

Labour market change and the international mobility of health workers

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Abstract

Most high-income countries are facing the social, health and economic challenges of an ageing population, including NCDs. This will have a significant impact on the demand for services in the future, which in turn will increase and change the workforce needs of high-income countries.

In this paper, we summarise the situation with regards to various elements of this problem. We look at the current trends in global population health, and the health labour market backdrop, in order to get a picture of how things stand. We then look at the policy responses that are available to tackle the skills shortages, and achieve a sustainable workforce, with a focus on mobility and migration, and in particular on sustainable and ethical recruitment.

Our findings were that:

- the challenge of NCDs is 'the most important public health problem in the European Region', and a workforce that is fit for purpose to tackle it will need new roles, workers and skills, as well as the continual development, retraining and redeployment of existing staff.
- the foundation of a strong and effective health workforce is the ability to effectively match up the supply and skills of health workers to the needs of the population. To achieve this, countries have to be able to assess their future health workforce needs.
- Health is labour intensive, but investment in the health workforce can be an economic multiplier.
- Health workforce skills shortages and mismatches are currently widespread.
- There was a global needs-based shortage of health workers in 2013 of about 17.4 million, projected to remain at more than 14 million in 2030.
- The health workforce profile in OECD countries is increasing, ageing and often poorly distributed, with some countries having a high reliance on foreign-trained health workers.
- To achieve sustainability, countries must address market failures that lead to the maldistribution of health care workers, focus their policy and funding efforts on improving the retention of workers (including foreign-trained workers), and improve the performance of their workforce.
- Countries should use international recruitment strategies in line with the WHO *Code of Practice*.

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Introduction

The aim of this paper is to summarize labour market changes in the health care sector, and to discuss the policy options to respond to a growing need for health workers. It focuses primarily on an analysis of current international datasets and projections of the health workforce, as well as recent policy papers and evidence, published since 2010.

An earlier version of this paper was tabled at the plenary meeting of the Migration Policy Institute's Transatlantic Council on Migration, held in Brussels on 24–25 September 2018, on 'Building Migration Systems for a New Age of Economic Competitiveness' (www.migrationpolicy.org).

This paper focuses on some of the issues that were also discussed at the 2nd International Platform on Health Worker Mobility, a meeting jointly convened by the Organisation for Economic Co-operation and Development (OECD), International Labour Organization (ILO) and World Health Organization (WHO), held in Geneva on 13–14 September 2018¹. This meeting discussed promising policy measures and proposed strategic actions to strengthen the management and governance of health worker mobility.

This paper is formed of five further sections:

- **Section 2** summarises the key global trends in population health and what these mean for the health workforce.
- **Section 3** examines the health labour market backdrop, with a focus on workforce mobility and migration.
- **Section 4** considers the policy context, and policy responses to tackle the skills shortages and mismatches in the health labour market.
- **Section 5** examines health workforce mobility and migration in more detail, reporting on the opportunities mobility creates. It also explains which of the available policy options meet 'ethical' and efficiency considerations, notably the WHO *Code of Practice*.
- **Section 6** looks at the key policy messages that emerge from the analysis and synthesis conducted for the paper.

The health system and labour market context

Demographic change: For most OECD countries, an ageing population

Most high-income countries are facing the social, health and economic challenges of an ageing population. There has been a significant improvement in life expectancy over recent years in OECD countries, with the average life expectancy at birth ten years higher today than it was in 1970. Across these countries, the average life expectancy at birth is now 80.6 years. Women can expect to live five years longer than men.

In 2015, there were 106 countries across the world where less than 10% of the population was aged 60 and older, but by 2050 this is projected to have decreased to only 41. Further, while only one country had more than 30% of its population aged 60 and older in 2015, by 2050 this is projected to have risen to 57.²

The impact of an ageing population on health services

The recent World Health Organization (WHO) Independent High-Level Commission on Noncommunicable Diseases (NCD's) highlighted and reinforced global concerns that NCDs and mental disorders currently pose one of the biggest challenges to health and development globally.³

In 2015, UN member states agreed a range of Sustainable Development Goals (SDGs). These included a specific health goal – SDG target 3, to 'ensure healthy lives and promote well-being for all at all ages'. Within this there is a specific NCD target, which is a one-third reduction in premature NCD mortality by 2030 through prevention and treatment of NCDs and the promotion of mental health and wellbeing (SDG target 3.4).

The WHO Commission report reinforced the key point that NCDs and their risk factors have critical links to:

- health systems and universal health coverage (UHC)
- environmental, occupational and social determinants of health
- communicable diseases
- maternal, child and adolescent health
- reproductive health
- ageing and palliative care.

It noted that multi-morbidity is a key challenge for health and social care delivery. It also stressed that failure to implement proven interventions to address the NCD challenge is leading to rapidly increasing health care costs, and that a continued lack of investment in tackling NCDs will have 'enormous' health, economic, and societal consequences in all countries.³

In this context, the Commission stated that ‘the 40 million health workers globally’, including community health workers and nurses, have an important role in advocating for and delivering on, the Commission’s recommendations.

NCDs present a prominent and growing challenge in high income countries. OECD has highlighted that across its member countries, more than one in three deaths are caused by ischaemic heart disease, stroke or other circulatory diseases, and one in four are due to cancer. Since the late 1990s, obesity rates have risen rapidly too: 54% of adults in OECD countries today are overweight, including 19% who are obese. Obesity rates are higher than 30% in Hungary, Mexico, New Zealand and the United States.

A country specific example of the impact of the ageing population on health and social care services is provided by recent data modelling in England, where it is estimated that the number of older people with care needs will expand by 25% by 2025, mainly reflecting population ageing, rather than an increase in the prevalence of disability.⁴

What are the implications of emerging health needs for the health workforce?

Member states of the WHO European Region met in April 2018 to determine how best to respond to the challenge of NCDs – ‘the most important public health problem in the European Region’. One of the four functions of the health system that they identified as underpinning an effective response to the NCD challenge was the health workforce (the others being health financing, medicines policy and information solutions).⁵

An efficient response to population ageing and the NCD challenge must place an emphasis on a primary care-led, interdisciplinary health team-based model.

This has major implications for how health systems train, recruit, deploy and manage the health workforce. In short, a future health workforce that is ‘fit for purpose’ to meet the challenge of NCDs will require new workforce roles and new workers who are trained in the correct skills and competences, based on relevant curricula, and scaled-up production capacity of educational institutions.⁶

The current workforce will also need to be used more effectively. This will require continual development and retraining, changes in task sharing (also referred to in some countries as skill mix change), effective performance management, and redeployment.

In most countries, this will require greater focus on primary care-led services, enabling improved access for the population. This will have implications for the deployment of more staff in rural and underserved areas, through effective recruitment and retention policies, enhanced by appropriate information and communication technology (ICT) solutions. This in turn requires workforce policy and planning, regulation and management that is aligned with service planning and delivery, and that supports integrated teams rather than isolated individual health professionals.

As emphasised by the WHO in the *Global Strategy on Human Resources for Health (HRH)*⁷, the foundation of a strong and effective health workforce that is able to respond to 21st

century priorities is the ability to effectively match up the supply and skills of health workers to the needs of the population.

In order to do this, countries will have to develop their capacity to assess future health workforce skills and competences. This must go beyond just looking at staff numbers. One example is the analysis conducted for the Department of Health in England, which examined the long-range demand implications of NCDs and other categories of demand for workforce skills, up to the year 2035 (see the box below). This highlights the scope and need for countries to assess future skills requirements in order to develop appropriate planning and education responses.

Box 1: NHS England: Scanning for future health workforce skills⁸

NHS England conducted research into the skills and competences of the health and care workforce in England. They used broad categories of activity for different workforce roles and responsibilities and looked at how the demand for these categories may change in six future scenarios.

Key features of this approach included:

- the use of ‘systems thinking’ methods to analyse the complex factors and forces that impact the system
- the use of a ‘system dynamics’ model to simulate how it might evolve
- the classification of workforce skills; and the use of workshops to create six challenging but plausible visions of the future health and care system. Skills were classified by type and level of intensity.

There were three key findings:

- 1) The demand for workforce time is growing faster than the population, with projections showing that the demand for health and care workforce time could grow more than twice as fast as the overall population by 2035.
- 2) Over 80 per cent of this additional demand is driven by increasing health care and support needs associated with long-term conditions and NCDs.
- 3) The growth in the demand for lower skill levels – such as those associated with unpaid care, support carers and staff in lower-skilled occupational grades – is projected to substantially outstrip growth in demand for the higher skill levels associated with medical and dental professionals.

