BASYS

Health workforce demand and supply

FINLAND

Augsburg, May 2022

© Copyright 2022. BASYS GmbH, All rights reserved. Reproduction or translation of this publication, in part or in full, with appropriate credit of the source is permitted.

Study financed by the European Institute of Health and Sustainable Development.

Authors

Markus Schneider

Thomas Krauss

Aynur Köse

Marian Craig

Uwe Hofmann

BASYS

Beratungsgesellschaft für angewandte Systemforschung mbH

Reisingerstraße 25

D-86159 Augsburg, Germany

EIHSD

European Institute of Health and Sustainable Development

Public Institution (NGO), Civil Registry Code – 305493062

Petro Vileišio g. 18 A. 301

10306 Vilnius, Lithuania

Content

1. Summary 6
1.1 Size of health workforce 6
1.2 Growth of health workforce 7
2. Health workforce 8
2.1 Overall health workforce density 8
2.2 Employment share 9
2.3 Growth of health employment 9
3. Employers 11
3.1 Health services workforce by providers 11
3.2 Health services workforce in hospitals 12
4. Skills 13
4.1 Medical doctors 13
4.2 Nurse professions 14
4.3 Other health professionals 14
5. Education 16
5.1 Graduates of health professions 16
5.2 Medicals graduates 17
5.3 Nurse graduates 17
6. Migration 19
6.1 Migration of health workforce 19
6.2 Migration of doctors 20
6.3 Migration of nurses 21
7. Income 23
7.1 Annual compensation of health workforce 23
7.2 Compensation of health workforce per hour 24
7.3 Annual growth of income 24
8. Working conditions 26
8.1 Working hours 26
8.2 Capital intensity 27
8.3 Job vacancies 27
9. Outlook 29
9.1 Workforce supply projection 29
9.2 Health care demand projection 30
9.3 Health workforce shortage 30
10. References 32

List of figures

Figure 1: Finnish health workforce as compared to EU27 6
Figure 2: Growth of Finnish health workforce as compared to EU27 7
Figure 3: Employment in health services and social care per 100 capita 8
Figure 4: Health workforce as % of total employment, 2017 9
Figure 5: Growth of health workforce by sectors, 2007 – 2017 10
Figure 6: Distribution of health workforce by sector, 2017 11
Figure 7: Share of persons employed in hospitals as % of QA, 2017 12
Figure 8: Doctors per 1000 capita, 2017 13
Figure 9: Nurses per 1000 capita, 2017 14
Figure 10: Other health professionals per 1000 capita, 2017 15
Figure 11: Share of graduates in doctors and nurses, 2017 16
Figure 12: Number of medical graduates per 100 000 inhabitants 17
Figure 13: Number of nurse graduates per 100 000 inhabitants 18
Figure 14: Cumulative net migration since 2007 19
Figure 15: Foreign-trained doctors in % 20
Figure 16: Source and destination of migration of medical doctors, 2013 – 2021 21
Figure 17: Foreign-trained nurses in % 22
Figure 18: Annual gross wages per employee, 2017 23
Figure 19: Gross wages of health workforce per hour 24
Figure 20: Annual growth of compensation per employee 25
Figure 21: Annual working hours , 2017 26
Figure 22: Fixed capital per health workforce 27
Figure 23: Share of job vacancies in % of posts 28
Figure 24: Growth of potential labour force in percent, 2019 - 2030 29
Figure 25: Health and long-term care demand 2030 30
Figure 26: Health workforce shortage 2030 31

Abbreviations

AR	Ageing Report
Cedefop	European Centre for the Development of Vocational Training
EC	European Commission
EU	European Union
EUR	Euro (currency)
EUROPOP	Eurostat demographic projections
Eurostat	European Statistical Office
GDP	Gross domestic product
GPs	General Practitioners
JVR	Job Vacancy Rate
JVS	Job Vacancy Statistics
MS	Member States
NACE	Statistical classification of economic activities
OECD	Organisation for Economic Co-operation and Development
PES	Public Employment Services
PPP	Purchasing Power Parity
Q	Health and Social Care (NACE 86-88)
QA	Health Services (NACE 86)
QB	Social Care (NACE 87-88)
RPD	Regulated Professions Database
WHO	World Health Organisation

1. Summary

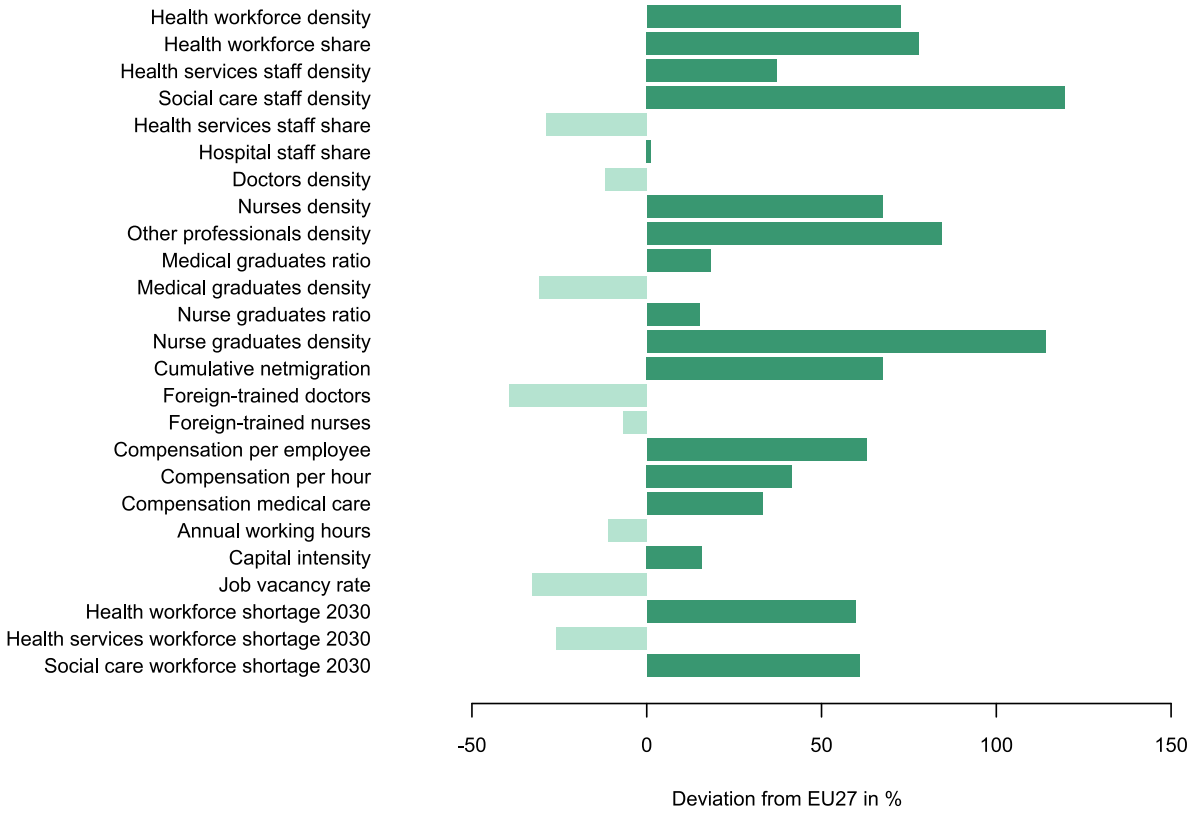
This country report aims to provide an general overview of the size and structure of the health workforce of Finland as compared to the EU27 average using existing statistical information systems. The report builds on a series of indicators used to describe the labour market of health services and social care.

Health workforce data are regularly collected by Eurostat for certain professions and for various economic activities. These data are gathered in a variety of statistical tools. This country report on Finland brings them together, and shows the overall growth of the health workforce. For different professions, indicators on income, education, working conditions, migration, and shortages are analysed. By comparing Finnish figures with those of the EU27 the report gives new insights into the availability of the health workforce and its development over time.

1.1 Size of health workforce

Figure 1 summarizes the main results of the size of the Finnish health workforce by 25 indicators. For each indicator, the figure shows the relative position of Finland compared to the EU27 average. In the case of values below the EU27 average, this is shown by light green bars, in the case of values above the EU27 average, in dark green bars.

Figure 1: Finnish health workforce as compared to EU27



Source: BASYS based on the following indicators of this report.

