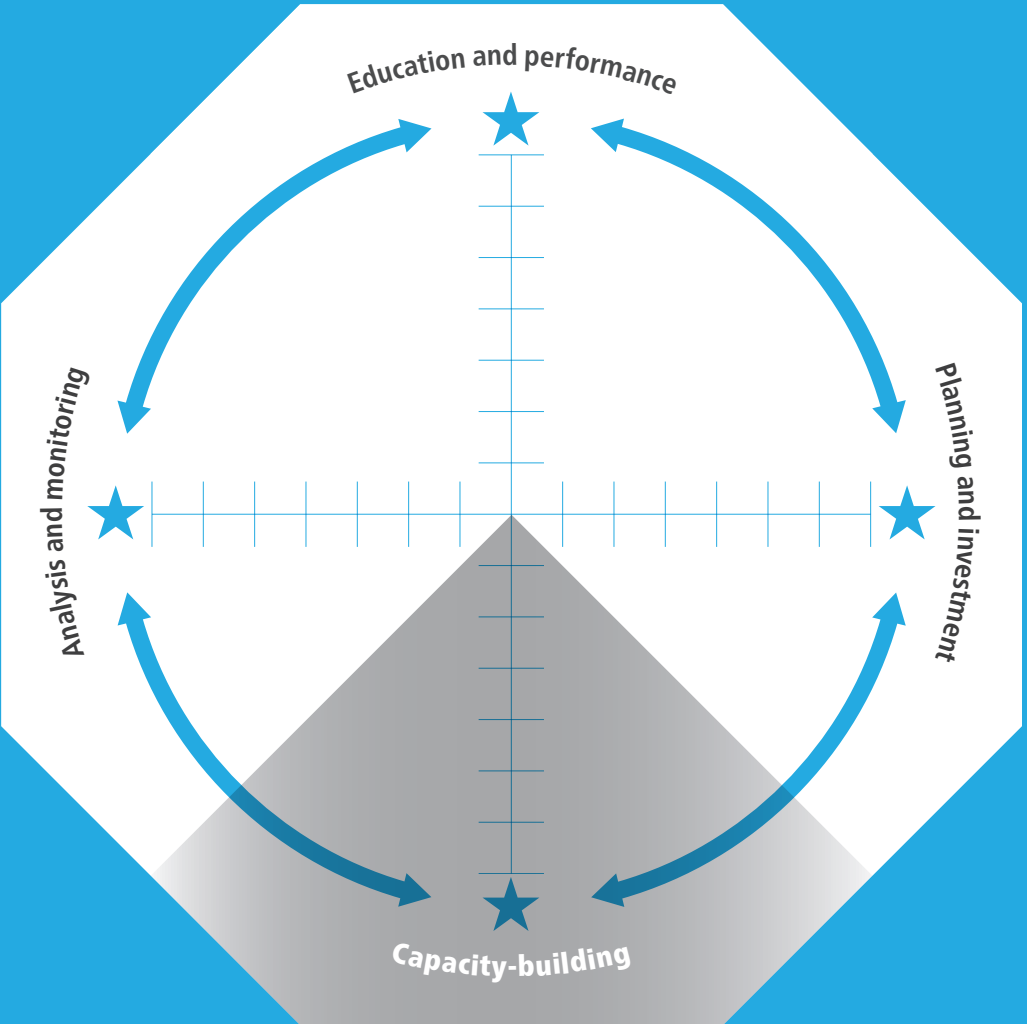
- health-sector objectives;
- realistic estimates of the effective population need for different categories/cadres of HRH workers; and
- consideration of the impact of the employment demands of wider sectors that may compete for human resources.

Planning should include strategies for matching available supply to anticipated demand, taking account of attrition from all causes, including emigration and employment outside the health sector (56).

The skill mix of health-care staff must also be considered in relation to investment and planning. Many Member States are reviewing the skills required by individuals or by multi- and interdisciplinary teams. This approach is attractive because of its potential for yielding maintainable resource efficiencies and sustainable HRH models that can achieve flexibilities in service delivery through, for example, upskilling nurses' abilities in diabetes care (38). Careful assessment is nevertheless advised when considering the skill mix of workforces, due to the potential for unanticipated negative impacts on health outcomes and patient satisfaction (19).



CAPACITY-BUILDING



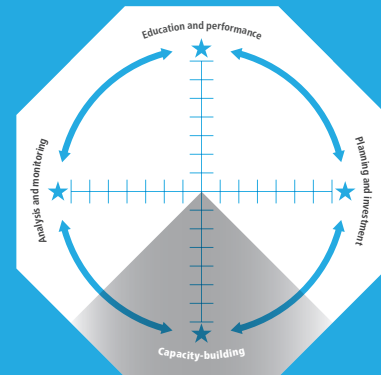
4. CAPACITY-BUILDING

This chapter looks at capacity-building in the context of:

- stewardship, leadership and governance
- improving the HRH function
- tools for HRH management
- HRH reflective of population needs
- the role of HRM
- certifying and registering health professionals.

It considers the importance of effective policy stewardship, leadership and governance for the production and development of HRH to support Member States' activities in delivering effective and efficient health systems. It also discusses the role of governance, and the importance of HRH management and strengthening of institutional environments to support accreditation and performance.

Relevant resources are shown in Box 4.



Box 4. Relevant resources

WHO

[World Health Organization \(2007\)](#). Everybody's business. Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: World Health Organization (http://www.who.int/healthsystems/strategy/everybodys_business.pdf).

[World Health Organization \(2015\)](#). Minimum data set for health workforce registry. Geneva: World Health Organization (http://www.who.int/hrh/statistics/minimun_data_set/en/).

[World Health Organization \(2016\)](#). National health workforce accounts: a handbook. Geneva: World Health Organization (http://who.int/hrh/documents/brief_nhwfa_handbook/en/).

[World Health Organization \(2017\)](#). Health workforce governance and planning. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/governance/en/>).

[World Health Organization \(2017\)](#). Health workforce regulation and accreditation. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/documents/accreditation/en/>).

[World Health Organization \(undated\)](#) Classifying health workers: mapping occupations to the international standard classification. Geneva: World Health Organization (http://www.who.int/hrh/statistics/Health_workers_classification.pdf).

4.1 Stewardship, leadership and governance

Stewardship, governance and leadership are the most complex components of any health system (7,66), so must be clearly articulated and evident in national policy frameworks.

Governance in health care involves balancing competing influences, supporting the strategic direction of policy development, and regulating the behaviour of all involved in health. Establishing

transparent and effective accountability procedures is also a core component of governance. Leadership provides direction to partners, staff and institutions: it facilitates change and is essential to scaling up the quantity and quality of health services. Stewardship is a broader term that includes the definitions of both governance and leadership. Beyond these, it entails responsible planning, management of resources and accountability at national, local and individual level in health-care systems (79).

Poor stewardship contributes to ineffective health systems exemplified by “poor accountability and transparency, corruption and limited engagement of communities in health” (80). Stewardship of health workforce competencies is made easier by differentiating between the two contributing processes: the health service delivery process, such as recruiting and orientation, and the health system process, including certifying and registering health professionals (81).

Good stewardship requires that ministries of health play a leadership and governance role in managing the health system and the intersectoral, sociopolitical environment within which the system operates (82), evidenced in case study 13 (83–85).

Case study 13. Active stewardship of a health system in a changing political environment

Since the early 1990s, the Russian Federation has been moving from budgetary financing to a model of compulsory health insurance (83). The Semashko system provided comprehensive funded health care, but with the transition to a market economy in 1991, the financing model was changed. The Law on Health Insurance of 1993 established a hybrid budget-insurance model for health-care financing. This developed unevenly, however, due to decentralization of funding and the minimal involvement of the Ministry of Health (84).

Currently, the government is reconsidering its approaches to information management, salary rates for health workers and methods of health services’ quality control (85).

Sources: Popovich et al. (83); Gerry & Sheiman (84); Government of the Russian Federation (85).

The activities of the Maltese Government, for example, demonstrate the importance of adopting policies that enable and strengthen governance for health, increasing resilience and providing a stable health workforce (86,87). In response to a loss of medical trainees who had left Malta to complete their training and subsequently did not return, the Maltese Government created the Malta Foundation School. The programme has increased retention of medical students and has led to recruitment of international medical graduates. The government has developed training-related agreements with institutions in Belgium, Germany and Italy.

Many Member States do not know the number or types of workers engaged and employed in their health system, as described in Chapter 5 on analysis and monitoring. Misdistribution of workers exposes populations to poor health-care services, access and quality. Effective stewardship needs to be underpinned by collaboration between stakeholders that uses analytical skills and processes to provide evidence that identifies the health needs of a population and the required health-worker competencies to inform robust policy-making, as illustrated in case studies 14 (7) and 15 (81).

It is important to note that poor IT infrastructure inhibits the ability of HRH administrations and yields counterproductive performance-planning and management. In turn, political leaders may fail to appreciate the need for enhanced HRH development and investment and fail to recruit professional HR managers (see section 5.2.2 on workforce intelligence function).

Case study 14. Health system processes: strengthening institutional capacity for policy analysis

The WHO Health Policy Analysis Project was launched in Kyrgyzstan in 2000. It was designed to support the government's Manas Health Care Reform Programme and aimed to improve the sustainability, efficiency and quality of the Kyrgyz health system. The project had four components: policy analysis; linking evidence to policy; capacity-building for policy analysis and evidence-based policy design; and dissemination of results.

Capacity-building in monitoring and evaluation of health-system performance, and in policy analysis more broadly, has been carried out in a number of ways:

- frequent interactions with senior policy-makers on findings of studies to demonstrate their political usefulness and stimulate demand;
- roundtable discussions on key health policy topics to inject technical input and build political consensus;
- health management courses targeted at managers of primary care and inpatient facilities to inform and engage them on health policy issues;
- health policy courses for countries in central Asia and the Caucasus in collaboration with the World Bank Institute and WHO, which have facilitated cross-country learning for many Kyrgyz policy-makers; and
- mentoring for young health policy analysts, which has led to the recruitment of a new cohort of independent researchers to support the Ministry of Health.

These core activities have been institutionalized within the Ministry of Health through the creation of the Department of Strategic Planning and Reform Implementation, which has taken on core health system performance-monitoring. Additionally, an autonomous public entity, the Centre for Health System Development, was created to support policy development and implementation.

Source: WHO (7).

Case study 15. Health service processes: improving the capacity of human resources

The Kazakhstan Government's development of a comprehensive national programme, "Salamatty Kazakhstan", is an example of an initiative that aims to improve the coordination, competency and integration of health services.

The programme has been developed in response to persistent health challenges, such as low life expectancy, poor maternal and child health, increasing chronic disease and high incidence rates of tuberculosis and HIV/AIDS. It has invested extensively in training, using a cascade method in which regional specialists are trained at national and international levels before dispersing to provide training at local level.

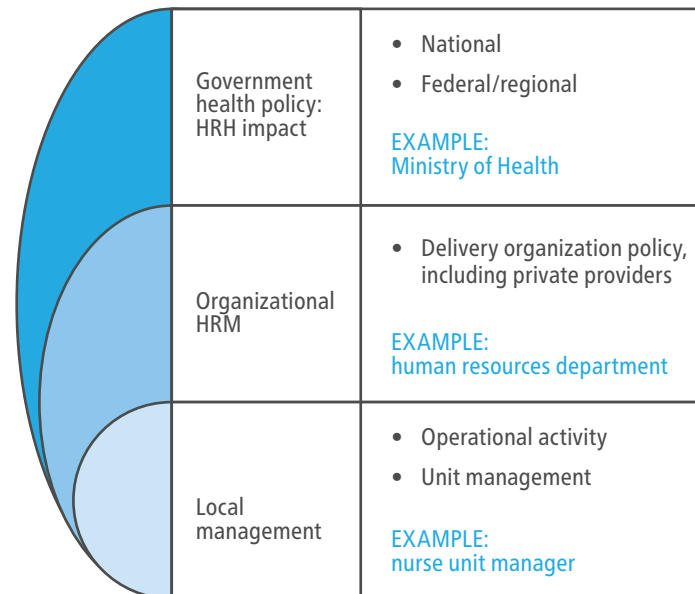
This has been implemented through an improved system of continuous medical education based on international standards, a system of accruing credits, and partnership-building with medical universities to facilitate training delivery.

Source: Barbazza et al. (81).

4.2 Improving the HRH function

HRH planning is the overarching systematic approach to providing human resources to deliver a sustainable health system (Fig. 7), comprising all people engaged in actions whose primary intent is to enhance health (88). The WHO document *Classifying health workers: mapping occupations to the international standard classification* (89) provides an encompassing overview and definitions of most health workers involved in HRH.

Fig. 7. HRH planning and organizational hierarchy



Investment in HRH function by governments and health-care institutions is critical for resolving and identifying real HRH shortages. Technical and professional leadership is required for successful HRH planning, development and supply, and to provide political leaders with informational, analytical and managerial support to develop policy.

Professional associations play an essential role in many Member States in defining standards for each profession, undertaking peer learning and evaluation that enable and strengthen health-care delivery and quality, and driving improvement through CPD. A strengthened HRH function can enhance this activity by health professional associations for all cadres of health workers.

Finally, investment in health systems' HRH function will ensure HRH resources and quality (see section 2.3 on skill mix).

Many Member States have strengthened the performance of their health systems by intentionally supporting the development of an HRH team, working on development and implementation of policy or coordinating intersectoral work between, for example, HRH and tertiary education settings (see case study 16) (90).

As an example, the Greek Government, recognizing the structural challenges created by the 2007/2008 financial crisis and, in particular, its impact on the Greek health system, has taken steps to move towards UHC and reduce the burden of out-of-pocket expenses. This is characterized by the recent initiation of primary health care and public health reform strategies and the recognition that these interventions require a structured and strategic approach to HRH and health workforce planning.

Case study 16. Ireland's new approach to health and social care workforce planning

In 2016, the Irish Department of Health convened a cross-sectoral steering group to develop a strategic framework for health and social care workforce planning in response to existing and emerging workforce challenges.

The framework is underpinned by core principles that are in line with the WHO Global Code of Practice and is based on a five-step iterative approach to strategic workforce planning (environmental analysis, assessment of supply and demand, identification of solutions, planning and implementation, and monitoring and evaluation of outcomes).

Delivery will be managed at sectoral and intersectoral levels, with monitoring and governance arrangements operating both vertically and horizontally in recognition that strategies and solutions must be designed and considered within the overall architecture of the health labour market.

The planned structures and governance arrangements comprise:

- a cross-departmental group chaired by the Department of Health and including key government departments and agencies, which will oversee implementation and prioritize/approve cross-sectoral projects;
- a joint Department of Health/Health Service Executive/Child and Family Agency strategic workforce planning group, which will oversee implementation and prioritize/approve projects within the health and child sectors;
- the Health Service Executive National Workforce Planning Unit, which will report on framework implementation and lead on strategic workforce planning in the health sector; and
- local-level workforce planning, with one- and three-year workforce plans being prepared and short-term workforce gaps identified.

The cross-departmental group will report to the Minister for Health on framework implementation annually. Provision has also been made for periodic strategic review of the relevance and effectiveness of the framework.

Source: Irish Department of Health (90).

HRH teams can be found in different settings, including within health ministries, dependent on Member State requirements.

Professional HRH managers, working with health professionals, can help ensure that those who lead and govern HRH systems argue for (and better utilize) appropriate levels of investment in health-care professional development and education (2).

4.2.1 Tools for HRM

A range of tools is available to health workforce planners and decision-makers to enable them to count and document all health workers within national and subnational contexts through developing an electronic system or by modifying an existing health information system. An example is WHO's minimum data set for health workforce registry (91), which can be used by ministries of health to support the development of standardized health workforce information systems. The minimum data set allows standardization of data values within existing electronic HRH information systems. When used appropriately by information system designers and software developers, a functional electronic health workforce registry can be created to enable health workforce data interoperability. It can allow, for example, the ability to exchange health workforce data between software applications and computer systems within broader subnational or national health information systems.

Through this approach, rapid aggregation and display of health workforce data for decision-making can be fully realized.

4.2.2 HRH reflective of population needs

National workforce policies will need to shift to address the economic and demographic challenges to UHC, which can include those designed on needs-based estimates and focused on training more health workers. Policies need to optimize the supply of health workers through comprehensive planning of HRH based on analysis of the health needs of a population and an understanding of the forces affecting the health labour market (see Fig. 2 and case study 17 (92)).

WHO developed a national health workforce accounts handbook (93) with core indicators that aim to provide concise information on the health workforce situation and trends in a country. The indicators are of relevance to country, regional and global reporting across the spectrum of health workforce priorities. The handbook is based primarily on a comprehensive health labour market framework for UHC and can be used to facilitate standardized health workforce information and track HRH policy performance towards UHC.

Case study 17. Considering the impact of, and potential mechanisms to deal with, geographic imbalances

Maintaining a health workforce in underserved areas is a common problem in health systems. Strategies to address this include targeting future physicians through education and current physicians through incentives, and working with present physicians through service redesign and technology, such as e-medicine.

The OECD report (92) discusses and explores the impact of geographic imbalances in section 5, on doctors and health-care services, and highlights a number of country approaches. Activities of interest to readers in the European Region may be found in the section dealing with policy strategies, targeting and service reorientation (among others).

