

Appendices for COVID-19 Living Evidence Profile #5

(Version 2: 15 July 2021)

Appendix 1: Methodological details

We use a standard protocol for preparing living evidence profiles (LEP) to ensure that our approach to identifying research evidence as well as experiences from seven countries - Australia, Brazil, France, Germany, South Africa, the United Kingdom (U.K.), and the United States (U.S.) - are as systematic and transparent as possible in the time we were given to prepare the profile. However, given that it was unlikely that we would find evidence syntheses and many empirical studies, we adapted the protocol to give greater attention to single studies and to include opinion pieces that justify the position(s) taken in ways described below.

Identifying research evidence

For each LEP, we typically search our continually updated [inventory of best evidence syntheses](#) and [guide to key COVID-19 evidence sources](#) for:

- 1) full systematic reviews;
- 2) rapid reviews;
- 3) protocols for reviews or rapid reviews that are underway;
- 4) titles/questions for reviews that are being planned; and
- 5) single studies.

In this case, we searched primarily for:

- 1) single empirical studies, including those published in the peer-reviewed literature, as pre-prints, and in the 'grey' literature; and
- 2) opinion pieces, specifically those that justify the position(s) taken with one or more of:
 - a. explicit assessment of the pros and cons of a course of action compared to the alternatives available,
 - b. cited data and/or evidence that was explicitly used in deriving lessons learned,
 - c. documented stakeholder-engagement process to elicit lessons learned, and
 - d. endorsement of lessons learned by a formal group or a large, informal group of signatories to a statement describing lessons learned.

To complement the databases containing COVID-19-specific single studies that are listed in the COVID-END [guide to key COVID-19 evidence sources](#), we also searched EMBASE and select grey-literature sources to identify any relevant empirical studies and opinion pieces. The grey-literature sources include:

- 1) websites of international agencies (Organisation for Economic Cooperation and Development and World Bank); and
- 2) grey-literature databases (OAIster).

Each source for these documents is assigned to one team member who conducts hand searches (when a source contains a smaller number of documents) or keyword searches to identify potentially relevant documents. A final inclusion assessment is performed both by the person who did the initial screening and the lead author of the living evidence profile, with disagreements resolved by consensus or with the input of a third reviewer on the team. The team uses a dedicated virtual

channel to discuss and iteratively refine inclusion/exclusion criteria throughout the process, which provides a running list of considerations that all members can consult during the first stages of assessment. For this update, we conducted searches in English. For next month's update we will conduct searches using terms in French, Portuguese and German.

We do not exclude documents based on the language of a document. However, we are not able to extract key findings from documents that are written in languages other than Chinese, English, French or Portuguese. We provide any documents that do not have content available in these languages in an appendix containing documents excluded at the final stages of reviewing.

Identifying experiences from other countries

We identified experiences from other countries related to the question by hand searching national government and national government agency websites. We included documents from the sub-national level if they were reported on these websites (but we did not search sub-national government websites separately). We reviewed English-, French- and Portuguese-language websites in this update, and will search sites in German next month. We also approached contacts in each country and asked that they send us any relevant literature that they have seen.

Assessing relevance and quality of evidence

We assess the relevance of each included evidence document as being of high, moderate or low relevance to the question. We then use a colour gradient to reflect high (darkest blue) to low (lightest blue) relevance.

For this update, we used AMSTAR to appraise the methodological quality of full systematic reviews and rapid reviews deemed to be highly relevant. Our standard protocol is that two reviewers independently appraise the methodological quality of systematic reviews and rapid reviews that are deemed to be highly relevant. Disagreements are resolved by consensus with a third reviewer if needed. AMSTAR rates overall methodological quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. High-quality reviews are those with scores of eight or higher out of a possible 11, medium-quality reviews are those with scores between four and seven, and low-quality reviews are those with scores less than four. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to health-system arrangements or to economic and social responses to COVID-19. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered 'high scores.' A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8.

We also identified the methodology of included empirical studies deemed to be highly relevant and undertook quality assessments for quasi-experimental studies using the [Maryland Scientific Methods](#)

[Scale](#). The Maryland Scientific Methods Scale is a five-point scale ranging from 1, for evaluation based on simple cross-sectional correlations, to 5, for randomized controlled trials. We were prepared to complete quality assessments for experimental studies using the Cochrane risk of bias assessment had we found any.

For quantitative observational studies that evaluate an intervention, we have used the [ROBINS-I](#) tool. Two reviewers independently assessed the risk of bias for each study by applying each of the signalling questions. The reviewers then reconciled any differences and agreed on an overall risk of bias score. The tool offers [four judgements for overall risk of bias](#). Studies with a low risk of bias are comparable to a well performed randomized trials when examining the effects of an intervention. Studies with moderate risk of bias provide sound evidence for a non-randomised study but cannot be considered comparable to a well-performed randomized trial. Studies with a serious risk of bias have some important problems with the methodology as compared to a randomized trial but may still provide evidence on the effects of an intervention. Finally, studies with a critical risk of bias are considered too problematic to provide any useful evidence on the effects of an intervention.

As scoring qualitative studies is not aligned with the qualitative tradition, we have used the Joanna Briggs Institute (JBI) Critical Appraisal tool for qualitative research to determine whether studies should be included in the LEP. Two reviewers independently applied the JBI checklist to ensure methodological rigour in the highly relevant qualitative studies. The two reviewers then reconciled their appraisals and agreed on the inclusion and relevance of each study. In the event of any significant limitations in methodological rigour we would have included the study but not has a highly relevant document.

Preparing the profile

Each included document is hyperlinked to its original source to facilitate easy retrieval. For all included empirical studies and opinion pieces, as well as any evidence syntheses, had we found them, we prepare a small number of bullet points that provide a brief summary of the key findings, which are used to summarize key messages in the text. Protocols and titles/questions have their titles hyperlinked given that findings are not yet available. We then draft a brief summary that highlights the total number of different types of highly relevant documents identified (organized by document), as well as their key findings, date of last search (or date last updated or published), and methodological quality.

Organizing framework

For this living evidence profile, we organized our results by COVID-19 response type and by the part of the question being addressed using an explicit equity lens.

The first organizing framework is for type of COVID-19 response:

- cross-cutting by federal versus provincial (versus municipal) and by shift in policy instrument (and/or condition, treatment, sector, or population);
- public health measures (e.g., stockpiling personal-protective equipment), by federal versus provincial (versus municipal) and by shift in policy instrument;
- clinical management, by condition and/or treatment (typically provincial for topics like drug formularies);

- health-system arrangements, by sector (e.g., long-term care) and population (e.g., essential workers and racialized communities) and by federal/pan-Canadian/cross-provincial (versus provincial) and by shift in policy instrument;
 - governance arrangements (e.g., dividing up or keeping public-health functions together),
 - financial arrangements, and
 - delivery arrangements; and
- economic and social, by sector and by federal (versus provincial) (versus municipal) and by shift in policy instrument.

The second organizing framework is for the three parts of the question:

- what went well;
- what could have gone better; and
- recommendations on what will need to go well in the future given any available foresight work being conducted.

