

1 Recent trends in international mobility of doctors and nurses

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This chapter reviews the contribution of foreign-born and foreign-trained doctors and nurses to the rising number of doctors and nurses working in OECD countries over the past decade. The number of foreign-trained doctors working in OECD countries increased by 50% between 2006 and 2016 (to reach nearly 500 000 in 2016), while the number of foreign-trained nurses increased by 20% over the five-year period from 2011 to 2016 (to reach nearly 550 000). The United States is still the main country of destination of foreign-trained doctors and nurses, followed by the United Kingdom and Germany. The number of foreign-trained doctors has also increased rapidly over the past decade in some European countries like Ireland, France, Switzerland, Norway and Sweden. However, it is important to bear in mind that not all foreign-trained doctors are foreigners as a large number in countries such as Norway, Sweden and the United States are people born in the country who obtained their first medical degree abroad before coming back. In these cases, it is not appropriate to refer to this phenomenon as a “brain drain”, particularly as these people usually pay the full cost of their education while studying abroad.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

1.1. Introduction

This chapter builds on and updates earlier work on the international mobility of health workers undertaken by the OECD, often jointly with WHO and the European Commission. In 2007, the chapter devoted to immigrant health workers in the OECD publication *International Migration Outlook (2007)*^[1] presented a broad picture of the migration flows with a view to support more informed policy dialogues. This information on migration flows was updated in the 2015 edition of the *International Migration Outlook (OECD, 2015)*^[2]. This topic was also addressed in a chapter in the 2016 OECD publication, *Health Workforce Policies: Right Jobs, Right Skills, Right Places (2016)*^[3], which analysed the impact of health and migration policies on the migration of foreign-trained doctors and nurses in OECD countries.

At the global level, the adoption of the WHO Global Code of Practice on the International Recruitment of Health Personnel in May 2010 called for a more ethical recruitment of health personnel to avoid active recruitment in those countries with acute shortages of skilled health workers as well as for a regular monitoring of the international mobility of health workers (WHO, 2010)^[4]. The third round of country reporting on the Global Code took place in 2018 and 2019, and a report on the implementation of the Code was discussed at the World Health Assembly in May 2019, contributing to such a regular monitoring.

The migration of health professionals takes place in a broader context of larger migration trends, including the increasing migration of highly-skilled workers and changes to the configuration of the European Union. There has been a steady rise in highly-skilled migration to OECD countries over the past 15 years: the number of tertiary-educated immigrants in the OECD more than doubled between 2000 and 2015.

This chapter draws on the OECD's long experience in collecting data across OECD countries to review the most recent trends in the overall number of doctors and nurses working in OECD countries (Section 1.2) and update the information on the international migration of health workers measured in terms of both foreign-born doctors and nurses (Section 1.3) and foreign-trained (Section 1.4). Annex 1.A provides further data and analysis on the growing efforts in most OECD countries to train more doctors and nurses domestically to respond to their needs and in some cases also to reduce their reliance on foreign-trained health workers. Annex 1.B provides further information on the country of education of foreign-trained doctors working in the two main destination countries, the United States and the United Kingdom.

1.2. The number of doctors and nurses has increased in most OECD countries, driven mainly by growing numbers of domestic graduates

Concerns about shortages of health professionals are not new in OECD countries, and these concerns have grown in many countries with the prospect of the retirement of the 'baby-boom' generation of doctors and nurses. These concerns prompted many OECD countries to increase over the past decade the number of students in medical and nursing education programmes to train more new doctors and nurses in order to replace those who will be retiring and avoid a "looming crisis" in the health workforce.¹

Because of these education and training policies, but also because of greater retention rates of current doctors and nurses and greater immigration of doctors and nurses in some countries, the number of doctors and nurses has continued to increase in most OECD countries since 2000, both in absolute number and on a per capita basis. In absolute number, a total of 3.7 million doctors and 11.2 million nurses were working in OECD countries in 2016, up from 2.9 million doctors and 8.3 million nurses in 2000. On a per capita basis, there were 3.4 doctors per 1 000 population on average across OECD countries in 2016, up from 2.7 in 2000 (Figure 1.1), and 8.6 nurses per 1 000 population, up from 7.3 in 2000 (Figure 1.2).

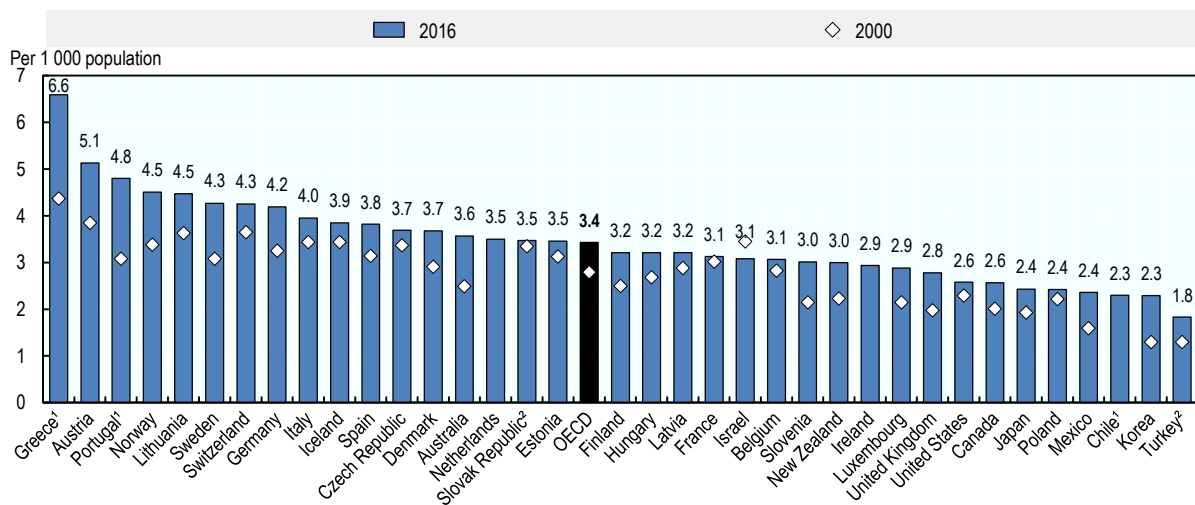
The growth in the number of doctors per capita has been particularly rapid in some countries that started with low levels in 2000, such as Korea, Mexico and the United Kingdom, converging to some extent to the

OECD average. But there has also been rapid growth in several countries that already had high levels of doctors per capita in 2000 (e.g. Greece, Austria, Portugal and Norway²). The number of doctors per capita has also grown quite rapidly in Sweden, Germany and Australia.

On the other hand, the number of doctors per capita has grown much more slowly or remained stable since 2000 in Belgium, France, Poland and the Slovak Republic. In these four countries, the number of domestic students admitted in medical schools has increased in recent years, which should contribute to increasing the number of new doctors who will be available to replace those who will be retiring in the coming years, if these newly-trained doctors end up working in these countries.

In Israel, the absolute number of doctors has increased substantially since 2000 (by over 20%), but this has not kept up with population growth (which has gone up by more than 33%). This explains the reduction in the doctor-to-population ratio between 2000 and 2016.

Figure 1.1. Practising doctors per 1 000 population in OECD countries, 2000 and 2016 (or nearest year)



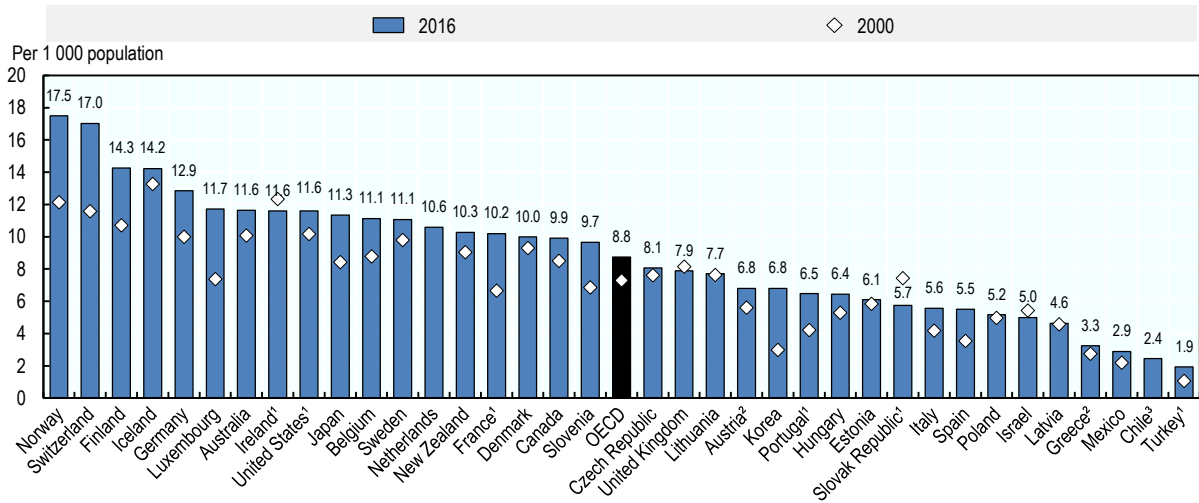
Notes: 1. Data refer to all doctors licensed to practice, resulting in a large over-estimation of the number of practising doctors (e.g. adding around 30% of doctors in Portugal). 2. Data include not only doctors providing care to patients, but also those working in the health sector as managers, researchers, etc. (adding another 5-10%).