The document highlights examples from Austria, Czechia, Denmark, Finland, France, Germany, Norway, Slovenia and United Kingdom (Scotland).

Source: OECD (92).

4.3 The role of HRM

HRM differs from HRH, and is defined as the integrated use of systems, policies and management practices to recruit, maintain and develop employees to support the delivery of organizational objectives (94).

The importance of HRM cannot be overstated. Staffing is a health system's most sizeable and important asset, representing between 70% and 80% of a system's budget (94). Poor HRM can lead to dissatisfaction and demotivation of staff, organizational failure, and the inability to deliver health services to a population.

Successful HRM functioning, either directly or through supporting local/team leadership and by developing leaders, improves health workers' skills, satisfaction and motivation to achieve improved levels of performance over time. It points to a number of benefits that accrue from an effective system (94):

- organizations benefit from increased retention, employee performance improvement, application of skills and knowledge by employees leading to improved efficiency and an organizational ability to manage change more effectively; and
- employees benefit from improved feelings of equity, being part of a team and well-being, leading to improved fit, worth, motivation and job satisfaction.

In a health system, health workers, managers and HRM personnel can feel undervalued, underprepared, undersupported and underpaid, although improved human resources planning and management makes managing these issues more effective. Implementation of a human resources department will strengthen HRM support functioning. This differs from local management and leadership development, which is the strengthening of any health manager who leads a team, such as a clinical director or nurse unit manager (95) (see Fig. 7). Specifically, a human resources department will function at organization level and will provide guidance to staff on education, regulation, accreditation and performance. This can also include provision of a role description, career structures, pay scales and assistance in engaging staff in CPD (96).

4.4 Certifying and registering health professionals

The main objective of health workforce regulation is public protection by ensuring accountability that will provide safety for service users and protection of health workers. Countries are able to protect service users from malpractice through regulatory approaches such as laws and decrees, rules and regulations, and policies and guidelines, and to foster conditions of trust between health workers and those they serve.

Regulatory approaches may range in levels, from government to nongovernment involvement. At one end of this spectrum, primary regulatory institutions have legally delegated powers; they control the scope of practice, determine standards for good practice, oversee the conduct of members and provide expert guidance for legislators and administrators. At the other end is an institutional model of regulation that gives the lead role on regulation of health-care professionals to the state.

The certification and registration of HRH workers, where relevant, is a standard process in many Member States and is an important element of an effective workforce. Some countries have gone as far as introducing mandatory recertification to improve quality and effectiveness: United Kingdom (England), for example, has introduced mandatory revalidation for doctors and nurses. Certification is the point of successful completion of professional training; in many cases, this is followed by registration with a regulatory body, which has the role (mandated by the government or the profession) of assuring competence to practise within the scope of the role.

Formal certification can also be an effective mechanism for supporting the introduction of new competencies or specialisms. A number of examples identify the use of CPD and formal adoption of new curricula as part of a mechanism leading to new certification, which is then assured by a regulatory body or elsewhere in the system. This has been the case with respect to community-based nursing in Malta (97) and palliative care nursing provision in Serbia (98). Accreditation of certifying bodies is a key element of, and an important mechanism for, ensuring (and assuring) that a consistent standard of competence is maintained (8).

WHO has a number of useful guides to formal accreditation and regulation available online (see Box 4).

4.5 Social third sector

This section is adapted from Mans et al. (99).

Investing in a sustainable health workforce requires long-term action at country and international levels as part of an intersectoral effort. Social third sector/civil society can have an active role as change agents (see case studies 18, 19 and 20). This section showcases the approach of nine civil society organizations (CSOs) and how they have been a driving force in bringing WHO's Global Code of Practice on the International Recruitment of Health Personnel (the WHO Code) to the attention of national and European-level policy-makers.

Under the umbrella of HealthWorkers 4all (HW4all), European civil society actors worked in their countries in coordinated action to exchange relevant data, tools, understanding and advocacy on health workforce mobility. The CSOs involved in implementing the WHO Code (including patient groups, labour unions, professional organizations and public health nongovernmental organizations) had backgrounds in international development cooperation and had been working on health system sustainability at national level. They urged their governments to include several ministries in addressing health workforce governance complexity in an intersectoral manner by, for example, involving ministries of foreign affairs, health, education, finance, labour and migration.

Between 2013 and early 2016, the HW4all partnership carried out advocacy activities in full alignment with the WHO Code, involving the development and dissemination of tools for policy analysis. The tools included: the translation of the WHO Code and its user guide into the national language(s) of partner countries; a stakeholder analysis for each country and at EU level; a collection of case studies; and a call to action. The case studies included a description of intersectoral/multi-actor collaboration

Case study 18. Multi-actor collaboration

In Romania, HW4all partner the Centre for Health Policies and Services collaborated with the SANITAS Health Union Federation and the International Organization for Migration in setting up a think tank as a platform for discussion on HRH. Collaboration with the Department of Public Health of the Romanian Presidential Administration was also established.

The Centre for Health Policies and Services/HW4all took steps via the organization of two policy dialogues on HRH (in 2014 and 2015) at national level, followed by an action plan for implementing change. In November 2015, the Romanian Government took responsibility for redefining the socioprofessional status of Romanian health workers through adequate salary management, performance assessment criteria and career pathways.

This project has been successful in improving the quality of health services, reducing health workers' migration abroad and decreasing personnel shortages in health units, especially in rural areas, through various incentives.

Source: HealthWorkers 4all (100).

Case study 19. Decent work

HW4all partner the Federation of Associations of Medicus Mundi in Spain shed light on the plight of a number of Spanish nurses hired by a private German recruitment agency. The case made headlines across Europe, since the nurses (who, given their Spanish university education, were more highly educated than their German counterparts) were exploited by German employers who placed them in positions below their skill level and with lower salaries.

Case study 19 contd

Promises regarding free choice of location and working conditions were not kept. Disillusioned, many of the nurses set out to break their contracts but were forced to pay fines.

Only a joint intervention effort by Spanish and German labour unions, supported by the European Public Service Union, helped rectify the situation.

Source: HealthWorkers 4all (101).

Case study 20. European Hospital & Healthcare Employers' Association and European Federation of Public Service Unions intranational governance

European social partners for the hospital and health-care sector include the European Hospital & Healthcare Employers' Association and European Federation of Public Service Unions, who provide an example of social partners' activity at supranational level with Member States on core concerns identified by members.

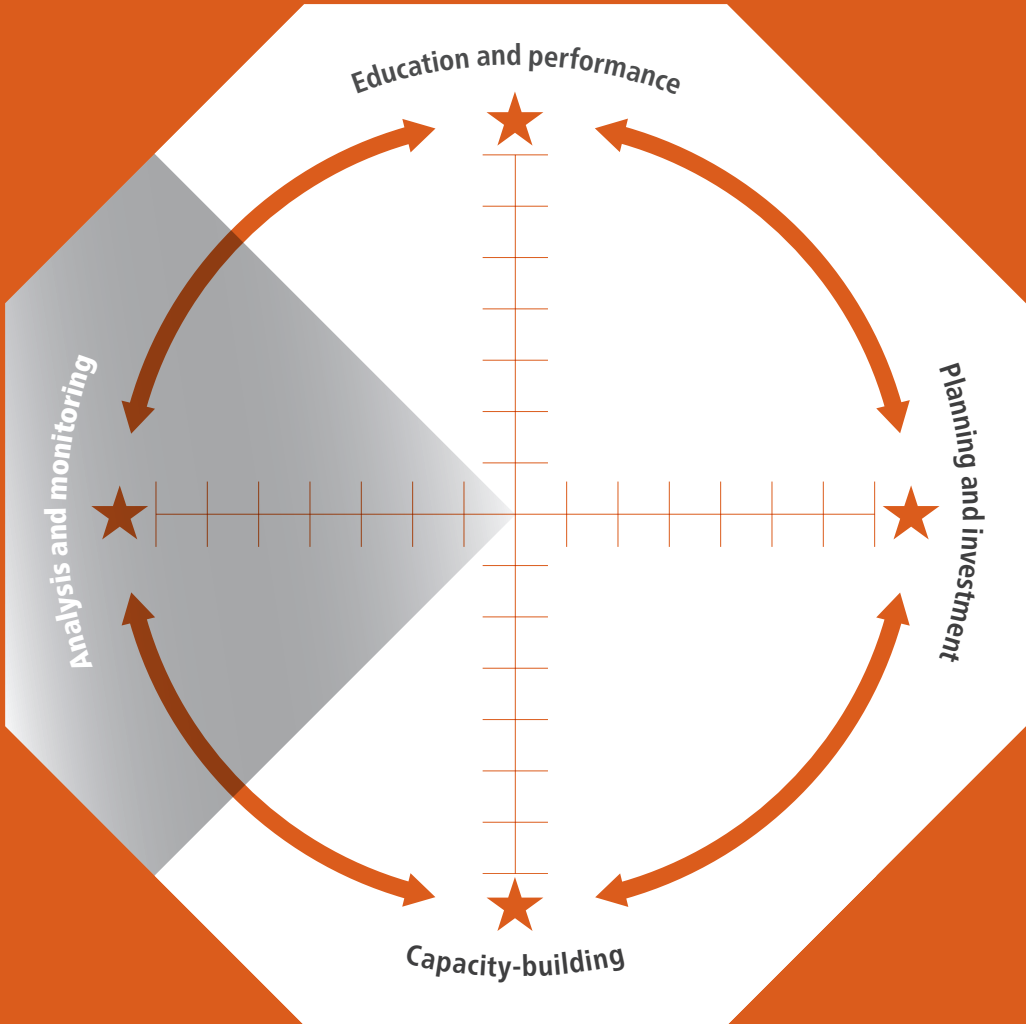
The European Hospital & Healthcare Employers' Association and European Federation of Public Service Unions adopted a code of conduct on ethical cross-border recruitment and retention in 2008 (102) and released a joint declaration on CPD and lifelong learning in 2016 (103). The code of conduct was developed to promote ethical (and stop unethical) practices in cross-border recruitment of health workers. The joint declaration was developed to guide promotion of, and ensure access to, CPD and lifelong learning, with the aim of safeguarding and improving quality of care and patient safety.

The code of conduct and joint declaration outline the inherent need for social partners, employers and health workers to cooperate and work with all stakeholders, such as governments, and regulatory and professional bodies, at local, national and regional levels to facilitate positive change.

Source: European Hospital & Healthcare Employers' Association & European Federation of Public Service Unions (102,103).

on WHO Code implementation and health workforce strengthening. They functioned as a so-called shadow report to the formal WHO Code monitoring by WHO and Member States.

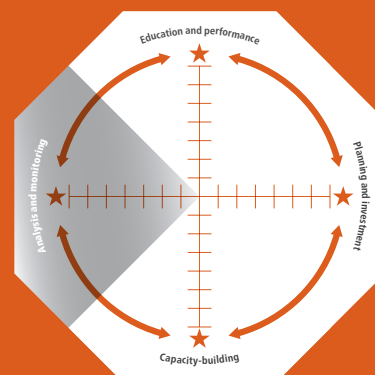
The HW4all partnership also organized workshops at national and EU level, which included health workers' representative bodies. The purpose was to create a community of shared practice involving national and international stakeholders to achieve a sustainable health workforce based on national and regional contexts. The HW4all partnership collaborated with the European Public Health Alliance and the European Public Services Union to achieve this at EU level.



5. ANALYSIS AND MONITORING

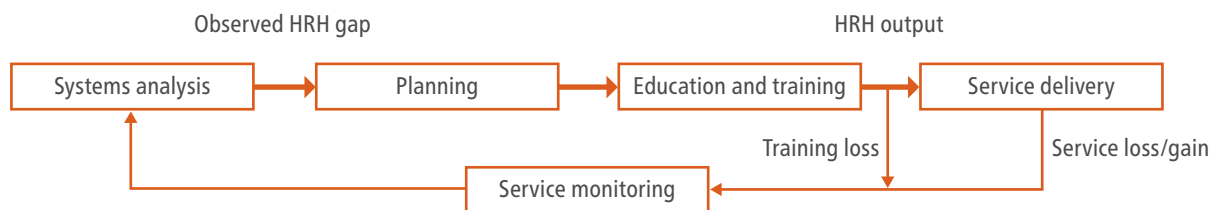
This chapter will explore the need to determine:

- HRH analysis: assessing the current position and future need;
- monitoring: Matrix Insight study, Centre for Workforce Intelligence;
- workforce analysis planning: workload indicators of staffing need;
- examples of analysis mechanisms: horizon-scanning, OECD, multiprofessional analysis mechanisms; and
- limitations to projections.



Simplistically, planning and delivering an HRH workforce could be considered in terms of a production and feedback cycle not dissimilar to production feedback and control loops (Fig. 8). This analogy is not intended to so-called dumb-down the complexities of planning, educating and training an HRH workforce, but rather to try to identify the key components of HRH supply, which this chapter will deal with in turn.

Fig. 8. Simple production and feedback cycle



The Global Health Workforce Alliance has produced an HRH toolkit that readers may find useful (see Box 5).

Relevant resources are shown in Box 5.

Box 5. Relevant resources

WHO

World Health Organization (2015). Workload indicators of staffing need (WISN) user's manual. Geneva: World Health Organization (http://www.who.int/hrh/resources/wisn_user_manual/en/).

World Health Organization (2017). Global Health Workforce Alliance. The Human Resources for Health Toolkit. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/workforcealliance/knowledge/toolkit/hrhtoolkitpurposepages/en/>).

Box 5 contd**EU/European Commission**

Centre for Workforce Intelligence (2014). Mapping the core public health workforce. Final report. London: Centre for Workforce Intelligence (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/507518/CfWI_Mapping_the_core_public_health_workforce.pdf).

Joint Action on Health Workforce Planning and Forecasting (2017). Joint Action on Health Workforce Planning & Forecasting [website]. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union (www.healthworkforce.eu/).

Matrix Insight (2012). EU level collaboration on forecasting health workforce needs, workforce planning and health workforce trends – a feasibility study. Brussels: European Commission (https://ec.europa.eu/health/sites/health/files/workforce/docs/health_workforce_study_2012_report_en.pdf).

OECD

Ono T, Lafortune G, Schoenstein M. Health workforce planning in OECD countries. A review of 26 projection models from 18 countries. Paris: OECD Publishing (Working Paper #26; <http://www.oecd-ilibrary.org/content/workingpaper/5k44t787zcbw-en>).

Organisation for Economic Co-operation and Development (2016). Health workforce policies in OECD countries. Right jobs, right skills, right places. Paris: OECD Publishing (<http://dx.doi.org/10.1787/9789264239517-en>).

Other

Centre for Workforce Intelligence (2015). Horizon 2035. Future demand for skills: initial results. London: Centre for Workforce Intelligence (<https://www.gov.uk/government/publications/horizon-2035-future-demand-for-skills-initial-results>).

5.1 HRH analysis: assessing the current position and future need

Ensuring an adequate balance in the number and mix of health workers is essential for the proper functioning of health systems.

An undersupply of physicians, for instance, can hamper access to health services for certain parts of the population, while an oversupply can lead to a loss of human capital and increase government cost pressures through supply-induced demand. Analysis and ongoing monitoring relies on having standardized and comparable data at all levels, and a specific function capable of dealing with data analysis. The mechanism for collecting and working with these data varies between Member States, but the existence of a system of registration or monitoring is a common theme among successful mechanisms (see section 4.4 on certifying and registering health professionals). Certification and registration of health professionals is often undertaken by a professional body (see case study 21 (104,105)), which outlines this at different regulation levels.

Case study 21. Establishing national workforce registries to predict health personnel movements

In 2011, the Republic of Moldova recognized the challenge presented to the health system by workforce migration. Under WHO coordination and with funding from the EU, the country implemented the “Better managing the mobility of health professionals” programme.

Case study 21 contd

A national information system was created to monitor health professionals. Training on using the system, which included the importance of HRH governance and management, was provided to over 800 people. The programme led to the development of a legislative framework, drafting of protocols on remuneration for health workers, changes to nursing and medical curricula, and a memorandum of understanding between the Republic of Moldova and Germany. Important lessons from this project include the strengthening of HRH information systems and national workforce registries.

Sources: WHO Regional Office for Europe (104); South-eastern Europe Health Network (105).

Traditional ways of determining staffing requirements include calculating population-to-staff ratios (for example, X number of nurses per 10 000 population) and facility-based staffing standards (X number of nurses and Y number of doctors for a health centre, for instance). Many governments also use so-called *numerus clausus* [closed number] policies to influence the supply of health workers to regulate admissions into education and training programmes. These methods have serious disadvantages in that they fail to take account of local variations in the demand for services and the activities health workers actually undertake.

The report *Health workforce policies in OECD countries* (92) looks at country policies and activity through the multiple lenses of labour market analysis, trends in labour markets, determinants of education and training policies, migration trends, geographic imbalances and skills mismatches, and at potential activity to ameliorate the impacts. The report notes that:

In several countries, *numerus clausus* policies have often been characterized by upward and downward phases, as a response to changing concerns and priorities about future shortages or surpluses of health care providers.