Health labour markets: profile, potential and dynamics

This section gives background data on the current assessment of health workforce shortfalls, the health workforce profile, and the varying levels of reliance on foreign-trained health workers in OECD countries.

Health is labour intensive, but can be an economic multiplier

According to the OECD data, spending on health averaged 9% of GDP within the OECD countries – ranging from 4.3% in Turkey to 17.2% in the United States. Health is labour intensive: much of the recurring cost of health care relates to staff training and employment costs.

However, the health of a population cannot be sustained effectively without enough well trained, motivated, deployed and managed health workers. As such, we need to view the health workforce as an investment rather than a cost, as highlighted by the recent UN High Level Commission on Health Employment and Economic Growth. Its analysis found that investing in the health workforce, coupled with the right policy actions, could lead to socioeconomic gains in quality education, gender equality, decent work, inclusive economic growth, and health and wellbeing.

The recommendations of the Commission are now being taken forward by the ILO, OECD and WHO in their *Five-year action plan for health employment and inclusive economic growth (2017–2021)*.⁹

Health workforce skills shortages and mismatches are widespread

This section provides a brief summary of recent analysis on health workforce skills shortages and mismatches. It first synthesises key messages from a global assessment conducted to inform the development of the WHO's *Global Strategy* in 2016 and provides a global backdrop. It then provides more specific detail on OECD countries.

Health workforce analysis and projections were carried out for more than 130 member states, to inform the *Global Strategy*. This aim of this work was to identify the minimum staffing level (threshold) needed to deliver on the WHO's Sustainable Development Goals (SDGs).

This threshold index was used to estimate the health workforce needs in 2013, and needs-based shortages by 2030.

The analysis showed that the global needs-based shortage of health workers in 2013 was estimated to be about **17.4 million**. Of this, almost 2.6 million were doctors, over 9 million were nurses and midwives, and the remainder were made up of all other types of health workers. The largest needs-based shortages were in South East Asia (6.9 million) and Africa (4.2 million).

The global needs-based shortage of health workers was projected to remain at more than **14 million** in 2030. The analysis concluded that, on current trends, health worker production and employment will not have sufficient impact on reducing the needs-based shortage of health workers by 2030.

Turning now to a more specific examination of OECD countries, it should first be noted that they all have a density of health workers above the SDG index threshold of 4.45 physicians, nurses and midwives per 1,000 people. However, a further projection analysis of the OECD health workforce profile conducted for the *Global Strategy* recognised that these countries have a service delivery profile that goes beyond the provision of essential health services.

A stock-and-flow approach was used to simulate future HRH supply in OECD countries in terms of headcounts. The analysis suggested shortfalls of about 50,000 midwives, 1.1 million nurses and 750,000 physicians across the 31 included countries for 2030 (see Box below). As with all such projection based analysis, the results are only as good as the data and assumptions, so the results must be treated with some caution.

Box 2: OECD countries: Health staffing shortfalls by 2030 based on projections for the WHO *Global Strategy on Human Resources for Health*

The WHO's workforce projections factored in the expected inflows (eg new graduates) and outflows (eg retirements) to each country's stock of health care workers. These were then adjusted according to the levels of participation (providing direct patient care) and activity (the proportion of full-time hours spent providing direct patient care) for different types of health care workers.

The model considered a number of policy variables, including the education, participation, productivity and attrition of the health care workforce. It also factored in variables such as demographic trends and changes in the health of the population.

These simulations in the baseline scenarios sum to aggregate shortfall against service requirements of about 50,000 midwives, 1.1 million nurses and 750,000 physicians across the 31 included countries for 2030.

These estimates are highly sensitive to the assumptions used in the model. Sensitivity analysis showed that by 2030 the shortfall against service requirements could be in excess of 4 million (over 70,000 midwives, 3.2 million nurses and 1.2 million physicians).

Considering jointly the needs-based shortage of over 14 million health workers in countries currently below the threshold of 4.45 physicians nurses and midwives per 1000 population, and the shortfall against service requirements in selected OECD countries possibly in excess of 4 million, the analysis for the *Global Strategy*, using a 2013 baseline, estimated that the aggregate projected global deficit of health workers against needs (defined differently in different contexts) could exceed 18 million (range: 16–19 million) by 2030.

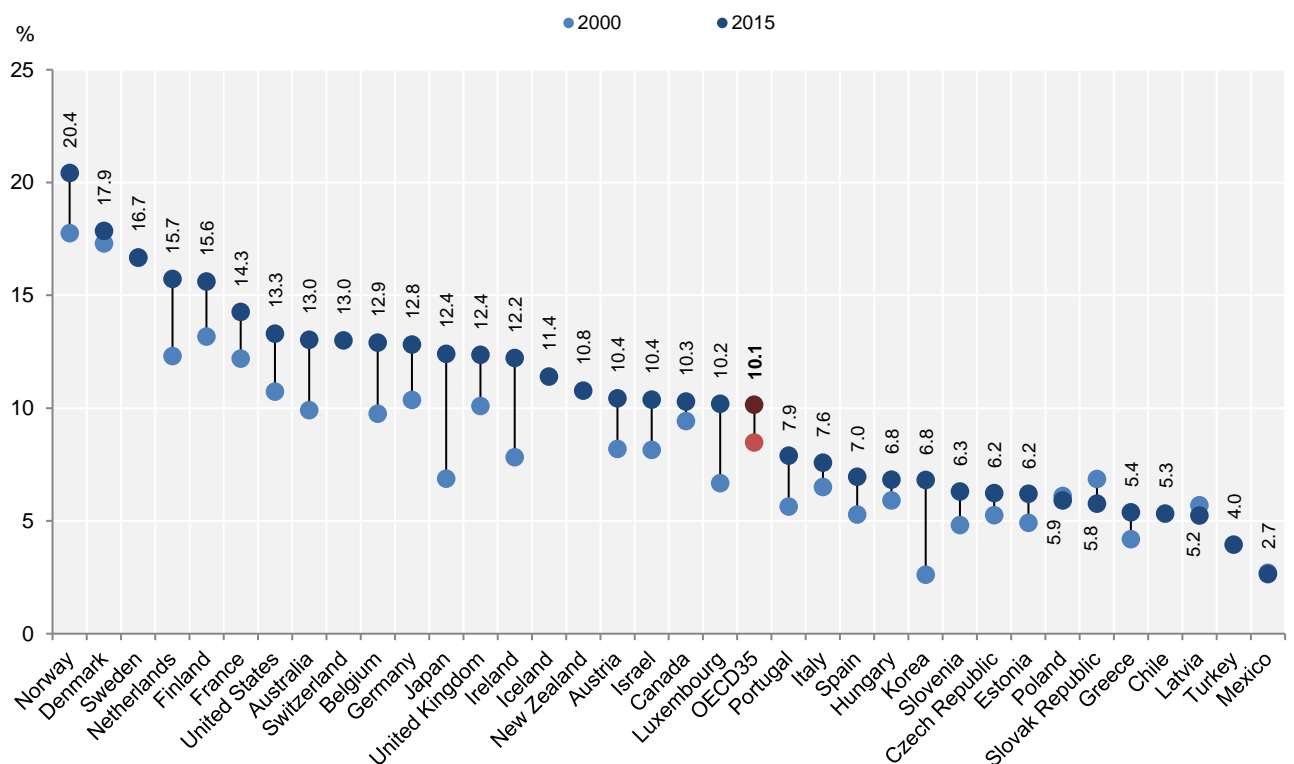
In summary, health systems in many high-income OECD countries face a demographic ‘double whammy’. An ageing population generating more demand for health care, is being cared for by an ageing health workforce, with growing concerns about future levels of supply of health professionals in many countries^{10,11}.

The health workforce profile in OECD countries: increasing, ageing and poorly distributed

This section presents a brief summary of key features of the health workforce in different OECD countries, to provide a data-based context for the focus on health workforce policy interventions that is covered in sections 4 and 5.

