OECD Health Working Papers No. 150

# Advancing patient safety governance in the COVID-19 response

**Katherine de Bienassis,**
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**Luke Slawomirski,**
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Katherine de Bienassis*, Zuzanna Mieloch, Luke Slawomirski, and Niek Klazinga*

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# Abstract

Against the backdrop of a once-in-a-century global health crisis**, ensuring the safety of health care presents a serious, ongoing challenge**. COVID-19 has made the continued vulnerability of healthcare delivery systems and subsequent risk to patient harm evident to a wider global audience. When compared to the unprecedented impact of COVID-19 in 2020, the estimated annual health burden of harm caused patient safety events is over two-fold. Given the scale of the problem, intervention and investment are still relatively modest.

Rapid decision making has been needed to address operational, staffing, safety, and COVID-19 related issues in health care systems. At the same time, trust in government health officials, health care providers, and evidence has declined at various points over the course of the pandemic. This has made consensus building and organisational learning more difficult, and a decline in performance on several key metrics of the performance of patient safety governance[1] have been observed:

- Over the course of the pandemic, **countries have observed declining levels of trust in government and health system capacity to handle the crisis** and implement coherent policies. According to data from the COVID-19 Trends and Impact Survey, on average, only 37% of people in OECD countries said they trusted COVID-19 information from government health officials in 2021. More than **half of people in OECD countries who did not receive COVID-19 vaccination report it is because of concerns over side effects** and trust in the pharmaceutical industry decreased by 5 percentage points on average in OECD countries between April/May 2020 and February/March 2021.
- During COVID-19, many **health systems countries lacked the needed resources to control the spread of COVID-19 in the hospital setting**. Studies show that as many as one-in-four of total confirmed COVID infections were acquired in the hospital setting during certain periods of the outbreak.
- **Data availability on healthcare-associated infections (HAIs) during the COVID-19 pandemic is still generally scarce**. Even so, data from the United States shows that, as of the third quarter of 2021, several HAIs were higher than a 2015 baseline.
- **Trends in the occurrence of hospital acquired conditions need to be interpreted with data on decreased healthcare use**. For example, the number of hip replacements fell by 16% in 2020 compared with 2019 across 27 OECD countries and knee replacements fell by 26%. Lack of timely care can lead to serious safety risks for those with ongoing health care needs and delays in treatment can cause patient harm.

COVID-19 has had a considerable impact on safety and safety governance, but this has also created a unique opportunity. Policy changes in response to the pandemic should be capitalised upon and used to strengthen patient safety. **Developments and improvements in safety governance should build out and strengthen existing safety mechanisms**. Improving safety governance is essential for driving

[1] Patient safety governance refers to approaches taken to minimise the risk for patient harm across an entity or system.

improvements in patient safety outcomes. Moving forward, healthcare leaders and policy makers will need to encourage and enforce safe care in a post-pandemic world. Patient safety is complex but strategically important. The risks associated with poor safety can be multidimensional, linked to socio-economic, labour, and global health factors—perhaps one of the most important lessons from the COVID-19 pandemic.

**Boosting trust in governance and health institutions should be a central theme.** Underlying improvements in trust in safety governance systems should be policies to establish strong safety cultures (for example, by ensuring non-punitive responses to event reporting and demonstrating leadership support for patient safety at all levels of management) and establishing balanced accountability mechanisms that focus on improving organisational learning and account for human factors.

**Optimal safety governance operates at the intersection of adaptive capacity and regulatory authority**, where appropriate safeguards can be complemented with additional support when needed. On the frontlines, staff should be encouraged to find solutions to patient safety challenges, knowing that appropriate linkages exist with regulators and additional support if safety is compromised. More can be done to showcase examples of where member countries' health systems (or organisations within them) have innovatively improved safety, and where safety governance and risk management incorporates a level of flexibility that accepts 'good' variation to established protocols. Tools developed in the military and in aviation can be adopted to promote transparent and effective leadership while strengthening essential non-technical skills, including communication, shared situational awareness, and psychological safety (the confidence and security to speak up).

Now more than ever political leadership should work to advocate for investments in improving patient safety, and its place at the top of its health policy agenda. Health systems will need to address deficits in trust through better communication strategies, shifting from public consultations to active stakeholder engagement, and demonstrating good governance of regulatory institutions. **Leaders play a key role** in driving organisational priorities by setting examples, fostering communication, and creating enabling atmospheres for raising concerns, as well as leveraging incentives with the aim of creating safe, people-centred care. Assessments of current safety plans, activities, and new digital infrastructure will need to be carried out on a continual basis to ascertain whether they are fit for purpose and can withstand the next global health crisis.

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# Acronyms

| | |
|---|---|
| C. diff | Clostridium difficile |
| CMS | Center for Medicare & Medicaid Services |
| CoG | Centre of Government |
| HAI | Health care acquired infection |
| MH | Ministry of Health |
| MSSA | Methicillin-susceptible Staphylococcus aureus |
| N95 | U.S. National Institute for Occupational Safety and Health (NIOSH) N95 classification of air filtration, filtering at least 95% of airborne particles |
| PI | Pressure injury |
| PPE | Personal protective equipment |
| TAPIC | Governance Framework (Transparency, accountability, participation, integrity, and capacity) |
| VTE | Venous thromboembolism |

# 1 Safety governance in the context of COVID-19

Good governance of patient safety in "normal times" was already a challenging battle for many health systems, but the COVID-19 pandemic has amplified the challenges of ensuring effective safety governance mechanism at all levels.

## 1.1. The coronavirus pandemic has been a watershed moment for safety in health care

COVID-19 has changed the structures, processes and outcomes of health care in fundamental ways. It created unprecedented challenges in practice and services delivery. It generated mobilisation of resources and change in policy settings in a short time not seen since the mid-20th century. This has benefited some safety outcomes but also worsened others. The challenge is to learn the lessons and harness the changes in a way that strengthens governance, resulting in more resilient healthcare systems that deliver the safest, quality care possible under any circumstances. Good safety governance is key to achieving policy goals and directly affects the health system's capacity to overcome challenges. Advances in health policy are restructuring governance to skew health systems towards objectives like quality and safety.

The societal apprehensions amplified by COVID-19 have been primarily safety concerns. Is it **safe** to receive care in a health facility? Is it **safe** to receive a COVID-19 vaccine? Is it **safe** to send children to school or visit a loved one in long-term care?

These fears and concerns, diminishing levels of trust in some cases, have not always been unjustified. Hospitals and other places for providing health care became hot spots for the spread of the coronavirus, and people experienced serious disruptions in needed care. Some studies suggested that over 30% of total COVID-19 infections being acquired in the hospital setting during certain periods (see section 2.1.2).

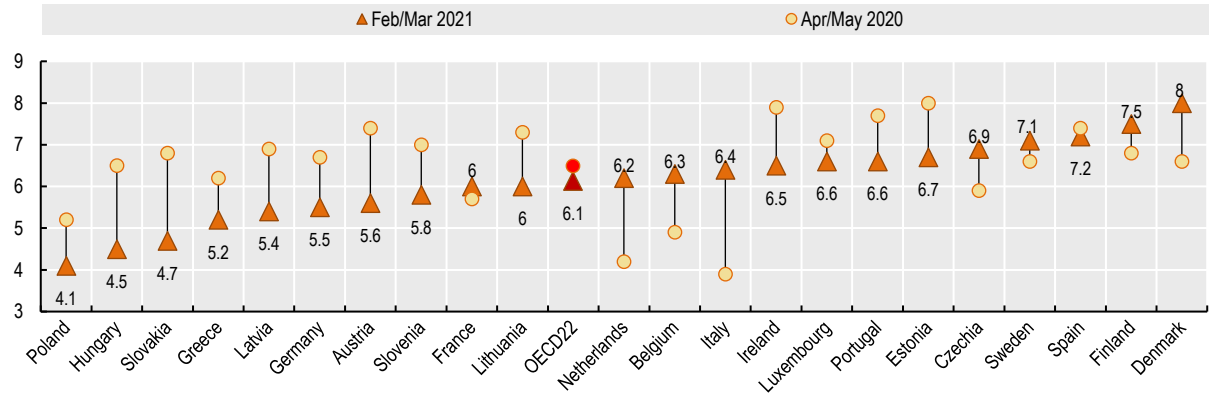
Many health settings saw increases in health care associated infection (HAI) rates despite lower testing. COVID-19 patients were more vulnerable to HAIs and subsequently suffered worse clinical outcomes if one was acquired (see more discussion in Chapter 2). In some cases, over 40% of COVID-19 patients developed a HAI during their ICU stay (Bardi et al., 2021[1]). Even though improved hygiene in hospitals has brought a decrease in rates of some HAIs, the rates have been recently rising coming back to pre-pandemic times. Early evidence suggests that rates of other hospital infections, such as ventilator and catheter associated infections—often required in the treatment of severe COVID-19, have increased during the pandemic.

The global crisis and related policy responses showed how complex policy problems are forcing governments to consider how to better govern toward patient safety, both for now and for the future. COVID-19 has highlighted the continued vulnerability of health care delivery systems and the real risk of patient harm, particularly the risk of healthcare-acquired infections (G20 Health & Development Partnership, 2021[2]).

Adjusting practices, implementing new policies and re-allocating resources in response to the pandemic also created harmful spill-over effects. Up to one-in-ten survey respondents in OECD countries reported that they did not access needed health care in part of 2022 due to fear of COVID-19 (see section 2.2.1). This apprehension creates a cascade of negative consequences. Delayed cancer diagnoses during the pandemic are likely to result in increased five-year cancer mortality in the UK by about 5% for lung and oesophageal cancers, 6% for oesophageal cancer, 7% for breast cancer, and 16% for colorectal cancer (Maringe et al., 2020[3]). In Victoria, Australia, it is estimated that 1000 melanomas, 650 breast cancers and 650 bowel cancers have not been diagnosed during the pandemic (Deam and Nazaretian, 2021[4]).Over the course of the coronavirus pandemic, and according to data from Eurofound countries have observed diminishing levels of trust in relation to various aspect of government capacity to handle the crisis and implement coherent policies. Poor messaging and lack of clear information and timely data can cause uncertainty in decision-making and diminish levels of trust in the population. More broadly, the pandemic has triggered widespread disinformation that has undermined both understanding and acceptance of science and public policy (de Figueiredo et al., 2020[5]). Average trust in healthcare institutions on a 1-to-10 scale has declined from 6.5 in Q3 2020 to 6.1 in Q3 2021 across 22 OECD countries (see Figure 1.1) (Eurofound, 2022[6]).The OECD Survey on the Drivers of Trust in Public Institutions[2] shows similar results, where on average, only six-of-ten respondents report being satisfied with the healthcare system in their country (OECD, 2022[7]).

[2] The inaugural OECD Survey on Drivers of Trust in Public Institutions (Trust Survey) offers a modern measurement tool for public governance. The Trust Survey is the first cross-national investigation dedicated to identifying the drivers of trust in public institutions, across levels of government and across institutions. It is a nationally-representative survey, run in 22 countries investigating the complex relationship between public trust and democratic governance. The questions in the survey build on the OECD Framework on Drivers of Trust in Public Institutions that recognizes government competencies (responsiveness and reliability) and values (openness, integrity and fairness) as key drivers of trust in public institutions.

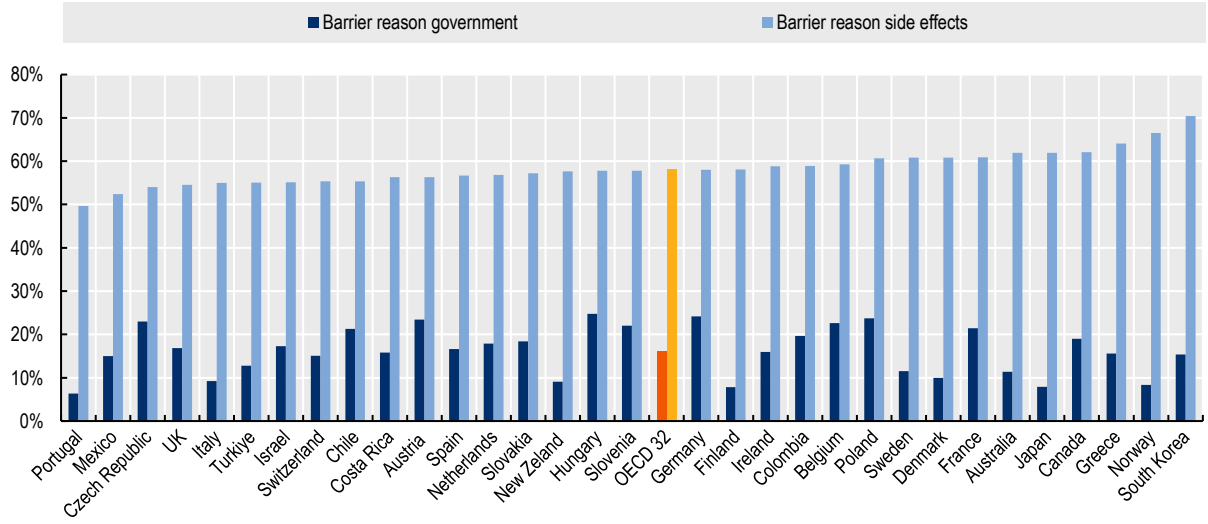
## Figure 1.1. Trust in healthcare system has declined substantially in most countries during the COVID-19 pandemic




Note: The data show the mean for respondents in the EU27 when asked: Please tell me how much you personally trust each of the following institutions? The healthcare system. Trust is measured on a scale of 1 to 10, where 1 means that you do not trust at all, and 10 means that you trust completely. Values displayed are net average response.
Source: (Eurofound, 2022[6])

More broadly, the pandemic has triggered widespread disinformation that has undermined both understanding and acceptance of science and public policy (de Figueiredo et al., 2020[5]). For example, despite widespread recognition among experts that COVID-19 vaccination can reduce the occurrence of serious COVID-19 related complications, significant portions of the population were unwilling to be vaccinated—in part due to misinformation (OECD, 2021[8]). Survey results suggest that, in January 2021, a quarter of the population in France, Germany and the United States would have refused COVID-19 vaccination, and an even higher proportion among younger population cohorts (Kantar, 2021[9]). The Global COVID-19 Trends and Impact Survey has identified that in OECD countries, 16% of those who did not get vaccinated did so due to lack of trust in the government and the healthcare system, and 58% due to fear of side effects (see Figure 1.2).

## Figure 1.2. More than half of people in OECD countries who did not receive COVID-19 vaccination cite concerns over side effects as the reason



Note: Voluntary Facebook based random survey, data collection period January 2021 – December 2021, sample almost 30 million responders. Barrier reason government - Respondents who reported not trusting the government as a reason why they would choose not to get a COVID-19 vaccine.
Source: COVID-19 Trends and Impact Survey (CTIS) (Fan et al., 2020[10])

Almost three years since the start of the COVID-19 pandemic, there remain major gaps in the collective knowledge on the impact of the crisis on patient safety. Experts and stakeholders across OECD countries have said that **health systems have struggled to maintain access to safe, continuous care during the COVID-19 pandemic.** These challenges, related to a wide variety of factors such as workforce, surge-capacity, continuity of care, and access to essential supplies, have impacts on the resilience of health systems, along with health and patient safety outcomes.

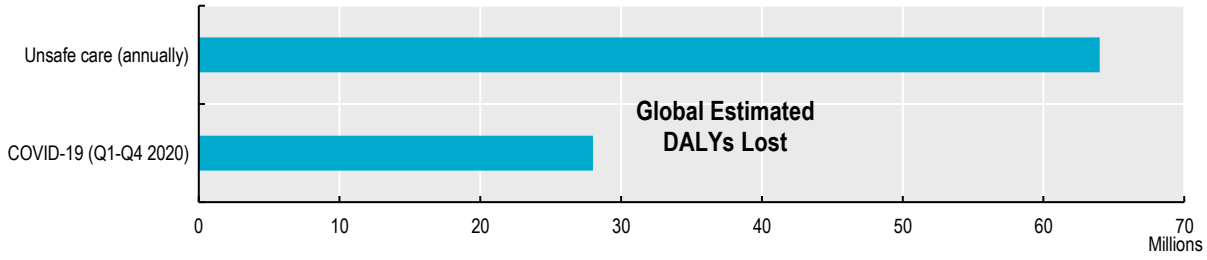
Despite the challenges, some aspects of patient safety governance have been more successful in ensuring access to safe care than others, and findings have varied between countries. Opportunities have emerged for leveraging existing legislative tools and capacities in accelerating reform to improve underlying governance so that it is responsive to future shocks.

## 1.2. Patient safety governance was already challenging for many health systems in "normal times"

The COVID-19 pandemic has amplified the challenges of ensuring effective safety governance mechanism at all levels (OECD, 2021[11]). As health care provision reaches its pre-pandemic capacity, challenges in maintaining safe care at scale remain-amplified by systemic shortfalls in health care staffing capacity and well-being. However, opportunities have emerged for leveraging existing legislative tools and capacities in accelerating reform to improve underlying governance so that it is responsive to future shocks. Combined with health system mega-trends–such as health care workforce shortages, health inequalities, and ageing populations–and headwinds across governance levels, low levels of trust in public institutions, and the pace of technological change, it is clear that new approaches are needed to address current issues and put health system leadership in a position to respond effectively to ensure safe care.

COVID-19 has made the continued vulnerability of healthcare delivery systems and subsequent risk to patient harm evident to a wider global audience. But the recent attention has not yet been translated into enough action to address the patient safety problem worldwide and given the scale of the problem (see Figure 1.3), intervention and investment are still relatively modest.

### Figure 1.3. The disease burden of patient safety failure is greater than that of COVID-19




Source: (Fan et al., 2021[12]; WHO, n.d.[13]; WHO, 2019[14]). Note: Long-COVID not included in global estimate of DALYs lost.

This report builds on previous work on patient safety governance to 1) assess the performance of key safety governance functions in response to COVID-19, 2) assess the role of COVID-19 in mobilising structural, regulatory and organisational reforms related to patient safety and 3) document lessons from

the successes and challenges in maintaining patient safety during the crisis and reiterate the recommendations from the 2019 *System governance towards improved patient* safety report (Auraaen, Saar and Klazinga, 2020[15]).

## 1.3. Better governance drives better safety outcomes

'First, do no harm' is a fundamental principle of the practice of medicine. Even so, patient safety remains one of the most pressing health issues for public education and further policy action. Over 15% of hospital expenditure and activity in OECD countries can be attributed to treating patients who experience a health safety event, many of which are preventable (Slawomirski, Auraaen and Klazinga, 2017[16]). Across settings of care, the direct cost of treating patients who have been harmed during their care approaches amounts to 13% of health spending. Excluding safety lapses that may not be preventable, puts this figure at 8.7% of health expenditure. This amounts to USD 606 billion a year, just over 1% of OECD countries' combined economic output (Slawomirski and Klazinga, 2022[17]). The annual burden of patient safety failures in DALYs is almost twice that of COVID-19 diseases in 2020 (see Figure 1.3).

The awareness of patient safety and its importance has grown in recent years. Bodies such as the World Health Organization (WHO), European Union (EU) and the G20 have elevated the issue on the crowded public health agenda. While patient harm incurs a huge toll on individuals and societies, much of it can be prevented through changes in practice and behaviour, better policy, and considered investment. The potential for good economic returns and value creation is there. Especially that during the pandemic safety culture among healthcare workers has suffered, with all monitored parameters declining in the USA (see Figure 2.9).

COVID-19 has shown that governments, health systems and healthcare providers can act swiftly, decisively and in unison to protect the public. While some countries have done better than others, change is possible if the will and urgency are there. Responding to, and limiting the impact of, the outbreak is rightly seen as everyone's responsibility. The contrast of inaction to improve patient safety over the past decades is stark. For example, the pandemic response appears to have achieved what hand hygiene proponents have been working towards for years—and may yet have the corollary benefit of reducing healthcare associated infections in the future (Slawomirski and Klazinga, 2022[17]).

### *1.3.1. System governance is fundamental to improving patient safety*

Essential to safety improvement is to enhance the way safety is governed within health systems (Auraaen, Saar and Klazinga, 2020[15]). Beginning in 2019, OECD policy work on patient safety was expanded beyond work on indicator development and activities to quantify the economic toll of patient safety failures, to specifically address the role of regulation and incentives and to provide a more complete picture of where OECD countries position themselves in regard to patient safety.

In many situations standardisation and control is not the right response in health care. Rather, ways to enhance learning, transparency, and accountability based on self-regulation should be seen as a central tenet; likewise, command and control can be replaced by incentives and influences. As complex systems are defined by variety, solutions should focus on outcomes for enabling health care staff to adjust their work to changing conditions (The Health Foundation, 2010[18]).

Key findings on this work on governance functions, and opportunities for improvement, completed before COVID-19, include the following:

- **Legislation is the cornerstone of safety governance models, but stakeholder involvement can be strengthened**. All 25 countries that responded to a 2019 OECD Survey of Patient Safety Governance have enacted legislation that aims to promote patient safety. These practices include external accreditation and inspections of safety processes and outcomes. A lower emphasis is

reported on the involvement of key stakeholders in safety governance. In one-quarter of responding countries, political leaders are not regularly informed on the patient safety in their health system. Furthermore, while legislation supports the involvement of patients in safety and quality decision-making processes, it is seldom implemented to its full potential in the development of safety strategies and programmes.

