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COMMISSION STAFF WORKING DOCUMENT

State of Health in the EU: Companion Report 2021

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Executive summary

The 2021 Companion Report highlights three key areas drawing on the 2021 Country Health Profiles prepared in the context of the *State of Health in the EU*

Part 1 of this Companion Report highlights three important takeaways from the analysis of European health systems resilience to the COVID-19 pandemic. Part 2 provides a snapshot of the key country findings in each of the 29 Country Health Profiles.

(1) *Understanding the far-reaching health impacts of the COVID-19 pandemic*

The COVID-19 pandemic has had a significant health impact in Europe, causing the premature death of nearly 800 000 people by the end of October 2021 in the EU/EEA. While all European countries have been adversely affected by COVID19, its mortality impact has been uneven across countries and over time. COVID-19 has also caused significant ill health for a large number of people who have developed post-COVID-19 condition (also called 'long COVID'). Moreover, COVID-19 has disrupted access to non-COVID care for many patients, including those with time-sensitive care needs such as cancer and mental healthcare, and exacerbated socio-economic health inequalities. As vaccines have significantly weakened the link between cases and deaths, many countries across Europe are turning their focus on the challenge of resuming non-COVID-19 care activity levels while dealing with persistently high numbers of COVID-19 infections. In this context, better measurement of the full morbidity impacts of COVID-19 is instrumental for better health policy response.

(2) *Locking in the advantages of digital innovation in healthcare delivery and public health*

Achieving greater use of digital tools for healthcare delivery has been a longstanding objective of many European health systems for many years. The COVID-19 pandemic triggered significant changes in how health healthcare services are delivered. In turn, this led to an unprecedented surge in the use of digital tools for health service delivery, public health and COVID-19 vaccination. However, a number of challenges are associated with the extremely rapid implementation of novel digital technologies in an emergency context, including the lack of an evidence base of what works and what does not. Looking beyond the pandemic, an assessment of how digital health technologies should be readjusted to serve a broader set of objectives, avoid unintended consequences in their implementation and incentivize their use in a non-emergency context are some of the reflections required to shape a positive digital health technology legacy from COVID-19 in the long term.

(3) *Rethinking health workforce strategies and planning after the COVID-19 pandemic*

The COVID-19 pandemic has thrown into sharp relief the persistent shortages and uneven geographic distribution of health workers in several European countries. It has also taken a large toll on the mental health and well-being of frontline health workers. In response, countries implemented a number of surge strategies to increase the availability of healthcare staff through the peaks of the pandemic. The aim to create a more flexible and agile workforce which can be used for surge capacity needs to be embedded in workforce planning, together with skill-mix innovations and investments in a sustained expansion of the health workforce.

Introduction

The *State of Health in the EU* cycle of knowledge brokering

The *State of Health in the EU* is a recurring two-year cycle of knowledge brokering. The project is steered by the European Commission, but relies on the internationally renowned expertise of the *OECD Health Division* and the *European Observatory on Health Systems and Policies* (hereafter the European Observatory). The project pools together the latest evidence on health systems in Europe and captures it in a series of concise, data-based reports.



The joint OECD-Commission report *Health at a Glance: Europe* kicks off each two-year *State of Health in the EU* cycle with a horizontal, cross-country assessment of national health systems' performance in the EU. Its latest edition, *Health at a Glance: Europe 2020* was published in November 2020, marking the launch of the third iteration of the *State of Health in the EU* cycle (2020-22).

The *State of Health in the EU* cycle supports the Member States by strengthening the evidence base on health systems performance for the benefit of policymakers, stakeholders, researchers and the general public. The project provides the European Commission with quality analytical inputs to feed into its own policy activities – for example, the European Semester.

Health at a Glance: Europe 2020, prepared by the OECD in cooperation with the Commission, is the quantitative starting point of the *State of Health in the EU* cycle, providing a horizontal assessment across all Member States.

Besides providing an overview of key indicators of health status, risk factors, expenditure and health system performance, the report presents two thematic chapters focusing respectively on European health systems' early response to the COVID-19 crisis and the health impact of air pollution in Europe.

The 2021 Country Health Profiles

Experts from the OECD and the European Observatory have drafted 29 *Country Health Profiles*, covering the 27 EU Member States and Norway and Iceland.

The Country Health Profiles are designed to cover the latest challenges and health policy responses in a digestible format. They are built on a standard template and methodology, which is then adjusted on a case-by-case basis to capture adequately each country's policy context.

Each Country Health Profile starts by providing a short synthesis of the health status in the country and its main determinants. It then presents the organisation of the health system, followed by an analysis of its performance based on three dimensions – effectiveness, accessibility and resilience. This conceptual framework is based on the objectives set out in the Communication from the Commission *on effective, accessible and resilient health systems*¹.

The analytical framework of the 2021 edition of the Country Health Profiles has been adjusted to reflect the specific health system challenges that have arisen in the context of the COVID-19 pandemic. Especially in the resilience section, the Country Health Profiles provide an analytical account of national health systems' response to the COVID-19 pandemic.

Whenever appropriate, the Country Health Profiles 2021 also link the analytical insights presented in the text to the most important EU-level health policy activities that are being implemented in the framework of the European Health Union initiative, such as *Europe's Beating Cancer Plan*, the *Pharmaceutical Strategy for Europe* and the *European Health Data Space*.

The 2021 Companion Report

The objective of the *State of Health in the EU's* Companion Report is to supplement the key deliverables of the project – *Health at a Glance: Europe* and the *Country Health Profiles* – by highlighting a selection of crosscutting issues drawn from the Country Health Profiles.

The report consists of two parts. Part 1 presents a chapter centred on European health systems' resilience in the face of the COVID-19 pandemic. Part 2 of the Companion Report presents a collection of one-page summaries of the key findings from all the Country Health Profiles.

The Voluntary Exchanges

The fourth and final deliverable of the *State of Health in the EU* cycle consists of a series of voluntary exchanges run by experts from the OECD and the European Observatory. The voluntary exchanges are the demand-driven component of the *State of Health in the EU* project: health ministries are invited to signal their interest to arrange these exchanges to the Commission after the publication of the Country Health Profiles. Their main objective is to enable better health policy development via facilitating the exchange of good policy practices across European countries.

In sum, through *Health at a Glance: Europe*, the *Country Health Profiles*, the Companion Report and the voluntary exchanges, the *State of Health in the EU* project constitutes an important knowledge-brokering platform to support European policymakers in their quest to develop more effective, evidence-based health policies.

¹ Communication from the European Commission *on effective, accessible and resilient health systems* (2014)

Part 1

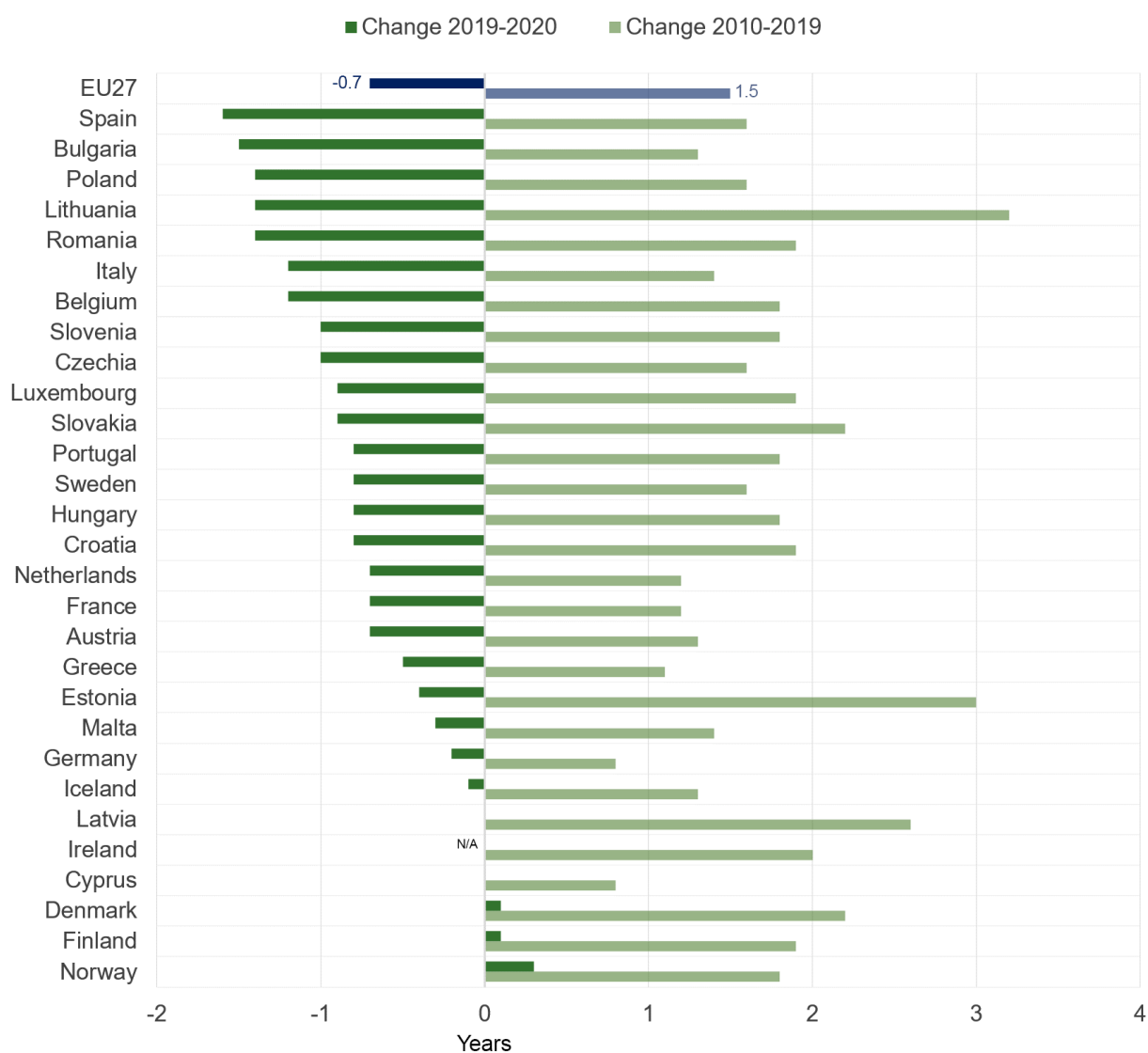
European health systems resilience in the face of the COVID-19 pandemic

1. Understanding the far-reaching health impacts of the COVID-19 pandemic

The COVID-19 pandemic has temporarily erased years of gains in life expectancy in most European countries

Prior to the COVID-19 pandemic, life expectancy at birth in the EU had been on a general upward path over the past decade. Against a context of slowing improvements in life expectancy in Western European countries and more marked gains experienced by Central and Eastern European (CEE) and Baltic countries (Figure 1.1), life expectancy in the EU as a whole increased by one and a half years between 2010 and 2019.

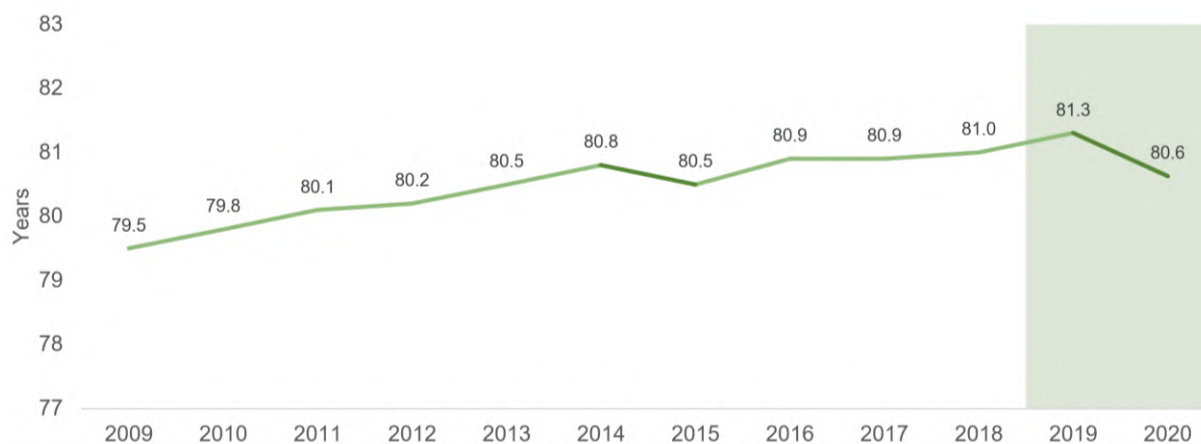
Figure 1.1. Gains and losses in life expectancy (2010-2019), (2019-2020)



Note: Provisional data for 2020; 2020 data for Ireland not available; No change (2019-2020) in Latvia and Cyprus.
Source: Eurostat Database.

The striking increase in mortality triggered by the COVID-19 pandemic halted this trend, causing an estimated decline of life expectancy in 2020 in all European countries except Latvia and Cyprus – in which life expectancy remained constant – and Denmark, Finland and Norway, which witnessed slight gains also in 2020. Overall, life expectancy in the EU decreased by more than eight months between 2019 and 2020 (Figure 1.2). The analysis from the *State of Health in the EU's Country Health Profiles 2021* shows how countries such as Spain, Italy, Belgium, France, the Netherlands and Sweden had not seen decreases in life expectancy of this magnitude since World War II.

Figure 1.2. Life expectancy at birth in the EU, 2009-2020



Note: Provisional data for 2020; data for Ireland from 2019
Source: Eurostat Database

As of end October 2021, nearly 800 000 deaths due to COVID-19 have been reported in the EU/EEA area since the start of the pandemic – a striking toll representing about 9 % of total registered deaths². This number alone is not enough to describe the uneven impact of COVID-19 across European countries and (socioeconomic and age) groups, as well as its impact on morbidity and the quality of life of the people who contracted the virus.

Moreover, the number of deaths is most likely an underestimate, for a number of reasons. Cross-country inconsistencies in cause-of-death registration practices, coupled with limited testing capacity at the beginning of the COVID-19 pandemic impinge on the reliability and comparability of reported COVID-19 deaths.

Excess deaths across the EU were 12 % greater than reported COVID-19 deaths

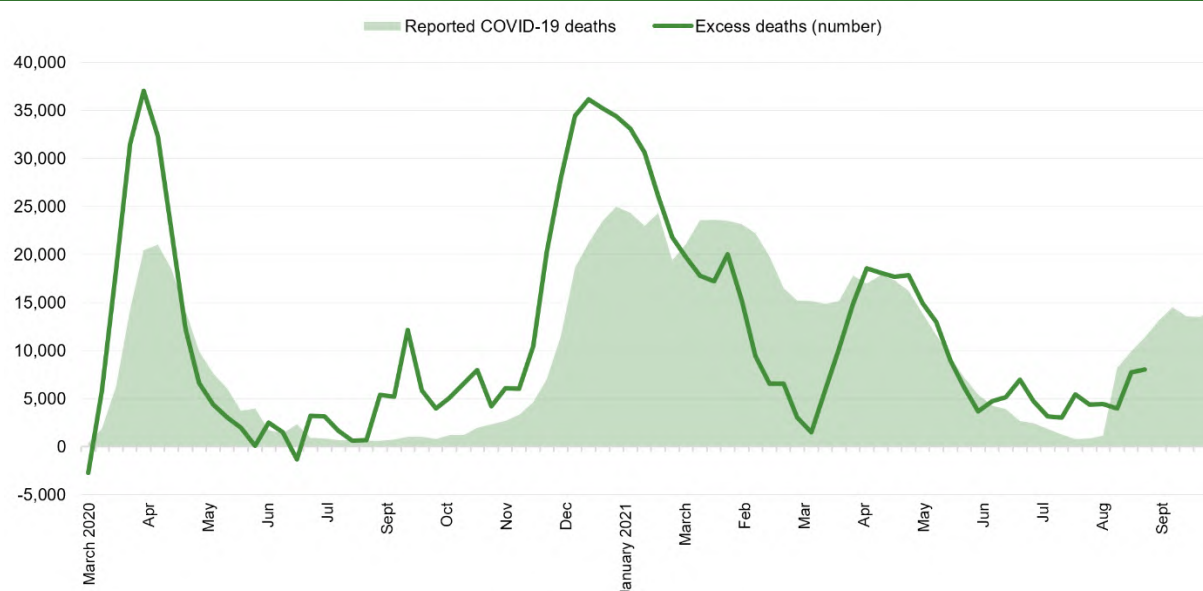
To obtain a more accurate estimate of the mortality impact of the COVID-19 pandemic, the Country Health Profiles 2021 utilised the concept of *excess mortality* – that is, the number of total deaths observed throughout the COVID-19 pandemic compared to a historical reference level³. Although excess mortality is not a direct measure of COVID-19 deaths, it has the advantage of not being affected by the measurement challenges outlined above.

² Source: [ECDC](#) and [Eurostat](#) Database.

³ Source: [Eurostat](#)

A comparison of reported COVID-19 deaths and excess mortality levels registered throughout the COVID-19 pandemic (Figure 1.3) suggests that reported COVID-19 deaths across Europe are likely an underestimate. This was especially the case during the first two major waves of the pandemic in Europe – respectively, in the spring and autumn/winter of 2020, during which the number of excess deaths was almost double the official number of COVID-19 deaths.

Figure 1.3. Reported COVID-19 deaths and excess deaths in the EU/EEA



Note: Data excludes IE (data not available), includes IS, NO. Baseline to calculate excess mortality: (2016-2019). Source: ECDC, Eurostat Database

During the first quarter of 2021, excess mortality across Europe dropped to a level below the number of reported COVID-19 deaths. This decrease can be explained in part by the low influenza activity over the course of the winter 2020/21. Measures implemented to slow down COVID-19 transmission – such as physical distancing, mask-wearing and school closures, contributed to far fewer influenza cases, hospitalizations and deaths in Europe compared with previous years. Another, at least partial explanation for this steep drop in the first quarter of 2021 is that the large COVID-19 wave of winter 2020/2021 may have led to the premature death of some vulnerable people who would have otherwise died during this period.

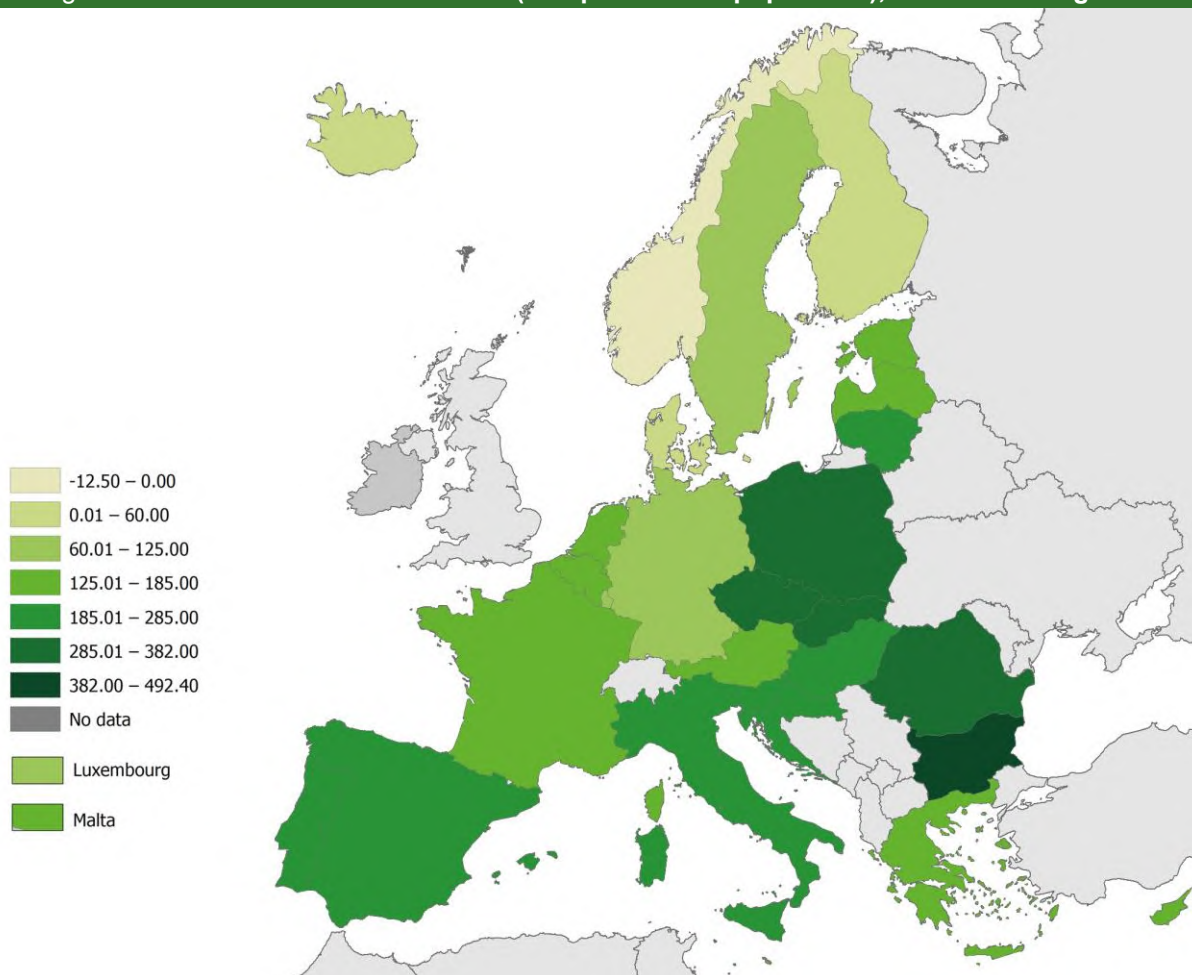
The mortality impact of the COVID-19 pandemic has been uneven across countries and over time

The first wave in the spring of 2020 saw the most severe COVID-19 outbreaks concentrated in Western Europe – especially Spain, Italy, France, Belgium and the Netherlands. In the autumn/winter of 2020, a second wave hit Western Europe as well as countries in Central and Eastern Europe. Hungary, Slovenia, Romania, Slovakia, Bulgaria, Poland and Czechia had severe spikes of excess deaths that protracted until June 2021. The latter four countries have reported the highest cumulative excess mortality rates in Europe⁴.