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

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For nurses, the growth in the number per capita has been particularly rapid in countries that already had a relatively high number of nurses in 2000 such as Norway, Switzerland and Finland (Figure 1.2). In Switzerland, most of the growth in the number of nurses has been in lower-qualified nurses. Strong growth in the number of nurses per capita has also occurred in Japan and Korea. The growth rate has been more modest, but still noticeable, in the United States, Canada and Australia. In the United Kingdom, the number of nurses per capita increased rapidly between 2000 and 2006, but has gradually decreased since then, so that the number per capita was slightly lower in 2016 than in 2000. Similarly, in Ireland, the number of nurses peaked at 13.6 per 1 000 population in 2008, but has decreased since then to 11.6 per 1 000 population in 2016.

Figure 1.2. Practising nurses per 1 000 population in OECD countries, 2000 and 2016 (or nearest year)



Notes: In Finland, Iceland and Switzerland, about one-third of nurses are "associate professional" nurses with a lower level of qualifications. In Switzerland, most of the growth in the number of nurses since 2000 has been in this category of "associate professional" nurses. 1. Data include not only nurses providing care for patients, but also those working as managers, educators, etc. (adding another 8-10% on nurses on average). 2. Austria and Greece report only nurses employed in hospital (resulting in an under-estimation). 3. Data in Chile refer to all nurses licensed to practice.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

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In most countries, the growth in the number of doctors and nurses has been fuelled largely by growing numbers of domestic graduates who have entered these professions, although in some countries the immigration of foreign-trained doctors and nurses also played an important role (as discussed in section 1.4). For example, in the United States, 75% of the increase in the number of doctors between 2006 and 2016 came from domestic graduates from US medical schools (i.e. about 150 000 out of a total increase of 200 000 doctors), while the other 25% came from foreign-trained doctors (see Table 1.3 below). A growing number of these foreign-trained doctors were Americans who went to get a first medical degree abroad before coming back.

Overall, the number of medical graduates in OECD countries has increased from less than 100 000 per year in 2006 to over 125 000 in 2016, whereas the number of nurse graduates across OECD countries has increased from about 450 000 per year in 2006 to more than 600 000 in 2016 (see Annex 1.A for more country-specific information).

1.3. Foreign-born doctors and nurses have contributed significantly to the growing number of doctors and nurses in many OECD countries

Immigrant doctors and nurses have contributed significantly to the growth in the overall number of doctors and nurses over the past decade in many OECD countries. This section presents the most recent data on the number of foreign-born doctors and nurses working in OECD countries. It is important to keep in mind that many of these foreign-born doctors and nurses may have pursued their medical or nursing studies in their country of destination, not in their country of origin (because they moved with their family at a young age or because they pursued their university education in their country of destination). Box 1.1 provides a

summary of the pros and cons of different approaches to monitor the international migration of health workers, along with the data sources used in this paper.

Box 1.1. Methods and sources used to monitor the international migration of health workers

A regular monitoring of the international migration of health personnel needs to be based on two key criteria: 1) relevancy to both countries of origin and countries of destination; and 2) feasibility of regular data collection.

Approaches to measure migration patterns

Migration patterns can be measured based on nationality, place of birth, or place of education/training. The first approach, based on nationality, faces a number of shortcomings. Firstly, foreigners disappear from the statistics when they are naturalised. Secondly, in several OECD countries, many people who were born and raised in the country hold a different nationality, so there is therefore no systematic link between migration and nationality.

The second approach, based on the place of birth, is more meaningful because when the country of birth differs from the country of residence, it implies that the person did cross a border at some point in time. However, the main question that arises to evaluate the impact of highly skilled migration on origin countries is where the education took place. Some foreign-born people arrived at younger ages, most probably accompanying their family, while others came to the country to pursue their tertiary education and have stayed after completing their studies. In these cases, most of the cost of education will have been supported by the receiving country, and/or by migrants themselves, not by the country of origin.

The third approach, based on the place of education/training, is the most relevant from a policy perspective, although it does raise a number of measurement issues. One of these issues is that nursing and medical education and training can be very long and go through different stages. The definition used in the annual OECD/Eurostat/WHO-Europe Joint Questionnaire is based on where people have received their first medical or nursing degree. Another issue has to do with the internationalisation of medical education, which means that a certain number of foreign-trained doctors or nurses may be people who were born in a country and decided to pursue their studies in another country before returning to their home country. The Joint Questionnaire seeks to collect data on the number of such native-born but foreign-trained doctors and nurses.

Data sources

The description of the international mobility of health workers presented in this chapter is based on the second and third approaches (doctors and nurses born abroad, and doctors and nurses trained abroad). Two data sources were used to identify the country of birth: the latest round of population censuses and Labour Force Surveys (LFS) for some European countries. National censuses generally include all persons aged 15 years and older, while the LFS is restricted to persons between the ages of 15 and 64. Health workers are generally identified on the basis of the International Standard Classification of Occupations (ISCO), revised in 2008. Data collected cover "medical doctors" (221) and "nursing and midwifery professionals" (222) and "nursing and midwifery associate professionals" (322).

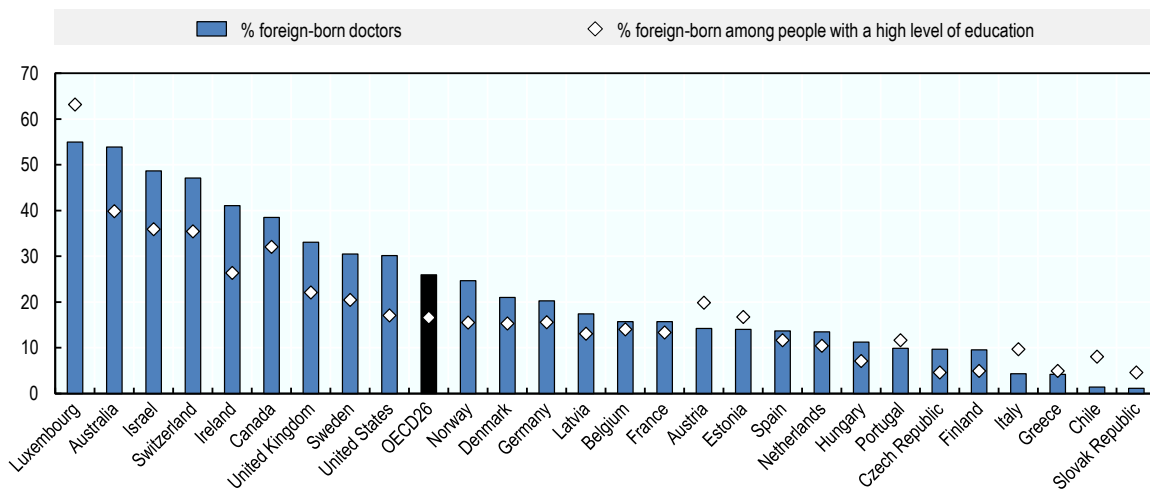
The data on foreign-trained doctors and nurses come from the annual OECD/Eurostat/WHO-Europe Joint Questionnaire that is administered to designated focal points in member countries. The main data source used by countries to supply these data are professional registries managed either by a professional organisation (e.g. a National Medical or Nursing Council) or by a government agency, although some countries have used other data sources.

To a certain degree, the share of migrants among health professionals mirrors that of immigrants – particularly those who are skilled – in the workforce as a whole. That being said, the percentage of foreign-born doctors tends to be greater than the percentage of immigrants among highly educated workers (Figure 1.3), whereas the share of foreign-born nurses is similar or lower (Figure 1.4).

The proportion of doctors born abroad ranges from less than 2% in the Slovak Republic to more than 50% in Australia and Luxembourg. With regard to nurses, the share of foreign-born is insignificant in the Czech Republic and the Slovak Republic, but over 30% in Switzerland, Australia and Israel. With the exceptions of a few countries, immigrants make up a higher proportion of doctors than of nurses, and markedly so in Luxembourg, Sweden, Switzerland and Australia.

Unsurprisingly, the proportions of foreign-born doctors and nurses are highest in the main settlement countries (e.g. Australia, Canada and Israel) and European countries like Luxembourg and Switzerland where large migrant flows head. Ireland and the United Kingdom are also near the top of the list for shares of foreign-born health professionals. Countries in Southern, Central and Eastern Europe have the lowest proportions of foreign-born health workers.

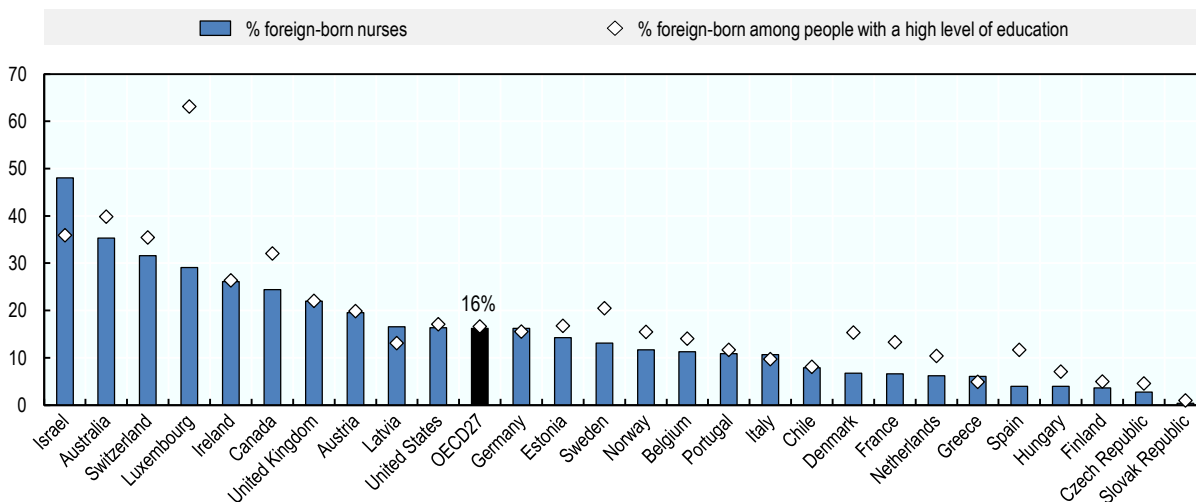
Figure 1.3. Percentage of foreign-born doctors in 27 OECD countries, 2015/16



Note: The OECD average is the unweighted average for the 27 OECD countries presented in the chart. It differs slightly from the OECD total presented in Table 1.1 which is a weighted average of the 18 OECD countries for which data are available in 2000/01, 2010/11 and 2015/16. Source: DIOC 2015/16, LFS 2015/16.