Employment in health and social care makes up a large and growing share of the labour force in many countries across the world.¹² In the OECD, health and social care activities made up around 10% of total employment on average in 2015 (see Figure 1). The proportion of workers employed in health and social work has risen steadily across much of the OECD between 2000 and 2015. For the OECD overall, there was an average rise of 1.7% from 2000 to 2015, with bigger rises in Japan, Ireland, Korea, Luxembourg and the Netherlands.¹³

Figure 1: Employment in health and social care as a proportion of total labour force, OECD countries, 2000 and 2015



Source: OECD <http://dx.doi.org/10.1787/888933604533>

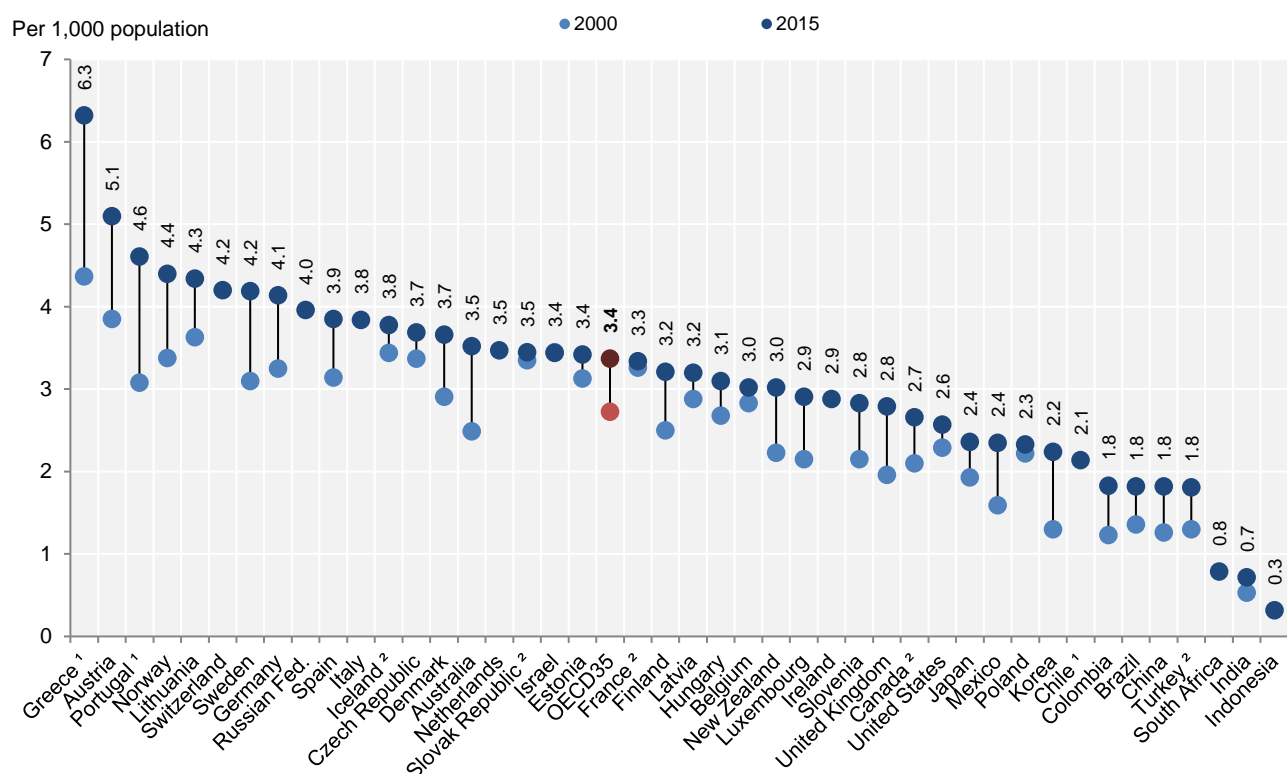
Doctor-to-population ratios

Ratios of health professionals to the population provide a loose indicator of health workforce capacity. The number of doctors per capita varies widely across OECD countries (see Figure 2). The OECD average was 3.4 doctors per 1,000 people, and among the OECD 'partner' countries, it was significantly lower. Since 2000, the number of doctors has increased in nearly all OECD countries, both in absolute numbers and on a per capita basis.

However, OECD notes that there is widespread concern about shortages of GPs and the undersupply of doctors in rural and remote regions. There is also concern about the policy implications of the ageing of the medical workforce in many OECD countries. In 2015, on average across OECD countries, one-third of all doctors were over 55 years of age, up from one-fifth in 2000. Between 2000 and 2015, France, Italy, Spain and Austria more than doubled their share of doctors over 55 years of age.

Another change is that in 2015, 46% of doctors across OECD countries were women, up from 39% in 2000. In 11 OECD countries, at least half of all doctors are now women, with Latvia and Estonia having the highest proportion at over 70%.

Figure 2: Practicing doctors per 1,000 population, OECD countries, 2000 and 2015

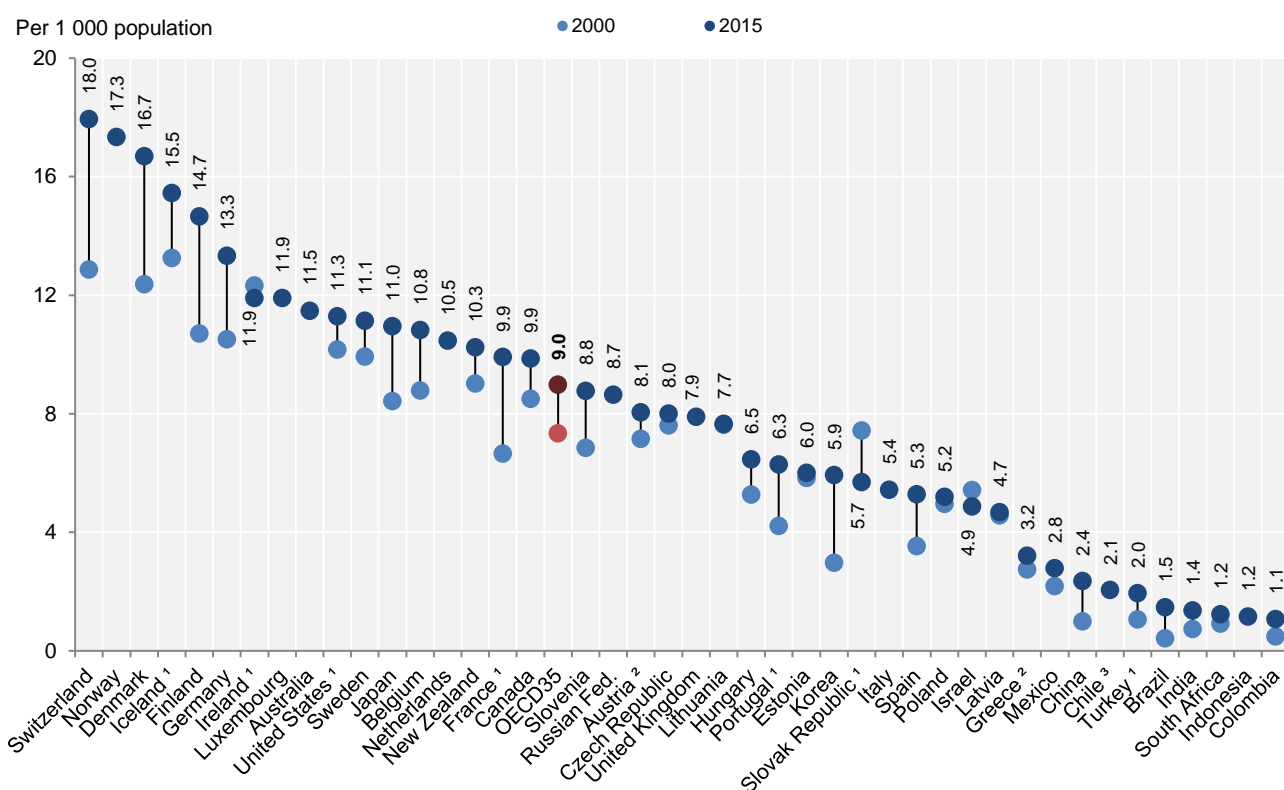


Source: OECD <http://dx.doi.org/10.1787/888933604571>

Nurse-to-population ratios

On average across OECD countries, the number of nurses per capita has gone up – from 7.3 per 1,000 people in 2000 to 9 per 1,000 in 2015 (see Figure 3). The number of nurses per capita was highest in Switzerland, Norway, Denmark, Iceland and Finland, and lowest in Turkey, Chile and Mexico (and lower still in some of the OECD ‘partner’ countries).

