

HEALTH SYSTEMS AND POLICY ANALYSIS

POLICY BRIEF 47

Addressing backlogs and managing waiting lists during and beyond the COVID-19 pandemic

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This policy brief is one of a new series to meet the needs of policy-makers and health system managers. The aim is to develop key messages to support evidence-informed policy-making and the editors will continue to strengthen the series by working with authors to improve the consideration given to policy options and implementation.

What is a Policy Brief?

A policy brief is a short publication specifically designed to provide policy makers with evidence on a policy question or priority. Policy briefs

- Bring together existing evidence and present it in an accessible format
- Use systematic methods and make these transparent so that users can have confidence in the material
- Tailor the way evidence is identified and synthesised to reflect the nature of the policy question and the evidence available
- Are underpinned by a formal and rigorous open peer review process to ensure the independence of the evidence presented.

Each brief has a one page key messages section; a two page executive summary giving a succinct overview of the findings; and a 20 page review setting out the evidence. The idea is to provide instant access to key information and additional detail for those involved in drafting, informing or advising on the policy issue.

Policy briefs provide evidence for policy-makers not policy advice. They do not seek to explain or advocate a policy position but to set out clearly what is known about it. They may outline the evidence on different prospective policy options and on implementation issues, but they do not promote a particular option or act as a manual for implementation.

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Acronyms

ARV	antiretroviral
DRG	diagnosis-related group
EU	European Union
EU-SILC	European Union Statistics on Income and Living Conditions
FFS	fee-for-service
GP	general practitioner
HSRM	Health System Response Monitor
ICU	intensive care unit
MNS	mental, neurological and substance use disorders
NTD	neglected tropical disease
OECD	Organisation for Economic Co-operation and Development
PPE	personal protective equipment
WHO	World Health Organization

Foreword

For more than two years, the COVID-19 pandemic has stretched health systems, restricting their ability to provide care for all people when needed. The simple truth is that, while countries in our Region have some of the strongest health systems in the world, none was fully prepared or resilient enough to really tackle the wide-ranging impacts this emergency has brought.

One major concern since the onset of the pandemic has been the extent to which countries' capacity to maintain essential health services has been negatively affected. In 2020, over 90% of countries in the WHO European Region reported some disruption to essential health services. At the end of 2021, a 23-country survey indicated similarly high levels of disruption.

This underlines that our health systems continue to face the dual challenge of managing both COVID-19 cases and disruption to non-COVID-19 health services, which has led to growing backlogs and waiting lists since the beginning of the pandemic. For each person who cannot receive care when they need it, this delay may have severe consequences, ranging from worsening health problems and prolonging recovery to decreasing quality of life.

In order to restore services to pre-pandemic levels and catch up on care, we need to understand and act on what we have learned from the pandemic, including investing in the health workforce, increasing funding for the health infrastructure of the future, and maintaining the innovative forms of service delivery that proved useful in reaching out to key groups affected by the pandemic.

This brief is a valuable resource for policy-makers seeking to understand the extent of disruption to health services caused by COVID-19, the reasons behind this, and what different countries are doing in response. Its aim is to provide options to reduce service backlogs for those who are addressing this challenge in their national contexts.

Our ultimate goal, as agreed in the European Programme of Work 2020–2025, is to provide better health services that deliver more efficient, person-centred and high-quality care for all.

My thanks to the experts and partner organizations who have contributed to this informative and timely policy brief.

It is up to all of us to make the necessary steps to ensure that our health systems emerge from this health crisis stronger than before.

Dr Hans Henri P Kluge

WHO Regional Director for Europe

Key messages

- COVID-19 meant non-emergency procedures were postponed which led to backlogs of care (and particularly hospital and specialist care) in virtually all countries. These jeopardize health outcomes.
- Countries still struggle to understand the extent of backlogs but they are testing policies in practice and are generating lessons on what works.
- Drivers that *increase* the backlog include:
 - Supply-side factors, such as: low numbers of health workers (even pre-COVID); lower productivity due to staff exhaustion; the extra cost of providing treatment safely; and weakened incentives for some care.
 - Demand-side factors include: new technologies; the ageing of the population and the rise of chronic conditions (including long COVID).
- Drivers that *decrease* the backlog include:
 - Supply-side factors, such as: sufficient workforce and infrastructure; extra funding; and more efficient new technologies and digital solutions.
 - On the demand side, fear of infection may reduce demand, although this may also increase unmet need.
- Restoring care to previous levels is not enough to overcome the backlogs but three broad groups of (overlapping) strategies are helping:
 - **Increasing workforce and staffing** with new professional roles and competencies; flexible recruitment and training; and improved work conditions and compensation.
 - **Improving productivity, management of capacity and demand**, separating planned and unplanned care; introducing tailored financial incentives; expanding access to telehealth; careful prioritization; and spreading patients to fit available capacity.
 - **Investing in capital, infrastructure and new models of care**, for example, by upgrading health facilities or digital infrastructure; investing in primary and community care; or expanding home care.
- Policy-makers can reduce the risks associated with these strategies by:
 - Pairing improvements in workforce planning and availability with policies to support and protect health workers.
 - Monitoring policies to rationalize health care delivery, reduce waste or use digital solutions to ensure they do not (inadvertently) increase inequalities in utilization and health.

Executive summary

As COVID-19 cases started to rise in early 2020 and hospitalization rates increased, health systems began to postpone non-emergency (elective) procedures to keep capacity available for COVID-19 patients, and to avoid elective patients being infected. This has subsequently led to longer waiting lists (number of people waiting for care) and waiting times (how long they must wait) in virtually all countries. The additional cumulated number of patients on the waiting lists due to COVID-19 is commonly referred to as the care backlog.

With each delay in diagnosis and treatment possibly leading to worse health, prolonged recovery and decreased chances of survival, countries have been taking steps to address these growing care backlogs while maintaining dual delivery of COVID and non-COVID services.

What do we know about the degree of service disruption and size of backlog?

Health service provision was disrupted in virtually all European countries to differing degrees, gradually expanding from hospital, dental and mental health services to include all areas of care. The degree of disruption decreased towards the end of 2021, but not for all services – including first-contact services, such as cancer care and nutrition services. Even as COVID-19 vaccinations have been rolled out across the Region, the number of countries experiencing disruptions in routine facility-based immunization services has increased, affecting mostly children and adolescents. These disruptions have led to high unmet need for health care during the pandemic, with data from the European Union (EU) showing that this especially affected hospital and specialist care, but with large variation between countries.

Although some countries managed to restore pre-pandemic levels of service delivery, in other countries waiting times only continued to increase. Even where provision has been brought back to previous levels, existence of pre-pandemic waiting times and the increase in the number of patients on the waiting lists during the pandemic mean that this will not be enough to overcome the backlogs.

What are the drivers of waiting times, waiting lists and backlog during and following the COVID-19 pandemic?

The pandemic put a halt to the number of patients being treated, thus generating a greater mismatch between the supply of and demand for health care services, translating into longer waiting lists and waiting times. Other supply- and demand-side factors, not necessarily related to the COVID-19 pandemic, also influence the size of the care backlog over time. Policy interventions to decrease backlogs should thus target both the supply- and demand-side factors when considering the local context.

- Drivers that can *increase* backlogs include supply-side factors such as the low number of health workers (even pre-COVID-19); staff exhaustion and burnout, anxiety and post-traumatic stress disorders (which are compounded by pre-existing workforce shortages and reduce productivity); the increased cost of providing treatment in a safe environment (e.g. tighter hygiene protocols); and changes to the payment systems that prioritized COVID-19 services, which may have weakened incentives to address the backlog of care. On the demand side, new technologies and treatments, rising expectations of patients, and trends such as population ageing and the rise of chronic conditions (including long COVID) can all increase demand for care.
- Drivers that can *decrease* backlogs include the availability of workforce and infrastructure; higher financial capacity to fund additional supply; and access to new technologies and digital solutions that support more efficient provision of care. On the demand side, fear of infection can lead to a temporary or permanent reduction in demand, but this may increase the extent of unmet need and may have detrimental health consequences.

Which policies are countries using to tackle their backlogs?

Health systems have been using a wide range of policies to reduce backlogs. These efforts have to carefully balance tensions between actions that help catch up on care as quickly as possible in the near term with strategies that build capacity over the long term to meet health needs more sustainably in the future. The policies to address backlogs fall within three broad strategies:

- 1) **Increasing the supply of workforce and staffing** includes introducing new professional roles and competencies, flexible recruitment and training, and improving work conditions of the health workforce, such as by offering mental health support and better compensation.
- 2) **Improving productivity, capacity management and demand management** encompasses a host of policies, including separating planned and unplanned care; extending hours of care delivery; introducing financial incentives to clear backlogs; introducing maximum waiting-time targets; expanding access to telehealth services and virtual models of care; and implementing demand-side prioritization policies. Lastly, there may be scope to better spread patients across available capacity and explore the potential of cross-border care by treating certain patients abroad.
- 3) **Investing in capital, infrastructure and new community-based models of care** enables more long-term solutions that include upgrading health infrastructure and facilities; investing in primary and community care; expanding digital infrastructure; and expanding home care and rehabilitative capacity.