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Figure 1.4. Percentage of foreign-born nurses in 27 OECD countries, 2015/16

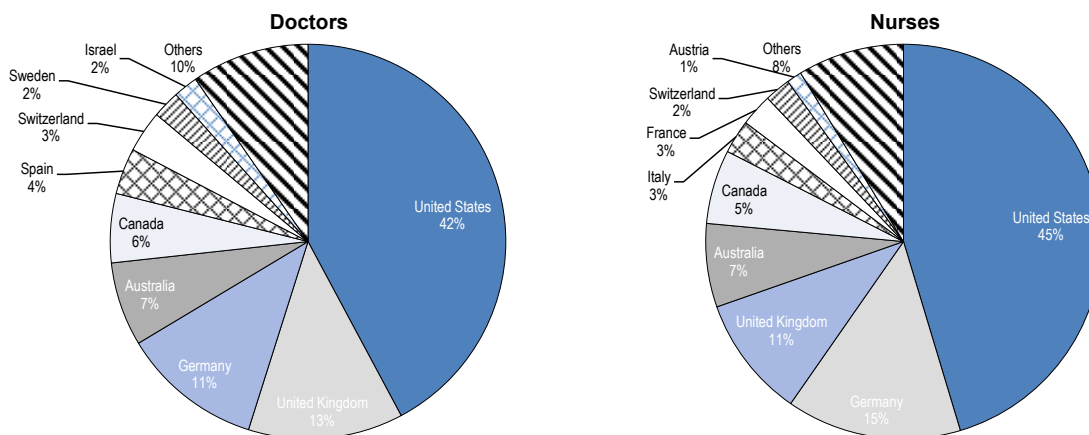


Note: The OECD average is the unweighted average for the 27 OECD countries presented in the chart. It differs slightly from the OECD total presented in Table 1.2 which is a weighted average of the 19 OECD countries for which data are available 2000/01, 2010/11 and 2015/16.
 Source: DIOC 2015/16, LFS 2015/16.

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In absolute terms, the United States remains the main country of destination for migrant doctors and nurses. Of all foreign-born health workers who practise in OECD countries, 42% of doctors and 45% of nurses practise in the United States (Figure 1.5). This is roughly equal to the share of all foreign-born highly-skilled people in OECD countries working in the United States (41%). The United Kingdom is the second country of destination for doctors, receiving 13% of all foreign-born doctors who practise in OECD countries, followed by Germany (11%). This ranking is reversed for nurses, with Germany in second place (15%) followed by the United Kingdom (11%).

Figure 1.5. Distribution of foreign-born doctors and nurses by country of residence, 2015/16



Source: DIOC 2015/16, LFS 2015/16.

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Among the 18 OECD countries for which data are available and comparable over time, the number of foreign-born doctors rose by over 20% between 2010/11 and 2015/16, a much higher growth rate than the overall increase in the number of doctors of 10% (Table 1.1).³ As a result, the proportion of foreign-born doctors across these OECD countries rose by 3.1 percentage points to 27.2%. This growth is due to both migration dynamics and differences in age structures between foreign-born and native-born doctors and nurses, which affect their exits from the labour market via retirement.

Increases in the share of immigrant doctors were highest in Luxembourg (+15 percentage points), Switzerland (+6), Germany (+5), Canada (+4), the United States (+4) and Spain (+3). In terms of absolute numbers, the greatest swing in the number of foreign-born doctors came in the United States (+67 000) and Germany (+22 000), followed by Australia (+11 100), Canada (+11 000), Switzerland (+5 400) and Spain (+4 900). By way of comparison, the increase in the United Kingdom was a mere 3 000.

Some OECD countries, such as Greece and Italy, recorded declines in the number of foreign-born doctors between 2010/11 and 2015/16. The negative trend in Greece may be related to the government-debt crisis after 2010, which may have prompted foreign-born doctors to leave the country.

Table 1.1. Foreign-born doctors working in OECD countries, 2000/01, 2010/11 and 2015/16

Country of residence	Doctors								
	2000/01			2010/11			2015/16		
	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born
Australia	48 211	20 452	42.9	68 795	36 076	52.8	87 471	47 154	53.9
Austria ¹	30 068	4 400	14.6	40 559	6 844	16.9	36 782	5 225	14.2
Belgium*	..	..	..	..	..	..	39 265	6 174	15.7
Canada	65 110	22 860	35.1	79 585	27 780	34.9	100 780	38 780	38.5
Czech Republic*	...	...	...	39 562	3 468	8.8	42 363	4 110	9.7
Denmark ²	14 977	1 629	10.9	15 403	2 935	19.1	18 593	3 904	21.0
Estonia*	...	...	...	4 145	747	18.0	5 299	742	14.0
Finland	14 560	575	4.0	18 937	1 454	7.7	20 121	1 917	9.5
France*	200 358	33 879	16.9	224 998	43 955	19.5	..	..	..
Germany	282 124	28 494	11.1	366 700	57 210	15.7	390 039	78 907	20.2
Greece ³	13 744	1 181	8.6	49 577	3 624	7.3	49 922	2 103	4.2
Hungary	24 671	2 724	11.0	28 522	3 790	13.3	33 532	3 761	11.2
Ireland	8 208	2 895	35.3	12 832	5 973	46.6	13 538	5 565	41.1
Israel*	...	...	...	23 398	11 519	49.2	28 264	13 753	48.7
Italy*	...	...	...	234 323	11 822	5.0	234 704	10 163	4.3
Latvia*	...	...	...	...	...	...	6 868	1 197	17.4
Luxembourg	882	266	30.2	1 347	536	40.0	2 006	1 103	55.0
Mexico*	205 571	3 005	1.5	...	...	...	...	...	...
Netherlands	42 313	7 032	16.7	57 976	8 429	14.6	65 744	11 247	17.1
New Zealand*	9 009	4 215	46.9	12 708	6 897	54.3	...	...	...
Norway	12 761	2 117	16.6	19 624	4 460	22.7	22 348	5 082	22.7
Poland*	99 687	3 144	3.2	109 652	2 935	2.7	...	...	...
Portugal	23 131	4 552	19.7	36 831	6 040	16.4	35 592	3 508	9.9
Slovak Republic ^{1*}	...	...	...	21 552	823	3.8	13 127	153	1.2
Slovenia*	...	...	...	5 556	1 006	18.1	...	...	...
Spain ¹	126 248	9 433	7.5	210 500	21 005	10.3	189 396	25 875	13.7
Sweden ⁴	26 983	6 148	22.9	47 778	14 173	29.8	50 437	15 372	30.5
Switzerland ⁴	23 039	6 431	28.1	43 416	18 082	41.6	49 760	23 438	47.1
Turkey*	82 221	5 090	6.2	104 950	3 003	2.9	...	...	...
United Kingdom	147 677	49 780	33.7	236 862	83 951	35.4	262 465	86 866	33.1

	Doctors								
	2000/01			2010/11			2015/16		
	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born
United States	807 844	196 815	24.4	838 933	221 393	26.4	958 666	289 106	30.2
OECD Total (18 countries)	1 712 551	367 784	21.5	2 174 176	523 755	24.1	2 387 192	648 913	27.2

Notes: Doctors whose place of birth is unknown are excluded from the calculation of the percentage of foreign-born doctors. Countries with an asterisk (*) are not counted in the total due to data gaps at least for one year.

1. Other sources indicate an increase in the number of doctors in Austria, the Slovak Republic and Spain between 2010/11 and 2015/16.

2. Some doctors undergoing specialty training may not be counted in 2011.

3. In 2001, doctors are only partially covered.

4. Some doctors undergoing specialty training may not be counted in 2000.

Source: OECD (2007^[1]) for 2000/01, DIOC 2010/11 and LFS 2009/12 for 2010/2011, DIOC 2015/16 and LFS 2015/16 for 2015/16.

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The overall trend for nurses is similar to that of doctors. The number of foreign-born nurses increased by 20% between 2010/11 and 2015/16 while the overall increase in nurses was about 10%, so the share of foreign-born nurses increased by an average of 1.5 percentage points to 16.2% (Table 1.2). The largest numerical increase was in the United States (+130 000), followed by Germany (+68 000) and Australia (+26 000). On the other hand, the number of foreign-born nurses decreased in some OECD countries.