Figure 3: Practicing nurses: per 1,000 population, OECD countries 2000 and 2015



Source: OECD <http://dx.doi.org/10.1787/888933604742>

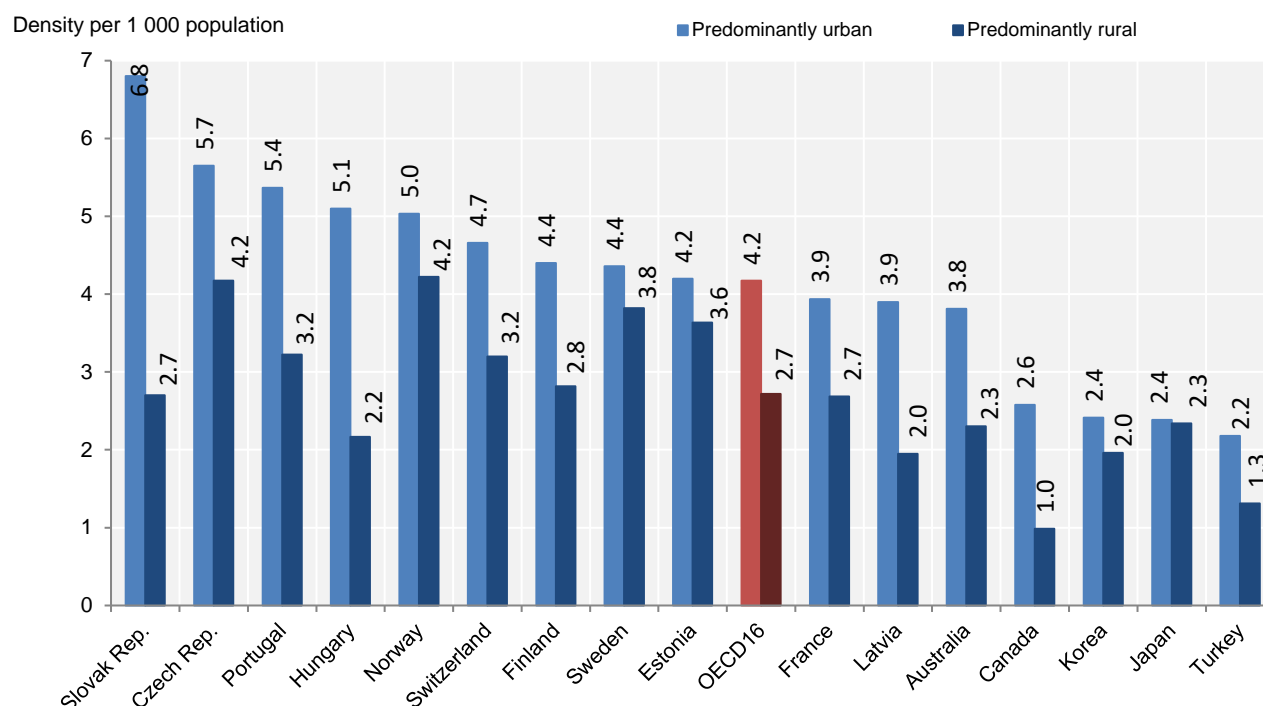
Nurse-to-doctor ratios

The differences in the ratios of nurses and doctors to the population in different OECD countries leads to marked variations in the ratios of nurses to doctors. In 2015 there were about three nurses per doctor on average across OECD countries, with about half of the countries having between two and four nurses per doctor. The nurse-to-doctor ratio was highest in Japan, Finland and Denmark (with 4.6 nurses per doctor) and lowest in Chile, Turkey and Mexico (with less than 1.2 nurses per doctor).

Variations in geographic distribution

Most OECD countries face challenges in achieving an effective distribution of health workforce across geographies and sectors. In particular, there is a need to achieve more equitable geographic distribution in order to enable the population to access health care, and to support the effectiveness of primary care.

Figure 4: Doctor-to-population ratios, urban and rural areas in OECD countries, 2015



Source: OECD <http://dx.doi.org/10.1787/888933603279>

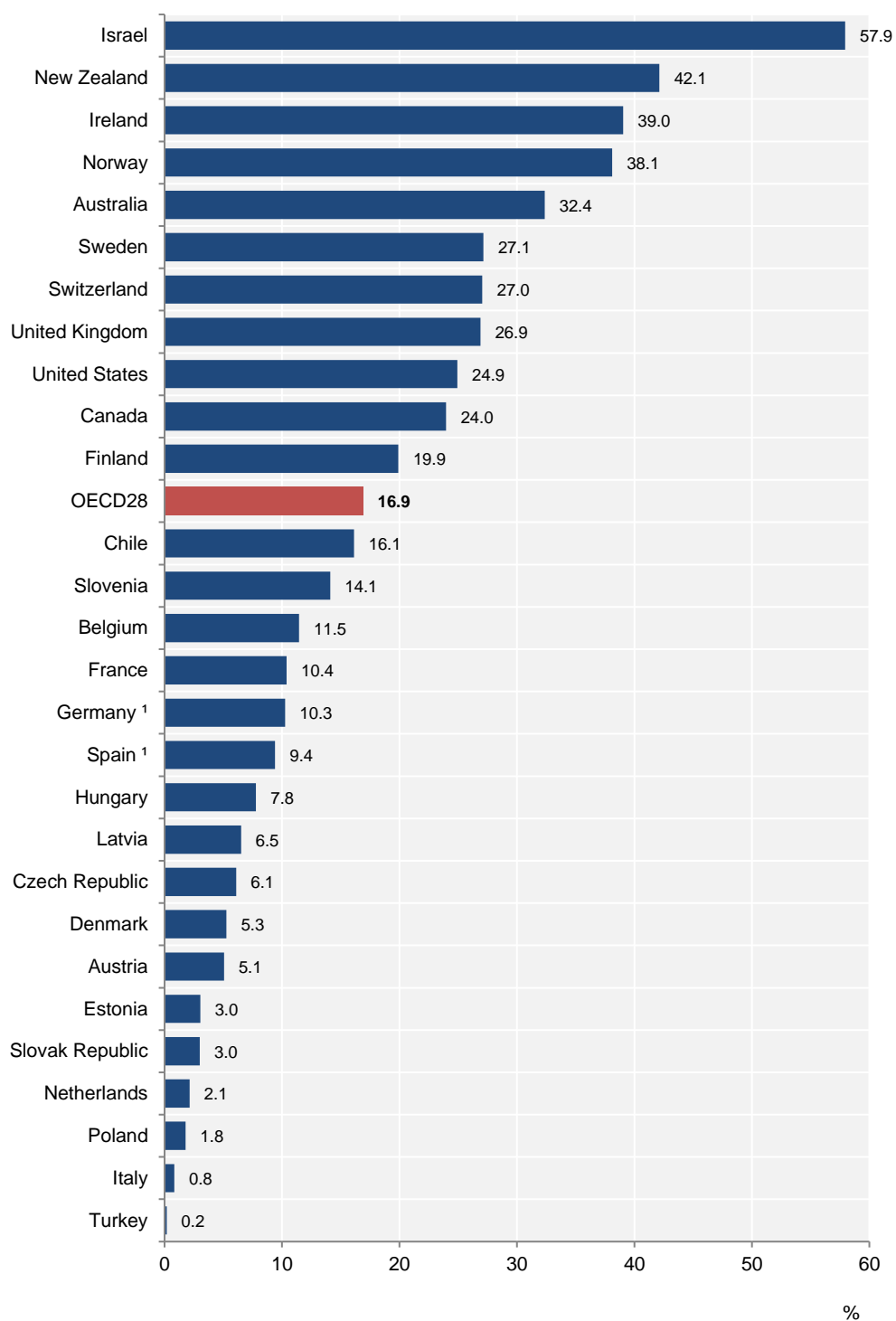
The figure above highlights marked variation in doctor-to-population ratios between rural and urban areas, in most OECD countries.

Reliance on ‘foreign-trained’ health professionals across OECD countries

In the context of an assessment of mobility and migration of health workers, it is important to note that there is wide variation in the level of reliance on international health professionals across OECD countries. This section reports on ‘foreign-trained’ health professionals in OECD countries (that is, health professionals who had been trained in another country). The data does not show which migration or mobility route they followed, or when they arrived, but gives a broad indication of each country’s reliance on health professionals not trained in that country.

Since 2000, the number and share of foreign-trained doctors has increased in many OECD countries (see Figure 5). In 2015, the share of foreign-trained doctors ranged from 3% or less in Estonia, the Slovak Republic, the Netherlands, Poland, Italy and Turkey, to more than 30% in Israel, New Zealand, Ireland, Norway and Australia.