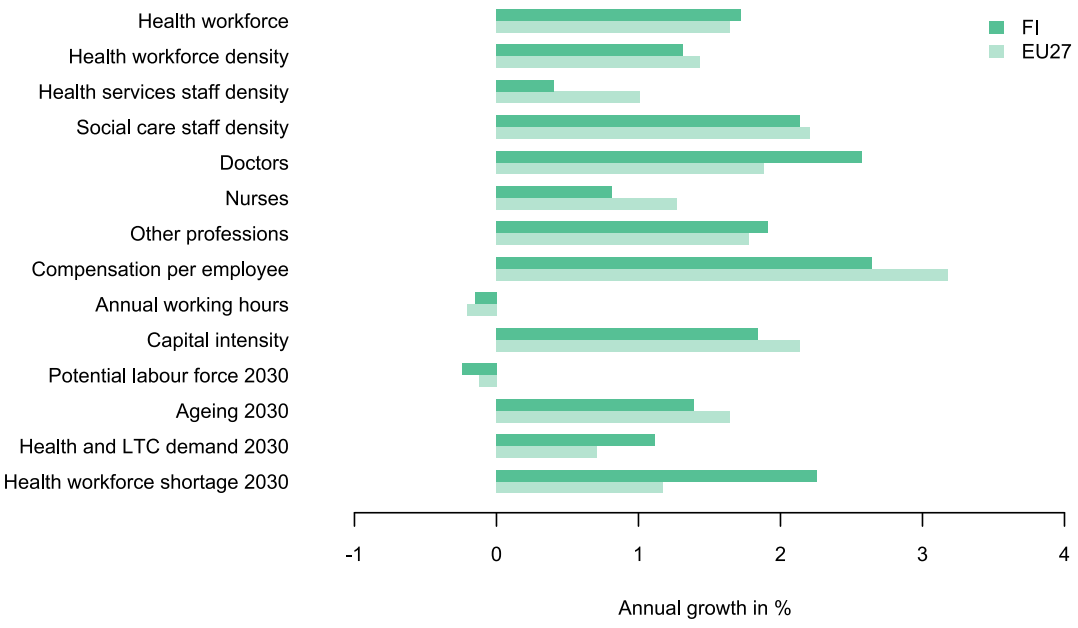
The values of most of these indicators are above the EU average. In Finland, the density of the health workforce per capita is higher than the EU average. This holds for health services and social care together as well as for health services only.

In Finland, almost equal health workforce is working in hospital settings than in EU27 average. Significantly higher is the density of other health professions such as medical technical professions and administrative staff working in health services and social care}.

1.2 Growth of health workforce

In the last decade, the dynamics of health workforce was below the growth of EU27. Figure 2 summarizes changes of selected indicators over time. 8 of 14 indicators show lower values relatively to the EU average; 6 of 14 indicators are above the EU27 average. In total, overall health workforce increased annually by 1.7 percent in Finland as compared to 1.6 percent increase in the EU27. In the period 2007 – 2017, the increase per capita was relatively lower than the EU average in the health services sector (QA) and lower in the social care sector (QB). To the overall lower growth of health workforce per capita in Finland compared to the EU contributed the stronger population growth.

Figure 2: Growth of Finnish health workforce as compared to EU27



Source: BASYS based on the following indicators of this report.

As one of the Nordic countries in the EU27, Finland has always been in a special position to attract health workforce by immigration across all professions. In future, one can expect that this advantage will continue and Finland will have no difficulties to achieve high access to care by European standards.

2. Health workforce

This chapter describes the development of health workforce employed in health services and social care as defined by NACE 86-88. Both demand and supply indicators are presented. It gives an overall picture as compared to the EU average.

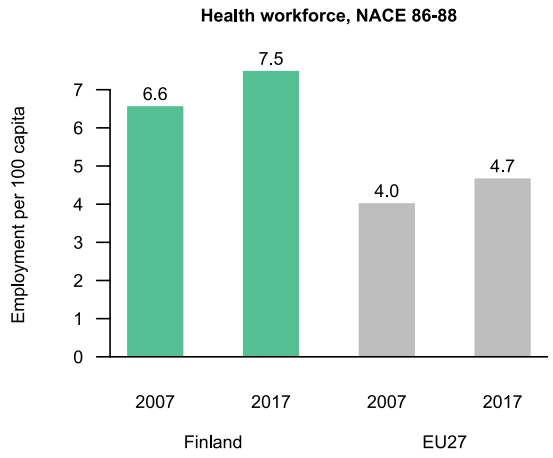
In the EU27, 21.0 million persons worked in the health services and social care sector (NACE 86-88) in the year 2017. That is 10.3 percent of EU27 total employment. Also in Finland, health workforce is a dominant part of the economy. But, the situation differs for historical reasons, due to geographical location, and many other factors, which are outlined in the following chapters.

In general, higher numbers of health workforce per population and high shares of health professionals in employment indicate better access to health care.

2.1 Overall health workforce density

In Finland, health and long-term care workforce is a growing part of the labourforce of the economy. Employment in health services shows the fulfilled demand for jobs. Access to healthcare in Finland benefited from the increasing number of health workforce per inhabitant.

Figure 3: Employment in health services and social care per 100 capita



Source: BASYS based on Eurostat.

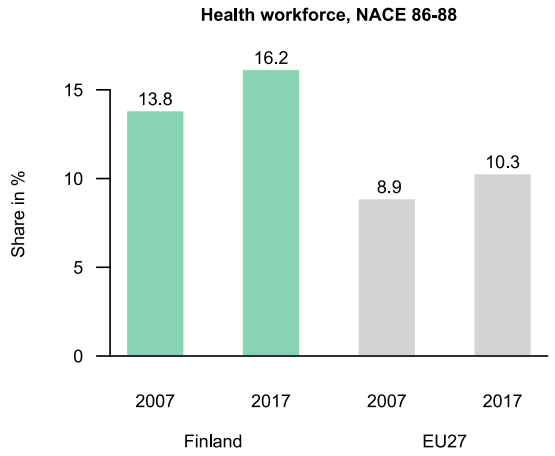
In Finland, 413900 persons worked in the health services and social care sectors in 2017 (Q). At 7.5 percent, the number of health and long-term care professionals per 100 inhabitants is above the EU average (4.7 percent). This higher number of health professionals indicates that Finnish inhabitants have better access to health services and social care than the EU average.

Certainly, any assessment needs to consider further factors, such as morbidity, the subjective perception of the population, or the working time. However, overall health workforce density is a strong indicator for health care access.

2.2 Employment share

The demand for health services and social care is driven by various factors, including medical progress and the increasing number of chronic patients. In the European Union as a whole, the share of health workforce in overall employment grew in the period 2007 – 2017. This means that in total 3.3 million new jobs were created in health services and social care in the EU.

Figure 4: Health workforce as % of total employment, 2017



Source: BASYS based on Eurostat.

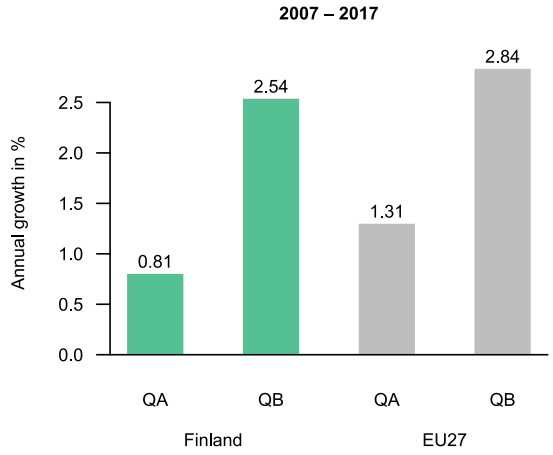
In Finland, the health services and social care workforce grew by 65400 persons from 348500 persons in 2007 to 413900 persons in 2017. The health and long-term care workforce amounts to 16.2 percent of the total employment. The ratio is above EU average. In Finland, in the period 2007 – 2017, the demand for health workforce (Q) grew annually by 1.7 percent. In the economy as a whole, employment changed by 0.2 percent.

One of the reasons for this stronger increase was the relative stronger growth of health and long-term care expenditures than spending for other services and goods. As a consequence the share of health workforce in total employment increased too.

2.3 Growth of health employment

Employment in health services (QA = NACE 86) comprises hospitals, medical practices of general practitioners, specialists, and dentists. Furthermore, practices of other professions are included. Providers of home health care services are partly classified under practices of other professionals, partly under social care (QB = NACE 87-88). Social care comprises long-term nursing care facilities, mental health and substance-abuse facilities and other residential long-term care facilities. Furthermore, other long-term care and social work activities without accommodation are included.

Figure 5: Growth of health workforce by sectors, 2007 – 2017



Source: BASYS based on Eurostat.

In Finland, in the period 2007 – 2017, the workforce working in health services (QA) developed annually by 0.8 percent. In social care including long-term care (QB), employment changed annually by 2.5 percent.

This indicator is strongly influenced by growth or decline of the population, the ageing process, and national health policy. In Finland, population grew annually by 0.4 percent over the whole period 2007 – 2017.

3. Employers

The distribution of health workforce employed in different settings depends very much on the national culture, the organisation of the health system, the public financing of health and social care, and the standards used in health workforce planning.