⁴ In these countries, mortality during the COVID-19 pandemic has been at least 20 % or higher than expected, based on mortality trends from 2016-2019.

Northern European countries recorded lower excess mortality compared to the rest of Europe. Among Nordic countries, Sweden – which introduced less stringent mitigation measures and at a later stage compared to the rest of Scandinavia – reported a higher excess mortality rate, which however remains below the EU average. Across all countries, Norway has been the only country recording negative excess mortality over the course of the COVID-19 pandemic.

Figure 1.4. Cumulative excess deaths (rate per 100 000 population), Mar 2020 – Aug 2021



Source: ECDC, Eurostat Database

The morbidity effects of COVID-19 are severe and not fully captured by available statistics

Besides having caused hundreds of thousands of premature deaths across Europe, COVID-19 has had a severe health impact on recovered patients that required hospitalisation, as well as those who contracted the virus but experienced a relatively mild acute course of disease. According to a 2020 nationwide study⁵ of hospitalised COVID-19 patients in

⁵ Gunster, C et al. (2021) 6-month mortality and readmissions of hospitalized COVID-19 patients: A nationwide cohort study of 8,679 patients in Germany" PLoS One 16.8.

Post COVID-19 condition occurs in individuals with a history of probable or confirmed SARS CoV-2 infection, usually 3 months from the onset of COVID-19 with symptoms and that last for at least 2 months and cannot be explained by an alternative diagnosis. Common symptoms include fatigue, shortness of breath, cognitive dysfunction but also others and generally have an impact on everyday functioning. Symptoms may be new onset following initial recovery from an acute COVID-19 episode or persist from the initial illness. Symptoms may also fluctuate or relapse over time.

Source: [WHO](#)

Germany, 27 % required to be readmitted after six months from discharge. Another large study⁶ from the United Kingdom found similar results.

Moreover, a significant share of both hospitalised and non-hospitalised people experience a range of lingering, fluctuating and often debilitating symptoms. This cluster of symptoms has been termed 'long COVID'⁷. To increase awareness about this condition among service providers and reduce inconsistencies across research groups studying its mechanisms, the World Health Organization (WHO) issued an official clinical case definition for *Post-COVID-19 condition* in October 2021 (see Box).

Estimates of the prevalence of this condition range widely due to the absence of a standard case definition until recently and because most studies available are based on small samples. The largest study developed to date⁸ estimates the prevalence of post-COVID-19 condition between 3 % and 11.7 % at 12 weeks after infection⁹.

Despite the uncertainty regarding the true prevalence of post-COVID-19 condition, it is clear that the high number of COVID-19 cases registered in Europe (Figure 1.5) render this condition one of the most serious health outcomes from the pandemic after death. Due to a lack of research on this condition, its likely duration and possible treatment options, it is difficult at this stage to assess the possible future impact of post-COVID-19 condition on European healthcare systems.

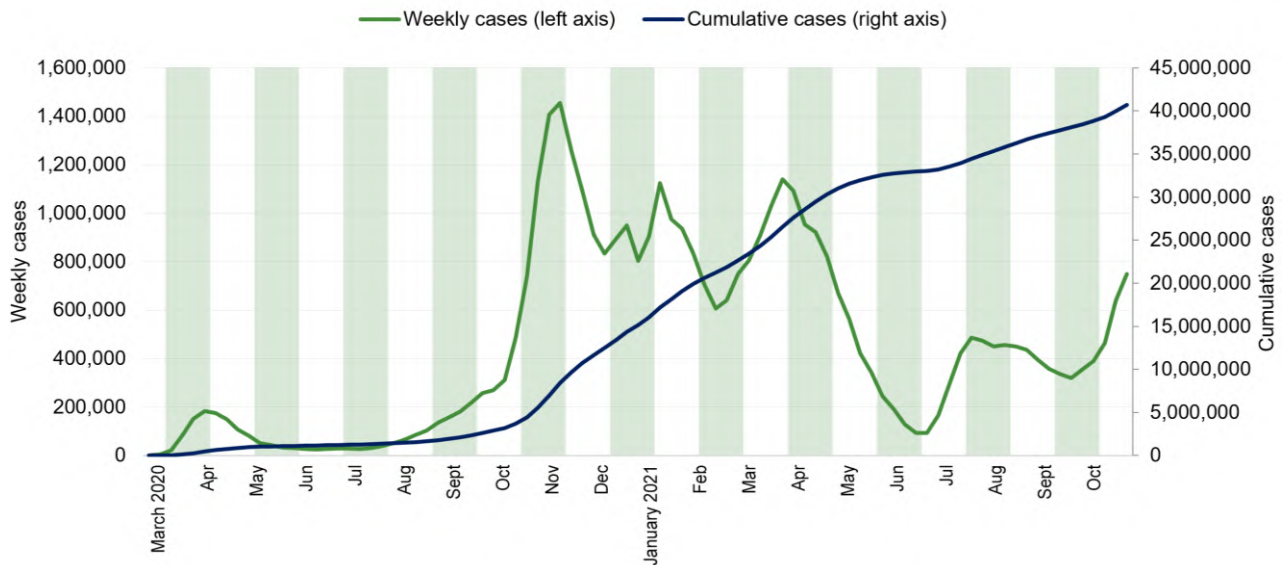
⁶ Ayoubkhani, D et al. (2021) Post-COVID syndrome in individuals admitted to hospital with COVID-19: retrospective cohort study

⁷ Davis, H. E. et al. (2021). *Characterizing long COVID in an international cohort: 7 months of symptoms and their impact*.

⁸ Office for National Statistics (2020). *The prevalence of long COVID symptoms and COVID-19 complications*.

⁹ This longitudinal study is based on a population-representative sample for the United Kingdom. The prevalence estimate of 3 % is based on tracking a selection of specific symptoms. However, experts assessed this list of symptoms as possibly too narrow to capture adequately the vast symptom makeup and severity that characterize post-COVID-19 condition (see Rajan et al, 2020). Using a different estimation approach based on self-reported data, the study produces an estimate of 11.7 %.

Figure 1.5. Reported COVID-19 cases in the EU/EEA, Mar 2020 – 2021



Source: ECDC

The pandemic disrupted access to non-COVID care for many patients

During the COVID-19 pandemic, healthcare systems across Europe had to adapt and reconfigure their resources to meet the unprecedented surge in demand for COVID-19 care.

In all European countries, measures to boost care capacity for COVID-19 patients were accompanied by a slowdown or temporary suspension of non-urgent, non-COVID-19 hospital care. Outpatient activity followed a similar trend. In most European health systems, primary care services stepped up their use of telehealth services to tackle the decrease in face-to-face consultations while protecting patients and workers from infection (see Section 2).

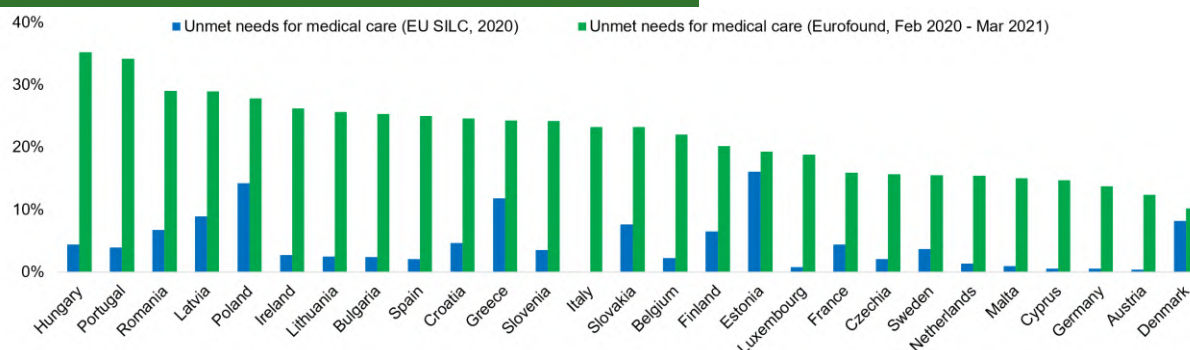
This general reconfiguration of resources away from non-COVID-19 care led to a significant interruption of routine patient flows across the health system. This is reflected in the high rates of unmet needs for medical care reported by European citizens in the first twelve months of the pandemic (Figure 1.6) and in the increased treatment backlog for a number of elective procedures, such as hip replacement (Figure 1.7). In the six EU countries for which data are available, waiting times increased by about two months on average in 2020.

In **Portugal**, COVID-19 led to a 21 % drop in the number of admissions for elective surgery in 2020 compared to 2019. A similar decrease (-23 %) was observed in the rate of planned ambulatory surgeries.

In **Finland**, waiting times for elective procedures increased by an average of 8 % between 2019 and 2020.

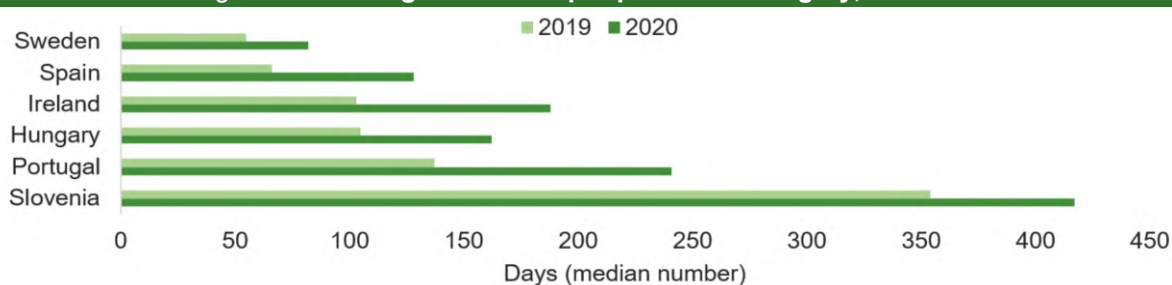
Sources: Portugal Country Health Profile 2021; Uimonen et al (2021) (data for Finland)

Figure 1.6. Share of individuals reporting unmet medical care needs



Sources: Eurofound ([2020](#)) Eurostat database (EU-SILC – part of the [Social Scoreboard](#)). Please note that the two indicators are not comparable due to methodological differences¹⁰

Figure 1.7 Waiting times for hip replacement surgery, 2019-2020



Source: OECD Health statistics database

Cancer care is another critical area of care that was disrupted by COVID-19. Especially during the peaks of the pandemic, access to cancer diagnosis and treatment have been delayed in several European countries.

¹⁰ The Eurofound survey question was “Since the pandemic began, have you needed a medical examination or treatment that you have not received?”; the EU-SILC survey question was “Was there any time during the past 12 months when you really needed medical examination or treatment? If yes, did you have it each time you really needed it?”. Eurofound: low reliability for data for Cyprus, Latvia, Luxembourg and Malta. Eurostat: break in series for Belgium, Germany, France, Luxembourg, Ireland; provisional data for France, Latvia, Poland, Slovakia; not significant data for Malta; data for Italy not available.

For example, in France breast cancer screening volumes in the second quarter of 2020 dropped by 44 % compared to the same period in 2019. Screening rates returned to their reference level in September 2020 and exceeded it by 13 % in the first half of 2021.

In 2021, the European Commission presented **Europe's Beating Cancer Plan**. As a building block of the *European Health Union*, the plan aims, together with the *Horizon Europe Mission on Cancer*, to improve access to prevention, early detection and treatment of cancer and reduce inequalities across Europe.

The plan sees a total of EUR 4 billion earmarked for its implementation through a number of EU funding instruments.

Similarly, in the first wave of the pandemic the number of cancer diagnoses in the Netherlands decreased by 25 %¹¹. During the first half of 2021, the number of cancer diagnoses was 6 % higher than the average in the corresponding period for 2017-2019¹². In Luxembourg, the number of radiotherapy sessions fell by almost one third during the first COVID-19 wave, and remained below baseline levels for several months. Across Europe, [estimates](#) have been developed indicating up to one million potentially undiagnosed cancer cases due to the disruption of health systems from COVID-19.

Because of the time-sensitive nature of cancer diagnosis and treatment, these delays are expected to have negative prognosis and survival implications for patients who have faced barriers to cancer screening and treatment during the COVID-19 pandemic.

COVID-19 exacerbated socio-economic health inequalities

The analysis from the Country Health Profiles 2021 shows how both across and within European countries, differences in health status mirror to a large extent the unequal distribution of its main socio-economic, behavioural and environmental determinants. This generates significant health disparities across the population that, in turn, reduce the capacity of the most disadvantaged groups to access healthcare services and maintain good health.

Although only a minority of European countries have systematically collected data on the distribution of the health burden of COVID-19 across socio-economic groups, a growing body of evidence indicates the impact of COVID-19 on specific categories.

In general, people with lower education and income levels have been more likely to be exposed to the virus at work and more often live in crowded spaces, which increased their risk of infection (see Box). Against the backdrop of a higher prevalence of underlying medical conditions and other risk factors for health, the risk of developing severe illness and death from COVID-19 has also been higher among those in socially disadvantaged groups. The health of people with an immigrant background has also been disproportionately affected by the COVID-19 pandemic. Overall, it is clear that the

In **Belgium**, excess mortality among people in the lowest income decile was twice as high as that of those in the highest income decile.

In **Germany**, 70 % of people with low education were at a risk of developing severe COVID-19 against 41 % of those with a high education.

In **Denmark** (capital region), immigrants from non-EU countries and their descendants had 26 % of all COVID-19 infections, despite representing 13 % of the population. Foreign-born individuals were 1,7 times as likely to be admitted for COVID-19 compared with natives.

Source: OECD (2021)¹¹

¹¹ Dyer, O. (2020). COVID-19: Pandemic is having severe impact on non-communicable disease care, WHO survey finds.

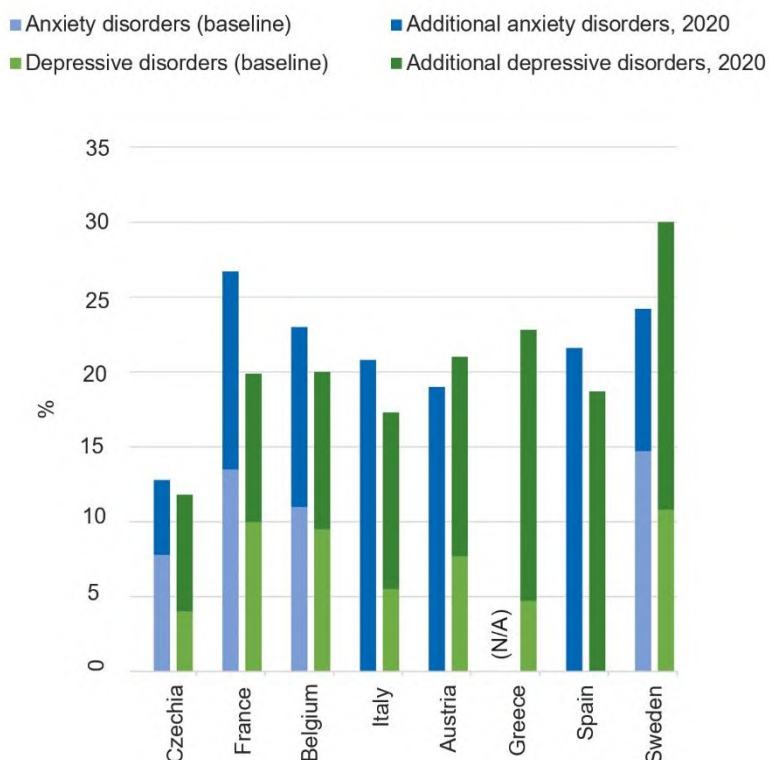
¹² OECD (2021), *Health at a Glance 2021: OECD Indicators*, OECD Publishing, Paris

COVID-19 pandemic has expanded and further revealed the scale of pre-existing health inequalities in several European countries.

The COVID-19 pandemic has affected people's mental wellbeing

The impact of the COVID-19 pandemic also took its toll on people's mental health. In a pre-pandemic context where mental health problems were estimated to affect more than one in six people across the EU¹³, the COVID-19 pandemic exacerbated several key determinants of poor mental health. Besides the fear, grief and stress caused by the direct health impact of COVID-19 infection that affected patients, their families and health workers (see Section 3), the mitigation measures such as general lockdowns and school closures exacerbated mental health risks. Moreover, the pandemic had knock-on effects on the economy of all European countries, which heightened the threat of job loss and/or income instability – both key factors associated with impaired mental wellbeing.

Figure 1.8. Prevalence estimates of anxiety and depressive disorders, pre-COVID-19 and 2020



Source: National data sources reported in OECD/EU (2020) and OECD (2021). No pre-COVID-19 baseline estimates of the prevalence of anxiety disorders available for Italy, Austria and Spain. No estimate of the prevalence of anxiety disorders available for Greece.

Available data suggest that the COVID-19 pandemic significantly increased levels of reported anxiety and depressive disorders in most European countries. According to a recent study¹⁴, the prevalence of anxiety and depressive disorders increased respectively by an average of 24% and 23% across EU countries in 2020.

The mental health challenge posed by the COVID-19 pandemic has immediate as well as long-term consequences, and diversifies as time moves on. Indeed, the analysis from the Country Health Profiles 2021 shows that the mental health impact of the pandemic has changed considerably over time: in the first months of 2020, the estimated prevalence of depressive symptoms more than doubled compared to the pre-COVID baseline level in at least seven EU countries (Figure 1.8).

¹³ See OECD/EU (2018), *Promoting mental health in Europe: why and how?*, in *Health at a Glance: Europe 2018*

¹⁴ Santomauro, D et al (2021). *Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic*. The Lancet.

Lastly, available data suggests that the impact of the COVID-19 pandemic on people's mental health has been especially marked in young people¹⁵, and vulnerable groups such as older people, and people with underlying health conditions or with disabilities¹⁶. In particular, young people (see Box) reported significantly higher levels of anxiety and depression during the pandemic, compared to the general population. This may reflect the effect of school closures on their educational and social experience, as well as their relatively more fragile position in the labour market¹⁷. These factors may also partly explain the disproportionate impact on the mental wellbeing of women, who have been generally more exposed to the negative economic/employment consequences of the pandemic, were more likely to sustain the burden of extra carer responsibilities linked to school closures, and (in some cases) faced increase risk of domestic violence¹⁸.

COVID-19 particularly affected the mental health of **young people**. In **Belgium**, around 30 % of those aged 18-29 had symptoms of depression in April 2020 – a rate about three times higher than in 2018. The situation further deteriorated from the second wave of the pandemic: nearly 40 % reported symptoms of depression in March 2021. Since April 2020, the Belgian public health care system has covered up to eight visits to a psychotherapist per year with a doctor's referral.

Source: Belgium - Country Health Profile 2021

To alleviate the increased mental health burden on vulnerable groups, several European countries – for example, Belgium, Latvia, Lithuania and Iceland – took a number of targeted measures to reduce access barriers to mental healthcare, including by promoting greater use of remote consultations (see Section 2). However, COVID-19 has generally hampered mental health care across the WHO European Region¹⁹ whilst also increasing the demand for mental health services at the same time.

Failing to meet these additional care needs risks aggravating the longer-term mental health effects of the pandemic, the full magnitude of which cannot be assessed while the pandemic is still unfolding (see Box). Scaling up mental health care capacity – also through innovative delivery methods, reducing the impact of social determinants of poor mental health, facilitating access to mental health services for vulnerable groups and improving the quality of mental health datasets are thus some of the key measures required to equip policymakers to meet this difficult challenge.

In May 2021, the European Commission organised the online conference '**Mental health and the pandemic: Living, caring acting**'. The first session provided an overview of pandemic's impact on mental health on the general population. Parallel sessions looked at its impact on specific vulnerable groups. Other sessions identified pre-existing mental health needs and their impact on services, discussed how to equip health systems to meet future needs and the role of different actors in this process. Speakers warned against overestimating the short-term consequences of the pandemic or underestimating its long-term impact. A number of promising approaches to addressing the COVID-induced mental health burden were published along with the conference report.

¹⁵ OECD (2021) *Supporting young people's mental health through the COVID-19 crisis*.

¹⁶ See the [2020 Commission Communication](#) to the European Parliament and the Council on 'Staying safe from COVID-19 during winter'.

¹⁷ See European Commission (2020) *Labour market and wage developments in Europe - Annual review 2020*.

¹⁸ Viero A et al (2020) *Violence against women in the COVID-19 pandemic: A review of the literature and a call for shared strategies to tackle health and social emergencies*.

¹⁹ See WHO (2021) '*Action required to address the impacts of the COVID-19 pandemic on mental health and service delivery systems in the WHO European Region - Recommendations From the Technical Advisory Group on the mental health impacts of COVID-19 in the WHO European Region*'.