Table 1.2. Foreign-born nurses (professional and associate professional nurses) working in OECD countries, 2000/01, 2010/11 and 2015/16

Country of residence	Nurses								
	2000/01			2010/11			2015/16		
	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born
Australia	191 105	46 750	24.8	238 935	78 508	33.2	295 103	104 272	35.3
Austria	56 797	8 217	14.5	70 147	10 265	14.6	96 048	18 779	19.6
Belgium ¹	127 384	8 409	6.6	140 054	23 575	16.8	135 893	15 281	11.2
Canada	284 945	48 880	17.2	326 700	73 425	22.5	378 775	92 530	24.4
Czech Republic*	...	...	...	89 301	1 462	1.6	94 879	2 600	2.7
Chile*	...	...	...	...	...	...	121 107	9 532	7.9
Denmark ¹	57 047	2 320	4.1	61 082	6 301	10.3	62 212	4 173	6.7
Estonia*	...	...	...	8 302	2 162	26.0	9 134	1 304	14.3
Finland	56 365	470	0.8	72 836	1 732	2.4	74 927	2 722	3.6
France	421 602	23 308	5.5	550 163	32 345	5.9	612 387	40 329	6.6
Germany	781 300	74 990	10.4	1 074 523	150 060	14.0	1 346 118	217 998	16.2
Greece	39 952	3 883	9.7	55 364	1 919	3.5	52 851	3 221	6.1
Hungary	49 738	1 538	3.1	59 300	1 218	2.1	56 442	2 238	4.0
Ireland	43 320	6 204	14.3	58 092	15 606	26.9	52 832	13 778	26.1
Israel*	...	...	...	31 708	16 043	50.6	41 531	19 946	48.0
Italy*	...	...	...	399 777	39 231	9.8	392 630	41 935	10.7
Latvia*	...	...	...	...	...	...	8 056	1 334	16.6
Luxembourg*	2 551	658	25.8	...	...	...	3 098	900	29.1
Mexico*	267 537	550	0.2	...	...	...	...	...	...
Netherlands	...	...	...	...	...	...	188 094	11 643	6.2
New Zealand*	33 261	7 698	23.2	40 002	13 884	35.0	...	...	...
Norway ¹	70 698	4 281	6.1	97 725	8 795	9.0	102 843	12 418	12.1
Poland*	243 225	1 074	0.4	245 667	595	0.2	...	...	...
Portugal	36 595	5 077	13.9	53 491	4 643	8.7	61 178	6 637	10.8

Country of residence	Nurses								
	2000/01			2010/11			2015/16		
	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born	Total	Foreign-born	% foreign-born
Slovak Republic*	...	...	...	52 773	303	0.6	48 991	186	0.4
Slovenia*	...	...	...	17 124	1 483	8.7	...	...	...
Spain	167 498	5 638	3.4	252 804	14 400	5.7	258 709	10 302	4.0
Sweden ¹	98 505	8 710	8.9	113 956	15 834	13.9	110 143	14 455	13.1
Switzerland ¹	104 227	28 041	26.9	101 302	31 020	30.6	102 134	32 264	31.6
Turkey*	...	...	...	147 611	4 484	3.1	...	...	...
United Kingdom	538 647	81 623	15.2	618 659	134 075	21.7	692 001	151 815	21.9
United States	2 818 735	336 183	11.9	3 847 068	561 232	14.6	4 225 529	691 134	16.4
OECD Total (19 countries)	6 203 999	712 302	11.5	8 115 621	1 195 863	14.7	8 904 219	1 445 989	16.2

Notes: Nurses whose place of birth is unknown are excluded from the calculation of the percentage of foreign-born nurses. Countries with an asterisk (*) are not counted in the total due to data gaps for at least one year.

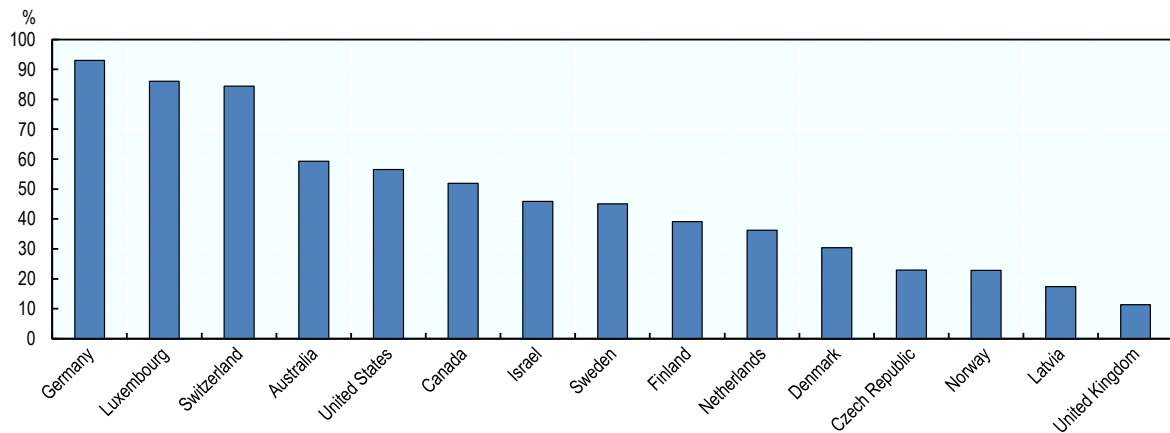
1. Other sources indicate an increase in the number of nurses in Belgium, Sweden and Switzerland between 2010/11 and 2015/16. Other sources indicate that the number of nurses in Denmark may be about 50% higher in 2010 and in 2015 (some “associate professional” nurses may not be counted).

Source: OECD (2007⁽¹¹⁾) for 2000/01 (except Switzerland, LFS 2001), DIOC 2010/11 and LFS 2009/12 for 2010/2011, DIOC 2015/16 and LFS 2015/16 for 2015/16.

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In six out of fifteen OECD countries, more than half of the increase in the total number of doctors in recent years is attributable to immigration (Figure 1.6). For nurses, in half of the OECD countries for which data is available, more than a third of the increase in the total number of nurses came from people who were born in another country (Figure 1.7).

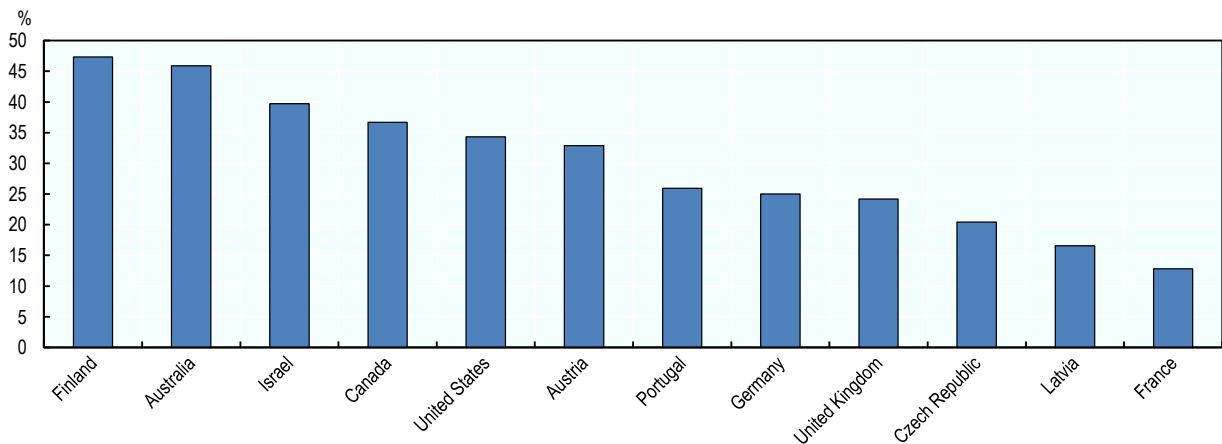
Figure 1.6. Share of the growth in practising doctors between 2010/11 and 2015/16 attributed to foreign-born doctors in 15 OECD countries



Source: DIOC 2010/11 and LFS 2009/12 for 2010/2011, DIOC 2015/16 and LFS 2015/16 for 2015/16.

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Figure 1.7. Share of the growth in practising nurses between 2010/11 and 2015/16 attributed to foreign-born nurses in 12 OECD countries



Source: DIOC 2010/11 and LFS 2009/12 for 2010/2011; DIOC 2015/16 and LFS 2015/16 for 2015/16.

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1.4. Many OECD countries have also relied increasingly on foreign-trained doctors and nurses

In most OECD countries, the proportion of health workers trained abroad is lower than those born abroad, reflecting the fact that destination countries provide part of the education and training to migrants. For example, 40% of foreign-born doctors in Australia received their medical education there (according to 2016 census data).

Overall, 16% of all doctors working in 26 OECD countries in 2016 had obtained at least their first medical degree in another country, that is, about 483 000 doctors (Table 1.3). This is up from 14% of all doctors in 2006 (or about 323 000) and 15% in 2011 (or about 424 000). The number and share of foreign-trained nurses has also increased in most OECD countries over the past decade (Table 1.4). However, it is important to keep in mind that not all of the foreign-trained doctors and nurses are foreigners, and that a large number in some countries (e.g. Chile, Israel, Norway, Sweden and the United States) are people born in the country who went to obtain at least a first medical degree abroad before coming back (see also Chapter 2).

Looking a bit more specifically at the trends in foreign-trained doctors in various parts of the OECD:

- Outside Europe, the share of foreign-trained doctors has increased greatly in New Zealand and Australia between 2006 and 2011, but has started to decline in recent years as the number of domestically-trained doctors increased faster. In Canada, both the number and share of foreign-trained doctors have increased steadily, whereas the share has remained relatively stable in the United States as the number of foreign-trained doctors increased at the same rate as the domestically-trained. Among the medical graduates with a foreign degree who obtained a certification to practice in the United States in 2017, a third were American citizens, up from 17% in 2007 (see also Figure 2.3 in Chapter 2). Similarly, in Israel, a growing number of foreign-trained doctors are people born in Israel who went to study abroad: their number nearly doubled between 2006 and 2016, accounting for 40% of all foreign-trained doctors in 2016.

- In Europe, the share of foreign-trained doctors has increased rapidly over the past decade in Ireland, Norway, Switzerland and Sweden, whereas it has decreased slightly in the United Kingdom as the number of domestically-trained doctors has increased slightly more rapidly. However, in Norway more than a half of foreign-trained doctors are in fact people who were born in the country and went to study abroad before returning. In Sweden, the number of foreign-trained natives quadrupled since 2006, accounting for nearly a fifth of foreign-trained doctors in 2015 (see also Figures 2.1 and 2.2 in Chapter 2). In Belgium, France and Germany, the number and share of foreign-trained doctors has also increased steadily over the past decade (with the share doubling from about 5 to 6% of all doctors in 2006 to 11 to 12% in 2016).