Important challenges remain

Clearing care backlogs as quickly as possible will be critical for maintaining health gains achieved before the pandemic and avoiding increasing excess mortality. It is still uncertain how much capacity will be needed to care for COVID-19 patients, how much is needed to reduce the backlog, and how many 'missing patients' with unmet needs there are. Furthermore, many of the policies that can reduce backlogs are demanding on an already overstretched workforce. This places increasing pressure on health workers, putting them at increased risk of absenteeism and burnout. Therefore, policies to support and protect health workers should be prioritized alongside improving workforce planning and workforce availability, both of which remain inadequate in many countries. In this process, it is important that policies that further rationalize health care delivery (including by reducing waste and inappropriate care, and making increased use of digital solutions), do not increase inequalities in utilization and health.

POLICY BRIEF

1. Introduction

As COVID-19 cases started to rise in early 2020 and hospitalization rates increased, health systems began to postpone non-emergency (elective) procedures to keep capacity available for COVID-19 patients, and to avoid elective patients being infected. This has subsequently led to longer waiting lists and waiting times in virtually all countries. Issues around staff recruitment and retention, which have been exacerbated by the COVID-19 pandemic, have further aggravated the problem. For patients needing common elective surgeries, such as hip and knee replacements, the backlog in care means that improvements in health and quality of life are postponed. For urgent care, such as missed chemotherapy sessions for cancer care, the delays can have more severe consequences. For other patients, the postponement of specialist appointments may lead to missed referrals for serious ailments. Primary care has also increasingly become affected, leading to late diagnosis of chronic diseases, as well as inadequate follow-up and control of these patients.

Each delay in diagnosis and treatment may worsen health problems, prolong recovery and decrease chances of survival for patients. Countries are now left playing catch-up on these backlogs. There is, however, great uncertainty regarding: the size of the backlogs; how much current and future capacity will be required to address them; and how much provider and workforce capacity will be needed for COVID-19 patients – which will in turn reduce capacity for non-COVID-19 patients. This brief will discuss what we know about: (1) the level of service disruptions and resulting backlog; (2) the drivers of backlog; and (3) what policies countries are using to address this. It aims to provide options for those who are involved in planning a policy response to this challenge.

Box 1: Methods

This policy brief draws on various sources. Much of the evidence used in the brief builds on the content (including 'snapshots', Eurohealth articles, as well as academic papers) generated through the COVID-19 Health System Response Monitor (HSRM), available at: <https://www.covid19healthsystem.org>. The HSRM tool was established in March 2020 and designed in response to the COVID-19 outbreak. Now an open archive, it collected and disseminated up-to-date information on how countries, mainly in the World Health Organization (WHO) European Region, were responding to the crisis, focusing primarily on the responses of health systems. It is a joint undertaking of the WHO Regional Office for Europe, European Commission, and European Observatory on Health Systems and Policies. In addition, to identify potential policy solutions on recovery from the backlog, the Nuffield Trust, in collaboration with Observatory staff, has identified and interviewed key experts and analysed recovery strategies in 16 Organisation for Economic Co-operation and Development (OECD) and EU countries. Lastly, we have consulted the wider literature and grey sources to complement our analysis.

2. What do we know about the degree of service disruption and size of the backlogs?

Service provision was disrupted in virtually all European countries

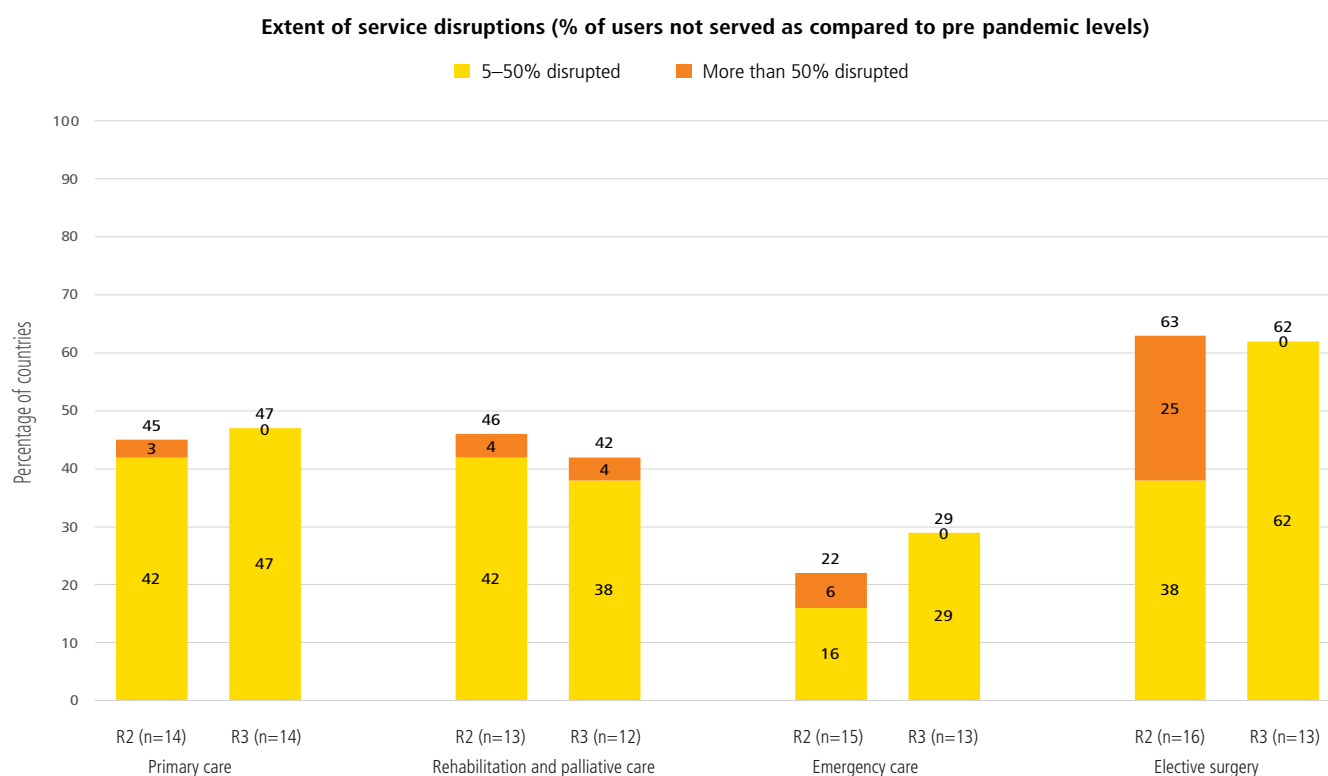
The WHO conducted three pulse surveys (i.e., key informant surveys) among ministry of health officials, covering the period February 2020 through November 2021. The first round of the global pulse survey on the continuity of essential health services during the COVID-19 pandemic estimated that 44 out of 48 countries (92%) in the WHO European Region that took part in the survey experienced some service disruption during the period February through August 2020. On average, 45% of the examined essential health services¹ were at least partially discontinued in the early stages of the pandemic (WHO, 2020). A second round of this survey, covering the period October 2020 to February 2021, indicated lower but still concerning levels of disruption, with 18 out of 22 countries (82%) that participated reporting suspensions. On average, 26% of the essential services were at least partially disrupted in each country (WHO, 2021). The third round, covering the period May through November 2021, found that countries across the European Region were still being affected by the COVID-19 pandemic on a large scale. Of the 23 countries who responded, 21 (91%) reported disruptions to essential health services during that period. Most countries reported a disruption of 25–49% of essential services and, on average, 28% of the examined essential services were found to be disrupted in these countries (WHO, 2022b).

While hospital, dental and mental health services were initially disrupted, disruptions gradually affected other areas as well

From the beginning, the COVID-19 pandemic has led to substantial disruptions of services across all levels of care in countries and in all settings. The pulse surveys illustrate that after initially impacting mostly hospital services, dental services and mental services, in 2021 disruptions gradually increased in primary care, as well as emergency care in subsequent periods of the pandemic (see Figure 1).

¹ In the areas of emergency, critical and operative care; reproductive, maternal, newborn, child and adolescent health and nutrition; immunization, communicable diseases, non-communicable diseases; mental, neurological and substance use (MNS) disorders; and rehabilitative and palliative care.

Figure 1: Towards the end of 2021, European countries were reporting more disruptions to primary and emergency care services compared to earlier in the pandemic but the proportion of countries with more than 50% of services disrupted reduced



Services include: Primary care (routine scheduled primary care clinic services, unscheduled primary care clinic services, prescription renewals for chronic medications); rehabilitation and palliative care (hospital inpatient services, appointments with specialists); emergency care (critical ambulance services, 24-hour emergency room/unit services, emergency surgeries); elective surgery.

Notes: R2 covers the period October 2020 to February 2021; R3 covers the period May through November 2021: only WHO European region countries providing complete answers were included.