Appendix 2: Highlights from highly relevant evidence documents and experiences from other countries

Response type	Lessons from evidence documents	Lessons from government reports and analyses
Cross-cutting	<p><i>Lessons from United Kingdom</i></p> <ul style="list-style-type: none"> • A qualitative study describing the experience and impact of the COVID-19 pandemic on young people from minority backgrounds reported exacerbation of socioeconomic and mental health challenges among the participants <ul style="list-style-type: none"> ○ Key recommendations to mitigate these challenges included the protection of work/internship schemes and maintenance of financial support, development of online peer support networks, support from schools to manage increased anxiety among the population, and dissemination of tailored communication 	<p><i>Lessons from Germany</i></p> <ul style="list-style-type: none"> • A government report published in March 2021 highlighted the need for digital transformation in order to simplify administrative processes, integrate management approaches, strengthen laboratories and businesses, and advance digital communications
Public-health measures	<p><i>Lessons from multiple countries</i></p> <ul style="list-style-type: none"> • A qualitative study comparing policies adopted in several countries in response to the COVID-19 pandemic concluded that strongly and timely political responses can make a difference in a country's pandemic response and when it corporates widespread testing, comprehensive contact tracing, and timely public health measures <ul style="list-style-type: none"> ○ A delayed response in implementing public health measures in Spain, Italy, Iran, the U.S. and the U.K. led to high infection and mortality rates ○ Germany and the U.K. provided widespread coverage of COVID-19 testing for its population and developed new diagnostic tests, with the U.K. increasing service capacity by engaging the private sector, increasing bed capacity and creating additional temporary hospitals and Germany recruited new healthcare workers and encouraged medical and nursing teams to join medical teams 	<p><i>Lesson from Israel</i></p> <ul style="list-style-type: none"> • A special interim report from Israel's State Comptroller published in October 2020 outlined what went well, what could have gone better, and recommendations related to epidemiological investigations <ul style="list-style-type: none"> ○ The General Security Service (GSS) acted promptly and despite technological challenges ○ The Ministry of Health did not have an effective system for epidemiological investigations (e.g., identification of positive cases, documentation and interrogation processes, lack of linkages to the Ministry of Education) ○ Day-to-day government activities were affected given the extra efforts towards the General Security Service (GSS) ○ The State Comptroller recommended that the epidemiological investigations with GSS requires further analyses to determine its value in future investigations • A special interim report from Israel's State Comptroller published in 2021 outlined what could have gone better, and recommendations related to diagnostic laboratories, including challenges to testing capacity, meeting the needs of laboratories, and long wait times for test results

	<p><i>Lesson from South Africa</i></p> <ul style="list-style-type: none"> • An opinion piece provided findings and challenges reported regarding schooling, employment, vaccines, hunger, early childhood development, and mental health in South Africa during the pandemic <ul style="list-style-type: none"> ○ Interventions aimed at encouraging vaccine acceptance seem to be working as vaccine acceptance rates have improved over time • An opinion piece explored the COVID-19 first wave response and subsequent resurgences in several countries to understand what should be expected and to mitigate a COVID-19 resurgence in South Africa, and concluded that South Africa should put emphasis on increasing testing and isolation capacity, strengthening enforcement of public health measures, and protecting high risk populations since strict lockdowns alone proved to be ineffective at stopping transmission at the anticipated rates <p><i>Lesson from the U.S.</i></p> <ul style="list-style-type: none"> • A study reviewed vaccine allocation frameworks in the U.S. and jurisdictions adopting proposals to reduce inequity using disadvantaged indices and related place-based measures, and found that 37 jurisdictions had adopted disadvantaged indices by the end of March 2021 compared to 19 at the end of November 2020, 18 jurisdictions plan to use an index to identify priority populations, and another 15 plan to use an index for promoting access such as reaching out to select communities 	<ul style="list-style-type: none"> ○ The State Comptroller recommended that the Ministry of Health should identify bottlenecks in testing processes, develop better relationships and coordination with laboratories, and establish appropriate quality tests <p><i>Lesson from the U.K.</i></p> <ul style="list-style-type: none"> • The U.K.'s Comptroller and Auditor General released a continually updated report on the U.K. government's approach to test and trace services in England through NHS Test and Trace Service and found that the success of the test and trace service relied heavily on the public coming forward for tests, that the service was set up with a workforce heavily reliant on consultants, and there is a need increased flexibility of the NHS Test and Trace contracts for contact tracing, future laboratory use, and engagement with local authorities
Clinical management	<ul style="list-style-type: none"> • One opinion piece provides examples of hospital best practices in Germany established during the pandemic, including: <ul style="list-style-type: none"> ○ Improve management of clinical capacities and patient flow 	<ul style="list-style-type: none"> • None identified

	<ul style="list-style-type: none"> ○ Determine therapy goals early, considering patients’ preferences, to improve use of available resources ○ Improve transfer of critically ill patients across departments ○ Facilitate quick capacity-building for nurses to enable them to work in intensive care ○ Foster clear communication through expert group as well as bottom-up communication ○ Optimize use of existing intensive care capacity before expansion 	
Health-system arrangements	<p><i>Lessons from Australia</i></p> <ul style="list-style-type: none"> ● Key themes emerging from the mental health response plans of Australia, New Zealand and other countries that were discussed in a scoping review include: <ul style="list-style-type: none"> ○ a fundamental shift to address the social determinants of health ○ an acceleration in new ways of working that include the use of digital technologies and enhancing service delivery and community supports ○ the need to pay attention to at risk groups including ethnic minorities, LGBT+, victims of abuse, people with disabilities <p><i>Lessons from Germany</i></p> <ul style="list-style-type: none"> ● Lessons for the future of healthcare identified by the Barmer Institute for Health Systems Research, Bertelsmannstiftung and Robert Bosch Stiftung in Germany are: <ul style="list-style-type: none"> ○ Strengthen health authorities and networks of general practitioners ○ Create more specialized hospitals, more integrated centers for basic care and cross-sectoral remuneration models ○ Ensure more skills for nurses 	<p><i>Lessons from Australia</i></p> <ul style="list-style-type: none"> ● After conducting a performance review of procurements and deployment related to COVID-19, the Australian National Audit Office found that due diligence and record keeping could have been improved for procurement processes, and that an absence of a performance framework and disaggregated data collected made it unclear how effective deployment of pandemic supplies was ● The Australian National Audit Office also conducted a performance review of the planning and governance of COVID-19 procurements to increase the National Medical Stockpile and found that procurement planning in Australia was not well coordinated with states and territories and pre-pandemic planning did not adequately consider emergency procurements <ul style="list-style-type: none"> ○ COVID-19 procurement needs were difficult to estimate for most products and there was a lack of documentation regarding risks and conflicts of interests, but the Audit Office found that, generally speaking, procurement needs were met or exceeded

- Foster more consistent use of the possibilities of digitization

Lessons from the U.K.