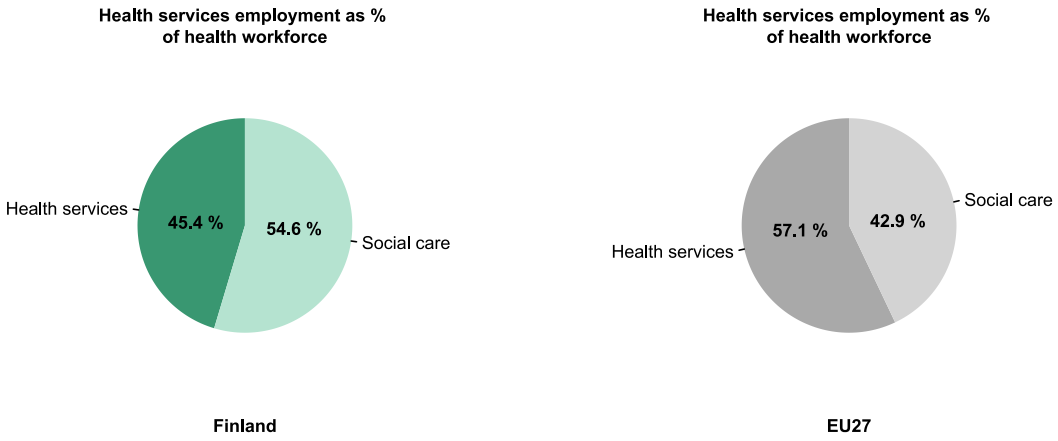
In general, the annual reimbursement negotiation gives health care employers some room to engage new staff. However, the ongoing pressure to increase salaries of health professionals reduces the capabilities of employers to recruit additional staff (see chapter 7. Income).

Besides financial restrictions, many countries face supply restrictions of health workforce because of general labour force shortage. Both financial and supply constraints have been important on expanding health service activities and improving access. These constraints are even more likely in the future.

3.1 Health services workforce by providers

The supply side of each European health system builds on public and private entities of different complexity and size which recruit the health workforce. Employers in heath services, especially medical care (NACE 86) comprise hospitals, medical practices of general practitioners, specialists, and dentists. Furthermore, practices of other professions are included. Employment in social care (NACE 87-88) comprises nursing homes, homes for handicapped persons, and providers of home health care services.

Figure 6: Distribution of health workforce by sector, 2017



Source: BASYS based on Eurostat, Destatis: GPR.

In Finland, 45.4 percent of health workforce is working in health services, and 54.6 percent in social care, especially in long-term care. This distribution is rather similar to the EU27 split 57.1 to 42.9 between both sectors.

Overall, a broad network of health services providers is a precondition for the supply of care across all types of diseases. In Finland, the distribution of health workforce across providers is strongly influenced by this public/private mix of provision and financing of the health system. In Finland, most doctors

working in outpatient care are as civil servants, in inpatient care, they are salaried too. Most services are covered by the Public Health System.

3.2 Health services workforce in hospitals

Hospitals are the backbone of specialised medical services and of the education of medical and nurse graduates. Most hospitals are in public ownership and hospital planning is under the responsibility of governmental institutions. University hospitals form the best equipped units and play a key role for health services innovations. The hospital workforce is large and diverse, covering many occupations. Hospital employees include medical staff (such as surgeons, anaesthetists and other specialists), nurses, diagnostic and allied health professionals (such as physiotherapists and occupational therapists), administrative and clerical staff, and domestic and other personal care staff.

Figure 7: Share of persons employed in hospitals as % of QA, 2017

Source: BASYS based on Eurostat/OECD.

In Finland, 57.8 percent of the workforce of health services are working in hospitals. The share of health workforce working in outpatient settings (42.2 percent) is lower than the European average. In the EU27, the share of health workforce in outpatient establishments amounts to 46.7 percent.

Several factors contribute to the growth of hospital staff. For example, there is a significant proportion of hosptal staff working part time. In Finland, the number of hospital staff was relatively stable during the period 2007 – 2017. Hospital staff grew modestly by 0.8 percent. But, in Finland, health spending for hospitals increased annually by 4.1 percent in the period 2014 – 2018 as compared to the EU with 2.9 percent.

4. Skills

This chapter provides information about the structure of skills of health workforce employed in health services and social care. The EU statistics on physicians split into licensed, active, and practising physicians. We focus on practising health personnel who provide services directly to patients.

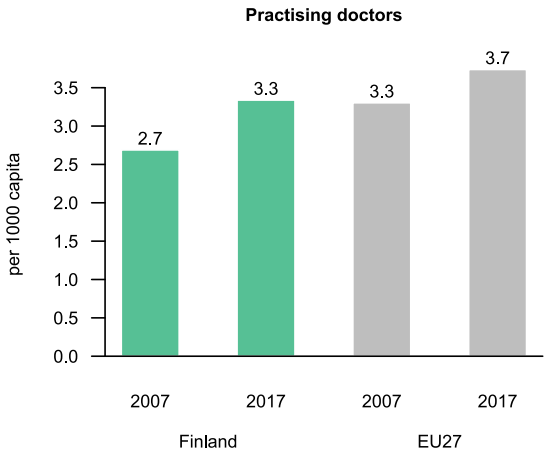
Doctors are usually at the top of the decision-making hierarchy in health care. Nursing is the profession with the most jobs both in health and long-term care. Other professions such as medical technical assitants and administrative staff support health and social service delivery. Workforce of pharmacies and sanitary shops, or of health insurance administration is not included in the boundary of this study.

The majority of health services and social care workers are women. There is a trend towards more women in medical professions. The majority of the EU27 countries reports higher numbers of female than male physicians.

4.1 Medical doctors

The structure of health workforce by skills is driven by an increasing specialisation. The number of doctors in general has increased continuously during the last decades. However, the number of qualified GPs has decreased, both in relation to the Finnish population and in relation to all physicians. A further trend is the increase in female doctors. The proportion of female doctors has increased in all EU27 countries over the past decade.

Figure 8: Doctors per 1000 capita, 2017



Source: BASYS based on Eurostat.

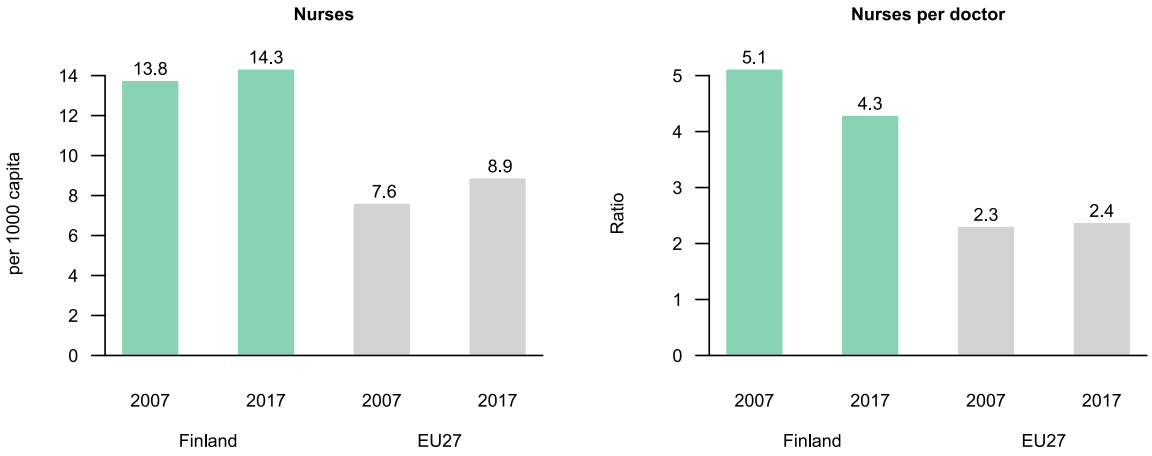
In Finland, 18 389 doctors were working in the year 2017in the health service sector. That is 9.79 percent of the health workforce employed in health services (QA). The number of doctors per 1000 inhabitants is 3.3, and below the European average (3.7). In line with the EU27, the increase of the density of doctors in the period 2007 – 2017 is the result of both an increase of the population and of an increasing number of doctors.

Emigration led obviously to impacts on the access to health care. Further analysis might focus on the development of specialists as well as the geographical distribution. More specialists are generally working in urban regions in line with specific regulations to secure quality and an efficient allocation of resources.

4.2 Nurse professions

Nurses are the largest professional group practising in health services. In some countries the data include different levels of professional nurses such as officially recognised general and specialist nurses and associate professional nurses. Although nurses have traditionally provided care to patients under the guidance of a physician, they are increasingly permitted in many EU Member States to practise independently as professionals. This, however, depends on their qualifications and level of training, with a growing proportion of nurses following university courses to degree level. The structure of nurses is also driven by the advancing specialisation in health services. However, the number of higher qualified nurses has increased continuously during the last decades.

Figure 9: Nurses per 1000 capita, 2017



Source: BASYS based on Eurostat.

In Finland, 79000 nurses worked in the health services and social care sectors in 2017. That is 19.1 percent of the health workforce employed in both sectors in total. The number of health nurses per 1000 inhabitants in 2017 is at 14.3 above the EU average (8.9). This results in a higher nurse to doctor ratio (4.3) than the EU average (2.4).

Nurses play a critical role in maintaining access to services and improving the productivity of the health workforce as well as improving the continuity and quality of care for the patients.

4.3 Other health professionals

The health workforce comprises a wide variety of professions and occupations who provide some type of healthcare service or support the delivery and administration of these services. Other health

professionals comprise medical technical professions, physiotherapists, assistants, administrative employees, and social professions. The indicator is compiled as difference between the total health workforce and the number of doctors and nurses.