- **Effective safety governance models enable continuous learning**: A key factor in patient harm is the complexity of modern health care. Strong safety governance models align the functions performed by different actors within a health system. This includes clear definition of roles and responsibilities, monitoring of safety and external accreditation. There is a clear linkage between national safety standards and systems for measurement and monitoring of safety with performance indicators. This forms the basis for continuous feedback and learning, where monitoring of safety and performance indicators serve as corrective measures to existing practice.
- **Safety governance regulation must be fit-for-purpose, and this depends on country's broader system governance models:** The specific approach taken to safety governance is shaped to a large extent on the broader system governance model. Health systems with a national focus, such as Denmark, England, and Sweden, have implemented more comprehensive and overarching safety governance models. These include enacting national-level legislation to ensure safety programs are implemented and aligned with other functions. In decentralised health systems with a high degree of fragmentation, the importance of developing a strategic oversight and common understanding of putting safety first is key to reducing patient harm across the system. Strategic oversight can be enabled by the establishment of a safety agency—for example Heathcare Excellence Canada and the German Federal Joint Committee—or a nation-wide safety strategy, as seen in Austria. Finally, there is a need for regular review and update of regulations to ensure they are meeting system needs.
- **Political leadership and safety culture are key elements for reducing harm:** The importance of leadership and culture in safety governance cannot be overstated. Leadership and political will to put patient safety on the national agenda have driven patient safety improvements across the OECD. While consistent system-level efforts in monitoring and reporting have a direct effect on the quality of health care, political focus from central governments can enable sustainable funding and the resources needed for investing in safety. Targeted investments that balance prevention costs with costs of treating safety failures can reduce harm and further improve system efficiency. Involvement of key stakeholders, such as professional and patient associations, is a driver of patient safety culture.

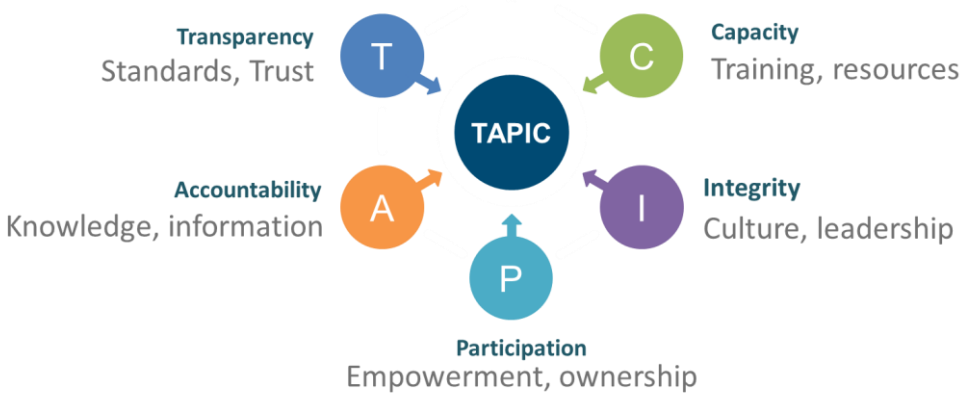
Health care workplace cultures embodied with high levels of trust, openness and learning are crucial for patient safety improvement; yet, governance is ineffective if it fails to promote compliance. Finding the right balance between compliance and autonomy is essential. Safety governance models are also moving away from punishment and shaming towards increased trust and openness. Trusting health professionals' ability and skills to provide safe care as well as report and learn from safety incidents when they occur is fundamental in safety culture. Learning from successes as well as failures represents a paradigm shift in safety governance.

## 1.4. Strong governance requires an accepted framework

The coronavirus pandemic has placed substantial strains on health care workforce and resources, revealing and exacerbating the real patient safety risks that come with health care. It can be argued that the coronavirus pandemic will be seen as a **pivotal safety crisis for the health care sector**—truly putting systems to test. And, as in other sectors, the experience of a significant crisis has served as a mechanism for significant changes in terms of regulation, governance, and structural resources for health care safety (OECD, 2021[19]; OECD, 2021[20]). Despite the challenges, the COVID-19 crisis has highlighted

opportunities for leveraging synergies, for instance with hygienic measures which dually improve COVID-19 outcomes while driving patient safety improvements.

### Figure 1.4. Components of the TAPIC Framework for safety governance




Source: ((n.a.), 2019[21]; Greer, Wismar and Figueras, 2016[22])

To understand the effectiveness of safety governance approaches in improving safety during the COVID-19 pandemic, this report uses the TAPIC framework (Greer, Wismar and Figueras, 2016[22]; WHO/European Observatory, 2019[23]). Based on the literature on health policy and public administration, the TAPIC framework defines five pillars of health care governance; transparency, accountability, participation, integrity, and capacity (see Figure 1.4). Elaborating the TAPIC framework and applying it to patient safety produces five pillars of governance (1) encouraging transparency and information sharing, (2) ensuring accountability, (3) promoting participation, (4) upholding integrity through effective leadership facilitating a culture of safety, and (5) building capacity. There are abundant – and non-exclusive – ways to embed these objectives into health care systems (see Table 1.1. ).

### Table 1.1. TAPIC Framework is suited to the COVID-19 context

| TAPIC Domain | **Examples of COVID related challenges:** | **Examples of mainstreaming opportunities** |
|---|---|---|
| **Transparency**<br>Standards, trust | Effectiveness of communications about safety protocols | Adoption of COVID-19 related safety indicators, new monitoring policies |
| **Accountability**<br>Knowledge, information | Challenges in maintaining performance on safety indicators (both COVID and non-COVID related) | Changes in public reporting/financial incentives, and contracting terms |
| **Participation**<br>Empowerment, ownership | Stakeholder involvement in decision making (infection control protocols) | Integration of clinical and corporate governance, health worker and patient safety, increased cooperation between agencies/ministries |
| **Integrity**<br>Culture, leadership | Maintaining a strong safety culture at all levels of the health system | Updates to national legislation, organisation of governance at the national level, and standards. Advancements in ensuring capacity, adaptive learning. |
| **Capacity**<br>Staffing, training | Challenges in maintaining staffing levels/resources (including data infrastructure) | Increases to staffing capacity and data infrastructure |

In the subsequent chapter of this report, patient safety governance functions are explored to analyse challenges faced and new developments made by OECD countries with regard to each of these pillars in relation to patient safety and the COVID-19 context). By using the TAPIC as a frame of reference, the five

identified aspects of governance can be assessed and used to diagnose areas of weak governance when it came to the COVID-19 pandemic.

Addressing weak areas of governance, exposed by COVID-19 is important for the governance of systems to health systems to provide **accessible, quality, sustainable health in the face of future health system shocks**.

# 2 Assuring Patient Safety in times of the pandemic: How did safety management systems fare?

The subsequent sections of this report discuss the core governance functions, reflecting particularly on OECD countries challenges and reforms in these areas in response to COVID-19.

The COVID-19 pandemic has significantly impacted health systems. It brought unprecedented stresses and challenges on staff and institutions at all levels. Nevertheless, it also brought several opportunities. This chapter outlines these challenges and opportunities in the context of the TAPIC framework outlined in the previous section.

## 2.1. Transparency and communication were never more important

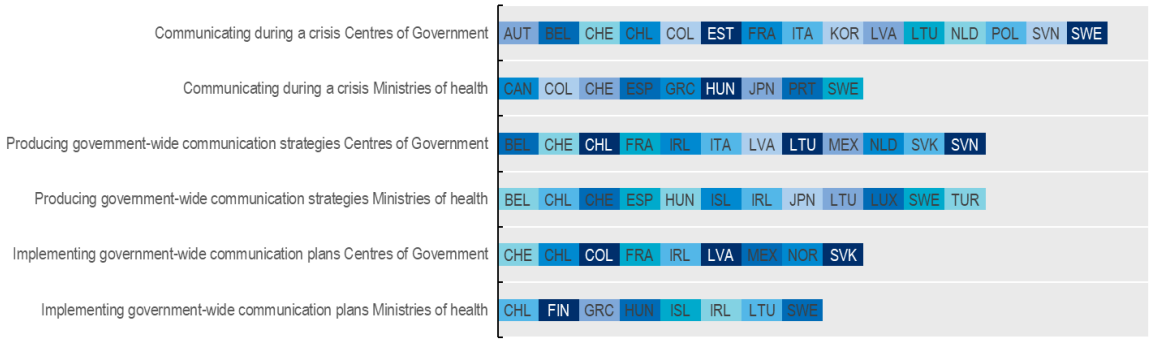
In the TAPIC framework, transparency refers to patient safety measurement, access to data and decisions, enhanced by watchdog committees, inspectorates, regular reporting, legislation, or performance assessment. In patient safety, the main venues of transparency are public reporting of safety indicators, incident reporting to induce collective learning and information sharing to avoid safety lapses stemming from miscommunication. Communications related to COVID-19 about safety have been a key component of transparency, however, ensuring trust and building effective communication channels still remains a challenge in many countries, as does ensuring ongoing patient safety measurement and access to data.

Effective communication about safety was a challenge prior to COVID-19

Public communication is a critical function of health systems, essential for coherent messaging both internally and externally, and is a key tool for effective policy design and implementation. Effective public communication is key to supporting the open government principles, ultimately serving to enhance good governance and build citizen trust. *Good* communication empowers individuals to understand issues and act on the information they receive. In the case of patient safety, public communication is essential to communicate risk and build trust, and is essential to the timely and beneficial dissemination of critical information.

Many countries found crisis communication to be particularly challenging both before and during the COVID-19 pandemic. 2020 survey findings from the OECD found that crisis communication was identified as one of the three most challenging competences in 15 out 27 Centres of Government (56%) and 9 out of 18 Ministries of Health (50%) (see Figure 2.1). A voluntary Facebook survey coordinated by the University of Maryland showed that in the seven days before response collection on average in OECD countries only of respondents 47% received news about COVID-19 from governmental health authorities and 49% from local healthcare providers (Fan et al., 2020[10]).3 Ministries of health commonly cited issues of co-ordination and human resources as the key challenges to implementing crisis communications (OECD, 2021[24]).

## Figure 2.1. Most challenging communication competencies for centres of government and ministries of health




Note: Finland, Greece, Iceland, Japan, Luxembourg, Portugal and Spain provided data for MHs but not CoGs. Austria, the Czech Republic, Estonia, France, Germany, Israel, Italy, Korea, Latvia, Mexico, the Netherlands, Norway, Poland, Slovakia, Slovenia and the United Kingdom provided data for CoGs but not MHs. The three alternatives presented are the top recurring challenges selected by respondents from 27 CoGs and 18 MHs out of all the options provided.
Source: OECD (2020), Survey on Understanding Public Communication in Centres of Government; (OECD, 2021[24])

[3] Data collection period Apr 2020 – Apr 2022, sample almost 30 million responders.

### Box 2.1. Good practice: diversifying and amplifying communication channels during a crisis in Switzerland

The Swiss government used various external communication channels to provide information to its citizens about the current situation and infection control measures. In addition to frequent press conferences by the Federal Council and experts, the federal administration used poster campaigns, webpages, social media and the "ALERTSWISS" app to disseminate information. For example, during the highest alert level, the Federal Council gave three press conferences per week, complemented by press briefings with specialists every second week.

In addition, the Swiss Government had adopted an Open Government Data Strategy as of 2018, which has accelerated in implementation because of the pandemic. As of November 2020, COVID-19 related statistics have been published on a dedicated dashboard (covid19.admin.ch), an open data platform (opendata.swiss), and a linked open data platform (lindas.admin.ch). Data on Covid-19 was published until March 2022 daily, and then weekly from April 2022 onwards. An additional dashboard that covers statistics a larger number of transmissible diseases is in development and set to be published by mid-2023. These systems have been enabled by governance changes enabling faster and standardised approval processes, secure data exchange procedures, and clearer communication about data availability and access. Improvements in the collaboration between public offices (Federal Office of Statistics), cantonal offices health care institutions concerned with vaccinations, and regulatory authorities (Swissmedic, Pharmasuisse) have also enabled faster and more efficient data sharing.

Since 2022, resources have been allocated to evaluate the lessons learned and invest in future pandemic preparedness. An evaluation by the Swiss Federal Chancellery has concluded that using a variety of communication channels allowed the government to reach a large portion of the population and was particularly effective.

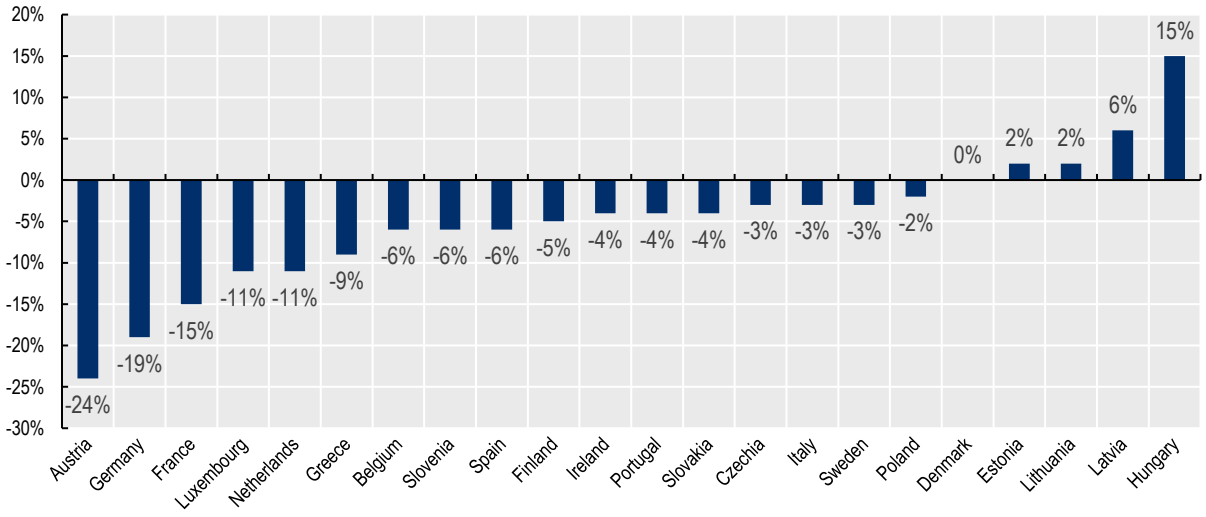
Source: (OECD, 2022[25]; Swiss Federal Chancellery, 2022[26]) 2021 OECD Survey of Health data and governance changes during the COVID-19 pandemic.

Proactively releasing information that is up-to-date, reliable, and easy to understand about medication safety, in compliance with access to information laws, is also crucial for people outside government to have confidence in the effectiveness of regulation and policies. *Good* communication is needed to identify what are the most effective ways to package and deliver that information to a diversified public in a way that it will be understandable and accepted–and to do so in a space where multiple voices with varying reliability can crowd out official sources (Alfonsii et al., 2022[27]; OECD, 2022[28]). Some countries, such as New Zealand, Norway, and Finland, found that trust in information provided by governments remained very high during the COVID pandemic, facilitated by systems for clear and transparent public communication (Beattie and Priestley, 2021[29]; OECD, 2022[30]; OECD, 2021[31]).

In the context of the COVID-19 pandemic, trust in the safety of vaccines, for example, was tested by reports of rare, but serious, adverse events with a probable causal link to the Oxford/AstraZeneca vaccine. The rate of adverse events is often below 1% - in EU it is 0.3% (European Medicines Agency, 2022[32]) and in Canada 0.6% (Government of Canada, 2022[33]). This has contributed to declines in trust in the pharmaceutical industry as a whole, with most countries populations showing a decline in trust in the pharmaceutical sector from 2020-2021 (see Figure 2.2). In countries such as Austria, Germany, and France, trust in pharmaceutical companies declined by 15% or more.

## Figure 2.2. Trust in pharmaceutical companies declined in the midst of the COVID-19 response

Percentage change in trust in pharmaceutical companies from Apr/May 2020 and Feb/Mar 2021




Note: The data show the mean for respondents in the EU27 when asked: Please tell me how much you personally trust each of the following institutions? Pharmaceutical companies. Trust is measured on a scale of 1 to 10, where 1 means that you do not trust at all, and 10 means that you trust completely.
Source: Eurofound, Living, working and COVID-19 dataset, Dublin, http://eurofound.link/covid19data (Eurofound, 2022[6])

### Box 2.2. Using independent research to counter COVID-19 vaccine hesitancy in the Czech Republic

In the Czech Republic, several studies have been published on vaccine hesitancy, COVID-19 side effects of vaccines, which showed high vaccine hesitancy among both the general public and health professionals, and relatively common but not serious problems in terms of side effects, e.g., redness at the injection site, muscle pain, headache ( (Riad et al., 2021[34]; Klugar et al., 2021[35]; Riad et al., 2021[36]).

A team from Institute of Health Information and Statistics together with team from Masaryk University registered the independent global study with aim to increase knowledge about the short and long term safety of vaccines against the COVID-19. The project took place as part of the "COVID-19 Vaccines Safety Tracking" (CoVaST) project, a global consortium of independent researchers and research institutions with the aim to bring independent evidence on COVID-19 Safety Tracking globally (Riad et al., 2021[37]). Given the independent nature and transparent design, such studies can suppressing vaccine hesitancy levels by enhancing public confidence in the vaccines.

The main aim of the project has been to assess the safety of COVID-19 vaccines in several target populations (healthcare workers, pedagogical workers and academics, university students, minors (up to 18 years old), senior citizens, and pregnant and breastfeeding women). Among the secondary aims is the exploration of any associations between the particular vaccine dose and side effects, the determination of the effectiveness of the vaccines, cross-comparison of the data across several countries in the world, across several target groups, and across the vaccine types4.

To improve transparency and public communications, many countries have increased capacity for communicating data with the public, for example through dashboards or other online systems. The pandemic increased the need for timely data including new systems to analyse and report data so that information could be quickly communicated and utilised by policy makers and stakeholders, including the public (Barbazza et al., 2021[38]). All 24 countries that responded to the 2021 survey reported that new mechanisms for reporting and analysing timely personal health data were established (de Bienassis et al., 2022[39]).

Both the safety signal and the different responses of public health bodies around the world undermined public confidence. In order to promote public trust in new and existing medicinal products (including vaccines), it is essential that governments demonstrate that no quality or safety standards were compromised for the sake of speedy development and approval processes (OECD, 2021[8]) As part of this, regulatory bodies have shown increased openness and capacity to conduct rapid assessment of patient-reported suspected adverse reactions after vaccination.

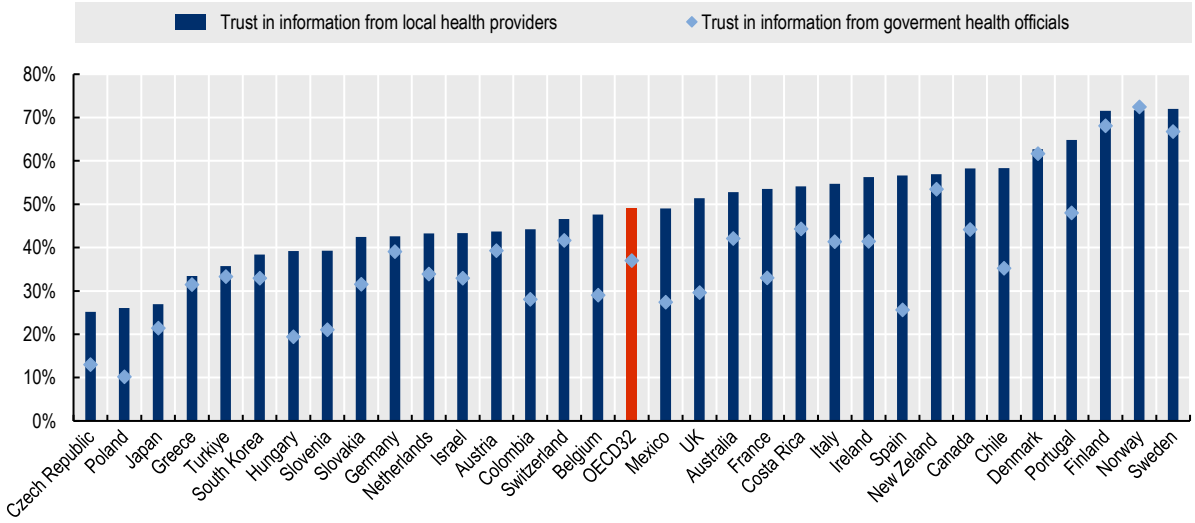
As part of the National Plan for Patient Safety 2021-2026 (NPPS 2021-2026) in Portugal a new Patient Safety reporting system (The NOTIFICA) has been created for notification and management of incidents related to the provision of health care in the Health System, in which the citizen or health professional can report incidents. This system is confidential, anonymous, and non-punitive, and aims to promote learning from error and the consequent implementation of improvement actions.

Trust in information from government health officials is often lower than information from local health providers—though both could be improved. Using data from the COVID-19 Trends and Impact Survey (CTIS), on average across OECD countries only 37% of responding individuals reported having trust in COVID-19 related information from government, this figure increases by over 10 percentage points (49%) when it comes to trust in information from local health providers (see Figure 2.3). This divergence shows

[4] https://www.med.muni.cz/covast/publications

the importance of engaging in safety governance mechanisms that reach, and effectively enable, frontline health workers and staff.

### Figure 2.3 In most countries, people place more trust in COVID-19 information from local healthcare providers than from the government health officials




Note: Trust in information from local health providers: respondent more likely to get vaccinated if recommended by local healthcare workers or doctors and other health professionals they go to for medical care. Trust in information from government health officials: respondents more likely to get vaccinated if recommended by government health officials.
Voluntary Facebook based random survey, data collection period Jan 2021 – December 2021, sample almost 30 million responders.
Source: COVID-19 Trends and Impact Survey (CTIS) (Fan et al., 2020[10])

As countries work to restore trust in and strengthen the regulatory systems that may have been affected by COVID-19, there are opportunities to improve governance practices at all levels of health care delivery. Moreover, there is a need for comprehensive monitoring and reporting of both the benefits, harms, and levels of uncertainty. Research has increasingly dismissed the notion that presenting evidence as uncertain or being open about what is not yet known leads to a loss in trust (van der Bles et al., 2020[40]). Moreover, withholding information, however tentative, has been shown to lead to mistrust, as documented widely during the pandemic and other crises. Communicating uncertainty is therefore important and necessary to prevent and curb misinformation. In this respect, trust can be rebuilt through good communications strategies, while dually transparent about the degree of certainty about any claims, levels of risk, and margins of errors of shared data on safety. Finally, lessons learned in relation to communicating about COVID-19 can be applied to medication safety—including access to publicly available data and transparent reporting.

### *2.1.1. New policies for sharing more timely, useful health related information have been implemented rapidly*

The COVID-19 pandemic has highlighted how a lack of clear information and timely data can cause uncertainty in decision-making and foster mistrust among the population. Ensuring the availability of timely and granular open-source data on key issues, such as the number of people vaccinated, the number of doses administered, geographical coverage, and the number of people experiencing adverse reactions, has been used to facilitate data analysis and dissemination (OECD, 2021[8]).