In absolute number, the United States had by far the highest number of foreign-trained doctors, with more than 215 000 initially trained abroad in 2016. Following the United States, the United Kingdom had more than 50 000 foreign-trained doctors in 2017. The main country of origin of these foreign-trained doctors in the United States and the United Kingdom is India, followed by Pakistan (see Annex 1.B).

Table 1.3. Foreign-trained doctors working in OECD countries, 2006, 2011 and 2015-17

	2006				2011				2015-17			
	Year	Total	Foreign-trained (of which natives) ¹	% of total	Year	Total	Foreign-trained (of which natives) ¹	% of total	Year	Total	Foreign-trained (of which natives) ¹	% of total
Australia	2007	62652	14808	23.6	2012	75258	24892	33.1	2016	86550	28283	32.7
			..	..			..	..			(304)	(0.3)
Austria	2006	30426	926	3.0	2011	33656	1372	4.1	2017	37963	2189	5.8
			..	..			(151)	(0.4)			(381)	(1.0)
Belgium	2006	49695	2636	5.3	2011	54851	5033	9.2	2017	63615	7801	12.3
Canada	2006	70870	15275	21.6	2011	84313	19864	23.6	2016	97169	23560	24.3
Chile		..	..	..		..	..	..	2017	45088	9591	21.3
			..	..			..	..			(2015)	(4.5)
Czech Rep.	2006	44064	1744	4.0	2011	42166	1984	4.7	2016	42682	2799	6.6
Denmark	2006	18402	1144	6.2	2011	20201	1141	5.7	2015	20902	1071	5.1
Estonia	2006	5336	30	0.6	2011	5884	102	1.7	2017	6748	238	3.5
Finland		..	..	..	2011	20502	3882	18.9		..	..	..
France	2006	212711	12261	5.8	2011	216762	17857	8.2	2016	224875	24420	10.9
			..	..			(542)	(0.2)			(660)	(0.3)
Germany ²	2006	284427	14703	5.2	2011	312695	22829	7.3	2016	346390	38247	11.0
Hungary	2006	37908	2917	7.7	2011	32966	2525	7.7	2016	31515	2459	7.8
			..	..			..	..			(376)	(1.2)
Ireland		..	..	..	2011	18812	6708	35.7	2017	22693	9606	42.3
Israel	2006	24675	15342	62.2	2011	26337	15777	59.9	2017	28690	16598	57.9
			(3448)	(14.0)			(4342)	(16.5)			(6320)	(22.0)
Italy	2006	357519	2488	0.7	2011	377376	3088	0.8	2017	396007	3250	0.8
			(1193)	(0.3)			(1339)	(0.3)			(1387)	(0.3)
Latvia	2006	7510	605	8.1	2011	7930	567	7.2	2017	8022	477	6.0
Lithuania		..	..	..		..	..	..	2017	14578	63	0.4
Netherlands	2006	45051	941	2.1	2011	51939	1352	2.6	2015	59144	1288	2.2
			..	..			..	..			(522)	(0.9)
New Zealand	2006	11889	4833	40.7	2011	14039	6111	43.5	2017	16368	6942	42.4
Norway	2008	18557	5996	32.3	2011	20649	7153	34.6	2017	24433	9689	39.7
			(2987)	(16.1)			(3529)	(17.1)			(5087)	(21.0)
Poland	2008	119604	2529	2.1	2011	123281	2172	1.8	2017	135468	2549	1.9

	2006				2011				2015-17			
	Year	Total	Foreign-trained (of which natives) ¹	% of total	Year	Total	Foreign-trained (of which natives) ¹	% of total	Year	Total	Foreign-trained (of which natives) ¹	% of total
Slovak Rep.		..	..	..	2011	16899	506	3.0		..	..	..
Slovenia		..	..	..	2011	5121	604	11.8	2017	6311	1092	17.3
		..	..	..			..	..			(142)	(2.2)
Spain		..	..	..	2011	207042	19462	9.4		..	..	..
Sweden	2006	32833	6351	19.3	2011	37499	9106	24.3	2015	41848	11715	28.0
			(542)	(1.7)			(1011)	(2.7)			(2117)	(5.0)
Switzerland	2008	29653	6477	21.8	2011	30849	7808	25.3	2016	36175	11900	32.9
Turkey	2006	104475	240	0.2	2011	126029	261	0.2	2015	141259	262	0.2
			(210)	(0.2)			(222)	(0.2)			(223)	(0.2)
UK	2008	147417	44050	29.9	2011	158439	46399	29.3	2017	180069	51329	28.5
USA	2006	664814	166810	25.1	2011	791602	195196	24.7	2016	862965	215630	25.0
OECD Total		2380488	323106	13.6		2913097	423751	14.5		2977527	483048	16.2
		(22 countries)				(27 countries)				(26 countries)		

1. So far only 12 OECD countries report data on number of foreign-trained but native-born doctors.

2. The data refer to foreign citizens (not necessarily foreign-trained).

Source: OECD Health Statistics 2018 , <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970038>

The trends in foreign-trained nurses working in OECD countries are as follows:

- Outside Europe, the number and share of foreign-trained nurses have increased steadily over the past decade in Australia, New Zealand, Canada and the United States. In Israel, the share of foreign-trained nurses has remained at around 10% (the fourth highest share among OECD countries), but one in four are in fact people born in the country who obtained their nursing degree abroad before coming back.
- In Europe, the number and share of foreign-trained nurses has increased particularly rapidly in Switzerland (with most of them coming from neighbouring countries, mainly Germany and France, but also to a lesser extent from Italy; it also includes a growing number of foreign-trained but native-born). In Belgium, France and Germany, the number and share of foreign-trained nurses have also increased quite rapidly over the past decade. In Italy, the number of foreign-trained nurses increased sharply between 2007 and 2015 (driven mainly by the arrival of many nurses trained in Romania following Romania's accession to the EU in 2007), but the number and share have started to decrease in recent years. Norway has a relatively high share of foreign-trained nurses (fifth highest among OECD countries), but more than one in eight were native-born in 2017.

In absolute number, the United States has by far the highest number of foreign-trained nurses, with an estimated number of almost 200 000 registered nurses (RNs) trained abroad in 2015. Following the United States is the United Kingdom with over 100 000 foreign-trained nurses in 2017 and Germany with 62 000 foreign-trained nurses in 2016.

Table 1.4. Foreign-trained nurses working in OECD countries, 2006, 2011 and 2015-17

	2006				2011				2015-17			
	Year	Total	Foreign-trained (of which natives) ¹	% of total	Year	Total	Foreign-trained (of which natives) ¹	% of total	Year	Total	Foreign-trained (of which natives) ¹	% of total
Australia	2007	263 331	38 108 (..)	14.5 (..)	2013	263 232	45 364 (669)	17.2 (0.2)	2016	279 789	51 180 (958)	18.3 (0.3)
Belgium	2006	150 817	1 290	0.9	2011	170 062	2 843	1.7	2017	204 256	7 215	3.5
Canada	2006	326 170	21 445	6.6	2011	360 572	26 005	7.2	2016	396 177	31 356	7.9
Chile		..	.. (..)	.. (..)		..	.. (..)	.. (..)	2017	50 062	1 048 (199)	2.1 (0.4)
Denmark	2006	51 841	820	1.6	2011	54 408	744	1.4	2015	55 732	645	1.2
Estonia		..	..	..	2011	11 543	4	0.0	2017	13 479	16	0.1
Finland		..	..	..	2011	71 160	1 089	1.5		..	..	..
France	2006	493 503	11 658	2.4	2011	567 564	14 495	2.6	2016	681 459	19 405	2.8
Germany		..	..	..	2012	814 000	50 000	6.2	2016	888 000	62 000	7.0
Greece	2006	10 023	311 (291)	3.1 (2.9)	2011	16 906	437 (403)	2.6 (2.4)	2015	17 770	451 (416)	2.5 (2.3)
Hungary		..	.. (..)	.. (..)	2013	53 323	650 (..)	1.2 (..)	2016	61 167	907 (13)	1.5 (0.0)
Israel	2006	46 188	4 907 (1 834)	10.6 (4.0)	2011	48 119	4 686 (1 701)	9.7 (3.5)	2017	52 956	4 875 (1 957)	9.2 (3.7)
Italy	2006	358 747	15 304 (403)	4.3 (0.1)	2011	397 859	23 621 (488)	5.9 (0.1)	2017	444 968	22 121 (449)	5.0 (0.1)
Latvia	2006	9 269	413	4.5	2011	9 032	381	4.2	2017	8 460	274	3.2
Lithuania		..	..	..		..	..	..	2017	27 712	104	0.4
Netherlands	2006	186 990	2 149 (..)	1.1 (..)	2011	198 694	1 358 (..)	0.7 (..)	2016	181 715	978 (249)	0.5 (0.1)
New Zealand	2008	39 247	8 931	22.8	2011	44 384	10 532	23.7	2017	48 743	12 680	26.0
Norway	2008	70 575	5 022 (..)	7.1 (..)	2011	83 851	7 076 (1 060)	8.4 (1.3)	2017	96 076	8 393 (1 113)	8.7 (1.2)
Poland		..	..	..		..	..	..	2016	288 395	150	0.1
Portugal	2006	51 095	2 285	4.5	2011	64 535	1 958	3.0	2014	66 473	1 212	1.8
Slovenia		..	..	..	2011	4 490	18	0.4	2017	6 731	27	0.4
Sweden	2006	98 792	2 695 (241)	2.7 (0.2)	2011	105 009	2 764 (306)	2.6 (0.3)	2016	108 185	3 269 (..)	3.0 (..)
Switzerland		..	.. (..)	.. (..)	2011	60 674	9 037 (703)	14.9 (1.2)	2016	70 866	18 352 (1 381)	25.9 (1.9)
Turkey	2006	82 626	118 (98)	0.1 (0.1)	2011	124 982	190 (153)	0.2 (0.1)	2015	152 803	456 (397)	0.3 (0.3)
UK	2006	686 815	91 412 (..)	13.3 (..)	2014	687 028	91 832 (..)	13.4 (..)	2017	691 482	103 671 (210)	15.0 (0.0)
USA ²		..	..	..	2012	2 779 650	166 779 ^e	6.0	2015	2 928 810	196 230 ^e	6.7
OECD Total						6 991 077	461 863	6.6		7 822 266	547 015	7.0
						(23 countries)					(25 countries)	