- One rapid review found that [Black, Asian, and minority ethnic \(BAME\) frontline healthcare workers in the United Kingdom \(U.K.\) were more likely to be exposed to COVID-19 during the pandemic than their White counterparts due to frontline prevalence, complications with PPE, and lack of empowerment to speak up about challenges](#)
 - After learning from the review that BAME healthcare workers reported increased mental health challenges, the authors concluded that more efforts in the U.K. should focus on the physical and mental wellbeing of BAME healthcare workers (AMSTAR rating 0/9)
- A qualitative study comparing the response policies of several countries found that [adequate resource funding and allocation was not enough to respond to the COVID-19 pandemic, but rather a strong and timely political response that incorporated widespread testing, comprehensive contact tracing, and timely public health measures](#)
- A study exploring the progress and challenges of the U.K.'s mental health community during the COVID-19 pandemic identified that [a fragmented mental health system infrastructure, inequalities in the mental health workforce, and the sacrifice of quality care when responding quickly to research request led to difficulties in the mental health community's COVID-19 response](#)
 - The exasperation of inequalities in mental health academia, limited and competitive funding schemes for mental health research, and lack of involvement of individuals with lived mental health experiences in mental health research have

	<p>also contributed to the difficulties of meeting the demand for quality mental health research in the U.K.</p> <ul style="list-style-type: none">• A Nuffield Trust report that analysed the quality and consistency of ethnicity coding in commonly used health datasets in the U.K. found inconsistencies in NHS health records where minority ethnic groups were commonly misclassified and independent health care providers only had ethnic coding for 62% of records<ul style="list-style-type: none">○ The report provided specific recommendations to address these data quality issues including a review of the quality of ethnic coding by the UK Statistics Authority, routine inclusion and reporting of ethnicity in data collection and research, the inclusion of data on the proportion of records coded as “not known” or stated “other group”, and the development and implementation of guidance on ethnicity coding by the NHS• An opinion piece describing the challenges experienced in the social care sector in England during the pandemic highlighted that while central government support for social care was slow during the first wave of the pandemic and lead to inadequate protection for people using and providing care, support in select areas eventually improved and social care providers and recipients’ access to testing, PPE, and vaccinations increased over time<ul style="list-style-type: none">○ Challenges that still remain include the fragmented government policy on social, the lack of publicly available data, and major structural issues in social care including chronic underfunding, workforce issues, system fragmentation and others were exacerbated during the pandemic	
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	<p><i>Lessons from the U.S.</i></p> <ul style="list-style-type: none"> • The key challenges and opportunities identified by the National Academy of Science based on the COVID-19 response of leaders in the U.S. health insurance sector were: <ul style="list-style-type: none"> ○ Accelerating the transition to value-based payment ○ Extending flexibilities for virtual health services and capabilities ○ Aligning incentives and investments to address health inequities ○ Creating mechanisms for collective action during public health emergencies ○ Coordinating payment reforms with public health functions • The National Academy of Science also identified several key policy considerations after assessing the response and experience of hospitals and health systems within the U.S. during the COVID-19 pandemic, namely: <ul style="list-style-type: none"> ○ Enhancing financial resiliency ○ Creating surge capacity in the medical supply chain ○ Investing in new workforce support and development programs and staffing models ○ Improving flexibility and built-in capacity for inpatient care ○ Building upon renewed commitments to address health inequities ○ Fostering linkages between health systems and other sectors such as public health 	
Economic and social	<p><i>Lessons from South Africa</i></p> <ul style="list-style-type: none"> • An observational study from South Africa reports on findings from a large survey regarding schooling, employment, vaccines, hunger, early childhood 	<p><i>Lessons from Israel</i></p> <ul style="list-style-type: none"> • A report from the State Comptroller on the economic responses to the pandemic found that the Tax Authority adapted and enacted emergency procedures and systems to monitor progress throughout the pandemic

	<p>development, shack residents, and mental health during the pandemic</p> <ul style="list-style-type: none"> ○ School closures and rotating timetables have caused significant learning loss amongst primary learners (particularly amongst the most disadvantaged), and COVID-19 infections are not strongly associated with schools being open ○ Lockdowns had an immediate and temporary negative impact on employment rates, and there has been a partial recovery of employment rates when lockdowns have been lifted—though there has been less employment recovery for women ○ Receipt of the national Unemployment Insurance Fund Temporary Employee Relief Scheme was associated with job retention (the aim of the policy), but women did not benefit from this form of support to the same extent as men ○ The termination of the government Social Relief of Distress grant, and the decline in the real value of others due to inflation, have contributed to a stubbornly high rate of hunger ○ Shack residents have suffered disproportionately from the pandemic, in part due to the halting of trading in the informal economy during hard lockdowns 	<ul style="list-style-type: none"> ○ However, consumers and businesses faced challenges in accessing government supports and the process could have been clearer and more efficient ● A report from the State Comptroller on the social responses to the pandemic found that internet access was limited amongst specific population groups, and it was recommended that the Ministry of Health take action on this issue <ul style="list-style-type: none"> ○ It was also recommended that environmental spaces outside of schools be further developed and used <p><i>Lessons from South Africa</i></p> <ul style="list-style-type: none"> ● A government report on the role of the South African Police Service's role during the pandemic made several recommendations: <ul style="list-style-type: none"> ○ Further work should be done to capitalize on the intersectoral collaboration that emerged during the pandemic ● A government report on the transportation sector's response to the pandemic found that there was a lack of sectoral planning for such an emergency situation, and there was a lack of coordination between transportation operators and public-health authorities regarding how to fund and implement pandemic safety measures ● A government report on agriculture and food security during the pandemic found that food supply was not severely impacted by the pandemic and related restrictions, in part due to collaboration between government and industry to resolve bottlenecks <ul style="list-style-type: none"> ○ However, the blanket financial relief program for the industry may not have been the most appropriate and a targeted program for the most impacted sectors may have been more effective ○ Large firms in the food industry were better positioned than small firms to collaborate and communicate with the government during the pandemic, and informal traders were particularly negatively impacted
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Appendix 3: Highlights from highly relevant new evidence documents and experiences from other countries

Response type	Lessons from evidence documents	Lessons from government reports and analyses
Cross-cutting	<p><i>Lesson from Germany</i></p> <ul style="list-style-type: none"> • A single study reported that existing research supports such as the Robert Koch Institute and Max Planck Institute were critical to the co-production of policy, the development of both formal and informal working groups, and to gain public trust in Germany • The inclusion of philosophers, theologians and jurists on some working groups was noted as a unique strategy when addressing appropriate steps to reopening 	<p><i>Lesson from Australia</i></p> <ul style="list-style-type: none"> • The Australian Senate’s Select Committee on COVID-19 found that National Cabinet (made up of the Prime Minister and all state and territorial first ministers and formed to handle COVID-19) did not function in accordance with Westminster conventions on cabinet responsibility, solidarity and transparency <ul style="list-style-type: none"> ○ The committee stated that the Prime Minister contributed to national confusion and anxiety and fractured the national response by criticizing certain state premiers’ decisions and providing mixed messaging ○ The committee also found that the National COVID-19 Commission Advisory Board lacked transparency and accountability, has not released any work publicly, and has not adequately managed any potential conflicts of interest <p><i>Lesson from South Africa</i></p> <ul style="list-style-type: none"> • The Department of Planning, Monitoring and Evaluation, the Government Technical Advisory Council, and the National Research Foundation analyzed the government’s response to the COVID-19 pandemic across different sectors <ul style="list-style-type: none"> ○ The review of leadership, governance and institutional arrangements found that the leadership and communication from the president, provincial leaders, and municipal leaders has generally been strong, but some serious lapses in leadership (most notably corrupt practices) have hindered the response ○ Disaster-management protocols were activated in each sector and enabled significant intergovernmental cooperation and relationships, but the overall system was under-resourced, and lacked staff capacity,