Vaccines have been a key instrument to alleviate the health impact of the COVID-19 pandemic

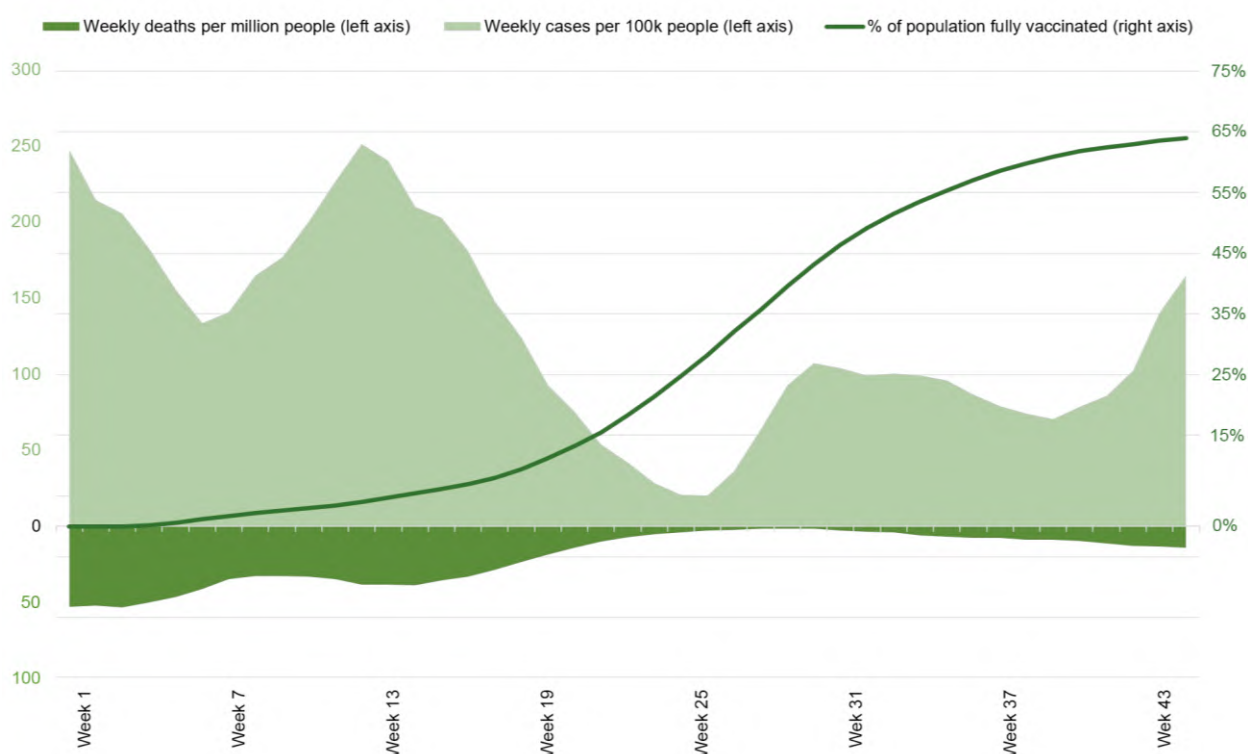
To counter the effects of COVID-19 on public health, a number of vaccines have been developed, evaluated and authorized for the EU market at unprecedented speed. The first COVID-19 vaccine received a conditional marketing authorisation from the European Commission on 21 December 2020, paving the way for the rollout of vaccination programmes across the EU.

Following up on the successful implementation of the EU Vaccines Strategy (see Box), the mass rollout of COVID-19 vaccination programmes during 2021 have significantly weakened the link between COVID-19 cases and deaths in the EU (Figure 1.9). As of 31 October 2021, almost 65 % of the total population in the EU was fully vaccinated – a share increasing to about 89% among those aged 80 years and above. However, COVID-19 vaccination rates varied considerably among EU countries, ranging from highs of 81 % (Malta, Portugal) to lows of just 22.5 % (Bulgaria).

In June 2020, the European Commission presented the **EU Vaccines Strategy**. The strategy was based on two pillars – i) the establishment of Advance Purchase Agreements with vaccine producers to ramp up vaccine manufacturing capacity in the EU and secure sufficient supplies of vaccines, and ii) changes to the EU's regulatory framework to accelerate the development, authorisation and availability of vaccines while maintaining quality, safety and efficacy standards.

The implementation of the EU Vaccines Strategy led the European Commission to secure up to 4.6 billion doses as part of the broadest portfolio of safe and secure COVID-19 vaccines in the world. (Latest update: 13 October 2021).

Figure 1.9. Number of COVID-19 cases, deaths and vaccination rates, EU (2021)



Source: ECDC

Against the backdrop of a general resurgence in COVID-19 infections across Europe, in the last quarter of 2021, differences in vaccination take-up reflect the distribution of COVID-19 case fatality rates. This shows markedly higher mortality in countries with lower vaccination

rates. Increasing the vaccination coverage is the highest priority at this stage of the vaccination rollout in the EU.

Due to emerging evidence on waning vaccine immunity, in October 2021 the [European Medicines Agency](#) recommended the administration of a third dose of COVID-19 mRNA vaccine to people with weakened immune systems, and cleared the possibility of administering a booster dose to people 18 years old and above 6 months after completion of the primary vaccination series.

At the start of the vaccination campaign, vaccine hesitancy was high in **France**, with one in two French people reporting unwillingness to get vaccinated in mid-January 2021. Over the course of 2021, vaccine hesitancy declined sharply: by mid-August 2021, 23 % of French citizens reported being unwilling to get vaccinated.

The implementation of the [EU Digital COVID Certificate](#) (see Section 2) during the summer of 2021 provided a strong incentive for people not yet vaccinated to begin or complete their primary vaccination series in Member States that decided to limit access to certain places and services in accordance with national law to EU Digital COVID Certificate holders.

Source: France - Country Health Profile 2021

Waning vaccine effectiveness, together with [higher transmissibility](#) of the Delta variant and persistent vaccine hesitancy in some countries indicate that non-pharmaceutical interventions are likely to remain in place in the near future to contain viral transmission. At the same time, health systems across Europe have turned their focus on resuming non-COVID-19 care activity levels back to pre-pandemic levels while dealing with persistently high numbers of COVID-19 cases.

In parallel with increased efforts to close the immunity gap and ensure all eligible individuals are fully vaccinated, European policymakers are called to devise prudent policies that strike a balance between

minimizing the direct health impact of COVID-19 while containing the long-term damage that would arise from postponing the return to normal levels of non-COVID care delivery further. This is particularly the case in the areas of cancer and mental health care, but also for those affected by post-COVID-19 condition. In this context, it will be critical to expand the range of metrics available to support decision-making, with a view to fully capture the complex health impacts of the COVID-19 pandemic on population health over time.

2. Locking in the advantages of digital innovation in healthcare delivery and public health

COVID-19 led to a massive surge in the use of digital health tools

Achieving greater use of digital tools for healthcare delivery to improve the quality, accessibility and efficiency of care has been a longstanding objective of the European Commission and many European health systems. However, as acknowledged in the 2018 [Commission Communication](#) on enabling the digital transformation of health and care in the Digital Single Market, the uptake of digital health tools was slow and uneven across EU countries before the COVID-19 pandemic.

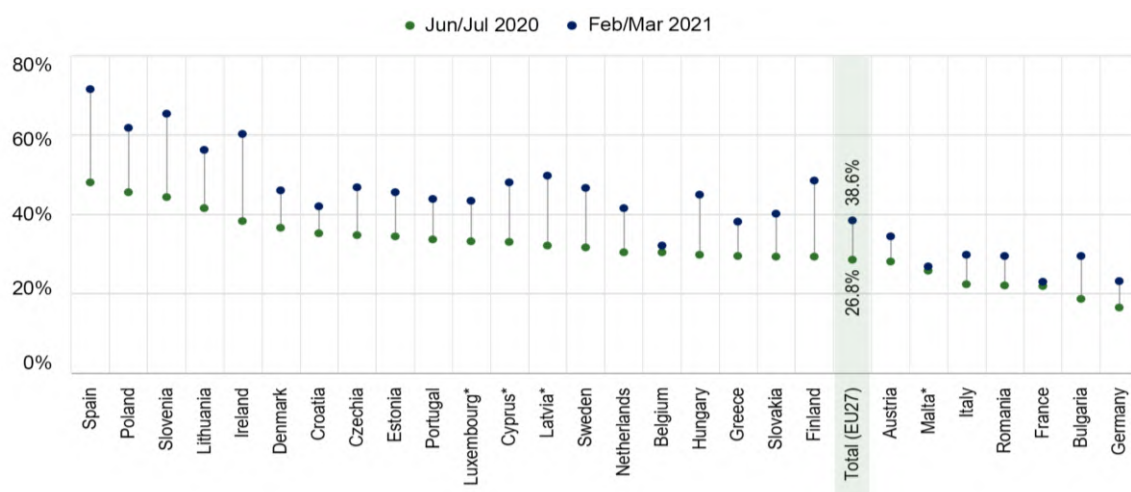
Pre-pandemic, technical challenges limited the widespread utilisation of digital health tools. However, other important determinants of their limited use were also non-technical. For example, in several countries the regulatory framework for the use of digital health tools was not sufficiently developed or failed to incentivize their use. Moreover, limited investment in supporting the implementation of digital health instruments on the ground (including training of health personnel) and various administrative barriers dampened the enthusiasm regarding their use among health workers.

The COVID-19 pandemic triggered significant changes to how healthcare services are delivered. For example, to minimise physical contacts between healthcare providers and patients with non-urgent care needs, the use of technology for remote consultations accelerated considerably across EU Member States over the course of the pandemic. For example, survey data (Figure 2.1) shows that the share of EU citizens that had a remote (phone or online) consultation with a general practitioner (GP) since the pandemic began increased from 28.7 % in June/July 2020 to almost 38.6 % in February/March 2021.

Since the pandemic began, the number of **remote consultations** (online or telephone) has increased in all EU countries. Between June/July 2020 and February/March 2021, reported rates increased by more than 50% in **Bulgaria, Finland, Hungary, Ireland and Latvia**.

The highest uptake was seen in **Spain**, where 71.6 % of the population reported to have had a remote consultation by February/March 2021.

Figure 2.1. Share of population that had a remote GP consultation since the pandemic began



Source: Eurofound (2021) Living, working and COVID-19 dataset. *Low reliability.

In several European countries (Iceland, France, Italy and the Netherlands), digital technologies were employed to actively monitor COVID-19 patients with mild symptoms at home. Some countries also applied digital health instruments to monitor their hospital care capacity in near-real time. For example, Germany developed the “[DIVI-Intensivregister](#)”, which provides information on free ventilation places, intensive care capacities and the COVID-19 cases treated in participating hospitals throughout Germany. These developments triggered by the unprecedented challenge of the COVID-19 pandemic indicate that healthcare systems can adopt new technologies and care delivery modes at incredible pace and scale.

Digital health technologies have been used to boost public health measures

Even prior to the COVID-19 pandemic, most European countries employed some digital health tools in the area of public health to support infectious disease monitoring and surveillance. Some countries have enhanced their pre-existing tools in response to the pandemic. For example, in Estonia, information flows to the authority responsible for monitoring and surveillance of infectious diseases was deemed too slow at the start of the pandemic. In response, authorities implemented a digital system to automatize reporting of COVID-19 related information.

During the COVID-19 pandemic, **Austria** leveraged its strong health data infrastructure, including by using pseudonymised electronic health record data for COVID-19 research and the creation of a central vaccination register.

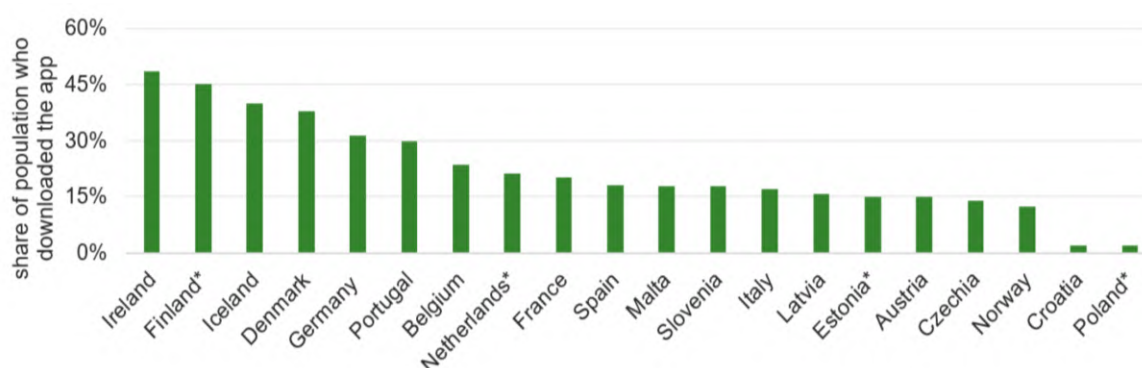
Source: Austria Country Health Profile 2021

During the COVID-19 pandemic, digital health tools were also employed to support contact-tracing, a key component of an effective disease containment strategy. However, contact tracing is also a very labour-intensive process that became unmanageable without the support of digital tools once the number of infections reached a certain threshold. As the number of professional contact-tracers was insufficient in most European countries in the early phase of the pandemic, [most EU countries](#) developed their national mobile contact-tracing and warning apps to support this process. Contact tracing and warning apps can help break the chain of infections. These apps enable people to receive information that they have been in contact with a person infected with Covid-19, if the person has decided to warn the others. It should be recalled that the use of these apps is voluntary.

Through the [European Federation Gateway Service](#), 18 out of 22 [national apps](#) have applied common protocols for the cross-border exchange of contact-tracing keys, which allows users to receive warning notifications regardless of the app used or Member State visited. The deployment of the cross-border connectivity for contact-tracing and notification and warning apps was supported by grants under the Emergency Support Instrument (ESI).

The estimated uptake of contract tracing apps varied considerably across countries (Figure 2.2). While Ireland and Finland achieved high volumes of downloads close to 50% of the population, in Poland and Croatia less than 5% downloaded the apps. Overall, the experience of contact-tracing apps during the early phase of the COVID-19 pandemic highlights some of the challenges associated with the extremely rapid implementation of novel digital technologies in an emergency context.

Figure 2.2. Estimated use of contact-tracing mobile apps



Source: Country Health Profiles 2021. Note: Data as of April 2021. * Data to autumn 2020.

Countries introduced new policies to support the rapid uptake of digital health tools during the COVID-19 pandemic

In the wake of the COVID-19 pandemic, many European countries introduced new policies to incentivize the use of digital health tools. In the area of regulation, countries that had established thresholds for the volume of remote consultations physicians could provide before the pandemic (for example, Germany) relaxed these restrictions. In a similar fashion, some countries that did not foresee the possibility of arranging teleconsultations with a physician for first-visit patients (for example, France and Belgium – see Box) temporarily removed this restriction to improve the accessibility of outpatient care services.

To limit as much as possible unnecessary physical contacts between physicians and patients, several EU countries (for example, Italy, Austria and Malta) developed provisions to allow the remote renewal of repeat prescriptions. Survey data²⁰ indicates that these changes led to a sizeable increase in the use of electronic prescriptions during the course of the pandemic. The share of Europeans that reported having received a remote prescription since the start of the pandemic increased from 43 % in June/July 2020 to almost 53 % in February/May 2021.

In Belgium, government authorities introduced regulation to promote the use of telemedicine. Reimbursement was set at EUR 20 per COVID-19 consultation, and physicians could use teleconsultations without knowing the patient beforehand. The number of teleconsultations peaked during the two waves in 2020, but fell when restrictions were lifted.

Source: BELGIUM Country Health Profile 2021

Concerning financial incentives, most countries accompanied their relaxation of limits to the number/duration of teleconsultations with adjustments to the reimbursement rates applied to remote consultations, or the creation of COVID-19-specific tariffs. In general, most countries have increased reimbursement levels for remote patient consultations closer or even up to those normally paid for standard face-to-face ones. This was done both to incentivize the provision of telehealth, as well as to offset physicians' loss of income from the temporary reduction in the volume of face-to-face consultations.

Lastly, several European countries have committed additional resources to foster the use of digital health tools and strengthen their infrastructure in the coming years, including via the EU's Recovery and Resilience Facility. For example, France allocated EUR 2 billion to roll

²⁰ Eurofound (2021), *Living, working and COVID-19 dataset*, Dublin

out a set of investments to deploy interoperable, secure software in all healthcare facilities, support its implementation at the local level and upgrade the national IT systems running the national digital health infrastructure. As part of its Recovery and Resilience Plan, Belgium allocated EUR 40 million to develop a suite of eHealth services that will extend e-prescription capabilities, develop digital clinical decision-making support systems and increase the use of telehealth.

Digital health tools have supported COVID-19 vaccination programmes

Digital health tools have been used in several European countries to support the implementation of COVID-19 vaccination programmes in various ways, including certification. In this area, digital tools have supported the implementation of the EU Digital COVID Certificate, a document that provides certified proof of vaccination, test negativity or recovery from infection recognized across the EU 27 and beyond (see Box).

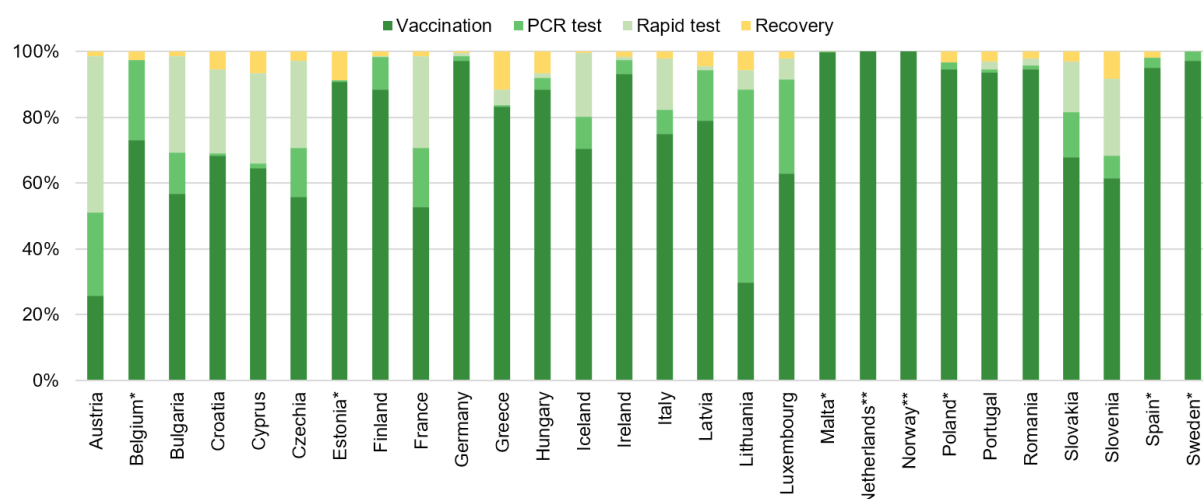
The EU Digital COVID Certificate has been a crucial element of Europe's response to the COVID-19 pandemic. With more than 591 million certificates generated (up to 13 October 2021), the EU Digital COVID Certificate has set a global standard. It is currently the only system in operation at international level, with 49 countries and territories connected to the EU system (latest update: 23 November 2021).

More than 591 million COVID certificates were issued by health authorities across Europe (latest update: 13 October 2021). Overall, vaccination certificates made up more than two thirds of all certificates issued, followed by negative test certificates (23 %) and recovery ones (less than 2 %). This composition was generally reflected at the country level, albeit in a minority of countries negative test certificates made up the largest share of total certificates issued (Figure 2.3).

Member States faced different challenges in the rollout of the EU Digital COVID Certificate, for example, due to a low level of digitalization in the health systems. As not all countries have digital immunization information systems, some of them had to rapidly introduce missing components for data registration, improve data quality and completeness of data collection and streamline data flows. For some Member States, it was the first time to introduce national health-related mobile applications. The deployment of the EU Digital COVID Certificate system in Member States was supported by grants under the Emergency Support Instrument (ESI). As a general observation, countries with stronger and more developed digital health capabilities were able to deliver the EU Digital COVID Certificate solution more quickly and with less effort. They could also reuse the existing tools, such as patient portals or national mobile apps, making it easier for citizens to start using EU Digital COVID Certificate.

Despite the challenges, the EU Digital COVID Certificate was implemented in a record time, and is a good example of the usefulness of digital solutions in the health sector, highlighting the importance of digital health for preparedness for any future possible health crisis.

European countries have also used digital health platforms to optimize the delivery of vaccines. For example, most countries developed bespoke online booking systems for people to book an appointment to get vaccinated, as well as messaging systems linked to patient registers that could identify and contact at the right time high-priority individuals eligible to receive a vaccination based on relevant criteria, such as age, occupation and underlying health conditions.

Figure 2.3. EU Digital COVID Certificates issued, breakdown (relative %) by type of certificate

Source: [European Commission](#) (2021). Data until 13 October 2021. No data for DK.

*Combined figures for PCR and rapid antigen tests; ** Reporting for rapid tests until 27 September 2021

Building on the increased adoption of digital health tools beyond COVID-19

The COVID-19 pandemic has sped up ‘by necessity’ the implementation of major changes required to increase the use of digital health technologies. As outlined at the beginning of this section, technical challenges were only one of the obstacles to implementation prior to the pandemic. In fact, for several digital health technologies, evidence suggests that important enablers of their increased adoption during the pandemic consisted in changes to the rules that governed their use by health workers²¹.

Even though changes to the regulatory and reimbursement frameworks contributed to increasing the adoption of digital health tools, in some countries these changes have been conceived as temporary measures linked to the COVID-19 emergency. Looking beyond the pandemic, it will be important to investigate the experiences of both health workers and patients who have used digital health tools during the pandemic, also with a view to evaluate their effectiveness and devise adequate financial and regulatory provisions.