Notes: 1. So far only 12 OECD countries report data on number of foreign-trained but native-born nurses. 2. The estimates for the United States refer only to registered nurses (RNs), not including lower-qualified nurses.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970057>

1.5. Conclusions

While there continue to be concerns in many countries about growing shortages of health professionals, the number of doctors and nurses in absolute number and on a per capita basis has never been greater in most OECD countries. Since 2000, the number of doctors and nurses has grown more rapidly than the overall population in most countries, so both the doctor-to-population and nurse-to-population ratios have generally increased.

The growth in the number of doctors and nurses since 2000 has been driven mainly by growing numbers of domestically-trained doctors and nurses, as most OECD countries took actions to increase the number of students in medical and nursing education programmes in response to concerns about current or projected shortages. The United States provides a striking example of this growth: the number of medical graduates from American medical schools grew from 18 000 per year in 2000 to 24 000 in 2016, while the growth in the number of nurse graduates (as proxied by the number of new nurses receiving an authorisation to practice) doubled from 100 000 per year in 2000 to 200 000 in 2016.

At the same time, growing numbers of foreign-trained doctors and nurses have also contributed significantly to the rise in the number of doctors and nurses in several countries. Taking the example of the United States again, whereas about three quarters of the overall increase in the number of doctors between 2006 and 2016 came from domestic graduates, the other one quarter came from foreign-trained doctors (who accounted for about 50 000 new doctors out of a total increase of 200 000). However, a growing number of these foreign-trained doctors were Americans who went to study abroad before coming back.

Immigration contributed to the growing number of doctors and nurses particularly in the main settlement countries (e.g. Australia, Canada, the United States and Israel) and European countries where large number of immigrants go (e.g., Luxembourg and Switzerland). In several OECD countries for which data is available, more than half of the increase in the total number of doctors in recent years came from doctors who were born in another country. For nurses, the proportion is a bit smaller, but still in half of OECD countries for which data is available, more than a third of the increase in the number of nurses came from foreign-born nurses. It is important to keep in mind that many of these foreign-born doctors and nurses may have pursued their medical or nursing studies in their country of destination.

Focussing more on the place of medical or nursing education, the number and share of foreign-trained doctors and nurses have increased in most OECD countries over the past decade. One in six doctors working in OECD countries in 2016 had obtained at least their first medical degree in another country, up from one in seven in 2006. For nurses, one in fourteen had obtained their first nursing degree in another country in 2016, up from one in fifteen in 2011. However, it is important to bear in mind that not all these foreign-trained doctors and nurses are foreigners: a large and growing number of foreign-trained doctors and nurses in some countries (e.g. Israel, Norway, Sweden and the United States) are people born in the country who went to obtain a first medical degree abroad before coming back. In these cases, it is not appropriate to refer to this phenomenon as a “brain drain” as these students usually pay the full cost of their education while studying abroad.

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Annex 1.A. Trends in number of medical and nursing graduates in OECD countries

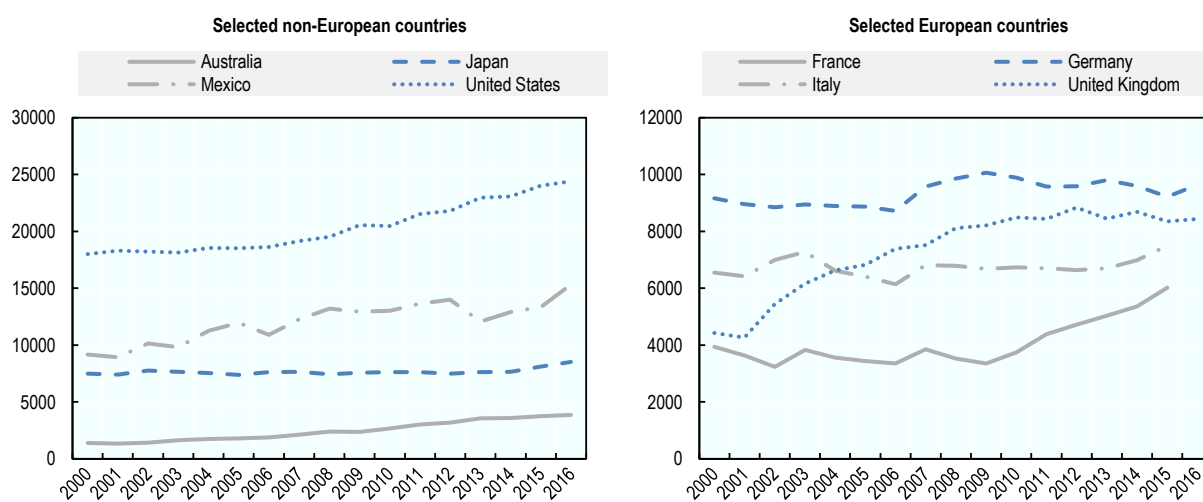
The increase in the number of doctors and nurses in most OECD countries since 2000 has been driven mainly by an increase in domestic graduates from medical and nursing education programmes. This rise in the number of medical and nursing graduates reflects in most cases deliberate policy decisions that were taken a few years earlier to increase the number of students admitted in medical and nursing schools, in response to concerns about current or possible future shortages of doctors and nurses. In some countries like Ireland, Poland and other Central and Eastern European countries, the strong increase in recent years also reflects the growing number of international medical students and graduates.

In the United States, the number of medical graduates has steadily increased from about 18 000 in 2000 to 24 000 in 2016 (Annex Figure 1.A.1). The number has also gone up substantially in Mexico, rising from 9 200 in 2000 to 15 000 in 2016. In Japan, the increase has been more modest, from 7 500 in 2000 to 8 500 in 2016, but the government decision to increase student intakes in medical education in 2008 in response to current and projected shortages of doctors should result in growing numbers of medical graduates in the coming years.

In Europe, while the number of medical graduates has remained relatively stable in Germany and Italy between 2000 and 2016, it has gone up markedly in the United Kingdom and France. The number of medical graduates in the United Kingdom increased from 4 400 in 2000 to over 8 300 since 2010, whereas in France it increased rapidly in recent years following a decade of stability in the 2000s. This rise reflects the gradual increase in the *numerus clausus* in France since 2000 (see Chapter 3).

Overall, the number of medical graduates across OECD countries has increased from less than 100 000 in 2006 to over 125 000 in 2016 (Annex Table 1.A.1).

Annex Figure 1.A.1. Changes in number of medical graduates, selected OECD countries, 2000 to 2016



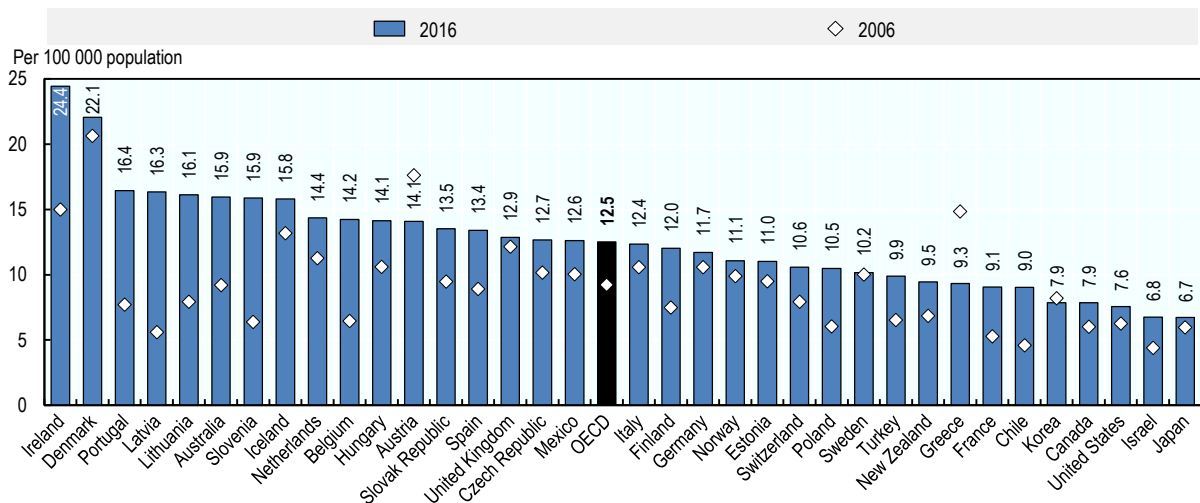
Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970209>

Relative to the population in each country, the proportion of new medical graduates per capita in 2016 was highest in Ireland and Denmark (Annex Table 1.A.2), although the number of Denmark may be an over-estimation as it reflects doctors getting a new authorisation to practice and may therefore also include foreign-trained doctors. In Ireland, about 50% of medical graduates nowadays are international students; in most cases, these international students do not pursue their postgraduate training and work in Ireland afterwards (see Chapter 4).