This has sometimes been called the yo-yo approach to fixing the *numerus clausus* (92):

Determining the right number of student admissions has proven to be a challenge, given the wide range and uncertainty of factors affecting both the future demand and supply of health workers.

The report also identifies that Australia has recently abandoned *numerus clausus* in medical education, and since its publication, United Kingdom (England) has removed the so-called cap on nurse education by ending bursary funding. It is perhaps too early to identify the full impact of these changes on workforce planning and delivery outcomes, however.

The report goes on to make a number of recommendations (92):

- health workforce planning is not an exact science and needs regular review;
- there is a need to understand the current HRH position before plans can be made for future supply;
- proper health workforce projections will help minimize the yo-yo effect;
- supply-side improvements must take account of retirement patterns;
- there is a need to consider multiprofessional approaches to planning; and
- planning needs to take into account geographic maldistribution.

The OECD published a working paper on health workforce planning in OECD countries, which reviewed 26 projection models from 18 countries (106); this may assist planners and readers, and provides examples from a range of countries (see section 5.4.2 on the OECD).

Adequate HRH planning requires thorough understanding of inflows and outflows from a health system. Outflows include data on career changes, emigration, deaths and retirements. Monitoring these factors, as well as workforce attributes such as gender, age and working hours, allows inflow and demand to be calculated adequately. Evidence suggests a failure to do this can result in HRH imbalances and maldistribution (107). In the context of the *Global strategy on human resources for health: workforce 2030 (2)*, this evidence suggests that even in an environment in which planning functions exist, there is a need to ensure that the operation of the function is consistent with the nature of a changing health-care environment. Case study 22 (108,109) outlines how some Member States have implemented planning and forecasting methods.

These issues suggest strongly that regular policy reassessment that considers the impact of how changing environments (including economic, social and technological) affect future demand and

Case study 22. Joint Action on Health Workforce Planning and Forecasting

The Joint Action on Health Workforce Planning and Forecasting aimed to better prepare Europe's future health workforce, improve capacities for health workforce planning and bring together planning knowledge and expertise from all over Europe. The group of experts produced several reports on health workforce planning terminology, mobility and planning data, and an extended handbook on health workforce planning methodology with a description of seven advanced planning systems. The horizon-scanning methodology was also used to explore the complexity of future challenges of health workforce systems and to underline the significance of qualitative data in health workforce planning. A toolkit on health workforce planning was designed to support Member States in evaluating their health workforce planning systems and offer achievable and manageable solutions that foster improvements.

A pilot study was conducted in Italy and Portugal on the effectiveness of knowledge provision and implementation of a health workforce planning system using the Joint Action handbook. In Italy, HRH stakeholders determine annually the enrolment numbers to university courses (*numerus clausus*) for all health professionals. The handbook outlines key elements of, and a stepwise approach to, implementing a new planning system. The outcome was a robust workforce inventory stock and a forecasting mathematical tool that is accessible to all stakeholders. Stakeholders considered this as the first step in improving health workforce planning, and proposals for future progress have been identified. The pilot study is an example of having a robust inventory as the integral initial stage for a forecasting exercise.

Another pilot was conducted in Belgium to learn about the application of horizon-scanning and the Delphi method for a national review of the GP workforce, based on an interest in improving health workforce planning to provide better policy for stakeholders. Using horizon-scanning methods and subject matter, experts from the Federal Public Services Planning Unit identified factors and driving forces not previously revealed that had affected the GP workforce, such as technology-enabled sharing of patient data. Using the Delphi method, collection and refinement of experts' knowledge through a systematic consensus process quantified a range of variables to be used within the health workforce planning model, including expected changes in future demand. Overall, both methods added value to the GP review and revealed new areas of information and data. The study team advised about transferability to other Member States and provided recommendations for applying qualitative methods in the future.

Sources: Michelutti & Malgieri (108); Edwards & Fellows (109).

supply of health workers is required. Such reassessment should be based on robust health workforce planning models, access to data, the HRH workers working in the wider system, interactions within the system/environment, changing scopes of practice and growing internationalization in health labour markets. Member States can develop reassessment mechanisms based on their own experience and circumstances. Example mechanisms from which countries can adopt or draw experience exist (see section 5.2 on monitoring).

5.2 Monitoring

5.2.1 Matrix Insight study

An EU-funded Matrix Insight study (110) (preparatory phase of the EU Joint Action on Health Workforce Planning and Forecasting) aimed to identify EU-level actions that could support Member States in assessing, forecasting and planning their health workforce needs and support ongoing sustainability of Member State health systems.

The study recognized that accurate information on HRH numbers, distribution and nature is essential to HRH planners. It notes that “data collection methodologies [still] vary substantially across countries” and highlights that most of the EU countries relied on two or more data collection institutions for HRH planning. The analysis suggests that a number of issues have a negative impact on the effectiveness of collection mechanisms, so Member States should consider the following (110):

- there should be a clear rationale behind collection of HRH data;
- data are collected from multiple sources, and therefore are often incomparable;
- data collected in many countries are not targeted specifically on workforce planning;
- resource allocation is insufficient: the poor status of data collection methods and information sets is due to insufficient human, technical and financial resource allocation; and
- greater clarity and standardization is needed on which professions and roles are included, particularly when defining health-worker roles.

5.2.2 Workforce intelligence function

Workforce planning benefits from a health system that is set up and able to collect and interrogate workforce data to provide short-, medium- and long-term workforce information that policy-makers and planners can use to support decision-making. As an example, the former Centre for Workforce Intelligence in the United Kingdom (which was in place between 2010 and 2016) provided independent workforce planning resources to the Department of Health in United Kingdom (England). Its *Mapping the core public health workforce* final report (111) outlined a useful four-stage approach that Member States may consider adopting. Using a combination of extensive desk research and engagement with stakeholders, the project involved the following processes (111):

- scoping, to determine the workforces to be mapped and agree the main definitions used throughout the project;
- review of the literature, to provide an overview of key developments and literature on important themes relating to the public health workforce;
- data collection, through a review of available data sources; and
- stakeholder engagement, to understand data availability on the workforce, how public health delivery is understood with respect to the workforce, and how important public health functions are delivered nationally and locally.

The process should also involve a detailed definition of the boundaries used in assessing who is and is not part of the specific workforce under consideration or investigation to provide planners with operational context. This is identified by the *Workload indicators of staffing need (WISN) user's manual (112)* as being a similar challenge to that of record-keeping.

5.3 Workforce planning

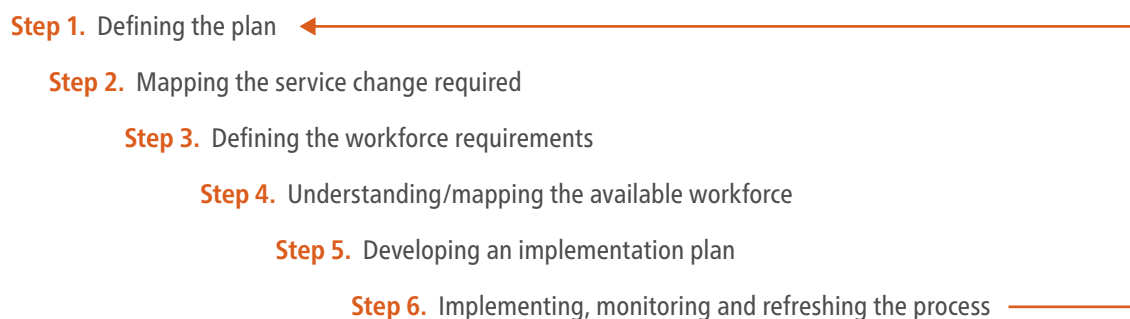
A systematic analysis will allow Member States to evaluate their current position and develop a strategy for reaching long-term goals, such as those in *The global strategy on human resources for health: workforce 2030 (2)*. An analysis, including a thorough evaluation of resources, will support Member States to build a robust and resilient plan to achieve their objectives.

Four major components are identified when conducting a workforce analysis:

1. identification of planning scenarios, including an assessment of the current state (A) and final state (B) for each planning scenario (see Fig. 3);
2. resource assessment for each scenario;
3. a listing of the current resource position; and
4. agreement of the scenario to be delivered and allocation of resources required to bridge the gap between current (3 above) and required (2 above) resources.

This four-phase model can be expanded with the incorporation of an additional mechanism to include assessing the feasibility of implementation strategies and a feedback loop to allow policy-makers to monitor progress towards a sustainable workforce and identify areas for improvement (113) (see step 6 in Fig. 9 (114)). The process should also include engaging stakeholders and agreeing and assigning ownership to avoid the creation of a paper exercise. The strategic objectives are intrinsically linked, as emphasized by the six-step model, which incorporates health workforce planning and continuous monitoring in an iterative process.

Fig. 9. Six-step model



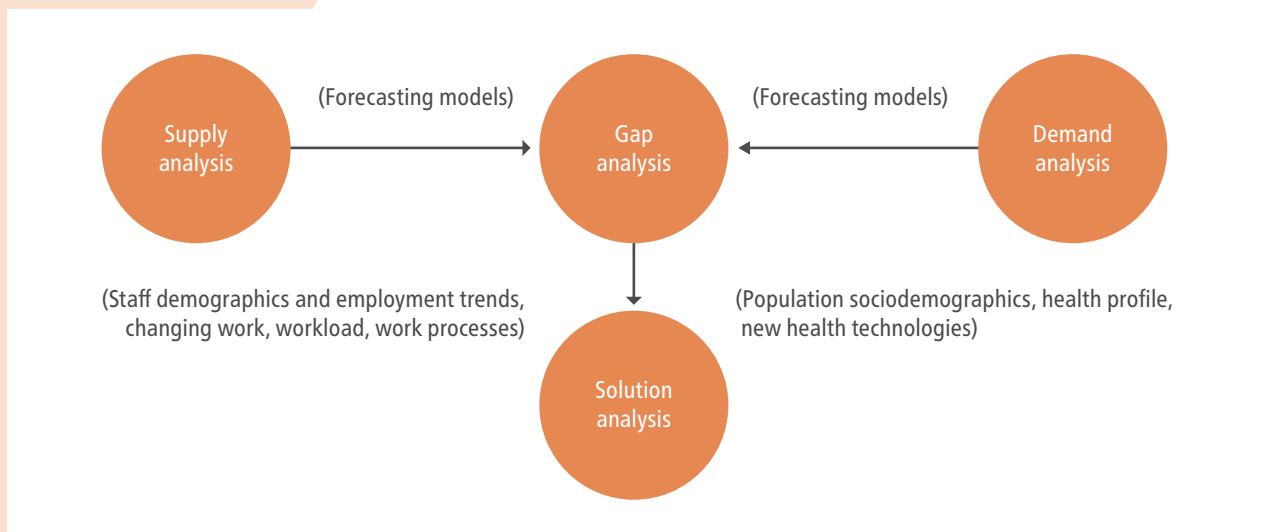
Source: Al-Sawai & Al-Shishtawy (114).

Roberfroid et al. (115) performed a useful study of physician-supply forecasting and the use of forecasting tools, looking at typology of approaches and analysis of methodology (Fig. 10).

The work identified four approaches that planners use:

1. supply projection (re-basing current provision based on anticipated need);
2. demand/requirement approaches (based on anticipated demand for services);
3. needs-based analysis (based on changing epidemiological requirements); and
4. benchmarking (moving to a standard defined by other provision, such as OECD density averages).

Fig. 10. Forecasting



Source: Roberfroid et al. (114). © Roberfroid et al.; licensee BioMed Central Ltd. 2009. Reproduced under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>).

The paper concludes that there is (115):

no single accepted approach to forecasting physician requirements. The value of projections lies in their utility in identifying the current and emerging trends to which policy-makers need to respond.

Work emanating from the Matrix Insight study (110) identified three dimensions of workforce planning which, the study suggests, correspond to the different roles workforce planning can play, noting that the dimensions are not exclusive to each other and can build on one another to improve sophistication:

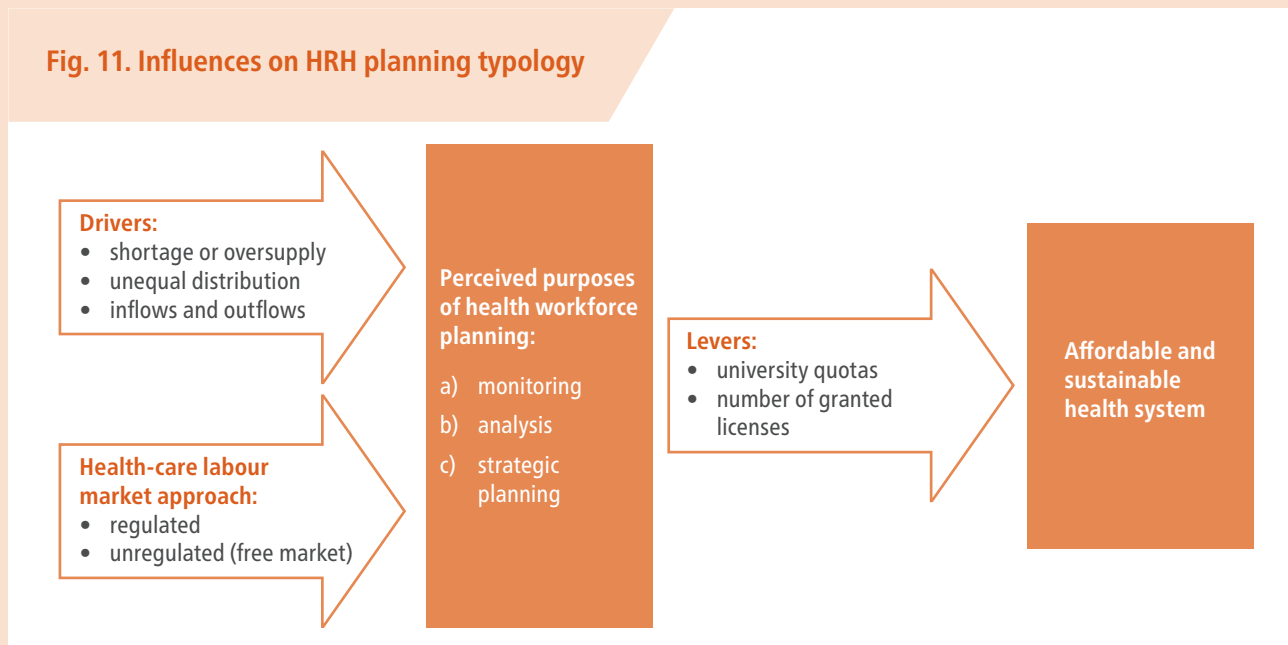
- a. monitoring: data on the current and future health workforce are collected to monitor performance and forecast (for instance, expenditure);
- b. analysis, to respond to challenges in terms of balancing the demand for, and supply of, human resources for health within the current environment; and
- c. strategic planning over the longer-term direction of the health system, including resource allocation, system characteristics and ensuring a sustainable health workforce.

The work goes on to note that the purpose of planning at national level is influenced by specific national drivers and approaches to health care. The regulation of supply within Member States therefore is likely to be governed by the nature of the health system in place (unregulated Bismark systems like France and Germany, or regulated Beveridge models such as the United Kingdom

and Scandinavian models). As a consequence of the fact that health workforce planning can have different perceived purposes, there is generally no agreement on what “good” looks like.

Fig. 11 summarizes how national specific drivers, the health-care system approach and the availability of levers influence the purpose and shape of health workforce planning systems at national level.

Fig. 11. Influences on HRH planning typology



Source: Matrix Insight (110). Reproduced with permission from the Publications Office of the European Union.

5.3.1 Workload indicators of staffing need (WISN)

The WISN tool developed by WHO, which has a principal focus on facility-based planning, supports evidence-based planning of a future workforce (112). WISN requires that the system is able accurately to count the human resources it currently has access to, locate the workers and provide an estimate of their productive output. With this detail, the tool can:

- determine how many health workers of a particular type are required to cope with the workload of a given facility; and
- assess the workload pressure of the health workers in that facility.

WISN uses annual service statistics to assess workloads. The accuracy of the WISN method is determined by the accuracy of the statistics used, emphasizing the importance of high-quality data.

5.4 Examples of analysis mechanisms

5.4.1 Horizon-scanning

The Centre for Workforce Intelligence published *Horizon 2035* in 2015 to assist the Department of Health in United Kingdom (England) in understanding plausible scenarios for future health workforce requirements that might present themselves over a 20-year time horizon to support HRH planning. The scenarios were constructed using elicitation techniques and by applying analytical approaches to identify the long-term HRH need. The report and the methodology used are publicly available (44).

5.4.2 OECD

The OECD review of 26 projection models from 18 countries (106) reviews the main characteristics and results of health workforce projection models mainly for physicians, but also includes some nursing models.

The Netherlands established an independent body, the Advisory Committee on Medical Manpower Planning (116), in 2000 with the intention of planning a sustainable health workforce while accounting for cyclic variations of supply. The focus on determining the medical training capacity required a 20-year projection to meet the demand for health care in the country. The model assessed the gap between supply and demand of doctors and the projected balance and aims, reaching supply–demand equilibrium for different medical and allied health professionals. The model is currently not capable of projecting for different medical professions in conjunction, which is important from an interdisciplinary perspective of health service delivery, but has stabilized the physician workforce in the Netherlands over the last 10 years and has become accepted by policy-makers and stakeholders (117).