Figure 10: Other health professionals per 1000 capita, 2017

Source: BASYS based on Eurostat.

The structure of other professions is strongly driven by the increasing specialisation in health care too. In 2017, there are in Finland 57.5 other health services workforce per 1000 capita. The number of other professionals has continuously increased during the last decade by 21.1 percent in total.

The importance of other professions is noticeable. The ratio of other health and social professionals including persons in training was 34.3 per 1000 capita in the EU27.

5. Education

The increasing demand for health professionals requires additional investment in programmes of education and training. Finland has expanded both the training capacities of doctors as well as of other health professionals.

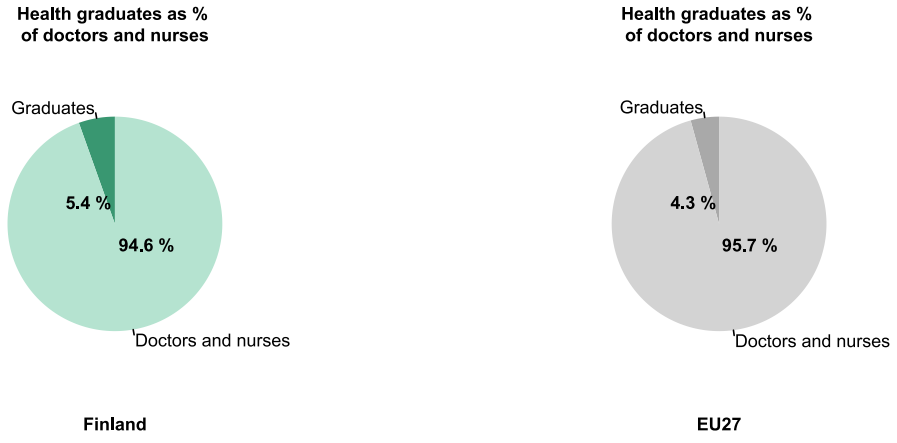
The training of health care professionals is usually a shared responsibility of different organisations, such as professional associations, government bodies, medical universities and schools, and providers. Comprehensive information on the number of graduates in all health professions is not available.

Further expansion of education capacities is planned. However, the expected need surpasses the supply.

5.1 Graduates of health professions

The following indicator shows the ratio of graduates of both doctors and nurses together as percent of the stock of doctors and nurses. It gives an idea of the share of the specific health workforce which can be replaced in one year. The indicator shows the number of students who have graduated from medical faculties or similar institutions and nursing schools, i.e., who have completed basic medical education and nursing education in a given year.

Figure 11: Share of graduates in doctors and nurses, 2017



Source: BASYS based on Eurostat.

In Finland, the ratio of graduates of medicine and nurses to practising doctors and nurses was 5.4 percent. In the EU27, this ratio was 4.3 percent which mean Finland invested relatively more into the education of these health professions than EU27 average.

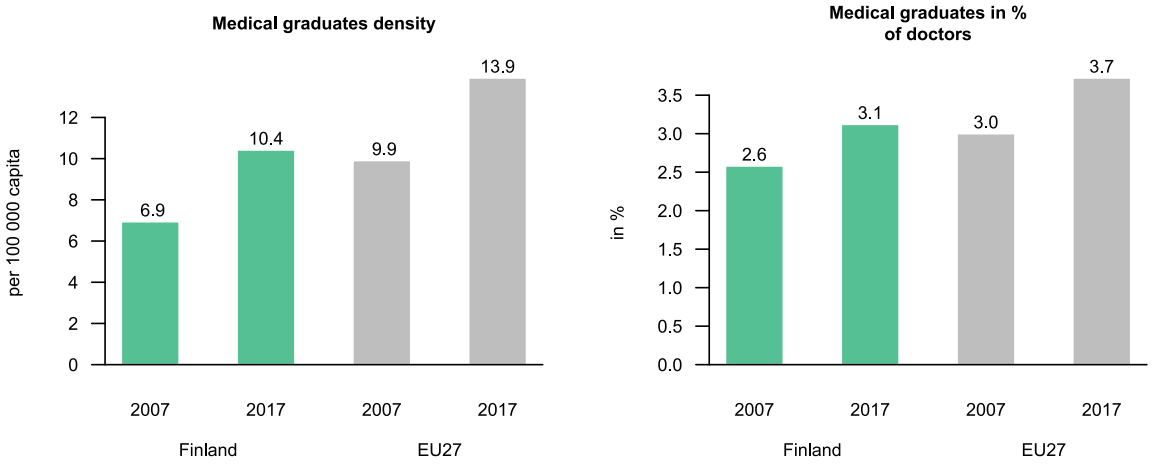
The ratio of graduates in Finland reflects the country's education activity to secure the stock of health professions. In several countries the ratio is influenced by international training activities. Also time lags needs to be considered. The number of graduates in a given year reflects training decisions that were made a few years earlier.
The interpretation of the ratio of graduates to professions should also take into consideration the fact

that some graduates will not practice their professions in health services but take other opportunities outside healthcare, e.g. such as in industries or media.

5.2 Medicals graduates

Medical graduates are defined as the number of students who have graduated from medical schools in a given year. The figures might differ from the number of new doctors receiving an authorisation to practice, because authorisation data include a certain number of foreign-trained doctors. In the EU27, on average 13.9 medical students per 100 000 inhabitants graduated in 2017.

Figure 12: Number of medical graduates per 100 000 inhabitants



Source: BASYS based on Eurostat/OECD.

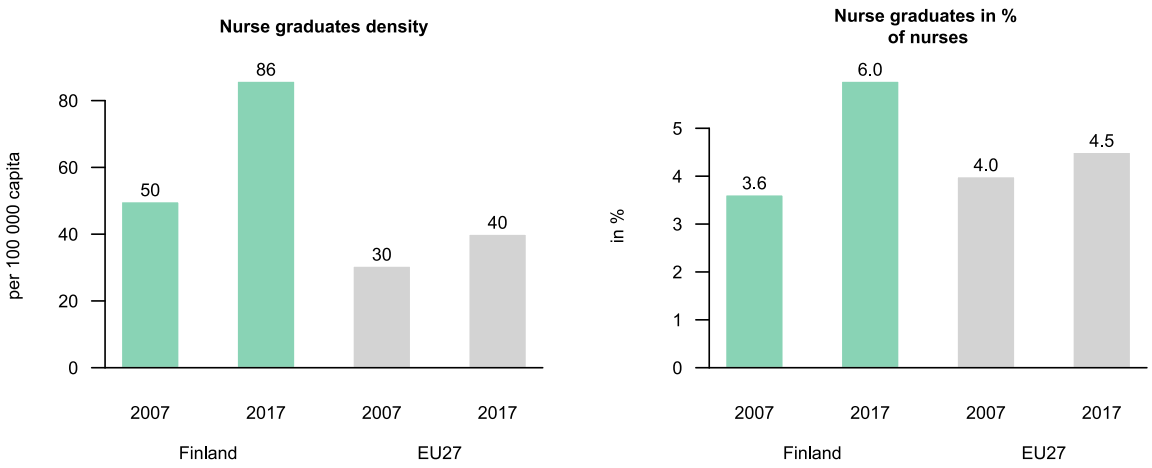
In Finland, 574 doctors graduated in the year 2017. That is 3.1 percent of the practising doctors and is 0.3 percent of health workforce employed in health services establishments (NACE 86). The number of medical graduates per 100 000 inhabitants is 10.4, which is below the EU average (13.9).

In response to concerns about current or possible future shortages of doctors many EU countries have increased their capacities of medical education and training.

5.3 Nurse graduates

Nursing graduates refer to the number of students who have obtained a recognised qualification required to practice as a nurse. The numbers include graduates from higher level and lower level nursing programmes. On average, 40 nurses are graduating in EU27 per 100 000 inhabitants. This means that on average more than twice as many students graduate in nursing than in medical professions.

Figure 13: Number of nurse graduates per 100 000 inhabitants



Source: BASYS based on Eurostat/OECD.

In Finland, 4730 nurses graduated in the year 2017. That is 6.0 percent of all practising nurses and 1.1 percent of health workforce employed in health services and social care (Q). The number of nurse graduates per 100 000 inhabitants is 86 which is significantly above the EU average (40).

There are wide variations across EU countries in the number of new nurses in training. In many countries, young people still see nursing as an occupation with low professional status and autonomy, and with few career opportunities (OECD 2021).

6. Migration

The chapter compares the migration of health workforce across various skills to the general migration of the country. Firstly, we focus on the total supply of labour. Then we analyse the migration of doctors and nurses.

The last decade has shown that general migration depends very much on global phenomena. In contrast, the migration of graduates depends also on the development of cross-border education and the opportunities for the graduates. During the Corona pandemic migration significantly changed, therefore it is unlikely that the described trends will continue in the future (see also Chapter 9. Outlook).