It is also important to acknowledge that some digital health technologies were scaled up so rapidly because they were critical to ensure health service delivery in a context where minimizing face-to-face contact between patients and

The creation of a **European Health Data Space (EHDS)** is one of the key priorities of the European Commission in the area of health. The expected general objective of the EHDS is to ensure that individuals have improved access to and control over their own health data, can benefit from a wealth of innovative health products and services based on health data use and reuse, and that researchers, innovators, policymakers and regulators can make the most of the available health data for their work while preserving trust and security. It is envisaged that the EHDS would empower citizens through increased access to and control over their personal health data, and support their free movement by ensuring that health data follows them.

²¹ See Fahy, N., & Williams, G. A. (2021). *Use of digital health tools in Europe: before, during and after COVID-19*.

healthcare providers was a priority. As health systems emerge from the COVID-19 pandemic, some aspects of their implementation will have to be recalibrated to the 'normal' context of healthcare delivery, so that they can serve a broader set of objectives such as health system efficiency, quality of care and accessibility.

The use of digital health technologies induced by COVID-19 should be evaluated also to identify possible risks of widening health inequalities through digital exclusion – especially in the context of health inequalities exacerbated by the pandemic (See Section 1). Risks of exclusion exist for certain classes of patients (for example, those affected by cognitive impairments), but also for a large share of the population who either has [never had access to the internet](#) (10 % of the EU's population in 2019) or [lacks the basic digital skills](#) to use it (29 %).

Lastly, sustained investment in implementation and maintenance of IT infrastructure and equipment (including cybersecurity and training of personnel) will be instrumental to enable health systems to capture the full potential of digital tools to improve quality and efficiency of care. In parallel, taking steps to understand and meet the specific training needs of the health workforce (See Section 3) will be important to secure a positive legacy from the experience from the COVID-19 pandemic in this area.

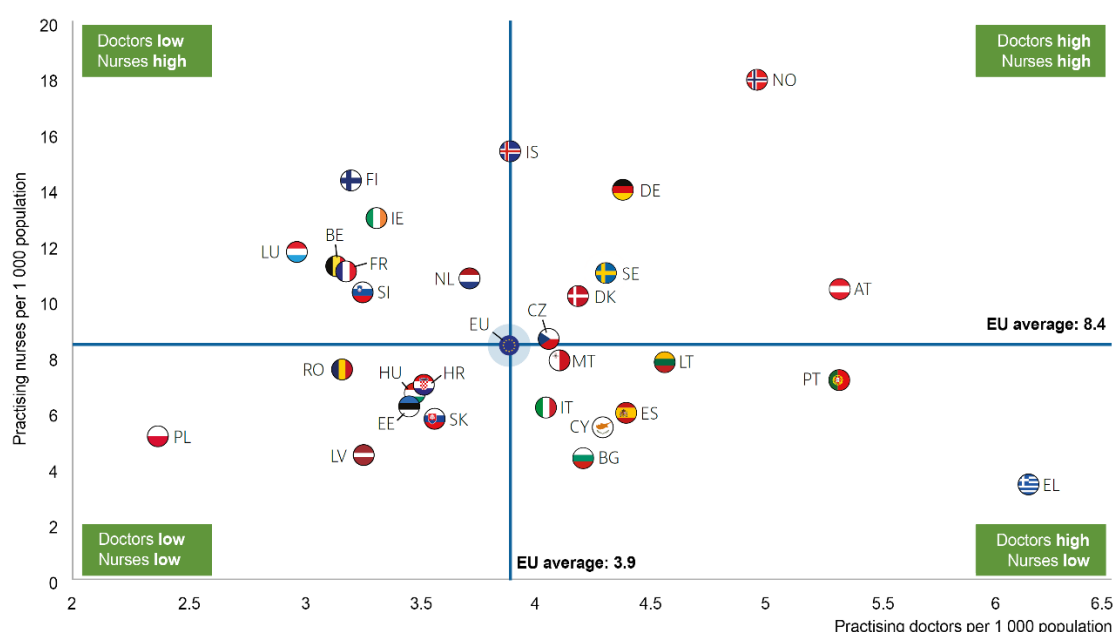
3. Rethinking health workforce strategies and planning after the COVID-19 pandemic

COVID-19 brought health workforce shortages under the spotlight

A well-trained, motivated health workforce of appropriate size and composition is a crucial precondition for building resilient health systems. This was exemplified more than ever throughout the early critical phase of the COVID-19 pandemic, as countries began arranging additional care capacity to meet the surge in COVID-19 patients requiring hospitalisation while maintaining essential services at the same time. Almost all countries managed to overcome the obstacles associated with scaling up their equipment and hospital bed capacity. However, countries that were already grappling with chronic shortages of health workers before the pandemic struggled to adequately staff the new care facilities with skilled personnel. Furthermore, staff shortages decreased the quality of care provided and exposed clinical personnel to excessive workload that affected their wellbeing.

The COVID-19 pandemic put shortages of healthcare into the spotlight, but this is by no means a new challenge to healthcare systems in Europe. On average, there were 3.9 doctors and 8.4 nurses per 1000 population in the EU in 2019 – an increase of about 16 % and 14 % respectively over the past decade. Despite these increases, the demand and complexity of care provided in Europe has grown at a comparatively faster pace due to population ageing and the growing burden of chronic diseases, which aggravated pre-existing shortages. In the 2021 edition of the *State of Health in the EU's Country Health Profiles*, health workforce shortages are reported as a key health system challenge in 15 countries.

Figure 3.1. Doctors and nurses per 1000 population, 2019 or latest year available



Note: In Greece and Portugal, data refer to all doctors licensed to practice, resulting in an overestimation of the number of practising doctors. In Greece, the number of nurses is underestimated as it only includes those working in hospitals.

Source: Adapted from OECD/European Observatory on Health Systems and Policies (2021), Country Health Profiles 2021 - State of Health in the EU.

At the same time, country-level data shows large variation in the size and composition of the health workforce across Europe (Figure 3.1). The number of practising doctors ranges from 2.4 (Poland) to 5.3 (Austria) per 1000 population, and the number of practising nurses varies by a factor of four from 4.4 (Bulgaria²²) to 17.9 (Norway) per 1000 population.

Differences in the nurses-to-physician ratio are also large, spanning from about 1:1 (Bulgaria) to more than 4:1 (Finland). Although differences in the nurse/physician mix reflect a number of factors, this large variation is explained to a large extent by the differing intensity of staff shortages affecting national health systems across Europe.

Health workforce shortages are a key challenge in the **Latvian** health system, with the number of doctors and nurses significantly below the EU average. Moreover, health workers are highly concentrated in urban areas, which hinders access to care for residents living in rural areas. In response, over the past years Latvia increased its medical training capacity and practitioners' pay in the public sector.

To improve access to care in rural areas, Latvia has also introduced monthly bonuses, a higher capitation rate and other financial incentives for GPs practising in underserved areas. Since April 2015, medical schools offer preference to candidates who have agreed to practice in a rural setting after completing their education.

Source: Portugal Country Health Profile 2021

Regional disparities in the density of physicians are wide

Another critical determinant of access to quality healthcare services is the geographic distribution of health workers. Data available at the sub-national level for physicians²³ reveal that the national-level differences in their supply are intensified at the regional level. Across the EU, data show a 5.6-fold difference between the regions with the lowest and the highest density of physicians (Figure 3.2).

Geographic disparities in the availability of doctors within countries – a challenge highlighted in 40 % of the Country Health Profiles 2021 – tend to follow a pattern whereby urban, wealthier areas and capital regions have a higher density of physicians than remote, less affluent ones. This gap can be explained

by several factors, such as the concentration of specialised health services in more densely populated areas and doctors' preference to live and practice in well-served urban settings.

Staff shortages in less densely populated areas constitute a major barrier to accessing care, especially in countries with a relatively low average number of doctors per capita. In a context of increasing average age of practising physicians difficulties in recruiting and retaining young doctors in remote regions, these inequities may be amplified in the future if no further retention policies are developed.

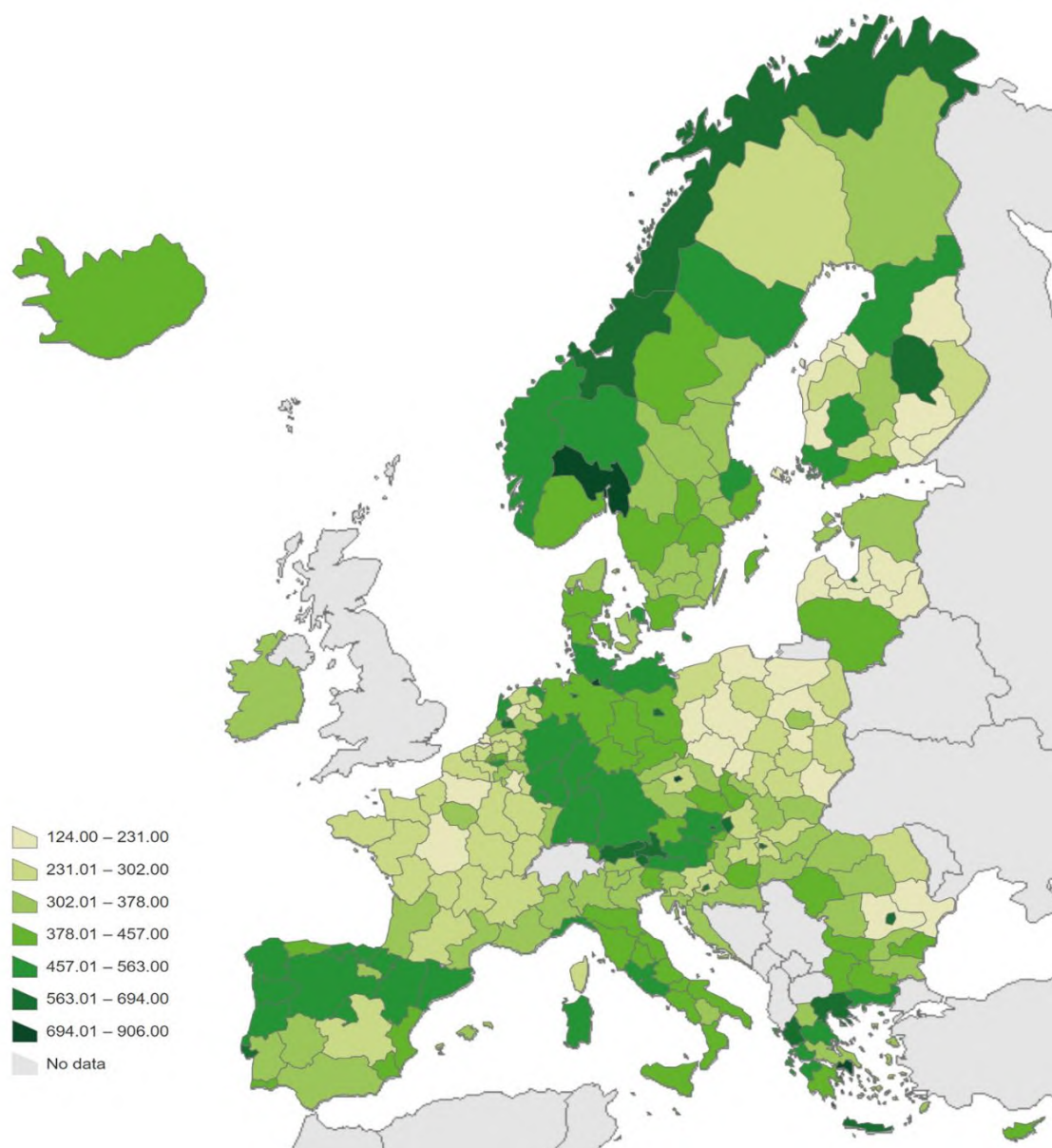
²² This description does not take into account Greece, which data for doctors refer to all doctors licensed to practice (resulting in an overestimation) and which data for nurses count only nurses working in hospital settings (resulting in an underestimation).

²³ Unfortunately, we could not carry out a similar analysis for the geographical distribution of nurses at regional level across Europe because of insufficient data.

The analyses from the Country Health Profiles 2021 show how almost all European countries struggling to recruit doctors to rural and underserved areas have developed a number of incentive mechanisms to improve the equity of doctors' distribution across their regions. Most incentive structures are financial – most often, they consist of salary bonuses conditional on physicians practising in underserved areas. A minority of European countries have also set up non-financial incentive schemes leveraging other key drivers of health personnel's motivation. Examples of non-financial incentives include opportunities for collaboration and exchange among peers (for example, via digital tools), continuous professional development, access to social services and investment in healthcare facilities/workplace safety.

The efficacy of these interventions remains difficult to assess. Overall, it is likely that the combined implementation of financial and non-financial incentives will be required to equalise the distribution of physicians and reduce interregional gaps in access to healthcare.

Figure 3.2. Doctors per 100 000 population – regional breakdown, 2020 or latest year available



Note: In Greece and Portugal, data refer to all doctors licensed to practice, resulting in an overestimation of the number of practising doctors.

Source: Eurostat database, National Statistical Institutes, National Medical Associations. Regional data (NUTS 1, 2 or 3) not available for Ireland, Estonia, Lithuania and Iceland.

Strategies to expand health workforce capacity were essential to avert health system failure in the countries hardest-hit by COVID-19

In most European countries, health workforce shortages proved to be a major barrier to increasing acute care capacity at the peak of the COVID-19 pandemic.

In response, countries implemented a wide array of strategies to increase temporarily the availability, numbers and flexibility of their clinical staff. For example, almost all EU/EEA countries mobilised medical and/or nursing students in their final year to perform support tasks as a way to increase the capacity of clinical staff for COVID-19 care. Most European countries arranged simplified recruitment procedures, extended the working hours of already employed healthcare staff and redeployed them from other care settings and areas with spare capacity to those most affected by the COVID-19 emergency.

During the early critical phase of the pandemic, some countries dispatched teams of doctors and nurses to the most severely affected areas and provided critical medical countermeasures where it was most needed with the support of the [Union Civil Protection Mechanism](#). Some Member States – among them Germany, Austria and Luxembourg, offered their intensive care capacity units for patients from other EU countries.

In an effort to increase clinical staff numbers as fast as possible, most countries also invited recently retired health professionals and those licensed to practice but not engaged in clinical work to return to practice temporarily. The Country Health Profiles 2021 show that five countries²⁴ had also set up 'health reserves' before the pandemic. These

Despite **Norway's** relatively large supply of doctors and nurses, workforce shortages limited the ability of hospitals to provide intensive care during the pandemic. On 24 March 2020, the Directorate of Health launched an official call for health workers not practising at the time to report for duty. In April 2020, overtime compensation for health workers was increased. The active workforce was also reallocated to provide COVID-19 care, and some personnel were retrained in intensive care provision and infection control. Medical and nursing students were also engaged, and rules for foreign-trained healthcare workers were modified in December 2020.

Source: Norway Country Health Profile 2021

In October 2020, the **European Society of Intensive Care Medicine (ESICM)** launched **C19 SPACE**, a short course in Intensive Care fundamentals for healthcare professionals not regularly working in Intensive Care Units (ICUs).

The project, funded by the European Commission, aimed to develop an 'ICU reserve formation' with the necessary skills to support and assist ICUs during surges in admissions due to COVID-19. The rapid training programme was available for doctors and nurses in all 27 EU Member States and the UK working in hospitals with intensive care capacity.

recruitment lists enabled them to quickly identify inactive health professionals willing and ready for deployment at an extremely time-sensitive moment.

Lastly, several European countries managed to increase the size of their workforce in selected disciplines (most notably, emergency and intensive care) by setting up rapid training programmes to equip health professionals specialised in other disciplines with the skills most needed to cater for the needs of critically-ill COVID-19 patients.

At the EU level, the [Emergency Support Instrument](#) funded the delivery of the 'C_19 SPACE' programme (see Box), which

²⁴ Belgium, Denmark, France, Iceland and Norway.

equipped a total of 17 000 European healthcare professionals with the skills necessary to work in intensive care units (ICU) during the pandemic.

COVID-19 has tested an already strained health workforce to the limit

The ability of countries to implement the workforce expansion strategies outlined above has been fully dependent on the commitment and capacity of health workers to withstand extended work shifts and persistently high levels of stress on the job. Although these measures managed to prevent health systems from collapsing during the acute phases of the outbreak, they have taken an unprecedented toll on the physical and mental wellbeing of health workers.

The most tragic impact of the pandemic on health workers is the number of deaths from COVID-19 among them. This data has not been tracked comprehensively at the European level. However, a recent study²⁵ estimates that more than 49 000 health professionals in the WHO European Region have lost their lives to COVID-19.

Several factors have severely affected the psychological well-being of health professionals (see Box). Besides the mental exhaustion from working long hours under hazardous conditions, doctors and nurses experienced prolonged anxiety due to the risks of contracting the virus and potentially infecting their families. Moreover, witnessing chronically high numbers of patients dying while being unable to provide high-quality care because of limitations such as reduced staff ratios/diluted skill mix provoked much emotional distress (known as ‘moral injury’²⁶) among clinical staff.

To alleviate this burden on the health and well-being of health workers, most European countries have rolled out a number of ad-hoc support solutions²⁷. These primarily consisted of mental health support services (dedicated 24-hour helplines and strengthened guidelines for supporting workers’ wellbeing), special childcare schemes for health workers and various forms of temporary salary increases. A small number of countries (Malta, Poland and Romania) also set up subsidised temporary accommodation for frontline staff who wanted to isolate to reduce the risk of transmission to their families.

The effectiveness of these interventions remains to be assessed. However, it is clear that collecting more detailed information on the impact of COVID-19 on health workers’ wellbeing is crucial to designing better support measures, maintain current workforce capacity and inform future workforce planning. Importantly, countries should retain staff support schemes

Several studies carried out after the first COVID-19 wave found consistently very high shares of workers reporting symptoms of burnout and/or post-traumatic stress disorder (PTSD):

In **Italy**, 49% of health workers reported symptoms of PTSD in a survey carried out in March 2020.

In **Spain**, 57 % of health workers reported symptoms of PTSD in April 2020;

In **Austria**, 46 % of health and long term care workers assessed their job as ‘overwhelming’ in May 2020;

Source: Expert panel on effective ways of investing in health (2021)²⁴

²⁵ World Health Organization (2021). *The impact of COVID-19 on health and care workers: a closer look at deaths*.

²⁶ See the recent [Opinion](#) from the EU Expert Panel on effective ways of investing in health (EXPH) on ‘Supporting mental health of the health workforce and other essential workers’.

²⁷ See Williams, G. A., et al (2020). *How are countries supporting their health workers during COVID-19? (Special Issue: COVID-19 health system response.)*. *Eurohealth*, 58-62.

throughout the post-pandemic recovery phase and beyond, to minimize any long-term health consequences of this traumatic experience on frontline staff.

Avenues out of the health workforce crisis post-COVID-19

Through an analysis of the Country Health Profiles 2021, this section of the Companion Report has presented how shortages of health professionals across Europe, compounded by their uneven geographic distribution, have been a persistent limitation to scaling up care capacity in many European health systems both before and after the pandemic broke out.

Over the past decade, **Malta** implemented a series of reforms aimed at improving the education, training and employment conditions of health professionals. Between 2008 and 2018, the number of medical graduates more than trebled, and the number of nursing graduates almost doubled. Although these measures contributed to a steady increase in the number of doctors and nurses, recruitment and retention of GPs remain challenging. Moreover, over the past two years a sudden increase in outward migration of foreign-trained nurses exacerbated shortages of nursing staff.

Source: Malta Country Health Profile 2021

The increase in demand for healthcare caused by COVID-19 exposed frontline workers in health systems that were already understaffed before the pandemic to an unsustainable workload that significantly affected their wellbeing. There are worrying signals that this is leading to many health workers leaving the profession through burn out or early retirement.

At the same time, European countries expect a continued increase in the demand for healthcare services, owing to population ageing as well as the

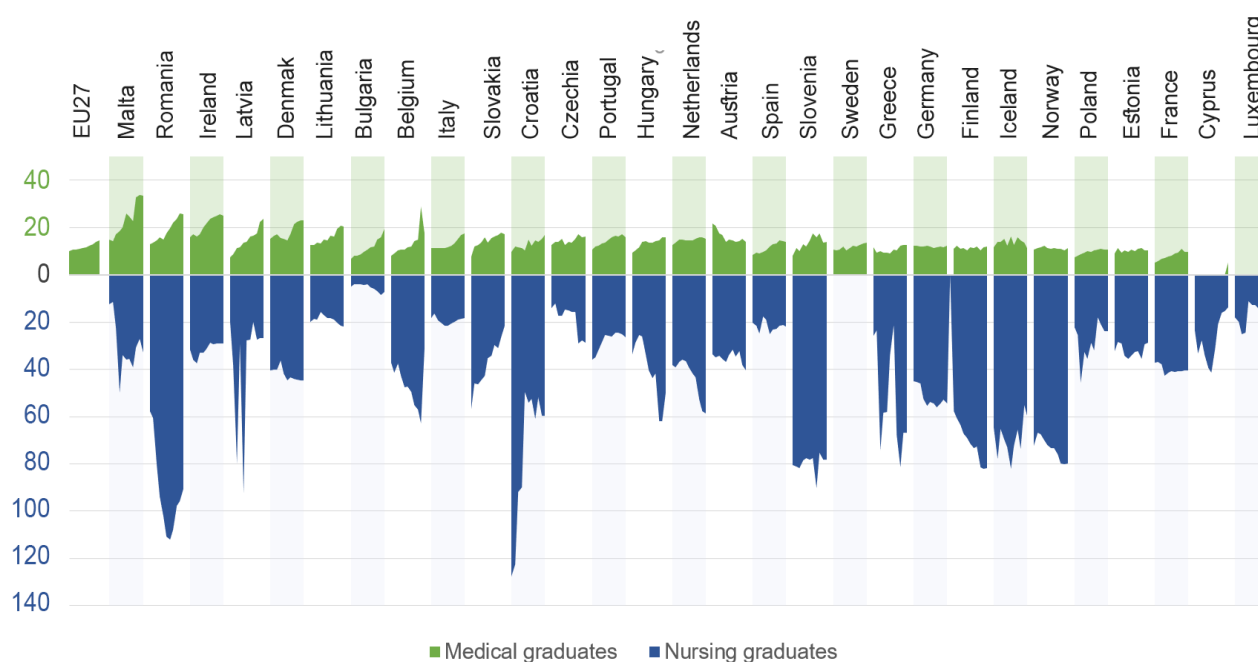
mounting backlog of non-COVID care created by the pandemic (see Section 1). In the aftermath of the COVID-19 crisis, it is more important than ever for European countries to build on the renewed momentum for health system reform to develop more resilient health systems, including through investment aimed at reducing the persistent mismatch between rising demand and limited care capacity.