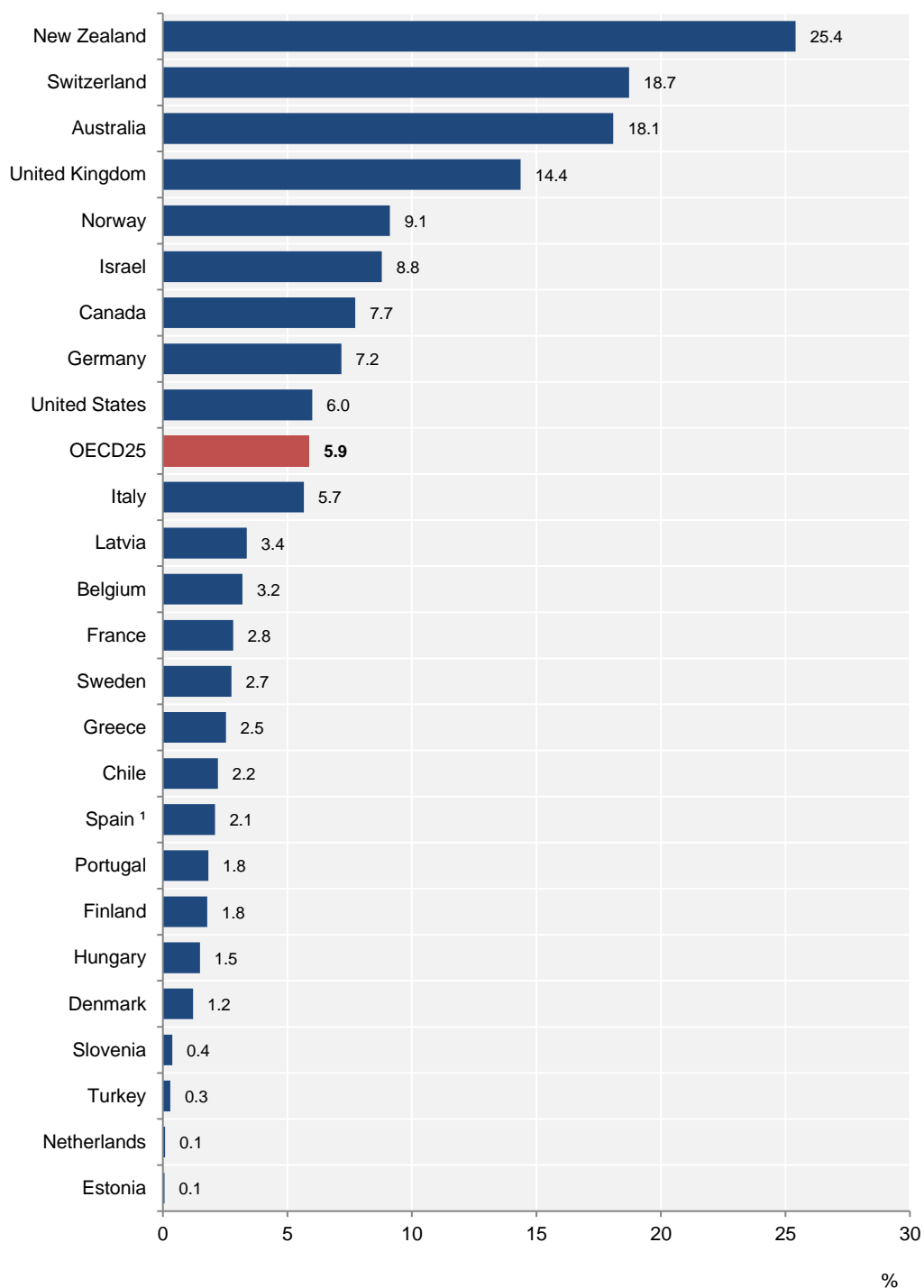
Figure 5: Share of foreign-trained doctors, OECD countries, 2015



Source: OECD <http://dx.doi.org/10.1787/888933604875>

The average proportion of foreign-trained nurses was 5.9% across the countries of OECD in 2015. However, this figure was over 25% in New Zealand, and between 10% and 20% in Switzerland, Australia and the United Kingdom.

Figure 6: Share of foreign-trained nurses, OECD countries, 2015



Source: OECD <http://dx.doi.org/10.1787/888933604894>

The policy response: how to achieve a sustainable health workforce

This section sets out the main policy options for any country considering how best to respond to the health workforce challenge of improving the supply and effectiveness of the health workforce against a backdrop of projected increases in demand. The next section will focus in more detail on policies related to health workforce migration and mobility.

Health workforce sustainability

The WHO has emphasised the need for countries to examine how best to achieve national health workforce ‘sustainability’ both in the *WHO Global Code of Practice on International Recruitment*¹⁴ and in the *Global Strategy*. The emphasis is on countries taking responsibility to meet their health workforce requirements primarily and progressively from their own resources. This should better enable them both to have greater control of the dynamics of their labour markets, and to ensure that they do not have a damaging impact on less well-resourced countries by exerting high levels of long-term active international recruitment, which can deplete less well-resourced countries of scarce skills.

Whilst there is no accepted standard technical definition of ‘sustainability’¹⁵, the *WHO Handbook on Health Workforce Data*¹⁶ has suggested that health workforce ‘self-sufficiency’ can be assessed by the proportion of the workforce that is domestically trained. As noted earlier, by this measure, OECD and related countries currently vary from 0.2% to 60% in their reliance on international doctors, with an average of 6%.

It is important that ‘sustainability’ should take account of the contribution of current foreign trained workers, and also be clear about any future adjustment of this level – it does not mean that the country can or should rely only on domestic trained workers.

This measure can help with an overall assessment of progress towards achieving national sustainability in the health workforce, but there are three other critical health workforce challenges that countries must also address.

Firstly, they must address market failures that lead to the maldistribution of health care workers, as highlighted in section 3. This includes workers being in the wrong place, working in the ‘wrong’ speciality to maximize access to acceptable care, or with a sub-optimal mix of skills, which will reduce quality.

Secondly, countries must focus their policy and funding efforts on improving the retention of workers, including foreign-trained workers, rather than just focusing on the initial supply of new workers from training. This will reduce costly attrition (which may include out-migration) and give greater workforce stability, thereby improving the availability and access to quality care. This must include policy responses to support the health and wellbeing of the health care workforce, thereby allowing them to stay in work for longer as retirement ages in many countries increase. This is a critical point – too often the policy focus is on monitoring and managing flows, rather than giving equal attention to addressing and improving retention.

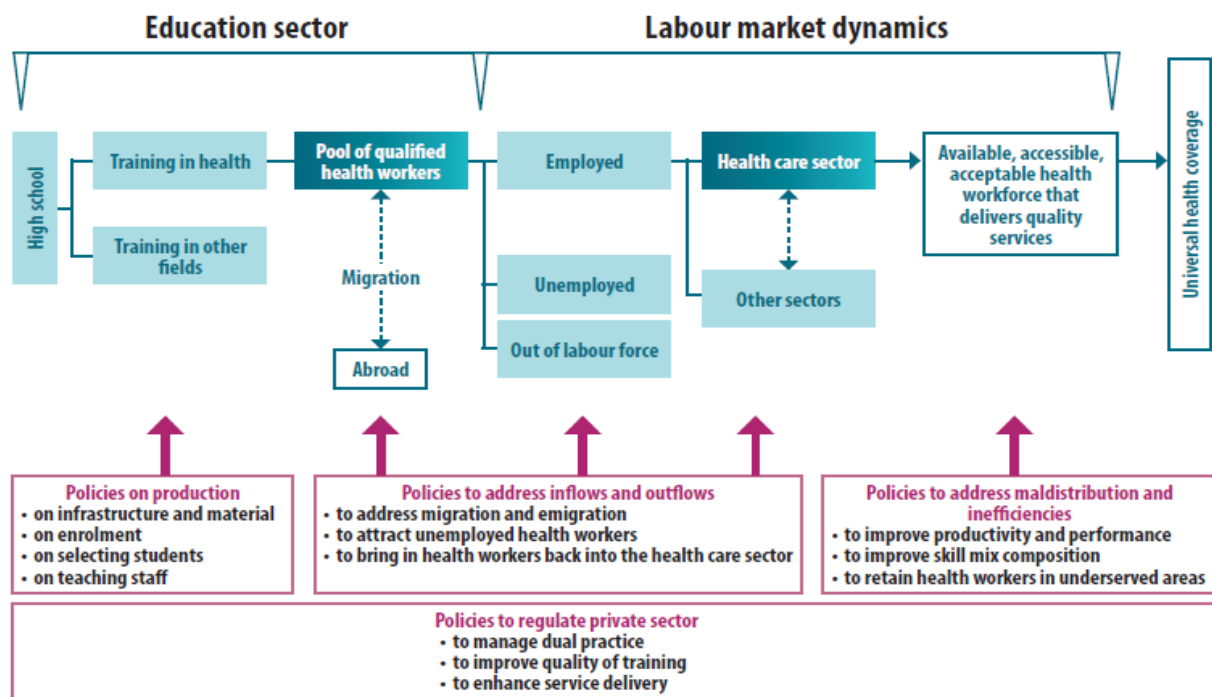
Thirdly, countries have to improve the performance of their workforce. This can be done through better use of current skills, improved skill mix, new roles, effective incentives, supportive working conditions, integration and teamwork. These will all improve the availability, accessibility, acceptability and quality of health care^{17,18,7}.