To respond to increasing public demands for immediate, easily understandable information, dashboards have been used as a key communication tool for sharing COVID-19 related data to the public in most OECD countries and these are generally updated daily and accessible to the public (de Bienassis et al., 2022[39]; Ivanković et al., 2021[41]) The pandemic increased the need for timely data, including new systems to analyse and report data, so that information could be quickly communicated and utilised by policy makers, stakeholders, and the public. All 24 countries that responded to the 2021 survey reported that new mechanisms for reporting and analysing timely personal health data were established (OECD, 2022[42]). The Czech Republic developed a special reporting system for evaluation of impact of COVID 19 epidemic on healthcare systems. Data from this reporting system has been used to support data-based decision making (Komenda et al., 2020[43]; Komenda et al., 2022[44]; Komenda et al., 2022[45]), analyses on risk factors of severe COVID-19 (Jarkovsky et al., 2021[46]) and examine vaccine effectiveness (Šmíd et al., 2022[47]) (Berec et al., 2022[48]).

In COVID dashboards, countries usually report tests, cases and deaths but in some cases, other indicators are also reported. Canada developed a COVID dashboard and interactive tool on excess mortality, and an international interactive data map of COVID-19 cases by country for international benchmarking. A Health Inequalities Improvement Dashboard in England (United Kingdom) will contain expanded datasets where there is currently a relative scarcity of information, e.g., for people experiencing post-COVID syndrome (NHS, 2021[49]).

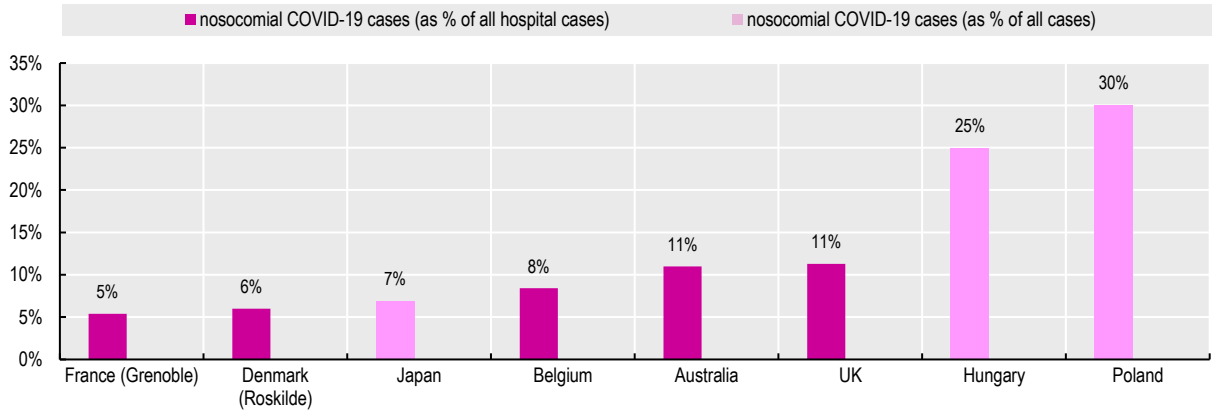
### *2.1.2. Few COVID-19 related safety indicators have been adopted, and in many cases patient safety measurement was not sustained*

*Measurement of healthcare acquired COVID-19 is not systematic, but findings show the scope may be substantial.*

With previous novel coronavirus infections, such as SARS and MERS, the healthcare setting has been identified as a major source of new infections (Chowell et al., 2015[50]). The same has been the case for COVID-19, where there have been systematic challenges in preventing hospital acquired COVID-19 infections during the acute phases of the pandemic—with some studies showing that over 30% of total COVID infections being acquired in the hospital setting during certain periods (see Figure 2.4). The risk of transmission in the hospital setting depends on a number of factors, including prolonged exposure, inadequate hand hygiene and PPE, insufficient spacing, and lack of negative pressure or insufficient ventilation (Ferioli et al., 2020[51]).

During COVID-19, many health systems countries lacked the needed resources to control the spread of COVID-19 in the LTC or hospital setting. In the United States, CMS reported that 13% of nursing homes did not have a one-week supply of N95 masks or a one-week supply of gowns, using data from July 2020 (CMS, 2020[52]). Over 3,000 nursing homes reported having no supply of N95 masks, and 1,000 nursing homes reported having no supply of surgical masks during the same time period (CMS, 2020[52]). Shortages of PPE were reported in many other OECD countries, including France, Italy, Spain, and the United Kingdom (Togoh, 2020[53]). Lack of staff and other capacities also had an impact, this is discussed further in section 2.5).

### Figure 2.4. Many healthcare settings in OECD countries were not able to prevent the spread of SARS-CoV-2 infections




Source: France: (Landoas et al., 2021[54]) Jan 2020- May 2020; Denmark: (Christian N. Meyer, 2020[55]) Mar 2020- Dec 2020, Japan: (Tani et al., 2020[56]) Feb 2020 – Apr 2020, Belgium: (Claes et al., 2021[57]) Mar 2020 – Mar 2021, Australia: (Sutton et al., 2021[58]) Jan 2020- Nov 2020, UK: (Read et al., 2021[59])Jun 2020 – Feb 2021, Hungary: ((n.a.), 2020[60]) until Jul 2020, Poland: ((n.a.), 2020[61]) until Apr 2020.

Determining whether the infection is health care or community acquired is presented with many measuring challenges, so the numbers represented in Figure 2.4 should be interpreted with caution, and the reality may be even higher. In many cases there was also no systematic evaluation post-discharge to determine whether the patients acquired the infection in the hospital and developed it only after the discharge (Melançon et al., 2022[62]). Likewise, community level-testing has lagged behind the testing capacity available in clinical settings, leading to the possibility of underestimates of community transmission. While many countries implemented testing at admission, only few had routine testing of asymptomatic patients during the course of hospitalisation. Additional measurement challenges concern the ambiguousness of the incubation period, as some studies include only specific number of days (ex. 5) and not the official WHO guideline of 1 to 14 days (WHO, 2020[63]). Furthermore, the detection of cases was impacted by testing availability and false negatives, especially at the beginning of the pandemic (Read et al., 2021[59]).

#### *In several cases, routine quality and safety measurements were paused and safety reporting decreased*

While data in many cases was increasingly open and transparent, this was offset by a decrease in reporting of routine quality and safety measures, particularly those generated through manual abstraction. In the United States, for example, CMS made most quality measure reporting optional for the first half of 2020 (Matthew Austin et al., 2020[64]). In the UK, Care Quality Commission stopped routine on-site inspections of the GP practices to reduce the burden on primary care, only risk-assessments were kept (NHS, 2021[65]). Additional findings from the UK show a drop in reporting rates since the beginning of the COVID-19 pandemic, most likely due increased staff pressure (Institute of Global Health Innovation, 2022[66]).

These decisions reflected the urgent need to focus all resources on surge preparation; however, they also created a blind stop in terms of how well countries were able to maintain safe and high-quality care during the pandemic.

## 2.2. Accountability was tested by COVID-19

Accountability in TAPIC refers to explanation and sanction. It is a relationship where actors have to inform and explain their actions to others and can be mandated and sanctioned (Greer, Wismar and Figueras,

2016[22]). In patient safety, accountability is a necessary compliment to governance functions emphasising learning and transparency. In the absence of accountability, adverse event reporting is not expected to yield considerable improvement. Accountability can help to uphold public trust in health care by establishing responsibilities, minimum standards, and compliance. Accountability can be clinical, professional, legal, financial, political or ethical, depending on how or by whom it is enforced. In the COVID-19 context, accountability refers to maintaining performance on safety indicators (both COVID and non-COVID related) and new developments in public reporting/financial incentives and contracting terms.

### *2.2.1. Maintaining safety measurement is challenging … pandemic or no pandemic*

*COVID-19 patients were particularly vulnerable to healthcare-associated infections (HAIs)*

Not only did the spread of COVID-19 need to be controlled in the hospital context (see Section 2.1.2), but COVID-19 patients also experienced particular vulnerability to HAIs, perhaps due to prolonged hospitalisations, challenges in maintaining staffing levels, and requirements for ventilation. Examples from Denmark, France, Greece, and the United Kingdom found that COVDI-19 patients were between 4% and 35% more likely to experience HAIs during their hospitalisation than non-COVID-19 patients (see Table 2.1).

In some cases, over 40% of COVID-19 patients developed a bacterial or fungal HAI during their ICU stay (Bardi et al., 2021[1]). In France, findings showed that the risk of acquiring a bloodstream infection was higher for COVID-19 as compared to non-COVID-19 patients treated in ICUs (Buetti et al., 2021[67]). Findings from New Jersey in the United States showed that patients with severe COVID-19 and bloodstream infections had a more severe initial presentation, longer hospital length-of-stays, and worse clinical outcomes than non-COVID patients (Bhatt et al., 2021[68]). Studies have likewise identified particularly high rates of HAIs in COVID-19 patients in Italy (Grasselli et al., 2021[69]).

**Table 2.1. COVID-19 patients typically experience higher rates of hospital acquired infection than non-COVID patients**

| Country | Absolute difference in HAI prevalence | Relative difference | Sample | Source |
|---|---|---|---|---|
| Denmark | 4% | 1.3% vs 5.3% | 227 COVID-19 positive patients, 2097 non-COVID-19 controls (singular hospital) | (Engsbro et al., 2020[70]) |
| France | 11.5% | 3.4% vs 14.9% | 235 COVID-19 ICU patients and 235 non-COVID-19 controls | (Buetti et al., 2021[71]) |
| Greece | 11.8% | 21.6% vs 33.4% | 1793 blood samples from COVID-19 positive patients, 1481 blood samples from pre-COVID-19 period | (Protonotariou et al., 2021[72]) |
| UK | 35% | 13% vs 48% | 81 COVID-19 ICU patients and 144 non-COVID-19 controls (singular hospital) | (Maes et al., 2021[73]) |

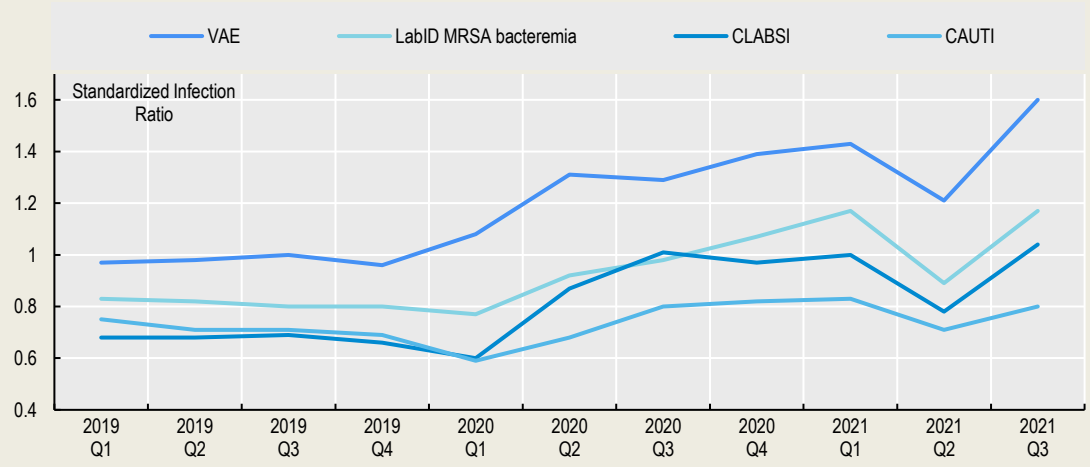
Note: Greece: patients admitted in Sep – Dec 2019 vs Sep-Dec 2020.

### Box 2.3. COVID-19 impact on healthcare-associated infections in the United States

Data availability on healthcare-associated infections (HAIs) during the COVID-19 pandemic is generally scarce. One of the exceptions is data published by Centre for Disease Control in the US. Findings showed a positive reduction of some hospital acquired infections, specifically, Clostridium difficile (C. diff), most probably due to hand hygiene, personal protective equipment practices and more rigorous cleaning. Conversely, the nature of COVID-19 infections brought the increase in the ventilator-associated events across all infection types. Compared to the same period in 2019, standardized infection ratios of ventilator-associated events were 51% higher in the beginning of 2021 and 60% higher in the third quarter of 2021, when the hospitalisations increased due to delta variant (Lastinger et al., 2022[74]). 2020 and 2021 data also showed an increase catheter-associated urinary tract infections the data showed a 65% increase in ICU patients, while the select inpatient wards saw only a 16% increase. In the third quarter of 2021 standardized infection rates of ventilator-associated events, laboratory-identified methicillin-resistant Staphylococcus aureus bacteraemia and central-line-associated bloodstream infection were higher than the 2015 baseline

Several other factors influenced the prevalence of HAIs, such as changes in hospital practices and changes in the hospitalized population. Due to concerns about COVID-19, an estimated 41% of adults had delayed or avoided medical care by June 2020, and 12% avoided or delayed emergency care (Czeisler et al., 2020[75]).

### Figure 2.5. Changes in select HAI types in comparison to the 2015 Baseline




Note: SIR – Standardized Infection Ratios, VAE – Ventilator-associated events, LabID MRSA bacteraemia - Laboratory–identified methicillin-resistant Staphylococcus aureus bacteraemia, CLABSI – Central-line–associated bloodstream infection, CAUTI - Catheter-associated urinary tract infection.
Source: (Lastinger et al., 2022[74])

*Patient safety declined overall declined over the course of the COVID-19 pandemic so far*

The occurrence of HAI during the COVID-19 pandemic has had variable results and is influenced by several COVID and non-COVID related factors. Many countries postponed non-emergency surgeries in 2020 as a COVID-19 response measure, leading to reductions in surgical volumes and hospitalized patients. The number of hip replacements fell by 16% in 2020 compared with 2019 across 27 OECD countries and knee replacements fell by 26% (OECD, 2022, Forthcoming[76]).

This may explain reductions in safety events in some countries which are able to report 2020 data (OECD, 2021[77]). In addition, the COVID-19 pandemic has seen a decrease in testing for HAIs. The number of tested blood samples in a hospital in Spain have decreased by 22.7% and 18.8% of decrease, compared to 2019 and 2018 respectively (Mormeneo Bayo et al., 2022[78]), with the highest decreases seen in emergency and surgical departments and the lowest in ICU. In a number of instances there were policies implemented to reduce the time staff spent with COVID-19 positive patients, some hospitals decreased the amount of samples collected in ICUs (Sturdy et al., 2020[79]).

Findings from the UK show a decline on several common patient safety performance measures. Between 2019, the rate of adult patients whose death related to Venous thromboembolism (VTE) within 90 days of discharge from hospital increased from around 57 per 100,000 hospital admissions to 99 deaths per 100,000 hospital admissions by 2020/21 (Institute of Global Health Innovation, 2022[66]). Recent increases have also been observed regarding rates of C. difficile infection, which have risen from 38 cases per 100,000 bed days in 2019/20 to 45 cases per 100,000 bed days in 2020/21. MSSA infections, a type of staph infection, also increased from 35 to 42 cases per 100,000 bed days between 2019/20 to 2020/21 (Institute of Global Health Innovation, 2022[66]).

Scarcity of resources and emergent nature of the pandemic have brought changes to ICU practices, which may have reflected negatively on the safety procedures. For example, limitations at St George's hospital in UK led to a number of new challenges related to safety risks including decrease in bed space per patient (from 25.5 m2 to 7 m2), number of ICU-trained staff per patient (from 1:1 to 1:4/1:6 plus variable number of non-ICU trained staff), hand hygiene protocol changes5 (Sturdy et al., 2020[79]). When the pandemic hit, all available workforce was engaged on COVID-19 wards and some time-sensitive tasks were delayed or stopped, including safety incidence reporting. In Italy the amount of incidence reports decreased substantially, especially in COVID-19 wards (Pauletti et al., 2021[80]). Even though actions to counteract the decrease in safety standards have been undertaken, increases of HAIs have still been observed in many circumstances.

Findings from the Czech Republic using data from the National Adverse Event Reporting System from inpatient health care providers revealed that the occurrence of adverse events did not decrease during the pandemic years, as compared to previous years—as might have been expected[6]. Pressure injuries (PIs) increased in 2020 as compared to 2010-2019 in hospitalized patients. COVID-19 patients were more likely to experience PIs, as compared to hospitalized patients without COVID-19 (2.62% vs 0.81%) (Pokorná et al., 2022[81]).

Findings from the United States showed that as volumes began to return to the pre-COVID baseline, a steady increase of health care acquired condition rates were reported per 10,000 adult discharges (Halverson et al., 2022[82]). Overall, major declines in performance have been observed in a number of patient safety indicators since the onset of the pandemic, including increases in central-line–associated bloodstream infections, catheter-associated urinary tract infections, ventilator-associated events, and resistant staph infections (Fleisher et al., 2022[83]; Patel et al., 2021[84]; Baker et al., 2021[85]).

### *Maintaining safe care for non-COVID conditions*

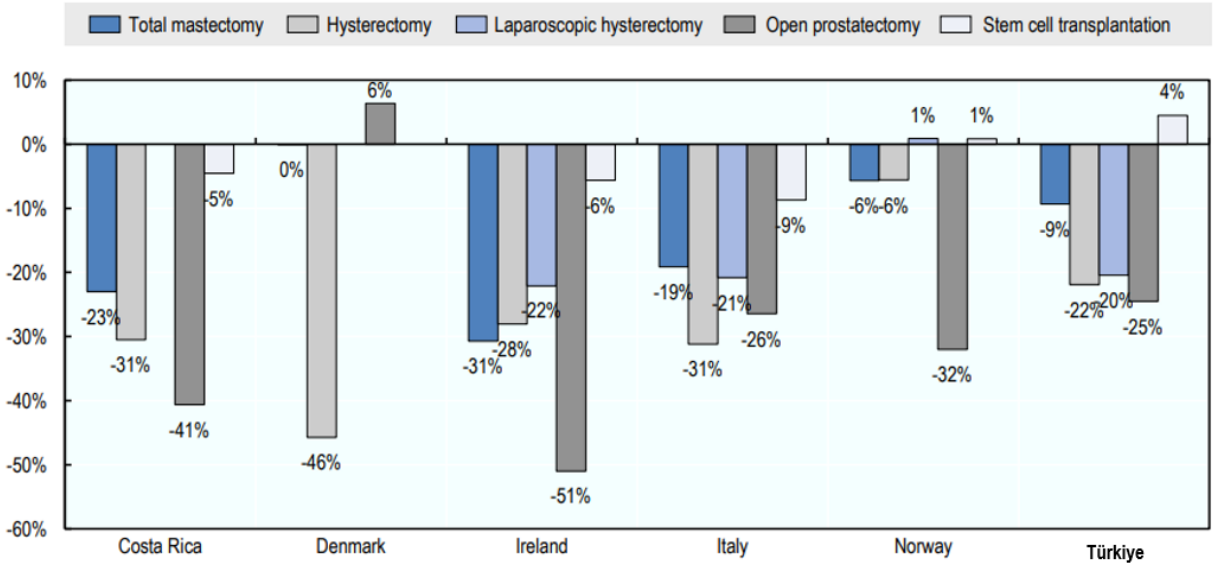
Lack of timely care can lead to serious safety risks for those with ongoing health care needs as delays in treatment can cause patient harm. Research from Israel, for example, found that during COVID patients with acute appendicitis presented at the hospital with more advanced appendicitis (so arriving later) and had a longer length of stay (Bickel et al., 2022[86]). Likewise, heart failure patients in the United Kingdom were found to present to the hospital during the COVID-19 pandemic with more severe symptoms

[5] Before the pandemic ICU protocols required for all staff to have hands bear below the elbow. During pandemic healthcare workers wore gowns up to their wrists that were changed after every session with the patients, but only over-aprons and gloves were changed between each patient.
[6] shnu.uzis.cz

(Bromage et al., 2020[87]). Both examples may indicate lapses in timely, care—which can contribute to patient harms and poorer outcomes.

Harm during care has likely also been experienced due to delays or skipping of in treatment. The number of cancer-related procedures declined in almost all six OECD countries which reported 2020 data before August 2021 (see Figure 2.6). Radiotherapy and chemotherapy appointments decreased in a number of countries, including France, Ireland, Spain and the United States (Fujisawa, 2022[88]). Delayed cancer diagnoses are likely to result in poorer cancer outcomes in the near future, and initial data in some countries reveals a worsening stage distribution for cancer patients. Available signals reveal that there may have been serious lapses in diagnostic safety. Poor timeliness in diagnosis is a key factor in the definition of diagnostic errors, i.e. the "failure to establish an accurate and timely explanation of the patient's health problem(s) or communicate that explanation to the patient" (Singh, Graber and Hofer, 2019[89]). The biggest Australian lab chain has encountered a 17.8% drop in the number of histopathology samples tested in Victoria region in early 2022 compared to previous years. It is estimated that in this region 1000 melanomas, 650 breast cancers and 650 bowel cancers have not been diagnosed. (Deam and Nazaretian, 2021[4]).