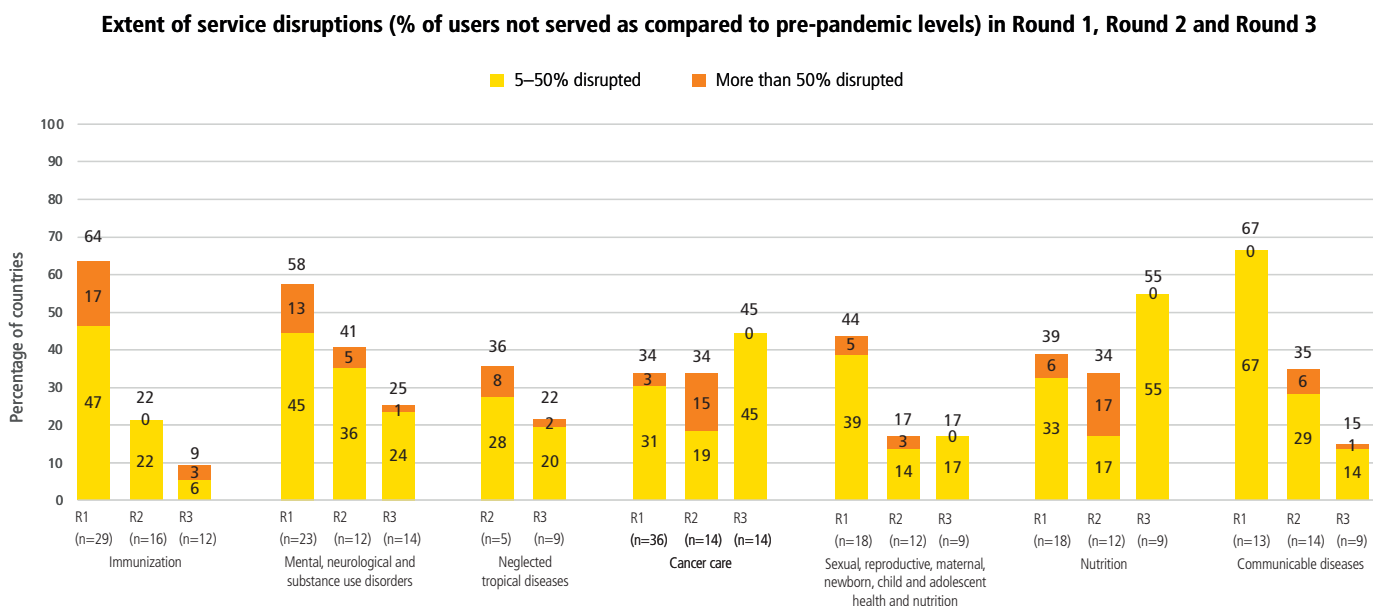
Source: WHO, 2022a.

The degree of disruption decreased towards the end of 2021, but not for all services

Looking into the different service areas, the pandemic had a negative impact on the provision of and demand for care related to other communicable and non-communicable acute and chronic diseases, neglected tropical diseases, immunization, reproductive, maternal, newborn, child and adolescent health. This has frequently resulted in severe delays and cancellations of appointments or procedures in countries, including routine visits, prescription renewals for chronic medications, referrals to specialty care, elective and emergency surgeries, among others. In the first pulse survey, the examined services with the largest extent of disruption in countries, defined by the percentage of users who were not served as compared to pre-pandemic levels were communicable diseases, routine immunization services and care for mental, neurological and substance use (MNS) disorders.

The MNS disorders, and communicable diseases. For non-communicable diseases, cancer screening was heavily disrupted. The third pulse survey showed that many services became less disrupted towards the end of 2021, but first-contact services, such as nutrition services and cancer care services exhibited large increases in disruptions (Figure 2).

Strikingly, even as COVID-19 vaccination has scaled up across the Region, the number of countries experiencing severe disruptions (more than 50% of services compared to before the pandemic) in routine facility-based immunization services has increased across the WHO European Region, from 0% to 6% of the countries that reported (figure not shown). This disruption affected mostly school-aged children and adolescents, and was hardly the only area where children were affected; see Box 2 for more examples.

Figure 2: Disruption of cancer care and nutrition services increased in 2021, but declined for other services

Notes: R1 covers the period February to August 2020; R2 covers the period October 2020 to February 2021; R3 covers the period May through November 2021; only WHO European region countries providing complete answers were included; neglected tropical diseases were not included in R1.

Immunization services include: facility-based routine immunization; outreach routine immunization.

Mental, neurological, and substance use disorders services include: MNS emergency services; counselling for MNS disorders; medicines for MNS disorders; services for children and adolescents; services for older adults; school mental health programmes; suicide prevention programmes; overdose prevention programmes; and critical harm reduction services.

Neglected tropical diseases (NTD) services include: diagnosis, treatment and care for NTDs (facility-based); large-scale preventive chemotherapy campaigns for NTDs (e.g. mass drug administrations, and/or school-based treatments); community awareness and health education campaigns for NTDs (e.g. WASH promotion, disease prevention, vector control, eradication); support for self-care, rehabilitation and psychosocial services for patients with chronic NTDs; prescriptions for NTD medicines; surgical procedures for NTDs.

Cancer care services include: cancer screening and treatment.

Sexual, reproductive, maternal, newborn, child & adolescent health & nutrition services include: family planning & contraception; antenatal care; facility-based births; sick child services; post-natal care; malnutrition.

Nutrition services include: screening for and/or management of moderate and severe wasting.

Communicable diseases services include: continuation of established antiretroviral (ARV) treatment; initiation of new ARV treatment; HIV prevention services; HIV testing services; Hepatitis B and C diagnosis and treatment; TB diagnosis and treatment; malaria diagnosis and treatment; ITN malaria prevention campaigns; IRS malaria prevention campaigns; and SMC malaria prevention campaigns.

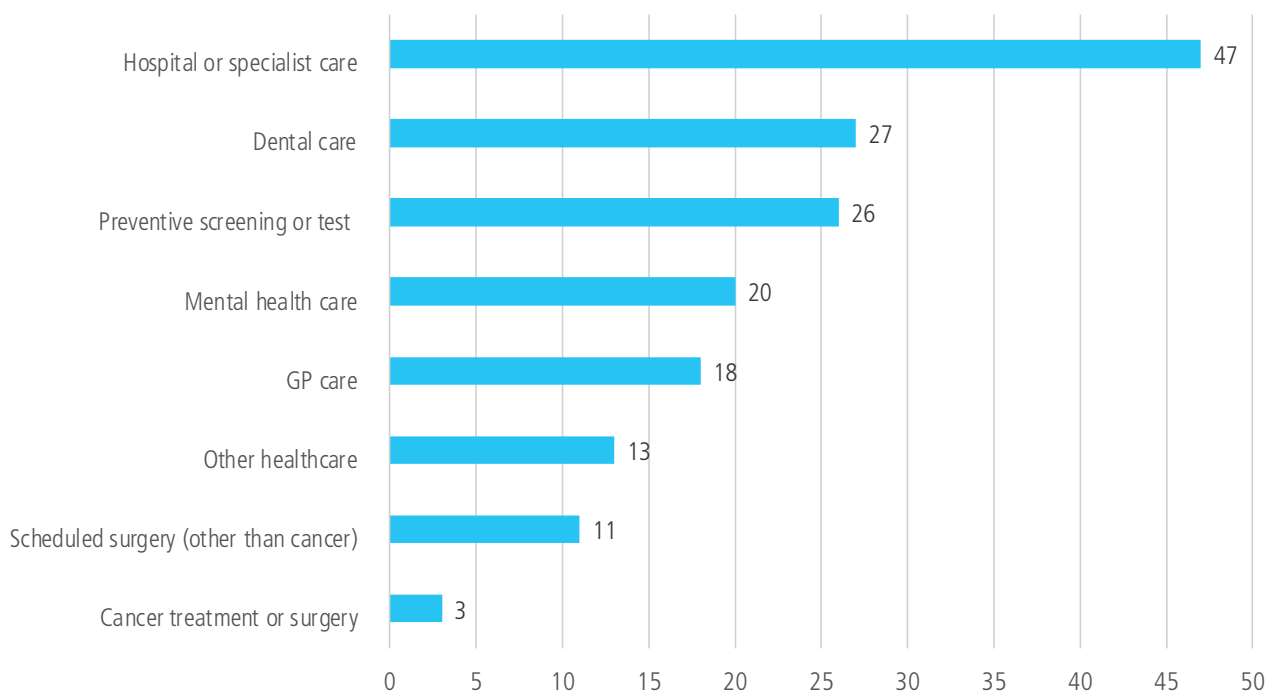
Source: WHO, 2022a.

Box 2: Care for children has been severely affected

Children also experienced disruptions in care, resulting in backlogs for several key services. Data from 2020 showed that, across the Region, hospital admissions for children dropped considerably: in the Netherlands by 56%, in Italy between 31% and 71%, in Germany by 38%, in France 45% and in Finland by 45–60% (Kruizinga et al., 2021). These reductions could not purely be explained by school and day-care closures, which led to a drastic decrease in contacts between children and physical activity and, as a result, in transmissible infections and traumas, which are under normal circumstances the cause of a large proportion of paediatric health care visits.

A survey of paediatricians in the UK and Ireland about delayed presentations in early 2020 found that 32% of emergency department paediatricians and 18% of paediatricians working in inpatient or clinic settings had witnessed delayed presentations over the previous 14-day period, the most common delayed diagnoses being diabetes and sepsis (Lynn et al., 2021). The delayed presentation of acute appendicitis led to an increased risk of perforation in younger patients and more complications during hospitalization (Snapiri et al., 2020; Gerall et al., 2021).

Data for two of the most common elective surgery procedures for children in Germany, i.e. appendectomy and tonsillectomy/adenoidectomy reveal substantial drops in admissions since the beginning of the pandemic (Panteli, Mauer, Tille & Nimptsch, forthcoming). Indeed, the hospitalization and appendectomy rates for children with appendicitis have dropped since the beginning of the COVID-19 pandemic, with admission rates decreasing by 9% between 2019 and 2020, and a further 8% by autumn 2021. This effect was particularly pronounced during the months coinciding with the first and second waves in Germany (May 2020: –24%; January 2021: –29%), which also registered a slight increase in complications among patients admitted with appendicitis compared to pre-pandemic times (May 2020: +5%; January 2021: +6%). A similar trend has been observed for tonsillectomy and adenoidectomy cases in Germany. There was a drop in volume of these procedures of 43% from 2019 to 2020, and of another 32% from 2020 to 2021, with a particularly large decline in April 2020 (over 80%), compared to the same month one year earlier in 2019. Similar to appendectomy rates, this coincided with the spike of COVID-19 cases in the country. A trend break was not seen until November and December 2021, when case numbers started to increase compared to the same months one year earlier.