The evidence from the 2021 edition of the Country Health Profiles suggests that the development of a more resilient health workforce should be pursued through multiple levers, all of which see better workforce planning at the core of improvement. To implement better workforce planning, European countries with the greatest personnel shortages will need to improve the working conditions (both salary and non-salary components) for their health workers as a means to increase retention and attract new talent.

Better planning will also require some countries to re-evaluate their forecasts of future staff needs and increase their investment in training and education (Figure 3.3) to replenish their health workforce and support its expansion²⁸. Besides increasing caps on medical and nursing education programmes, this will also require increasing support for clinical placements and setting up incentives to reduce drop-out rates and support students throughout their healthcare studies.

²⁸ Better forecasting should also help realign skills with the changing demand. The work developed under the [SEPEN project](#) and the forthcoming Joint Action on workforce planning and forecasting are a good stepping stone for continuation of efforts in this area.

Figure 3.3. Medical and nursing graduates per 100 000 population, 2009-2019



Source: Eurostat database. 2018 data for Denmark, Greece, France, Poland (both variables) Croatia and Slovenia (nursing graduates); no data on nursing graduates for Sweden.

Section 2 of this chapter has also documented how the COVID-19 pandemic has indirectly brought some benefits, including the large-scale adoption of new digital health technologies as well as new roles and ways of working together among health workers. Building a more resilient health workforce will also require health systems to implement skill-mix innovations such as task shifting, which hold potential for improving health outcomes while optimising resource use and availability. However, as discussed by the [EU Expert Panel on effective ways of investing in health](#) in their 2019 opinion²⁹, it will be crucial not to frame skill-mix innovations as a substitute for investments aimed at increasing the size of the health workforce.

In conclusion, the COVID-19 pandemic has laid bare the prevalence of health workforce shortages across several European health systems and their role as a critical limiting factor to expanding care capacity. In the aftermath of the pandemic, a renewed focus on more sophisticated workforce planning, investment in skill-mix innovations and a sustained expansion of the workforce (including by improving working conditions to attract new talent) will be key ingredients of the policy mix to resolve this longstanding vulnerability and build a positive legacy out of the COVID-19 health crisis.

²⁹ EU Expert Panel on effective ways of investing in health (2019). *Task shifting and health system design*.

Towards building more resilient health systems

Understanding the health impacts of the COVID-19 pandemic will require further data analysis for years to come

Mortality and morbidity increased throughout Europe as an immediate impact of the pandemic. In the medium and longer term, health systems will have to cater for many people suffering from post-COVID-19 condition and for those whose health worsened because of foregone non-COVID care and mental distress.

Although countries have made significant efforts to develop stronger public health data collection and analysis systems since the beginning of the pandemic, gaps in their scope, granularity and collection methods remain. This also hinders their cross-country comparability.

The full extent of the health impact of the COVID-19 pandemic will emerge only gradually. Health policymakers will only be able to design effective strategies and policies to mitigate the negative effects of the pandemic if they have high quality evidence at hand. Hence, strengthening health data collection and analysis efforts will be crucial to support more evidence-based health policymaking and the design of more effective, accessible and resilient health systems post-pandemic. The initiatives under the [European Health Union](#), especially the [European Health Data Space](#) and the [Health Emergency Preparedness and Response Authority](#) (see Box) will contribute to this goal.

At EU level, increased collaboration has been the keystone of effective responses to the COVID-19 pandemic. A prime example of this has been the implementation of the *EU Vaccines Strategy*, which allowed the EU to secure up to 4.6 billion doses of vaccines and export over [1 billion doses worldwide](#) to more than 150 countries. EU-level collaboration has delivered results that no Member State could have achieved alone.

Efforts towards building a *European Health Union* will help equip Member

States with appropriate and effective means to prevent and address future pandemics, to improve the resilience of health systems, and to shore up prevention and treatment as well as surge capacity for crisis response. The proposal on serious cross-border threats to health³⁰ aims to enhance EU capacity for preparedness, surveillance, risk assessment, early warning and response and to ensure the availability of medicines and medical devices in

In September 2021, the European Commission set up the **Health Emergency Preparedness and Response Authority (HERA)**. Its mission is to strengthen Europe's ability to prevent, detect, and rapidly respond to cross-border health emergencies, by ensuring the development, manufacturing, procurement and equitable distribution of key medical countermeasures.

HERA will be an important component of a strong *European Health Union*. By helping anticipate and identify effective responses to cross-border health threats, HERA aims to enable the rapid deployment of the most advanced medical countermeasures in the event of a health emergency across Europe.

HERA will have at its disposal EUR 6 billion from the EU budget over six years.

³⁰ Proposal for a Regulation of the European Parliament and of the Council on serious cross-border threats to health and repealing Decision No 1082/2013/EU, COM/2020/727 final

public health emergencies.

Sustainable health technology innovation requires both push and pull strategies

The COVID-19 pandemic has accelerated innovations in both public health and healthcare services. There have been remarkable achievements in the uptake of telemedicine, specifically, teleconsultations and ePrescriptions in many EU countries. Some countries used digital tools to monitor patients and to track hospital bed capacities.

Moreover, to support public health measures in the management of the pandemic, digital platforms and apps have been used for COVID-19 monitoring and public health surveillance, contact tracing, vaccination programmes, and for issuing and verifying COVID-19 certification. For example, the contact tracing apps have been useful in providing the public with the latest information on the epidemiological situation.

This innovation wave was spurred by the necessity created by the pandemic and was encouraged by a number of push strategies to incentivise creation and uptake of new technologies.

To increase and sustain the use of digital health technologies, both pull strategies (satisfying existing demand) and push strategies (creating further demand) can be deployed. In this context, there is a need for an assessment of the efficacy, cost-effectiveness, and overall impact of these digital health technologies. Such assessments will be crucial to provide policymakers with the evidence base required to support their continued implementation.

As new technologies develop and the digital dimension of healthcare becomes broader, it will be important to ensure equal access to healthcare services and to safeguard universal health coverage. In addition, keeping the digital skills of both healthcare workers and patients up to date will require a conscious policy and investment effort.

A resilient workforce needs better workforce planning and improved working conditions

The pandemic has revealed the urgent need to address health workforce shortages that existed already before the crisis hit in 2020. In response, a mix of policies have been put in place to develop a more resilient health workforce. More sophisticated health workforce planning methods lies at the core of achieving effective solutions to this longstanding challenge. It will help to create a more flexible and agile workforce well equipped to cater for surge capacity needs in future health crises.

A greater investment in skill-mix innovations, improved working conditions for health workers and incentives to attract new talent (including through increased investment in training and education) will be key ingredients of successful health workforce strategies.

Long-term financing and investments will ensure stronger health system resilience and better preparedness for public health emergencies

The pandemic has emphasised the importance of resilient health systems and the long-term benefits of investing in public health. Increased demand for health services and enhanced preparedness for health emergencies – including those stemming from climate change, will require continued and adequate investment to allow health systems and personnel to cope.

As budgetary pressures might grow in the aftermath of the pandemic, it will be important to maintain adequate and stable levels of public spending on health. Stable funding allows effective investment planning and smooth continuity of services in organising and managing care delivery. Health systems with financing based on less stable sources of revenue are more prone to suffer from external shocks.³¹ It will also be necessary to re-evaluate the sources of public healthcare financing and to consider possible approaches to more sustainable funding structures.

The EU has created a range of funding instruments to support the longer-term investment needs of EU countries. The [Recovery and Resilience Facility](#) will finance reforms and investments in health, including health infrastructure, medical equipment, digital technologies and training for the health workforce. From the 22 Resilience and Recovery Plans to date endorsed by the Commission, a total of around EUR 40 billion will be spent on health.

With a budget of EUR 5.3 billion, the new [EU4Health programme](#) (2021-2027)³² will be used to support cross-country actions to improve and foster health in the European Union, tackle cross-border health threats, improve medicinal products, medical devices and crisis-relevant products, and strengthen health systems, their resilience and resource efficiency and the health workforce. The 2021 *EU4Health* work programme adopted on 24 June 2021³³ has dedicated an overall budget of EUR 23 million for actions related to reforming and strengthening health systems.

Funding investments in health systems will also continue from the [Cohesion Policy](#) funds and member states can request technical assistance on health system reform from the [Technical Support Instrument](#).

In 2020, the European Commission launched the [Pact for Skills](#), a shared engagement model for skills development in Europe. This initiative includes the health ecosystem, and it will promote upskilling and reskilling of health workers, especially for digital skills.

In the wake of the COVID-19 pandemic, the *State of Health in the EU* cycle will continue to provide comparative data and analysis for policymakers to transform health systems to be more resilient.

³¹ Communication from the Commission *on effective, accessible and resilient health systems*, COM (2014)

³² [Regulation](#) (EU) 2021/522 of the European Parliament and of the Council of 24 March 2021 establishing a Programme for the Union's action in the field of health ('EU4Health Programme') for the period 2021-2027, and repealing Regulation (EU) No 282/2014

³³ Commission Implementing Decision (2021) 4793 final

Part 2

Key findings from the Country Health Profiles

AUSTRIA

- Life expectancy in Austria was 81.3 years in 2020 – above the EU average but nearly two years below the levels in the best-performing countries. Gains in life expectancy had slowed in Austria over the past decade, even before the COVID-19 pandemic led to the largest reduction since records began in 1951. In 2020, COVID-19 accounted for over 6 000 deaths.
- While most Austrians report being in good health, nearly two in five adults report at least one chronic condition. The burden of cancer in Austria is considerable: about 21 500 people died from cancer in 2019. Lung cancer remained the leading cause of cancer death. The COVID-19 pandemic led to sharp reductions in cancer screening rates; for example, colonoscopy screening fell by 34 % in the first half of 2020 compared with the first half of 2019. It will be important to assess the longer-term effects of the pandemic on timely diagnosis and treatment of cancers, and any negative impacts on survival rates.
- Risk factors and unhealthy lifestyles remain important drivers of mortality in Austria: about 40 % of deaths in 2019 can be attributed to smoking, dietary risks, alcohol, low physical activity and air pollution. Smoking and alcohol consumption among adolescents and adults in Austria remain above the EU averages.
- Austria has one of the most expensive health systems in the EU. Health spending per capita was the third highest in the EU in 2019. Out-of-pocket payments on health are higher than the EU average. Despite this, Austria has low levels of unmet medical care needs for financial or other reasons.
- The health system in Austria remains highly hospital-centric, with the highest share of health spending devoted to inpatient care. Recent reforms have aimed to reduce the complexity and fragmentation in the health system, including by strengthening primary care services. While 99.9 % of the population is covered through a social health insurance fund, benefits are not yet fully harmonised across funds.
- The number of physicians per capita was the second highest in the EU in 2019. However, the proportion of general practitioners is one of the lowest in the EU, and an ageing physician workforce remains a key challenge in Austria. The average age of physicians is over 50, and 60 % of contracted general practitioners are expected to reach retirement age by 2025.
- Austria reacted quickly at the start of the first wave of the COVID-19 pandemic, and was initially able to avoid the high number of cases and deaths experienced by many other European countries. The high capacity of the hospital system, including a relatively high number of intensive care unit beds, meant that hospital capacity was not saturated during the first wave. Additional measures were taken to mobilise resources to fight the pandemic, including scaling up the number of intensive care unit beds and increasing the health workforce.
- The three waves of the pandemic were met with a range of measures to contain the virus, including a series of strict lockdowns, imposition of a curfew, regulations related to mask-wearing indoors and travel restrictions. Testing also formed an important pillar of the Austrian strategy against COVID-19, with a series of mass testing events undertaken in December 2020 and January 2021 and widespread free-of-charge availability of antigen and PCR tests. From May 2021, a “green pass” was required to access certain public venues, including restaurants, bars and sports facilities.
- As in other EU countries, the vaccination campaign against COVID-19 started at the end of December 2020. As of the end of August 2021, over 60 % of the population had received at least one shot, and 57 % had received two doses (or equivalent). The increase in vaccination rates was accompanied by a sharp reduction in COVID-19 deaths.

BELGIUM

- Life expectancy in Belgium in 2020 remained slightly above the EU average, although it temporarily dropped by 1.2 years because of deaths due to COVID-19 – a larger reduction than the 0.7 years across EU countries. Belgium was among the EU countries hard hit by the pandemic, with nearly 20 000 deaths in 2020 and another 5 500 by the end of August 2021.
- Other important risk factors for health also continue to be major drivers of mortality in Belgium – notably smoking (accounting for an estimated 20 000 deaths in 2019), alcohol consumption and obesity. Tobacco control policies have managed to reduce smoking rates, but other public health policies have been less successful in reducing alcohol consumption and other modifiable risk factors. Environmental factors like air pollution also result in a sizeable number of deaths (about 3 800 deaths in 2019) from circulatory diseases, respiratory diseases and some types of cancer.
- The incidence of cancer is greater in Belgium than the EU average, and about 30 000 people were expected to die from cancer in 2020. Over the last decade, Belgium has developed a comprehensive strategy to improve cancer prevention and care. However, the COVID-19 crisis had a negative impact on cancer screening and care, as some services and interventions were disrupted.
- The number of doctors in Belgium has increased more slowly than in most EU countries over the past decade and is now well below the EU average. About 44 % of doctors are over 55, raising concerns about growing shortages in the future. In response, the number of students admitted to medical schools has increased in recent years, which will result in a growing supply of new doctors.
- Belgium spent 10.7 % of its GDP on health in 2019, a share higher than the EU average of 9.9 %. Most health spending is publicly funded (77 %), which is slightly less than the EU average (80 %). Between 2015 and 2019, the legislated ceiling on growth in public spending on health was set at 1.5 % per year in real terms to contain costs. In 2020, in response to the pandemic, Belgium maintained its overall budgetary objective while at the same time allocating additional funds to cover COVID-19 spending in hospitals and other settings. In 2021, the initial budgetary target was to increase public spending on health by 7.5 % in nominal terms as a response to issues that emerged during the crisis. Additional spending is also provided to pay for other COVID-19-related costs.
- A broad set of measures were implemented to contain the spread of COVID-19 from the beginning of the pandemic. Insufficient crisis preparedness at the onset of the pandemic, including a lack of face masks and limited testing capacity, led to rapid spread of the virus. However, Belgium managed to increase its testing capacity and supply of face masks and other personal protective equipment by the time the first lockdown was lifted in May 2020.
- The first wave of COVID-19 put hospitals under severe strain, but mobilisation of resources was swift. Additional ICU beds rapidly became available to respond to the surge in demand. However, there was a lack of staff with ICU expertise, especially nurses, which prevented further increases. Workforce strategies included increasing nurse numbers through reallocation, overtime and recruitment.
- About 60 % of all COVID-19 deaths in 2020 were among residents of long-term care facilities. The response in nursing homes improved gradually over time, although recommendations on testing and isolating suspected or confirmed cases remained difficult to implement.
- While access to healthcare is generally good in Belgium, the COVID-19 crisis and related containment measures limited access to some services. Some 22 % of Belgians reported unmet healthcare needs in the first 12 months of the pandemic, which is close to the EU average (21 %). To help maintain access to care, new regulations were introduced to scale up telemedicine. It will be important to assess the efficiency of the many innovative practices adopted during the pandemic, to keep and further develop those that worked well.

BULGARIA

- Life expectancy at birth in Bulgaria increased by 3.5 years between 2000 and 2019, but then declined by 1.5 years in 2020 due to the COVID-19 pandemic. At 73.6 years, it continues to be the lowest in the EU. Stroke and ischaemic heart disease remain the leading causes of death, while lung and colorectal cancers are the dominant causes of cancer mortality. Excess mortality data for Bulgaria suggest that the death toll from COVID-19 was considerably higher than officially recorded.
- Almost half of all deaths in Bulgaria are related to behavioural risk factors – unhealthy diets, high smoking rates and alcohol consumption. Mixed results for some existing preventive and health promotion policies, coupled with relatively poor resourcing for public health, contribute to high preventable mortality rates. Similarly, deaths from treatable causes are the third highest in the EU, reflecting difficulties in providing effective and timely treatment in the most appropriate settings.
- Health expenditure per capita has grown steadily but ranks lowest among EU countries. The government share of health financing has increased substantially, reaching its highest level in nearly two decades. Nevertheless, out-of-pocket payments are still very large. At 38 % of total health expenditure, they are the highest in the EU and are mainly driven by spending on pharmaceuticals. Heavy reliance on out-of-pocket spending has a disproportionate impact on the low-income population, as evidenced by the levels of catastrophic health expenditure borne by Bulgarian households, most of which are concentrated in the lowest income quintile.
- Aside from the negative impact of OOP payments on the affordability of healthcare, other major challenges for accessibility are the prevailing gaps in coverage (an estimated 15 % of the population do not have health insurance), referral quotas for diagnostic tests and some specialist care, and geographic disparities in the availability of health personnel and medical facilities. Nevertheless, all COVID-19-related treatment and services – including medicines – were provided free of charge, regardless of insurance status. Teleconsultations also helped maintain access to medical care, particularly for patients with chronic conditions.
- The COVID-19 pandemic put a spotlight on longstanding challenges facing Bulgaria's health workforce. Existing workforce shortages were exacerbated by medical professionals falling ill from the virus. It also demonstrated the importance of safe working conditions along with adequate remuneration, ensuring job satisfaction and worker retention. As part of its pandemic response, particularly for hospital care, the government recruited medical volunteers and offered material and other support to health professionals working in affected districts.
- Bulgaria acted quickly during the first months of the pandemic to boost and reallocate funding for hospital care, testing and teleconsultations. Nevertheless, specific challenges included delayed implementation of mitigation measures to address case surges during the second wave, low testing rates despite increased laboratory capacity and pressure on health services – both in hospitals and within primary care – where not enough attention was given to the treatment of COVID-19 patients recuperating at home. Bulgaria's slow rate of vaccination has presented a further challenge in trying to respond effectively to the pandemic's impact on people's health and society.

CROATIA

- Prior to the COVID-19 pandemic, life expectancy in Croatia was increasing, although it remains more than three years below the EU average. In 2020, life expectancy at birth temporarily fell by just over 9 and a half months compared to 2019 – a significant decline that reflects the toll of the COVID-19 pandemic. While COVID-19 accounted for a large number of deaths in 2020, ischaemic heart disease and stroke are leading causes of mortality. In addition, mortality rates from lung and colorectal cancer in Croatia are among the highest in the EU.
- Behavioural risk factors are responsible for a large share of deaths in Croatia, and public health interventions remain underdeveloped. Anti-tobacco policies are weak, indoor smoking in public places is still widespread, and rates of teenage smoking are the fourth highest in the EU. Obesity rates are rising – in particular among children. Preventable mortality is well above the EU average.
- Prior to the pandemic, Croatia spent 7.0 % of its GDP on the health sector. While Croatia is among the three lowest spenders in the EU in terms of health spending per capita, when measured as a share of GDP, health expenditure is higher than in seven other EU Member States. Croatia has also maintained a high share of public spending on health, resulting in high levels of financial protection.
- Although the Croatian health system provides access to a broad range of services, primary care is fragmented and seems to be underutilised compared to hospital care and care provided by hospital outpatient departments. Data on quality of care and the effectiveness of health technologies are lacking. An Agency for Quality and Accreditation has been established, but it has been subsumed under the Ministry of Health, and its role in quality assurance and accreditation has been limited.
- Long waiting lists for secondary and tertiary care remain a challenge, and waiting times have increased as a result of the COVID-19 pandemic. Before the pandemic, there were fewer unmet needs for medical care in Croatia than on average in the EU, but variations across income groups were substantial, pointing to potential problems in accessibility. In particular, unmet needs due to geographical distance were higher than in any other EU Member State, and unmet needs were higher among older people.
- A broad set of measures was implemented to try to contain the spread of COVID-19. Croatia was less affected by the first wave of infections than the EU overall, but more affected by the second wave – in terms of both cases and deaths per population. To help maintain access to primary care during the pandemic, many consultations shifted to remote provision. Croatia took a number of steps to increase the number of healthcare staff where needed and to ensure the retention of existing health workers.
- The availability of health infrastructure prior to the COVID-19 pandemic was good, with an adequate number of intensive care unit beds. Certain hospitals, wards and outpatient facilities were designated as COVID-19 facilities. However, Croatia consistently performed fewer COVID-19 tests per population than the EU average, and test positivity rates were higher, reaching more than 35 % in the second wave of the pandemic, indicating capacity problems. Existing public sector facilities have been marshalled to roll out the vaccination campaign, including establishing vaccination points in health centres, using general practitioners to inoculate older patients on their lists and administering vaccines within nursing homes.