## Figure 2.6. Most of the countries provided less cancer-related surgeries in 2020 than previous years

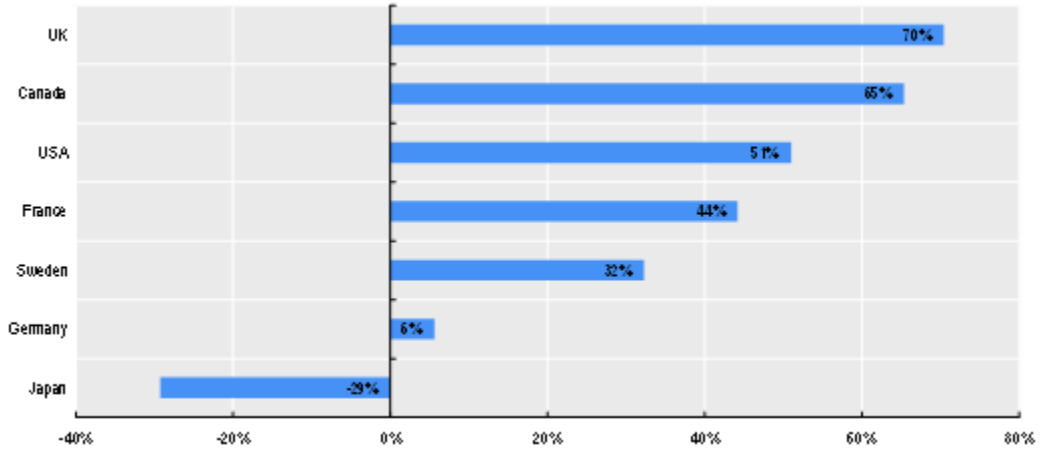



Note: The number of procedures per 100 000 population in 2020 is compared to the average number of procedures per capita between 2017 and 2019. For Türkiye, 2020 data is compared to the average for 2018 -2019. 2020 data for Italy and Türkiye are provisional. Hysterectomy for Denmark refers to vaginal hysterectomy.
Source: (Fujisawa, 2022[88])

In many countries access to healthcare providers has decreased during the COVID-19 pandemic. As shown in Figure 2.7, between March and June 2020, the amount of participants in the UK who were not able to see a healthcare provider at all or every time they needed to increased by 70% compared to December 2019 through February 2020. Fear of COVID-19 has also played a role in restricted access. The same study has shown that 3-10% of those who needed to see a healthcare provider were unable to do so due to fear of acquiring COVID-19 between March to June 2020 (Institute for Health Metrics and Evaluation (IHME), Bill and Melinda Gates Foundation (BMGF) and IPSOS, 2021[90]). As part of a rapid analysis, Gesundheit Österreich (GmbH) in Austria examined developments in health care provision,

finding a reduction of inpatient stays in cardiology, oncology and paediatric care the months of March to May 2020 compared with the previous year[7].

### Figure 2.7. The percentage of people who reported they could not access health care increased in most countries between Dec 2019 – Feb 2020 and Mar – Jun 2020




Source: (Institute for Health Metrics and Evaluation (IHME), Bill and Melinda Gates Foundation (BMGF) and IPSOS, 2021[90])

Many countries struggled in maintaining safe care for patients living with chronic health conditions during the pandemic. This has been evidenced by increasing rates of adverse events, in some cases caused by delays or lack of access to care. Only one-in-three people with diabetes in England received all their recommended checks in 2020-21 (The Guardian, 2022[91]). This may have an impact on downstream outcomes for diabetic patients. While rates of health checks among diabetic patients in the UK have increased since the start of COVID, they remain lower than pre-pandemic values. (Carr et al., 2022[92])

Lower access and use of health care have in cases led to poorer health outcomes. For example, research from a hospital the Netherlands found that the lockdown during the COVID-19 pandemic resulted in a significant increase in the number of major amputations (Schuivens et al., 2020[93]).Research from the US found that that the odds of undergoing amputation was over 10 times higher during the pandemic versus before the pandemic—and the likelihood of a major amputation (as opposed to minor) also increased (Casciato et al., 2020[94]). However, combined with general declines in elective surgery, shorter term findings have not always had consistent results. For example, there was not a clear change in amputation rates during the first year of the pandemic observed in the Ontario province (Canada) (De Mestral et al., 2022[95]).

Delayed care had a severe toll on the youngest. One of many negative effects was an increase in diabetic ketoacidosis in children and young adults. Compared to pre-pandemic period, presentation of this complication increased by 47 percentage points in Australia (Lawrence et al., 2020[96]), by 18.6 percentage points in Canada (Sellers and Pacaud, 2021[97]), and 20.2 percentage points in Germany (Kamrath et al., 2020[98]). Possible reasons for the delay of care are reduction in medical services, and fear of approaching the health care system during the pandemic. Significant drops in use of the emergency department have been observed in paediatric patients. Even though partially it is attributed to lower rate of injuries, parts of Italy saw decreases between 73-88% of emergency department use for children, with fear of COVID-19 infection being cited by parents as the main reason for avoidance (Lazzerini et al., 2020[99]). A UK-based

7 https://jasmin.goeg.at/1507/1/Auswirkungen%20Lockdown_Covid19_G%C3%96G_bf.pdf

interview study has shown that the predominant reason for caregivers to delay care was fear of acquiring COVID-19 (Watson et al., 2021[100]). Delayed care due to fear of COVID-19 has also been identified as a significant contributor to safety incidents in France (Fournier et al., 2021[101]).

### *2.2.2. Countries paused financial incentives and contracting terms during the pandemic*

Based on survey data published in 2020, two-thirds of responding countries use financial incentives and penalties in safety governance, and 16/25 responding countries tie these indicators to safety outcomes or routine reporting of patient safety indicators. Many countries have lifted the limits on funding in some areas of care related to COVID-19. The UK's suspension of financial incentives programs correlated with patient safety indicators (Lewis et al., 2020[102]). A number of value-based purchasing programs in the United States coordinated by the Center for Medicare & Medicaid Services (CMS) paused the use of financial penalties in response to the COVID-19 pandemic. This included the pausing of all measures in the Hospital Acquired Condition Reduction Program and the pausing of financial penalties for poor performance in fiscal year 2023 (CMS, 2022[103]).Other countries switched the mode of payment, mostly to salary and budget based, where indicators were no longer considered (Waitzberg et al., 2022[104]). This was done to cover the loss of income incurred by the pandemic and maintain the provision of care, but removal of quality indicators has been a secondary outcome.

In the context of COVID-19, it makes sense for penalty schemes to be relaxed temporarily and replaced by initiatives to support services that are struggling with maintaining safety standards. These support programs would ideally be coupled with close supervision to help drive improvement, for example through collaborative interventions connected to resourcing and monitored with timely data.

Many countries updated contracting terms to increase COVID-19 vaccinations. The UK has increased payments for vaccination appointments across several providers, including pharmacies and primary care practices (NHS England, n.d.[105]).

### Box 2.4. Flexible regulation in health and social care – a new strategy for the English Care Quality Commission

The Care Quality Commission (CQC), the independent regulator of health and social care in England, has issued a strategy for consultation built on four themes:

- **People and Communities**: new ways to gather experiences, record and analyse them will be identified. This way, changes in the quality of care can be more easily detected, facilitated by a new assessment framework, designed to enhance trust among the public.
- **Smarter Regulation**: the intent is to regulate in a more dynamic and flexible way to reflect the anticipated – and non-anticipated – changes.
- **Safety though learning**: Stronger safety and learning cultures are prioritised and at the centre of a better quality service delivery in health and care. The CQC particularly wants to focus on types of settings with greater risk of a poor safety culture being unrevealed to understand, address and improve safety. Services will have to respond to targeted concerns on the measures taken to learn and improve safety. This information will be shared with the public.
- **Accelerating improvement**: The new strategy aims at the establishment and facilitation of national sector-wide improvement coalitions with a broad spectrum of partners (including representatives of services users) to collaboratively work on better policies and practices to ensure better availability of support, both nationally and at a local system level.

Source: (OECD, 2021[11])https://www.cqc.org.uk/get-involved/consultations/world-health-social-care-changing-so-are-we ; https://soundcloud.com/carequalitycommission/cqc-strategy-2021-our-public-consultation; https://carequalitycomm.medium.com/changing-how-we-regulate-to-improve-care-for-everyone-7accf34d30c1 https://www.cqc.org.uk/getinvolved/consultations/world-health-social-care-changing-so-are-we.

## 2.3. Stakeholder participation underwent a metamorphosis… health services had no choice

Participation is a crucial element of governance referring to the inclusion of all affected actors in decision-making to maximise efficacy. It enables the gathering of information from different stakeholders, thereby facilitating the design of more effective policies and ensuring legitimacy and ownership needed for successful implementation (Greer, Wismar and Figueras, 2016[22]). This is especially important in the context of health care and its tradition of self-regulation, where there is limited effectiveness of controls given the magnitude of patients, medical professionals, and the diversity of medical diagnoses and treatments. For this reason, substantial engagement with health care providers and patients is required at all levels of care. Participation can involve functions such as patient representation in official roles and decision-making processes, reviewing safety by boards of health care-providing organisations, system reports by an agency responsible for patient safety to government, or patient reported incident monitoring.

### *2.3.1. Stakeholder involvement in decision making still needs improvement*

A growing number of OECD countries consult stakeholders on at various stages of health system governance processes. However, cross-sector findings show that public consultations are normally passive and could benefit from a more proactive approach. For instance, recent findings on OECD countries governance mechanisms finds that eight member states systematically inform stakeholders by e-mail about consultations, while a further 20 countries do so occasionally (OECD, 2021[24]). In general, countries still need to improve how they treat stakeholder input. Showing how comments have influenced the policy development helps to engender a feeling of ownership and trust in the proceedings. While most

OECD countries make stakeholders' views publicly available in some way (via interactive websites, summary of comments, etc.), half respond to all comments or those they consider more relevant (OECD, 2021[24]). Methods for gathering and incorporating stakeholder inputs still requires substantial development on all levels of patient safety governance.

Involvement of civil society in decision making during the pandemic has been mostly present in international organisations (World Bank, n.d.[106]) (Global Health Summit, 2021[107]). Involvement of stakeholders, especially frontline workers, was sometimes used by governmental organisations to better understand the nature of the COVID-19 impact. In Canada, for example, a number of family physicians were documented as taking on pandemic related leadership roles (Mathews et al., 2022[108]). advisors (Lavazza and Farina, 2020[109]). In Portugal, the development of the National Patient Safety Plan 2021-2026, involved the active collaboration and participation of all the health care facilities and institutions, namely the 5 Regional Health Administrations and the Central Administration of Health Systems, National Authority of Medicines and Health Products, and the Information Systems Area, among others The Plan was developed through triangulation methodology and followed-up by an advisory body of experts. This was made through a collaborative approach with academic institutions and with participation of different stakeholders.

Nevertheless, in many cases due to the rapid development of the pandemic and the need for fast decision-making, there was no proper stakeholder engagement, instead governments utilised the pre-existing structure of Despite inadequacies, the speed at which policies were introduced or adapted to deal with the pandemic suggests that with sufficient will, there is potential to progressively strengthen a people-centred agenda.

*Patient engagement in decision making has been even less integrated into routine health system management… and some legislation is aiming to address this.*

Health system responses to the COVID-19 pandemic in 2020 and 2021 have largely lacked patient-centeredness, revealing a lack of deeply-embedded people-centred policies in OECD health care systems. The absence of formal patient representation in health decision making was largely absent as countries needed to make rapid decisions to contain the spread of the virus, such as measures restricting mobility and measures implemented in hospitals and long-term care settings. For example, among 57 patient organisations in Europe, nearly two-thirds indicated that there was no patient involvement or consultation in management and decision-making processes during the pandemic (OECD, 2021[110]).

The role of family and caregiver supporters in medical care extends beyond a comforting presence—they are essential partners in patient safety. Severely restricted visitation policies—often developed without patient involvement—have been criticized as incompatible with family-centred care, particularly for vulnerable patients, including children, LTC, residents, and those at the end-of-life. Restricted policies were implemented in most countries and health care sectors, and supported by WHO recommendations in the context of maintaining essential health services only (Jensen et al., 2022[111]; Fiest et al., 2021[112]; WHO, 2020[113]; Hugelius, Harada and Marutani, 2021[114]).

Family and caregivers are essential members of the care team, who often play an important advocacy and safety roles for their loved ones in health care settings. Family and care givers are relied on to provide medical and medication information, help in the coordination of transitions in care, and document, question, and verify medical decisions. The idea that family and caregivers make care safer is supported research findings showing that their presence improves patient safety—even during COVID-19 (Gandhi, 2022[115]).

Research from the Netherlands found that restrictive visitation policies severely impacted the well-being of older long term care residents, resulting in high levels of loneliness, depression, and an increase in staff reports of mood and behavioural problems (Van der Roest et al., 2020[116]). Evidence from Canada showed

examples of psychological and moral distress, mental health issues, the worsening of health conditions, concerns for patient safety and communication lapses (CFHI, 2020[117]).

A study of 32 hospitals in the United States found that hospitals with closed visitation policies during COVID saw reductions on their performance with regard to patient ratings of medical staff responsiveness, fall rates and sepsis (Silvera et al., 2021[118]). Other assessments, comparing safe-prescribing practices before versus after restricting visitation in hospitals due to COVID, found that the presence of caregivers impacts use of potentially inappropriate medications among older adults (Brown et al., 2022[119]). Finally, a review of visiting restrictions imposed during the COVID-19 pandemic have had numerous negative consequences for both patients and family members (Hugelius, Harada and Marutani, 2021[114]).

In some cases, the fear of limited visitor policies contributed to avoidance of care. This has been documented as a concern for maternity care for example, where patients took on physical risks in response to concerns of labouring and birthing without needed support (Altman et al., 2021[120]). Finally, the enforcement of severely restricted visitation policies has also had an impact on health care worker outcomes, including psychological distress and injury (Andrist, Clarke and Harding, 2020[121]).

In the case of COVID-19, facing the unknown threat, and high levels of hospital transmission, some level of restrictions were warranted. However, reflections on the COVID experience suggest that the restrictions may have been too strict and prolonged in cases, potentially causing more harm than good. There have been a number of legislative changes implemented to prevent this in the future, and in some cases hospital visiting protections are now being seen as a civil rights issue. For example, legal reforms have been made to ensure that patient rights are protected in times of crisis. In the US, several states have recently passed 'no patient left alone' acts (Sudai, 2021[122]). Some laws, like those passed last year in New York and Texas, are specific to long-term care facilities. They allow residents to designate essential caregivers, also known as compassionate caregivers, who are allowed to visit regardless of whether there is a health crisis. (NPR, 2022[123]).

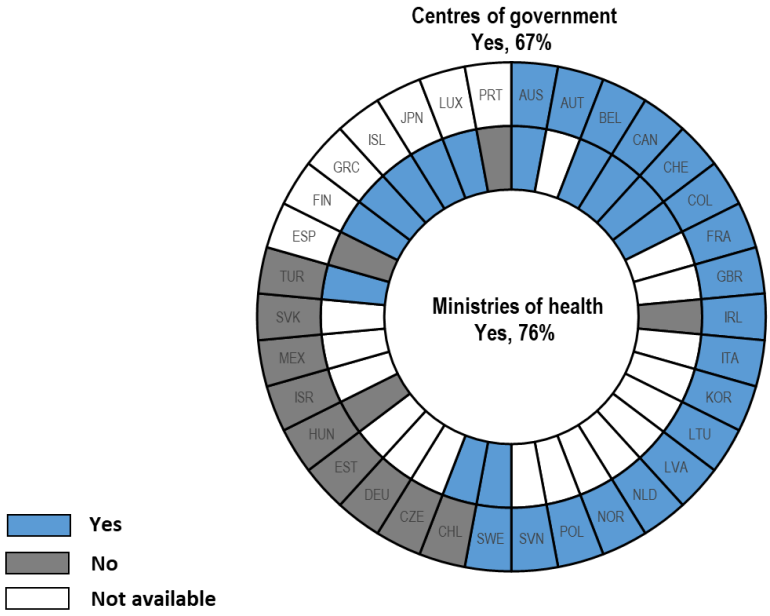
A number of countries are developing and implementing essential care partner policies and practices to support the re-inclusion of care partners in health care delivery. For example, the Essential Together program in Canada, is working to support the safe reintegration of care partners into health and care settings after COVID-19 related access disruptions such as blanket visitor restrictions (Healthcare Excellence Canada, 2022[124]). As countries implement reforms to adapt to COVID-19 responsive health systems, they will need to further strengthen their efforts to ensure safe, people-centred care.

### *2.3.2. Clinical governance and health systems management became more aligned in some cases*

A silver lining of COVID-19 has been that health and safety, and access to appropriate resources for safe care, has been recognized at all levels of health care policy—including national leadership. In Norway, for example, the Prime Minister noted in a newspaper interview that infection rates are the first thing she looks at when she wakes up, and the last thing she sees before she goes to bed (Deilkås and Bondevik, 2020[125]).

Recent OECD survey findings show that 18 out of 27 Centres of Government (CoGs) in OECD countries (67%) had defined crisis communication procedures, as did 13 out of 17 Ministries of health (MHs) (76%) (see Figure 2.8). CoGs' specific manuals or procedures include crisis communication frameworks (e.g., the United Kingdom's emergency planning framework), dedicated factsheets (the Netherlands), or sections on communication in wider crisis response plans (France) and frameworks (Australia and Belgium), acts (Switzerland and Luxembourg) and policies (Canada). In countries with no specific written criteria, some rely on adapting existing procedures, as in the Czech Republic, Estonia, and Mexico. In Australia, Austria, Belgium, Canada, and Germany, it is a shared responsibility between national and sub-national governments and is often – though not always – guided by CoG protocols or procedures.

## Figure 2.8. Availability of standard protocols or procedures to respond to crises in OECD countries, 2019




Note: Finland, Greece, Iceland, Japan, Luxembourg, Portugal and Spain provided data for MHs but not CoGs. Austria, the Czech Republic, Estonia, France, Germany, Israel, Italy, Korea, Latvia, Mexico, the Netherlands, Norway, Poland, Slovakia, Slovenia and the United Kingdom provided data for CoGs but not MHs. Data for Lithuania's Ministry of Health are not available. The outer ring shows the data for CoGs, and the inner ring the data for MHs.
Source: OECD (2020), Survey on Understanding Public Communication in Centres of Government (OECD, 2022[25])

While patient safety has been a constant problem/challenge for all healthcare systems, there are opportunities to develop new approaches adapting the policies put in place during the COVID-19 pandemic. It is not feasible to maintain such emergency approach for a sustained period time. Long-lasting, effective polices lessons from the pandemic need to must be designed in a way that they do not put ongoing strain on the system, especially on healthcare workers.

### *Maintaining health care workforce safety and well-being during the crisis has been a major challenge*

Emergency situations, often exacerbated by shortages of staff and supplies, can lead to challenges in maintaining safe and quality care. Staffing challenges have been particularly acute in addressing the needs of the COVID-19 pandemic. A large proportion of nurses and other health workers reported having been affected by mental health issues during the pandemic, such as symptoms of anxiety, depression, burnout and post-traumatic stress disorder (OECD, 2022, Forthcoming[76]). According to 2022 data from the US, surveying over 13,000 physicians, 47% reported feeling burned out and 21% reported suffering from clinical depression (IHI, 2022[126]). Between February 2020 and September 2021, the health care industry in the United States lost half a million workers (ibid).

The pandemic had a severe effect on both emotional and physical health of healthcare workers. A study in a hospital in Italy have found that 44% of voluntary health care professionals scored abnormally on assessing of anxiety, depression, or post-traumatic stress disorder (Priori et al., 2021[127]). In Spain, 25% of healthcare workers presented symptoms for acute stress disorder (Rodriguez-Menéndez et al., 2021[128]). Health care workers working at ICUs experienced significant moral distress during the COVID-19 pandemic in the Czech Republic via data from nationwide cross-sectional survey. The major sources

of distress included lack of time spent with patients, inconsistency of opinions regarding transition, practice of palliative care, and insufficient communication with patient's family and within the ICU team (Prokopová et al., 2022[129]).

The workload of healthcare workers has increased drastically during 2020 and 2021. Resource scarcity was one of the main reasons for emotional distress in Australia ( (Smallwood et al., 2021[130])). A study in Korea showed that most nurses had to perform duties out of their general duties, such as medical equipment management and cleaning (Cheong et al., 2022[131]).

The relationship between worker safety and patient safety has been well studied, and performance on related indicators is closely linked (de Bienassis, Slawomirski and Klazinga, 2021[132]). Improving worker well-being has intrinsic value, but it also lessens the costs of occupational harm (estimated at up to 2% of health spending) *and* contributes to minimising patient harm (estimated at up to 12% of health spending) (Slawomirski and Klazinga, 2022[133]). Safe, healthy, and happy workers are also more productive and contribute to better care quality more broadly.

## 2.4. Maintaining integrity throughout and after the pandemic will be key

Strong patient safety governance implies that roles and responsibilities are clearly defined in a culture based on trust and teamwork. The pillar of integrity is important at all levels of governance. Integrity is the concomitant of strong leadership and crucial in health care governance to ensure coherence of action (Greer, Wismar and Figueras, 2016[22]). Clarification of authority between the stakeholders is the prerequisite for efficient regulatory activity and further associated with better commitment of individuals in group settings. Governance functions associated with integrity include defining the roles and responsibilities of patient safety in national legislation, setting up national quality and safety agencies, and encouraging leadership, which promotes patient safety culture. As countries work to ensure integrity, they need to implement policies to support adaptive learning and control—embracing uncertainty and empowering workers to adopt practices to manage risk. This is further discussed in Section 3.

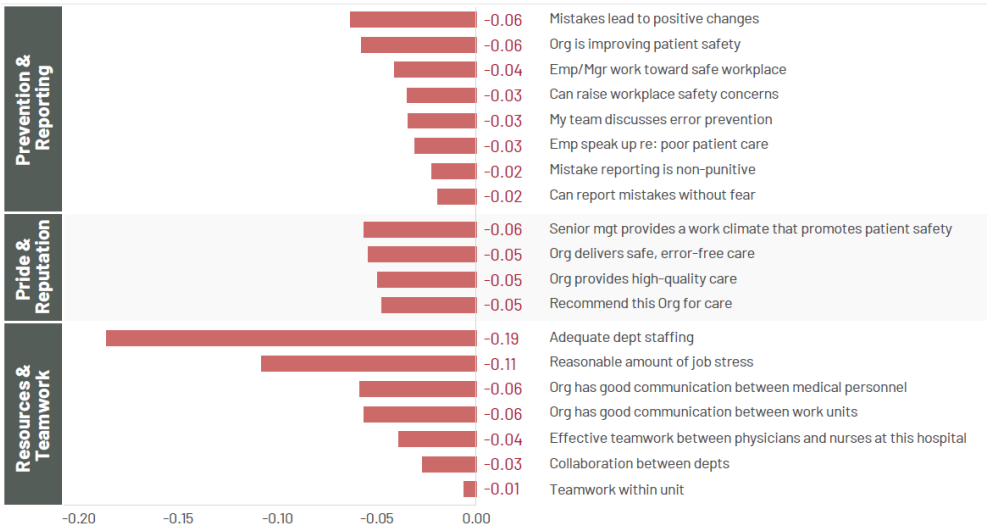
### *2.4.1. Ensuring a strong safety culture during the prolonged crisis was easier said than done*

Preliminary results find that many aspects of safety integrity have not withstood the stress of the COVID-19 pandemic. Many countries had trouble maintaining their routine high standards of care. In the United States, for example, across-the-board declines in safety culture have been observed between 2019 and 2021 (see Figure 2.9). For health providers using a Press Ganey tool to assess health performance, when comparing 2021 to pre-pandemic performance, there were declines in all domains, with the biggest drop in domains related to adequate department staffing and reasonable job stress. Similar findings have been observed in hospitals in Croatia and the UK (Brborović, Brborović and Hrain, 2022[134]; Denning et al., 2020[135]). Findings from the 2021 NHS staff survey showed that the percentage of staff agreeing that there are enough staff in their organisation to facilitate them doing their job properly decreased by 11 percentage points, from 38% in 2020 to 27% in 2021 (Nuffield Trust, 2022[136]). An international survey of health personnel deployed or redeployed to ICUs US, Netherlands, and Ireland in April and May 2020 found that staff perceived that the amount of supervision and the quality and safety of care were lower than usual (Hennus et al., 2021[137]).