5.4.3 Multiprofessional analysis mechanisms

Alongside national-level projections by ministries with regard to individual intake numbers for distinct professions, research and analysis has been done into multiprofessional projections and skills approaches, including *Horizon 2035* (44) and work from the Joint Action on Health Workforce Planning and Forecasting (118). The latter describes the drivers of change acting on health workforces and highlights the need for quantitative and qualitative methodological developments in workforce planning that can support the further development of multiprofessional projections.

5.5 Limitations to projections

While projections can highlight the scale of current and future issues that require attention, the impact of long-term projections is a mixture of multiple opinions and compromise points of view. As Dussault et al. (119) note, “even with the best data and projections in hand, governments cannot dictate or decree change ... it still has to be negotiated”. Any projections are susceptible to extrinsic factors such as changing political and economic environments. Projections are further complicated by political timescales and the large quantity of interested parties.

Actors other than ministries may also propose changes that potentially have impacts on the workforce or service delivery. For example, the Department of Health in United Kingdom (England) implemented recommendations made by the Lancet Global Independent Commission (120) and the final report of the Shape of Training Review (121), which looked at potential reforms to the structure of postgraduate medical education and training across the United Kingdom. These studies noted that future employers will want to recruit more broadly trained individuals to work across setting boundaries (118).

CONCLUSION



6. CONCLUSION

This toolkit is not a definitive rulebook for planning HRH workforces. It is a guide to point planners to examples where activity has been effective, and also to highlight potential pitfalls. It is intended to support action – an aide memoire.

Readers should remember that planning is not only a technical exercise, and there are no magic tricks to getting it right. In the case of complex professional groups, the education production lead times can be long. Generally, training complexity has a direct correlation with training length: in itself, this lead time can result in drift between actual and planned need.

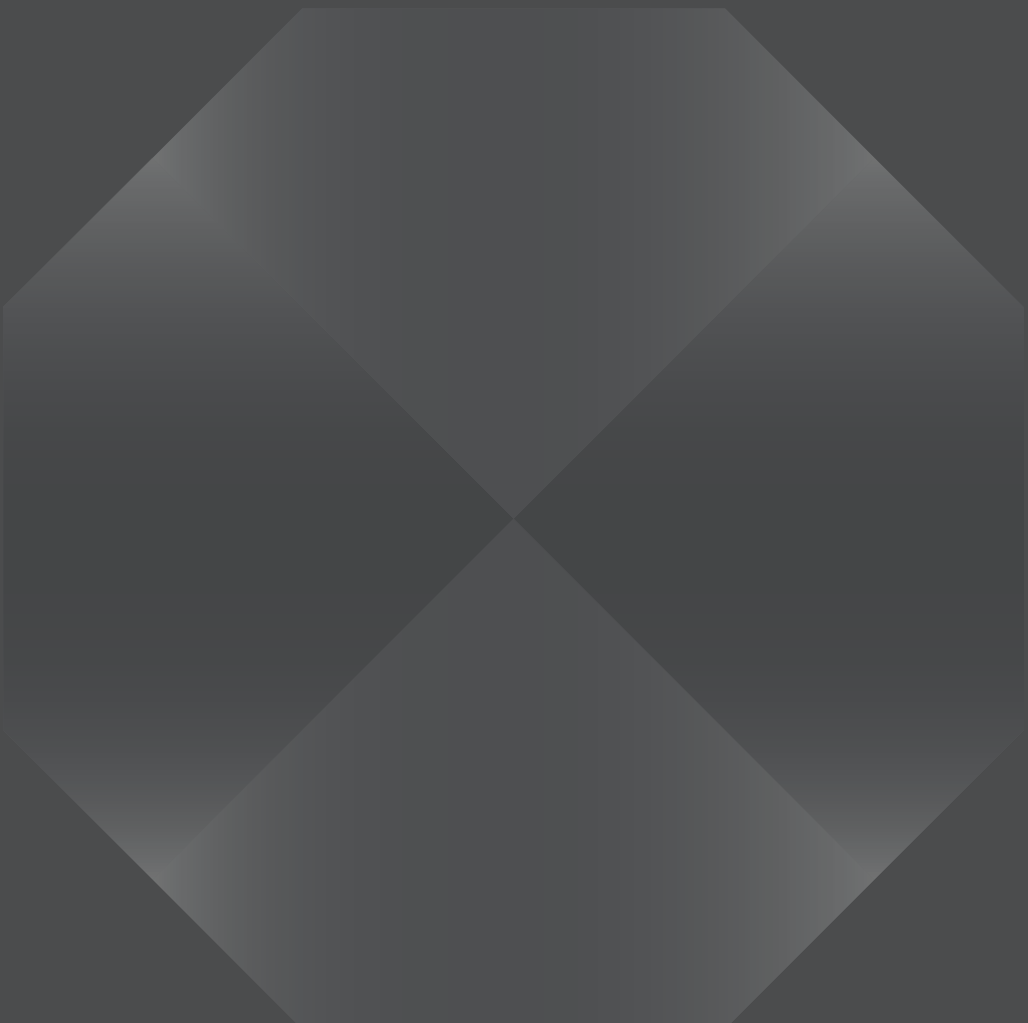
It is also impossible to achieve precision. For this reason, planners and stakeholders need to utilize a flexible and adaptive approach to minimize the drift between plan and delivery.

Planners and stakeholders should therefore not be afraid to question plans, or to build in checks and balances and introduce mechanisms that allow adaptability of plans (such as common core training) as time progresses.

Planning, while based on hard numbers, often requires an ability to finesse the outcome as pipelines begin to deliver. Getting it right is not a question of simple analysis. It is more about getting close enough to the requirement to be able to minimize wasted cost and missed opportunities.

R

REFERENCES



REFERENCES⁷

1. Towards a sustainable health workforce in the WHO European Region: framework for action. Copenhagen: WHO Regional Office for Europe; 2017 (http://www.euro.who.int/__data/assets/pdf_file/0011/343946/67wd10e_HRH_Framework_170677.pdf).
2. Global strategy on human resources for health: workforce 2030. Geneva: World Health Organization; 2016 (<http://www.who.int/hrh/resources/globstrathrh-2030/en/>).
3. Health 2020. A European policy framework and strategy for the 21st century. Copenhagen: WHO Regional Office for Europe; 2013 (<http://www.euro.who.int/en/health-topics/health-policy/health-2020-the-european-policy-for-health-and-well-being/publications/2013/health-2020.-a-european-policy-framework-and-strategy-for-the-21st-century-2013>).
4. The Tallinn Charter: Health Systems for Health and Wealth. Copenhagen: WHO Regional Office for Europe; 2008 (<http://www.euro.who.int/en/publications/policy-documents/tallinn-charter-health-systems-for-health-and-wealth>).
5. Final report of the expert group to the High-Level Commission on Health Employment and Economic Growth. Geneva: World Health Organization; 2016 (<http://www.who.int/hrh/com-heeg/reports/report-expert-group/en/>).
6. Strengthened health systems save more lives: an insight into WHO's European health systems' strategy. Copenhagen: WHO Regional Office for Europe; 2005 (http://www.euro.who.int/__data/assets/pdf_file/0011/78914/healthsys_savelives.pdf).
7. Everybody's business. Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: World Health Organization; 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf).
8. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010;376(9756):1923–58 ([http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(10\)61854-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)61854-5/fulltext)).
9. Transforming and scaling up health professionals' education and training: WHO education guidelines. Geneva: World Health Organization; 2013 (http://www.who.int/hrh/resources/transf_scaling_hpet/en/).
10. Boelen C, Woollard B. Social accountability and accreditation: a new frontier for educational institutions. *Med Educ.* 2009;43:887–94.
11. Celletti F, Reynolds TA, Wright A, Stoertz A, Dayrit M. Educating a new generation of doctors to improve the health of populations in low- and middle-income countries. *PLoS Med.* 2011;8(10):e1001108.
12. Recruitment and retention of the health workforce in Europe. Final report. Brussels: European Commission; 2015 (https://ec.europa.eu/health/workforce/key_documents/recruitment_retention_en).
13. About the Francis Inquiry. In: The Health Foundation [website]. London: The Health Foundation; 2013 (<http://www.health.org.uk/about-francis-inquiry>).
14. Buchan J, Calman L. Skill-mix and policy change in the health workforce: nurses in advanced roles. Paris: Organisation for Economic Co-operation and Development; 2004 (OECD Health Working Papers No. 17; <https://www.oecd.org/els/health-systems/33857785.pdf>).
15. Randall S, Crawford T, Currie J, River J, Betihavas V. Impact of community based nurse-led clinics on patient outcomes, patient satisfaction, patient access and cost effectiveness: a systematic review. *Int J Nurs Stud.* 2017;11(73):24–33.
16. Bond C. iMPact on practice oUtcomes and costs of New ROleS for health professionals. Presentation at the 9th European Public Health Conference, Vienna, Austria, 9–12 November 2016. In: MUNROS [website]. Aberdeen: University of Aberdeen; 2016 (<https://www.abdn.ac.uk/munros/research/conference-papers/>).
17. Maier CB, Aiken LH. Expanding clinical roles for nurses to realign the global health workforce with population needs: a commentary. *Isr J Health Policy Res.* 2016;5(1):21.
18. Lovink MH, Persoon A, van Vught AJAH, Schoonhoven L, Koopmans RT, Laurant MG. Substituting physicians with nurse practitioners, physician assistants or nurses in nursing homes: protocol for a realist evaluation case study. *BMJ Open* 2017;7(6):e015134.
19. Aiken LH, Sloane D, Griffiths P, Rafferty AM, Bruyneel L, McHugh M et al. Nursing skill mix in European hospitals: cross-sectional study of the association with mortality, patient ratings, and quality of care. *BMJ Qual Saf.* 2017;26(7):559–68.
20. Taylor K. Connected health: how digital technology is transforming health and social care. London: Deloitte Centre for Health Solutions; 2015 (<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/life-sciences-health-care/deloitte-uk-connected-health.pdf>).
21. Bye SM, Hagen O, Karoliussen S, Sjaaeng E. Qualitative improvement of health services for indigenous people in remote areas in the Nenets Region. Tromsø: Norwegian Centre for Integrated Care and Telemedicine; 2015 (https://ehealthresearch.no/files/documents/Prosjektrapporter/NST-rapport_2015-02_Qualitative_improvement_of_health_services_for_indigenous_people_in_remote_areas_in_the_Nenets_Region.pdf).

⁷ All weblinks accessed 12 February 2018.

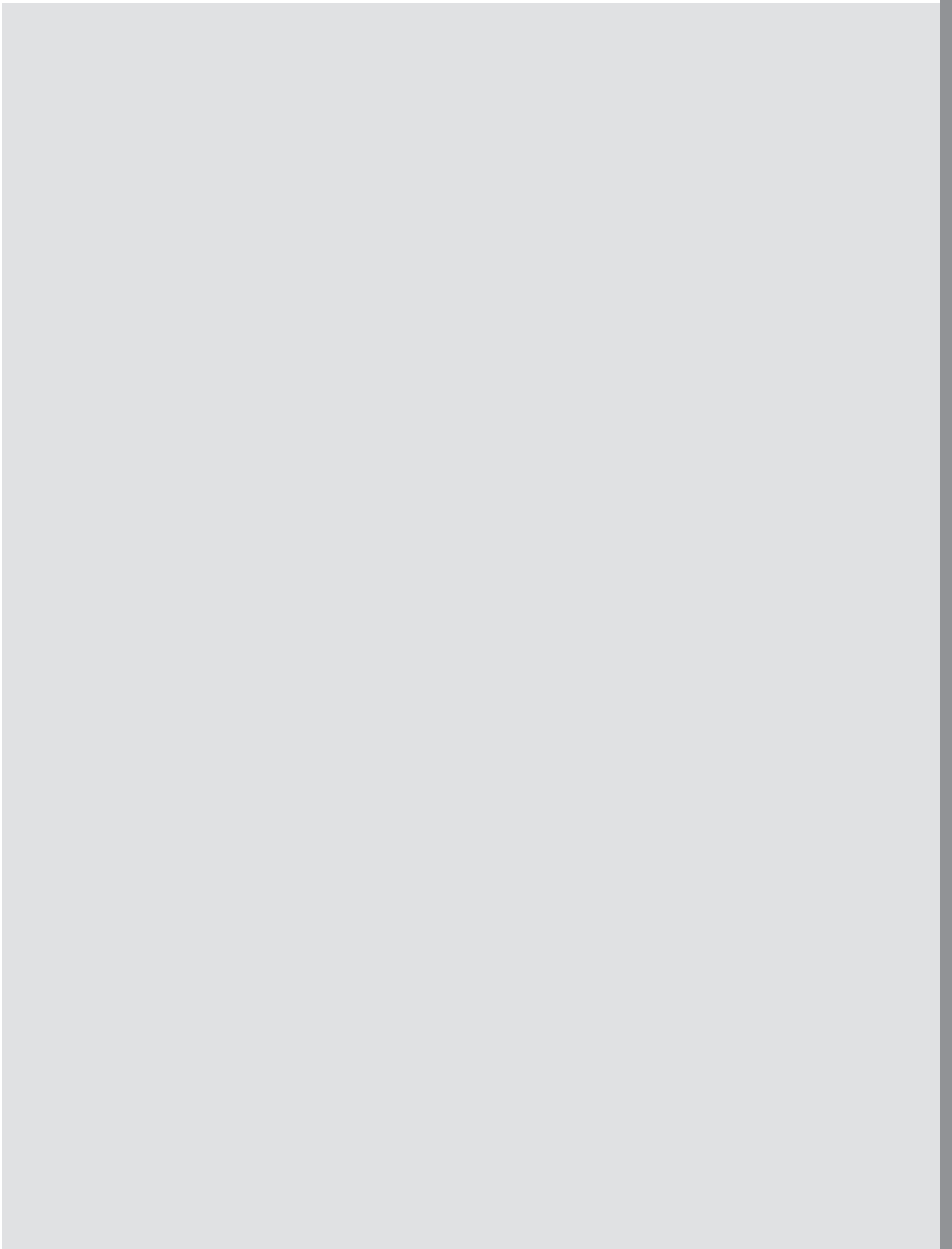
22. Murphy J, Goossen W. Introduction. In: Murphy J, Goossen W, Weber P, editors. *Forecasting informatics competencies for nurses in the future of connected health*. Proceedings of the Nursing Informatics Post Conference 2016. Amsterdam: IOS Press; 2017:1–6 (Studies in Health Technology and Informatics, Volume 232; <http://ebooks.iospress.nl/volume/forecasting-informatics-competencies-for-nurses-in-the-future-of-connected-health-proceedings-of-the-nursing-informatics-post-conference-2016>).
23. Koster Y, van Houwelingen CTM. Technology-based healthcare for nursing education within the Netherlands: past, present and future. In: Murphy J, Goossen W, Weber P, editors. *Forecasting informatics competencies for nurses in the future of connected health*. Proceedings of the Nursing Informatics Post Conference 2016. Amsterdam: IOS Press; 2017:101–10 (Studies in Health Technology and Informatics, Volume 232; <http://ebooks.iospress.nl/volume/forecasting-informatics-competencies-for-nurses-in-the-future-of-connected-health-proceedings-of-the-nursing-informatics-post-conference-2016>).
24. *New health technologies: managing access, value and sustainability*. Paris: OECD Publishing; 2017 (http://www.oecd-ilibrary.org/social-issues-migration-health/managing-new-technologies-in-health-care_9789264266438-en).
25. Oliveira TC, Bayer S, Gonçalves L, Barlow J. Telemedicine in Alentejo. *Telemedicine Journal and e-Health* 2014;20(1):90.
26. Nemeth O. Opportunities for introducing teledentistry in Hungary [thesis]. Budapest: Semmelweis University; 2017 (in Hungarian).
27. *eHealth in Denmark: eHealth as a part of a coherent Danish health care system*. Copenhagen: Danish Ministry of Health; 2012 (http://www.sum.dk/~media/Filer%20-%20Publikationer_i_pdf/2012/Sundheds-IT/Sundheds_IT_juni_web.ashx).
28. *From innovation to implementation – eHealth in the WHO European Region*. Copenhagen: WHO Regional Office for Europe; 2016 (<http://www.euro.who.int/en/publications/abstracts/from-innovation-to-implementation-ehealth-in-the-who-european-region-2016>).
29. Al-Shorbaji N, Atun R, Car J, Majeed A, Wheeler E, editors. *eLearning for undergraduate health professional education – a systematic review informing a radical transformation of health workforce development*. London: Imperial College London & World Health Organization; 2015 (<http://whoeducationguidelines.org/content/elearning-report>).
30. Resolution WHA60.26. *Workers' health: global plan of action*. Geneva: World Health Organization; 2008 (http://www.who.int/occupational_health/WHO_health_assembly_en_web.pdf?ua=1).
31. *Third global survey on eHealth*. Geneva: World Health Organization; 2015 (<http://www.who.int/goe/survey/2015survey/en/>).
32. *Digital agenda for Europe*. In: European Commission [website]. Brussels: European Commission; 2010 (<https://ec.europa.eu/digital-single-market/en/digital-agenda-europe-key-publications>).
33. *Opening up education: innovative teaching and learning for all through new technologies and open educational resources*. Brussels: European Commission; 2013 (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52013DC0654>).
34. Hongoro C, Normand C. Health workers: building and motivating the workforce. In: Jamison DT, Breman JG, Measham AR, Alleyne G, Claeson M, Evans DB et al., editors. *Disease control priorities in developing countries*, 2nd edition. Washington (DC): World Bank; 2006 (<http://www.ncbi.nlm.nih.gov/books/NBK11730/>).
35. Willis-Shattuck M, Bidwell P, Thomas S, Wyness L, Blaauw D, Ditlopo P. Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Serv Res*. 2008;8:247.
36. Dopp AL, Moulton JR, Rouse MJ, Trewet CB. A five-state continuing professional development pilot program for practicing pharmacists. *Am J Pharm Educ*. 2010;74(2):28 (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2856417/>).
37. *Continuing professional development/continuing education in pharmacy: global report*. The Hague: International Pharmaceutical Federation; 2014 (https://www.fip.org/files/fip/PharmacyEducation/CPD_CE_report/FIP_2014_Global_Report_CPD_CE_online_version.pdf).
38. Disoteo O, Grimaldi F, Papini E, Attanasio R, Tonutti L, Pellegrini MA et al. State-of-the-art review on diabetes care in Italy. *Ann Glob Health* 2015;81(6):803–13.
39. *Study concerning the review and mapping of continuous professional development and lifelong learning for health professionals in the EU*. Brussels: European Commission; 2013 (https://ec.europa.eu/health/sites/health/files/workforce/docs/cpd_mapping_report_en.pdf).
40. *Summary of the profession*. In: Council of Occupational Therapists for the European Countries [website]. Karlsbad-Ittersbach: COTEC; 2017 (<http://www.coteceurope.eu/updates/summary-of-the-profession/>).
41. *High-Level Commission on Health Employment and Economic Growth*. In: World Health Organization [website]. Geneva: World Health Organization; 2018 (<http://www.who.int/hrh/com-heeg/en/>).
42. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A et al. Global health 2035: a world converging within a generation. *Lancet* 2013;382(9908):1898–955.
43. Buchan J, Dhillon I, Campbell J, editors. *Health employment and economic growth: an evidence base*. Geneva: World Health Organization; 2017 (http://www.who.int/hrh/resources/health_employment-and-economic-growth/en/).
44. *Horizon 2035. Future demand for skills: initial results*. London: Centre for Workforce Intelligence; 2015 (<https://www.gov.uk/government/publications/horizon-2035-future-demand-for-skills-initial-results>).