Identifying policy options using a labour market frame

Policymakers need a frame of reference to consider where there is scope to implement interventions to improve workforce sustainability, and to consider how best to sequence and 'bundle' these interventions. One example is the labour market frame used to underpin the WHO *Global Strategy* (see Figure 7). This emphasises the dynamic nature of health workforce mobility, and places the direct workforce issues of training, recruitment, retention, distribution and productivity in a broader national policy context.

This frame can be adapted for use by policymakers in different countries and contexts. It helps to identify potential 'entry' points for different types of policy, and the likely interconnection of different policies as they are applied.

Figure 7: The health labour market context



Source: Sousa et al, 2013, Bulletin of the WHO.

The labour market frame reinforces the need for policymakers to develop a good overview of health labour market dynamics in order to be able to develop effective policies. It also emphasises the need to take account of regulatory aspects of the market, and focus on performance and productivity. flows of new students into education, flows of new workers from education into employment, retention, optimal distribution of the workforce, flows between different sectors, countries, and types of employment status.

Policy options for health workforce sustainability

This section highlights some of the policy options that may be available and relevant. The aim is to provide a broader policy context for a more focused examination of the international mobility and migration dynamic, which is discussed in more detail in section 5.

Taking the labour market frame as a model, Table 1 identifies some of the main areas in which policy interventions can contribute towards health workforce sustainability, as well as highlighting some main points to consider.

Different examples of potential policy interventions to contribute towards health workforce sustainability are listed in the table, and there is a more detailed discussion below. Policymakers and analysts are directed to the *Global Strategy* for a more detailed discussion of the context, policy options, and the need to consider policy alignment and sequencing rather than isolated and one-off interventions.

Table 1: Policy options to improve health workforce sustainability	
	Options may include:
'Production': educating and training today's and tomorrow's workforce	<p>'Transforming' the education and training of the health workforce:</p> <ul style="list-style-type: none"> • Continuous professional development (CPD) • Re-skilling • Redefining skills in line with population needs • Life-long learning • Steering students towards 'shortage' professions • Broadening out the recruitment base by targeting under-represented groups • Investing in educational capacity • Adapting curricula to demography and disease profiles • Harnessing technology.
Better management of 'flows': improving recruitment, retention, management of migration	<ul style="list-style-type: none"> • Creating supportive and safe workplaces • Flexible working hours • Professional autonomy • Expansion of roles • Remuneration

Table 1: Policy options to improve health workforce sustainability

	<ul style="list-style-type: none">• Professional development and career progression• Return to practice• Retraining• Active international recruitment• Integration of foreign trained health workers and international 'returners'*.
Addressing inefficiencies and maldistribution	<ul style="list-style-type: none">• Financial and non-financial incentives• Education• Regulation• Professional and personal support• Harnessing technology• Performance management• Skill mix changes• New roles

Sources: Buchan and Perfilieva, 2006¹⁸; Glinos et al, 2015⁷; WHO 2016¹⁹

Some policies may have an impact on different objectives. For example, role expansion can improve retention, performance and motivation. New technology can support effective training and education, performance and productivity, and can also enable more effective distribution of skills.

It is important to also consider the best sequencing and 'bundling' of policy interventions, as there is rarely a single solution to health workforce challenges, and some policy interventions will also have knock-on or unintended consequences.

The three main areas of potential policy intervention for sustaining the workforce are discussed in the following pages, while section 5 focuses in greater detail on the management of migration and international flows.

Educating and training today's and tomorrow's workforce

The education and training of the health workforce needs to make sure the skills and competencies of health professionals match up with population health priorities. The Lancet Commission on the Education of Health Professionals for the 21st Century highlighted that the education of health professionals has not kept pace with rapid demographic and epidemiological transitions, and was characterised by fragmented, outdated and static curricula 'that produce ill-equipped graduates'.²⁰

Subsequently, the WHO issued guidelines on the *Transformative scale up of health professional education*.²¹ It argued that scaling up education could increase the quantity,

* Discussed in more detail in section 5

quality and relevance of the health workforce. It also argued that stronger collaboration between the education sector, health sector, other national authorities and the private sector is needed to improve the match between the education health professionals receive and the realities of health service delivery.

OECD has stressed the need for its member countries to re-design their initial education and training programmes and continuous professional development (CPD) for health professionals.²² They identified mismatches between the skills that health professionals have and the skills they need to do their jobs, which can either lead to waste in human capital (when people are over-skilled for the work they do) or where the quality and safety of health services may be undermined (when they are lacking certain skills).

OECD also note the need to develop policies that address over-skilling, which is reported by more than 70% of doctors and nurses who participated in their survey. These policies should promote a fuller use of people's skills, possibly by delegating some tasks from highly skilled to mid-level or lower-skilled workers.

They also advise that transformative education of health professionals will call for more attention to team-based training and problem-based learning in order to overcome the current skills gaps in the health workforce. They highlight how CPD can be used to make sure the skills of the workforce are kept up to date, with CPD activities often now combined with re-licensing or re-registration requirements, in order to better ensure quality and patient safety.

Improving retention and distribution

The effectiveness and cost of different policies to promote a better distribution of health workers can vary significantly. This will depend on the characteristics of each health system, the geography of the country, the needs and behaviours of workers, and the specific policy and programme design. In order to have any significant and lasting impact, policies should be designed with a clear understanding of the motivations and interests of the target group.^{23,24}

Generally, there are four main areas that policies can target when trying to improve retention and distribution:

- Education, such as recruiting students from underserved areas and providing training rotation in underserved areas
- Financial incentives to relocate
- Regulatory measures, such as compulsory service in underserved areas
- What has been termed 'professional and personal support', which recognises the need of health professionals to remain actively involved in professional developments, even if they are located in a remote area, and that they (and often their family and partners) will also have needs, such as for housing and good schooling.

The WHO review on these subjects found that educational interventions have the strongest evidence of effectiveness, but that effectiveness is most likely to be sustained where co-ordinated 'bundles' of policies are considered in alignment.

Harnessing technology

Technological innovations and improvements – including health system digitalization, health information systems and communications technologies – can be complex and costly, but have potential long-term benefits in promoting the efficiency of health services. Key areas where there is scope for a major impact include²⁵:

- **Genomics and precision medicine**, which can target treatment interventions at specific sub-groups of patients, potentially making them more effective and creating new therapeutic possibilities.
- **Remote care** enabled by ICT, which can improve access to health care services, and enable patient's needs to be addressed as early as possible.
- **Technology-supported self-management** which can help empower patients to better manage and understand their condition.
- **Data** can improve analysis and generate new research, and linked to **artificial intelligence (AI)**, which supports new analytical capacity for diagnosing patients, triage and logistics.

In the context of health workforce skills and distribution, these technological developments are likely to change the roles and functions of the health workforce. This in turn has major implications for the selection, curricula, education, training, development and lifelong learning of current and future workers²⁶.

OECD has highlighted that the development of telemedicine to connect patients and health professionals across large distances is the source of a growing number of initiatives aimed at improving access to health services, notably in large countries such as Canada, Australia and Finland. Studies have shown that the use of ICT in the health sector has many benefits and uses, including:

- increasing efficiency
- reducing errors
- supporting more team-based care
- improving the integration of best practice into routine care
- enabling consumers to engage more actively in their care
- producing more efficient services through changes in professional roles and responsibilities.²⁷

There is also a critical role for ICT in supporting transformative education of the workforce – for example, through the use of multimedia training programmes and clinical decision support tools (such as learning management systems, open online courses, mHealth, social media, webcasts, decision support tools, simulation training).

Policy research in the United States has reported that high-quality simulation experiences could be used to substitute for up to 50% of traditional clinical hours across the prelicensure nursing curriculum.²⁸ In turn, this will require the establishment of new standards and accreditation procedures for these modalities of training programmes for continuing education. In some cases, health workers will also have to be supported to become computer literate.²⁹

Migration and mobility policy responses

Not all migrant and mobile health workers are the same

This section focuses in more detail on policies related to the mobility and migration of health workers. It should be noted that there is nothing new about a policy focus on harnessing the flows, and managing the impact, of health worker mobility across national borders. A global review of the issue was published forty years ago and concluded that WHO and member states should cooperate to identify and monitor migration patterns at country level, and outlined a set of policy options to manage and modify migration patterns.³⁰

There is now a better understanding that not all health worker migration flows reflect a single direction, long-term proposition³¹. The reasons ('push and pull') why individuals move, voluntarily and involuntarily, and choose to move in a particular direction or to a specific destination, are influenced by a range of factors^{32,33,34}.