To address these challenges, several countries have taken action. Portugal, for example, conducted awareness training sessions on patient safety and quality culture for the health care professionals (hospitals and primary healthcare institutions) in collaboration with Portuguese Association of Hospital Development during the crisis phases of the COVID-19 pandemic. Switzerland's quality strategy and the objectives of the Federal Council for 2022-2024 cites the establishment of a just culture and improving

governance as two of its three core system-wide objectives[8]. The same strategy document includes additional goals related to patient safety, including goals for the comprehensive implementation of clinical risk management systems at the level of individual service providers and at the national level.

### Figure 2.9. Safety culture among health workers in the United States has declined in recent years




Note: US health providers using Press Ganey Patient Safety Culture Questionnaire (2021 vs. 2019)
Source: (Press Ganey, 2022[138])

### *2.4.2. National-level reforms to legislation, organisation of governance and standards have been implemented*

*Reforms to safety regulation to protect health workers and patients have been implemented*

Many of the updates to policies and directives enacted on OECD countries with regards to COVID-19 and safe care related to suspensions of elective procedures. Modelling estimates suggest that approximately 70% of elective surgeries were cancelled in 12 weeks in 2020—totalling 28 million elective surgeries worldwide (Nepogodiev et al., 2020[139]) While the rationale behind these changes was in part to increase capacity to treat COVID-19 patients, another, complementary rationale was to reduce COVID-19 exposure to staff and patients. In Canada, changes to licencing and regulation have been used to increase health worker capacity—including changes to health worker scope of practice and increased use of virtual care (Mihailescu, Sim and Bourgea, n.d.[140]).

A prominent area of regulation change relates to the update of legal protections to reflect the hazard that health workers face in regard to exposure to COVID-19 in terms of classifications of occupational diseases. This is of significant importance due to recognition and preventability as it relates to the work environment, and the legal aspect that entitles workers to compensation. As of March 2021, COVID-19 was recognized as an occupational disease by international organisations, including the ILO, WHO, and EU (Sandal and Yildiz, 2021[141]). Even so, many countries have moved forward in developing new regulations classifying COVID-19 as an occupational disease, work accident, or otherwise providing compensation to those impacted (Sandal and Yildiz, 2021[141]).

[8] https://www.admin.ch/gov/fr/accueil/documentation/communiques.msg-id-87511.html

In Victoria, Australia, new legislation establishing a Duty of Candour requires health services to provide patients who have experienced safety events 1) a written account of the lapse independent of severity, 2) an apology for suffered harms 3) a description of the providers response to the event; and 4) documentation of activities that the provider has taken to similar events in the future. Ministers will have the power to publish a statement to name relevant health services that have failed to comply with these processes (de Silva, 2022[142]).

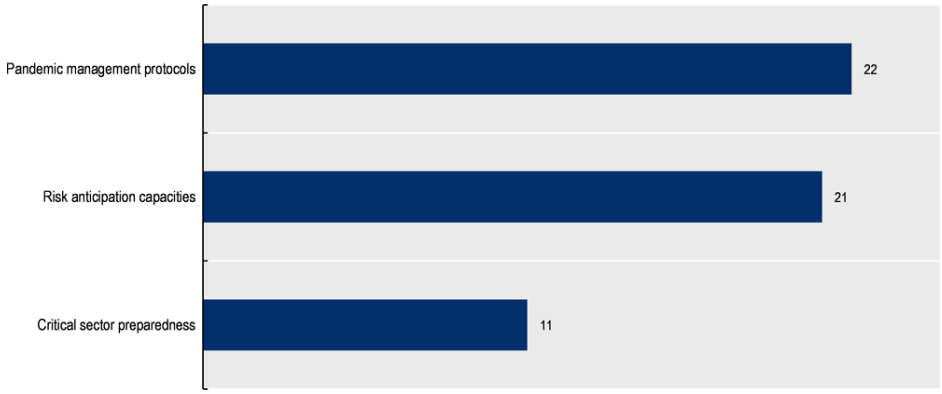
### *Pandemic management has been a top priority according to evaluation of COVID-19 responses*

Many OECD countries have implemented new strategies to increase patient safety in the context of COVID-19. Finland has introduced a new plan that concentrates on preventing avoidable harm (Ministry of Social Affairs and Health, 2022[143]). It promotes cooperation, training, best practices, and organizational safety. In this plan COVID-19 has influenced the approach to infections, both overall and healthcare acquired, through detailed monitoring, reporting, and training. The Portuguese National Patient Safety Strategy 2021-2026 has taken a holistic approach on patient safety through 5 pillars: culture of safety, leadership and governance, communication, prevention and management of patient safety incidence, and finally safe practices in safe environment (Portuguese National Patient Safety Strategy, 2021[144]). The plan includes numerical goals for 2023 and 2026 that are aimed at improving goal achievement. Spain is concentrating on evaluation with 150 indicators included in a database curated by its National Ministry of Health, which will promote risk management to reduce the burden of healthcare related incidence.

At the national level, countries have begun assessing their COVID-19 responses. Work from the OECD examined 67 evaluations contributed by 18 OECD countries. Most countries in the sample (13 out of 18) have examined the extent to which the government was adequately prepared to manage such a global shock (OECD, 2022[25]). Specifically, the evaluations on this topic focused on three main types of policy or measure that contribute to pandemic preparedness:

- Risk management protocols to follow during pandemics (i.e. ‘pandemic management protocols’);
- government capacity for risk anticipation, through foresight and risk assessment (i.e. ‘risk anticipation capacities’);
- the overall preparedness of critical sectors for pandemics (i.e. ‘critical sector preparedness’, see Figure 2.10).

### Figure 2.10. Evaluations of pandemic preparedness focus on protocols, risk anticipation and preparedness




Note: n =67. 67 evaluations were conducted across 18 countries. 11 evaluations examined at least one issue related to the preparedness of critical sectors to pandemics, in particular relating to the preparedness of the health sector. 22 evaluations examined at least one aspect of issues related to pandemic management protocols. 21 evaluations examined at least one issue related to risk anticipation capacities, either forecast and assessment, such as early warning systems, or national and sectoral risk assessments, and emergency planning.
Source: (OECD, 2022[25])

Findings from the OECD Trust Survey found that countries in which most people think their government learned from the pandemic are also the countries in which more people are likely to trust that government. On average across countries, 49.4% of respondents express confidence that their government would be prepared to protect people's lives in the event of a new pandemic (OECD, 2022[7]).

## 2.5. COVID-19 has exposed shortcomings in health system capacity

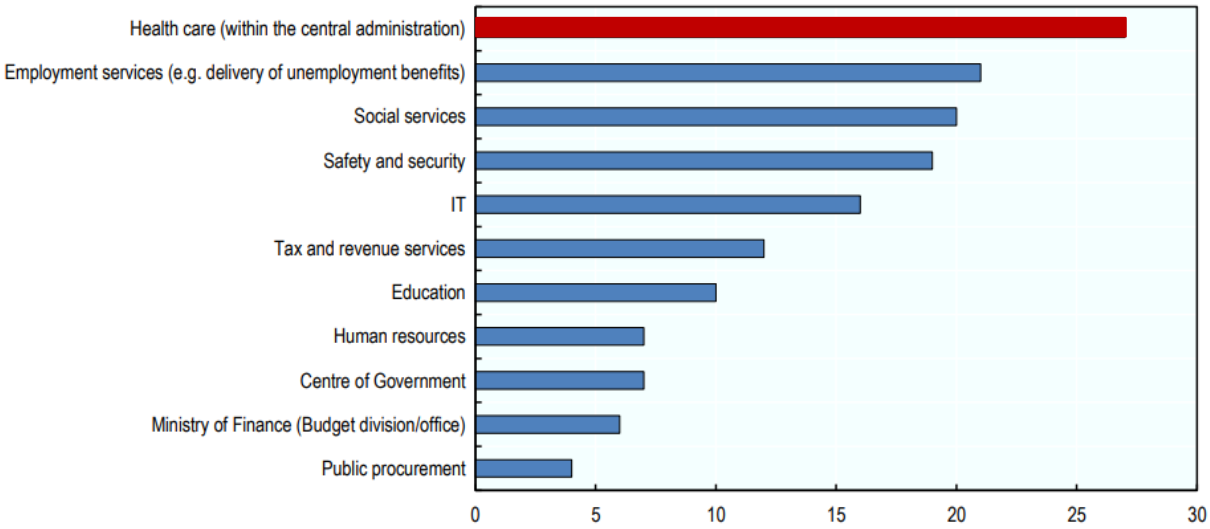
Capacity building and resource allocation are key to supporting patient safety. Capacity building in health care governance refers to developing intelligence about existing capacities, while investing in developing new capacities (Greer, Wismar and Figueras, 2016[22]). In patient safety it includes the embedding safety into curricula of students, integrating safety training as part of professional development for health care professionals, or allocating enough resources to ensure patient safety in daily clinical practice. Capacity building can also take a broader approach and include aspects such as establishing positive safety culture within the organisation and shifting the focus on safety training from technical skill-building towards emphasising teamwork, quality improvement and organisational change.

### *2.5.1. Countries continue to face challenges in ensuring health care worker capacity and appropriate matching of competencies to health system needs.*

Most countries identified pressing needs to deploy surge capacity to their health, employment, social and security services (OECD, 2021[145]). Figure 2.11 shows the scale of the resourcing challenges faced across OECD countries' central public administrations for which health was the most common priority. This staffing challenges in indicative of a larger challenge in the health sector, where frontline health care workers make up the vast majority.

## Figure 2.11. Areas that required additional staffing during first wave of the COVID-19 crisis

Number of OECD countries, n=32 (2020)




Note: Data were collected in the summer of 2020 through a special COVID-19 module of the 2020 Survey on Public Service Leadership and Capability. Data refer to HRM practices in central government designed at the time of the data collection. Not all OECD countries experienced the first wave of the pandemic and potential restrictions with the same intensity or at the same time. Original survey question: "In which areas of central administration did additional workload require recruitment or reassignment of existing staff?"
Source: OECD (2020), Special COVID-19 module of the Survey on Public Service Leadership and Capability. Maintaining adequate staffing levels; (OECD, 2021[145]).

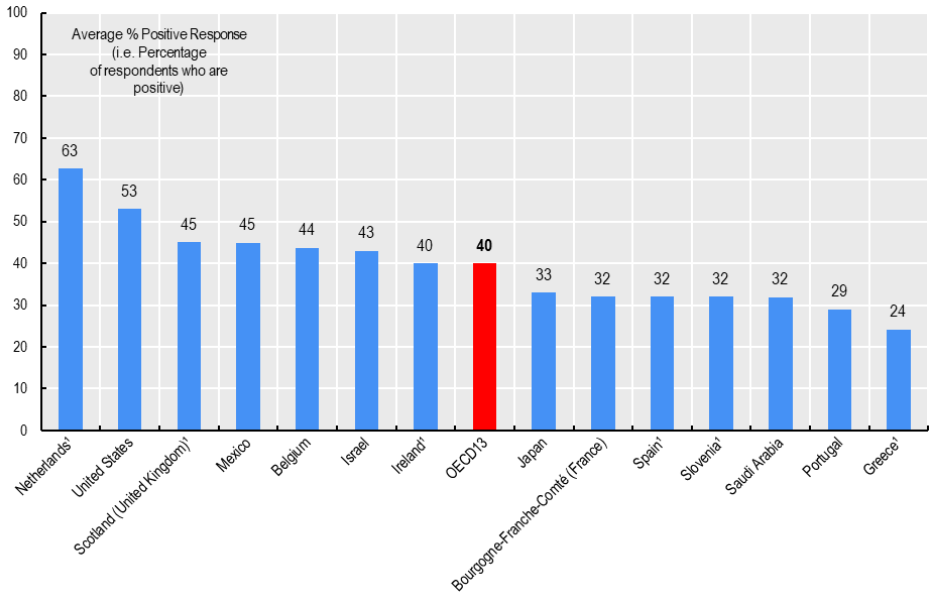
Adequacy of staffing is an important patient safety issue—and has been linked to patient outcomes in a number of studies. For example, a study across nine European countries found that increasing a nurse's workload by one patient increased by 7% the likelihood of an inpatient dying within 30 days of admission (Aiken et al., 2014[146]). A Korean study found similar results, where each additional patient per nurse was associated with a 5% increase in the risk of patient death within 30 days of admission (Cho et al., 2015[147]). In some specific sectors, such as burns care, adding an additional patient per nurse was found to increase mortality by as much as 30% (Bettencourt et al., 2020[148]).

Limited staff capacity, and its impact on the provision of safe care has been an ongoing concern throughout the COVID-19 pandemic. Austria, for example, projects that it will require an additional nursing staff for the period from 2017 to 2030 of approximately 76,000 personnel9.

In many countries, the majority of staff do not think that there are enough staff to handle the workload and that work hours are not appropriate in providing the best care for patients (de Bienassis and Klazinga, 2022[149]). Countries where the fewest health workers had a positive perception of staffing levels include Japan (33%), France (32%), Portugal (29%), and Greece (24%) (see Figure 2.12). This is of particular concern as countries have faced, and expect to continue to face, workforce shortage as a consequence of COVID-19. Assessment of the staffing domain of safety culture can provide a signalling function in respect to workforce capacity.

9 https://www.sozialministerium.at/Themen/Pflege/Pflegepersonal.html

## Figure 2.12. Less than half of health workers in OECD countries think staffing levels are appropriate to provide the best care for patients



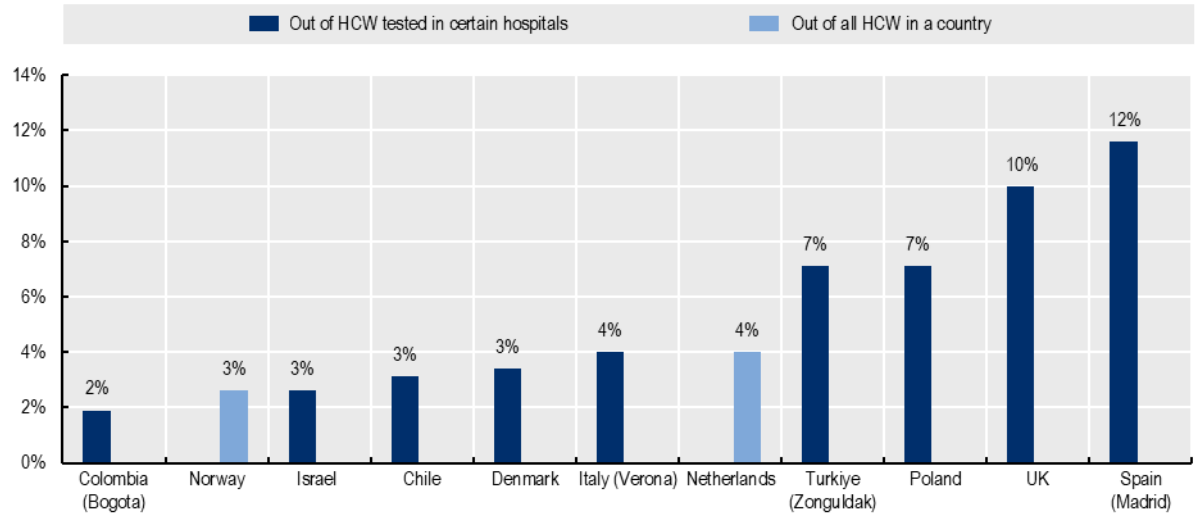

1. Data older than 2015

Note: The most recent year of available data presented for each country (Data identified with a [1] is from 2015-2005. All other data 2021-2015). The data presented includes Saudi Arabia, an OECD non-member country, which is not included in the OECD average. Definition of Staffing: There are enough staff to handle the workload and work hours are appropriate to provide the best care for patients.

*Source*: OECD Patient Safety Culture Pilot Data Collection 2020-2021

Health care workers have been overrepresented in terms of COVID-19 infections (see Figure 2.13). In some settings as many as one in three healthcare workers were infected with COVID-19 during certain periods of testing (Mathabire Rücker et al., 2022[150]). Aside from the impact of acute COVID infections and workforce burnout rates of long COVID in health workers have raised concerns regarding health system capacity, given prolonged leaves of absence health workers with severe long COVID symptoms may need to take. Interviews with physicians with long COVID have highlighted concerns about future fineness for work and stigma with suffering from symptoms such as fatigue (Burns and Warren, 2021[151]). Before the COVID-19 pandemic, observational studies in the US found that hospital nurses were burned out and working in understaffed conditions (Lasater et al., 2021[152]).Living with long COVID may also have psychological manifestations for health workers, including anxiety, depression, and post-traumatic stress disorder (Burns and Warren, 2021[151]).

## Figure 2.13. Examples of percentage of HCW infected with COVID-19 in selected OECD countries

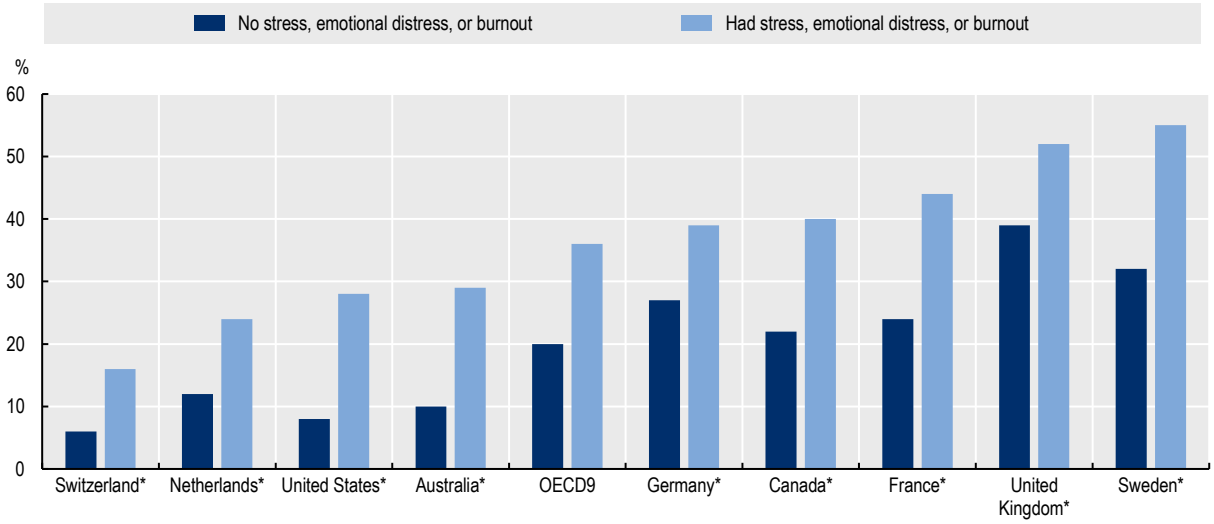



Notes: Israel - all participants were vaccinated against COVID-19, Source: Colombia: (Caballero et al., 2022[153]) Jun 2020 – Oct 2020, Norway: (Elgersma et al., 2022[154]) Aug 2020 – Sep 2021, Israel: (Bergwerk et al., 2021[155]) Dec 2020 – Apr 2021, Chile: (Olmos et al., 2021[156]) May 2020 – Jul 2020, Denmark: (Jespersen et al., 2020[157]) May 2020 – Jun 2020, Italy: (Porru et al., 2020[158]) Feb 2020, Netherlands: (Sikkema et al., 2020[159]) Mar 2020, Türkiye: (Çelebi et al., 2020[160]) Mar 2020 – May 2020, Poland: (Drobnik et al., 2021[161]) Mar 2020 – Apr 2020, UK: (Oxford COVID infection review team, 2021[162]) Jan 2020 – Oct 2020, Spain: (Folgueira et al., 2020[163]) Mar 2020,

In addition to stretching frontline staff, many key support staff in maintaining quality and safety in health care were not able to take up their functions as usual. For example, during the COVID-19 crisis, many patient safety and quality improvement experts were deemed “unessential” and asked to work from home, often ending up carrying out tasks unrelated to the current crisis (Staines et al., 2020[164]). Patient safety attendants, hospital staff whose role is to observe patients who have cognitive impairments or thoughts, saw significant reductions in worked hours in the United States (Shields, Lawson and Flanders, 2021[165]). Likewise, many health care workers were reassigned to duties outside the scope of their training.

As described previously, poor working conditions and mental health contribute to sub-optimal patient outcomes. Data from a 2022 Commonwealth Fund Survey of primary care physicians found that on average across 10 OECD countries, 3 out of 4 clinicians reported their workload increasing since the COVID-19 pandemic began. Over half of survey participants across OECD countries (52%) reported having experienced emotional distress and 35% were identified as having burn out. These staffing outcomes have an impact on health care and quality, as 36% of physicians reporting stress, emotional distress, or burnout reported that the quality of care they were able to deliver since the start of the pandemic had worsened, compared to only 20% who did not report stress, emotional distress, or burnout (Gunja et al., 2022[166]).