45. UN Commission: new investments in global health workforce will create jobs and drive economic growth. In: World Health Organization [online news release]. Geneva: World Health Organization; 2016 (<http://www.who.int/mediacentre/news/releases/2016/global-health-workforce/en/>).
46. Liu JX, Goryakin Y, Maeda A, Bruckner T, Scheffler R. Global health workforce labor market projections for 2030. *Hum Resour Health* 2017;15:11 (<https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-017-0187-2>).
47. European Agency for Safety and Health at Work. OSH in figures: stress at work – facts and figures. Luxembourg: Office for Official Publications of the European Communities; 2009 (https://osha.europa.eu/en/tools-and-publications/publications/reports/TE-81-08-478-EN-C_OSH_in_figures_stress_at_work/view).
48. Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all. In: Sustainable Development Goals: 17 goals to transform our world [website]. New York (NY): United Nations; 2018 (<http://www.un.org/sustainabledevelopment/economic-growth/>).
49. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an EU strategic framework on health and safety at work 2014–2020. Brussels: European Commission; 2014 (COM(2014) 332 final; <http://ec.europa.eu/social/main.jsp?catId=151>).
50. Figueras J, McKee M, editors. Health systems, health, wealth and societal well-being. Assessing the case for investing in health systems. Maidenhead: Open University Press; 2011 (<http://apps.who.int/medicinedocs/documents/s19262en/s19262en.pdf>).
51. Joint action on health workforce planning and forecasting. Circular migration of the health workforce. Leuven: Catholic University of Leuven; 2016 (http://healthworkforce.eu/wp-content/uploads/2016/03/WP7_M7.2-Report-on-Circular-Migration-of-the-HWF_final.pdf).
52. Buchan J, Wissmar M, Glinos I, Ball JE. Health professional mobility in a changing Europe. New dynamics, mobile individuals and diverse responses. Copenhagen: WHO Regional Office for Europe; 2014 (http://www.euro.who.int/__data/assets/pdf_file/0006/248343/Health-Professional-Mobility-in-a-Changing-Europe.pdf).
53. International medical graduate. In: Health Service Executive [website]. Dublin: Health Service Executive; 2017 (http://www.hse.ie/eng/staff/Leadership_Education_Development/MET/ed/IMG).
54. Medical training initiative. In: Academy of Medical Royal Colleges [website]. London: Academy of Medical Royal Colleges; 2017 (<http://www.aomrc.org.uk/medical-training-initiative/>).
55. All our health: personalised care and population health. London: Public Health England; 2015 (<https://www.gov.uk/government/collections/all-our-health-personalised-care-and-population-health>).
56. Russo G, Pavignani E, Guerreiro CS, Neves C. Can we halt health workforce deterioration in failed states? Insights from Guinea-Bissau on the nature, persistence and evolution of its HRH crisis. *Hum Resour Health* 2017;15(1):12.
57. Matendo R, Engmann C, Ditekemena J, Gado J, Tshetu A, Kinoshita R et al. Reduced perinatal mortality following enhanced training of birth attendants in the Democratic Republic of Congo: a time-dependent effect. *BMC Med*. 2011;9:93.
58. Rana TG, Rajopadhyaya R, Bajracharya B, Karmacharya M, Osrin D. Comparison of midwifery-led and consultant-led maternity care for low risk deliveries in Nepal. *Health Policy Plan*. 2003;18(3):330–7.
59. Bloor K, Maynard A. Planning human resources in health care: towards an economic approach. An international comparative review. Ottawa: Canadian Health Services Research Foundation; 2003 (<http://www.hrresourcecenter.org/node/274>).
60. Frenk J, Alagon J, Nigenda G, Muñoz-delRio A, Robledo C, Vaquez-Segovia LA et al. Patterns of medical employment: a survey of imbalances in urban Mexico. *Am J Public Health* 1991;81(1):23–9.
61. Frenk J, Knaul FM, Vázquez-Segovia LA, Nigenda G. Trends in medical employment: persistent imbalances in urban Mexico. *Am J Public Health* 1999;89(7):1054–8.
62. Agvall B, Paulsson T, Foldevi M, Dahlström U, Alehagen U. Resource use and cost implications of implementing a heart failure program for patients with systolic heart failure in Swedish primary health care. *Int J Cardiol*. 2014;176(3):731–8.
63. Ferguson B. Investing in prevention: is it cost-effective? Blog: Public health matters. In: Gov.uk [Website]. London: Public Health England; 2016 (<https://publichealthmatters.blog.gov.uk/2016/02/29/investing-in-prevention-is-it-cost-effective/>).
64. Porter ME, Larsson S, Lee TH. Standardizing patient outcomes measurement. *New Engl J Med*. 2016;374(6):504–6.
65. Methodological approaches for cost-effectiveness and cost-utility analysis of injury prevention measures. Copenhagen: WHO Regional Office for Europe; 2011 (<http://www.childhealthresearch.eu/research/add-knowledge/cost%20effectiveness%20of%20injury%20prevention.pdf>).
66. Tool #31: health impacts. Brussels: European Commission; 2015 (https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-31_en_0.pdf).
67. Tan-Torres Edejer T, Baltussen R, Adam T, Hutubessy R, Acharya A, Evans DB et al. WHO guide to cost-effectiveness analysis. Geneva: World Health Organization; 2003 (http://www.who.int/choice/publications/p_2003_generalised_cea.pdf).
68. Health impact assessment (HIA). In: World Health Organization [website]. Geneva: World Health Organization; 2018 (<http://www.who.int/hia/tools/en/>).
69. Murray CJL, Salomon JA, Mathers CD, Lopez AD, editors. Summary measures of population health: concepts, ethics, measurement and applications. Geneva: World Health Organization; 2002 (<http://apps.who.int/iris/handle/10665/42439>).

70. Constitution of the World Health Organization. Basic Documents, Forty-fifth edition, Supplement, October 2006. Geneva: World Health Organization; 2006 (http://www.who.int/governance/eb/who_constitution_en.pdf).
71. Resolution WHA58.23. Sustainable health financing, universal coverage and social health insurance. Geneva: World Health Organization; 2005 (http://www.who.int/health_financing/HF%20Resolution%20en.pdf).
72. Making fair choices on the path to universal health coverage: final report of the WHO Consultative Group on Equity and Universal Health Coverage. Geneva: World Health Organization; 2014 (http://www.who.int/choice/documents/making_fair_choices/en/).
73. Closing the gap in a generation: health equity through action on the social determinants of health. Final report of the Commission on Social Determinants of Health. Geneva: World Health Organization; 2008 (http://www.who.int/social_determinants/final_report/csdh_finalreport_2008.pdf).
74. Marmot M, Allen J, Bell R, Bloomer E, Goldblatt P on behalf of the Consortium for the European Review of Social Determinants of Health and the Health Divide. WHO European review of social determinants of health and the health divide. *Lancet* 2012;380:1011–29.
75. World Health Organization, World Bank. Tracking universal health coverage: first global monitoring report. Geneva: World Health Organization; 2015 (http://apps.who.int/iris/bitstream/10665/174536/1/9789241564977_eng.pdf).
76. Verguet S, Laxminarayan R, Jamison DT. Universal public finance of tuberculosis treatment in India: an extended cost-effectiveness analysis. *Health Econ.* 2015;24:318–32.
77. Asaria M, Griffin S, Cookson R. Distributional cost-effectiveness analysis: a tutorial. *Med Decis Making* 2016;36:8–19.
78. Cookson R, Mirelman A, Griffen S, Asaria M, Dawkins B, Norheim O et al. Fairer decisions, better health for all: health equity and cost-effectiveness analysis. York: Centre for Health Economics, University of York; 2016 (https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP135_fairer_decisions_health_equity_cost-effectiveness.pdf).
79. Stewardship. In: World Health Organization [website]. Geneva: World Health Organization; 2018 (<http://www.who.int/healthsystems/stewardship/en/>).
80. Dieleman M, Shaw DM, Zwanikken P. Improving the implementation of health workforce policies through governance: a review of case studies. *Hum Resour Health* 2011;9:10.
81. Barbazza E, Langins M, Kluge H, Tello J. Health workforce governance: processes, tools and actors towards a competent workforce for integrated health services delivery. *Health Policy* 2015;119(12):1645–54.
82. Implementation of health sector reforms in the African Region: enhancing the stewardship role of government: report of the Regional Director. Brazzaville: WHO Regional Office for Africa; 2002 (<http://www.who.int/iris/handle/10665/95976>).
83. Popovich L, Potapchik E, Shishkin S, Richardson E, Vacroux A, Mathivet B. Russian Federation. Health system review. *Health Syst Transit.* 2011;13(7):1–190, xiii–xiv.
84. Gerry C, Sheiman I. The health workforce of the Russian Federation in the context of the international trends: basic research program working papers. St Petersburg: National Research University Higher School of Economics; 2016 (Public and Social Policy WP BRP 01/PSP/2016; <https://wp.hse.ru/data/2016/12/02/1113380342/01PSP2016.pdf>).
85. Об исполнении снятых с контроля поручений, содержащихся в Указе Президента Российской Федерации от 7 мая 2012 г. № 597. “О мероприятиях по реализации государственной социальной политики” [On the execution of orders removed contained in the Decree of the President of the Russian Federation of May 7, 2012, No. 597. “On measures to implement state social policy”]. Moscow: Government of the Russian Federation; 2012 (<http://static.government.ru/media/files/41d4a63575671e54d894.pdf>) (in Russian).
86. Building resilience: a key pillar of Health 2020 and the Sustainable Development Goals – examples from the WHO Small Countries Initiative. Copenhagen: WHO Regional Office for Europe; 2017 (<http://www.euro.who.int/en/publications/abstracts/building-resilience-a-key-pillar-of-health-2020-and-the-sustainable-development-goals-examples-from-the-who-small-countries-initiative-2017>).
87. Small Countries Initiative. In: WHO Regional Office for Europe [website]. Copenhagen: WHO Regional Office for Europe; 2017 (<http://www.euro.who.int/en/about-us/networks/small-countries-initiative>).
88. The world health report 2006 – working together for health. Geneva: World Health Organization; 2006 (<http://www.who.int/whr/2006/en/>).
89. Classifying health workers: mapping occupations to the international standard classification. Geneva: World Health Organization; undated (http://www.who.int/hrh/statistics/Health_workers_classification.pdf).
90. Ireland’s new approach to health and social care workforce planning. Dublin: Department of Health; 2017.
91. Minimum data set for health workforce registry. Geneva: World Health Organization; 2015 (http://www.who.int/hrh/statistics/minimum_data_set/en/).
92. Health workforce policies in OECD countries. Right jobs, right skills, right places. Paris: OECD Publishing; 2016 (<http://dx.doi.org/10.1787/9789264239517-en>).
93. National health workforce accounts – a handbook. Geneva: World Health Organization; 2016 (http://www.who.int/hrh/documents/brief_nhwfa_handbook/en/).

94. O'Neil M, Reimann S. Strengthening human resource management to improve health outcomes. *The eManager* 2009;1:1–17 (https://www.msh.org/sites/msh.org/files/emanager_2009no1_hrm_english.pdf).
95. McCaffery J. HRM systems strengthening and retention [online presentation]. Chapel Hill (NC): Capacity Project; 2009 (http://www.who.int/hrh/migration/hmr_core_expert_mccaffery.pdf?ua=1CFWI).
96. Kabene SM, Orchard C, Howard JM, Soriano MA, Leduc R. The importance of human resources management in health care: a global context. *Hum Resour Health* 2006;4(1):1.
97. Fearne R. Introducing community-based lifestyle clinics to improve population health in Malta. Granada: Escuela Andaluza de Salud Pública; 2016 (<http://www.integratedcare4people.org/practices/390/introducing-community-based-lifestyle-clinics-to-improve-population-health-in-malta/>).
98. Milicevic N, Haraldsdottir E, Lukic N, Baskott J, Rayment C, Downing J. Palliative care development in Serbia, five years after the national strategy. *Eur J Palliat Care* 2015;22(1):30–3 (http://www.opml.co.uk/sites/default/files/EJPC_22_1_Milicevic.pdf).
99. Mans L, van de Pas R, Marschang S. Civil society contributions to a sustainable health workforce in the European Union. *Public Health Panorama* 2017;3(3):514–22 (http://www.euro.who.int/__data/assets/pdf_file/0010/348373/Case_Study2_ENG.pdf?ua=1).
100. HealthWorkers 4all. Romania: summary report. Bucharest: Centre for Health Policies and Services; 2016 (http://www.healthworkers4all.eu/fileadmin/docs/eu/hw4all_papers/PUBL-ROM.pdf).
101. HealthWorkers 4all: collection of case studies. Practices of WHO Code implementation in Europe: the role of non-governmental actors. Amsterdam: HealthWorkers 4all; 2015 (http://www.healthworkers4all.eu/fileadmin/docs/eu/hw4all_papers/case_studiesREADER.pdf).
102. EPSU–HOSPEEM code of conduct and follow up on ethical cross-border recruitment and retention in the hospital sector. Brussels: European Federation of Public Service Unions & European Hospital and Healthcare Employers' Association; 2008 (<https://www.epsu.org/lv/node/4419>).
103. HOSPEEM–EPSU joint declaration on continuing professional development (CPD) and life-long learning (LLL) for all health workers in the EU. Brussels: European Hospital and Healthcare Employers' Association & European Federation of Public Service Unions; 2016 (https://www.wemos.nl/wp-content/uploads/2017/10/Case_Study2_ENG.pdf).
104. Monitoring official development assistance to the health sector in the Republic of Moldova. 2012 report. Copenhagen: WHO Regional Office for Europe; 2013 (http://www.euro.who.int/__data/assets/pdf_file/0006/242079/MONITORING-OFFICIAL-DEVELOPMENT-ASSISTANCE-TO-THE-HEALTH-SECTOR-IN-THE-REPUBLIC-OF-MOLDOVA-2012-REPORT.pdf?ua=1).
105. Managing the mobility of health professionals in the Republic of Moldova. In: South-eastern Europe Health Network [website]. Skopje: South-eastern Europe Health Network; 2017 (<http://seehn.org/managing-the-mobility-of-health-professionals-in-the-republic-of-moldova/>).
106. Ono T, Lafortune G, Schoenstein M. Health workforce planning in OECD countries. A review of 26 projection models from 18 countries. Paris: OECD Publishing; 2013 (Working Paper #26; <http://www.oecd-ilibrary.org/content/workingpaper/5k44t787zcwben>).
107. Polyzos N, Karakolias S, Mavridoglou G, Gkorezis P, Zilidis C. Current and future insight into human resources for health in Greece. *Open Journal of Social Sciences* 2015;3:5–14 (<https://www.scirp.org/journal/PaperInformation.aspx?PaperID=56472>).
108. Michelutti P, Malgieri A. Two pilot projects and two feasibility studies. The overall report. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union; 2016 (http://healthworkforce.eu/wp-content/uploads/2016/07/160630_WP5_D054_Overall_Report.pdf).
109. Edwards M, Fellows J. Pilot study experiences in Belgium using horizon scanning and the Delphi method as part of a national review of the general practitioner workforce. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union; 2016 (http://healthworkforce.eu/wp-content/uploads/2016/07/JAHWF_WP6_D064-Pilot-study-experiences-in-Belgium-using-horizon-scanning-and-Delphi-method.pdf).
110. Matrix Insight. EU level collaboration on forecasting health workforce needs, workforce planning and health workforce trends – a feasibility study. Brussels: European Commission; 2012 (https://ec.europa.eu/health/sites/health/files/workforce/docs/health_workforce_study_2012_report_en.pdf).
111. Mapping the core public health workforce. Final report. London: Centre for Workforce Intelligence; 2014 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/507518/CfWI_Mapping_the_core_public_health_workforce.pdf).
112. Workload indicators of staffing need (WISN) user's manual. Geneva: World Health Organization; 2015 (http://www.who.int/hrh/resources/wisn_user_manual/en/).
113. Skills for Health [website]. London: Skills for Health; 2017 (<http://www.skillsforhealth.org.uk>).
114. Al-Sawai A, Al-Shishtawy MM. Health workforce planning. *Sultan Qaboos Univ Med J*. 2015;15(1):e27–33.
115. Roberfroid D, Leonard C, Stordeur S. Physician supply forecast: better than peering in a crystal ball? *Hum Resour Health* 2009;7:10 (<https://human-resources-health.biomedcentral.com/articles/10.1186/1478-4491-7-10>).
116. Capaciteitsorgaan [Capacity body] [website]. Utrecht: Capaciteitsorgaan; 2017 (<http://www.capaciteitsorgaan.nl/>).