		accountability, transparency in decision-making and dedicated planning
Public-health measures	<p><i>Lessons from Brazil</i></p> <ul style="list-style-type: none"> • Social distancing and lockdown policies are useful tools for flattening the epidemic curve of COVID-19 <ul style="list-style-type: none"> ○ An interrupted time series design study of four Brazilian cities demonstrated statistically significant downward trends of COVID-19 cases after the implementation of lockdown policies, and important reductions in COVID-19 related deaths ranging from 37.85% in São Luís to 16.77% in Belém ○ A time series analysis study in the state of São Paulo demonstrated a significant reduction in COVID-19 deaths attributable to social-distancing strategies ○ A study employing a difference-in-difference approach found that higher levels of social-isolation policies are associated with a reduction in the number of COVID-19 cases and deaths ○ A modelling study found that isolating adults 60 and over during the COVID-19 pandemic is important for reducing COVID-19-related hospitalizations and deaths ○ A modelling study found that maintaining social-distancing measures is necessary for managing the demand for ICU beds • Reopening prematurely after lockdown and relaxing social-distancing policies can significantly increase new COVID-19 cases <ul style="list-style-type: none"> ○ Using other states as a synthetic control, an observational study found that between 9.5% and 40.4% of new COVID-19 infections between 23 April and 14 May 2020 could be attributed to the reopening policy 	<p><i>Lessons from Australia</i></p> <ul style="list-style-type: none"> • The Senate Select Committee on COVID-19 found that the government should have responded with greater urgency in January 2020 <ul style="list-style-type: none"> ○ Pre-COVID-19 pandemic planning was inadequate and the initial response in February 2020 had several key gaps regarding international borders, aged care, care for those with disabilities, and mental health ○ Government actions and inactions had led to thousands of Australians being stranded abroad ○ The Senate Select Committee’s chapter on managing COVID-19 in Australia states that the national COVIDSafe contact-tracing application has underperformed in its ability to aid in contact tracing <p><i>Lessons from Brazil</i></p> <ul style="list-style-type: none"> • Femicide and complaints to the national violence against women helpline increased 22% and 29% respectively during the first two months after confinement measures were implemented in Brazil <p><i>Lessons from France</i></p> <ul style="list-style-type: none"> • The Auditors Court (“Cour des comptes) has issued evaluating aid for returning French people abroad in foreign countries during the COVID-19 pandemic • The partnership established between the Ministry of Transportation and Air France was successful and brought citizens back in a timely and cost-efficient manner <p><i>Lessons from the U.K.</i></p> <ul style="list-style-type: none"> • The U.K.’s Comptroller and Auditor General released a report that summarizes the emergency response to personal protective equipment (PPE) shortages in England, with a focus on the performance of national bodies in obtaining and distributing PPE to local

- A [protocol for a multiple case study](#), including Brazil, is underway to compare learnings from public health and hospital resilience to the SARS-CoV-2 pandemic

Lessons from Israel

- A study examined Israel's [drive-through testing complexes derived key lessons learned from an analysis of these centres](#)
 - The drive-through complexes were cost-effective and efficient in performing mass testing
 - The Magen David Adom's (Israel's national emergency medical services organization) prior experience with mass-casualty incidents was beneficial, especially with existing national-level protocols and procedures in place
 - Use of unique features such as preregistration with a national call number, text message, and identification at site by QR code provided optimal physical distancing between staff and patients
 - More mobile complexes close to outbreaks may be more valuable compared to a smaller number of larger expensive centres
 - Reduction in mass testing sites during religious holidays helped to preserve staff capacity
 - Engagement of stakeholders with experience in process improvement to develop or update clinical operations (e.g., industrial engineering consultant) were useful
- An opinion piece described [the need for tailoring public measures for minority populations in Israel, such as developing a comprehensive national plan that includes building trust among leadership in certain communities and civil-society networks](#)

organizations, the experience of health- and social-care providers, and the Department of Health and Social Care's new PPE strategy, with the following lessons to be learned:

- A comprehensive lessons-learned exercise involving all the main stakeholders, including local government and representatives of the workforce and suppliers, would inform the planning for future emergencies
- Business as usual activities within government need to strike a balance between operational and financial efficiency versus the longer-term need for resilience and capability for dealing with shocks
- Emergency plans for dealing with a pandemic must provide for appropriate stockpiles of high-quality PPE
- Clear, timely, two-way information and communication are vital for both providing services at the front line and for managing the response at the national level
- [People's Covid Inquiry](#), an inquiry body called upon by [Keep our NHS Public](#) will invite testimonials from NHS staff, front-line workers, and the public to develop a body of work to help understand how best to restore the NHS, public health and social care

- A study [described key characteristics that contributed to Israel's rapid vaccination roll-out, including:](#)
 - Long-standing characteristics extrinsic to health care (e.g., small geographical and population size, relatively young population, warm weather, centralized national government, well-developed infrastructure)
 - Health-system specific characteristics (e.g., organizational, IT, and logistical capabilities of community-based healthcare providers, well-trained, salaried, community-based nurses directly employed by providers, effective cooperation among government, health plans, hospitals, and emergency-care providers, tools and decision-making frameworks to support vaccination campaigns)
 - COVID-19 vaccination-effort specific characteristics (e.g., special government funding for vaccine purchase and distribution, timely contracting, clear and simple implementable vaccination criteria, creative technical responses to storage and handling, and tailored outreach efforts)

Lessons from South Africa

- A [rapid review of the legislation related to South Africa's 15 March to 31 May 2020 lockdown in response to the COVID-19 pandemic](#) was conducted to determine how the legislation advanced or constrained South African children's vulnerability to abuse and neglect
 - Findings showed that the strict lockdown regulations put in place prioritized the maintenance of children's physical health by restricting their movement, but at the same time obstructed their social circles with extended

family members and friends, and access to school-based food programs, and in some cases, formal education because of lack of digital technology needed for virtual learning

- A [review examined contact-tracing experiences, challenges and lessons learned from four African countries, including South Africa](#)
 - South Africa experienced an overwhelming load of contact tracing for the number of workers as well as an under-utilization of quarantine facilities due to enacted stigma, fear of in-facility property loss, and unwillingness to isolate away from family
 - Contact tracing was reliant on public-health specialists, however additional involvement of community health workers helped to alleviate some of the capacity concerns
 - Proposed solutions included building decentralized contact-tracing activities and leveraging of telephone and digital solutions

Lessons from the U.K.

- A [multi-country analysis compares the public-health measures taken in nine high-income countries](#), including England, that have started to ease restrictions
 - A three phased plan for re-opening in England has been used using the reproduction number to guide decision-making, however no explicit public criteria has been used to guide which restrictions to relax, undermining public trust

Lessons from the U.S.