**Figure 2.14. Percentage of primary care physicians who said quality of medical care they were able to provide worsened "somewhat" or "a lot" compared to before the COVID-19 pandemic began**




Note:* Statistically significant difference to bar in comparison for within-country stratification analyses at p<.05 level. Data: Commonwealth Fund International Health Policy Survey of Primary Care Physicians (2022).
Source: (Gunja et al., 2022[166])

### *2.5.2. Improvements in underlying data infrastructure are promising*

In addition to staffing capacity and other physical resources, data infrastructure is an area where governance is needed to ensure adequate resources. In a 2021 OECD survey, 15 of 24 responding countries indicated that there had been legal, regulatory, or policy reforms in 2020 and 2021 to improve health data availability, accessibility, or sharing. In conjunction with efforts to increase data sharing, 9 of 24 countries had made reforms to improve privacy or security protections—with a number of countries strengthening both data sharing and data privacy simultaneously (OECD, 2022[167]). Data sharing improved significantly within the public sector, sometimes through automated processes. Most OECD countries linked different data sources to monitor the COVID-19 pandemic and open data policies were promoted. In general, sharing and publishing of guaranteed information on daily basis in open data as well as secure data with limited access to particular stakeholders are crucial in terms of being transparent to general public and providing valid reporting for critical management on national and regional levels (i.e. government departments or municipalities). These data sets can provide the objective support for further decision-making processes (Komenda et al., 2020[43]).

Not surprisingly, timeliness of key national datasets saw almost universally advancements in OECD countries as a result of the COVID-19 pandemic. Improvements in the quality, coverage, and completeness of existing national personal health datasets were widely improved among OECD countries in response to COVID-19 (OECD, 2022[167]).These regulatory reforms and enhanced data sharing capacity can potentially be further leveraged to inform systems for monitoring patient safety.

The coronavirus pandemic created a sense of urgency and political will to adapt service delivery models and outdated information systems—and to accelerate the use of new digitally based health services, such as telemedicine. But just as in other sectors, the process of adopting and implementing new processes and ways of working can also likewise lead to safety lapses. The innovations in the health sector have great potential, but will require careful evaluation and calibration to prevent the introduction of new safety risks.

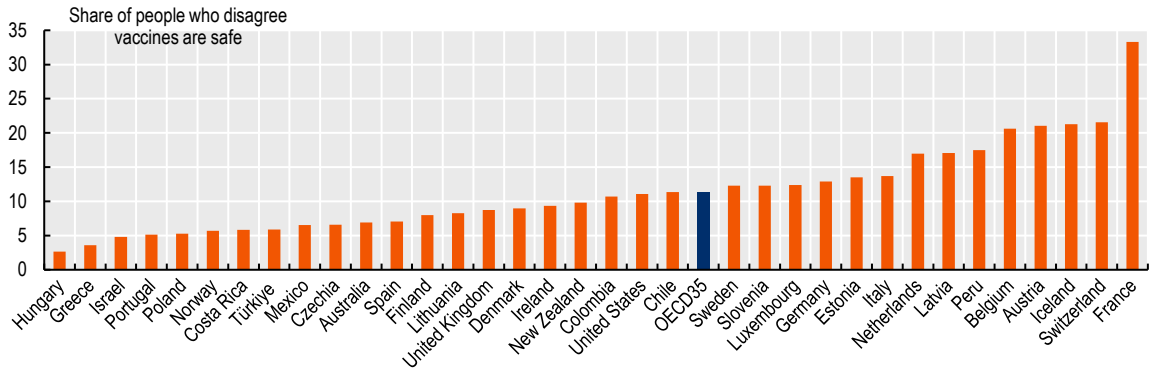
# 3 Capitalising on the pandemic to embed and mainstream patient safety

Countries can adopt fit for the future patient safety governance agendas, integrate patient safety governance with health system resilience policies, and maintain safety as a top priority on the political agenda.

## 3.1. Patient safety governance and health system resilience go hand-in hand

Modern healthcare is a team activity, where care providers work together over extended periods of time to provide complex care services. The COVID crisis required rapid reconfiguration and creation of new teams, who were tasked with preforming at a high standard over a short period of time. Challenges related to human factors and ergonomics were observed during the COVID-19 pandemic. Patient safety governance should be integrated into efforts to enhance health system resilience. Safety governance needs better alignment with key areas brought into focus by the COVID crisis, in particular, staffing and resourcing as well as health worker safety and well-being. Safety governance should encourage effective healthcare financing and investment, including the appropriate data infrastructure/systems and use for the scope of the challenge.

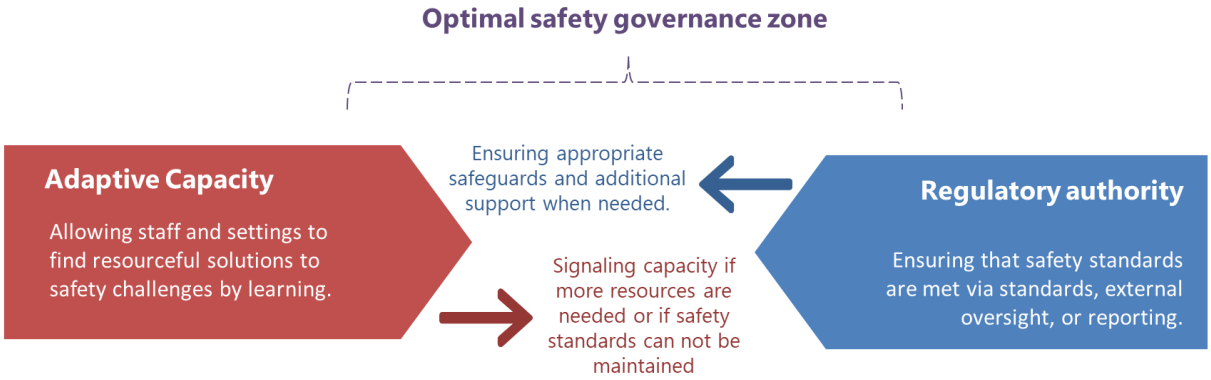
## Figure 3.1. Before COVID-19, one-in-ten people thought vaccines were unsafe




Note: Share of people who disagree that vaccines are safe, 2018 data
Source: Our World in Data/ Wellcome Trust

Resilient health systems need to promote *guided* adaptability, which recognises that good performance and safety comes neither from preventing or encouraging variation, but from recognising that variation is inevitable in a complex, adaptive system. Risk management can then move from dictating certain specific protocols and processes to facilitating safe variation in behaviour when the situation and context requires it. Moreover, optimal safety governance (see Figure 3.2) operates at the intersection of adaptive capacity and regulatory authority, where leadership has implemented appropriate safeguards and can respond with additional support when needed. On the frontlines, staff should be encouraged to find solutions to patient safety challenges, knowing there are appropriate linkages with regulators to provide additional support if safety performance cannot be maintained.

## Figure 3.2. Optimal safety governance operates at the interface of localized adaptive capacity and regulatory authority.




Source: Authors.

There are opportunities for the health sector to better identify and adopt the critical and teachable skills needed for healthcare teams to work effectively (Fitzsimons, 2021[168]). More can be done to showcase examples of where member countries' health systems (or organisations within them) have innovatively improved safety, and where safety governance and risk management incorporates a level of flexibility that accepts 'good' variation to established protocols. Tools developed in the military and in aviation, such as

Crisis Resource Management, can be adopted to promote transparent and effective leadership while strengthening essential non-technical skills, including communication, shared situation awareness, and psychological safety (the confidence and security to speak up) (Fitzsimons, 2021[168]).

At the intersection of patient safety governance and resilience is also the issue of trust. Countries faced substantial declines in trust in the health care sector during the COVID-19 pandemic, including trust in international organisations, health care providers, and health care stakeholders. Between April/May 2020 and February/March 2021 trust in the health care sector declined by an average of 2 percentage points across 22 OECD countries for which there was data. Trust is a key component of health system governance, and a necessary condition for resilient health systems. Countries must continue work to build transparency, enhance communications, and maintain integrity so that health care systems are trusted as safe, even when impacted by unexpected shocks.

## 3.2. A fit for the future patient safety governance agenda

The COVID-19 pandemic has required health systems to react to new circumstances much more quickly than they have been required to in the past. A fit for the future, patient safety governance agenda offers an opportunity to adapt, amend and create a more agile framework for governance and promotion of patient safety. This is in contrast to most previous patient safety governance agenda's largely focused on command and control regulation.

The implementation of patient safety policy is suffering from significant gaps. First, flexible governance mechanism remains underutilised by health systems compared with the attention that is given to health spending and infrastructure measures and the efforts made in those areas. Second, it continues to be a trend that regulatory management tools for patient safety are underdeveloped, insufficiently implemented or applied with unsatisfactory effects. Third, by relying on conventional models of human action, patient safety efforts can fail to consider behavioural barriers and biases that limit the effectiveness of implementation of policies in this area.

Safety governance should enable continuous learning from both harm and success. This movement towards learning from what goes right represents a more recent paradigm, which aims to promote safety by enabling organisations and its people to adapt to emergent situations and conditions. This decentralised approach aims to ensure safe care through adaptation and flexibility (Braithwaite, Wears and Hollnagel, 2015[169]). It draws on resilience engineering theory that has a proven track record in other high-risk industries, where adaptability and proactive thinking is added to top-down control. This is said to be more compatible with managing the inherent complexity and unpredictability of healthcare systems compared to the linear, one-size-fits-all traditional paradigm.

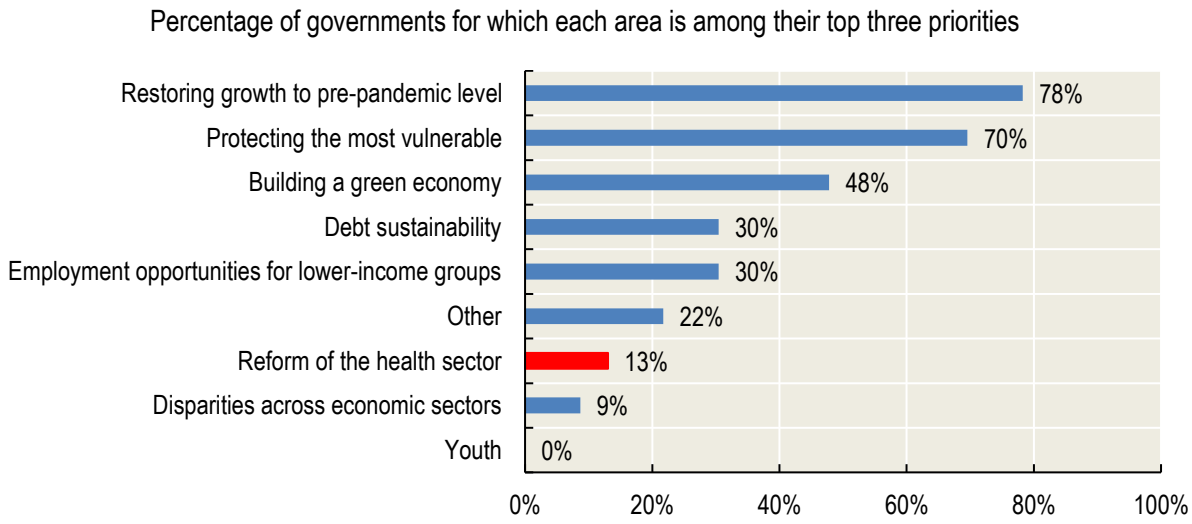
Examples of innovative, flexible governance models have been further advanced in other sectors as well in response to the COVID-19 pandemic. OECD findings on the regulatory changes in food safety, for example, found that reducing inspections, introducing self-compliance models or making inspections remote have not led to poorer outcomes (OECD, 2021[170]).

Moving forward, health care leadership and policy makers will have to ascertain how to apply and enforce safe care in a post-pandemic world. Questions related to patient safety are often complex and, at times, strategically important. This is because the risks associated with poor safety can be multidimensional, linked to socio-economic, labour, and global health related factors. This is perhaps one of the most important lessons from the COVID-19 pandemic. Whatever the scenario, the COVID crisis has once again stressed the need for co-operation, transparency, and collective learning. Assessments of current safety plans and activities will need to be carried out on a continual basis to ascertain whether they are fit for purpose and can withstand the fallout from another global health crisis.

## 3.3. Maintaining patient safety on the policy agenda: The role of leadership

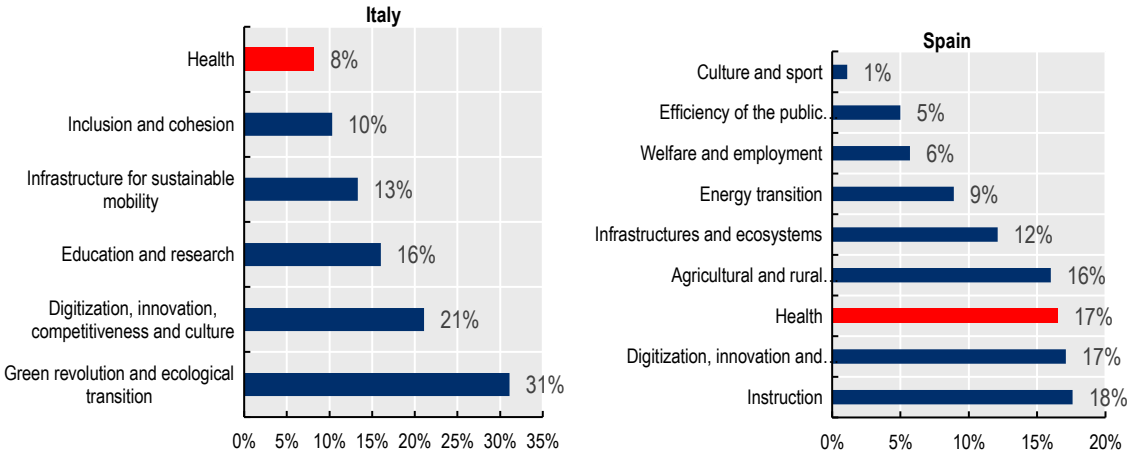
Now more than ever political leadership should work to advocate for patient safety, and its place at the top of its health policy agenda. However, some findings show this may be an uphill battle given the pulling current of ongoing global crises and challenges that governments must now face head-on. For example, a survey of countries government priorities in support of the COVID-19 recovery effort found that only 13% of countries indicated reform of the health sector as being among their top three priorities (Figure 3.3) (OECD, 2021[24]). Of the total funding allocated through national reliance and recovery plans, Italy has proposed that only 8% of the total funds go to health, and 16.5% in Spain (Figure 3.4) (DE Belvis et al., 2022[171]).

### Figure 3.3. Government priorities in support of the COVID-19 recovery effort




Note: Includes data from centres of governments in Belgium, Canada, Chile, Colombia, the Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Israel, Italy, Korea, Latvia, Lithuania, Luxembourg, Mexico, Norway, Poland, Portugal, Sweden and Türkiye.
Source: Presentation created for Government at a Glance 2021 using data from OECD (2021), Building a Resilient Response: The Role of Centre of Government in the Management of the COVID-19 Crisis and Future Recovery Efforts (OECD, 2021[24]).

### Figure 3.4. Relative Spending on Health in National Resilience and Recovery Plans: Italy and Spain




Source: (DE Belvis et al., 2022[171])

The task for health care leadership is substantial. Health systems will need to (re-)build trust in their systems, through better communication strategies, shifting from public consultations to stakeholder engagement and demonstrating good governance of regulatory institutions (OECD, 2021[11]). New legislation in Portugal, conferred in 2022 created an NHS Executive Directorate is to coordinate the healthcare response of NHS health units, ensuring their networked operation, the continuous improvement of access to healthcare, patient participation and the alignment of clinical and health governance.

Commitment on the part of leadership and management is crucial to establishing and maintaining a safe, people-centred environment. Leaders play a key role in driving organisational priorities by setting examples, fostering communication, and creating enabling atmospheres for raising concerns, as well as leveraging incentives with the aim of creating safe, people-centred care. In tandem, good safety governance should include patient perspectives on the design, implementation, and execution of efforts to improve safety.

The current pandemic has highlighted the need for strong and resilient safety governance and culture. This requires investments and leadership, as well as a focus on patient- and worker-centredness, and must extend beyond the hospital to ensure safety in long-term care (LTC) and ambulatory care settings. For example, COVID-19 has unfortunately brought to light the challenges faced in ensuring safe LTC—and the vulnerabilities and human costs associated with the status quo. Policymakers have an opportunity to address and improve safety governance in this setting—including the need for appropriate quality standards and standards for staffing levels and competencies to match the needs of LTC residents, better linkages with acute care, and improving organizational learning and safety culture in LTC (de Bienassis, Llena-Nozal and Klazinga, 2020[172]).

In all sectors of health care, a culture of patient safety is a fundamental component of efforts to pivot towards learning-based health systems built on risk mitigation. Leadership in implementing policies to create the conditions conducive to good patient safety are essential for driving healthcare improvement.

COVID-19 has challenged the capacity of governments, health systems, and healthcare providers to work quickly and in a coordinated manner to address a substantial threat. While the degree of success has varied across countries, systematic changes are possible with the requisite political/institutional will and sense of urgency. Reducing the harm caused by COVID-19 and by adverse safety events is an achievable and necessary objective which could bring significant health and economic returns.

# References


(n.a.) (2020), *Coronavirus: Half of Deceased Contracted Infection in Hospitals - Hungary Today*, https://hungarytoday.hu/coronavirus-deaths-hospitals-hungary/ (accessed on 23 June 2022). [60]

(n.a.) (2020), *GIS: One third of infections come from hospitals and clinics*, https://healthcaremarketexperts.com/en/news/gis-one-third-of-infections-in-poland-come-from-hospitals-and-clinics/ (accessed on 23 June 2022). [61]

(n.a.) (2019), *It's the governance, stupid!: TAPIC: a governance framework to strengthen decision making and implementation*, WHO/European Observatory, https://eurohealthobservatory.who.int/publications/i/it-s-the-governance-stupid-tapic-a-governance-framework-to-strengthen-decision-making-and-implementation-study (accessed on 15 July 2022). [21]

Adrish, M. (ed.) (2021), "SARS-CoV-2 infection in asymptomatic healthcare workers at a clinic in Chile", *PLOS ONE*, Vol. 16/1, p. e0245913, https://doi.org/10.1371/journal.pone.0245913. [156]

Agency for Healthcare Research and Quality (2021), *Workplace Safety Supplemental Items for Hospital SOPS*, https://www.ahrq.gov/sops/surveys/hospital/supplemental-items/workplace-safety.html (accessed on 26 July 2022). [187]

Agnew, C., R. Flin and K. Mearns (2013), "Patient safety climate and worker safety behaviours in acute hospitals in Scotland", *Journal of Safety Research*, Vol. 45, pp. 95-101, https://doi.org/10.1016/j.jsr.2013.01.008. [191]

Aiken, L. et al. (2014), "Nurse staffing and education and hospital mortality in nine European countries: A retrospective observational study", *The Lancet*, Vol. 383/9931, pp. 1824-1830, https://doi.org/10.1016/S0140-6736(13)62631-8. [146]

Alfonsii, C. et al. (2022), *Public communication trends after COVID-19 : Innovative practices across the OECD and in four Southeast Asian countries | OECD Working Papers on Public Governance | OECD iLibrary*, https://www.oecd-ilibrary.org/governance/public-communication-trends-after-covid-19_cb4de393-en (accessed on 23 January 2023). [27]

Altman, M. et al. (2021), "The impact of COVID-19 visitor policy restrictions on birthing communities of colour", *Journal of Advanced Nursing*, Vol. 77/12, p. 4827, https://doi.org/10.1111/JAN.14991. [120]

American Hospital Association (2022), *Sustaining Quality Transparency While Accounting for COVID-19's Unprecedented Challenges*, https://www.aha.org/news/blog/2022-07-15-sustaining-quality-transparency-while-accounting-covid-19s-unprecedented (accessed on 15 August 2022). [190]

Anand, P. and V. Stahel (2021), "Review the safety of Covid-19 mRNA vaccines: a review", *Patient Safety in Surgery*, Vol. 15/1, pp. 1-9, https://doi.org/10.1186/S13037-021-00291-9/TABLES/2. [173]

Andrist, E., R. Clarke and M. Harding (2020), "Paved with Good Intentions: Hospital Visitation Restrictions in the Age of Coronavirus Disease 2019∗", *Pediatric Critical Care Medicine*, pp. E924-E926, https://doi.org/10.1097/PCC.0000000000002506. [121]

Auraaen, A., K. Saar and N. Klazinga (2020), "System governance towards improved patient safety: Key functions, approaches and pathways to implementation", *OECD Health Working Papers*, No. 120, OECD Publishing, Paris, https://doi.org/10.1787/2abdd834-en. [15]

Baker, M. et al. (2021), "171. The Impact of COVID-19 on Healthcare-Associated Infections", *Open Forum Infectious Diseases*, Vol. 8/Supplement_1, pp. S102-S103, https://doi.org/10.1093/OFID/OFAB466.171. [85]

Barbazza, E. et al. (2021), "The experiences of 33 national COVID-19 dashboard teams during the first year of the pandemic in the WHO European Region: a qualitative study", *medRxiv*, p. 2021.11.23.21266747, https://doi.org/10.1101/2021.11.23.21266747. [38]

Bardi, T. et al. (2021), "Nosocomial infections associated to COVID-19 in the intensive care unit: clinical characteristics and outcome", *European Journal of Clinical Microbiology and Infectious Diseases*, Vol. 40/3, pp. 495-502, https://doi.org/10.1007/S10096-020-04142-W/TABLES/3. [1]

Barranco, R., L. Du Tremoul and F. Ventura (2021), "Hospital-Acquired SARS-Cov-2 Infections in Patients: Inevitable Conditions or Medical Malpractice?", *International Journal of Environmental Research and Public Health*, Vol. 18/2, pp. 1-9, https://doi.org/10.3390/IJERPH18020489. [178]

Beattie, A. and R. Priestley (2021), "Fighting COVID-19 with the team of 5 million: Aotearoa New Zealand government communication during the 2020 lockdown", *Social Sciences & Humanities Open*, Vol. 4/1, p. 100209, https://doi.org/10.1016/J.SSAHO.2021.100209. [29]

Berec, L. et al. (2022), "Protection provided by vaccination, booster doses and previous infection against covid-19 infection, hospitalisation or death over time in Czechia", *PloS one*, Vol. 17/7, https://doi.org/10.1371/JOURNAL.PONE.0270801. [48]