Figure 3: In early 2021, the percentage of unmet need was highest for hospital and specialist care

Source: Eurofound, 2021.

Note: Data shows percentage of respondents in the EU in spring 2021.

Many EU citizens reported unmet need for health care during the pandemic

Reductions in provision of services translates into unmet need. Eurofound data from April 2021 show that over a fifth (21%) of EU citizens had missed a medical examination or treatment in the previous year during the pandemic, with 18% reporting still having a medical issue for which they could not get treatment, and large variation across countries (from 6% in Denmark and 8% in Czechia, to 32% in Poland and 36% in Hungary). Figure 3 shows that common types of unmet health care need included hospital or specialist care, dental care, preventive screening or tests, and mental health care (Eurofound, 2021). European Union Statistics on Income and Living Conditions (EU-SILC) data for unmet need covering the COVID-19 pandemic period was not yet available at the time of writing this brief.

The degree of disruption and recovery in service provision varies greatly across countries

Looking at individual countries, large variation is visible between them in terms of the size of disruption, how far they have come in restoring pre-pandemic levels of elective care, and how waiting times have been affected by the backlog. However, few studies have investigated the exact size of the backlogs or pent-up demand for services accumulated throughout the COVID-19 pandemic in countries to date. In many countries, the size of care backlogs is hard to estimate due to lags in reporting the number of referrals, diagnostics and screening. The data that are available have been col-

lected through various systems and by applying different methodologies, so the following results are indicative rather than comparable across countries.

Some countries managed to restore pre-pandemic levels of service delivery

In some countries, care activity has been restored to pre-pandemic levels, which helps to prevent the backlog from growing even more, but may not be enough to reduce it. For example, in the Netherlands, the number of hospital surgeries was restored to pre-pandemic levels by July 2021 and increased further throughout the summer period. However, as a whole, the health system performed 23% fewer surgeries between March 2020 and August 2021 than in the same period of time in the previous year – so there are still an estimated 170,000–210,000 procedures that need to be made up (NZA, 2021a).

In Sweden, there are signs of recovery as the number of patients in outpatient surgery in June 2021 was higher than the volume in the same month averaged over 2017–2019 (National Board of Health and Welfare, 2021). However, at the same time, waiting times have increased sharply since January 2021. Patients waiting for a medical assessment increased by 30% between January and August 2021, and patients waiting for surgery increased by 27% in the same period (Swedish Association of Local Authorities and Regions, 2021). Whether and to what degree forgone nursing care and routine dental care will be recovered has yet to be determined (Kalenderian E et al., 2022; Nymark et al., 2022).

In Finland, activity levels in primary, dental and specialized care have been restored to pre-pandemic levels (THL, 2021a,b). Yet, like Sweden, some patients are still waiting for care, especially for dental and specialized care, due to the accumulated backlog. In August 2021, 6.8% of patients waited more than six months for non-urgent, specialist care – before the pandemic it was around 2%. The proportion of patients with long waits increased in most districts between April and August 2021 but was lower than levels in August 2020.

In other countries, waiting times only continued to increase

Other countries that entered the pandemic with already relatively long waits have seen wait times increase further during the course of the pandemic. For example, in Ireland, the proportion of patients waiting for an outpatient specialist appointment or inpatient/day-case procedure grew by 11.6% and 14.5%, respectively, between January 2020 and January 2022. Among patients on the waiting list, the proportion waiting more than six months grew by 16% for outpatients and 30% for inpatient/day-case procedures (NTPF, 2022).

Similarly, in England, the number of routine GP referrals fell by 18% between February 2020 and August 2021; 4 million fewer people completed elective treatment in England in 2020 compared with 2019; and the number of people waiting to start elective treatment grew from 4.4 million in February to 6.1 million in December 2021 – nearly a 37% increase (Gardner & Fraser, 2021; Morris, 2021). Of the patients on the waiting list, 36% have been waiting more than 18 weeks (the constitutional standard) for a specialist appointment (Health Foundation, 2021; Rocks et al., 2021). Also, the number of people waiting more than 52 weeks for treatment has grown significantly since the start of the pandemic, reaching a high of 463,127 in March 2021. Since then, it has decreased to 306,996 in November 2021.

Furthermore, data from Italy show high levels of disruption in urgent and high-priority health services across a range of areas since the onset of the pandemic, across all regions of the country. Compared with 2019, volumes of cancer screening dropped by over 40% for some types of cancer in 2020 (see Box 3), and over 20% for cardiovascular care and psychiatric care. Overall system indicators also showed a decrease of nearly 30% in elective surgeries, and 26% for planned admissions (Mantoan & Nuti, 2021). Small waves of recovery for at least some, but not all, services were subverted by new waves of disruption throughout the year, resulting in backlogs across a range of services.

Some countries do not systematically monitor waiting times

France and Germany, neither of which systematically collect waiting times, also experienced disruptions during the pandemic. In France, the number of surgical removals of cancers decreased by 6.2%, and acute treatment for ischaemic heart disease fell by 7.8% in 2020 compared to 2019. Although cancer screening was disrupted, it increased to above pre-pandemic levels by September 2020; however, overall, mammograms and colorectal cancer screening

decreased by 14.5% and 11.8% respectively between 2019 and 2020 (l'Assurance Maladie, 2021). Similarly, for Germany, analyses comparing data from pre-COVID-19 periods (2017–2019) with 2020 pointed towards heavy disruption in the provision of urgent care for severe health problems. These found a reduction in hospitalization rates for cardiovascular emergencies by 26%, as well as an unmet need for oncological care for around 2700 patients in the months April to June alone (extrapolated data), mainly for those with breast cancer and colorectal cancer across the country since the outbreak of the COVID-19 health emergency (Repschläger, Schulte & Osterkamp, 2021). So, even though national data on waiting times are missing, this suggests that, at least for some areas of care, a backlog is building up in these countries.

Box 3: Disruptions in cancer care may lead to higher avoidable cancer deaths

Delays in cancer diagnosis, treatment and follow-up are expected to lead to more avoidable cancer deaths, as more patients are receiving (or have received) their diagnoses at a more advanced stage (Maringe et al., 2020). A global survey among 356 health care centres across 54 countries found that 88.2% reported facing challenges in delivering care during the pandemic, service reductions, lack of personal protective equipment (PPE), staffing shortages, and limited access to medications. This resulted in more than 10% of patients missing cycles of therapy in nearly half of these centres (Jazieh et al., 2020).

An Italian study compared the same 10-week period in 2018, 2019 and 2020 in seven hospitals and found that cancer diagnoses fell by 45% in 2020, with the largest decreases being for colorectal, skin, prostate and bladder cancers (Ferrara et al., 2021). Similar delays for paediatric cancer diagnosis in Italy were also described (Chiaravalli et al., 2020). Overall, data for the country suggest that screening volumes fell by 46% for colorectal tumours, 43% for cervical, and 37% for breast cancer. The rates for surgery also underwent disruption, ranging from –17% for colon tumour to –5% for uterus tumour surgery.¹⁷

Cancer services have also been heavily impacted in the UK. Between April and June 2020, only 73% of patients started cancer treatment within two months of an urgent GP referral, which is 27% lower than for the same period in the previous year (Nuffield Trust, 2021). Many cancer outpatient visits were replaced by telephone consultations, and routine therapy, tests and procedures were deferred (Saini et al., 2020). By September 2021, performance had declined further, with a third of patients waiting longer than two months to start cancer treatment following an urgent referral.

Data from Germany from the early stages of the pandemic (April to June 2020) show that there were 14.3% fewer cancer surgeries than during comparable periods in previous years, with particularly high drops for colorectal tumours (–20%), breast cancer (–18%) and lung cancer (–14%), of which only a small portion could be recovered later that year (Repschläger, Schulte & Osterkamp, 2021).

In France, a 21% reduction in patients managed within the nationwide network of the Unicancer comprehensive cancer centres in the months of April and May 2020 could not be fully recovered later that year. These delays in cancer patient management were observed for newly diagnosed patients only, and more frequently in women with breast cancer, but also for prostate cancer and nonmetastatic cancers, possibly resulting in an excess risk of cancer-related deaths in the coming years. A more positive finding was that, during that period, the clinical activity for previously diagnosed patients increased by 4%, which is similar to previous years (Blay et al., 2021).

Pre-pandemic overload and missed elective care during the pandemic mean that restoring care to previous levels will not be enough to overcome the backlogs

The rates discussed above suggest that simply restoring care to pre-pandemic levels will not be enough to overcome the backlogs, because that would only address new demand for health care. In fact, several countries were already struggling with backlog before the pandemic. In the Netherlands, for example, it is estimated that 11–14% more medical procedures would have to be carried out above those in a 'normal' year to compensate for the postponed care due to COVID-19 (NZA, 2021b). Furthermore, countries are grappling with patients who were expected to be referred for treatment but did not present during the pandemic ('missing patients'), adding even more uncertainty. With service provision resuming, some of these patients may present for care, perhaps with more severe conditions. The National Audit Office in England, for example, estimates that there were between 7.6 million and 9.1 million patients 'missing' in elective care between March 2020 and September 2021. Although precise numbers are uncertain, these may add substantial numbers to the already long waiting lists (Health Foundation, 2021).