Understanding which motivations are dominant for a particular person or group will help policymakers focus policies³⁵. Some health workers move for short periods of time, or move on to a third country relatively quickly, and some even commute across borders periodically or daily. Developing a better understanding of the relative magnitude of these different types of international flows will be required if national workforce planning, policy, education and regulation – as well as international responses – are to achieve sustainability.

In section 3 we highlighted that the average level of reliance on foreign-trained doctors across OECD countries was 17%, and 6% for foreign trained nurses, but with wide country-by-country variation. In developing effective policies on international labour market connections at national level, policymakers need to consider the rights of individuals to move and their reasons for moving, which can extend beyond economic migration, ranging from issues of personal safety and political refugee status through to a lack of work or career and educational opportunities in source countries. Issues related to gender and equity in the motivations and experiences of migrating health workers is also recognised, but under explored. Many of these elements are included in the *WHO Code*, discussed in more detail below.

In practice, not all policy responses to health workforce migration and mobility issues have been well established in evidence, or subsequently informed adequately by analysis and evaluation. The table below summarises a range of policy responses which have been identified and implemented. Each of these responses is then discussed in more detail below.

It should also be noted that nearly all the published analysis focuses on health professionals – mainly doctors and nurses, with a much smaller evidence base on some other health professions such as pharmacists and midwives. Given the recent emphasis on taking a 'whole of workforce' perspective on health workforce policy and planning, this relatively narrow focus runs the risk of missing important aspects of the impact of health workforce migration.

Policy options for mobility and migration

There are four sets of policy options to manage and steer mobility (see Table 2): ethical recruitment practices; country-to-country collaboration; integration of foreign-trained professionals in host systems; and facilitated returns into source systems.

Ethical recruitment practices	Introduction and implementation of guidelines and codes at national or international levels, such as the <i>WHO Code</i> , to encourage employers to recruit and employ ethically.
Bilateral agreements and other forms of country-to-country collaboration	Measures include: <ul style="list-style-type: none"> • bilateral agreements between destination and source countries to share training costs • provide additional training prior to a worker's return • define the type and number of health professionals to be recruited, for what time period and with specified pay and conditions • and for international recruitment to be directed at specific areas or sectors in the destination country.
Integration of foreign-trained/born professionals	Measures include: <ul style="list-style-type: none"> • induction and language courses • mentoring • practical help to settle down in destination country • legal frameworks to facilitate recognition and authorisation to practise processes • preventing discrimination • integration of refugee health workers.
Facilitated returns and 'circular migration'	Measures in or by source countries (or bilaterally with destination country) to encourage returns and to allow returning health professionals to use skills acquired abroad and reintegrate the workforce.

Source: developed from Buchan and Perfilieva, 2006¹⁹; Glinos et al 2015¹⁸

Ethical recruitment: the WHO Code

The WHO *Code*¹⁴ was endorsed by all member states at the World Health Assembly in 2010. It is the main global policy instrument that provides guidance and structure to member states on developing and implementing policies related to health workforce mobility and migration. The main purposes of the WHO *Code* are to:

- establish and promote voluntary principles for the ethical international recruitment of health personnel, taking into account the rights, obligations and expectations of source countries, destination countries and migrant health personnel
- serve as a reference for member states in establishing or improving the legal and institutional framework required for the international recruitment of health personnel
- provide guidance that may be used where appropriate in the formulation and implementation of bilateral agreements and other international legal instruments
- facilitate and promote international discussion and co-operation on matters relating to the ethical international recruitment of health personnel as part of strengthening health systems, with a particular focus on the situation of developing countries.^{14,24}

The Code highlights the need for member states to improve their domestic health workforce planning, and to address workforce retention, distribution and productivity. As noted earlier, the intention is to signal that health workforce sustainability should be the overall goal for member states, and that in attending effectively to their domestic labour market situation they will reduce the need for active international recruitment. This will both reduce the reliance of destination countries, and reduce the 'push' factors creating out-migration in source countries.

There are some reported examples of countries using the *Code* as a catalyst to develop a more sustained approach to national policy dialogue on health workforce issues. This has included engaging with other government departments and non-governmental stakeholders from civil society and from trade unions, regulators and professional associations.^{36,37,38}

These examples suggest that the *Code* can be the entry point for countries to develop a broader focus on national-level workforce policy and planning mechanisms, or for strengthening those that exist. They also serve to remind us that while health workforce migration may be an issue of policy concern to ministries of health, health regulators and health sector employers, it also feeds into the policy remit of other government departments (such as immigration, trade, and employment).

The requirement for member states to regularly report on the implementation of the *WHO Code* has also led to improvements in mobility data specification and analysis, as well as providing access to updated information on related policy initiatives – for example, the second round of reporting identified more than 60 examples of bilateral agreements on health workforce mobility and migration.

Bilateral agreements

Various stakeholders have promoted bilateral agreements as a way to direct health worker mobility and mitigate any negative impacts.³⁹ These are usually taken to describe a model where a destination country develops an agreement with a source country to recruit staff for a fixed period, sometimes with an understanding that staff will receive training and development in the destination country prior to returning. Alternatively, they may focus on recruiting 'surplus' staff in a source country. However, the term 'bilateral agreement' has in practice been applied to a broad range of different policy instruments with different objectives, varying degrees of detail, and different timelines (see Box 3 below). Some of these agreements were broader, and included health worker migration and mobility as only one of a number of areas for bilateral cooperation.

There has been little evaluation of the application and impact of bilateral agreements. One review⁴⁰ noted that there was a significant lack of clarity on the precise role, form and content bilateral agreements should take. A more recent evaluation of different models of bilateral agreements questioned the extent to which some models have had any substantial impact.⁴¹

Box 3: An example of bilateral agreements on health worker development and recruitment. Japan's Economic Partnership Agreements (EPAs) with South East Asian countries (Indonesia, Philippines, Vietnam).

As part of trade liberalization, Japan signed EPAs that allowed foreign nurses and caregivers to enter and practice in Japan temporarily. The EPA framework quota allowed Japan to accept no more than 400 foreign nurses and 600 foreign caregivers from the Philippines every two years. Between 2008 and 2016, 472 nurses and 1124 caregivers from the Philippines, 593 nurses and 1199 caregivers from Indonesia, and 53 nurses and 417 caregivers from Vietnam had entered Japan as part of the respective agreements. Reportedly, access to entry into the Japanese labour market was mainly from Indonesia, Philippines, and Vietnam, as part of broader economic cooperation with Japan (for example, nurse and caregiver provisions are relatively minor in the 600 page EPA between Japan and the Philippines).⁴²

Other forms of co-operation can include 'twinning', where organizations in source and destination countries develop links with one another and work out agreements on the exchange and support of staff, often in exchange for resources moving in the other direction, and 'staff exchange', where there is a planned temporary move of staff to another organization, based on career and personal development opportunities in that country.

Integrating foreign-trained health professionals

The process of cross-border movement by individual health workers will take a number of forms, which vary depending on the country, worker and worker status. Some workers will be actively recruited from one country to another, while some will move voluntarily. The ability to practice may be regulated by the destination country, and the physical movement may occur after, or before, regulatory approval to practice.

Appendix 1 summarises the likely steps in the process for a regulated health professional (nurses, in this illustrative example). It distinguishes between the steps required when there is no mutual recognition agreement (MRA) between the source and destination countries, and where there is an MRA or similar mechanism that allows for freer movement, such as between the countries of the European Union (EU). Where there is no MRA, the process can have many additional steps, involve more agencies, is likely to be more time consuming, and also carries a greater risk of delay or failure because of the greater complexity of the multi-agency process.³⁴

There is a risk of market failure due to the ineffective integration of internationally recruited or migrant health workers and underutilisation of their skills – often the failure of regulation and immigration mechanisms to enable them to fully use their skills. This is both inefficient for the system and demoralising for the worker. Misleading information about job availability, wages and conditions, or discriminatory recruitment and employment practices, are also sometimes features of this inefficient and possibly unethical or illegal process.

Therefore, there are two policy imperatives that underpin the need for effective international recruitment and integration processes: ensuring that foreign-trained health workers meet their destination country's education, employment, practice and patient safety standards, and enabling them to maximise their potential contribution in the destination country.

The inefficiencies and unethical practices in recruiting and integrating internationally recruited health professionals has been widely documented.^{43,44,45,46,47} These stem mainly from three sources of poor practice (sometimes cited as unethical practice) and disconnected policy:

- Inadequate recruitment processes, where international recruits are not fully informed about their new job, location and employment conditions, and may be under- or over-qualified for the post to which they are recruited.
- The misalignment or overlap of functions between different agencies involved in recruitment, regulation and immigration – such as recruitment agencies, immigration authorities, professional regulation bodies, education authorities, and employing organisations – leading to delays or blocked recruitment.
- Inequitable treatment of international recruits, in terms of pay levels, career prospects and access to career development, leading to under-used skills and low motivation and retention. In some cases this is created by discriminatory practices.