117. Van Greuningen M, Batenburg RS, Van der Velden LF. Ten years of health workforce planning in the Netherlands: a tentative evaluation of GP planning as an example. *Hum Resour Health* 2012;10:21.
118. Edwards M, Fellows J. Horizon scanning: future skills and competences of the health workforce in Europe. In: Joint Action on Health Workforce Planning and Forecasting [website]. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union; 2016 (<http://portal.healthworkforce.eu/future-skills-and-competences-of-the-health-workforce-in-europe/>).
119. Dussault G, Buchan J, Sermeus W, Padaiga Z. Policy summary 2: assessing future health workforce needs. Geneva: World Health Organization; 2010 (http://www.euro.who.int/__data/assets/pdf_file/0019/124417/e94295.pdf).
120. Bhutta ZA, Chen L, Cohen J, Crisp N, Evans T, Fineberg H et al. Education of health professionals for the 21st century: a global independent commission. *Lancet* 2010;375(9721):1137–8.
121. Shape of training. Securing the future of excellent patient care. Final report of the independent review led by Professor David Greenaway. London: Shape of Training; 2013 (<http://www.shapeoftraining.co.uk/reviewsofar/1788.asp>).



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ANNEXES

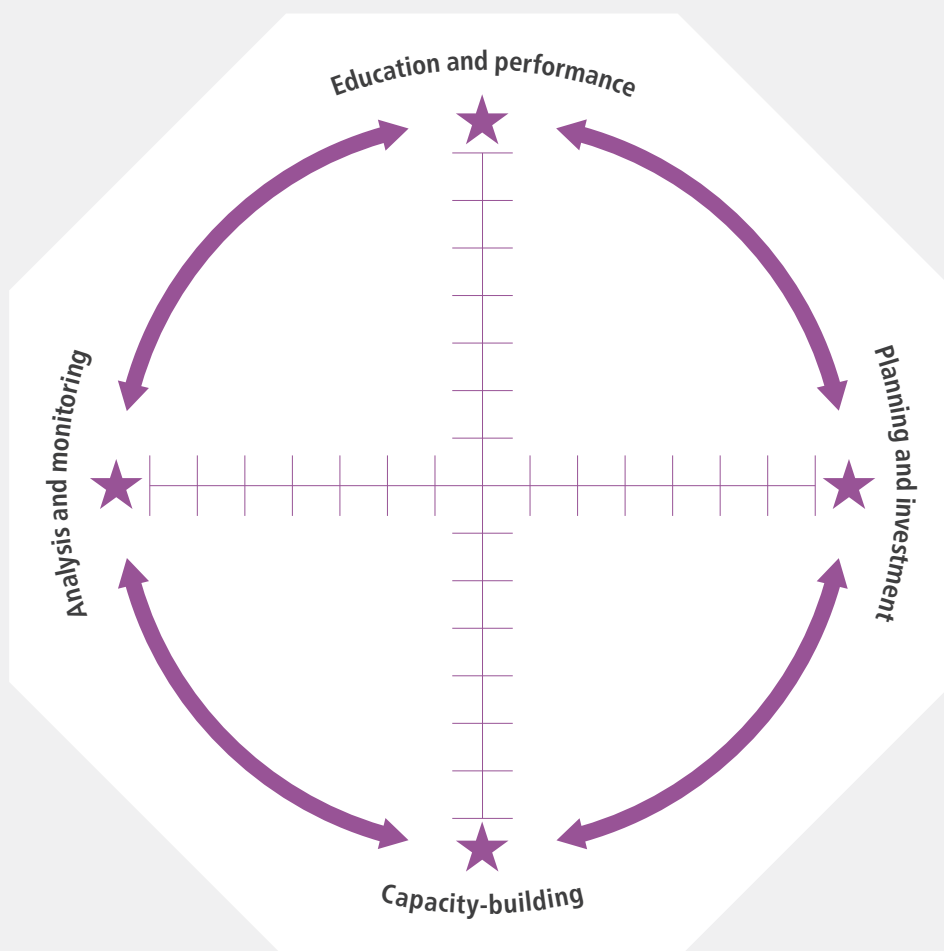


Annex 1.

THE POLICY MATRIX EXPLAINED

This toolkit makes reference to the policy matrix (Fig. A1.1). This matrix is a graphical aide memoire. It is laid out in four axes that align with the four strategic objectives of the framework and the four domains in this toolkit.

Fig. A1.1. A policy matrix



The matrix can be used to illustrate a relative assessment of a country's current position in relation to an ideal state, which an intervention supporting a policy objective seeks to achieve (represented by a star on the ends of the four axes). It can be used both to assess the current situation in each of the four domains, and to determine where policy attention should be focused.

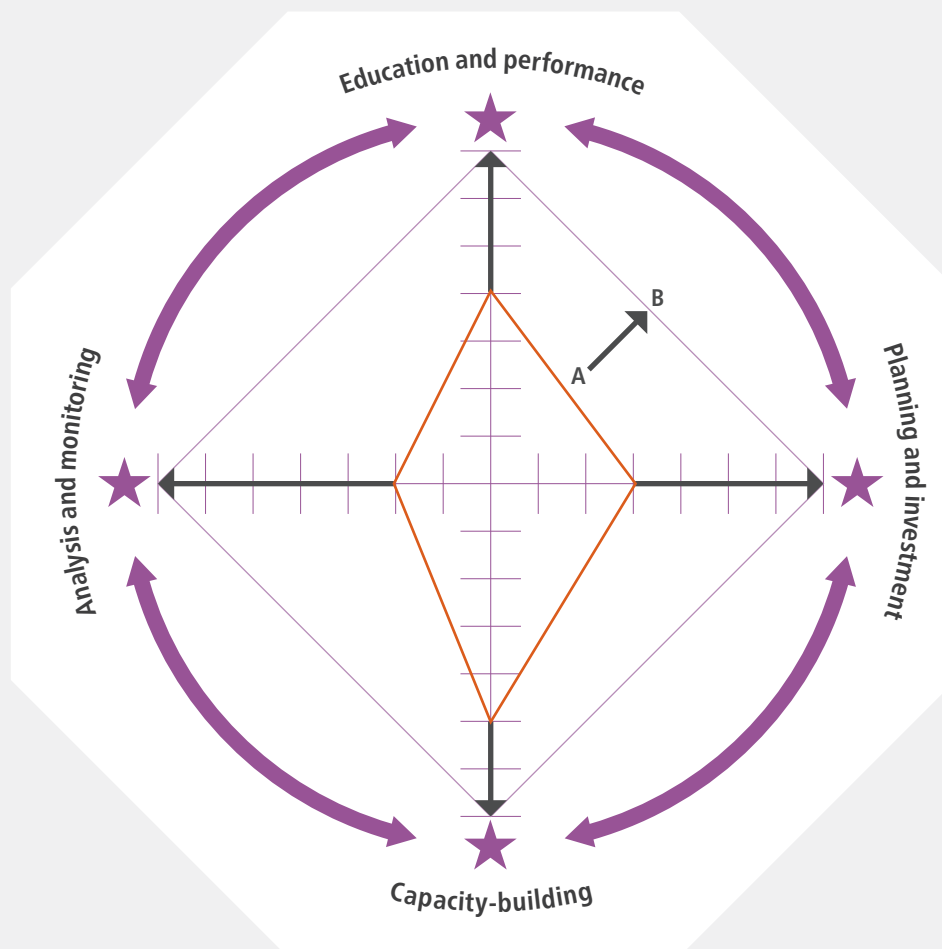
The desired outcome of policy interventions across the four areas is represented in Fig A1.2 by the blue boundary connecting all four stars, representing an ideal state B.

Policy-makers can use the matrix to identify the initial state across the four domains represented in Fig A1.2 by the red boundary connecting four crosses, representing a current state A. Fig. A1.2 represents a situation where a policy or policies have to operate in all four domains, but this will vary among Member States.

It is worth reiterating that the ideal state represented by the blue boundary is not an absolute end state, but represents successful delivery of an intervention to achieve a policy objective.

The initial state represented by the red boundary is, as stated earlier, a qualitative assessment of the starting position. An intervention designed to impact in only one domain may therefore have an initial state and a final state in the same place in the domains where intervention is not planned.

Fig. A1.2. Policy matrix in use – current state A relative to ideal state B



The matrix can be used as part of feedback and any progress assessment.

The matrix is a graphical support to describing the nature and relative scale of change required; it is not in itself a tool, but can be used by policy-makers to describe the impact of policy initiatives to decision-makers and observers, or as an aide memoire.

Annex 2.

USEFUL TOOLS AND GUIDELINES FOR HUMAN RESOURCES FOR HEALTH

Contextual documents

Underpinning publications

Towards a sustainable health workforce in the WHO European Region: framework for action

The development of this toolkit has been supported by the Standing Committee of the Regional Committee for Europe to operationalize the European framework for action on sustainable health workforce endorsed by the Sixty-seventh session of the WHO Regional Committee for Europe in September 2017.

WHO Regional Office for Europe (2017). Towards a sustainable health workforce in the WHO European Region: framework for action. Copenhagen: WHO Regional Office for Europe (http://www.euro.who.int/__data/assets/pdf_file/0011/343946/67wd10e_HRH_Framework_170677.pdf).

Global strategy on human resources for health: workforce 2030

The toolkit supports this global framework at the level of the WHO European Region. The global strategy on human resources for health (HRH) addresses all aspects of HRH to inform incisive and multisectoral action based on new evidence and best practices.

World Health Organization (2016). Global strategy on human resources for health: workforce 2030. Geneva: World Health Organization (<http://www.who.int/hrh/resources/globstrathrh-2030/en/>).

Health 2020: the European health policy framework

The policy aims to support action to achieve set goals through fulfilling two strategic objectives: improving health for all and reducing health inequalities; and improving leadership and participatory governance for health.

WHO Regional Office for Europe (2013). Health 2020. A European policy framework and strategy for the 21st century. Copenhagen: WHO Regional Office for Europe (<http://www.euro.who.int/en/health-topics/health-policy/health-2020-the-european-policy-for-health-and-well-being/publications/2013/health-2020.-a-european-policy-framework-and-strategy-for-the-21st-century-2013>).

The Tallinn Charter: Health Systems for Health and Wealth

The Tallinn Charter provides guidance and a strategic framework for strengthening health systems in the WHO European Region.

WHO Regional Office for Europe (2008). The Tallinn Charter: Health Systems for Health and Wealth. Copenhagen: WHO Regional Office for Europe (<http://www.euro.who.int/en/publications/policy-documents/tallinn-charter-health-systems-for-health-and-wealth>).

High-Level Commission on Health Employment and Economic Growth

Recognizing that investing in new jobs in the health and social workforce generates economic growth, the Commission developed innovative ways to address health labour shortages and ensure a good match between the skills of health workers and job requirements, to enhance the efficiency of the health sector and its contribution to inclusive growth.

World Health Organization (2018). High-Level Commission on Health Employment and Economic Growth. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/com-heeg/en/>).

WHO

Al-Shorbaji N, Atun R, Car J, Majeed A, Wheeler E, editors (2015). eLearning for undergraduate health professional education – a systematic review informing a radical transformation of health workforce development. London: Imperial College London & World Health Organization (<http://whoeducationguidelines.org/content/elearning-report>).

Buchan J, Dhillon I, Campbell J, editors (2017). Health employment and economic growth: an evidence base. Geneva: World Health Organization (http://www.who.int/hrh/resources/health_employment-and-economic-growth/en/).

Tan-Torres Edejer T, Baltussen R, Adam T, Hutubessy R, Acharya A, Evans DB et al., editors (2003). WHO guide to cost-effectiveness analysis. Geneva: World Health Organization (http://www.who.int/choice/publications/p_2003_generalised_cea.pdf).

WHO Regional Office for Europe (2016). From innovation to implementation – eHealth in the WHO European Region. Copenhagen: WHO Regional Office for Europe (<http://www.euro.who.int/en/publications/abstracts/from-innovation-to-implementation-ehealth-in-the-who-european-region-2016>).

World Health Organization (2011). Transformative scale up of health professional education. An effort to increase the numbers of health professionals and to strengthen their impact on population health. Geneva: World Health Organization (http://www.who.int/hrh/resources/transformational_education/en/).

World Health Organization (2007). Everybody's business. Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: World Health Organization (http://www.who.int/healthsystems/strategy/everybodys_business.pdf).

World Health Organization (2013). Transforming and scaling up health professionals' education and training: WHO education guidelines. Geneva: World Health Organization (http://www.who.int/hrh/resources/transf_scaling_hpet/en/).

World Health Organization (2015). Minimum data set for health workforce registry. Geneva: World Health Organization (http://www.who.int/hrh/statistics/minimun_data_set/en/).

World Health Organization (2015). Third global survey on eHealth. Geneva: World Health Organization (<http://www.who.int/goe/survey/2015survey/en/>).

World Health Organization (2015). Workload indicators of staffing need (WISN) user's manual. Geneva: World Health Organization (http://www.who.int/hrh/resources/wisn_user_manual/en/).

World Health Organization (2016). National health workforce accounts – a handbook. Geneva: World Health Organization (http://www.who.int/hrh/documents/brief_nhwfa_handbook/en/).

World Health Organization (2017). Global Health Workforce Alliance. The Human Resources for Health Toolkit. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/workforcealliance/knowledge/toolkit/hrhtoolkitpurposepages/en/>).

World Health Organization (2017). Health workforce education and training. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/education/en/>).

World Health Organization (2017). Health workforce governance and planning. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/governance/en/>).

World Health Organization (2017). Health workforce regulation and accreditation. In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hrh/documents/accreditation/en/>).

World Health Organization (2017). Managing health workforce migration – the global code of practice. In: World Health Organization [website]. Geneva: World Health Organization ([http://www.who.int/hrh/migration/code/practice/en/WHO guidelines and documents for governance and planning](http://www.who.int/hrh/migration/code/practice/en/WHO%20guidelines%20and%20documents%20for%20governance%20and%20planning/)).

World Health Organization (2018). Health impact assessment (HIA). In: World Health Organization [website]. Geneva: World Health Organization (<http://www.who.int/hia/tools/en/>).

World Health Organization (undated). Classifying health workers: mapping occupations to the international standard classification. Geneva: World Health Organization (http://www.who.int/hrh/statistics/Health_workers_classification.pdf).

European Union/European Commission

Centre for Workforce Intelligence (2014). Mapping the core public health workforce. Final report. London: Centre for Workforce Intelligence (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/507518/CfWI_Mapping_the_core_public_health_workforce.pdf).

Centre for Workforce Intelligence (2015). Horizon 2035. Future demand for skills: initial results. London: Centre for Workforce Intelligence (<https://www.gov.uk/government/publications/horizon-2035-future-demand-for-skills-initial-results>).

European Commission (2015). Recruitment and retention of the health workforce in Europe. Final report. Brussels: European Commission (https://ec.europa.eu/health/workforce/key_documents/recruitment_retention_en).

European Commission (2017). Digital agenda for Europe: key publications. In: European Commission [website]. Brussels: European Commission (<https://ec.europa.eu/digital-single-market/en/digital-agenda-europe-key-publications>).