CYPRUS

- The Cypriot population enjoys good health overall, with one of the highest life expectancies in the EU. However, increases in life expectancy had slowed even prior to the pandemic, especially for women, and they stalled in 2020, although in most other EU countries life expectancy fell in 2020. Overall, official COVID-19 deaths accounted for 2 % of all deaths in 2020, but the higher number of excess deaths recorded in Cyprus that year suggests that the impact on mortality may have been larger.
- While death rates from cancer are lower than in the EU they still account for a considerable share of overall deaths. Lung cancer is the most common cause of cancer mortality among men, with tobacco consumption undoubtedly playing a major role in this. The National Cancer Strategy aims to improve data collection, prevention and service provision for cancer patients.
- Although mortality rates from preventable and treatable causes are relatively low overall, there are variations in access to different services that affect health outcomes. For example, although cervical cancer screening rates compare well with the EU average, despite the existence of a national screening programme, only about 31 % of women aged 50-69 had been screened for breast cancer in the past two years in 2019 – far below the 59 % screening rate across the EU.
- Cyprus has been successful in implementing long-awaited reforms bringing universal health coverage. These unified a previously fragmented system that had serious problems, including an imbalance of resources between public and private providers, high out-of-pocket payments, large inequalities in access, long waiting lists and inefficiency of the health system overall. Concerted reform efforts meant that, despite the COVID-19 pandemic, the new health system became operational in 2020 and out-of-pocket payments have reduced considerably.
- The implementation of the General Healthcare System from 1 June 2019 provided much more flexibility in planning surge capacity by being able to contract freely with private providers to maintain access to routine emergency care while coping with the extra demand for inpatient care in the public sector. Doctors and nurses working in the private sector were also contracted to work in public hospitals as part of the surge capacity needed to cope with the burden of COVID-19.
- While reported levels of unmet needs are slightly lower than the EU average, they are much higher for low-income groups than for high-income groups, indicating barriers to access for those who cannot afford to pay privately and instead have to join a waiting list. Both reducing high levels of out-of-pocket spending and tackling long waiting lists were key drivers for the introduction of the General Healthcare System.
- To get back to normal and fully reopen its borders for tourism, Cyprus has focused on a policy of testing, tracing and vaccinating. The vaccination campaign started in late December 2020 and initially focused on the highest-risk groups, but subsequently expanded to all adults. Coverage kept pace with the EU average and then surpassed it.

CZECHIA

- Life expectancy in Czechia was 2.3 years below the EU average in 2020, having temporarily fallen by one year between 2019 and 2020. By the end of August 2021, there had been more than 30 000 COVID-19 deaths (a mortality rate 80 % higher than the average across the EU), while the broader indicator of excess mortality suggests that the COVID-19 death toll may be even higher.
- Behavioural risk factors are a major public health challenge in Czechia – nearly half of all deaths in 2019 could be attributed to dietary risks, tobacco use and alcohol consumption. The adult obesity rate in Czechia was among the highest in the EU in 2019, and is projected to grow further in the coming years. Strengthening public health and prevention is a key goal of the health strategy for 2021-30, but will require robust implementation planning and monitoring.
- There is a relatively high physician density ratio, albeit with an increasing age profile, but availability of nurses is a long-standing challenge. This shortfall was made more evident in 2020 and 2021 when availability of nursing staff became an important constraint in COVID-19 wards. Policymakers have implemented a variety of measures to address this issue, including increased remuneration and a campaign to improve the attractiveness of nursing. However, substantial issues such as nurse competencies and career pathways have not yet been addressed.
- Czechia contained the first COVID-19 wave well, but struggled to repeat its success later in the year. The government faced challenges in formulating adequate policy responses quickly, when both managing the second wave and planning the vaccination strategy and its rollout. It also lacked clarity and transparency in communication and engagement with the public, fuelling wider public distrust and contributing to poor compliance with containment measures and testing and tracing efforts.
- Important advances in digitalisation and data sharing were made during the pandemic. Several tools proved useful, such as electronic prescriptions, remote video/phone consultations and daily data reporting. Digitalisation of the health system is a key strategic goal for 2021-30, but will require substantial investment and political focus to enable Czechia to catch up with other EU countries.
- Czechia is looking to bolster the resilience of its health system, with a focus on its workforce, financing and governance, even though many planned reforms or new laws were delayed because of the pandemic.

DENMARK

- Life expectancy in Denmark in 2020 was 81.6 years – one year higher than the EU average. Denmark was one of the only two EU countries where life expectancy continued to grow at least modestly in 2020, despite the pandemic – partly because the number of COVID-19 deaths was much lower than in most other EU countries.
- Some behavioural risk factors remain important public health issues in Denmark. Although smoking rates are below the EU average, Denmark has a higher share of deaths attributable to tobacco smoking than most other EU countries, and respiratory conditions are among the leading causes of preventable mortality. Recently announced tobacco control policies are expected to contribute to improvements in this area. High rates of physical inactivity and excessive alcohol drinking among adolescents, as well as growing obesity rates and poor nutritional habits among adults, are other important public health issues.
- Denmark spent 10 % of GDP on healthcare in 2019 – a similar share to the EU average. Overall, the system appears to allocate and use its resources efficiently. Concerted policy efforts have succeeded in shifting care from inpatient to community settings. Denmark's investments in digital care options have enabled eHealth and telehealth options, which have improved accessibility – particularly through the pandemic.
- Danish residents enjoy universal access to a comprehensive package of health services. Unmet needs for medical care are generally low. However, because dental care is less well covered, unmet needs and out-of-pocket spending for dental services are higher, particularly among lower income groups.
- The mortality rate from COVID-19 between early March 2020 and end of August 2021 was three-and-a-half times lower in Denmark than the EU average, in part because of better containment measures (particularly during the first wave), responsive and flexible health system, and more widespread testing.
- At the start of the pandemic, testing was quickly scaled up to achieve one of the highest testing rates in Europe. Widespread testing enabled the country to be one of the first in Europe to relax containment measures and reopen society in April 2020. During the second wave in autumn 2020 and winter 2021, private laboratories were mobilised to provide additional testing support.
- The health system remained responsive to changing needs throughout the COVID-19 pandemic. Hospital and intensive care unit bed capacity was never exhausted, and private hospitals provided additional hospital capacity. Co-operation between hospitals across regions improved during the second wave of the pandemic in autumn 2020. While elective surgeries were postponed during the peaks of the first and second waves, activity levels for primary care were maintained at regular levels, in part thanks to rapid national rollout of app-based teleconsultations. As a result, unmet healthcare needs during the first twelve months of the pandemic were among the lowest in Europe.
- As with all other EU countries, Denmark started COVID-19 vaccinations at the end of December 2020. Populations were prioritised according to risk, with nursing home residents, other older adults, people at risk of severe COVID-19 complications and front-line workers first in line. By the end of August 2021, 76 % of the Danish population had received at least one vaccine, and 72 % had received two doses when recommended, a higher share than the EU average.

ESTONIA

- Life expectancy in Estonia has risen more quickly than in any other country in the EU since 2000. However, over the same period, disability-free life expectancy has plateaued, and health inequalities across regions and socioeconomic groups have widened. Self-reported health status by income level in Estonia has the widest gap in the EU, and disability-adjusted life expectancy varies by 14 years across regions.
- Mortality and morbidity vary considerably across the Estonian population, mirroring large differences in the prevalence of behavioural risk factors. High and growing overweight and obesity rates are a concern. Risky behaviours are more prevalent among Estonian men, with 22 % of males reporting binge drinking at least once a week compared to only 4 % of women. Similarly, men are twice as likely as women to be daily smokers. Some additional policy actions to target these behaviours have been proposed, but they require implementation.
- Progress in public health and health system development has been challenged by the COVID-19 pandemic. The National Health Plan 2020-30; green papers on nutrition and physical activity; and the Cancer Control Plan 2021-30 have faced delays in their implementation. The frequency of exhaustion among the health workforce and policymakers may further slow necessary changes, especially since fewer health workers are being trained to meet future health needs. This will be particularly crucial in primary care, since over half of family doctors are aged 60 and over.
- In 2019, nearly 15 % of the Estonian population reported unmet needs for medical care because of waiting lists, which is far above the EU average of 0.7 %. Consequently, Estonia has the highest level of unmet medical needs in the EU. During the COVID-19 pandemic, the level of unmet needs was slightly greater than usual, but lower than in many other EU countries. Access to care during the crisis was promoted with the rapid uptake of remote consultations, which was supported by Estonia's existing digital infrastructure. The long-term impact of COVID-19 on waiting lists for elective care is not yet known, however.
- Health spending in Estonia is among the lowest in the EU, and out-of-pocket payments accounted for nearly a quarter of all health spending in 2019. Only 30 % of dental care services and 52 % of outpatient pharmaceuticals are publicly funded. Recent reforms expanding dental care and pharmaceutical benefits have targeted ways to reduce out-of-pocket spending and increase financial protection for the population.
- Estonia injected additional funds into the Estonian Health Insurance Fund during the pandemic, using direct government transfers. However, given pre-existing challenges with underfunding, ensuring the sustainability of health system financing will necessitate other longer-term financing mechanisms. These mechanisms are also required to close existing gaps in population coverage by extending health insurance to the whole population.
- COVID-19 prompted several changes in the governance of the Estonian health system. Hospital networks played a leading role in bolstering bed capacity, reorganising provision and coordinating care. The private sector also increased its involvement in the health system, particularly in testing and vaccination, although the effectiveness of pre-existing collaboration with primary healthcare providers proved to be a deciding factor in the success of these initiatives.

FINLAND

- Life expectancy in Finland has increased steadily since 2000, reflecting the positive impacts of public health policies and healthcare interventions in reducing mortality from preventable and treatable causes. Finland was one of the only two EU countries where life expectancy continued to increase in 2020 despite the COVID-19 pandemic, although the gains were fairly small.
- Substantial progress has been achieved in reducing important risk factors for health such as smoking and alcohol consumption. The aim of the current Tobacco Act is that Finland should become tobacco-free in 2030, with a smoking rate of less than 5 %. Alcohol consumption has decreased fairly steadily since 2005, and this reduction continued during the COVID-19 pandemic in 2020. However, obesity rates have increased among both children and adults, and most interventions aimed at curbing this growth have shown only modest results so far.
- Health spending in Finland is slightly lower than the EU average both per person and as a share of GDP (9.2 % compared with 9.9 % for the EU average in 2019), and is much lower than in Sweden, Norway and Denmark. Public spending accounts for 78 % of health spending, which is below the EU average (80 %) and the rates in other Nordic countries (all above 82 %). The rest is paid mainly out of pocket by households, especially for pharmaceuticals and dental care.
- An important challenge is to strengthen access to primary care and promote greater coordination between primary care providers and hospitals, as well as with social welfare services. More timely and effective access to primary care could help reduce unnecessary visits to specialists or hospital emergency departments, especially for the growing number of people with chronic conditions. For the post-pandemic recovery plan it is important to tackle unmet needs due to lack of services, which have emerged in primary healthcare, specialised care and social welfare services. This aim may be complicated by a lack of funding and limited availability of qualified staff.
- A particular concern is that both occupational healthcare and primary care provided through private providers reinforce inequalities in access to care. These mainly facilitate faster access for people from higher socioeconomic groups, while those from lower socioeconomic groups and retired people have to wait longer.
- Health and social care services, funding mechanisms and the regional governance structure will be reformed from 2021 onwards. The 21 self-governing counties and the capital Helsinki will be in charge of social and healthcare services, and most services will be delivered by public providers.
- Finland applied a hybrid strategy against COVID-19, which focused on testing, tracing, isolating and treating confirmed cases. Until August 2021, Finland had the lowest rate of registered COVID-19 cases and deaths among EU countries. The country's positive outcome in managing the pandemic has been seen as a result of the government's and public authorities' effective actions to contain the spread of the virus with this hybrid strategy, as well as contextual factors including the remote location of the country, low population density and the population's cultural preference for maintaining social distance.

FRANCE

- Life expectancy in France is among the highest in Europe, but it fell by eight months in 2020 because of deaths due to COVID-19 – the biggest drop since the Second World War. About 65 000 people died from COVID-19 in 2020, and another 49 000 in the first eight months of 2021.
- Behavioural risk factors for health – notably smoking, alcohol consumption and lack of physical activity – are major drivers of mortality, and risk factors such as obesity increase the risk of complications and deaths from COVID-19. Environmental factors like air pollution also result in several thousand deaths each year from circulatory diseases, respiratory diseases and some types of cancer.
- In recent years, between 380 000 and 420 000 new cases of cancer have been detected in France annually and between 157 000 and 185 000 people died from cancer each year, making it the leading cause of death. France compares well with other EU countries in survival rates following diagnosis of various cancers. The National Cancer Plan 2021-30 was introduced to reduce the number of avoidable deaths from cancer by 50 000 per year. The COVID-19 crisis had a negative impact on cancer screening and care, as services and interventions were disrupted during the lockdowns.
- In 2019, health spending accounted for 11.1 % of GDP – the highest share in the EU along with Germany. Public spending on health rose by 9.5 % in 2020 in response to the COVID-19 crisis, while GDP dropped by 8 %.
- The French health system provides good access to care, with low out-of-pocket payments. However, the pandemic and related containment measures limited access to health services in 2020, and one in six people reported forgone care during the first 12 months of the pandemic; this was lower than the EU average of 21 %, but higher than in Germany. To help maintain access to care, new regulations were introduced to scale up the use of telemedicine.
- Low numbers of general practitioners practising in underserved areas (“medical deserts”) have been a concern over the past decade. The creation of territorial communities of health professionals is expected to help improve access to care, notably by fostering teamwork and task-shifting between doctors and other health professionals.
- France was among the EU countries hardest hit by COVID-19, with the number of cases and death rate slightly higher than the EU average between March 2020 and the end of August 2021. Many measures were implemented to try to contain virus transmission from the beginning of the outbreak, including three more or less strict lockdowns, with mixed success. France initially faced several shortcomings linked to weak pandemic preparation, limited testing capacity and coordination issues between national, regional and local governments, but the situation improved after the first couple of months.
- Additional resources were mobilised during the peaks of the pandemic to help overstretched hospitals and other parts of the health system. France managed to mobilise additional staff by using a national platform to recruit volunteers, students in medical and nursing education programmes and the “health reserve”.
- As in other EU countries, the vaccination campaign against COVID-19 started at the end of December 2020. At the end of August 2021, nearly 60 % of the population had received two doses (or the equivalent), a slightly higher percentage than the EU average. The implementation of the Pass Sanitaire in the summer 2021 provided a strong incentive for people who were still hesitating to get vaccinated to get their first and second doses to be able to enjoy a normal life again.

GERMANY

- Life expectancy in Germany is higher than in the EU as a whole despite a temporary drop of 2.5 months in 2020 due to the COVID-19 pandemic. Ischaemic heart disease, stroke and lung cancer remain the main causes of mortality, and risk factors – including smoking and poor diet – account for about 4 in 10 deaths. Progress has been made in reducing smoking and alcohol consumption among adults and children, but heavy drinking, poor diets and tobacco use are still challenges that need to be addressed to improve the health status of the population.
- Germany spends more of its wealth on health than any other EU country, and most comes from public sources. Health expenditure per capita is the highest among Member States. This robust funding is reflected in the resources Germany has at its disposal: it provides the highest number of hospital beds per population in the EU, and the rates of physicians and nurses per population are well above the EU average.
- Mortality from preventable and treatable causes is lower in Germany than the EU average, but considerably higher than in several other European countries. Comparatively strong separation between ambulatory and hospital care and a lack of effective coordination between primary and specialist ambulatory care has led to problems with continuity and coordination. Higher-than-average cancer survival rates suggest that the quality of cancer care is good, and that treatment is effective. Germany's National Cancer Plan aims to develop early cancer detection and the care structures of specialised and certified cancer centres.
- Access to health services is very good. The population has access to a broad benefits package, and out-of-pocket payments by households accounted for only for 12.7 % of health expenditure in 2019, which is below the EU average (15.4 %). Prior to the COVID-19 pandemic, self-reported unmet needs for medical care were close to zero, but surveys show that this rate increased considerably in 2020. The pandemic led to delayed and forgone care, but also to a higher uptake of e-health options, such as medical teleconsultations.
- Germany acted rapidly in response to the COVID-19 pandemic, and was relatively well prepared in terms of health infrastructure and resources. The country demonstrated high testing activity from the beginning of the crisis, which was enabled by good laboratory capacity, but later surges in cases saw this capacity stretched to its limits. The availability of intensive care unit beds was not at risk during the first wave of the pandemic or the second, which saw a higher number of positive cases. The number of health workers was scaled up, and overburdened public health offices received help from the military and 'containment scouts' to conduct contact tracing.
- The COVID-19 crisis also revealed the challenges faced by federal systems in coordinating and managing the pandemic. To tackle problems like ensuring consistency in regulations across states in lockdown measures or testing strategies, governance mechanisms were put in place to enable rapid, cross-state measures to respond to the crisis through ordinance authorisations, particularly by the Federal Ministry of Health.

GREECE

- Life expectancy in Greece remains higher than in the EU as a whole, but experienced a drop of six months in 2020 due to the impact of COVID-19. Ischaemic heart disease and stroke continue to be the leading causes of death, while lung cancer remains the most frequent cause of death by cancer. Although Greece was less affected by the COVID-19 pandemic than many other European countries, the disease accounted for 1 in 25 deaths in 2020.
- Two in five deaths in 2019 could be attributed to behavioural risk factors – particularly tobacco smoking and diet-related factors. A dedicated national strategy is now in place to address the previously neglected areas of prevention and health promotion. The government has launched several initiatives to tackle smoking, given that lung cancer accounts for a significant share of preventable deaths. A new National Lung Cancer Control Strategy is being developed, and aims to improve prevention, as well as early diagnosis and disease management. Cancer information will also receive a boost through the creation of a national cancer patient registry linked to digital health records, addressing a large data gap that has impeded timely treatment in the past.
- Health expenditure has grown in recent years, after a significant reduction between 2009 and 2015, brought about by wide-ranging measures, including targeting wasteful spending, notably on pharmaceuticals, by means of improved governance, pricing and expenditure ceilings to reduce the incentives for supplier-induced demand. Levels of spending are still below the EU average, but additional, short-term funding injections were secured for the health sector during the COVID-19 pandemic. A main concern is represented by the high levels of out-of-pocket payments borne by households (35 % of total health expenditure in 2019), which is more than double the average across the EU. This is linked to the fact that spending on retail pharmaceuticals, a key driver of out-of-pocket spending, overall represents a high share of total healthcare expenditures.
- Access to health services is underwritten by universal population coverage and a fairly extensive benefits package. However, in practice some services may not always be available, for instance owing to a lack of contracted providers (in the case of dentistry). Even before the COVID-19 pandemic, Greece consistently recorded the second highest rate of unmet needs for medical care in the EU, with the widest disparity between income groups. Unmet needs appear to have grown during the pandemic, but the use of teleconsultations expanded, particularly to facilitate accessibility of care in remote and underserved areas.
- Despite weaknesses in its public health system and health emergencies competencies, Greece acted swiftly and pre-emptively to respond to the COVID-19 pandemic, introducing a range of mitigation measures that stemmed the impact of the first wave. Health system responses included the upscaling of laboratory capacity to boost testing and measures to secure more intensive care unit beds and health personnel to deal with subsequent surges in case numbers. Primary care health centres – the focus of ongoing reform to strengthen the public provision of primary care – also played a role in detecting and managing COVID-19 cases.
- The pandemic has highlighted the importance of the health sector in Greece and has spurred resourcing plans through the EU's Recovery and Resilience Facility. Key areas that will benefit from strategic investment include primary care and hospital infrastructure, preventive and health promotion programmes and the digital transformation of health services.

HUNGARY

- Before the COVID-19 pandemic, life expectancy in Hungary was growing at a slightly faster rate than in most EU countries, but remained almost five years below the EU average in 2019. In 2020, Hungary experienced a temporary decline in life expectancy of 10 months as a result of the COVID-19 pandemic, a reduction similar to the EU average.
- Risk factors including smoking, alcohol consumption and unhealthy diets are more prevalent in Hungary than other EU countries. These have contributed to relatively high rates of preventable causes of death, such as cancer and cardiovascular diseases.
- Despite growth in recent years, health spending per capita and as a proportion of GDP in Hungary remains well below the EU average. Public spending is particularly low for outpatient care and pharmaceuticals.
- Spending on preventive care as a proportion of total health spending has fallen over the past 10 years in Hungary. In an effort to improve disease prevention, the government introduced five national health programmes for 2019-22, which focus on prevention across the lifecycle.
- Hungary has experienced persistent health workforce shortages, which the government has been addressing recently through substantial wage increases. During the pandemic, short-term measures to boost the workforce were introduced, including recruitment of 900 voluntary staff. In the longer term, the government aims to address workforce shortages via the new public sector employment contract, which includes a 120 % pay increase for doctors by 2023.
- In response to the COVID-19 pandemic, the Hungarian government centralised power by establishing an Operative Corps led by the Minister of the Interior and Minister of Human Capacities. In an effort to reduce disease transmission, two rounds of lockdown measures were introduced between March 2020 and May 2021. In addition, the Operative Corps aimed to free up existing resources by cancelling elective surgeries and requiring hospitals to reserve a high proportion of beds for COVID-19 patients. The latter policy resulted in securing a higher number of hospital beds during the first wave of the pandemic than what was justified based on infection figures.
- Hungary implemented an intensive, swift and broad-based vaccination campaign by being the first European country to approve Chinese and Russian vaccines. As a result, during the early months of the rollout, the proportion of people vaccinated progressed at a faster pace than in most EU countries.