3. What are the drivers of waiting times, waiting lists and backlog during and following the COVID-19 pandemic?

The care backlog caused by the COVID-19 pandemic is closely related to waiting list dynamics driven by the supply of and demand for care

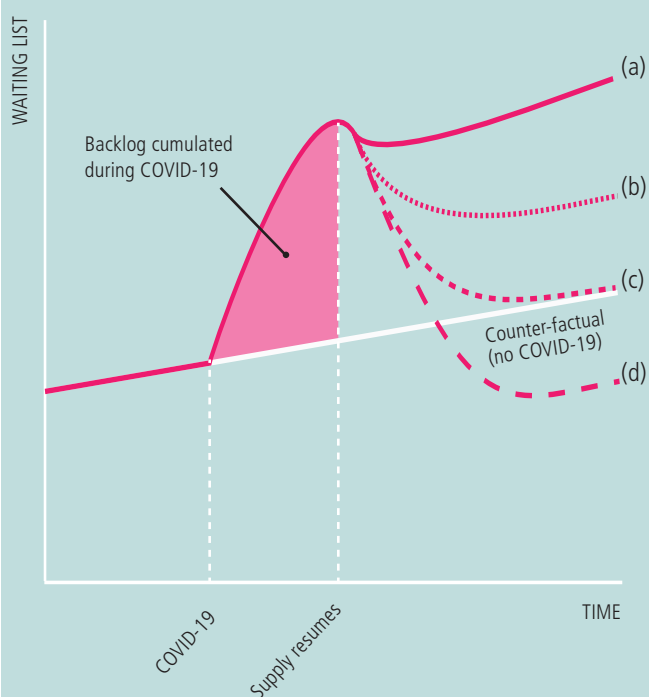
The pandemic put a halt to the number of patients being treated, thus generating greater excess demand and a bigger mismatch between demand for health care services and the supply of services provided, translating into longer waiting lists and waiting times. The additional cumulated number of patients on the waiting lists due to COVID-19 is commonly referred to as the care backlog. Box 4 emphasizes the critical role of resuming supply at different levels, and its importance in absorbing the backlog and reducing the waiting list.

Box 4: How do backlog, waiting lists and supply of services interact?

While waiting times and waiting lists are often treated as synonymous, they capture different dimensions of access. What matters to patients is the waiting time – how long they wait to obtain the care rather than the length of the waiting list. For policy-makers the waiting list is also a concern as it measures the number of people who are affected by a long waiting time. Waiting times and waiting lists are intertwined concepts and have a complex dynamic interaction. The waiting list and waiting times generally grow over time if the number of patients being added to the waiting list exceeds the number of patients treated. But, in some cases, they may follow different trajectories: if the number of patients treated is larger than the number added to the waiting list, the waiting time would be expected to reduce, while the waiting list could still increase, at least temporarily, if ageing and technological progress imply growing demand and therefore more patients treated in the health system (Siciliani, 2008). There are also possible feedback effects. Longer waiting times may induce some patients to opt for private or alternative care, therefore reducing the additions to the waiting list. In some cases, patients may even recover while waiting – or, at the opposite end, die while waiting. GPs may also refer fewer patients and specialists may increase the severity thresholds over which they add patients to the list.

Figure 4 below shows a hypothetical example of how the waiting list might evolve over time following the pandemic. We can think of the 'backlog' as the sudden increase in the number of patients on the waiting list between the beginning of COVID-19 and the time when the supply of services resumes. Given that the pandemic is ongoing, several scenarios are possible during and after it. In the first scenario (a) the supply post COVID resumes, but at a lower level. This could be due to COVID-19 and long-COVID patients displacing and therefore reducing supply for non-COVID patients. Reduced supply could also be due to tighter protocols that ensure patient safety and increase length of stay. In this scenario, the backlog is unlikely to be absorbed and the waiting list will grow at a faster rate over time. Scenario (b) is less pessimistic and considers a case where supply resumes at the pre-COVID levels. The waiting list is higher but grows at the same rate as pre-COVID. Scenario (c) goes one step further: the temporary reduction in supply is offset by a large temporary increase in supply (e.g. financed by a backlog fund) before resuming pre-pandemic levels. Scenario (d) is the most optimistic. As a result of new technologies (e.g. digital services) triggered by the pandemic and/or higher permanent funding for the health system, the waiting list is actually reduced in the long run.

Figure 4: The higher the increase in supply level, the more likely it is the backlog will be absorbed



Temporary large reduction in supply followed by:

- (a) ——— small permanent reduction in supply
- (b) supply going back to pre-covid levels
- (c) - - - - temporary large increase in supply, followed by supply going back to pre-covid
- (d) - - - - permanent increase in supply

Source: Authors.

Which factors are driving the demand for and supply of care during COVID-19?

Table 1 summarizes some key determinants on both the demand and the supply. Relative to pre-COVID-19 times, fewer patients may have been seeking health care due to fear of infection. The backlog could have been even higher without such reductions. However, this is not necessarily good news, as not seeking care at all will translate for many patients into unmet need. People who have a serious condition may not be diagnosed or treated, with potentially life-threatening consequences. Alternatively, as health systems start to resume their regular activities, this repressed demand may be observed but with a delay, and those patients may in the meantime have a worse health condition with higher levels of need.

Changing population health, also due to COVID-19, impacts the demand for health services

In addition to COVID-19 changing the way patients express their demand for health services, as discussed above, the

health status of the population may also change. Before the pandemic, ageing and rising multimorbidity were often mentioned as factors increasing service demand and thus waiting times. Also, COVID-19 is affecting population health, but the future impact in terms of demand for health services is still largely unknown. According to provisional estimates, life expectancy fell in most EU countries due to COVID-19, with the largest decreases from 2019 to 2020 in Spain (-1.6 years), Bulgaria (-1.5), as well as Lithuania, Poland and Romania (all -1.4) (Eurostat, 2021). Furthermore, in the longer term, post COVID-19 conditions (so called 'long COVID'), estimated to occur in 10–20% of cases, will pose a challenge that requires a multidisciplinary approach to assessment and management (Rajan et al., 2021), which will undoubtedly create an additional demand for new services.

Provider capacity, health workers and their productivity determine the supply of health services

The supply of health services is determined by the availability of health workers, their productivity and provider capacity (hospital beds, operating theatres) (Winkelmann et al., 2021). Some countries were already struggling with proportionally low numbers per population of doctors, nurses, hospital staff, available hospital beds or low productivity before the pandemic started. COVID-19 has exposed these gaps, and may have worsened some through staff exhaustion and burnout, as well as people leaving the profession. Staff shortages have been experienced due to their being redeployed to treat COVID-19 patients and administer vaccination programmes, as well as taking sick leave due to being infected with COVID-19. Low numbers of health workers and harder working conditions make it difficult to boost the supply of health services.

There are several documented examples of staff struggling with the workload. For example, in England, 44% of health care professionals reported feeling unwell due to work-related stress over the previous year, a 9% increase from 2019 (NHS Staff Survey Co-ordination Centre, 2021). Likewise, in Spain, an April 2020 survey of health care professionals found that over half of respondents reported symptoms of anxiety (59%) and/or post-traumatic stress disorder (57%), and just under half (46%) experienced depression (Luceño-Moreno et al., 2020). These examples highlight the need for creating better working conditions for health workers.

The cost of treating patients has increased during COVID-19, leading to lower levels of supply

Following the subsequent waves of COVID-19, the cost of treating patients in a safe (COVID-free) environment has also gone up due, for example, to tighter hygiene protocols during surgery, meaning that the same resources now generate lower levels of supply on top of the reduced supply due to capacity being absorbed to treat COVID-19 patients. This suggests that there may be scope for reorganizing and optimizing surgical scheduling and introducing new medical technologies. Digital solutions may also help in mitigating the backlog, but this can only be applied in specific settings (e.g. some primary care, and routine consultations in secondary care where a physical examination is not required).

Payment mechanisms adapted for COVID-19 related care may have weakened incentives to provide backlog care

Moreover, countries have changed their payment systems to cover COVID-19 related care and prevent providers from going bankrupt (Waitzberg et al., 2021). This may have influenced the size of their backlog and waiting times, and how fast these can be restored. For example, the prioritization of COVID-19 care with special fees and diagnosis-related group (DRG) payment systems, or a switch from activity-based payments to fixed budgets to keep providers solvent, can weaken incentives to provide backlog care. Policy-makers will need to further develop incentive schemes that are aligned with the expansion of hospital supply, including the resumption of activity-based financing.

Policy interventions should consider local context and can target the supply side as well as the demand side

Several other supply-side policies are also possible. Countries with low capacity for workforce and/or hospital beds could expand investments in the health sector, although this is costly, increases fiscal pressure, and requires political will. Countries with relatively high capacity can use this to fund the treatment of additional patients and should be able to absorb the backlog more quickly. Countries with a mix of

public and private providers might consider involving the private sector in treating additional patients on the list at the expense of the public purse, thereby using existing capacity within the private sector. However, there are limits to this approach as it is often the same doctors who work in both the public and private sectors (see also 'Outsourcing more care to the private sector').