Joint Action on Health Workforce Planning and Forecasting (2016). Future skills and competences of the health workforce in Europe. In: Joint Action on Health Workforce Planning & Forecasting [website]. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union (<http://portal.healthworkforce.eu/future-skills-and-competences-of-the-health-workforce-in-europe/>).

Matrix Insight (2012). EU level collaboration on forecasting health workforce needs, workforce planning and health workforce trends – a feasibility study. Brussels: European Commission (https://ec.europa.eu/health/sites/health/files/workforce/docs/health_workforce_study_2012_report_en.pdf).

University of Aberdeen (2017). MUNROS: Health Care Reform: the iMPact on practice, oUtcomes and costs of New roles for health pROfeSSionals. In: Health Economics Research Unit [website]. Aberdeen: University of Aberdeen (<https://www.abdn.ac.uk/heru/research/worgc/projects/munros/>).

European Union Joint Action on Health Workforce Planning and Forecasting

Health Services Management Training Centre (undated). Toolkit on health workforce planning [website]. Budapest: Health Services Management Training Centre, Semmelweis University (<http://hwftoolkit.semmelweis.hu/>)

Joint Action on Health Workforce Planning and Forecasting (2015). Handbook on health workforce planning methodologies across EU countries [website]. In: Joint Action on Health Workforce Planning & Forecasting [website]. Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union (<http://hwf-handbook.eu/>).

Joint Action on Health Workforce Planning and Forecasting (2017). The future health workforce horizon scanning. In: Brussels: Joint Action on Health Workforce Planning and Forecasting, Funded by the Health Programme of the European Union (<http://portal.healthworkforce.eu/>).

Semmelweis University (2017). Support for the health workforce planning and forecasting expert network [website]. Budapest: Semmelweis University (<http://www.healthworkforce.eu/>).

Organisation for Economic Co-operation and Development

Ono T, Lafortune G, Schoenstein M (2013). Health Workforce planning in OECD countries. A review of 26 projection models from 18 countries. Paris: OECD Publishing (Working Paper #26; <http://www.oecd-ilibrary.org/content/workingpaper/5k44t787zcwb-en>).

Organisation for Economic Co-operation and Development (2016). Health workforce policies in OECD countries. Right jobs, right skills, right places. Paris: OECD Publishing (<http://dx.doi.org/10.1787/9789264239517-en>).

Organisation for Economic Co-operation and Development (2017). New health technologies: managing access, value and sustainability. Paris: OECD Publishing (http://www.oecd-ilibrary.org/social-issues-migration-health/managing-new-technologies-in-health-care_9789264266438-en).

Other

Baumol WJ, de Ferranti D, Malach M, Pablos-Méndez A, Tabish H, Wu LG (2013). The cost disease: why computers get cheaper and health care doesn't. New Haven (CT): Yale University Press.

Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T et al (2010). Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 376(9756):1923–58 ([http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(10\)61854-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(10)61854-5/fulltext)).

International Labour Organization (1996–2018). Decent work [website]. Geneva: International Labour Organization (<http://www.ilo.org/global/topics/decent-work/lang--en/index.htm>).

Annex 3.

TOWARDS A SUSTAINABLE HEALTH WORKFORCE IN THE WHO EUROPEAN REGION: FRAMEWORK FOR ACTION

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Towards a sustainable health workforce in the WHO European Region: framework for action

This document presents a framework for action towards a sustainable health workforce in the WHO European Region.

The framework for action translates the Global Strategy on Human Resources for Health: Workforce 2030 to the regional context. The overall goal of the framework is to accelerate progress towards achieving the population health objectives of Health 2020, and the longer-term health goals for Member States in the European Region, by sustaining a transformed and effective health workforce within strengthened health systems. It sets out key strategic objectives for Member States in the Region, proposes policy options and implementation modalities, and provides guidance to health policy-makers, planners, analysts and others with a responsibility for health workforce issues.

The framework for action towards a sustainable health workforce is submitted for consideration and approval by the 67th session of the WHO Regional Committee for Europe.

Introduction

1. The health workforce has a critical role to play in tackling 21st-century health challenges related to demographic, epidemiological and technological changes, as well as those resulting from conflict and natural and man-made disasters. Health workers must be at the forefront of meeting these challenges, mitigating the effects of the social determinants of health and providing health promotion, disease prevention and integrated people-centred health services across the delivery of care.
2. Effective health and care in the WHO European Region can only be achieved fully with a sustainable, resilient health workforce, transformed with the knowledge, skills, values, ethics and behaviours to address the existing, emerging and new health challenges. Investment in the health workforce is a key enabler for health systems strengthening in the European Region.
3. Health workforce sustainability can be viewed as a dynamic situation which requires a broad-based policy focus on achieving and sustaining a workforce that best meets identified population health needs. The policy and planning focus must reflect national priorities, resources and international obligations, while taking into account flows of workers between regions, countries and sectors.
4. Achieving a transformed and sustainable health workforce in Member States requires effective policy actions across various sectors, including health, social care, welfare, education, finance, labour and foreign affairs. Intersectoral processes must engage the public and private sectors, civil society, trade unions, health worker associations, regulatory bodies and educational and training institutions. This approach will require national leadership and strong political commitment, as well as effective partnerships and cooperation among organizations, sectors and countries in the Region and globally. It must also be based on a recognition that the workforce is composed of individual health workers with personal and professional rights and responsibilities.
5. While Member States of the European Region have made progress in recent years, many challenges in human resources for health (HRH) must be addressed fully in order to achieve optimal contribution of the workforce. These challenges include supply–demand imbalances, gender inequality and gender imbalances, achieving an appropriate skills mix, geographical maldistribution, gaps in quality, attaining decent working conditions and improving recruitment and retention. In addition, funding constraints will place increasing pressure on decision-makers in many Member States as they work to address these health workforce challenges.
6. Two recent global strategic developments, the *Global Strategy on Human Resources for Health: Workforce 2030*¹ (2016) and *Working for Health and Growth: Investing in the Health Workforce*² (2016), provide a unique opportunity for a paradigm shift in health workforce policy and reinforce the key focus of the Tallinn Charter: Health Systems for Health and Wealth³ (2008). Member States can build on these strategic directions and on the evidence generated for the United Nations High-Level Commission to develop an approach to health workforce sustainability that recognizes it as a critical investment, not a cost, thereby enabling more effective health services delivery and improved health, well-being and economic prosperity.
7. This framework for action for health workforce sustainability has been developed by the WHO Regional Office for Europe to support Member States of the European Region in moving towards a sustainable workforce by building on the strategic objectives set out in the *Global Strategy*, and adapting them to the regional context. A summary of the framework is provided in Fig. 1.
8. The breadth of the framework is extensive and inclusive, covering the full range of HRH, focusing on systems, organizations and individuals (see Box 1).

1 The *Global Strategy*, published by WHO, 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.

2 *Working for Health and Growth* is a report of the United Nations High-Level Commission on Health Employment and Economic Growth.

3 The Tallinn Charter is a commitment by Member States in the WHO European Region to improve population health by strengthening health systems, which includes the health workforce.

Box 1. What is the health workforce or human resources for health (HRH)?

The statistical office of the European Union (Eurostat), the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD) and WHO are working to progressively standardize definitions of the health workforce and to ensure comprehensive coverage. Each Member State should verify that its analysis and policies are based on an inclusive definition of its own health labour market and workforce.

The *Global Strategy on Human Resources for Health: Workforce 2030* and the European framework for action adopt a broad and inclusive definition of HRH, which covers all workers in the health services, public health and in related areas, and workers who provide support to these activities. This broad scope usually includes, but is not limited to, health professionals, other health and social care workers, informal carers, support staff, administrators and managers. Such workers can be located in one or more environments, such as public health, primary and community care, long-term care, secondary and tertiary care, or in support functions.

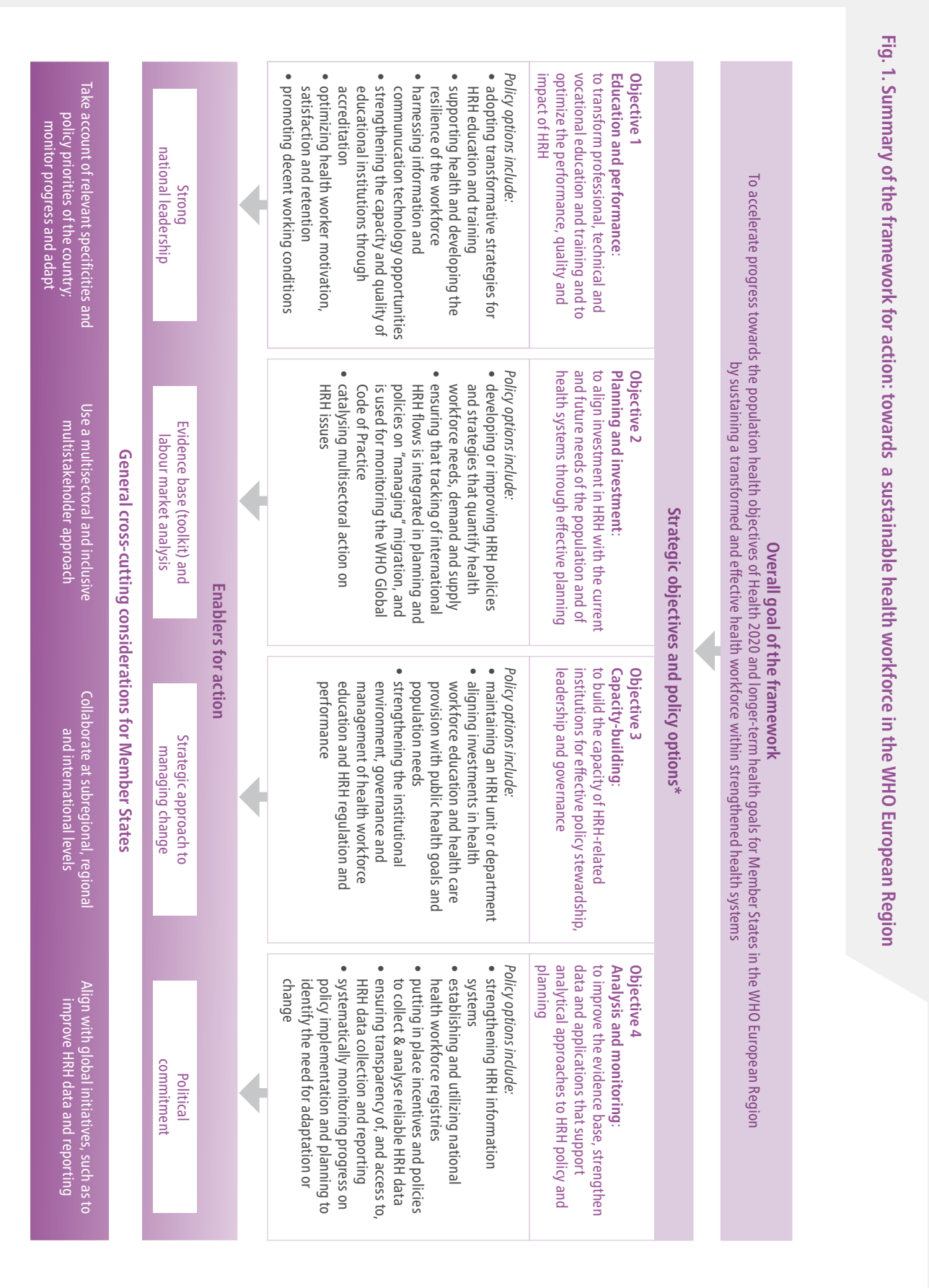
9. The framework for action, which is supported by a toolkit of strategies, planning tools and case studies, consists of three sections:
 - the overall goal of the framework, which highlights alignment of the *Global Strategy* with the regional context;
 - the four strategic objectives, with associated policy options to be considered for action by Member States; and
 - critical enablers and general cross-cutting considerations for Member States applying the framework.
10. The Regional Office for Europe has conducted an extensive consultation process with governing bodies and with other stakeholders on the draft version of the framework. This process has included convening expert group meetings, holding a web-based consultation and consulting with other stakeholders throughout the European Region.

Background: policy context

11. In 2015, United Nations Member States unanimously adopted a set of goals to end poverty, achieve good health and well-being, protect the planet and ensure prosperity for all as part of the new 2030 Agenda for Sustainable Development. Each of the 17 Sustainable Development Goals (SDGs) has specific targets to be achieved by 2030, and many have direct or indirect linkages with health workforce issues.
12. Taking the 2030 Agenda for Sustainable Development as its frame of reference, the *Global Strategy on Human Resources for Health: Workforce 2030*, which was unanimously adopted by the Sixty-ninth World Health Assembly in resolution WHA69.19 in May 2016, urges Member States to apply an integrated approach to addressing health workforce challenges at the national and international levels. Such an integrated approach will be informed by a comprehensive health labour market framework and underpinned by the milestones to be achieved by 2020 and 2030 [Annex 4], which will be used to assess progress.
13. The *Global Strategy* sets out four objectives for Member States:
 - to optimize the health workforce to accelerate progress towards achieving universal health coverage and the SDGs;
 - to understand and prepare for the future needs of health systems, harnessing the rising demand in health labour markets to maximize job creation and economic growth;
 - to build the institutional capacity to implement this agenda; and
 - to strengthen data on HRH, for analysis, monitoring and ensuring accountability for the implementation of national strategies and to support the global monitoring and accountability framework.⁴

⁴ For the complete monitoring and accountability framework, Member States should refer to Annex 3 of the *Global Strategy*.

Fig. 1. Summary of the framework for action: towards a sustainable health workforce in the WHO European Region



*Examples of policy options are provided; Member States should develop, review and prioritize from the broad list of options; HRH: human resources for health.

14. As emphasized in the introduction, these four strategic objectives have been adapted to the regional context in the framework for action. The recommendations of the High-Level Commission on Health Employment and Economic Growth⁵ focus on proposed solutions to transform the health workforce through the implementation of enabling policies in order to achieve the SDGs. To take these recommendations forward, the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD) and WHO developed a joint intersectoral five-year action plan for health employment and inclusive economic growth (2017–2021), which was adopted by the Seventieth World Health Assembly in resolution WHA70.6 in May 2017.
15. In order to transform health services delivery and move towards universal health coverage, these two key global HRH strategic initiatives (the *Global Strategy* and *Working for Health and Growth*) emphasize that health workforce policy must be integrated with health services and public health policy. In the European Region, Health 2020 sets out the required direction of strategic change for health services: the adoption of inclusive models of health care; a people-centred approach; the reorientation of health systems towards a collaborative primary care approach, built on team-based care; and the realization of the potential for technological innovation, such as e-health.

Overall goal of the framework

16. The overall goal of the framework for action is to accelerate progress towards achieving the population health objectives of Health 2020 and the longer-term health goals for Member States in the European Region by sustaining a transformed and effective health workforce within strengthened health systems. The framework aligns with and builds on the *Global Strategy* and *Working for Health and Growth*. It is intended for Member States and other relevant stakeholders.
17. The framework provides guidance to health policy-makers, planners and analysts and others with a responsibility for health workforce issues. It goes hand in hand with a toolkit, which provides access to relevant diagnostic, situation assessment, policy and planning tools, analytical approaches and examples of good practice. The toolkit takes a multisectoral approach and is structured to enable Member States and other stakeholders to access, review and implement policies, plans, strategies and tools that support the attainment of the four strategic objectives.

Applying the framework: strategic objectives

18. Member States of the European Region can progress towards achieving a sustainable health workforce by implementing the four strategic objectives identified in the *Global Strategy*, which have been adapted to the regional context as follows:
 - to transform education and performance
 - to align planning and investment
 - to build capacity
 - to improve analysis and monitoring.
19. These four strategic objectives are discussed in more detail below. They provide an outline of how Member States can develop a more comprehensive and adaptive approach to HRH challenges. The *Global Strategy* provides milestones to assist Member States with tracking progress at two marker dates: 2020 and 2030. These milestones are listed in [Annex 4]. Member States can use the framework to assess their policy

⁵ The recommendations of the High-Level Commission on Health Employment and Economic Growth were adopted by the United Nations General Assembly at its seventy-first session in resolution 71/159 in December 2016.

priorities and utilize the toolkit to evaluate their national situation and to identify evidence and good practice for implementing transformative workforce policies. They can also apply the milestones as a means of tracking and reporting on progress towards achieving health workforce sustainability.

Strategic objective 1: education and performance

20. Strategic objective 1 is to transform professional, technical and vocational education and training and to optimize the performance, quality and impact of HRH through evidence-informed policies, contributing to healthy lives and well-being, effective universal health coverage, and resilient and strengthened health systems at all levels.
21. There is a range of policy options for Member States to improve health workforce education and performance. These include but are not limited to:
 - (a) scaling up transformative, high-quality professional, technical and vocational education and training and lifelong learning so that all health workers have skills that match the health needs of the population and can work to their full potential;
 - (b) ensuring the development and delivery of health workforce education that aligns system and individual needs in order to address national requirements for leadership, health, public health and care requirements;
 - (c) harnessing information and communication technology to support the delivery of transformative education and bolster health workforce performance;
 - (d) strengthening the capacity and quality of educational institutions through accreditation; and
 - (e) supporting health workforce performance, motivation, satisfaction, retention and well-being by promoting decent work (as defined by the ILO)⁶ and positive working environments.