ICELAND

- Life expectancy in Iceland was 2.5 years above the EU average in 2020 and higher than all EU countries because the COVID-19 pandemic had much less of an impact than on some EU countries with previously higher life expectancies. Overall, COVID-19 death rates in 2020 and the first eight months of 2021 were almost 18 times lower than the EU average. However, social inequalities in life expectancy have widened over the past decade, owing in part to greater exposure to various risk factors among people with low socioeconomic status.
- While tobacco smoking has decreased greatly and alcohol consumption is relatively low, actions to reduce obesity have yet to make an impact. Overweight and obesity rates among 15-year-olds increased from 17 % in 2010 to 21 % in 2018, which is the fifth highest rate in Europe. In adults, obesity rates increased from 20 % in 2007 to 27 % in 2017, and are now higher than in nearly all EU countries.
- Health expenditure in Iceland is lower than the EU average on a per capita basis and as a share of GDP, with 8.5 % of GDP allocated to the health sector in 2019 (compared with 9.9 % in the EU as a whole). Less than 3 % of all health spending is allocated to prevention.
- The health system provides universal access, but dental care and pharmaceuticals enjoy lower levels of public coverage than in most EU countries. Unmet needs for medical and dental care are much greater than in other Nordic countries. Large inequalities exist for unmet medical needs, and for unmet needs for dental care are even greater: 14 % of those in the lowest income quintile reported going without dental care in 2018, mainly due to cost, compared to only 4 % of people in the highest. In addition, waiting times for elective surgery remain long.
- Iceland's successful strategy to manage the COVID-19 pandemic included, from the very early stages, mass testing, tracing all infections, isolation, identifying risk areas early, quarantining and/or testing those coming to Iceland, and quarantining those who had had contact with infected people. Control of entry points was greatly facilitated by the fact that Iceland is an island. People living in Iceland were advised not to travel abroad, and everyone entering the country was required to undergo quarantine, with the length made flexible when combined with testing. The number of positive cases increased greatly in summer 2021 due to the more transmissible delta variant, which led to a temporary reinstatement of containment measures.
- The health system remained relatively flexible throughout the pandemic. Additional hospital capacity and health workers were mobilised to respond to peaks in demand in certain areas. Iceland introduced measures to minimise the impact of COVID-19 on essential care via the use of website chats, helplines and telemedicine, which was used extensively during the pandemic.
- Initially, Iceland aimed to vaccinate at least 60 % of the population to achieve herd immunity. By the end of August 2021, over 80 % of the population had received two doses (or equivalent) – a much higher proportion than the EU average. As in other countries, vaccination in Iceland has reduced greatly the risk of infection, hospitalisation and admission to intensive care units.

IRELAND

- Life expectancy in Ireland is higher than in most other EU countries, having reached 82.8 years in 2019. Up to the end of August 2021, COVID-19 accounted for 5 100 deaths, a death rate about one third lower than the EU average.
- While most Irish people report being in good health, nearly three in ten suffer from a chronic condition. The incidence of cancer in Ireland is higher than the EU average, with prostate cancer among men and breast cancer among women the leading causes. Over 31 000 people died from cancer in 2018. The COVID-19 pandemic had at least a temporary dampening effect on screening and early detection of cancers.
- Risk factors for health – notably smoking and alcohol consumption – are important drivers of mortality in Ireland. While progress has been made in reducing smoking rates among adults, regular heavy alcohol consumption among adults is higher than in most EU countries and obesity is now higher than the EU average.
- Per capita health spending in Ireland was EUR 3 513 in 2019 (adjusted for purchasing power), which is close to the EU average. The proportion of expenditure from voluntary health insurance schemes was 14 % – the second highest in the EU, and almost three times higher than the EU average (5 %).
- Ireland faces a shortage of doctors and nurses, which contributes to long waiting times for publicly funded services and increased demand for private providers. The implementation of the Sláintecare consultant contract by 2021 aims to address a shortage of doctors in public hospitals, while contributing towards universal healthcare.
- In general, Ireland fares better than many EU countries on avoiding deaths from both treatable and preventable causes. Further efforts, however, are needed to reduce the burden of cancer. The Healthy Ireland initiative and the National Cancer Strategy aim to improve cancer prevention and care.
- The pandemic contributed to limiting access to care for those with conditions not related to COVID-19. During the first 12 months of the pandemic, 26 % of the Irish population reported that they did not receive a medical examination or needed treatment, a slightly higher proportion than the EU average (21 %). The digitalisation of the healthcare system aimed to mitigate disruptions to regular care, with increased uptake of telemedicine and electronic medicine prescriptions.
- Despite Ireland's successful handling of the first two waves of the COVID-19 pandemic in early 2020, the country experienced a severe third wave in late 2020 and early 2021, due to a relaxation of containment measures and the spread of more transmissible variants. This created unprecedented pressure on the contact tracing system. The third wave underscored the importance of an integrated, staggered response, informed by evidence-based guidance including testing and contact tracing.
- As of the end of August 2021, Ireland's vaccination programme had achieved better rates than the EU average, with almost 70 % of the population receiving two doses (or equivalent). The increase in vaccination was accompanied by a significant reduction in COVID-19 deaths.

ITALY

- Italy had one of the highest levels of life expectancy in the EU in 2020, despite the sharp reduction of more than one year due to the COVID-19 pandemic. Geographical inequalities in life expectancy are significant: the gap between those living in southern and northern regions reached almost three years in favour of the latter before the pandemic. This geographical gap is expected to narrow at least temporarily in 2020, as the COVID-19 pandemic had a greater impact on the northern regions.
- The burden of cancer is considerable in Italy: over 180 000 people died of cancer in 2018, which is more than twice the registered number of COVID-19 deaths in 2020 (slightly more than 75 000). Screening rates for breast, cervical and colorectal cancer dropped by approximately 40 % to 45 % in 2020 due to disruptions of services or people being afraid of catching the virus. Delays in screening can be expected to result in later diagnosis and treatment.
- Risk factors for health – notably smoking, poor nutrition, physical inactivity and obesity – are major drivers of ill health and mortality in Italy. Smoking rates among teenagers remain very high. In 2018, nearly 30 % of 15-year-olds reported that they had smoked in the past month, which is one of the highest rates in the EU. The proportion of children and adolescents who are either overweight or obese is also greater than the EU average. Three in ten children aged 8-9 were either overweight or obese in 2019. Higher rates of overweight and obesity were reported in the south of the country and in households with poor socioeconomic conditions.
- Health spending per capita in Italy was EUR 2 525 in 2019, representing 8.7 % of GDP, which is below the EU average of 9.9 %. A growing share of health spending has been paid out of pocket by households in recent years. However, public spending on health increased sharply in 2020 in response to the COVID-19 pandemic.
- Italy was the first European country affected by the COVID-19 pandemic. Despite a well-developed healthcare system in the most affected regions, it was unable to flatten the curve of infections early enough, leading to saturation of hospitals and a dramatic acceleration in deaths. Italy had one of the highest death rates from COVID-19 during the first wave of the pandemic from March to May 2020. Many other EU countries had a higher death rates during the second wave in the autumn 2020; nevertheless, the number of deaths in Italy from October to December 2020 was greater than during the first wave. The death toll continued to increase from January to April 2021, before stabilising in summer 2021. By the end of August 2021, the cumulative mortality rate from COVID-19 in Italy was about 35 % higher than the EU average.
- A broad set of measures – including establishing widespread lockdowns, strengthening laboratory capacity and establishing a COVID-19 integrated surveillance system – was implemented to try to reduce the virus transmission from the beginning of the outbreak. However, the restriction measures were not sufficient to prevent a second wave of the pandemic in autumn 2020, which lasted until summer 2021. Increases in the initially low intensive care bed capacity and mobilisation of additional health workers helped to respond to pressures during the peaks of the pandemic.
- The vaccination campaign against COVID-19 started at the end of December 2020. By the end of August 2021, 60 % of the total population were considered to be fully vaccinated through two doses or the equivalent – a proportion higher than the EU average.

LATVIA

- Over the past two decades, life expectancy in Latvia has increased by 5.5 years, from 70.2 years in 2000 to 75.7 years in 2020. Nevertheless, it remains one of the lowest in the EU, and considerable gender and socioeconomic inequalities exist.
- Latvia has a high prevalence of major behavioural risk factors. It has the highest level of per capita alcohol consumption in the EU, and a higher than average prevalence of smoking and obesity. To improve population health, the government has implemented a number of public health policies, such as a new regulation on alcohol advertising and availability, and a public health strategy. However, limited resources have been devoted to the implementation of these policies.
- In addition to prevention, many deaths in Latvia could be avoided through better healthcare. In 2018, Latvia had the second highest mortality rate from treatable causes in the EU. Despite improvements in areas such as primary care and cancer screening, there remains considerable scope to invest in improving the quality of the healthcare system.
- While health expenditure per capita has increased by 75 % since 2010, it remains the fourth lowest in the EU. Only 61 % of health expenditure is publicly funded. The benefits package is relatively limited, and even when services or goods are covered, they are nearly always subject to user co-payment charges. Moreover, publicly funded health services are capped by annual quotas. Once these are met, patients have to either wait until the following year or cover the costs privately.
- As a result, out-of-pocket spending is very high, accounting for 37 % of total health expenditure – more than twice the EU average. This leads to people spending more on health than they can afford (15 % of Latvian households experience catastrophic health spending) and forgoing treatment: the proportion of the Latvian population reporting unmet needs for medical treatment was among the highest in Europe, both before and during the COVID-19 pandemic.
- Despite early implementation of COVID-19 containment strategies, Latvia was hit hard by the second wave of the pandemic at the end of 2020 and the first few months of 2021. While the government had invested in stockpiles and hospital capacity was centrally coordinated, at the peak of the pandemic equipment, staff and bed shortages occurred.
- Latvia's COVID-19 vaccination strategy prioritised frontline health professionals treating COVID-19 patients and working in the Emergency Medical Service, followed by all other healthcare workers, and social care workers and clients. While the vaccination rate is lower than in the EU on average, by the end of August 2021 41 % of the Latvian population had received two doses (or equivalent).
- During the COVID-19 crisis, Latvia continued to invest in its healthcare system. In the years before the pandemic, Latvia had been increasing the state health budget. To support the healthcare system during the pandemic, additional funding was allocated, including EUR 254 million (equivalent to more than 20 % of the annual state healthcare budget) to strengthen laboratory services, improve the infrastructure of health facilities and improve access to healthcare services. The health sector will also benefit from the EU Recovery and Resilience fund.
- Digital surveillance and tracing played a role in the Latvian COVID-19 response. The Centre for Disease Prevention and Control started providing COVID-19 information even before the first case was diagnosed. Daily updated statistics are available from Latvia's Open Data Portal. Latvia was the first country to launch a COVID-19 contact tracing application, using newly developed software, and the source code was made available for others to use. Moreover, Latvia's app was connected to those of other countries, using the interoperability solution provided by the European Commission.

LITHUANIA

- The COVID-19 pandemic caused major loss of life in Lithuania, accounting for a 1.4-year drop in life expectancy in 2020 and becoming the third largest cause of death. Overall, 16 % more deaths were recorded that year compared to the average of the previous five years, suggesting that the pandemic had an even wider impact on population health and health services.
- Population health was improving before the pandemic. Following the introduction of stronger alcohol control measures, alcohol consumption was falling, particularly among young people. However, there is still scope to strengthen public health measures, as half of the deaths in Lithuania can be attributed to behavioural risk factors.
- Levels of preventable and treatable mortality in Lithuania remain high. Recent quality checks on the treatment of heart attack and stroke patients show that not all providers are adequately equipped to provide high-quality care for conditions that are among the deadliest for the population. There is also scope for improvement in cancer care – in both screening coverage and survival rates for many treatable cancers. Indeed, screening rates fell even lower during the pandemic.
- High out-of-pocket and catastrophic spending show that while population coverage is very broad, some services (particularly medicines, dental care and medical devices) are less financially accessible. Nevertheless, important steps have been taken in the past few years to reduce co-payments for medicines and improve equity, particularly by covering the full cost of essential medicines for older people and those in low-income households.
- The initial swift reaction to the pandemic in Lithuania – national lockdown and border restrictions from 16 March 2020 – translated into a relatively small first wave of COVID-19. However, the response to increasing case numbers in autumn 2020 came late, and by December 2020 Lithuania was among the countries with the highest number of COVID-19 cases and mortality in Europe.
- Spare capacity in terms of hospital beds, including intensive care beds, helped the healthcare system cope with the large influx of patients at peak times in December 2020 and April 2021, allowing hospitals to allocate more space to COVID-19 patients either within the same hospital or by tapping into regional capacity. Similarly, regulations allowed reallocation of health workers between providers to ensure that essential staffing levels were maintained.
- Lithuania was ahead of many EU countries in purchasing the necessary equipment for testing, allowing the country to expand testing capacity relatively quickly. Similarly, the country was ahead of many on vaccination planning, and by end of August 2021, 55 % of the population had received at least two doses of vaccine or equivalent. However, the pandemic severely limited accessibility of non-COVID-19 services.
- At the start of the pandemic, the Lithuanian e-health system was in the process of redevelopment. An important shift towards digitalisation of services, as well as the need for rapid, accurate and wide-ranging data collection, prompted much wider use of e-health by residents, providers and public administrations.

LUXEMBOURG

- Life expectancy in Luxembourg has increased by more than two years since 2010, reaching 81.8 years in 2020, which is well above EU average. However, COVID-19 accounted for an estimated 11 % of deaths in 2020, which contributed to a reduction of nearly 11 months in life expectancy compared with 2019. Risk factors, including smoking and poor diet, account for one third of all deaths. Public health policies such as smoking bans and tax increases on tobacco products have contributed to reducing smoking among adolescents and adults. However, heavy alcohol consumption in adults remains a cause for concern.
- Low mortality rates from treatable causes suggest that Luxembourg's health system provides effective healthcare interventions. Mortality rates from heart attack, stroke and cancer have declined in the last decade. The mortality rate for breast cancer has remained relatively stable, albeit close to the EU average. Luxembourg's second National Cancer Plan (2020-24) aims to improve the use of modern genetics and molecular pathology in treating cancer.
- Health spending per capita in Luxembourg is among the highest in the EU, although it represents a relatively small share of its GDP. The public share of health financing is considerably higher than the EU average, at 85 % in 2019. The population enjoys a broad benefits package, and out-of-pocket spending is the second lowest in the EU. Unmet needs for medical and dental treatment are among the lowest in Europe. However, out-of-pocket spending for pharmaceuticals, dental care and long-term care can still be substantial. To further improve access to outpatient medical care and streamline administration, the government aims to extend the third-party payment system from 2023.
- Luxembourg's health workforce is marked by strong dependence on neighbouring countries. Around two thirds of nurses and one quarter of doctors practising in Luxembourg live outside the country. During the early phase of the COVID-19 pandemic, the reliance on foreign health professionals made Luxembourg particularly vulnerable to the risk of border closures with Belgium, France and Germany. The government aims to alleviate reliance on cross-border health professionals by raising the attractiveness of health professions among the resident population, expanding medical training opportunities and implementing skill-mix approaches.
- The country acted rapidly in response to the COVID-19 pandemic, and was relatively well prepared. The crisis unit at the Ministry of Health coordinated all related actions, with support from other public services. The public health surveillance system included an efficient contact tracing and large-scale testing strategy.
- The COVID-19 pandemic triggered rapid progress and innovations in the organisation of healthcare provision, while also revealing persistent problems. For example, Luxembourg started to use teleconsultations extensively, created a reserve of health professionals and fostered co-operation with the Ministry of Family Affairs for support and supervision of nursing homes. The collaborative effort by public services, healthcare providers, the armed forces and private companies, as well as the financial reserves of the National Health Insurance Fund, made it possible to create dedicated structures, such as the advanced care centres, testing centres and new on-call GP services for nursing homes. Some of these innovations will be maintained in the long term.

MALTA

- Life expectancy in Malta is high, but income-based disparities in health status persist. Strong public health policies contribute to low levels of preventable mortality, and deaths from treatable causes have declined substantially in recent decades as a result of improved health system performance. Further reductions in cancer mortality are targeted through stronger and more equitable access to primary prevention and treatments and improved care integration.
- Obesity rates among adults and adolescents in Malta are the highest in the EU. Recent legislation regulating advertising and food provision in schools, along with inter-sectoral investment to promote a culture of physical activity, aims to help tackle this major public health challenge. Prevention overall will be strengthened through training of health professionals and encouraging citizens to improve their own health and well-being.
- Life expectancy in Malta fell by 0.3 years in 2020 as a result of the COVID-19 pandemic, which is below the average decline of 0.7 years recorded across the EU. Until early 2021, widespread testing linked to contact tracing alongside other public health measures contributed to Malta having a lower rate of infection than the EU average. A strong rise in cases in early 2021 put pressure on the healthcare system, but the rapid rollout of the vaccination programme saw over 80 % of the population vaccinated by August 2021– helping to reduce hospital admissions and deaths. Additional public funding was committed to the health sector during 2020 to support the COVID-19 response – in particular, to procure personal protective equipment and to scale up hospital and health workforce capacity.
- Malta's National Health Service provides good access to care to the population, and levels of unmet needs for care are the lowest in the EU. However, out-of-pocket spending is high, primarily due to private expenditure on primary and outpatient care and on pharmaceuticals prescribed in these settings. Private care is often purchased to bypass waiting lists for certain outpatient services in the public sector. Long waiting lists are a persistent challenge, and are likely to increase due to delayed treatments during the COVID-19 pandemic.
- Malta enhanced the use of digital technologies during COVID-19 to support communication, surveillance and monitoring, and provision of remote services. Use of e-prescriptions, clinical management systems and a telemedicine hub are likely to remain after the pandemic. Greater use of digital health technologies is acknowledged as a key strategy to support efficiency, access and the sustainability of the health sector.
- Strengthening primary and outpatient care has been a health system objective in Malta for the past two decades to shift service delivery away from more expensive hospital settings and improve care for chronic conditions. A new outpatient building at Mater Dei Hospital and two regional primary care hubs are being built, while health centres and community clinics across the country are being modernised. Reorienting service delivery towards more cost-effective settings will help improve health system sustainability.
- Ensuring availability of affordable medicines is a critical challenge facing Malta as a small country. Increased use of managed entry agreements and clinical protocols for the evaluation of new medicines have contributed to improved availability in recent years. Initiatives to promote stronger cross-border collaboration, joint procurement and price transparency will work to enhance access.

NETHERLANDS

- At 81.5 years in 2020, life expectancy in the Netherlands remains higher than the EU average by about one year. Gains have slowed over the last decade, and life expectancy temporarily fell by over 8 months between 2019 and 2020 during the COVID-19 pandemic. Lung cancer, stroke and ischaemic heart disease accounted for nearly one fifth of deaths in 2019, but 1 in 15 deaths in 2020 were attributed to COVID-19.
- The Netherlands has lower mortality from preventable and treatable causes than the EU average. Lung cancer contributes to 30 % of all preventable deaths, while colorectal cancer and breast cancer account for 40 % of treatable deaths. Mortality rates from other treatable causes – such as ischaemic heart disease, stroke and pneumonia – are among the lowest in the EU. Even though cancer causes a large share of preventable and treatable deaths, five-year cancer survival rates in the Netherlands exceed the EU average.
- The Dutch population generally reports low unmet needs for medical treatment, and government regulation guarantees universal and equal access to affordable care. In 2019, only 0.2 % of the surveyed population reported unmet medical needs, but additional survey evidence shows that over 15 % of respondents had to forgo care in the first 12 months of the COVID-19 pandemic. Many non-urgent services were cancelled or postponed, which may further increase waiting times that had already been rising in outpatient settings.
- The Netherlands is among the highest spenders on long-term care and prevention in the EU, and among the lowest spenders on outpatient pharmaceuticals and medical devices. Several factors may have contributed to low pharmaceutical spending, including a long history of volume and price control policies, a conservative approach by general practitioners to issuing prescriptions and well-established health technology assessment processes. International collaboration through the BeNeLuxA initiative also aims to improve collaboration on pharmaceutical policy and procurement. Public spending covers a high percentage of healthcare expenditure, with the exception of dental care, and many people have dental coverage through voluntary health insurance. Out-of-pocket expenditure in the Netherlands, at just over 10 %, is considerably below the EU average of 15 %, while voluntary health insurance spending exceeds the EU average.
- While the Netherlands had a national pandemic response plan in place and a high level of preparedness before the COVID-19 pandemic, the health system response encountered obstacles. In particular, testing, contact tracing and vaccination efforts suffered from limited capacity, fragmentation and lack of coordination. More positively, the pre-existing primary care gatekeeper system offered shared decision making between the patient and provider to determine the desired treatment for COVID-19 patients.
- The need for a coordinated response to the COVID-19 pandemic – for example, in contact tracing and testing – overruled pre-existing structures in the Dutch healthcare system that separated payers and providers and distanced the Ministry of Health from direct intervention in the system. Temporary legislation updated financial relationships and patient management to enable the necessary national-level responses, such as transferring patients between regions and sharing patient data.