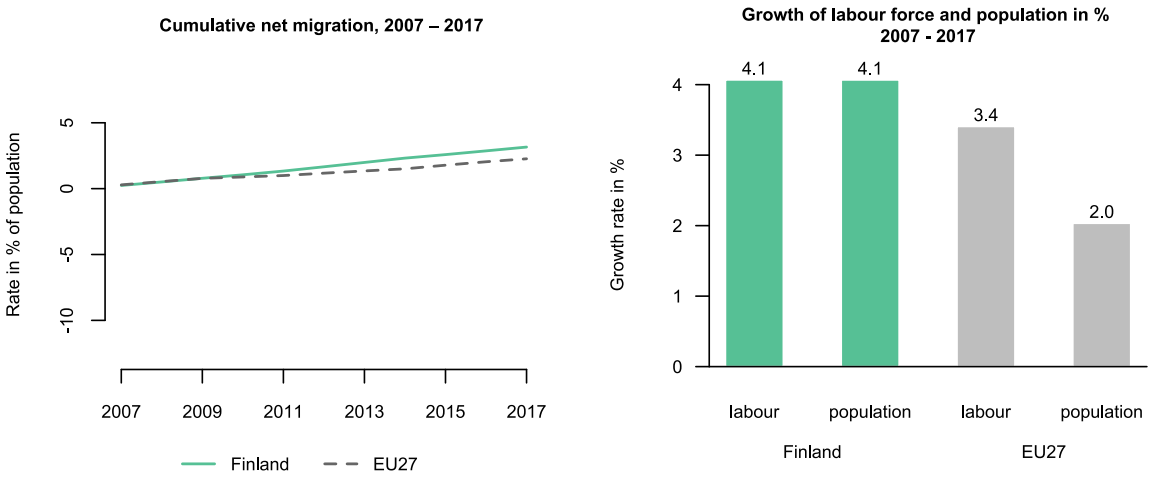
The resilience of the health systems of the EU Member States depend increasingly on the functioning of the common labour market. There is a trend from the periphery to the centre of the European Union. In this respect Finland is an special immigration country.

6.1 Migration of health workforce

The international migration and mobility of health workers is increasing in volume and growing in its complexity. The migration of health workers affects all countries in one way or another. In some cases, health workers leave their home countries looking for better working conditions and career opportunities abroad.

A general statistic of inflows and outflows of healthworkforce does not exist. Therefore, we use the general net migration as proxy indicator. The net migration shows the difference between inflows and outflows. It is measured as the difference between the rate of actual growth of population and the natural growth.

Figure 14: Cumulative net migration since 2007



Source: BASYS based on Eurostat/OECD.

In Finland, the cumulative net migration rate was 3.2 percent in the period 2007 - 2017 as compared to 2.3 percent in the EU27 as a whole. This had an impact on the overall workforce. In the period 2007 –

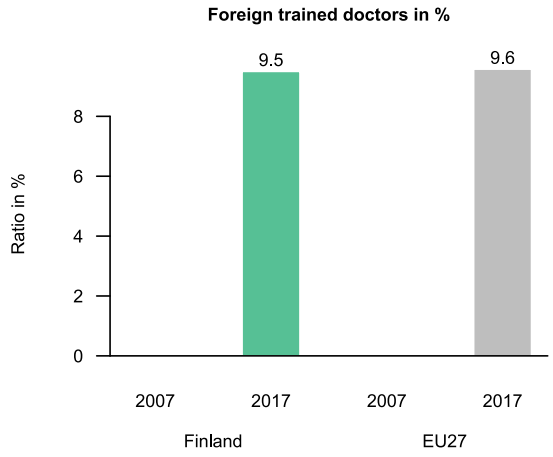
2017, the supply of the total workforce grew by 4.1 percent in Finland, but by 3.4 percent in EU27 countries.

Differences in pay and working conditions among Member States have influenced the inflow and outflow of migrant workers, who are mainly female.

6.2 Migration of doctors

The international migration of health care professionals has been recognized as a public health concern. In this context a series of 'push' and 'pull' factors have been identified as driving forces for migration of doctors. In most EU Member States, the share of foreign-trained doctors has increased rapidly over the past decade. To some extent the migration of doctors follows the general trend of labour force migration. The indicator migration of doctors shows the inflows as percent of active doctors. A particular role is played by education and training abroad.

Figure 15: Foreign-trained doctors in %



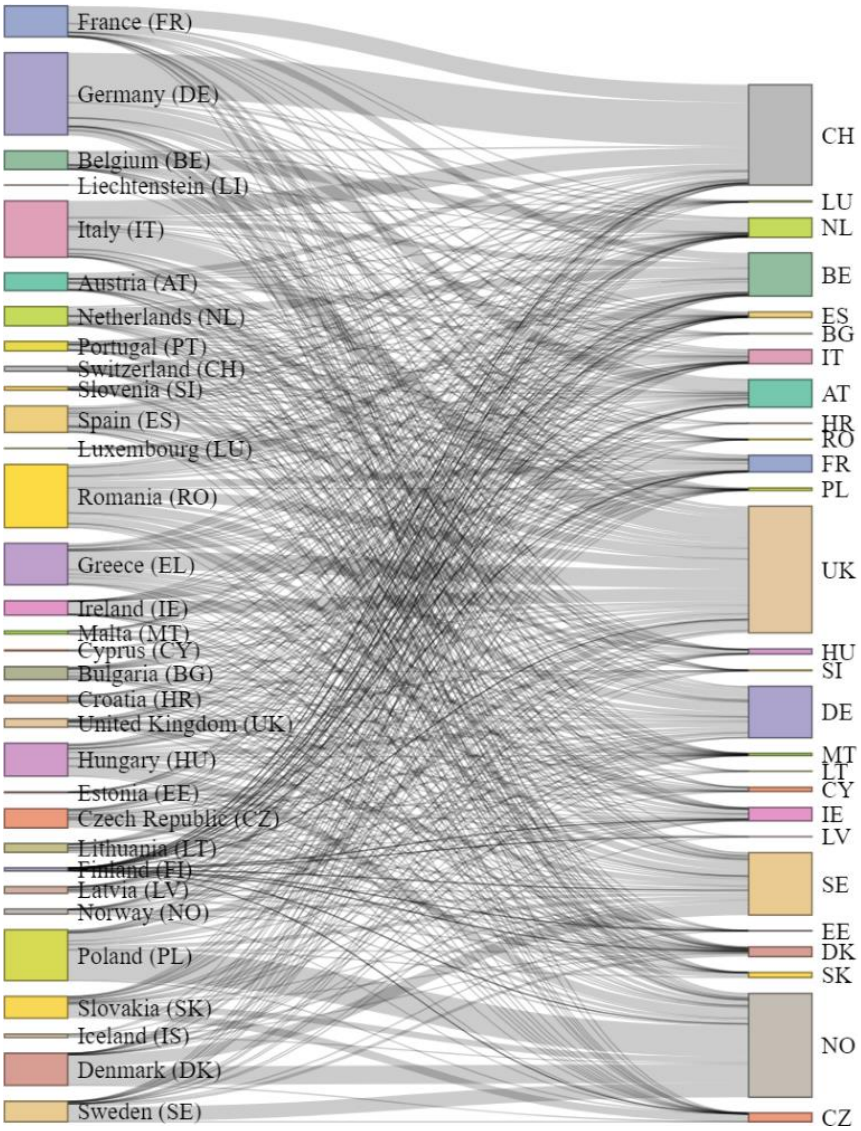
Source: BASYS based on Eurostat/OECD.

In Finland, the share of foreign-trained doctors is 9.5 percent of active doctors working in health care. This share is below the EU average (9.6).

Foreign-trained doctors contribute significantly to the provision of health services in many EU-countries. Foreign-trained does not mean foreign-born. Increasingly, EU-born citizens undertake their medical training abroad. In general, the proportion of health workers born abroad is higher than the proportion trained abroad, reflecting the fact that destination countries provide education and training to migrants who may have moved at an early age with their families or moved to pursue their university education (OECD 2019).

The Regulated Professions Database (RPD) registers inflows and outflows of medical doctors in European countries as shown in figure 16. The major outflows of medical doctors from Finland (country of qualification) are towards the receiving countries Sweden, United Kingdom, and Norway (host country) with a share of 81.3 percent. The interpretation of the absolute numbers of RPD flows of doctors should, however, take other data into consideration because of incomplete data sets sent by countries. In the other way no doctors are recorded to migrate to Finland from 2013 to 2020.

Figure 16: Source and destination of migration of medical doctors, 2013 – 2021.

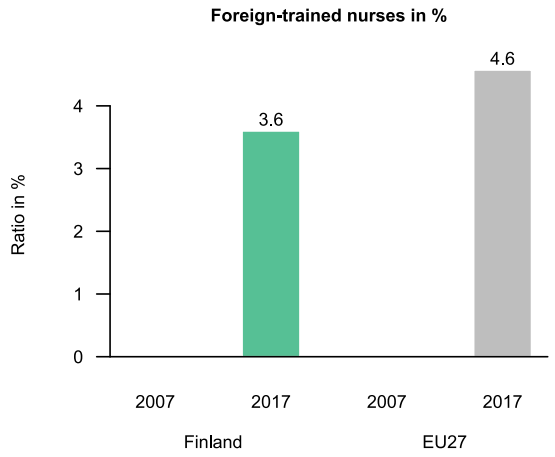


Source: BASYS based on Regulated Professions Database.