- A [study examined the implementation of case investigation and contact tracing in controlling COVID-19 transmission during the early stages of the U.S. pandemic response](#)

	<ul style="list-style-type: none"> ○ Ability to scale up contact tracing in the U.S. was limited and many jurisdictions grappled with uneven adoption of electronic case reporting from laboratories and providers ○ Cities with large outbreaks shifted to focusing exclusively on contact tracing in congregate-living settings and high-density employment places while smaller cities were able to rely upon contact tracing as a containment strategy ○ Challenges of contact tracing included developing a set of standards for implementation of COVID-19 case investigation and contact-tracing programs, characterizing job functions within contact tracing and case-investigation units, and training new contact tracers and case investigators with limited previous experience 	
Clinical management	<p><i>Lessons from Israel</i></p> <ul style="list-style-type: none"> ● A study examined the establishment of a COVID-19 treatment centre in Israel and described lessons learned <ul style="list-style-type: none"> ○ Facility modifications should occur at the initial stages of the outbreak ○ Ability to rapidly differentiate patients with or without diagnosed COVID-19 is important (e.g., designated isolation space and prioritization of swab testing of emergency department (ED) patients) ○ Prioritization of PPE to ED staff ○ Different zones for patients were effective, but required constant adjustments (e.g., staff allocation, increasing laboratory testing capabilities, channels for early discharge) ○ The need for other strategies were uncovered as the pandemic progressed, such as staff and management agility, continuous real-time planning and learning processes, constant 	

	<p>adjustments to PPE policy, effective communication with staff, maintenance of non-COVID care, increased logistical capabilities, immediate post-exposure epidemiological studies, and early preparation and readiness</p>	
<p>Health-system arrangements</p>	<p><i>Lessons from Australia</i></p> <ul style="list-style-type: none"> • One study examining the implementation of telehealth due to COVID-19 and its impact on youth mental health care and services in Australia found that young people were more likely to rate a positive experience with telehealth than clinicians <ul style="list-style-type: none"> ○ While most clinicians were interested in continuing telehealth, they indicated that telehealth is not appropriate for complex or high-risk conditions or individuals with limited access to technology • The authors identified a need for more long-term, stable and purpose-built telehealth platforms and for understanding when and for whom telehealth is appropriate to use, and the technical challenges and time burdens for telehealth <p><i>Lessons from Germany</i></p> <ul style="list-style-type: none"> • An opinion piece on the experiences of Germany that have been critical to its response between October 2020 and January 2021 concluded several successes of the country: <ul style="list-style-type: none"> ○ Entering the pandemic with an updated and detailed National Pandemic Plan following the Middle East respiratory syndrome allowed the government to act quickly and decisively ○ Putting the Robert Koch Institute in charge of risk assessments, strategy documents, response plans, and technical guidance provided the federal government with a steady stream of information from a centralized source to make informed decisions 	<p><i>Lessons from Australia</i></p> <ul style="list-style-type: none"> • The Senate Select Committee on COVID-19 in Australia has highlighted several concerns with Australia's COVID-19 response: <ul style="list-style-type: none"> ○ The National Medical Stockpile was unprepared for the personal protective equipment needs of the pandemic despite prior warnings ○ Although the committee put forward its support of the national government's strategy for procuring vaccines, there were concerns regarding the lack of diversification in the vaccine procured and lack of logistical planning for Australia's vaccine roll-out ○ The lack of a national centre for disease control disadvantaged the national response to COVID-19 in the country; it is recommended that an Australian CDC be created ○ The committee found that the crisis in aged care was avoidable considering that known vulnerabilities (such as inadequate staffing levels, inadequate personal protective equipment, and gaps in infection-control training) were not addressed, and the national government failed to implement a COVID-19 plan that enabled appropriate assessment and preparedness for the sector <ul style="list-style-type: none"> ▪ The committee also found that there was a failure to anticipate future challenges in the aged care sectors and that the national government failed to accept responsibility for this situation ▪ The state-funded aged care regulator's decision to suspend unannounced visits was also questioned by the committee

- Scientists in Germany were able to quickly turn their attention to increasing testing capacity because they were responsible for the early development of a SARS-CoV-19 test
 - All insurance companies were required to pay for COVID-19 tests for symptomatic individuals, and this incentivized private laboratories to scale up their capacity and test asymptomatic individuals
 - An economic rescue package was announced, totaling 930 billion euros, which was earmarked for business and job protection, direct relief payments, and tax cuts to keep consumer spending at reasonable levels
- The same study also provided some [challenges Germany experienced](#):
 - Criticism of two apps that were launched, the Corona-Warn-App and the Corona Data Donation App, that were considered only minimally effective
 - Human resource constraints for contact tracing were faced and physical distancing efforts were complicated as states enacted requirements that differed from national guidelines, often confusing the public
 - A crisis with PPE supplies early on in the pandemic resulted in significant shortages for masks and disposable gloves

Lessons from Brazil

- [Prioritizing at-risk groups for vaccination helped to reduce COVID-19 related deaths in people over 80 in Brazil](#), lowering the proportion of deaths in this population from 28.3% before the end of January 2021 when vaccinations started, to as low as 11.6% on 22 April 2021

Lessons from France

- A report by the Auditors Court (“Cour des comptes) focused on resuscitation and critical care during the COVID-19 pandemic found that [the resuscitation sector was largely unprepared for the pandemic](#) (e.g., there was an insufficient number of resuscitation equipment) and that the mobilization of care to provide resuscitation and critical care was only made possible by scaling back emergency care
- The report recommended:
- Assessing the consequences of reducing non-essential care during the pandemic
 - Increasing critical-care equipment and critical-care personnel in select regions to reduce inequalities
 - Reviewing the training for general-care nurses to incorporate critical-care training to ensure they are able to be called upon in the event of another pandemic
 - Identifying a new funding model for critical care

Lessons from Israel

- A [special interim report from Israel’s State Comptroller published in October 2020 outlined key recommendations to the government](#):
 - Implement other alternative digital interventions for epidemiological investigations in lieu of the Israeli Security Agency tracking system
 - Increase the use of open spaces to conduct learning and meetings
 - Identify gaps in internet and broadband coverage
 - Increase testing and bed capacity in long-term care homes
 - Improve the efficiency and shorten testing processes
 - Conduct period testing among providers who are in close contact with patients with COVID-19
 - Prepare contingency plans for remote medical visits for future outbreaks