Strategic objective 2: planning and investment

22. Strategic objective 2 is to align investment in HRH with the current and future needs of the population and of health systems through effective planning. This must take account of the dynamics of the health labour market and give consideration to approaches to better align planning and investment in the workforce with service delivery priorities. It will also necessitate using planning approaches to address identified shortages and to improve the distribution of health workers and skills mix.
23. Policy options that Member States should consider in relation to investment approaches and to effective HRH planning include:
 - (a) stimulating investments in creating decent health sector jobs with the right skills in the right numbers and in the right places, particularly for women and young people;
 - (b) undertaking comprehensive analysis of the labour market in order to develop appropriate policies and strategies;
 - (c) developing tools and plans that quantify health workforce needs, demand and supply for projected future scenarios;
 - (d) catalysing multisectoral action and engagement to agree on investment in HRH;
 - (e) developing policies and tools to assess and to optimize the required skills mix; and
 - (f) investing in long-term public policy stewardship and strategies, particularly with regard to respecting the rights of female workers.

⁶ According to the ILO, "Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men." (<http://www.ilo.org/global/topics/decent-work/lang--en/index.htm>, accessed 28 June 2017).

Strategic objective 3: capacity-building

24. Strategic objective 3 is to build the capacity of HRH-related institutions for effective policy stewardship, leadership and governance of actions in order to develop and to maintain a sustainable health workforce.
25. The capacity-building policy options for active consideration of Member States include:
 - (a) ensuring that the importance of the governance, system stewardship and leadership of HRH is clearly articulated and evident in the national policy framework;
 - (b) maintaining an HRH unit or department at the appropriate national and regional levels with sufficient capacity and standing to conduct analysis, convene stakeholders and enact policy reporting across government; and
 - (c) improving and strengthening the institutional environment, governance and management of health workforce education, and HRH regulation, accreditation and performance.

Strategic objective 4: analysis and monitoring

26. Strategic objective 4 is to improve the evidence base and to strengthen the data and applications that support analytical approaches to HRH policy and planning. The *Global Strategy* sets out policy options for Member States on approaches to improve HRH data collection, reporting and analysis. These include:
 - (a) supporting evidence-informed policy and planning by strengthening HRH information systems and other mechanisms for the effective collection, reporting and analysis of reliable HRH data, such as national health workforce registries and national health workforce accounts;
 - (b) ensuring the transparency of and access to HRH data and its regular reporting; and
 - (c) monitoring progress on policy implementation and planning by applying labour market analytical approaches in order to identify the need for any adaptation or change.

Enablers for action

27. The four strategic objectives set out above can be achieved only once enabling efforts and mechanisms are in place. The enablers described below reinforce the core need for strong leadership by Member States and for coordinated efforts across national boundaries, underpinned by the use of the evidence-informed toolkit and by labour market analysis and supported by change management and sustained political commitment.

Strong national leadership

28. Resolution WHA69.19 urges Member States to adopt the *Global Strategy*. Achieving the four Region-specific strategic objectives set out in the framework will require intersectoral action and engagement with the public and private sectors, civil society, professional associations, trade unions, nongovernmental organizations, regulatory bodies and training institutions, as well as a coordinated, whole-of-government response. Member States are encouraged to demonstrate leadership by ensuring that governance and regulation mechanisms covering the performance of the entire health sector are in place. They should also develop labour market policies to foster the demand for a sustainable health workforce.
29. In addition, Member States would benefit from exercising strong leadership in terms of strengthening capacities so as to support and enable the existing health workforce to contribute to the achievement of universal health coverage. This can be done by analysing, forecasting and actively addressing gaps between health workforce needs, demand and supply, and by building institutional capacity at the subnational and national levels for the effective governance and leadership of HRH. Member States will need to allocate sufficient financial resources to support transformation and change and to ensure consolidation of a core set of health workforce data for policy and planning purposes and for annual reporting within the global monitoring and accountability framework⁷ and to provide an evidence base for national policy and planning.

⁷ For the complete monitoring and accountability framework, Member States should refer to Annex 3 of the *Global Strategy*.

Evidence-informed policy, planning and labour market analysis: a toolkit for a sustainable health workforce in the WHO European Region

30. Achieving a transformed and sustainable health workforce requires a systematic and integrated policy focus. This necessitates whole system analysis and thinking, shaped by an understanding of labour market dynamics and policy connections, and supported by the application of relevant strategies, and planning and analytical tools.
31. Fig. 2 sets out the key elements of a labour market analytical approach. It emphasizes the multiple policy options that exist at different stages of the labour market cycle as well as the critical need to ensure that implemented policies are in alignment. When Member States and other stakeholders consider which health workforce policies to implement, they must be able to make informed and coordinated policy decisions that take into consideration all aspects of the health workforce – production, work life-cycle, flows, existing maldistribution and inefficiencies. In short, full consideration should be given to health-care labour market dynamics.
32. The toolkit (see Box 2) will support Member States and other stakeholders in the implementation of the framework for action, and in related labour market analysis.
33. The toolkit draws on a wide range of relevant resources and materials, such as WHO studies and recommendations, the work of the European Union Joint Action on Health Workforce Planning and Forecasting, the European Commission Expert Group on European Health Workforce, the OECD, country case studies and other research and analytical sources. It provides support materials to assist in assessing the current HRH situation and to guide HRH policies and actions in accordance with individual Member State priorities and context.

Box 2. Toolkit for a sustainable health workforce in the WHO European Region

Focusing largely on regional specific evidence, the toolkit provides Member States and other stakeholders with structured access to effective strategies, planning tools and case studies of HRH practice.

The toolkit underpins the framework's four strategic objectives:

- education and performance
- planning and investment
- capacity-building
- analysis and monitoring.

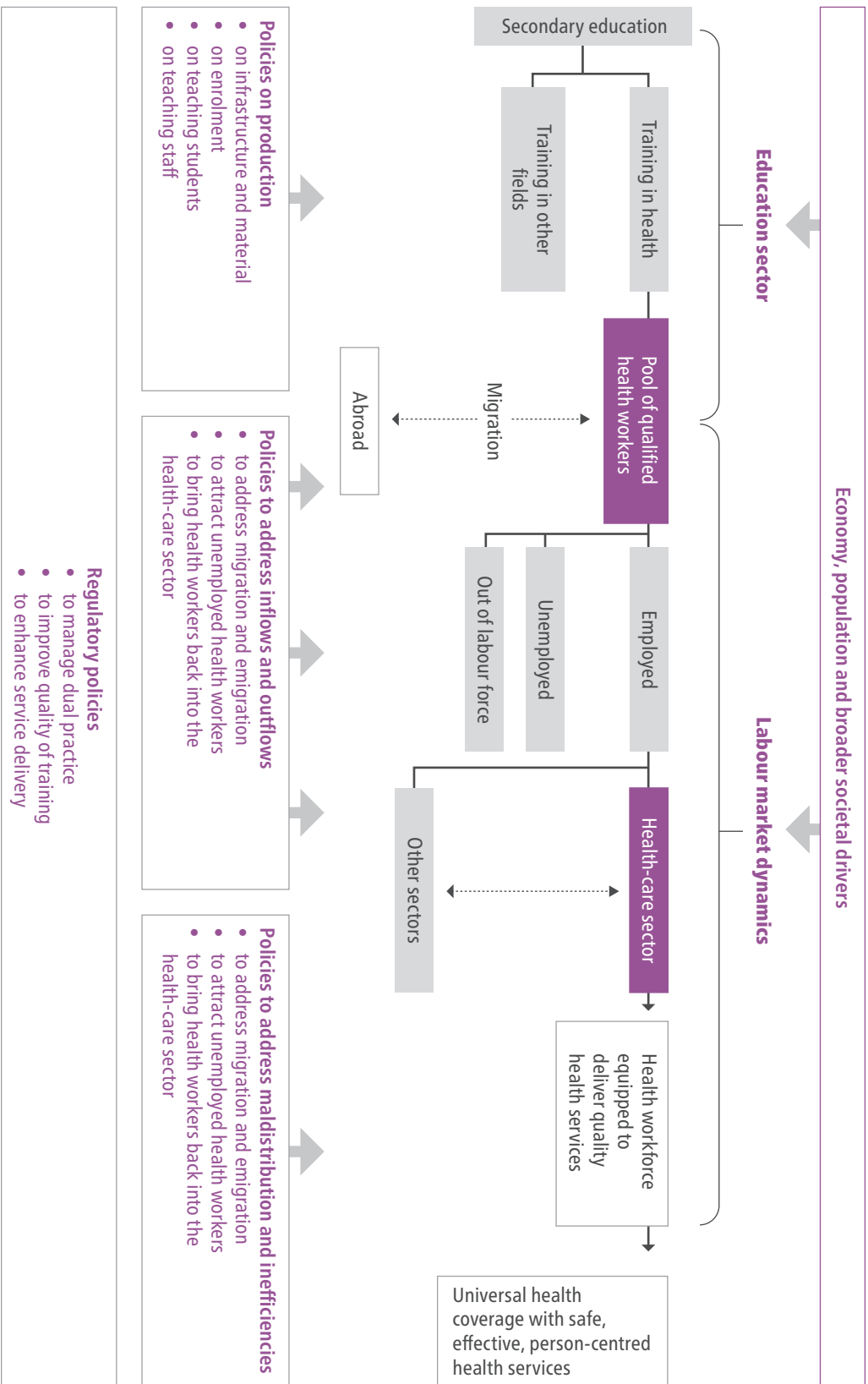
The materials highlighted in the toolkit are categorized as follows:

- international/national HRH strategic documents
- analytical, planning and management tools
- case studies
- research and evaluation.

Strategic approach to managing change

34. Effective governance and leadership requires harnessing the evidence base and establishing mechanisms for managing change in health systems, which will include the ability to adapt and be responsive to changing environments, priorities and innovations. This necessitates a strategic, adaptive and dynamic HRH approach, not a "one-off" plan, and should be based on continuous review of environmental and contextual factors that affect the performance of the health workforce and the delivery of services, and informed by lessons learned from practice.

Fig. 2. Policy levers and the health-care labour market



Source: adapted from the *Global Strategy on Human Resources for Health: Workforce 2030*.

35. More broadly, any action-oriented approach to achieving sustained transformation requires effective change management, setting a clear direction supported by effective communication, engaging with stakeholders, piloting and evaluating innovations, and sustaining a process of implementation, review and adjustment.

Political commitment

36. Unwavering support at the highest level of government and policy will be a key success factor. A sustained approach to addressing such health workforce challenges requires a policy focus on identifying how best to plan, educate, deploy, manage, motivate and reward health workers, and on the subsequent implementation of such processes. Mobilizing political commitment and financial resources for the health system and for its critical workforce at the country level will be critical to addressing such challenges.

General cross-cutting considerations

37. In addition to ensuring that enabling actions are in place, Member States will need to take the following four broader cross-cutting considerations into account in developing a transformative and sustainable approach to health workforce management.

The approach must be context specific.

38. Member States, together with other stakeholders, will seek to ensure that their approach to identifying and to implementing policy priorities takes the relevant demographic, geographic, labour market and organizational specificities of their country or subregion into account.

The approach must be inclusive, multisectoral and multistakeholder.

39. While Member States will need to demonstrate strong leadership in setting the direction for change and in the overall coordination of policy prioritization and governance, it is also necessary to consider how best to engage effectively with other sectors and stakeholders and to maximize their contributions. Various stakeholders may lead the implementation of the different policies and approaches. A multisectoral approach is therefore required and the participation of civil society, nongovernmental organizations and the private sector will be vital.

An effective approach will include collaboration at the subregional, regional and international levels.

40. Member States have a clear leadership role in the process and they can achieve this within an enabling international environment. The core HRH challenges are common to all countries. There is much to be gained from effective collaboration on health workforce sustainability issues with other Member States and with international bodies, such as the European Union, the ILO and the OECD through subregional, regional and international policy dialogue, knowledge exchange and cooperation.

The approach must align with relevant global and regional initiatives.

41. Within the European Region, Health 2020 provides the broad policy direction; the framework draws on the *Global Strategy* and the recommendations of the High-Level Commission as the two key sources of guidance in developing an approach that is relevant to the regional context. Continued implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel will also be a critical element in monitoring the international mobility of the health workforce and in assisting Member States to move towards achieving sustainable health workforces.

Responsibilities of WHO

Global

42. Resolution WHA69.19 requests WHO to provide support to Member States on the implementation and monitoring of the *Global Strategy*, and to submit a regular report to the World Health Assembly on progress made towards the milestones established by the *Global Strategy*, aligned with reporting on the WHO Global Code of Practice.

Regional

43. The Regional Office for Europe will have several main areas of responsibility in taking forward the framework. It will:
- (a) promote the use of the framework by Member States as they consider the *Global Strategy*, its milestones and the recommendations of the High-Level Commission;
 - (b) compile, maintain and update the toolkit to ensure that it remains relevant in supporting Member States and other stakeholders as they identify and address health workforce priorities;
 - (c) provide the necessary technical assistance to Member States as they identify and address their individual health workforce priorities within the framework, consider the *Global Strategy* milestones and other potential indicators of progress; and
 - (d) support regional, subregional and national policy dialogues on health workforce issues that emerge as critical priorities.

Recommendations for other stakeholders and international partners

44. The contents of the framework and toolkit are of relevance and value to other stakeholders in the health workforce area, including employers in the public and private sectors, nongovernmental organizations, professional associations, educational and training institutions, labour unions, civil society, bilateral and multilateral development partners and international organizations.
45. Stakeholders are advised to give full consideration to the framework and the toolkit to inform and shape their input when participating in policy dialogues and in making other contributions to improving HRH policy and planning. Some examples include:
- (a) educational institutions adapting their education programmes and training models to meet population health priorities and to align with national accreditation standards (norms);
 - (b) educators, employers and funders reaching informed agreement on how to plan for, train and develop a sufficient number of health workers of appropriate quality while promoting gender equality;
 - (c) professional councils, associations and regulatory bodies that hold relevant HRH data collaborating to ensure that reliable and comprehensive data is accessible for analysis; and
 - (d) researchers and analysts focusing on evaluating cost-effective approaches to implementing HRH policies.

Implementation

46. The framework and toolkit are intended to support Member States in the European Region. At the country level, the situation assessment and policy options identified as most relevant to the individual Member State should be embedded in its national health and development strategies and plans.
47. Member States will need to consider how best to include specific HRH targets and indicators when developing national policies and strategies. It is assumed that existing effective processes and mechanisms for a health sector review at the country level will include a regular assessment of progress on the health workforce agenda in the national context.

48. The *Global Strategy* provides a monitoring and accountability framework to assess progress towards achieving the milestones listed in [Annex 4]. Global accountability will include a progressive agenda, facilitated by the WHO Secretariat, to implement national health workforce accounts, with annual reporting by countries on core HRH indicators. The overall aim is to streamline reporting requirements for Member States by progressively improving HRH data, effectively linking the monitoring of the *Global Strategy* with that of the WHO Global Code of Practice and other HRH-focused global and regional resolutions and strategic documents.
49. While the four main strategic objectives of the framework are derived from the *Global Strategy* and linked to the report of the High-Level Commission, they are tailored to regional specificities and priorities, and the policy options of the toolkit are intended for consideration by Member States in the European Region. The relevance and applicability of policy options must be determined by the specific realities of each Member State vis-à-vis the health needs of the population, education policies, labour market dynamics and health system requirements.

Annex 4.

THE GLOBAL MILESTONES SET OUT IN THE *GLOBAL STRATEGY ON HUMAN RESOURCES FOR HEALTH: WORKFORCE 2030*

By 2020

- (a) All countries have inclusive institutional mechanisms in place to coordinate an intersectoral health workforce agenda.
- (b) All countries have a human resources for health unit with responsibility for the development and monitoring of policies and plans.
- (c) All countries have regulatory mechanisms to promote patient safety and adequate oversight of the private sector.
- (d) All countries have established accreditation mechanisms for health training institutions.
- (e) All countries are making progress on health workforce registries to track health workforce stock, education, distribution, flows, demand, capacity and remuneration.
- (f) 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 Secretariat annually.
- (g) All bilateral and multilateral agencies are strengthening health workforce assessment and information exchange.

By 2030

- (a) All countries are making progress towards halving inequalities in access to a health worker.
- (b) All countries are making progress towards improving the course completion rates in medical, nursing and allied health professional training institutions.
- (c) 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.
- (d) All bilateral and multilateral agencies are increasing synergies in official development assistance for education, employment, gender and health, in support of national health employment and economic growth priorities.
- (e) As partners in the United Nations Sustainable Development Goals, to reduce barriers in access to health services by working to create, fill and sustain at least 10 million additional full-time jobs in the health and social care sectors to address the needs of underserved populations.
- (f) As partners in the United Nations Sustainable Development Goals, to make progress on Goal 3c to increase health financing and the recruitment, development, training and retention of the health workforce.

Source: World Health Organization (2016). *Global strategy on human resources for health: workforce 2030*. Geneva: World Health Organization (<http://www.who.int/hrh/resources/globstrathrh-2030/en/>).