6.3 Migration of nurses

There is currently a worldwide nursing shortage. Developed countries are facing a nursing staff shortage, with nearly all of the countries relying on nurses from abroad to ease this situation. Nurses are the largest professional group of the healthcare workforce, and migration has affected both source and destination countries. Many countries have difficulty achieving a stable supply and demand of nurses because of the constantly changing health care employment needs and competition for recruitment of potential workers. In most EU Member States, the share of foreign-trained nurses is below that of doctors. However, it is also increasing. To some extent the migration of nurses follows the general trend of labour force migration. The migration of nurses is measured here by the foreign-trained nurses.

Figure 17: Foreign-trained nurses in %



Source: BASYS based on Eurostat/OECD.

In Finland, the share of foreign-trained nurses is 3.6 percent of active nurses working in health care. This share is below the EU average (4.6 percent). and comparatively low among the countries which reported this statistic.

The interpretation of this percentage should consider the different structures of qualified and auxiliary nurses. Therefore, the estimated ratio might give an incomplete picture about the foreign nursing staff.

7. Income

The chapter describes the compensation of health workforce which includes the gross income of employees including special payments by employers. Comparative data on the income of self-employed health professions are rarely available. The chapter relates the compensation of health workforce to the average compensation of employees in the country.

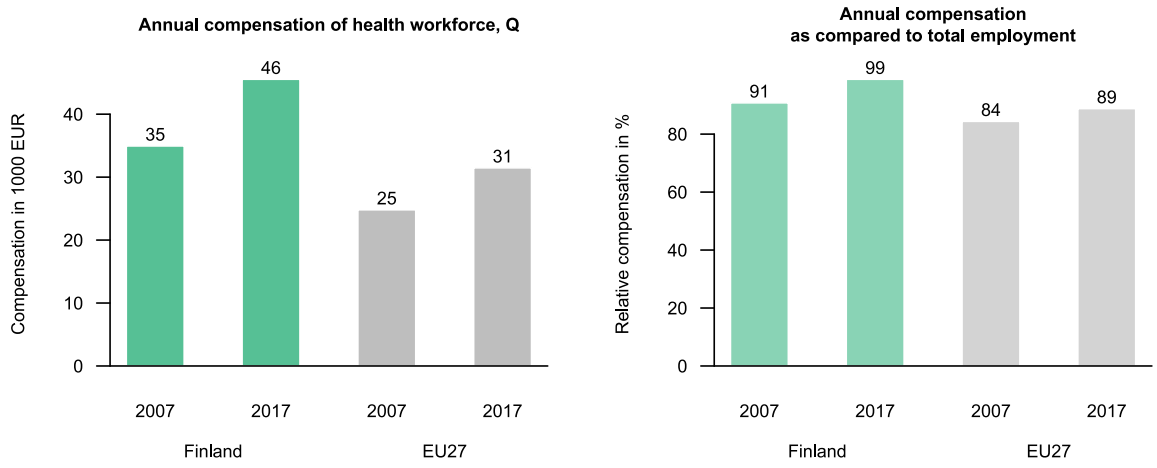
Differences in levels of compensation of workforce across countries can act as a 'push' or 'pull' factor when it comes to health workforce migration. The wage level for different types of health workforce has an impact on the financial atraction of health professions and the local attractivness of the working place.

One important factor in the variation of income is the degree of professional organisation of the health workforce. Another factor is the availability of medical equipment.

7.1 Annual compensation of health workforce

The annual wage in health services and social care describes the average income of employees. Most of the health workforce work as employees.

Figure 18: Annual gross wages per employee, 2017



Source: BASYS based on Eurostat.

In Finland, persons employed in the health services and social care sectors (Q) earned on average 45545 EUR per year as compared to the EU-average (31476 EUR). The income of self-employed is not included. In 2017, the relative income of the health workforce was 99 percent of the national average (46041 EUR). In Finland. the compensation of nurses and assistant health professions is below the economic average of the EU, but also below the Finnish economy.

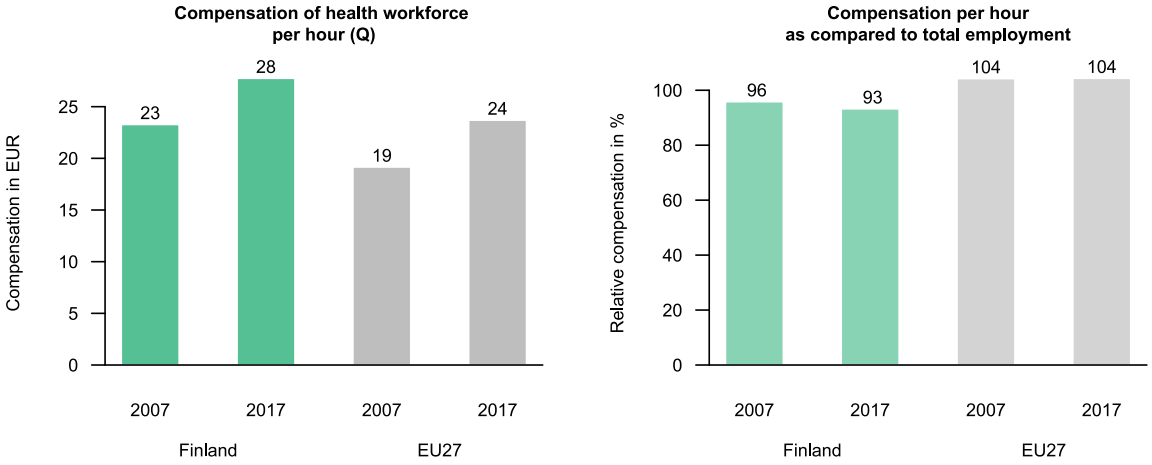
One should keep in mind that the average working hours of the health workforce are below the national average (see indicator 8.1). Therefore, further insights into the growth factors are given by the indicator income per working hour.

One should also keep in mind the variation of Purchasing Power Parities (PPPs) across Europe and the variation of salaries within countries such as between urban areas and rural districts or by gender.

7.2 Compensation of health workforce per hour

The attractivness of the health sector depends among other factors on the income that persons can earn as compared to other sectors. Two indicators are presented in the figure below, the average hourly compensation and the relative compensation per hour. The latter indicator relates the values of the first indicator to the average income per hour of the whole economy.

Figure 19: Gross wages of health workforce per hour



Source: BASYS based on Eurostat.

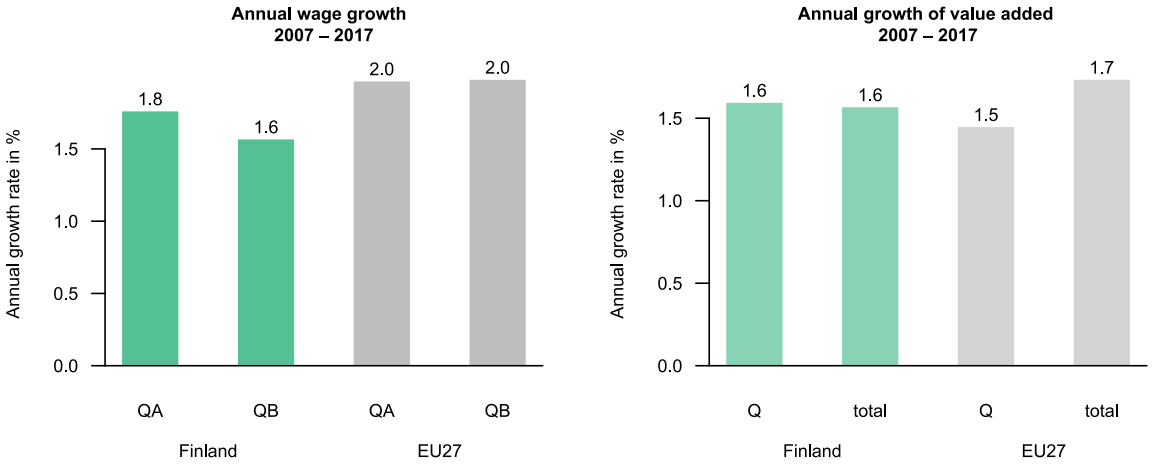
In Finland, the average annual gross hourly wage in health services and social care was 28 EUR including all income taxes and social security contributions. In 2017, this was 93 percent of the Finnish wage level. In the period 2007 – 2017, this hourly wage in health services and social care grew on average by 3.2 percent per year. In the economy as a whole, wages were growing by 2.0 percent. The general wage growth was lower than the EU average.

Higher growth rates of wages in health services than in the economy as a whole might be driven by the relative scarcity of health professions. Further insights into the growth factors of income in health services and social care might be gained by splitting this indicator across professional groups.

7.3 Annual growth of income

Two indicators are presented below, the annual growth of compensation and the annual growth of value added. The latter indicator is more comprehensive because self-employed persons and other types of income than wages are also included. Both indicators are of interest in the national context and also in the European context. Convergence of income within European Member States can only be reached if wages and value added in countries with lower income grow faster than the EU average.