As waiting times increase due to the backlog, there is scope for enhancing policy interventions not just on the supply side but on the demand side too, not least because some countries may be limited in the extent to which they can increase supply. One option is to make more use of prioritization, with patients who have greater need and more disability as a result of waiting (e.g. pain, impaired mobility) being given a higher priority and shorter wait relative to patients with lower need. A second option is to improve the management of referrals, therefore avoiding unnecessary referrals and over-treatment, and reducing the care provided in the more expensive hospital setting. The latter can be facilitated by better coordination between primary and secondary care, and by removing incentives for over-diagnosis, over-referrals and over-treatment (OECD, 2020). Shifting care from secondary to primary or community care requires reforms to ensure that the additional workload can be absorbed by the providers (van Schalkwyk et al., 2020).

Table 1: Supply and demand determinants of backlog during and following COVID-19

SUPPLY DETERMINANTS	DEMAND DETERMINANTS
Increases backlog	
<ul style="list-style-type: none"> • A low number of health workers (doctors, nurses, hospital staff) even pre-COVID • Cost of providing treatment in a safe environment has increased • Staff exhaustion and burnout, anxiety and post-traumatic stress disorders all affect workforce • Payment systems during pandemic have changed, i.e. from activity-based or fee-for-service (FFS) to fixed budgets, capitation 	<ul style="list-style-type: none"> • Ageing and rising chronic conditions, and multi-morbidity patients (including long-COVID patients) • Increasing expectations • New technologies and treatments • Higher demand for health care from COVID patients or other unforeseen shocks
Decreases backlog	
<ul style="list-style-type: none"> • Available workforce and infrastructure key factors for 'bouncing back', affecting the ability to increase supply • Countries with higher financial capacity can fund additional supply and absorb the backlog more quickly • Technologies and digital solutions 	<ul style="list-style-type: none"> • Fear of infection leading to a temporary or permanent reduction in demand but an increase in unmet need

4. Which policies are countries using to tackle their backlogs?

Many interventions used for managing waiting times before and during the pandemic are being reinforced to address backlogs

Health systems are adopting a range of interventions to catch up on care backlogs and bring down waiting times that have accelerated as a result of the pandemic. These include both a mix of supply-side changes intended to add capacity and maximize patient flow through the system, and demand-side initiatives that better optimize resources and help keep more patients out of hospitals. Common approaches are summarized in Table 1 and discussed below by area of focus. Many of the interventions being turned to are policies that health systems have previously relied on to manage waiting times but are now being scaled or tightened in the wake of the pandemic as care backlogs accumulate further. In each category, health systems are having to carefully balance tensions between actions that help catch up on care as quickly as possible in the near term with strategies that build capacity over the long term to

meet system demands more sustainably in the future. The strategies and policies discussed below have not yet been evaluated and their adoption should therefore be considered with caution.

Strategy 1: Increasing the supply of workforce and staffing

Health systems implemented a range of measures to quickly mobilize staff and surge capacity during peaks of the crisis that countries are now seeking to sustain

At the centre of health system recovery and backlog challenges is the need to increase the supply of staff while making best use of existing workforce skills and talents. Across Europe, health systems have recognized insufficient numbers of staff as a key threat to tackling the backlog and future sustainability of health services (Winkelmann et al., 2021). Long-standing workforce pressures have been exacerbated during the pandemic as more staff are experiencing burnout, mental illness and trauma as a result of the crisis, with many systems worried that high numbers of health workers will soon leave the profession (Sagan et al., 2021).

Table 2: Countries have used a range of strategies and policies to reduce backlog

STRATEGIES	POLICIES	EXAMPLES
Increasing the supply of workforce and staffing	1) Introducing new professional roles and competencies	<ul style="list-style-type: none"> • Widening the scope of authority • Allowing staff to work across traditional clinical boundaries • Introducing flexible staffing, e.g. where one specialist oversees more nurses with expanded competences
	(2) Flexible recruitment and training	<ul style="list-style-type: none"> • Targeting campaigns at retaining staff that volunteered or re-enlisted as part of the pandemic response • Investing in new training places for key areas • Increasing international recruitment • Requesting assistance from other countries
	(3) Improving work conditions and offering mental health support	<ul style="list-style-type: none"> • Introducing hygiene measures in health and long-term care facilities to protect vulnerable staff • Providing support helplines, websites or apps • Offering free counselling sessions • Relaxing rules around accessing mental health support during worktime • Providing free child care, parking and transport between home and work
	(4) Improving compensation	<ul style="list-style-type: none"> • Offering reward bonuses • Increasing salaries • Increasing basic allowances for students and interns

To be continued on next page >>>

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STRATEGIES	POLICIES	EXAMPLES
Improving productivity, capacity management and demand management	(5) Separating planned and unplanned care	<ul style="list-style-type: none"> • Building speciality centres outside of hospitals to free up more acute capacity and enable better separation of emergency and routine patients
	(6) Extending hours of care delivery	<ul style="list-style-type: none"> • Extending hours of care to evening and weekends • Carefully targeting overtime at specific staff groups or times of year to be more sustainable in the longer term
	(7) Outsourcing more care to the private sector	<ul style="list-style-type: none"> • Block-booking private hospital beds, equipment and staff to treat urgent cases • Carefully assessing whether dual practice could negatively impact public provision
	(8) Introducing financial incentives to clear backlog	<ul style="list-style-type: none"> • Introducing performance incentives to help clear backlogs • Creating a dedicated fund for backlog
	9) Introducing maximum waiting time targets	<ul style="list-style-type: none"> • Introducing explicit recovery targets for key areas
	10) Expanding access to telehealth services and virtual models of care	<ul style="list-style-type: none"> • Implementing remote consultations, telemedicine solutions and virtual monitoring • Introducing new payments and more lenient regulations for telehealth • Assessing and including telehealth services in the benefit basket
	(11) Implementing demand-side prioritization policies	<ul style="list-style-type: none"> • Introducing and applying prioritization mechanisms more stringently • Using clinical validation of waiting lists or quality assurance of referrals to avoid adding patients to the waiting list with little or no expected benefits
	(12) Increasing patient choice	<ul style="list-style-type: none"> • Giving patients an extended choice of hospital in those countries where this is normally constrained • Allowing patients to visit private providers
	(13) Better spreading patients across available capacity	<ul style="list-style-type: none"> • Fostering greater collaboration, trust and capacity-sharing across local and regional providers • Establishing centralized and real-time waiting time data to facilitate the spreading of patients
Investing in capital, infrastructure and new community-based models of care	(14) Exploring the potential of care abroad	<ul style="list-style-type: none"> • Assessing whether certain priority services are better available abroad • Exploring the European cross-border care frameworks to better facilitate patient transfers
	(15) Upgrading health infrastructure and facilities	<ul style="list-style-type: none"> • Implementing new capital investment plans • Applying to international funding mechanisms where possible • Freeing health care providers of debt for them to be able to take on loans or make new investments
	(16) Investing in primary and community care	<ul style="list-style-type: none"> • Investing in primary and community care capacity, including primary care centres, community diagnostic hubs, community hospitals, integrated care networks and 'home first' approaches
	(17) Expanding digital infrastructure	<ul style="list-style-type: none"> • Expanding virtual ways of working and enhancing system sustainability • Devoting resources to expanding the digital infrastructure • Developing new technologies and virtual consultations • Developing and implementing interoperable, secure software in all health care facilities
	(18) Expanding home care and rehabilitative capacity	<ul style="list-style-type: none"> • Fostering a shift in delivering more hospital and ambulatory services in the home, e.g. by using virtual wards • Building up rehabilitative beds and avoiding unnecessary hospital attendances

Source: Authors.

(1) Introducing new professional roles and competencies

Many countries have widened the scope of authority for different roles and maintain specialist competencies so that staff can work across clinical boundaries on an ongoing basis. For example, the Israeli health system has expanded the scope of practice for paramedics and nurses to add capacity in primary care and acute care departments (Ministry of Health of Israel, 2022a). The government has also expanded intensive care training so that more nurses have the skills to aid in ventilation techniques and monitor critical care (Ministry of Health of Israel, 2022b). Likewise, in Catalonia, an integrated health system has developed flexible staffing models for surgeries whereby one consultant anaesthesiologist oversees three nurses that have been trained to administer sedative medicines and monitor patients for complications. This has helped stretch the existing workforce as far as possible to keep up with routine care (Reed, Schlepper & Edwards, 2022). Furthermore, while the pandemic is ongoing and extra rounds of vaccinations are needed, most countries have been relying on personnel that normally perform vaccinations in their countries, primarily physicians, to also administer the COVID-19 jabs. However, some countries allowed other professionals and even trained lay vaccinators to perform the jabs, keeping physicians and nurses available for usual care (Shuftan, 2021).

(2) Flexible recruitment and training

Countries are also seeking to maintain volunteers and health professionals that re-enlisted during peaks of the pandemic, either as reserve capacity to deal with unexpected shocks or to provide surge capacity to help clear backlogs. Health systems are looking to grow numbers of staff by investing in new training places and international recruitment in areas with key vulnerabilities, including nurse anaesthetists, urologists and intensive care nurses (e.g. Ireland, Sweden, Israel, Portugal, Canada, Denmark). For example, the NHS in England has set ambitions to expand international recruitment, make effective use of temporary staffing, and expand recruitment initiatives for key roles like specialist nursing, cancer support workers and GPs to support elective recovery (NHS England and NHS Improvement, 2022). In this context, the UK has recently approved a new code for ethical recruitment of international health workers, which includes not recruiting from countries with critical shortages as defined by the WHO (Department of Health & Social Care, 2021). Finally, some countries have requested assistance from other countries or international organizations, or have used military personnel to supplement the civilian workforce (Williams et al., 2022b).