NORWAY

- Life expectancy in Norway is the highest in Europe, at 83.3 years in 2020. Norway is one of just three European countries where life expectancy increased in 2020 – by 0.3 years, despite the COVID-19 pandemic. Overall, COVID-19 death rates in 2020 were nearly nine times lower than the EU average in 2020, and no excess mortality was observed.
- Norway's spending on health is the highest in Europe in per capita terms, although when measured as a share of GDP it is comparable to the EU average. Public spending represents 85 % of health expenditure – the highest share in Europe. Norway also devotes more spending to long-term care than any EU country.
- The healthcare system provides universal access to a broad benefits package. Annual cost-sharing ceilings protect patients from high health spending, and these were lowered and simplified in 2021. Cost-sharing exemptions apply for priority services and vulnerable populations. Unmet needs for medical care are low, mainly related to waiting times, while unmet needs for dental care are higher.
- Reflecting good access to effective treatment, Norway has one of the lowest rates of deaths from treatable causes in Europe, and high cancer survival rates. Standardised patient care pathways help reduce geographical variation in care quality. Rates of preventable deaths are also low, reflecting strong primary care and relatively healthy lifestyles: both smoking rates and alcohol use are lower than in the EU overall. Increasing overweight, physical inactivity and the use of snus (a smokeless oral tobacco product) among adolescents are areas for improvement, however.
- Norway has a good supply of doctors and nurses, with high reliance on a foreign-trained workforce. The National Health and Hospital Plan 2020-23 launched 19 healthcare communities, which are tasked with coordinating planning, priority-setting and service provision across sectors.
- The first wave of COVID-19 cases was curbed through a national lockdown introduced in mid-March 2020. Norway was one of the first countries to start gradually reopening society in April, with no rise in cases observed until late summer. The second wave saw less restrictive containment measures, although a rise in cases in March 2021 necessitated national restrictions. In contrast to most EU countries, death rates were lower during the second wave than during the first.
- Testing rates were higher than the EU average during the second wave, and expanded testing capacity contributed to low positivity rates. Norway's original contact tracing mobile app was redesigned following privacy concerns and was relaunched in December 2020. In June, the app was connected to the European Federation Gateway Service. The Norwegian Public Health Institute was able to monitor and report on the epidemiological situation in real time, thanks to existing registries.
- The health system remained relatively flexible throughout the pandemic. Hospital and intensive care unit capacity was never exhausted, but workforce expansions were necessary. Shortages of personal protective equipment and medicines at the beginning of the pandemic led to centralised purchasing and distribution solutions. Rapid expansion of telehealth ensured continuity of ambulatory care, but delays were observed for specialist hospital care and some cancer screenings.
- The relative success of Norway's handling of the pandemic during the first year has been attributed to factors such as rapidly implemented containment measures, geographical location, low population density, high levels of trust in government and generous social welfare arrangements.

POLAND

- High mortality from COVID-19 caused life expectancy in Poland to fall temporally by 1.4 years between 2019 and 2020, and widened the gap in life expectancy at birth between Poland and the EU average to four years. Inequalities in life expectancy by gender and education remain pronounced.
- Behavioural and environmental risk factors account for nearly half of all deaths in Poland. Although decreasing, smoking rates remain high and alcohol consumption is also higher than the EU average. Obesity is a growing health issue, and policy efforts to tackle it have increased, including the introduction of a “sugar tax” on beverages in 2021. Preventable mortality is far above the EU average, drawing attention not only to the relatively low spending on health promotion and disease prevention but also to the scope for strengthening tobacco and alcohol control measures.
- The share of GDP dedicated to health remains low, accounting for only 6.5 % in 2019, and per capita funding for health is much lower than the EU average. Although the benefits package is fairly broad with no cost sharing for primary and inpatient care, financial coverage of outpatient medicines is low: public pharmaceutical spending is among the lowest in the EU, and outpatient medicine costs are the single largest driver of catastrophic spending on health in Poland. Over three quarters of OOP spending on medicines goes on directly purchased medicines for self-treatment – possibly due to long waiting times to access specialist care. Efforts have been made in recent years to control the prices of medicines and to expand access, particularly for older people, through co-payment exemptions.
- Low levels of financing are likely contributors to health workforce shortages, which are more severe than in most EU countries. These shortages contribute to access problems such as long waiting times, particularly in rural areas. In the EU, Poland has among the lowest number of doctors and nurses per capita. Further, many doctors and nurses are approaching retirement age, which exacerbates concerns about future supply. During the pandemic, regulations around the recruitment of international medical staff were relaxed, despite previous strong opposition.
- The early COVID-19 response allowed Poland to contain the first wave of infections effectively. It also offered an opportunity to build contingencies, but the health system quickly came under strain when the infection rate surged during the second wave. Capacity issues affected the large inpatient sector, where shortages of health workers proved to be a major bottleneck to upscaling care, even when infrastructure such as additional intensive care unit beds was mobilised quickly. Over the course of the pandemic, primary healthcare increasingly became the first line of response to COVID-19.
- Thanks to the use of telemedicine solutions and supportive platforms and tools, it was largely possible to maintain primary care services during the pandemic. This was more difficult with specialist consultations, which tend to rely on physical examinations and diagnostic tests. Provision of inpatient care for non-COVID-19 patients suffered the most, as health resources were reallocated to treatment of COVID-19 patients. Poland has bolstered access to the COVID-19 vaccine by assembling a range of vaccination sites to administer the inoculation. In the face of some vaccine hesitancy, it has also provided incentives to encourage the population to get vaccinated.

PORTUGAL

- Life expectancy in Portugal is slightly higher than the EU average, but it fell temporarily in 2020 by 0.8 years as a result of the COVID-19 pandemic. Portugal was among the EU countries hardest hit by the pandemic in terms of infection and death rates. More than 17 000 people died from COVID-19 between March 2020 and August 2021, with the mortality rate slightly higher than the EU average.
- Behavioural risk factors— notably alcohol consumption, obesity and lack of physical activity – are major drivers of ill health and mortality in Portugal. Overweight and obesity are growing public health issues: 22 % of 15-year-olds were overweight or obese in 2018, which is a higher share than the EU average (19 %). Obesity has also increased among adults and is also now above the EU average.
- As in other EU countries, the burden of cancer is considerable in Portugal. Based on trends from previous years, about 30 000 Portuguese people were expected to die of cancer in 2020. The National Cancer Plan was introduced in 2016 to promote greater prevention, earlier diagnosis and better treatment for cancer. One of the priorities for 2020 was to increase screening rates for breast, cervical and colorectal cancer, but the COVID-19 pandemic disrupted cancer screening programmes, resulting in a temporary reduction in screening rates in 2020.
- In 2019, health spending accounted for EUR 2 314 per capita (adjusted for differences in purchasing power) – about one third below the EU average. Following fiscal consolidation measures after the economic crisis in 2008 that led to a reduction between 2011 and 2013, public spending on health grew at a steady but modest rate between 2013 and 2019. In response to the COVID-19 pandemic, the government provided substantial additional funding to the health sector in 2020 to allow hiring of additional workers, bonus payments and procurement of medical and personal protective equipment.
- Portugal responded to the pandemic with a series of containment measures that managed to keep infection and death rates low during the first wave in the spring 2020, but measures taken afterwards proved to be insufficient to prevent a steep rise in the number of cases and deaths in the autumn 2020 and early 2021. In addition, the pandemic and related containment measures limited access to health services in 2020. Over one third (34 %) of Portuguese people reported some unmet healthcare needs during the first 12 months of the crisis – a much higher share than the EU average of 21 %. The volume of elective surgery was reduced by over 20 % in 2020 compared with 2019; this has worsened existing long waiting times. On a more positive note, while the number of face-to-face consultations fell sharply during the first wave, the growing use of teleconsultations helped to cushion the impact of COVID-19 on access to care throughout 2020.
- The peaks of the outbreak put Portuguese hospitals under severe strain and unveiled shortages in acute care capacity. During the peak of the second wave, NHS hospitals rapidly became overstretched. To manage the surge in demand, Portugal more than doubled its intensive care unit capacity between March 2020 and March 2021, mostly by shifting capacity from planned (elective) procedures to increase bed availability in general and intensive care units. The authorities also mobilised additional workforce to cope with the surge in demand.
- The COVID-19 vaccination campaign, which started at the end of December 2020, followed a hierarchical order according to risk of exposure, age, disease groups at high risk and essential groups. Portuguese people showed interest in getting vaccinated, with low levels of vaccination hesitancy. As of the end of August 2021, a much greater proportion of the population had been vaccinated compared with the EU average.

ROMANIA

- Life expectancy at birth in Romania increased by more than four years between 2000 and 2019, but declined by 1.4 years in 2020 because of the impact of the COVID-19 pandemic. It remains among the lowest in the EU. Risky health behaviours account for more than half of all deaths. Romanians report relatively high rates of tobacco smoking, unhealthy diet, alcohol consumption and low physical activity. Overweight, obesity, and smoking rates among adolescents are also high, and have been growing continually over the past two decades.
- Per capita spending on prevention is the second lowest in the EU. This meant that, prior to the pandemic, public health was under-resourced and underperforming. For example, among older people the seasonal influenza vaccination rate had declined considerably from just over half of the target older age group in 2007 to around one fifth in 2018. Health spending on primary care is also the lowest in absolute terms among EU countries. The weakness of primary care and prevention may explain Romania's high mortality rates from both preventable and treatable causes, with the latter the fourth highest in the EU in 2017.
- Overall, Romania has significantly increased its health spending but remains the EU country with the second lowest health expenditure, both on a per capita basis and as a share of GDP. Romania has high levels of public financing for inpatient and outpatient care, but out-of-pocket costs are also high, particularly for outpatient medicines. Nevertheless, all COVID-19 treatment and services are provided free of charge, including medicines.
- Romania trains large numbers of healthcare practitioners, but emigration of medical staff has contributed to health workforce shortages in the country, and the numbers of physicians and nurses per capita are well below the EU averages. This adversely affects access to care and contributes to waiting times. The state of the health workforce was also a key concern in pandemic preparedness.
- Romania managed to increase its testing capacity significantly during the first wave of the COVID-19 pandemic, but testing rates remain low compared to the EU average. High positivity rates in the second and third waves indicate that testing capacity has not kept pace with the speed of community transmission. In addition, the pressures placed on hospitals by the pandemic undermined access to non-COVID-19 care. In the second half of 2020, the number of excess deaths in Romania was much higher than the number of reported COVID-19 deaths, indicating that COVID-19 deaths were being undercounted.
- Shortages faced during the pandemic stimulated the creation of several electronic information systems to manage the stretched health resources better. For example, a system for diagnostic testing was set up to improve communication between laboratories, district public health authorities, general practitioners and patients. An electronic centralised operational coordinating centre now reports on bed occupancy on a daily basis to facilitate resource management. Remote care was also developed to replace some face-to-face visits, and this could support improved care provision for underserved communities in the future.
- The COVID-19 vaccination campaign began relatively well in Romania, although it was delayed by supply issues. It has been supported from its inception with a comprehensive and coherent communication strategy implemented by the government, but vaccine hesitancy has still severely limited coverage and the vaccination programme appears to have lost momentum.

SLOVAKIA

- Life expectancy in Slovakia steadily increased from 73.3 to 76.9 years between 2000 and 2020 but remains among the lowest in the EU, at almost four years below the EU average. As a result of COVID-19, the life expectancy declined by almost a year between 2019 and 2020, slightly more than the EU average. Disparities in life expectancy by socioeconomic status remain among the largest in the EU; on average, the most educated men live 15 years longer than the least educated.
- Nearly half of all deaths in Slovakia are attributable to potentially preventable behavioural and environmental causes. Dietary risks alone contributed to 26 % of all deaths in 2019 – well above the 17 % EU average. Adult and adolescent obesity rates are on the rise. The high prevalence of smoking among both adults and adolescents remains a public health concern.
- In 2019, health spending in Slovakia accounted for 7.0 % of GDP – much lower than the EU average (9.9 %). Despite this relatively low level, Slovakia provides a comprehensive benefits package to nearly the entire population. The share of public spending by service type is higher than the EU average, but out-of-pocket spending accounts for nearly 20 % of health spending, driven to a large extent by the purchase of outpatient pharmaceuticals.
- Slovakia has one of the highest mortality rates from preventable and treatable causes, yet spends the least on prevention in the EU. Substantial scope remains for improvement in effective public health policies to reduce avoidable hospitalisations and premature deaths.
- While Slovakia's cancer mortality rate is among the highest in the EU, the country is increasing efforts to reduce this burden. For the first time, a national cancer plan was adopted in 2018 to achieve progress in cancer prevention and care, with initial measures focusing on nationwide screening for selected cancers. Unfortunately, these screening programmes were temporarily suspended or delayed in 2020 due to COVID-19.
- Access to care is generally good for most of the Slovak population, and very few reported unmet needs for medical care before the pandemic. The COVID-19 crisis and related containment measures limited access to services in 2020 and 2021. In early 2021, 23 % of people reported forgoing some care, slightly more than the EU average of 21 %. The introduction of telemedicine helped to maintain access to care during the second wave of the pandemic.
- While numbers of COVID-19 cases and deaths during the first wave of the pandemic were relatively low, in part attributed to Slovakia's rapid implementation of containment measures, they increased exponentially from September 2020. By the end of June 2021, the COVID-19 mortality rate was around 80 % higher than the EU average. Slovakia faced several challenges during the second wave, including frequent changes to measures, a mass antigen testing campaign that did not go as expected and an unstable political situation.
- Measures were implemented to boost the availability of physical and human resources during the pandemic, such as reallocation of hospital beds to COVID-19 patients and additional financial contributions to hospitals to purchase medical equipment. However, with a comparatively low pre-pandemic density of doctors and nurses, health workforce capacity was a major bottleneck in Slovakia's pandemic response. Measures to strengthen health workforce capacity included mobilisation of additional staff and extra remuneration, but came quite late in the course of the pandemic.

SLOVENIA

- In 2020, COVID-19 was the main cause of mortality in Slovenia, accounting for about 12 % of deaths. As a result, life expectancy fell temporarily by one year between 2019 and 2020, erasing 20 % of the gains achieved in the previous two decades. At 80.6 years in 2020, average life expectancy among Slovenes is now equal to the EU average.
- In 2018, stroke, ischaemic heart disease and lung cancer were the main causes of mortality. Behavioural and environmental risk factors were associated with more than one third of all deaths. In particular, poor nutrition, tobacco and alcohol are all public health concerns, especially among adolescents.
- Public health policies targeting smoking and alcohol consumption have slowly contributed to decreasing preventable mortality, although it remains higher than the EU average. On the other hand, mortality from treatable causes is below the EU average, indicating that Slovenia provides effective healthcare interventions. These are evidenced by gradually improving avoidable hospital admissions and five-year cancer survival rates. Cancer screening programmes and new primary care models have also had an impact. Improvements can be encouraged by targeting risk factors and promoting healthy lifestyles, especially among adolescents, which would address some of the drivers of avoidable mortality. Much is expected from the scale-up of general practitioner family medicine practices and health promotion centres, which should improve screening and coordination of public health action across primary care centres.
- The Slovenian health system successfully protects its citizens from high out-of-pocket payments. In the years prior to the COVID-19 pandemic, households experienced low rates of catastrophic spending related to health. At only 12 % of total health expenditure, out-of-pocket spending is among the lowest in Europe, mainly due to the role of widespread voluntary health insurance to cover co-payments and special subsidies for those who cannot afford this insurance.
- Slovenia introduced several measures to overcome health workforce shortages, which are one of the main challenges of the system. These measures include additional funding, task-shifting and new care provision models. The COVID-19 pandemic put extra pressure on the workforce and necessitated several temporary measures to manage the situation. However, the crisis highlighted the need for sustained investment to increase workforce capacity.
- The COVID-19 pandemic challenged access to preventive and other healthcare services in Slovenia. Uptake of services in primary and preventive care – including general practitioner consultations, cancer screening and planned elective orthopaedic surgery – fell during 2020. Consistent with this trend, the number of hospital discharges and outpatient services also decreased. On the other hand, Slovenia was able to maintain provision of life-saving services, including in oncology, dialysis and emergency cardiology. Increased use of teleconsultations has helped to maintain access to services throughout the pandemic and to facilitate continuity of care.
- The COVID-19 pandemic has highlighted the need for large-scale investment in the health sector and demonstrated the value of having strong digital infrastructure. Hospital and long-term care facilities have largely been neglected over the past decade, resulting in out-of-date buildings and fragmented provision of services across health and long-term care. Slovenia has dedicated over EUR 270 million from its National Recovery and Resilience Plan for investment in the healthcare sector, including enhancing digitalisation, upgrading of facilities and achieving greater integration between health and social care services.

SPAIN

- Life expectancy in Spain was the highest in the EU in 2019, but fell substantially in 2020 due to the COVID-19 pandemic. Public health policies contributed to low levels of preventable mortality before the pandemic, and mortality rates from treatable causes decreased between 2011 and 2018 due to improved health system performance.
- While the proportion of adults smoking daily has decreased since 2000, it remains higher than in most EU countries, particularly among men. Taxes on tobacco products have been increased, and further regulation on packaging and labelling was introduced in 2017, outlining rules on health warnings, use of additives and e-cigarettes. Moreover, obesity rates among adolescents and adults have increased. The government has reached agreement with the food industry to cut the content of sugar, salt and fat and, more recently, the nutritional labelling system Nutri-score has been introduced.
- Following the economic crisis in 2008, health spending decreased for several years, but it started to increase again from 2014 and is expected to increase further due in part to EU funds. In 2019, Spain allocated 9.1 % of its GDP to health spending, which is lower than the EU average (9.9 %). Per capita spending climbed to EUR 2 488 in 2019, although it is also still below the EU average. Spain's Recovery and Resilience Plan has been endorsed by the European Commission and devotes EUR 2 billion to health investments. Further, EU funds from the REACT-EU package are expected to strengthen and modernise the health system and help finance the high costs of the fight against the COVID-19 pandemic.
- While potentially avoidable hospital admission rates for some chronic conditions such as diabetes are relatively low in Spain, they are close to the EU average for asthma and chronic obstructive pulmonary disease. More investment in primary care from national funds would help to spur improvement, as this area has not been prioritised by Spain under EU-funded programmes. Over the last decade, all regions have promoted greater use of telehealth to improve access to care, particularly for patients with chronic conditions. These activities were enhanced during the COVID-19 pandemic and further developments are under way.
- Primary care remains a central element of the Spanish health system, with general practitioners and nurses providing care and health promotion and preventive services. Primary care was key during the COVID-19 pandemic to reinforce home care and to facilitate early detection through testing and contact tracing, as well as in monitoring COVID-19 patients and implementation of the vaccination strategy. The Recovery and Resilience Plan envisages full implementation of the Strategy on Primary and Community Care adopted in 2019.
- Spain was one of the first European countries affected by the COVID-19 pandemic. Along with nationwide mitigation measures aimed at preventing transmission of the virus, the country had to act quickly to increase intensive care unit bed capacity, and measures were introduced to facilitate the best distribution of the health workforce. Preparedness measures honed during the pandemic response will be further strengthened by initiatives to be funded under the Recovery and Resilience Plan, including creation of a new public health authority and improving public health surveillance.

SWEDEN

- While life expectancy in Sweden remains higher than in most EU countries, the high number of deaths from COVID-19 led to a reduction of 0.8 years in life expectancy in 2020. This reduction was close to the EU average fall, but much greater than in other Nordic countries.
- Beyond COVID-19, the burden of cancer and other non-communicable diseases should not be underestimated. About 23 500 people in Sweden died from cancer in 2018, which is more than twice the number of COVID-19 deaths in 2020 (about 10 000). Since the implementation of the national cancer strategy in 2010, Sweden has put much effort in improving cancer care. The government also identified cancer care as a priority for new investment in 2019-21. While the strategy has a strong focus on quality and equity in treatment, it also targets prevention and early detection. Preliminary data for 2020 indicate that cancer care was not affected during the pandemic, although cancer screening programmes were disrupted.
- Waiting times for health services are a longstanding issue, and a greater proportion of the population had to wait longer than three months to get access to specialists or to interventions during the pandemic in 2020. The government has committed to increasing efforts to reduce waiting times.
- Sweden allocates a large amount of money to health, with spending per capita and as a share of GDP among the highest in the EU. The government also increased public spending on health in 2020 in response to the pandemic, with a further increase of over 10 % planned for 2021. This includes additional healthcare transfers to municipalities and regions, the equivalent of EUR 1.6 billion for testing and tracing, and EUR 1.0 billion for COVID-19 vaccinations.
- The initial approach to managing the COVID-19 pandemic in Sweden was unique. Unlike other Nordic and western European countries, which adopted strict lockdowns during the first wave to curb the spread of the virus, the Swedish government took a less restrictive approach, trying to strike a balance between protection of people's health and protection of economic and social activities. Social distancing measures were imposed, such as bans on large gatherings and travel restrictions, but these were less stringent than in other countries. There were hopes that the greater number of cases during the first wave would help mitigate any second wave because of greater immunity, but the second wave ended up being slightly larger than the first in terms of numbers of cases and deaths.
- The first wave of the pandemic hit people living in long-term care institutions particularly hard. Nearly half of all COVID-19 deaths in Sweden during the first wave were among long-term care residents, and another quarter were among people receiving long-term care at home. Insufficient testing of staff and residents in nursing homes during the first few months of the pandemic slowed early detection and isolation of confirmed cases. The lack of personal protective equipment and the physical infrastructure of nursing homes also limited opportunities to contain virus transmission.
- People with the greatest need for protection against COVID-19 were offered the vaccine first, including older people, people with chronic diseases, family members and staff caring for these people. By the end of August 2021, over 55 % of the total population in Sweden had received two doses of a COVID-19 vaccine or the equivalent – a slightly higher proportion than the EU average. The increase in vaccination has been accompanied by a reduction in the number of COVID-19 deaths.