Two recent case studies of the integration of health professionals are highlighted in the boxes below. The first (Box 4) reports on the integration of Syrian migrant health

professionals in Germany. The second (Box 5) reports on a local recruitment effort in Wales which targeted locally based individuals with nursing qualifications who had trained in other countries, but were currently not practising.

Box 4: Facilitating the practice of Syrian refugee health workers in Germany^{48,49,50,51}

A large proportion of Syrian refugees in Germany bring with them important skills to the German labour market. The IMF estimated that 21% of Syrian asylum seekers who arrived in Germany between 2013 and 2014 reported having a tertiary education.

The German Recognition Act, also known as the ‘Law to improve the assessment and recognition of professional and vocational education and training qualification acquired abroad’, was adopted in 2012 with immigrants and refugees entitled to the recognition irrespective of their residence status or citizenship. Key elements of the legislation reportedly include:

- Amendment of the European Professional Qualification Directive (2005/36/EC) to make it applicable to citizens from all countries (not limited to EU/EEA and Switzerland)
- When medical training does not correspond to German standards, the competent agency can take work experience into consideration and/or request the applicant to take an assessment test.
- The applicant can be granted a two-year provisional license to practice medicine while continuing the recognition process.
- Refugees can submit their application from their home country.
- The Integration through Qualification (IQ) programme offers in-person advice in all 16 German Federal States, including placement of applicants in upgrading measures.

Between 2012 and 2015, over 63,000 immigrants requested qualification recognition in Germany: over three-quarters were from doctors or nurses. In October 2015, Germany’s Bundestag adopted the ‘Act on the Acceleration of Asylum Procedures’, allowing immigrant doctors to work alongside certified physicians in the refugee centers without the required German license.

An array of measures to further support migrant and refugee health workers have been implemented at the hospital and facility level, including induction, language courses, information on administrative formalities inside and outside of the workplace (including obtaining work and residence permits), tutoring and support with family reunification and the participation of family members in the labour market.

Box 5: Recruiting local ‘international’ nurses in Wales⁵²

One health care organisation in Wales focused a recruitment initiative on foreign-trained nurses who were living and working in the local community, but who could not work in a registered nurse role because they didn't have the necessary regulatory approval to practice – needing either financial or practical support to get this approval.

The approach was in line with the national regulatory authority (Nursing and Midwifery Council) registration requirements, and used a stepwise employment offer to successful applicants.

Three recruitment events were undertaken between May 2017 and March 2018, advertised through radio and social media. Potential applicants were asked to provide demographic details, the country and year of their nurse registration, their employment status and information about their visa or rights to remain in the UK. Attendees came from India, Nigeria, Pakistan, the Philippines, Poland, the US, Vietnam and Zimbabwe.

18 nurses from the first event are now reportedly employed by the health board and working towards meeting their English language and regulatory requirements. A total of 12 contracts were offered following the second event and 35 applicants were shortlisted and selected for interview from the third event. The contract of employment offered to successful applicants requires that the nurses commit to working with the health board for at least two years post-registration and that if they leave earlier they will need to repay their training costs.

Facilitated returns and circular migration

Temporary and ‘circular’ migration schemes can be attractive to policymakers as they have the potential to address shortages in the destination country by timed international inflow, whilst mitigating some of the negative effects of outflow, as well as generating remittances and possibly upskilling the temporary migrant health workers. In some cases, managed temporary mobility, often via a bilateral agreement, can be a mechanism to temporarily ‘scale up’ the workforce for a defined period of time without having to address the policy implications of long-term or permanent migration.

Policies and practices that have been advocated and proposed to promote return or circular migration include the use of incentives, granting dual nationality and flexible residential rights, providing time-limited contracts tied to an agreed departure or return date, and ensuring that international experience is recognised on return. However, there is currently a lack of detailed analysis of country and individual experiences to underpin policy decisions in their use and effectiveness.^{53,54}

Aligning domestic and international health workforce policies to avoid 'boom and bust'

Some countries have exhibited a 'boom and bust' phenomenon created by the significant time lags that occur between health professionals entering and completing training, and because they have failed to align the education of domestic workers with international recruitment. This can lead to a situation where, for example, concern about current shortages leads to an increase in domestic training capacity as well as active international recruitment. This can then lead to a surplus, or the perception of a surplus, which in turn then generates a cap or a reduction in enrolments, leading to another shortage in the medium- to long-term.⁵⁵

International recruitment can be a solution to domestic market failure if use of international recruitment as a short-term measure reduces the level of shortage. But If this is intended to be a time limited policy option, in some cases linked to a bilateral agreement, its success is dependent on the destination country's ability to control levels and periods of inflow. However, misaligned domestic and international policies may amplify domestic workforce problems, rather than dampen them.

Alternatively, a country may have implemented strict general immigration policies that in practice then exacerbate existing domestic shortages, because active international recruitment of health professionals is not possible at the level desired by employers, unless some type of exemption, cap or focused special treatment enables them to do so. This was the situation recently in the UK.⁵⁶

Key messages for policy makers

Health worker migration is inevitably and inextricably linked with other aspects of national health workforce policy and planning. Any comprehensive analysis of health workforce labour markets points to several key messages for national-level health policy makers:

- You (almost certainly) do not have all the data and analysis you need to be fully monitor and manage domestic and international health workforce mobility. This can be addressed more effectively by making the optimum use of data sets that do exist – held in different government departments, agencies and professional regulators and associations – and commissioning analysis to fill critical data gaps.
- You cannot be ‘isolationist’: your health care systems and labour markets are increasingly interconnected, and your approach to national health workforce policy, planning and regulation will not succeed if you do not consider international connections and drivers.
- Issues of health worker migration and mobility cannot be addressed successfully as a stand-alone policy challenge. They are part of the broader dynamic of workforce mobility, and need to be aligned with health and health workforce policy. There also needs to be ‘whole of government’ action aligning employment, education, refugee integration and immigration policy.
- You must consider how to respond to the *WHO Code*. A sustainable and effective response should:
 - integrate monitoring with broader health workforce analysis and planning
 - share the key findings of your health labour market analysis beyond your own system and country
 - where appropriate and mutually beneficial, initiate joint policy action on health workforce migration through bilateral and multilateral connections.

Annex 1: An illustrative example of the steps involved in active international recruitment – between countries with, and without, a mutual recognition agreement (MRA)

The table sets out an illustrative example, which in practice will vary depending on specific practices and policies in the destination country. One notable difference between countries is that some require the taking of a licensure examination, whilst others focus on the assessment of individual applicants' qualifications and experience. The table also suggests a simple linear progression, but in practice the mobile or refugee health professional has to deal with a range authorities, in a process where some steps are dependent on others having been completed, and where in some countries there are time limits to completing specific steps.

	No MRA	MRA
1. Destination country employer [in some cases with recruitment agency support] selects source country for recruits	•	•
2. Agency advertises or uses networks to generate interest	•	•
3. Selection process agreed by employer/agency	•	•
4. Employer and/or agency staff interview potential recruits in country	•	•
5. Employer selects nurses	•	•
6. Employer/agency gives names and details of nurses to destination country regulator authority	•	•
7. Regulatory authority contact nurses with request for applicant details	•	•
8. Nurses provide information to regulatory authority direct [or via recruitment agency]	•	•
9. Source country regulatory authority is requested to send verification of qualifications details to authority in destination country [or via the agency]	•	•

10. Destination country regulatory authority issue letter detailing period of adaptation (if required) or that application is accepted/declined*	•	•
11. Nurse [or agency] contact destination country immigration authority with application, supported by destination country acceptance	•	
12. Destination country immigration authority reviews application and [may] issue visa and/or work permit	•	
13. Work permit sent to recruitment agency, or direct to nurse	•	
14.. Agency sends work permit to destination country embassy/consulate in source country	•	
15. Embassy verifies identity of nurse	•	
16. Embassy issues visa	•	
17. Domestic country administration issues any final clearance [e.g. verifies that nurse is not under return of service obligation]	•	
18. Nurse [or agency] arranges travel to destination country	•	•
19. Nurses arrive in the destination country	•	•
20. Nurses undertake any specified period of adaptation	•	•
21. Nurses admitted to destination country register, and can practice unsupervised	•	•

Source: the authors. *In some countries, a licensure examination will also take place; language proficiency will often also be tested, either as part of this process or as a separate step in the process.

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