The number of medical graduates relative to the population in 2016 was lowest in Japan and Israel. In Israel, the low number of domestic medical graduates is compensated by the high number of foreign-trained doctors, who increasingly are people born in Israel who went to pursue their studies abroad before coming back.

Annex Figure 1.A.2. Number of medical graduates per 100 000 population, 2006 to 2016



Note: In Denmark, Mexico, New Zealand and Sweden, the data refer to the number of new doctors receiving an authorisation to practice, which may result in an over-estimation if these include foreign-trained doctors. There are no medical graduates in Luxembourg (explaining why this country is not shown in this chart).

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

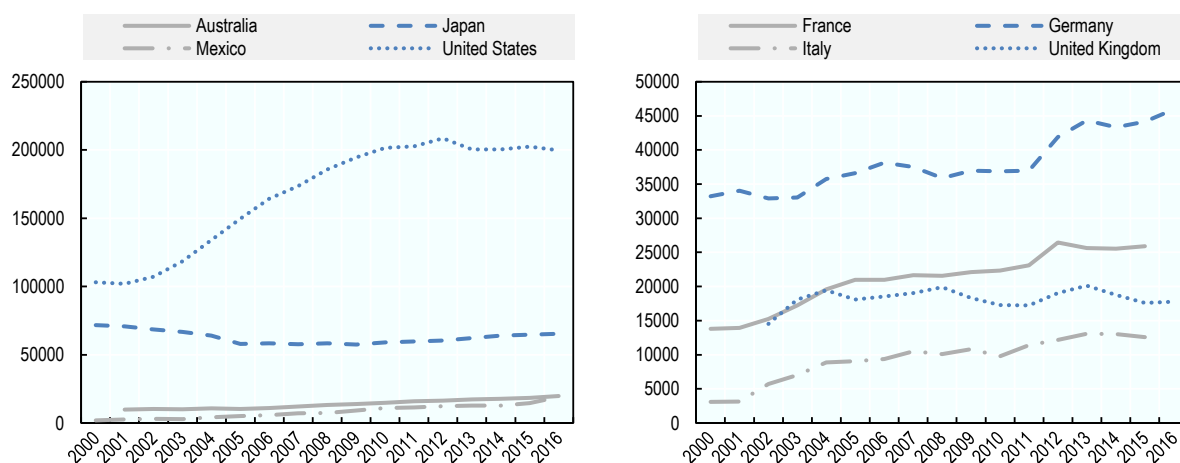
StatLink  <https://doi.org/10.1787/888933970076>

The number of nursing graduates has also increased in most OECD countries since 2000, often reflecting deliberate policies to increase the number of students in nursing schools in response to concerns about current or possible future shortages of nurses (Annex Table 1.A.3 and Annex Table 1.A.2).

In the United States, the number of nursing graduates (as proxied by the number of new nurses receiving an authorisation to practice) doubled between 2000 and 2010, rising from 100 000 per year to 200 000, but it has stabilised since then at around 200 000 per year. The number of nurse graduates has also doubled in Australia, increasing from less than 10 000 in 2000 to nearly 20 000 in 2016. By contrast, the number of nurse graduates decreased in Japan between 2000 and 2010, but it has started to increase since 2010. In Europe, the number of nurse graduates has increased fairly steadily in Germany, France and Italy since 2000. In the United Kingdom, it has levelled off since the mid-2000s and even decreased slightly in 2015 and 2016, before starting to rise again in recent years.

Overall, the number of nurse graduates across OECD countries has increased from about 450 000 in 2006 to more than 600 000 in 2016 (Annex Table 1.A.2).

Annex Figure 1.A.3. Changes in number of nursing graduates, selected OECD countries, 2000 to 2016



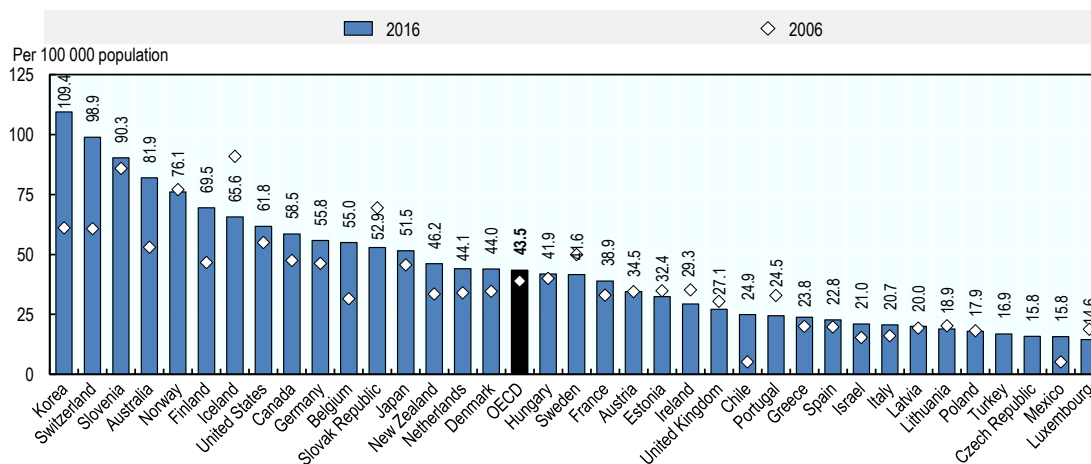
Note: In the United Kingdom and the United States, the data are based on the number of new nurses receiving an authorisation to practice, which result in an over-estimation as these may include foreign-trained nurses.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970057>

In proportion to the population size in each country, the number of new nurse graduates per capita was highest in 2016 in Korea and Switzerland, whereas it was lowest in Luxembourg, Mexico and Czech Republic (Annex Figure 1.A.4).

Annex Figure 1.A.4. Number of nursing graduates per 100 000 population, 2006 to 2016



Note: In Mexico, the data refer to professional nursing graduates only. In Denmark, Israel, Sweden, the United Kingdom and the United States, the data are based on the number of new nurses receiving an authorisation to practice; this may result in an over-estimation if these include foreign-trained nurses. The data for Turkey refer to 2017.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970076>

In 2016, several OECD countries reported that they had raised admission rates in medical and nursing schools over the previous four years (Annex Table 1.A.3), so the number of medical and nursing graduates can be expected to continue to increase in these countries in the coming years.

Annex Table 1.A.1. Number of medical graduates, 2006 to 2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Australia	1884	2117	2389	2361	2662	3011	3179	3573	3595	3751	3858
Austria	1456	1835	1814	1726	1466	1413	1170	1259	1255	1218	..
Belgium	681	732	758	851	980	1125	1180	1176	1289	1359	1614
Canada	1957	2046	2122	2338	2447	2526	2643	2658	2795	2813	2847
Chile	750	664	853	1068	1248	1193	1632	1294	1537	1693	1644
Czech Republic	1041	1108	1163	1319	1458	1460	1591	1338	1473	1430	1338
Denmark	1122	1192	1121	1204	1210	1179	1039	1032	1101	1254	..
Estonia	128	106	112	120	149	125	136	128	139	133	145
Finland	395	367	546	500	603	621	790	624	636	625	661
France	3354	3850	3526	3354	3740	4384	4717	5040	5365	6025	..
Germany	8724	9574	9857	10069	9894	9572	9587	9801	9599	9215	9647
Greece	1635	1599	1418	1285	1038	1096	1017	1022	..	..	..
Hungary	1069	1005	960	923	1040	1148	1374	1405	1347	1319	1388
Iceland	40	36	49	37	44	44	49	40	53	42	53
Ireland	641	726	673	722	785	738	781	931	1009	1107	1162
Israel	310	296	325	300	314	377	304	408	517	458	578
Italy	6143	6816	6796	6682	6732	6699	6635	6706	6981	7500	..
Japan	7639	7647	7434	7561	7619	7631	7501	7639	7652	8118	8529
Korea	3973	4354	4454	4449	4064	3992	4096	4009	4112	4004	4028
Latvia	124	111	140	161	179	232	234	271	280	320	320
Lithuania	259	264	322	395	391	407	394	438	429	476	462
Luxembourg ¹	0	0	0	0	0	0	0	0	0	0	0
Mexico	10899	12255	13209	12926	13033	13647	13998	12077	12905	13334	15328
Netherlands	1842	2019	2022	2075	2276	2456	2467	2416	2445	2475	2445
New Zealand	287	284	308	337	317	351	348	379	392	399	444
Norway	461	497	496	516	551	568	619	578	567	580	580
Poland	2308	2550	2727	2788	3081	3349	3549	3757	3689	3888	3983
Portugal	812	1029	1101	1126	1262	1287	1394	1426	1554	1642	1698
Slovak Republic	509	535	458	421	577	590	621	690	732	..	..
Slovenia	128	129	174	162	229	206	266	245	302	358	328
Spain	3951	3841	3922	3882	4299	4199	4457	4770	5571	6053	6226
Sweden	910	932	950	993	969	1011	1131	987	1091	1216	1008
Switzerland	594	612	667	729	813	744	782	786	863	894	885
Turkey	4532	4872	4753	5087	5138	4981	4949	4803	5175	6952	7849
United Kingdom	7390	7520	8115	8210	8490	8435	8840	8450	8690	8355	8440
United States	18635	19140	19532	20555	20469	21522	21799	22963	23075	24027	24410
Total²	96583	102660	105266	107232	109567	112319	115269	115119	119237	124787	128431

Notes: 1. Luxembourg has arrangements with neighbouring countries to provide medical education to some of its citizens. 2. When data are missing, the latest year available has been used to calculate the total number of graduates across OECD countries.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970133>