(3) Improving work conditions and offering mental health support

A main area of focus across European health systems has been on improving working conditions to help make the health care profession more attractive, in order to retain the workforce and prevent early departure. This includes policies

to protect the health of the workforce, something that is especially important while the pandemic continues. Examples include: introducing hygiene measures in health and long-term care facilities; ensuring sufficient PPE is available; providing regular testing for all professionals; putting in place isolation procedures; moving vulnerable staff to remote roles; and shifting towards remote consultations where appropriate. Many countries are also increasing mental health and wellbeing support by: providing helplines, websites or apps that offer counselling or referrals for additional support; offering (remote) counselling sessions; organizing wellbeing sessions; teaching self-care; and relaxing rules around access to mental health support during worktime. Other practical support policies include free child care, free parking, free transport between home and work, campaigns to reduce discrimination against health workers, and continuing medical education credits (Sagan et al., 2021; Williams et al., 2022c). In addition, contextual factors, such as supportive workplace cultures and effective leadership, are essential to successful implementation (European Union, 2021).

(4) Improving compensation

In many countries, the pandemic has spurred debates around compensating the workforce for their efforts, but also about appropriate compensation for the health workforce in general. In countries where pay increases have happened (beyond standard uplifts) they have tended to be in the form of bonuses for overtime to help accelerate elective activity, or one-off payments to recognize working long hours and service during the pandemic (Waitzberg et al., 2021). Some health systems have enacted longer-term pay deals, like France, which has made an €8 billion investment to retain and recruit more staff, including increases to nurse and care worker salaries by an average of €183/£152 a month (OECD, 2019). The measures also increased salaries and basic allowances for medical students and interns, and introduced a flat-rate accommodation allowance for students who train in underserved areas.

Strategy 2: Improving productivity, capacity management and demand management

Health systems are adapting the ways in which patients interact with health services

Efforts to maximize productivity and throughput at the hospital level include measures to 'smooth' elective surgical schedules to better account for the ebbs and flows in demand and make best use of available capacity. This also includes establishing elective 'hubs' and better separating emergency and planned health services to prevent future outbreaks of COVID-19 and seasonal surges in demand from spilling over into elective capacity – leading to delays or cancellations of care. Improved use of existing capacity across providers has been enabled by far more advanced and rapid availability of data to make coordinated decisions across providers. In many countries, competitive and disjointed ways of working gave way to far greater

collaboration and trust across local and regional providers throughout the pandemic. The pandemic has also strengthened collaboration between governments, payers and providers across borders, and there is potential to further capitalize on this. In parallel, demand-side interventions have been implemented to prioritize patients differently for acute services.

(5) Separating planned and unplanned care

Health systems that have been better able to segregate planned and unplanned work expressed this as an advantage during their pandemic response and early experiences with recovery, as it helped to minimize risk for hospital-acquired transmission of the virus and meant that more elective care could be protected throughout (Reed, Schlepper & Edwards, 2022). For example, one health system in Catalonia, Spain, accelerated the building and construction of speciality ophthalmology centres outside of hospital to free up more acute capacity and better segregate patients, which meant that 20% of surgeries and all ambulatory activity could be separated to avoid major backlogs. Similarly, in the Netherlands, hospitals are relying on a system of independent outpatient clinics to clear backlogs for day-case procedures, joint replacements and other planned surgeries; there are about 300 in the country, many formally aligned with hospitals but paid separately on FFS contracts. The Irish government has also passed system reforms to develop elective capacity by reconfiguring facilities to separate out scheduled and non-scheduled care.

(6) Extending hours of care delivery

Many health systems are extending their hours of care to evening and weekends to be able to increase the number of patients seen (Winkelman et al., 2021). There is however a risk that strategies that require staff to work extended hours place yet further strain on an already depleted workforce and will undermine recovery and resilience if rates of absenteeism and staff burnout deteriorate further. Some health systems are trying to avoid this by carefully targeting overtime at specific staff groups or times of the year to be more sustainable in the longer term, as some hospitals are doing in Germany.

(7) Outsourcing more care to the private sector

In some countries with a sizable private sector, there has been increasing use of private hospitals and providers during the pandemic, which could also be considered when recovering backlogs (Webb et al., 2021). For example, several countries (e.g. Ireland, England, Italy, North Macedonia, Spain) block-booked private hospital beds, equipment and staff to treat urgent cases. In Ireland and Italy (Lombardy), private hospital beds made major contributions to hospital surge capacity, amounting to 2000 private hospital beds and 47 intensive care unit (ICU) beds in early April in Ireland and 30% of ICU surge capacity in Lombardy (Winkelman et al., 2021). However,

this strategy needs to be carefully considered as in many systems there is a limit as to how much extra capacity these arrangements can achieve. Indeed, private and public services often draw from the same pool of staff, which can create perverse incentives or risk draining staff out of public hospitals. Some health systems have tried to counteract this by implementing specific measures to better retain staff in public hospitals and narrow the pay gap with private work, including in France and Ireland, where health workers have been offered increased pay for working exclusively in public hospitals (Cullen, 2021; Government of Ireland, 2021).

(8) Introducing financial incentives to clear backlog

Some countries have also introduced performance incentives and dedicated funding to help clear backlogs. While many health systems have been moving away from volume-based payments given the inherent inefficiencies, some countries are retaining some form of activity-based reimbursement for elective care in response to growing waiting lists and the need to catch up on services as quickly as possible. For example, the English NHS has increased volume-based payments for elective care to help meet the goals that have been set for recovery (Serle, 2021). Moreover, an elective recovery fund (£2 billion revenue) has been established that offered regional areas additional funding for delivering elective care at more than 95% of their 2019–2020 levels. Uplifts to physician overtime have also been introduced to further incentivize increased activity. Similar schemes have been introduced in Sweden, where the government is providing SEK251 million of incentive funds to regional authorities to improve waiting times, with the aim of evening out unwarranted variation across conditions or between regions. Performance targets includes a mix of indicators, including primary care, specialist care and mental health.

(9) Introducing maximum waiting time targets

While many countries have waiting time targets, some are also introducing explicit recovery targets. For example, in Finland, recovery plans have placed renewed focus on delivering a 7-day care guarantee for non-urgent primary care and dental services that have lagged pre-pandemic volumes of activity, supported by a €30 million implementation grant to regions. In England, new target ambitions have been set for elective recovery, including that the waiting list would reduce by March 2024, and waits of longer than a year for elective treatment would be eliminated by March 2025. In Ireland, the pandemic has helped accelerate the implementation of wait time targets introduced as part of system reforms prior to the pandemic. Between 2021 and 2023, patients are expected to wait no longer than 3 months for an inpatient procedure, 10 weeks for an outpatient appointment, or 10 days for a diagnostic test.

(10) Expanding access to telehealth services and virtual models of care

In virtually all European countries studied, the pandemic has accelerated the use and implementation of remote consultations, telemedicine and virtual monitoring. For example, Spain, Sweden and England have expanded the use of virtual wards and hospital-at-home programmes in the hopes of avoiding unnecessary hospital admissions and facilitating early discharge to free up beds for patients who need them (Reed, Schlepper & Edwards, 2022). In many systems, these shifts have been aided by new payments and more lenient regulations for these services that countries are seeking to sustain and further develop through significant investments in infrastructure. Countries including Belgium, the Czech Republic, Denmark, Estonia, Italy, Lithuania, Luxembourg, Slovenia and Romania, introduced new payments for remote consultation, while other countries introduced a large adjustment to coverage and payments for the use of digital health. In France, for example, reimbursements for teleconsultations have been possible since September 2018, provided they meet strict requirements (at least one face-to-face visit with the patient during the previous 12 months; in a remote or underserved area; dedicated software). These conditions were drastically relaxed during the pandemic. Most health care professions were allowed to provide teleconsultations, including nurses and physiotherapists, without a previous face-to-face meeting and through all communication technologies available (Williams et al., 2022a). There are, however, limitations to digital solutions as they apply only to a subset of care where an in-person visit or treatment is not necessary or essential (e.g. surgery). Moreover, they can come on top of an already very busy workload, as for example seen among general practitioners (GPs) in the UK (Green, McKee & Katikireddi, 2022). More also needs to be understood about how the shift to digital infrastructure differentially impacts patients to avoid inadvertently widening inequalities in access.

(11) Implementing demand-side prioritization policies

Most health systems entered the pandemic with prioritization policies already in place to manage demand for elective care that typically selected patients based on clinical need and time waited (Reed, Schlepper & Edwards, 2022). Rather than broaden criteria to account for the increased numbers of patients waiting, in many countries, the principles of how patients are prioritized remained unchanged but are being applied more stringently to optimize resources. Likewise, many countries used strategies like clinical validation of waiting lists or quality assurance of referrals to manage demand before the pandemic, but these are now being more tightly enforced to remove or avoid adding patients to the waiting list when there are few or no expected benefits, or they can be managed more appropriately elsewhere in the system.

(12) Increasing patient choice

In health systems where choice of provider is restricted, there is an opportunity to expand this choice and improve access. Some countries (like Denmark and Portugal) had arrangements in place whereby patients are given the right to 'extended free choice of hospital' if the region cannot ensure that treatment will be initiated within the guaranteed maximum waiting time target, and these arrangements have been maintained during the pandemic (OECD, 2019). This means that patients may choose to go to a private hospital in Denmark, or to a public or private hospital in another region. These patient choice arrangements have been reinforced and relied on to better use available capacity across a system.