	<p><i>Lessons from Israel</i></p> <ul style="list-style-type: none"> • In an opinion piece published in the Israel Journal of Health Policy Research, the author derived policy lessons for Canada based on Israel's vaccine roll-out successes and advantages such as: <ul style="list-style-type: none"> ○ Well-developed primary-care system to deliver vaccines ○ Delivery systems that were responsible for different priority groups (e.g., a national medical emergency-services organization that solely vaccinated residents living in long-term care) ○ A centralized and developed electronic medical record system ○ Unified and strategic planning and execution of vaccination strategies • A study examined the establishment of a COVID-19 treatment centre in Israel and described lessons learned <ul style="list-style-type: none"> ○ Facility modifications should occur at the initial stages of the outbreak ○ Ability to rapidly differentiate patients with or without diagnosed COVID-19 is important (e.g., designated isolation space and prioritization of swab testing of ED patients) ○ Prioritization of PPE to ED staff ○ Different zones for patients were effective, but required constant adjustments (e.g., staff allocation, increasing laboratory testing capabilities, channels for early discharge) ○ The need for other strategies were uncovered as the pandemic progressed, such as staff and management agility, continuous real-time planning and learning processes, constant adjustments to PPE policy, effective communication with staff, maintenance of non-COVID care, increased logistical capabilities, 	<p><i>Lessons from South Africa</i></p> <ul style="list-style-type: none"> • In the chapter on gender equity in a country report on the South African government's responses to the COVID-19 pandemic, it was reported that the sexual and reproductive health rights of women, girls and other vulnerable groups experienced a negative impacted during the pandemic, but the pandemic period also caused some barriers to be removed <ul style="list-style-type: none"> ○ The pandemic period spurred advances in self-managed care, telehealth, decentralized collection and delivery of medicines, and a lesser reliance on facility-based care – health system responses that may improve service delivery beyond the pandemic <p><i>Lessons from the U.K.</i></p> <ul style="list-style-type: none"> • A report undertaken by the National Audit Office to support the U.K. parliament found that the U.K. government took a range of actions to support health and social care during the COVID-19 pandemic: <ul style="list-style-type: none"> ○ The U.K. government announced 6.6 billion pounds in funding to support the health and social-care response, in addition to the routine Department of Health & Social Care budget that was already being spent on COVID-19 response ○ Support was provided for individuals facing economic difficulties, including changes to benefits and statutory sick pay, direct financial support for individuals or households, and deferring tax payments, and also for businesses, including payments for laid-off employees, government-backed loan schemes, cash grants, and additional reliefs ○ Existing resources were re-prioritized, including armed forced support, and education and children's services (e.g., supporting home schooling by providing laptops for disadvantaged and vulnerable students) • The U.K.'s Comptroller and Auditor General released a report providing lessons from the U.K. government's
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	<p>immediate post-exposure epidemiological studies, and early preparation and readiness</p> <p><i>Lessons from the U.S.</i></p> <ul style="list-style-type: none"> • One rapid review examined the impact that COVID-19 had on the provision of care through telemedicine across various health service lines in the U.S. and found that the service lines of dermatology, oncology, obstetrics and gynecology, and mental health demonstrated effective responses to COVID-19 through workflow adaptations via telemedicine <ul style="list-style-type: none"> ○ Telemedicine has been effective through risk mitigation, improved access, convenience, lower cost, and patient satisfaction ○ Mental health service lines had the most documented outcomes with the use of telemedicine ○ Obstacles to implementing telemedicine included a lack of reimbursement parity, telemedicine infrastructure capabilities, regulatory and Health Insurance Portability and Accountability Act of 1996 compliance guidelines, lack of internet connectivity, and patient and provider discomfort with technology, however each health service line developed the capacity to accelerate telemedicine adoption • A discussion paper from the National Academy of Science examined the U.S. public health sector's experience during the COVID-19 pandemic, including legacy systems, and health departments' key contributions and challenges, and identified priority areas and policy considerations for the public-health sector, such as: <ul style="list-style-type: none"> ○ Closing funding gaps for foundational capabilities 	<p>response to the COVID-19 pandemic to support its own evaluation of its performance, including:</p> <ul style="list-style-type: none"> ○ Identify the consequences of major emergencies, develop playbooks for the most significant impacts, and be clear about risk tolerance as the basis for choosing which trade-offs should be made in emergencies ○ Ensure transparency and public trust by producing clear and timely communications and providing clear documentation to support decision-making ○ Monitor how programs are operating, forecast changes in demand as far as possible, and tackle issues arising from rapid implementation or changes in demand ○ Gather information from end-users and front-line staff more systematically to test the effectiveness of programs, and undertake corrective action when required ○ Clarify responsibilities for decision-making in coordination and delivery of resources ○ Put appropriate measures in place to assist front-line and other key workers in coping with the physical, mental and emotional demands of responding to the pandemic ○ Ensure that the NHS and existing systems can respond effectively and flexibly to emergencies, including provision for spare or additional capacity and redeploying staff where needed <ul style="list-style-type: none"> • The U.K.'s parliament Science and Technology Committee is in the process of conducting various inquiries, such as on lessons learned, and the role of technology, research and innovation in the COVID-19 recovery
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	<ul style="list-style-type: none"> ○ Affirming a mandate for public health ○ Promoting structural alignment ○ Investing in workforce development ○ Modernizing data capabilities ○ Supporting cross-sector partnerships ● In an opinion piece published in the Israel Journal of Health Policy Research, the author identified policy lessons for the U.S. based on Israel’s successful COVID-19 vaccination experience: <ul style="list-style-type: none"> ○ A national strategy for the distribution, and the workforce for the provision, of vaccines beyond the state level would have provided for greater efficiency and coordination across the country ○ Development and maintenance of a strong, well-trained public-health infrastructure would have been beneficial given that the U.S. public-health infrastructure was ill-prepared and functioning on staff shortages 	
Economic and social	<p><i>Lessons from Brazil</i></p> <ul style="list-style-type: none"> ● COVID-19 related school closures have had a significant impact on the educational outcomes of Brazilian children, and strong remote learning strategies are needed to support their continued education <ul style="list-style-type: none"> ○ The first modelling study estimates a significant decrease in Portuguese and math proficiency relative to if COVID-19 and related school restrictions were not occurring, with greater decreases for younger students ○ The second study characterizes and evaluates state-level distance-learning strategies and demonstrates that students in states with better distance-learning plans have a higher proportion of access to remote classes and study for more hours <p>Government fiscal stimulus can partially mitigate the reduction in GDP during the COVID-19 outbreak</p>	<p><i>Lessons from Australia</i></p> <ul style="list-style-type: none"> ● Senate’s Select Committee on COVID-19 acknowledged that the government’s initial economic support packages in March 2020 were crucial in saving jobs, supporting low-income individuals, and supporting businesses, but there challenges with the scale and timing of these packages <ul style="list-style-type: none"> ○ The committee notes that the wage-subsidy program (JobKeeper) came too late and deliberately excluded some of the most severely affected groups of workers ○ The committee also notes that the government’s fiscal response failed to identify and correct for the gendered impact of the pandemic, and the government should have undertaken a gendered impact analysis of its decisions ○ Finally, the committee posits that the government’s delay in implementing a national paid pandemic-leave program put lives, particularly those of low-income workers, at risk