Bergwerk, M. et al. (2021), "Covid-19 Breakthrough Infections in Vaccinated Health Care Workers", *New England Journal of Medicine*, Vol. 385/16, pp. 1474-1484, https://doi.org/10.1056/nejmoa2109072. [155]

Bettencourt, A. et al. (2020), "Nurse Staffing, the Clinical Work Environment, and Burn Patient Mortality", *Journal of Burn Care & Research*, Vol. 41/4, pp. 796-802, https://doi.org/10.1093/JBCR/IRAA061. [148]

Bhatt, P. et al. (2021), "Risk Factors and Outcomes of Hospitalized Patients With Severe Coronavirus Disease 2019 (COVID-19) and Secondary Bloodstream Infections: A Multicenter Case-Control Study", *Clinical Infectious Diseases*, Vol. 72/12, pp. e995-e1003, https://doi.org/10.1093/CID/CIAA1748. [68]

Bickel, A. et al. (2022), "Delayed diagnosis and subsequently increased severity of acute appendicitis (compatible with clinical-pathologic grounds) during the COVID-19 pandemic: an observational case-control study", *BMC Gastroenterology*, Vol. 22/1, pp. 1-5, https://doi.org/10.1186/S12876-021-02024-9/TABLES/1. [86]

Braithwaite, J., R. Wears and E. Hollnagel (2015), "Resilient health care: turning patient safety on its head", *International Journal for Quality in Health Care*, Vol. 27/5, pp. 418-420, https://doi.org/10.1093/intqhc/mzv063. [169]

Brborović, O., H. Brborović and L. Hrain (2022), "The COVID-19 Pandemic Crisis and Patient Safety Culture: A Mixed-Method Study", *International Journal of Environmental Research and Public Health*, Vol. 19/4, https://doi.org/10.3390/IJERPH19042237. [134]

Bromage, D. et al. (2020), "The impact of COVID-19 on heart failure hospitalization and management: report from a Heart Failure Unit in London during the peak of the pandemic", *European journal of heart failure*, Vol. 22/6, pp. 978-984, https://doi.org/10.1002/EJHF.1925. [87]

Brown, R. et al. (2022), "Benzodiazepine and antipsychotic use among hospitalized older adults before versus after restricting visitation: March to May 2020", *Journal of the American Geriatrics Society*, https://doi.org/10.1111/JGS.17947. [119]

Buetti, N. et al. (2021), "COVID-19 increased the risk of ICU-acquired bloodstream infections: a case-cohort study from the multicentric OUTCOMEREA network", *Intensive care medicine*, Vol. 47/2, pp. 180-187, https://doi.org/10.1007/S00134-021-06346-W. [67]

Buetti, N. et al. (2021), "COVID-19 increased the risk of ICU-acquired bloodstream infections: a case–cohort study from the multicentric OUTCOMEREA network", *Intensive Care Medicine*, Vol. 47/2, pp. 180-187, https://doi.org/10.1007/s00134-021-06346-w. [71]

Burns, S. and S. Warren (2021), *Learning from doctors with long covid*, The BMJ, https://blogs.bmj.com/bmj/2021/02/26/learning-from-doctors-with-long-covid/ (accessed on 19 May 2021). [151]

Buttenschøn, H. et al. (2022), "Comparison of the clinical presentation across two waves of COVID-19: a retrospective cohort study", *BMC Infectious Diseases*, Vol. 22/1, https://doi.org/10.1186/s12879-022-07413-3. [189]

Caballero, N. et al. (2022), "Prevalence of SARS-CoV-2 infection and SARS-CoV-2-specific antibody detection among healthcare workers and hospital staff of a university hospital in Colombia", *IJID Regions*, Vol. 3, pp. 150-156, https://doi.org/10.1016/j.ijregi.2022.03.013. [153]

Carr, M. et al. (2022), "Impact of COVID-19 restrictions on diabetes health checks and prescribing for people with type 2 diabetes: a UK-wide cohort study involving 618 161 people in primary care", *BMJ Quality & Safety*, Vol. 0, pp. bmjqs-2021-013613, https://doi.org/10.1136/BMJQS-2021-013613. [92]

Carroll, K. (ed.) (2020), "Bacteremia and Blood Culture Utilization during COVID-19 Surge in New York City", *Journal of Clinical Microbiology*, Vol. 58/8, https://doi.org/10.1128/jcm.00875-20. [186]

Carter, B. et al. (2020), "Nosocomial COVID-19 infection: examining the risk of mortality. The COPE-Nosocomial Study (COVID in Older PEople)", *The Journal of Hospital Infection*, Vol. 106/2, p. 376, https://doi.org/10.1016/J.JHIN.2020.07.013. [176]

Casciato, D. et al. (2020), "Diabetes-related major and minor amputation risk increased during the COVID-19 pandemic", *Journal of the American Podiatric Medical Association*, https://doi.org/10.7547/20-224. [94]

Çelebi, G. et al. (2020), "Specific risk factors for SARS-CoV-2 transmission among health care workers in a university hospital", *American Journal of Infection Control*, Vol. 48/10, pp. 1225-1230, https://doi.org/10.1016/j.ajic.2020.07.039. [160]

CFHI (2020), "EVIDENCE BRIEF: Caregivers as Essential Care Partners". [117]

Cheong, H. et al. (2022), "Workload of Healthcare Workers During the COVID-19 Outbreak in Korea: A Nationwide Survey", *Journal of Korean Medical Science*, Vol. 37/6, https://doi.org/10.3346/jkms.2022.37.e49. [131]

Cho, E. et al. (2015), "Effects of nurse staffing, work environments, and education on patient mortality: An observational study", *International Journal of Nursing Studies*, Vol. 52/2, pp. 535-542, https://doi.org/10.1016/j.ijnurstu.2014.08.006. [147]

Chowell, G. et al. (2015), "Transmission characteristics of MERS and SARS in the healthcare setting: a comparative study", https://doi.org/10.1186/s12916-015-0450-0. [50]

Christian N. Meyer (2020), "Transmission, start of symptom and morbidity among Danish COVID-19 patients admitted to hospital", *DANISH MEDICAL JOURNAL*, Vol. 67/9, https://ugeskriftet.dk/dmj/transmission-start-symptom-and-morbidity-among-danish-covid-19-patients-admitted-hospital (accessed on 23 June 2022). [55]

Claes, J. et al. (2021), "Nosocomial COVID-19 infections in Belgian hospitals: A longitudinal study | Antimicrobial Resistance and Infection Control; 10(SUPPL 1), 2021. | EMBASE", *Antimicrobial Resistance and Infection Control*, Vol. 10/SUPPL 1, https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/pt/covidwho-1448320?lang=en (accessed on 23 June 2022). [57]

CMS (2022), *FY 2023 Hospital Inpatient Prospective Payment System (IPPS) and Long-Term Care Hospital Prospective Payment System (LTCH PPS) Final Rule — CMS-1771-F | CMS*, https://www.cms.gov/newsroom/fact-sheets/fy-2023-hospital-inpatient-prospective-payment-system-ipps-and-long-term-care-hospital-prospective (accessed on 29 November 2022). [103]

CMS (2020), *COVID-19 Nursing Home Dataset | Data.CMS.gov*, https://data.cms.gov/Special-Programs-Initiatives-COVID-19-Nursing-Home/COVID-19-Nursing-Home-Dataset/s2uc-8wxp (accessed on 28 July 2020). [52]

Czeisler, M. et al. (2020), "Delay or Avoidance of Medical Care Because of COVID-19–Related Concerns — United States, June 2020", *MMWR. Morbidity and Mortality Weekly Report*, Vol. 69/36, pp. 1250-1257, https://doi.org/10.15585/mmwr.mm6936a4. [75]

DE Belvis, A. et al. (2022), "COVID-19: yesterday, today and tomorrow. The quality of COVID-19 management and the evaluation of the "Health" chapter of the Recovery Plan", *Journal of preventive medicine and hygiene*, Vol. 63/3, pp. E391-E398, https://doi.org/10.15167/2421-4248/JPMH2022.63.3.2604. [171]

de Bienassis, K. et al. (2022), *Health data and governance developments in relation to COVID-19 : How OECD countries are adjusting health data systems for the new normal*, OECD Health Working Paper, https://www.oecd-ilibrary.org/social-issues-migration-health/health-data-and-governance-developments-in-relation-to-covid-19_aec7c409-en (accessed on 22 May 2022). [39]

de Bienassis, K. and N. Klazinga (2022), *Developing international benchmarks of patient safety culture in hospital care : Findings of the OECD patient safety culture pilot data collection and considerations for future work*, OECD Health Working Papers, https://www.oecd-ilibrary.org/social-issues-migration-health/developing-international-benchmarks-of-patient-safety-culture-in-hospital-care_95ae65a3-en (accessed on 25 February 2022). [149]

de Bienassis, K., A. Llena-Nozal and N. Klazinga (2020), *The economics of patient safety Part III: Long-term care: Valuing safety for the long haul*, OECD Health Working Paper, https://www.oecd-ilibrary.org/social-issues-migration-health/the-economics-of-patient-safety-part-iii-long-term-care_be07475c-en (accessed on 1 April 2021). [172]

de Bienassis, K., L. Slawomirski and N. Klazinga (2021), "The economics of patient safety Part IV: Safety in the workplace: Occupational safety as the bedrock of resilient health systems", *OECD Health Working Papers*, No. 130, OECD Publishing, Paris, https://doi.org/10.1787/b25b8c39-en. [132]

de Figueiredo, A. et al. (2020), "Mapping global trends in vaccine confidence and investigating barriers to vaccine uptake: a large-scale retrospective temporal modelling study", *The Lancet*, Vol. 396/10255, pp. 898-908, https://doi.org/10.1016/S0140-6736(20)31558-0/ATTACHMENT/853684EA-3E2B-4ACB-A386-FEAEA7A055F5/MMC2.XLSX. [5]

De Mestral, C. et al. (2022), "A Population-Based Analysis of Diabetes-Related Care Measures, Foot Complications, and Amputation During the COVID-19 Pandemic in Ontario, Canada", *JAMA Network Open*, Vol. 5/1, pp. e2142354-e2142354, https://doi.org/10.1001/JAMANETWORKOPEN.2021.42354. [95]

de Silva, S. (2022), *New Quality and Safety Requirements for Victorian Health Services - Health Legal*, https://healthlegal.com.au/current-news/new-quality-safety-requirements-victorian-health-services/ (accessed on 16 June 2022). [142]

Deam, D. and S. Nazaretian (2021), *The true impact of Australia's COVID-19 lockdowns on critical health diagnoses - Australian Clinical Labs*, https://www.clinicallabs.com.au/about-us/doctor-media-releases/the-true-impact-of-australia-s-covid-19-lockdowns-on-critical-health-diagnoses/ (accessed on 12 July 2022). [4]

Deilkås, E. and G. Bondevik (2020), "Pasientsikkerhetskultur og koronapandemien– nye muligheter for trygghet og samarbeid i norsk helse- og omsorgstjeneste", *Tidsskrift for omsorgsforskning*, https://doi.org/10.18261/issn.2387-5984-2020-01-07. [125]

Denning, M. et al. (2020), "What has been the impact of COVID-19 on safety culture? A case study from a large metropolitan healthcare trust", *International Journal of Environmental Research and Public Health*, Vol. 17/19, pp. 1-12, https://doi.org/10.3390/IJERPH17197034. [135]

Drobnik, J. et al. (2021), "COVID-19 among Healthcare Workers in the University Clinical Hospital in Wroclaw, Poland", *International Journal of Environmental Research and Public Health*, Vol. 18/11, p. 5600, https://doi.org/10.3390/ijerph18115600. [161]

Elgersma, I. et al. (2022), "Transmission of severe acute respiratory coronavirus virus 2 (SARS-CoV-2) between hospital workers and members of their household: Nationwide, registry-based, cohort study from Norway", *Infection Control & Hospital Epidemiology*, pp. 1-6, https://doi.org/10.1017/ice.2022.108. [154]

Engsbro, A. et al. (2020), "Predominance of hospital-acquired bloodstream infection in patients with Covid-19 pneumonia", *Infectious Diseases*, Vol. 52/12, pp. 919-922, https://doi.org/10.1080/23744235.2020.1802062. [70]

Eurofound (2022), "Fifth round of the Living, working and COVID-19 e-survey: Living in a new era of uncertainty", https://www.eurofound.europa.eu/topic/covid-19 (accessed on 12 July 2022). [6]

European Medicines Agency (2022), *Safety of COVID-19 vaccines*, https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19/treatments-vaccines/vaccines-covid-19/safety-covid-19-vaccines (accessed on 15 August 2022). [32]

Fan, C. et al. (2021), "Estimating global burden of COVID-19 with disability-adjusted life years and value of statistical life metrics", *Journal of the Formosan Medical Association*, Vol. 120, p. S106, https://doi.org/10.1016/J.JFMA.2021.05.019. [12]

Fan, J. et al. (2020), *UMD Global CTIS Open Data*, https://gisumd.github.io/COVID-19-API-Documentation/docs/citing.html (accessed on 28 July 2022). [10]

Ferioli, M. et al. (2020), "Protecting healthcare workers from SARS-CoV-2 infection: practical indications", https://doi.org/10.1183/16000617.0068. [51]

Fiest, K. et al. (2021), "An environmental scan of visitation policies in Canadian intensive care units during the first wave of the COVID-19 pandemic", *Canadian Journal of Anesthesia*, Vol. 68/10, pp. 1474-1484, https://doi.org/10.1007/S12630-021-02049-4/TABLES/2. [112]

Fitzsimons, J. (2021), "Quality and safety in the time of Coronavirus: design better, learn faster", *International Journal for Quality in Health Care*, Vol. 33/1, https://doi.org/10.1093/INTQHC/MZAA051. [168]

Fleisher, L. et al. (2022), "Health Care Safety during the Pandemic and Beyond — Building a System That Ensures Resilience", *New England Journal of Medicine*, Vol. 386/7, pp. 609-611, https://doi.org/10.1056/NEJMP2118285/SUPPL_FILE/NEJMP2118285_DISCLOSURES.PDF . [83]

Folgueira, M. et al. (2020), *SARS-CoV-2 infection in Health Care Workers in a large public hospital in Madrid, Spain, during March 2020*, Cold Spring Harbor Laboratory, https://doi.org/10.1101/2020.04.07.20055723. [163]

Fournier, J. et al. (2021), "Patient-safety incidents during COVID-19 health crisis in France: An exploratory sequential multi-method study in primary care", *European Journal of General Practice*, Vol. 27/1, pp. 142-151, https://doi.org/10.1080/13814788.2021.1945029. [101]

Fujisawa, R. (2022), *Impact of the COVID-19 pandemic on cancer care in OECD countries | OECD Health Working Papers*, https://www.oecd-ilibrary.org/social-issues-migration-health/impact-of-the-covid-19-pandemic-on-cancer-care-in-oecd-countries_c74a5899-en (accessed on 10 May 2022). [88]

G20 Health & Development Partnership (2021), *The Overlooked Pandemic: How to Transform Patient Safety and Save Healthcare Systems*, https://www.ssdhub.org/wp-content/uploads/2021/03/1863-Sovereign-Strategy-Patient-Safetly-Report-1.pdf (accessed on 3 June 2021). [2]

Gandhi, T. (2022), "Don't Go to the Hospital Alone: Ensuring Safe, Highly Reliable Patient Visitation", *Joint Commission Journal on Quality and Patient Safety*, Vol. 48/1, pp. 61-64, https://doi.org/10.1016/J.JCJQ.2021.10.006. [115]

Global Health Summit (2021), *Consultation with civil society*, https://global-health-summit.europa.eu/consultation-civil-society_en (accessed on 26 August 2022). [107]

Government of Canada (2022), *COVID-19 vaccine safety: Summary of weekly report on side effects following immunization*, https://health-infobase.canada.ca/covid-19/vaccine-safety/summary.html (accessed on 15 August 2022). [33]

Grasselli, G. et al. (2021), "Hospital-Acquired Infections in Critically Ill Patients With COVID-19", *Chest*, Vol. 160/2, pp. 454-465, https://doi.org/10.1016/J.CHEST.2021.04.002. [69]

Greer, S., M. Wismar and J. Figueras (2016), "Strengthening Health System Governance European Observatory on Health Systems and Policies Series". [22]

Greer, S. et al. (2016), "Governance: a framework", in Scott L. Greer, Matthias Wismar, J. (ed.), *Strengthening Health System Governance: Better policies, stronger performance*, Open University Press, Berkshire. [181]

Grimley, K. et al. (2021), "Nurse Sensitive Indicators and How COVID-19 Influenced Practice Change", *Nurse Leader*, Vol. 19/4, pp. 371-377, https://doi.org/10.1016/J.MNL.2021.05.003. [179]

Gunja, M. et al. (2022), *Stressed Out and Burned Out: The Global Primary Care Crisis*, Commonwealth Fund, https://www.commonwealthfund.org/publications/issue-briefs/2022/nov/stressed-out-burned-out-2022-international-survey-primary-care-physicians (accessed on 30 November 2022). [166]

Halverson, T. et al. (2022), "Impact of COVID-19 on hospital acquired infections", *American Journal of Infection Control*, https://doi.org/10.1016/J.AJIC.2022.02.030. [82]

Healthcare Excellence Canada (2022), *Essential Together*, https://www.healthcareexcellence.ca/en/what-we-do/all-programs/essential-together/ (accessed on 29 November 2022). [124]

Healthcare Excellence Canada (2022), *Pandemic Recovery and Resilience Self-Assessment and Toolkit*, https://www.healthcareexcellence.ca/en/resources/pandemic-recovery-and-resilience-self-assessment-and-toolkit/ (accessed on 26 July 2022). [188]

Hennus, M. et al. (2021), "Supervision, Interprofessional Collaboration, and Patient Safety in Intensive Care Units during the COVID-19 Pandemic", *https://doi.org/10.34197/ats-scholar.2020-0165OC*, Vol. 2/3, pp. 397-414, https://doi.org/10.34197/ATS-SCHOLAR.2020-0165OC. [137]

Hugelius, K., N. Harada and M. Marutani (2021), "Consequences of visiting restrictions during the COVID-19 pandemic: An integrative review", *International Journal of Nursing Studies*, Vol. 121, p. 104000, https://doi.org/10.1016/J.IJNURSTU.2021.104000. [114]

Iacobucci, G. (2020), "Covid-19: Doctors sound alarm over hospital transmissions", *BMJ*, Vol. 369, p. m2013, https://doi.org/10.1136/BMJ.M2013. [177]

IHI (2022), *Declaration to Advance Patient Safety*, http://www.ihi.org/Engage/Initiatives/National-Steering-Committee-Patient-Safety/Pages/Declaration-to-Advance-Patient-Safety.aspx (accessed on 17 May 2022). [126]

Institute for Health Metrics and Evaluation (IHME), Bill and Melinda Gates Foundation (BMGF) and IPSOS (2021), *Ipsos General Population COVID-19 Health Services Disruption Survey 2020*, Institute for Health Metrics and Evaluation (IHME), Seattle, United States of America, https://ghdx.healthdata.org/record/ihme-data/ipsos-general-population-covid-19-health-services-disruption-survey-2020 (accessed on 29 July 2022). [90]

Institute of Global Health Innovation (2022), "National State of Patient Safety 2022: What we know about avoidable harm in England". [66]

Ivanković, D. et al. (2021), "Features Constituting Actionable COVID-19 Dashboards: Descriptive Assessment and Expert Appraisal of 158 Public Web-Based COVID-19 Dashboards", *J Med Internet Res 2021;23(2):e25682 https://www.jmir.org/2021/2/e25682*, Vol. 23/2, p. e25682, https://doi.org/10.2196/25682. [41]

Jarkovsky, J. et al. (2021), "Covidogram as a simple tool for predicting severe course of COVID-19: population-based study", *BMJ open*, Vol. 11/2, https://doi.org/10.1136/BMJOPEN-2020-045442. [46]

Jensen, H. et al. (2022), "Conditions and strategies to meet the challenges imposed by the COVID-19-related visiting restrictions in the intensive care unit: A Scandinavian cross-sectional study", *Intensive & Critical Care Nursing*, Vol. 68, p. 103116, https://doi.org/10.1016/J.ICCN.2021.103116. [111]

Jespersen, S. et al. (2020), "Severe Acute Respiratory Syndrome Coronavirus 2 Seroprevalence Survey Among 17 971 Healthcare and Administrative Personnel at Hospitals, Prehospital Services, and Specialist Practitioners in the Central Denmark Region", *Clinical Infectious Diseases*, Vol. 73/9, pp. e2853-e2860, https://doi.org/10.1093/cid/ciaa1471. [157]

Kamrath, C. et al. (2020), "Ketoacidosis in Children and Adolescents With Newly Diagnosed Type 1 Diabetes During the COVID-19 Pandemic in Germany", *JAMA*, Vol. 324/8, p. 801, https://doi.org/10.1001/jama.2020.13445. [98]

Kantar (2021), *International public opinion: Research on the vaccination campaign against COVID 19*, https://www.kantar.com/inspiration/society/study-finds-vaccine-hesitant-public-in-france-and-us (accessed on 31 March 2022). [9]

Klugar, M. et al. (2021), "COVID-19 Vaccine Booster Hesitancy (VBH) of Healthcare Workers in Czechia: National Cross-Sectional Study", *Vaccines*, Vol. 9/12, https://doi.org/10.3390/VACCINES9121437. [35]

Komenda, M. et al. (2020), "Complex Reporting of the COVID-19 Epidemic in the Czech Republic: Use of an Interactive Web-Based App in Practice", *Journal of Medical Internet Research*, Vol. 22/5, https://doi.org/10.2196/19367. [43]

Komenda, M. et al. (2022), "Control Centre for Intensive Care as a Tool for Effective Coordination, Real-Time Monitoring, and Strategic Planning During the COVID-19 Pandemic", *Journal of medical Internet research*, Vol. 24/2, https://doi.org/10.2196/33149. [45]

Komenda, M. et al. (2022), "Sharing datasets of the COVID-19 epidemic in the Czech Republic", *PLOS ONE*, Vol. 17/4, p. e0267397, https://doi.org/10.1371/JOURNAL.PONE.0267397. [44]