Figure 20: Annual growth of compensation per employee



Source: BASYS based on Eurostat.

In health services (QA), the wages of the health workforce grew annually by 1.8 percent in the period 2007 – 2017, and in social care (QB) by 1.6 percent. In the Finnish economy as a whole, wages were growing by 1.8 percent. It is interesting to note, that over the whole period 2007 – 2017 the growth rates of value-added in health services and social care together were on average below the growth of wages.

In EU27, the annual wage growth in health services (QA) was at 2.0 percent, the same rate as in social care (QB) 2.0 percent. Also in the EU27 as a whole, value added per employed person was growing at a lower rate than wages per employee. Value added differs from wages by profits including depreciation and self-employed income. If we take inflation into account, it is unlikely that these lower growth rates of wages mean divergence from the EU average.

8. Working conditions

The chapter describes the working conditions of the health workforce. Some proxy variables are used such as working hours and capital intensity. A further aspect is the tightness of the labour market. In future, analysis might include subjective indicators such as satisfaction with the workplace. European survey data can provide further information on working conditions.

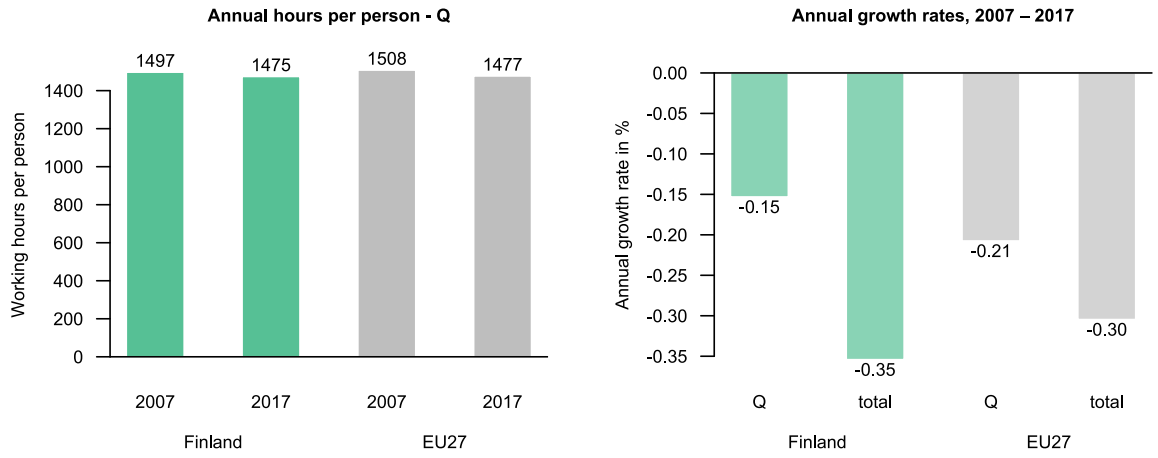
In Finland the working time is below the economic average.

Working conditions are indirectly measured by the investments in health care and the number of working hours as compared to other professions.

8.1 Working hours

Working time is hugely important for the health sector because of the implications of long working hours for the health and safety of staff, patient safety and the impact on work-life balance for the recruitment and retention of staff. Working conditions also include factors other than income which impacts output and satisfaction of health workforce. Working hours is one important indicator for working conditions.

Figure 21: Annual working hours , 2017



Source: BASYS based on Eurostat/OECD.

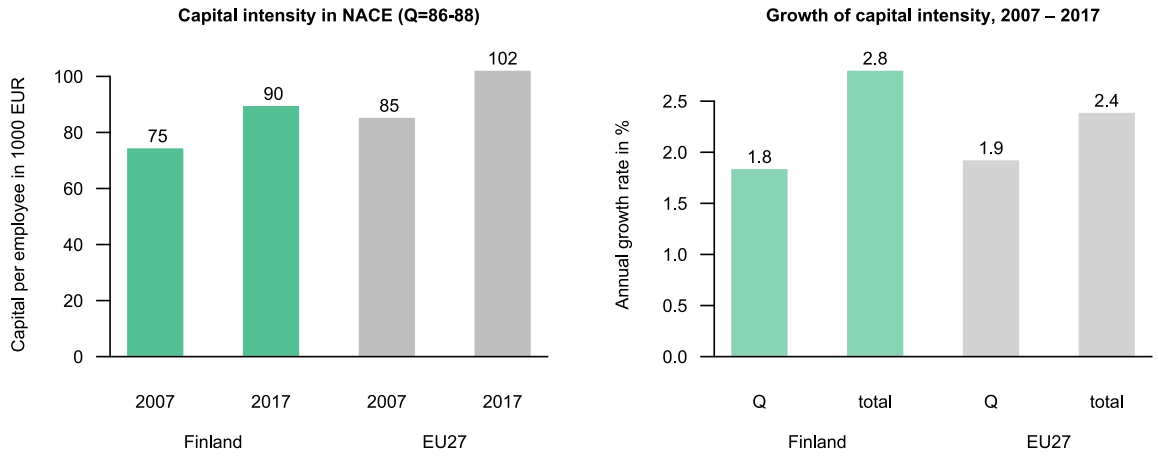
In 2017, the annual working hours in health services and social care (Q) amounted to 1475 hours per employed person in Finland as compared to 1477 hours in the European Union as a whole. In the total economy of Finland, working hours per person decreased annually by -0.35 percent in the period 2007 – 2017. In the European economy as a whole, working hours per person were decreasing at -0.30 percent.

One should note that the average working time in the whole economy was 1600 hours per employed person in Finland, just above the working time in health care (1475 hours).

8.2 Capital intensity

Knowing how much a health system is investing in hospitals, medical technology and other equipment is very relevant for policy making and analysis. Although health systems remain a highly labour-intensive sector, capital has been increasingly important as a factor of production of health services over recent decades. Capital intensity indicates the availability of sufficient health infrastructure such as medical equipment and facilities but more and more includes intangible assets such as advances in medical knowledge. Capital intensity is compiled as fixed capital and intangible capital per employed persons.

Figure 22: Fixed capital per health workforce



Source: BASYS based on Eurostat/OECD.

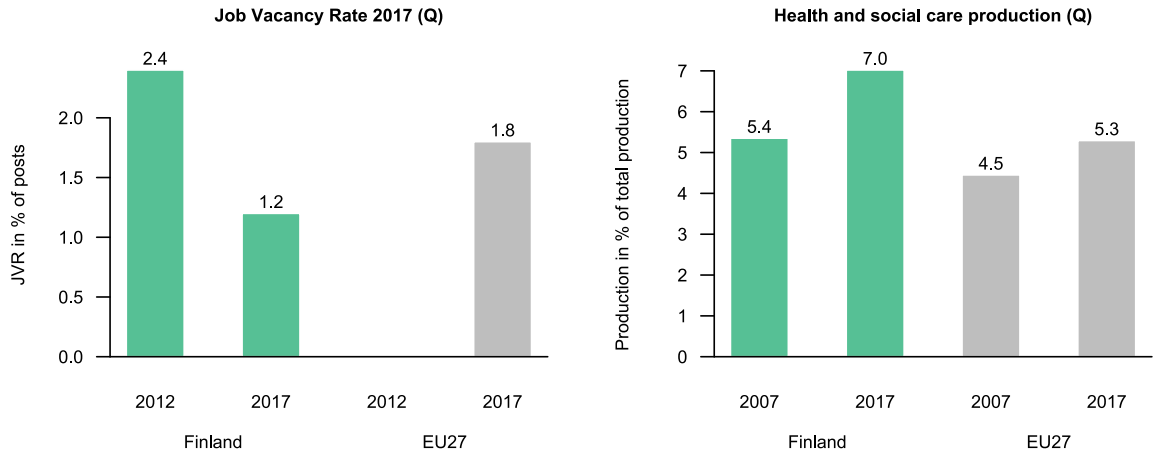
In 2017, capital intensity in health services and social care (NACE 86-88) amounted to 89720 EUR per employed person as compared to 102317 EUR in the European Union as a whole. Capital intensity grew annually by 1.8 percent in the period 2007 – 2017. In the economy as a whole, capital intensity was growing at 2.8 percent. In Finland, the capital intensity in health services and social care grew slower than in the EU27.

Capital is playing an increasing role in the development of health services and social care. Diagnostics, digitilsation, robotics, case managment, telemedicine, etc. are essential parts of modern medicine and require specific professional knowlege.

8.3 Job vacancies

Job vacancies are defined as paid posts for which employers are taking steps and are prepared to take further steps to find suitable candidates from outside health care facilties. Job vacancies concern posts that are newly created, unoccupied, or about to become vacant. The indicator is used for assessing mismatches in labour markets and the analysis of the economic cycle. The relation of job vacanies to posts is termed the Job Vacancy Rate (JVR). Eurostat collects the data quarterly on the number of job vacancies and the number of occupied posts under the JVS framework regulation.

Figure 23: Share of job vacancies in % of posts



Source: BASYS based on Eurostat.