Annex Table 1.A.2. Number of nursing graduates, 2006 to 2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Australia	10853	12113	13093	13772	14886	16004	16296	17303	17804	18291	19835
Austria	4758	4898	4890	4006	4703	4900	4697	4920	4628	4752	..
Belgium	3324	3566	3476	4022	4542	4140	4735	5305	5315	5601	6236
Canada	..	15637	14941	15417	17471	19055	20031	19926	..	20964	..
Chile	848	709	1233	1306	1977	1851	2056	2211	3309	3875	4537
Czech Republic	5029	3643	1612	1457	1283	1822	1810	1565	1596	1665	1674
Denmark	4555	4627	4984	4597	5214	5348	5167	5688	5951	5911	..
Estonia	470	591	332	433	379	387	455	467	451	429	426
Finland	2453	2633	2981	3076	3368	3430	3594	3747	3541	3707	3817
France	20982	21648	21566	22122	22311	23113	26447	25619	25539	25888	..
Germany	38155	37499	35877	36968	36860	36959	41906	44312	43317	44134	45938
Greece	..	2207	2633	2863	2609	2659	2689	2609	..	..	..
Hungary	4031	3684	3158	3369	2863	2544	2596	3364	4000	4318	4112
Iceland	276	224	327	206	248	208	224	236	269	239	220
Ireland	1508	1410	1572	1440	1641	1720	1518	1528	1460	1352	1394
Israel	1081	1010	960	860	848	879	1111	1271	1813	1592	1792
Italy	9388	10491	10091	10821	9776	11389	12154	13075	13035	12563	..
Japan	58343	57634	58344	57529	59014	59629	60508	62258	63938	64722	65395
Korea	29600	32224	35099	38293	45268	47012	45953	48955	56711	55579	56072
Latvia	429	554	470	428	806	1646	592	1865	556	545	392
Lithuania	662	933	688	630	581	574	474	502	536	535	543
Luxembourg	89	88	81	89	101	130	130	61	72	73	85
Mexico	5653	7039	7260	9162	10864	11477	12323	12747	12719	14598	19133
Netherlands	5562	5876	6177	6322	6519	6331	6215	6334	6823	7244	7513
New Zealand	1403	1318	1372	1343	1454	1522	1627	1966	2073	2112	2166
Norway	3593	3696	3282	3488	3260	3347	3522	3653	3764	3811	3983
Poland	6938	7918	9187	8428	9653	17323	12395	13561	10929	12187	6812
Portugal	3457	3594	3571	3792	3706	3391	3005	2666	2674	2716	2528
Slovak Republic	3732	..	2713	3061	3167	3159	3430	3416	2868	..	..
Slovenia	1723	1788	1711	1641	1665	1679	1614	1598	1611	1599	1864
Spain	8764	8748	8987	9472	10098	11654	8194	8783	11700	10766	10578
Sweden	4534	4184	4114	3960	4081	4211	3793	3847	3865	3871	4126
Switzerland	4549	4960	5124	5738	5983	6180	5699	6759	7649	8112	8282
Turkey	5708	7001	4035	4288	11597	14046	14865	19842	22272	30205	57041
United Kingdom	18521	19023	19884	18316	17289	17241	19036	20133	18771	17580	17793
United States	164190	173495	185801	194575	201611	202697	208486	200338	200467	202345	199710
Total¹	453005	469376	481626	497290	527696	549657	559347	572430	584561	599358	629552

Notes: In Mexico and Sweden, the data refer to professional nursing graduates only. The large variations from year-to-year in some countries (e.g. Czech Republic, Latvia, Poland) reflect changes in the education and training system for nurses. In Turkey, the large increases in recent years is due to the fact that a very large number of students were admitted in nursing programmes in vocational high schools between 2007 and 2014, but 2014 was the last year when new students were admitted in these programmes; the number of nurse graduates has started to fall greatly in 2017.

1. When data are missing, the latest year available has been used to calculate the total number of graduates across OECD countries.

Source: OECD Health Statistics 2018, <https://doi.org/10.1787/health-data-en>.

StatLink  <https://doi.org/10.1787/888933970114>

Annex Table 1.A.3. Changes to medical and nursing education intake, OECD countries, 2012 to 2016

	Medical education intake	Nursing education intake
Australia	No change	Increase
Austria	No change	No change
Belgium	Increase	No change
Canada	No change	Increase
Chile	No change	Increase
Czech Republic	Increase	No change
Denmark	Increase	No change
Estonia	No change	n.a.
Finland	Increase	Increase
France	Increase	No change
Germany	Increase	No change
Greece	No change	No change
Hungary	Increase	n.a.
Iceland	No change	Increase
Ireland	No change (domestic students)	n.a.
Israel	Increase	Increase
Italy	Decrease	No change
Japan	Increase	No change
Korea	n.a.	n.a.
Latvia	No change	No change
Lithuania	No change	n.a.
Luxembourg	[no medical school]	No change
Mexico	n.a.	n.a.
Netherlands	No change	n.a.
New Zealand	n.a.	n.a.
Norway	Increase	n.a.
Poland	Increase	Increase
Portugal	Increase	No change
Slovak Republic	Increase	n.a.
Slovenia	Increase	Increase
Spain	Decrease	Increase
Sweden	No change	No change
Switzerland	Increase	Increase
Turkey	Increase	n.a.
United Kingdom	No change	No change
United States	n.a.	n.a.

Source: OECD Health System Characteristics Survey 2016, <http://www.oecd.org/els/health-systems/characteristics.htm>.

StatLink  <https://doi.org/10.1787/888933970152>

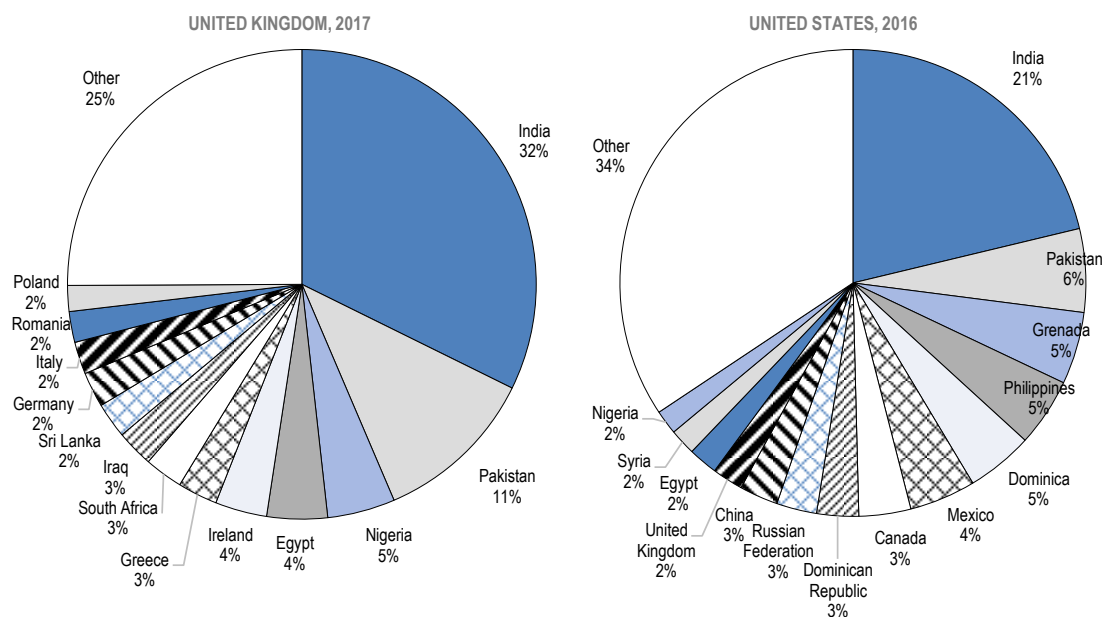
Annex 1.B. Countries of education of foreign-trained doctors working in the United States and the United Kingdom

The United States and the United Kingdom are the two main countries of destination of foreign-trained doctors working in OECD countries, with over 215 000 foreign-trained doctors working in the United States in 2016 and more than 50 000 working in the United Kingdom in 2017. Annex Figure 1.B.1 shows that the main country of origin of foreign-trained doctors working in these two countries was by far India, followed by Pakistan.

In the United States, more than one-fifth (21%) of foreign-trained doctors in 2016 came from India, with doctors trained in Pakistan and the Philippines following (with a share of 6% and 5% respectively). Many foreign-trained doctors in the United States were also trained in the Caribbean Islands (notably in Grenada and Dominica), but in many cases these are American students who went to study abroad and then came back to the United States to complete their postgraduate training and work. A large number of foreign-trained doctors also came from neighbouring countries (Mexico and Canada).

In the United Kingdom, nearly one-third (32%) of foreign-trained doctors in 2017 came from India, followed by Pakistan (11%). Many foreign-trained doctors also came from African countries (e.g. Nigeria, Egypt and South Africa). A significant number of foreign-trained doctors in the United Kingdom also came from other EU countries (e.g. Ireland, Greece, Germany, Italy, Romania and Poland).

Annex Figure 1.B.1. Main countries of training of foreign-trained doctors in the United Kingdom and the United States



Source: OECD Health Statistics 2018.

StatLink  <https://doi.org/10.1787/888933970171>

Notes

¹ [“The Looming Crisis in the Health Workforce: How Can OECD Countries Respond?”](#) was the title of an OECD publication in 2008 that called for greater efforts from OECD countries to train more doctors and nurses, as well as to improve retention rates and delay the retirement of existing health workers, to respond to growing demand for health care arising from population ageing.

² It is important to bear in mind, however, that the number of doctors in Greece and Portugal is over-estimated as it includes all doctors who are licensed to practice but may no longer be practising because some of them might have emigrated, be unemployed or retired.

³ This increase is roughly equal to the growth in the number of highly-skilled immigrants in OECD countries during that period.



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