	<ul style="list-style-type: none"> ○ An economic modelling study estimates more than a 3% mitigation in the reduction of GDP after both three and six months <p><i>Lessons from Germany</i></p> <ul style="list-style-type: none"> ● One opinion piece suggested that providing a substantial economic stimulus package with earmarked funds for business and job protection, direct relief payments and tax cuts to keep consumer spending at reasonable levels, helped Germany begin to recover better than other EU member states <p><i>Lessons from South Africa</i></p> <ul style="list-style-type: none"> ● A rapid review of the lockdown legislation in South Africa found that the strict lockdown regulations put in place prioritized the maintenance of children’s physical health by restricting their movement, but at the same time obstructed their social circles with extended family members and friends, and access to school-based food programs, and in some cases, formal education because of lack of digital technology needed for virtual learning <ul style="list-style-type: none"> ○ The review further found that children’s rights to protection from abuse were prioritized by legislators during the pandemic as the judiciary was advised to prioritize family law matters involving children, and reports by social workers were used to authorize child-protection services ○ The review suggests that social work, education, and mental health professionals should be actively involved in the development processes of COVID-19 legislation that affect children to ensure that their intellectual, mental and social needs are not neglected 	<ul style="list-style-type: none"> ● The same committee found that an approximately \$41-billion early pension access scheme for individuals placed too much of the economic burden on the working people and will have a permanent and long-term negative impact on the retirement income system ● The committee noted that the government’s economic stimulus via the JobMaker program is necessary, but the scale is inadequate to facilitate economic recovery <p><i>Lessons from Brazil</i></p> <ul style="list-style-type: none"> ● The expansion of the Bolsa Familia (emergency assistance program) and existing unemployment insurance provided by the Brazilian government collectively provided a robust response to mitigate the impact of COVID-19 for the poorest 40% of Brazilians <p><i>Lessons from France</i></p> <ul style="list-style-type: none"> ● The Auditors Court issued an eight-part report examining the government’s COVID-19 response which included parts on education, services for the homeless and marginally housed, and financial supports for businesses <ul style="list-style-type: none"> ○ The report that focused on digital education found challenges in continuity for middle- and high-school students, which was especially acute among students in disadvantaged areas ○ The report that focused on measures put in place during the pandemic for homeless and marginally house individuals found that while confinement measures and use of hotels helped to contain the spread of COVID-19, it had negative effects on individuals’ health and integration ○ The report on the solidarity fund which provided financial support for businesses during the pandemic found that the program was rapidly deployed and successfully adjusted to support sectors most affected by the crisis, however the report found that the general operating principles did not evolve in parallel
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		<p><i>Lessons from South Africa</i></p> <ul style="list-style-type: none">• The Department of Planning, Monitoring and Evaluation, the Government Technical advisory Council and the National Research Foundation are producing papers analyzing and reflecting on the measures taken by the national government and their partners during the COVID-19 pandemic<ul style="list-style-type: none">○ The analysis report on education identified several successes in the education sector during the pandemic, including:<ul style="list-style-type: none">▪ Some schools and post-secondary institutions adapted curricula and educational delivery models well▪ Institutions applied risk-based and differentiated approaches to bringing students back in person▪ There was collaboration between the education and health sectors and no large-scale infections○ The same report also identified several challenges for the sector and for families, including:<ul style="list-style-type: none">▪ Vulnerable and low-income students had little opportunity to engage in remote learning, and many parents were not equipped to teach their children from home▪ There were challenges in ensuring adequate social distancing and personal protective equipment provision in schools▪ Teachers and lecturers experienced burnout▪ Funding was diverted from the educational sector to respond to the pandemic▪ Based on the success and challenges in the educational sector several lessons learned are articulated▪ There is a need to invest in and upgrade infrastructure for education, including water, sanitation, and information technology in schools,
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		<p>and connectivity infrastructure for students learning in the community</p> <ul style="list-style-type: none">▪ There is a need to invest in continuous teacher professional development▪ Parents and families need to receive regular and ongoing communication and be provided with resources for remote learning <p><i>Lessons from the U.K.</i></p> <ul style="list-style-type: none">• The U.K.'s Comptroller and Auditor General released a report that examines how well Her Majesty's Treasury (HM Treasury) and HM Revenue and Customs (HMRC) have managed risks in implementing employment support schemes, namely the Coronavirus Job Retention Scheme (CJRS) and Employment Income Support Scheme (SEISS), and whether the schemes have reached the people who it was intended for, including these following recommendations:<ul style="list-style-type: none">○ HM Treasury and HMRC should consider how to ensure that reliable data covering as many people as possible can be used to determine eligibility so that fewer people suffering loss of income are excluded from future similar schemes○ HM Treasury and HMRC should monitor how far employment support schemes protect jobs○ HM Treasury and HMRC should provide more timely assessments of the total value of error and fraud○ HM Treasury and HMRC should specify how performance and value for money will be judged as the schemes progress, and monitor outcomes and adapt arrangements quickly if required <p><i>Lessons from the U.S.</i></p> <ul style="list-style-type: none">• The U.S. Government Accountability Office's CARES act reports found:<ul style="list-style-type: none">○ Small business loan fraud and overpayments throughout the pandemic
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		<ul style="list-style-type: none">○ A lag between K-12 schools' use of pandemic funds and their reporting to the Department of Education● The U.S. Department of Energy issued a report on lessons learned during the COVID-19 pandemic and identified select challenges including establishing the necessary roles, responsibilities, and authorities for response<ul style="list-style-type: none">○ The report included two recommendations to address future challenges including revising all crisis response plans and placing the functions that serve department-wide roles as direct reports to the Deputy Secretary
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Appendix 3: Key findings from new evidence documents related to what went well and what could have gone better in the COVID-19 response in other countries, as well as what will need to go well in the future given available foresight work

Type of document	Relevance to question	Key findings	Recency or status
Full systematic reviews	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> The systematic review synthesized the experiences and perceptions of organisations and actors at multiple levels of health systems internationally The review found that most of the studies focused on new roles and responsibilities of healthcare workers, burnout and distress, recognition of ‘unseen’ healthcare workers, and positive changes and solutions during crises The review also identified the need for psychological support, COVID-19 seen as a catalyst for change and need for more open leadership by health system managers and authorities Identified studies focusing on local health systems reported aspects of continuous training, regulation of working conditions, providing supportive resources, coordinating a diversity of actors, and reviewing regulations Overall, organizational, and system-level studies characterized the COVID-19 responses as the need for better coordinated activities by local health system actors, need for service adaptations, and the recognition and reliance on expanded roles of front-line workers The authors recommended that public health authorities should focus on organisational arrangements that supports vertical and horizontal coordination to address common challenges (e.g., directing financial investments, securing access to PPE), should involve strong representation of front-line workforce, and evaluate rapid service innovations (e.g., telemedicine) and whether these changes can or should be sustained beyond emergency use <p>Source (AMSTAR rating 5/9)</p>	Published 7 May 2021
Rapid reviews	<ul style="list-style-type: none"> Public health measures 	<ul style="list-style-type: none"> In the U.S. vaccine allocation frameworks are determined by each of the Centres for Disease Control and Prevention’s 64 jurisdictions 	Published 18 May 2021

		<ul style="list-style-type: none"> • The study which reviews allocation frameworks examined whether jurisdictions adopted proposals to reduce inequity using disadvantaged indices and related place-based measures • The study found that 14 of the 64 jurisdictions had prioritized specific zip codes in combination with other metrics such as COVID-19 incidence and 37 jurisdictions had adopted disadvantaged indices by the end of March 2021 compared to 19 at the end of November 2020 • 18 jurisdictions plan to use an index to identify priority populations, which might entail increased vaccine or appointment allocations or earlier placement in the sequence of priority groups, while another 15 plan to use an index for promoting access by for example reaching out to select communities or planning the location of dispensing sites <p>Source (AMSTAR 5/9)</p>	
	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • The rapid review focused on inequalities faced by Black, Asian, and minority ethnic (BAME) frontline healthcare workers of delivering care during the COVID-19 pandemic in the United Kingdom • The review found that healthcare workers were more likely to be exposed to COVID-19 due to frontline prevalence, complications with PPE, and lack of empowerment to speak up about challenges that were primarily driven by existing systemic racism and disproportionate redeployment compared to White counterparts • BAME healthcare workers reported increased mental health challenges (e.g., anxiety due to greater mortality risk, and conflict between personal risk and sense of duty due to intergenerational living) and racial abuse • The authors concluded that more efforts should focus on the physical and mental wellbeing of BAME healthcare workers <p>Source (AMSTAR 0/9)</p>	Pre-print (Last edited 5 March 2021)
	<ul style="list-style-type: none"> • Health system arrangements 	<ul style="list-style-type: none"> • This scoping review assesses how governments, agencies and organizations have responded to the challenge of the mental health impact of COVID-19 in order to identify common themes and innovative developments 	