In Finland, the JVR is 1.2 percent of the posts in health services and social care (NACE 86-88). The Finnish rate is below the EU JVR which is 1.8 percent.

One has to keep in mind that the JVR reflects national mismatches in the labour market and not EU-wide imbalances. The higher JVR correlates positively with the higher production of health services and a larger national health labour market. Therefore, countries with comprehensive health services and social care might have higher mismatches of health workforce. Furthermore, comparing with the EU average one should keep in mind some differences in the data coverage between countries.

9. Outlook

The outlook summarizes specific indicators of the further development of size, structure, and growth of health workforce in Finland. It focuses on both supply of and demand for health workforce. Various projections are included.

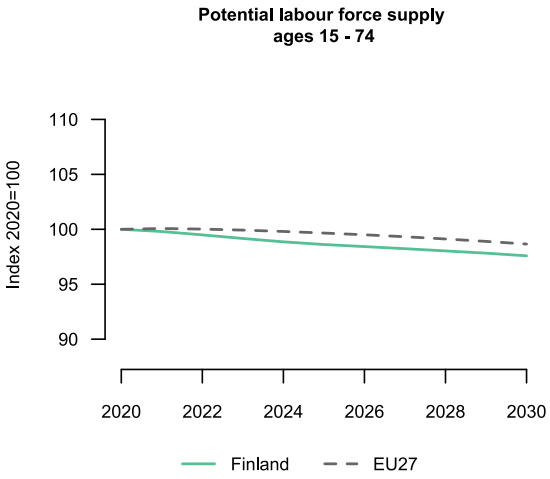
The further development of supply and demand for health workforce depends very much on the general demographic and economic situation in Finland, but also in the EU as a whole.

On the supply side, the age structure of the existing workforce and the overall growth of labour force determine strongly the furture health workforce. In Finland, both factors lead to a further shortage of doctors and other health professionals. On the other side, health care demands drives the demand for health workforce. The projections of the demand side depend also very much on demographic and economic factors.

9.1 Workforce supply projection

The Ageing report makes some assumptions about the development of migration during the next decades. For the medium term, it extrapolates trends observed in recent years. For the long-term projections, it uses a partial convergence module.

Figure 24: Growth of potential labour force in percent, 2019 - 2030



Source: BASYS based on EUROPOP, AR 2021.

In Finland, potential labour force will decrease by -2.4 percent until the year 2030 under the assumption of the European population projection 2019 of Eurostat. In most MS, potential labour force will decrease. In EU27 as a whole, the projection forecasts an moderate decline of -0.7 percent until 2030 as compared to the year 2020. Recent immigration from Ukraine and their long-term consequences are not considered.

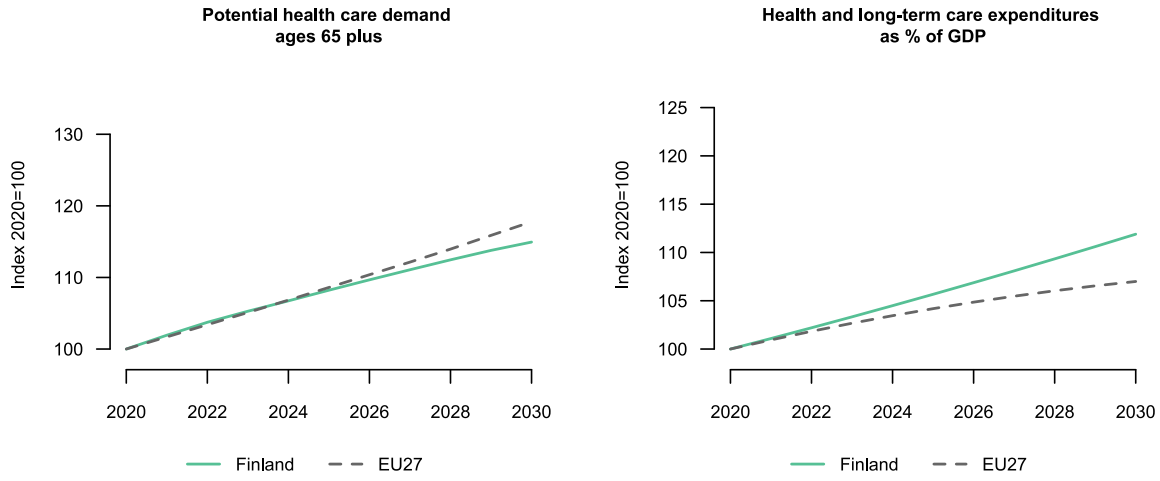
One has to keep in mind that this Eurostat projection makes specific assumptions on migration, mortality, and on fertility, which will remain below the natural replacement rate. Eurostat's population

projection (EUROPOP) estimates the Finnish population around 5.52 million in 2030, a change by -0.1 percent.

9.2 Health care demand projection

The 2021 Ageing Report budgetary projections for the period 2019 – 2070 rest mostly on Eurostat's April 2020 population projections – based on 2019 data of EUROPOP. For Finland, the population projection forecasts a less pronounced negative net migration distributed over the next decades.

Figure 25: Health and long-term care demand 2030



Source: BASYS based on EUROPOP, Ageing Report.

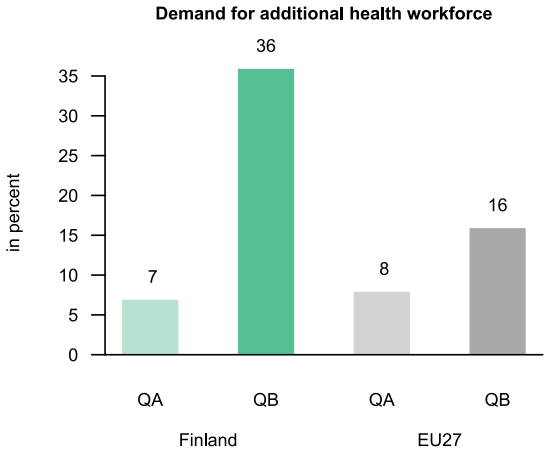
Projections forecast a further need for health care which results in further demand for health professions, particularly the need for long-term care professions. As a result of high emigration among younger people and low fertility rates, Finland is ageing at a fast pace similarly to most EU27 countries.

A key question when projecting health services and social care demand is the impact of increased longevity on health care utilisation and dependency rates. Based on the actual utilisation rates, the Ageing Report forecasts in the Reference Scenario an increase of Finnish health expenditures in relation to GDP of 6 percent and long-term care of 35 percent by 2030. In the EU27 as a whole, health care expenditure will increase by 6 percent and long-term care by 16 percent.

9.3 Health workforce shortage

The level of health workforce in a country and the change over time is dependent on a wide range of demographic, social and economic factors, as well as the financing arrangements and organisational structure of the health system itself. Skills-related shortages of health workforce expressed as non-occupied jobs exist in most European countries. However, there are also structural shortages because of the common European labour market and the migration of the labour force. Countries have developed different strategies to cope with these shortages. In the measurement of shortages one must therefore distinguish between country-specific adjustements and EU-standards.

Figure 26: Health workforce shortage 2030



Source: BASYS based on EC 2021, CEDEFOP 2022.

In Finland, the projected demand for health care results in further demand for health professions, particularly in the need for additional long-term care professions. Our estimates of the additional demand for health workforce in health services (QA) and social care (QB) are shown in the above figure. In 2030, the additional demand for labour in health services will be around 7 percent and 36 percent in social care. The estimates depend very much on the income effect (growth of GDP) and the so-called Baumol effect, which means lower productivity growth in health services and social care compared to the industrial production of goods and services.

However, despite many uncertainties about the future growth rate of demand for health care, there is certainty about the shortage of skilled nurses and assistant health professionals at the supply side. Nevertheless, large differences in labour coefficients and part-time work prevail across countries. The skill-based forecast of the EC estimates the future EU employment growth in health and social care on average over the period 2020 – 2030 at 12.0 percent (CEDEFOP 2020). Furthermore, one shoud keep in mind, that retirement from paid work is the most relevant driver of the outflow of the labour supply in the health services and social care sectors.

10. References

Cedefop (2020), Skillpanorama, https://skillspanorama.cedefop.europa.eu/,%20accessed 2020.12.21).

European Commission (2020), Analysis of shortage and surplus occupations 2020, EURES, Brussels.

European Commission (2021a), EUROPOP, https://ec.europa.eu/eurostat/de/web/population-demography/population-projections/database

European Commission (2021b), Regulated professions database, Professionals moving abroad https://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=stat_overall&b_services=false

European Commission (2021c), The 2021 Ageing Report, Economic & Budgetary, Projections for the EU Member States (2019-2070), Institutional Paper 148, May 2012, Brussels.

Eurostat (2021), Labour market flow statistics in the EU, Health statistics explained. Luxembourg.

Eurostat (2022), NewCronos Database, https://ec.europa.eu/eurostat/data/database.

OECD (2019), Recent Trends in International Migration of Doctors, Nurses and Medical Students, OECD Publishing, Paris, https://doi.org/10.1787/5571ef48-en.

OECD (2022), OECD.Stat online database, https://stats.oecd.org/.