Kretzschmar, M. (ed.) (2021), "Transmission of community- and hospital-acquired SARS-CoV-2 in hospital settings in the UK: A cohort study", *PLOS Medicine*, Vol. 18/10, p. e1003816, https://doi.org/10.1371/journal.pmed.1003816. [162]

Landoas, A. et al. (2021), "SARS-CoV-2 nosocomial infection acquired in a French university hospital during the 1st wave of the Covid-19 pandemic, a prospective study", *Antimicrobial Resistance and Infection Control*, Vol. 10/1, pp. 1-8, https://doi.org/10.1186/S13756-021-00984-X/TABLES/3. [54]

Lasater, K. et al. (2021), "Chronic hospital nurse understaffing meets COVID-19: an observational study", *BMJ Quality & Safety*, Vol. 30/8, pp. 639-647, https://doi.org/10.1136/BMJQS-2020-011512. [152]

Lastinger, L. et al. (2022), "Continued increases in the incidence of healthcare-associated infection (HAI) during the second year of the coronavirus disease 2019 (COVID-19) pandemic", *Infection Control & Hospital Epidemiology*, pp. 1-5, https://doi.org/10.1017/ice.2022.116. [74]

Lavazza, A. and M. Farina (2020), "The Role of Experts in the Covid-19 Pandemic and the Limits of Their Epistemic Authority in Democracy", *Frontiers in Public Health*, Vol. 8, https://doi.org/10.3389/fpubh.2020.00356. [109]

Lawrence, C. et al. (2020), "Increased paediatric presentations of severe diabetic ketoacidosis in an Australian tertiary centre during the COVID-19 pandemic", *Diabetic Medicine*, Vol. 38/1, https://doi.org/10.1111/dme.14417. [96]

Lazzerini, M. et al. (2020), "Delayed access or provision of care in Italy resulting from fear of COVID-19", *The Lancet Child & Adolescent Health*, Vol. 4/5, pp. e10-e11, https://doi.org/10.1016/s2352-4642(20)30108-5. [99]

LeRose, J. et al. (2020), "The impact of coronavirus disease 2019 (COVID-19) response on central-line–associated bloodstream infections and blood culture contamination rates at a tertiary-care center in the Greater Detroit area", *Infection Control & Hospital Epidemiology*, Vol. 42/8, pp. 997-1000, https://doi.org/10.1017/ice.2020.1335. [183]

Lewis, R. et al. (2020), "Understanding and sustaining the health care service shifts accelerated by COVID-19". [102]

Maes, M. et al. (2021), "Ventilator-associated pneumonia in critically ill patients with COVID-19", *Critical Care*, Vol. 25/1, https://doi.org/10.1186/s13054-021-03460-5. [73]

Marago, I. and I. Minen (2020), "Hospital-Acquired COVID-19 Infection – The Magnitude of the Problem", *SSRN Electronic Journal*, https://doi.org/10.2139/SSRN.3622387. [174]

Maringe, C. et al. (2020), "The impact of the COVID-19 pandemic on cancer deaths due to delays in diagnosis in England, UK: a national, population-based, modelling study", *The Lancet Oncology*, Vol. 21/8, pp. 1023-1034, https://doi.org/10.1016/S1470-2045(20)30388-0/ATTACHMENT/52C550CA-E7E3-475D-8B04-14D4EDC4444D/MMC1.PDF. [3]

Mathabire Rücker, S. et al. (2022), "Transmission of COVID-19 among healthcare workers-an epidemiological study during the first phase of the pandemic in Sweden", *Epidemiology and Infection*, Vol. 150, https://doi.org/10.1017/s0950268822000231. [150]

Mathews, M. et al. (2022), "Family physician leadership during the COVID-19 pandemic: roles, functions and key supports", *Leadership in Health Services (Bradford, England)*, Vol. 35/4, p. 559, https://doi.org/10.1108/LHS-03-2022-0030. [108]

Matthew Austin, J. et al. (2020), "The State of Health Care Quality Measurement in the Era of COVID-19: The Importance of Doing Better", *JAMA*, Vol. 324/4, pp. 333-334, https://doi.org/10.1001/JAMA.2020.11461. [64]

Melançon, E. et al. (2022), "Outcomes of hospital-acquired SARS-CoV-2 infection in the Canadian first wave epicentre: a retrospective cohort study", *CMAJ Open*, Vol. 10/1, pp. E74-E81, https://doi.org/10.9778/cmajo.20210055. [62]

Mihailescu, M., J. Sim and I. Bourgea (n.d.), *AFTERWORD: THE IMPACT OF THE COVID-19 PANDEMIC ON THE CANADIAN HEALTH WORKFORCE*, https://www.hhr-rhs.ca/images/Intro_to_the_Health_Workforce_in_Canada_Chapters/23_Afterword.pdf (accessed on 29 November 2022). [140]

Ministry of Social Affairs and Health (2022), "The Client and Patient Safety Strategy and Implementation Plan 2022-2026", *Publications of the Ministry of Social Affairs and Health*. [143]

Mormeneo Bayo, S. et al. (2022), "Bacteremia during COVID-19 pandemic in a tertiary hospital in Spain", *Enfermedades Infecciosas y Microbiología Clínica*, Vol. 40/4, pp. 183-186, https://doi.org/10.1016/j.eimc.2021.01.015. [78]

Nepogodiev, D. et al. (2020), "Elective surgery cancellations due to the COVID-19 pandemic: global predictive modelling to inform surgical recovery plans", *The British journal of surgery*, Vol. 107/11, pp. 1440-1449, https://doi.org/10.1002/BJS.11746. [139]

NHS (2021), *2021/22 priorities and operational planning guidance: Implementation guidance*, https://www.england.nhs.uk/wp-content/uploads/2021/03/B0468-implementation-guidance-21-22-priorities-and-operational-planning-guidance.pdf (accessed on 12 July 2021). [49]

NHS (2021), *NHS Letter nr. C1468*, NHS, London. [65]

NHS England (n.d.), *Coronavirus » Temporary GP contract changes to support COVID-19 vaccination programme*, https://www.england.nhs.uk/coronavirus/documents/temporary-gp-contract-changes-to-support-covid-19-vaccination-programme/ (accessed on 29 August 2022). [105]

NL Times (2022), *Sharp increase in toe, foot amputations during Covid pandemic | NL Times*, https://nltimes.nl/2022/05/05/sharp-increase-toe-foot-amputations-covid-pandemic (accessed on 9 May 2022). [180]

NPR (2022), *New laws say patients can have visitors even in an outbreak : Shots - Health News : NPR*, https://www.npr.org/sections/health-shots/2022/04/03/1086216581/visiting-patients-during-covid?t=1651738803704 (accessed on 5 May 2022). [123]

Nuffield Trust (2022), *Safety culture in the NHS*, https://www.nuffieldtrust.org.uk/resource/safety-culture (accessed on 4 November 2022). [136]

OECD (2022), *Building Trust to Reinforce Democracy: Main Findings from the 2021 OECD Survey on Drivers of Trust in Public Institutions*, Building Trust in Public Institutions, OECD Publishing, Paris, https://doi.org/10.1787/b407f99c-en. [7]

OECD (2022), "Draft Principles of Good Practice for Public Communication Responses to Mis- and Disinformation", https://www.oecd.org/governance/reinforcing-democracy/. (accessed on 19 July 2022). [28]

OECD (2022), *Drivers of Trust in Public Institutions in Norway*, Building Trust in Public Institutions, OECD Publishing, Paris, https://doi.org/10.1787/81b01318-en. [30]

OECD (2022), *First lessons from government evaluations of COVID-19 responses: A synthesis*, OECD Policy Responses to Coronavirus (COVID-19), https://www.oecd.org/coronavirus/policy-responses/first-lessons-from-government-evaluations-of-covid-19-responses-a-synthesis-483507d6/ (accessed on 19 July 2022). [25]

OECD (2022), *Health data and governance developments in relation to COVID-19*. [42]

OECD (2022), *Health data and governance developments in relation to COVID-19*. [167]

OECD (2021), *Data-Driven, Information-Enabled Regulatory Delivery*, OECD Publishing, Paris, https://doi.org/10.1787/8f99ec8c-en. [20]

OECD (2021), *Drivers of Trust in Public Institutions in Finland*, Building Trust in Public Institutions, OECD Publishing, Paris, https://doi.org/10.1787/52600c9e-en. [31]

OECD (2021), *Enhancing public trust in COVID-19 vaccination: The role of governments*, OECD Policy Responses to Coronavirus (COVID-19), https://www.oecd.org/coronavirus/policy-responses/enhancing-public-trust-in-covid-19-vaccination-the-role-of-governments-eae0ec5a/ (accessed on 7 July 2021). [8]

OECD (2021), *Government at a Glance 2021*, OECD Publishing, Paris, https://doi.org/10.1787/1c258f55-en. [24]

OECD (2021), *Health at a Glance 2021*, OECD Publishing, Paris, https://doi.org/10.1787/19991312. [77]

OECD (2021), *Health for the People, by the people*, OECD Publishing, Paris, https://doi.org/10.1787/2074319x. [110]

OECD (2021), *Improving Regulatory Delivery in Food Safety: Mitigating Old and New Risks, and Fostering Recovery*, OECD Publishing, Paris, https://doi.org/10.1787/bf34907e-en. [170]

OECD (2021), *OECD Regulatory Policy Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/38b0fdb1-en. [11]

OECD (2021), *Public Employment and Management 2021: The Future of the Public Service*, OECD Publishing, Paris, https://doi.org/10.1787/938f0d65-en. [145]

OECD (2021), *Recommendation of the Council for Agile Regulatory Governance to Harness Innovation*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0464 (accessed on 23 January 2023). [19]

OECD (2022, Forthcoming), *Improving the resilience of health systems*. [76]

Oikonomou, E. et al. (2019), "Patient safety regulation in the NHS: mapping the regulatory landscape of healthcare", *BMJ Open*, Vol. 9/7, p. e028663, https://doi.org/10.1136/bmjopen-2018-028663. [182]

Patel, P. et al. (2021), "Impact of COVID-19 pandemic on central-line–associated bloodstream infections during the early months of 2020, National Healthcare Safety Network", *Infection Control & Hospital Epidemiology*, pp. 1-4, https://doi.org/10.1017/ICE.2021.108. [84]

Pauletti, G. et al. (2021), "Incident Reporting Reduction during the Covid-19 Pandemic in a Tertiary Italian Hospital. A Retrospective Analysis", *International Journal for Quality in Health Care*, https://doi.org/10.1093/intqhc/mzab161. [80]

Pokorná, A. et al. (2022), "How the COVID-19 pandemic influences the prevalence of pressure injuries in the Czech Republic: A nationwide analysis of a health registry in 2020", *Journal of tissue viability*, Vol. 31/3, pp. 424-430, https://doi.org/10.1016/J.JTV.2022.06.003. [81]

Porru, S. et al. (2020), "Health Surveillance and Response to SARS-CoV-2 Mass Testing in Health Workers of a Large Italian Hospital in Verona, Veneto", *International Journal of Environmental Research and Public Health*, Vol. 17/14, p. 5104, https://doi.org/10.3390/ijerph17145104. [158]

Portuguese National Patient Safety Strategy (2021), *Portuguese National Patient Safety Strategy 2021-2026*. [144]

Press Ganey (2022), *Safety Culture Trends*. [138]

Priori, A. et al. (2021), "The Many Faces of Covid-19 at a Glance: A University Hospital Multidisciplinary Account From Milan, Italy", *Frontiers in Public Health*, Vol. 8, https://doi.org/10.3389/fpubh.2020.575029. [127]

Prokopová, T. et al. (2022), "Palliative care practice and moral distress during COVID-19 pandemic (PEOpLE-C19 study): a national, cross-sectional study in intensive care units in the Czech Republic", *Critical Care*, Vol. 26/1, pp. 1-14, https://doi.org/10.1186/S13054-022-04066-1/FIGURES/3. [129]

Protonotariou, E. et al. (2021), "Microbiological characteristics of bacteremias among COVID-19 hospitalized patients in a tertiary referral hospital in Northern Greece during the second epidemic wave", *FEMS Microbes*, Vol. 2, https://doi.org/10.1093/femsmc/xtab021. [72]

Read, J. et al. (2021), "Hospital-acquired SARS-CoV-2 infection in the UK's first COVID-19 pandemic wave", *The Lancet*, Vol. 398/10305, pp. 1037-1038, https://doi.org/10.1016/s0140-6736(21)01786-4. [59]

Riad, A. et al. (2021), "Global Prevalence and Drivers of Dental Students' COVID-19 Vaccine Hesitancy", *Vaccines*, Vol. 9/6, https://doi.org/10.3390/VACCINES9060566. [36]

Riad, A. et al. (2021), "COVID-19 Vaccine Acceptance of Pregnant and Lactating Women (PLW) in Czechia: An Analytical Cross-Sectional Study", *International journal of environmental research and public health*, Vol. 18/24, https://doi.org/10.3390/IJERPH182413373. [34]

Riad, A. et al. (2021), "Covid-19 vaccines safety tracking (Covast): Protocol of a multi-center prospective cohort study for active surveillance of covid-19 vaccines' side effects", *International Journal of Environmental Research and Public Health*, Vol. 18/15, https://doi.org/10.3390/IJERPH18157859. [37]

Rodriguez-Menéndez, G. et al. (2021), "Short-term emotional impact of COVID-19 pandemic on Spaniard health workers", *Journal of Affective Disorders*, Vol. 278, pp. 390-394, https://doi.org/10.1016/j.jad.2020.09.079. [128]

Sandal, A. and A. Yildiz (2021), "COVID-19 as a Recognized Work-Related Disease: The Current Situation Worldwide", *Safety and Health at Work*, Vol. 12/1, pp. 136-138, https://doi.org/10.1016/j.shaw.2021.01.001. [141]

Schuivens, P. et al. (2020), "Impact of the COVID-19 Lockdown Strategy on Vascular Surgery Practice: More Major Amputations than Usual", *Annals of Vascular Surgery*, Vol. 69, pp. 74-79, https://doi.org/10.1016/J.AVSG.2020.07.025. [93]

Sellers, E. and D. Pacaud (2021), "Diabetic ketoacidosis at presentation of type 1 diabetes in children in Canada during the COVID-19 pandemic", *Paediatrics & Child Health*, Vol. 26/4, pp. 208-209, https://doi.org/10.1093/pch/pxab017. [97]

Shields, L., T. Lawson and K. Flanders (2021), "The impact of COVID-19 on patient safety attendant use", *Nursing*, Vol. 51/10, p. 42, https://doi.org/10.1097/01.NURSE.0000791760.49330.35. [165]

Sikkema, R. et al. (2020), "COVID-19 in health-care workers in three hospitals in the south of the Netherlands: a cross-sectional study", *The Lancet Infectious Diseases*, Vol. 20/11, pp. 1273-1280, https://doi.org/10.1016/s1473-3099(20)30527-2. [159]

Silvera, G. et al. (2021), "The influence of COVID-19 visitation restrictions on patient experience and safety outcomes: A critical role for subjective advocates", *Patient Experience Journal*, Vol. 8/1, pp. 30-39, https://doi.org/10.35680/2372-0247.1596. [118]

Singh, H., M. Graber and T. Hofer (2019), "Measures to Improve Diagnostic Safety in Clinical Practice", *Journal of Patient Safety*, Vol. 15/4, p. 311, https://doi.org/10.1097/PTS.0000000000000338. [89]

Slawomirski, L., A. Auraaen and N. Klazinga (2017), "The economics of patient safety: Strengthening a value-based approach to reducing patient harm at national level", *OECD Health Working Papers*, No. 96, OECD Publishing, Paris, https://doi.org/10.1787/5a9858cd-en. [16]

Slawomirski, L. and N. Klazinga (2022), *THE ECONOMICS OF PATIENT SAFETY From analysis to action*, http://www.oecd.org/health/health-systems/Economics-of-Patient-Safety-October-2020.pdf (accessed on 1 April 2021). [133]

Slawomirski, L. and N. Klazinga (2022), "The economics of patient safety: From analysis to action", *OECD Health Working Papers*, No. 145, OECD Publishing, Paris, https://doi.org/10.1787/761f2da8-en. [17]

Slawomirski, L. and N. Klazinga (2020), *THE ECONOMICS OF PATIENT SAFETY From analysis to action*, http://www.oecd.org/health/health-systems/Economics-of-Patient-Safety-October-2020.pdf (accessed on 1 April 2021). [184]

Smallwood, N. et al. (2021), "Moral Distress and Perceived Community Views Are Associated with Mental Health Symptoms in Frontline Health Workers during the COVID-19 Pandemic", *International Journal of Environmental Research and Public Health*, Vol. 18/16, p. 8723, https://doi.org/10.3390/ijerph18168723. [130]

Šmíd, M. et al. (2022), "Protection by Vaccines and Previous Infection Against the Omicron Variant of Severe Acute Respiratory Syndrome Coronavirus 2", *The Journal of Infectious Diseases*, Vol. 226/8, pp. 1385-1390, https://doi.org/10.1093/INFDIS/JIAC161. [47]

Staines, A. et al. (2020), "COVID-19: patient safety and quality improvement skills to deploy during the surge | International Journal for Quality in Health Care | Oxford Academic", *International Journal for Quality in Health Care*, https://academic.oup.com/intqhc/article/doi/10.1093/intqhc/mzaa050/5836316 (accessed on 23 July 2020). [164]

Sturdy, A. et al. (2020), "Severe COVID-19 and healthcare-associated infections on the ICU: time to remember the basics?", *Journal of Hospital Infection*, Vol. 105/4, pp. 593-595, https://doi.org/10.1016/j.jhin.2020.06.027. [79]

Sudai, M. (2021), "Not Dying Alone: the Need to Democratize Hospital Visitation Policies During Covid-19", *Medical Law Review*, Vol. 29/4, pp. 613-638, https://doi.org/10.1093/MEDLAW/FWAB033. [122]

Sutton, B. et al. (2021), "COVID-19 Hospital-Acquired Infections Among Patients in Victorian Health Services". [58]

Swiss Federal Chancellery (2022), "Rapport concernant l'évaluation de la gestion de crise pendant la pandémie de COVID-19", https://www.newsd.admin.ch/newsd/message/attachments/64454.pdf. [26]

Tani, Y. et al. (2020), "Nosocomial SARS-CoV-2 Infections in Japan: A Crosssectional Newspaper Database Survey", *International Journal of Health Policy and Management*, https://doi.org/10.34172/ijhpm.2020.75. [56]

Tani, Y. et al. (2020), "Nosocomial SARS-CoV-2 Infections in Japan: A Cross-sectional Newspaper Database Survey", *International Journal of Health Policy and Management*, Vol. 9/10, p. 461, https://doi.org/10.34172/IJHPM.2020.75. [175]

Tham, N. et al. (2022), "Hospital Acquired Infections in Surgical Patients: Impact of COVID-19-Related Infection Prevention Measures", *World Journal of Surgery*, Vol. 46/6, pp. 1249-1258, https://doi.org/10.1007/s00268-022-06539-4. [185]

The Guardian (2022), *Disruption to diabetes care during Covid threatens thousands, charity warns | Diabetes |*, https://www.theguardian.com/society/2022/apr/20/disruption-to-diabetes-care-during-covid-threatens-thousands-charity-warns (accessed on 9 May 2022). [91]

The Health Foundation (2010), *Evidence scan: Complex adaptive systems*, The Health Foundation, London. [18]

Togoh, I. (2020), "Here's How Some Of The Countries Worst Hit By Coronavirus Are Dealing With Shortages Of Protective Equipment For Healthcare Workers", *Forbes*, https://www.forbes.com/sites/isabeltogoh/2020/03/31/heres-how-some-of-the-countries-worst-hit-by-coronavirus-are-dealing-with-shortages-of-protective-equipment-for-healthcare-workers/#6ee8a1bf2c13 (accessed on 3 August 2020). [53]

van der Bles, A. et al. (2020), "The effects of communicating uncertainty on public trust in facts and numbers", *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 117/14, pp. 7672-7683, https://doi.org/10.1073/PNAS.1913678117/SUPPL_FILE/PNAS.1913678117.SAPP.PDF. [40]

Van der Roest, H. et al. (2020), "The Impact of COVID-19 Measures on Well-Being of Older Long-Term Care Facility Residents in the Netherlands", *Journal of the American Medical Directors Association*, Vol. 21/11, p. 1569, https://doi.org/10.1016/J.JAMDA.2020.09.007. [116]

Waitzberg, R. et al. (2022), "Balancing financial incentives during COVID-19: A comparison of provider payment adjustments across 20 countries", *Health Policy*, Vol. 126/5, pp. 398-407, https://doi.org/10.1016/j.healthpol.2021.09.015. [104]

Watson, G. et al. (2021), "'Do I, don't I?' A qualitative study addressing parental perceptions about seeking healthcare during the COVID-19 pandemic", *Archives of Disease in Childhood*, Vol. 106/11, pp. 1118-1124, https://doi.org/10.1136/archdischild-2020-321260. [100]

WHO (2020), "Coronavirus disease 2019 (COVID-19) Situation Report – 73", https://doi.org/10.3201/eid2606.200239. [63]

WHO (2020), *Maintaining essential health services: operational guidance for the COVID-19 context: interim guidance, 1 June 2020*, https://apps.who.int/iris/handle/10665/332240 (accessed on 28 July 2022). [113]

WHO (2019), "Patient safety Global action on patient safety: Report by the Director-General", https://doi.org/10.1136/bmjqs-2012-001748. [14]

WHO (n.d.), *The true death toll of COVID-19: estimating global excess mortality*, https://www.who.int/data/stories/the-true-death-toll-of-covid-19-estimating-global-excess-mortality (accessed on 10 May 2022). [13]

WHO/European Observatory (2019), *It's the governance, stupid! TAPIC: a governance framework to strengthen decision making and implementation*, https://apps.who.int/iris/handle/10665/331963 (accessed on 28 July 2022). [23]

World Bank (n.d.), *Citizen Engagement and Stakeholder Consultations during COVID-19*, 2020, https://www.worldbank.org/en/news/factsheet/2020/12/01/citizen-engagement-and-stakeholder-consultations-during-covid-19 (accessed on 26 August 2022). [106]

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