(13) Better spreading patients across available capacity

In many health systems, the pandemic has helped foster greater collaboration and trust across local and regional providers, which has been enabled by more advanced and accessible data. For example, hospitals have cooperated in Germany and Denmark to transfer COVID-19 or non-COVID-19 patients from areas struggling to cope with demand. Countries with coordinated data like Canada, Sweden and Denmark have been able to establish centralized waiting time data to help expand patient choice and transparency, and offer patients choice over where to receive care in the event that care guarantees cannot be met locally (Reed, Schlepper & Edwards, 2022). Some health systems have established more coordinated data registries for the first time, including in the Netherlands where hospitals set up a centralized data registry showing real-time information on bed capacity and waiting times during the crisis, enabling the redistribution of patients and staff to avoid any one hospital being overburdened with COVID-19 cases. This coordination has also been maintained in the early stages of recovery to better redistribute capacity across the system. Agreements to share data and capacity across hospitals have been made through voluntary arrangements, with some experts fearing competitive behaviour would return if broader incentives and governance arrangements did not also change. Similar developments also occurred in Germany, which allowed for greater coordination across federal states to transfer COVID patients across state borders to hospitals and regions with spare ICU capacity. Better data-sharing and coordination may make it possible to coordinate waiting list and care backlogs on a more regional or national level, and to redistribute resources to enhance efficiency in a way that was not previously possible.

(14) Exploring the potential of care abroad

During the first wave of the pandemic in the spring of 2020, within a two-month period, almost 300 European COVID-19 patients were treated in another Member State. Most transfers took place from the French Region of Grand Est, Northern Italy and the Netherlands to Austria,

Germany, Luxembourg and Switzerland. These transfers were a measure of last resort and aimed to help countries and regions on the brink of collapse due to capacity shortages. This signals the potential of cross-border care in crisis situations but potentially also during times when local supply cannot meet local demand. Countries could therefore explore the European frameworks better to facilitate the continued demand for COVID-19-related services as well as new demand for backlog care, although, historically, cross-border volumes have been low (Wismar et al., 2022).

Strategy 3: Investing in capital, infrastructure and new community-based models of care

Longer-term measures seek to strengthen capacity outside of hospitals and improve integration of care

Concerns over capacity and the ability to keep up with growing demand have prompted countries to make ambitious investments in the wake of the pandemic to upgrade and modernize health care infrastructure while at the same time rethinking how care should be delivered in the future. This is a more long-term strategy, and the benefits will take time to materialize. While many health systems had a strong focus on mobilizing acute and intensive care resources during peaks of the crisis, many recovery plans are foregrounded in strengthening capacity outside of hospital and better integrating services in the longer term. This speaks to the interconnectedness of recovery and how freeing up acute resources relies on being able to deliver as much care to patients in primary care, community services, mental health and social care. Focusing on new care models is also seen as important in identifying unmet need or 'missing patients' and dealing with people suffering from long-COVID or mental health problems, as many health systems experience ongoing lags in referrals, diagnostic and screening volumes – which may result in fewer conditions being detected and worsened health outcomes and prognosis for patients over time. This calls for multidisciplinary care models that can identify vulnerable populations for medical and social outreach (Kumpunen et al., 2021).

(15) Upgrading infrastructure and facilities

In many health systems, the pandemic highlighted the need for modern and flexible infrastructure to boost capacity and productivity. Much of this has been funded by large-scale financial support available through the EU's Recovery and Resilience Facility. For instance, France has made a €19 billion investment over 5 years to fund building - renovations and modernize infrastructure in health and social services. The government will also absorb €10 billion of hospital debt, giving the system the ability to take on new loans for investment to fund infrastructural improvements. In the UK, the government announced a real increase in capital spending for the English NHS of just over £1 billion (around 3.6% a year) by 2024/25 (HM Treasury, 2021). Likewise, Italy has invested €1.4 billion to increase intensive care capacity, modernize A&E rooms and increase the number of ambulances, as well as €1.19 billion to upgrade and acquire new hospital equipment.

(16) Investing in primary and community care

Health systems are not just investing in the acute sector but are also investing heavily in primary and community care capacity, including primary care centres, community diagnostic hubs, community hospitals and integrated care networks. These investments are motivated in part by the need to manage patients outside of hospital better in order to free up more acute capacity for patients with greater needs and prevent avoidable admissions. Italy, for instance, is investing €1 billion in community hospitals and €2 billion into new facilities called 'community health houses' to strengthen local delivery of health services. In Ireland, the pandemic has accelerated system reforms to develop enhanced primary care and community services and there has been investment in establishing community health networks and community specialist teams to better manage older people as well as those with chronic conditions locally and using 'home first' approaches. This has been supported by significant upgrades to home care, community care beds, and rehabilitation and intermediate care beds, to support timely discharge from hospital (see below), and there are plans to recruit 7000 additional community-based staff. Likewise, Austria has put in place plans to increase the number of primary care centres to boost recovery and expand access, as well as an investment of €54.2 million to expand community nursing capacity to help relieve the burden on informal carers.

(17) Expanding digital infrastructure

To support the expansion of virtual ways of working and enhance system sustainability, many systems are also devoting resources to expanding digital infrastructure – a major theme and priority of the EU Recovery and Resilience funds. For example, Denmark has invested €1.8 million to expand and develop new technologies and virtual consultations; France has allocated €2 billion of its reform plan to develop and implement interoperable, secure software in all health care facilities, and upgrade the national IT systems running the national digital health infrastructure; Belgium has also allocated €40 million to extend e-prescription capabilities, develop digital clinical decision-making support systems and increase the use of telehealth. Furthermore, countries are expanding interoperability of patient data and information across different sectors of care (e.g. Belgium, France, Finland, Italy) and developing digital infrastructure and security. However, sustained progress will require adequate leadership and governance frameworks in place that some health systems are lacking.

(18) Expanding home care and rehabilitative capacity

Health systems that entered the pandemic with more rehabilitative beds and home care capacity have emphasized this as an asset in resuming and maintaining access to planned care throughout the pandemic and now in clearing backlogs (Reed, Schlepper & Edwards, 2022). For example, in Sweden, health reforms since the 1990s have led to a steady shift towards delivering more hospital and ambulatory services in the home. During the pandemic, the

regions' primary care services reorganized and significantly increased the use of mobile teams to provide first-line care for people with chronic illness (SKR, 2022). Other countries have also made expanding home care and rehabilitative capacity an explicit part of their recovery strategies, like Portugal, where the government invested €205 million to develop a network of integrated care providers with rehabilitation and home care units to better enable continuity of care within the patient's home (European Commission, 2022). France and the UK have also expanded the use of 'virtual wards' and remote monitoring to help discharge patients earlier from hospital and avoid unnecessary hospital attendances.

Conclusions

Clearing backlogs is critical for maintaining health gains achieved before the pandemic

This policy brief provides an inventory of policies that can together play a role in reducing the backlog of health services that has affected virtually all countries during and after the pandemic. If health systems do not manage to reduce the backlog, they risk worsening health outcomes and wasting important health gains made in the pre-pandemic years.

Countries have been affected by care backlogs due to COVID-19 to varying degrees. A great deal of uncertainty remains as to how much capacity will be needed to care for COVID-19 patients, how much will be required to reduce the backlog, and how many 'missing patients' with unmet needs there are. Indeed, backlogs and waiting lists are dynamic and therefore flexible policies that will increase health service supply flows and can absorb unexpected changes in supply and demand need to be implemented, rather than just one-off increases in supply. A key requirement is the systematic collection of reliable and meaningful waiting time data, which some countries are not yet doing.

Policies to support and protect health workers should be prioritized but workforce planning and availability remain inadequate in many countries and should also be addressed

Some of the policies described in this brief are particularly demanding on the health workforce. For example, strategies to boost elective capacity in the short term, like surgical hubs and standalone elective facilities, may have come with unrealistic assumptions about the workforce available to staff them, which will undermine their effectiveness in the short to medium term. Similarly, addressing the care backlog with (well-deserved) bonuses and better payments and salaries may result in short-term gains but will not protect the workforce from exhaustion or burnout. Thus, in many countries, having a large enough health workforce will remain a main bottleneck for years to come. This puts increasing pressure on health workers, making them at increased risk of absenteeism, mental health problems and possible burnout, all of which are increasingly seen across Europe. Therefore, policies to support and protect health workers should be implemented in parallel, and their wellbeing should be a top priority and a long-term concern. Yet, even with these efforts, there are limits to what measures can achieve when it comes to addressing care backlogs given the insufficient numbers of qualified health workers in the pipeline and global competition for these limited numbers of staff. This speaks to a broader problem of inadequate workforce planning and cross-government coordination to alleviate the staffing pressures confronting many systems. Many health systems lack the prognostic assessments of future staffing needs required to be able to develop informed workforce strategies, and they vary in the levels and granularity of appropriate data available to them.

It is important that policies to recover from backlog do not inadvertently increase inequalities

In the future, countries may consider policies that further rationalize the supply of health services and demand for health care (by reducing waste and inappropriate care), but if not done carefully, this may increase inequalities in utilization and health. In addition, the shift to more use of digital solutions will differentially impact patients and could also carry the risk of widening inequalities of access. Therefore, it appears that countries have a real opportunity to make a strong case for reforms that address long-standing gaps, inefficiencies and inequalities in the health system, including funding gaps in some countries. Investments in new models of care, which shift more care towards primary health and community care, and which prioritize medical and social outreach to vulnerable groups, should be a central part of these discussions, so that countries do not just build back to what they had before but instead aim for something better.

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