		<ul style="list-style-type: none"> • Two countries, Australia and New Zealand, have issued mental health response plans, while a number of other countries have used a common framework to develop action plans • Key themes emerging from the response plans include : <ul style="list-style-type: none"> ○ a fundamental shift to address the social determinants of health which could include providing basic income supports or furlough schemes to support worker’s income ○ an acceleration in new ways of working such as using digital technologies to transform service delivery, enhanced community supports, co-producing service delivery solutions, and improving data quality and modelling ○ the need to pay attention to at risk groups including ethnic minorities, LGBT+, victims of abuse, people with disabilities <p>Source (AMSTAR rating 4/9)</p>	
	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • The rapid scoping review identified lessons learned from previous crises and informed the development of the November 2020 “United Nations Research Roadmap for the COVID-19 Recovery” • The review found that there is a need to identify short- and long-term impacts of essential services, quality assurance of services, role of primary health care in the frontline, and need for effective communication on vaccination • The authors concluded that the reactive nature of policies and practices with lack of resources, infrastructure and political challenges resulted in the failed response to COVID-19 and recommended further investments in implementation science to help bridge the research-practice gap <p>Source</p>	Published 8 April 2021
Protocols for review		<ul style="list-style-type: none"> • No protocols were identified 	
Single studies	<ul style="list-style-type: none"> • Cross-cutting 	<ul style="list-style-type: none"> • The qualitative study described the experience and impact of the COVID-19 pandemic on young people (aged 16 to 25 years) who are from minority backgrounds in the United Kingdom 	Pre-print (last edited 17 March 2021)

		<ul style="list-style-type: none"> • From the 40 participants, key themes emerged such as the exacerbation of socioeconomic and mental health challenges and racism in the health system • The participants provided recommendations such as protecting work/internship schemes and maintaining financial support, developing online peer support networks, supporting schools to manage increased anxiety, disseminating tailored communication, including young people in racially sensitive communication, reducing barriers to access self-help support <p>Source</p>	
	<ul style="list-style-type: none"> • Public-health measures • Health-system arrangements • Economic and social responses 	<ul style="list-style-type: none"> • This qualitative study compares the policies adopted by Iran to respond to the COVID-19 pandemic with those of China, Japan, South Korea, Germany, Singapore, Spain, Italy, the U.S., and the U.K. • Results of the documents analysis of policy measures between 31 December 2019 and 15 April 2020 revealed that there were three main strategies that were most effective at combatting the COVID-19 pandemic – widespread testing, comprehensive contact tracing, and timely public health measures • China, South Korea and Singapore responded quickly to reports of positive COVID-19 cases in country with screening and isolation measures that were executed in a coordinated way and relied on effective leadership at the national and regional level • In other countries like Spain, Italy, Iran, the U.S. and the U.K., a delayed response in implementing public health measures unfortunately led to high infection and mortality rates <ul style="list-style-type: none"> ○ Following the significant increase in infections, these countries implemented border restrictions and strict lockdowns for various periods of time in order to control widespread transmission ○ Public health information campaigns were also launched in most countries to keep the public informed about the latest information about how to prevent and control transmission of the virus 	<p>Published 1 March 2021</p>

		<ul style="list-style-type: none"> • Germany provided widespread coverage of COVID-19 testing for its population and developed a new diagnostic test that detected the virus 2.5 hours after exposure; the U.K. also developed a new diagnostic test and increased their testing capacity to 10,000 tests per day on 28 March 2020 • The U.K. also increased service capacity by engaging the private sector, increasing bed capacity by discharging patients with stable conditions, and creating additional temporary hospitals, while Germany recruited new healthcare workers and encouraged medical and nursing students to join medical teams at hospitals • Many countries, including Germany, the U.K., and the U.S., allocated specific budgets for vaccine development, and the expenses of COVID-19 patients were covered in various ways across countries by the government and the private sector • The study concluded that adequate resource funding and allocation is not enough to respond to a pandemic, but rather a strong and timely political response that takes the risk of disease seriously early on can make all the difference in a country's response to a pandemic <p>Source</p>	
	<ul style="list-style-type: none"> • Public-health responses 	<ul style="list-style-type: none"> • A modelling study of population behaviour and governmental interventions in Brazil such as prohibiting mass gathering, closing non-essential establishments, quarantine and movement restrictions showed that population adherence to social distance recommendations greatly mediates the effectiveness of interventions and therefore is an important consideration for controlling COVID-19 <p>Source</p>	Published June 2021
	<ul style="list-style-type: none"> • Public-health measures 	<ul style="list-style-type: none"> • This study reported on a national longitudinal survey in Australia that ran between April and June 2020 and sought to determine if Australians experienced any positive effects from the COVID-19 pandemic and related measures • Of 1370 individuals in the study sample, 960 (70.1%) experienced at least one positive effect during the pandemic 	Published 12 May 2021

		<ul style="list-style-type: none"> • Most study participants (54.2%) reported a sufficient level of well-being, 23.2% reported low well-being, and 22.6% reported very low well-being • Women, people who lived with other people, and people working from home for pay were more likely to have reported positive effects from the pandemic • The most commonly reported reasons for experiencing a positive effect from the pandemic were family time, work flexibility, and a calmer life <p>Source</p>	
Opinion pieces	<ul style="list-style-type: none"> • Cross-cutting 	<ul style="list-style-type: none"> • The descriptive study described lessons learned from the global management of the COVID-19 pandemic • The author recommended a strong focus on comprehensive testing and surveillance strategies (e.g., contact tracing, isolation, quarantine), public health measures (e.g., physical distancing and wearing non-medical masks in public, hand hygiene), protection and strengthening health systems, transparent scientific-based information sharing, international collaboration, social and economic assistance to marginalized populations, provision of PPE and front-line workforce, mental health, and vaccination development <p>Source</p>	Pre-print (last edited 23 November 2020)
	<ul style="list-style-type: none"> • Public-health measures • Economic and social responses 	<ul style="list-style-type: none"> • A report from the National Income Dynamics Study– Coronavirus Rapid Mobile Survey provides an overview of survey data findings regarding schooling, employment, vaccines, hunger, early childhood development, shack residents, and mental health in South Africa during the pandemic • With respect to schooling, projections indicate that between March 2020 and June 2021 primary school children have lost 70 to 100% of a year’s worth of learning relative to the 2019 cohort <ul style="list-style-type: none"> ○ Learner dropout rates have been significantly higher than they have been in 20 years and concentrated amongst the poor, rural, and those whose caregivers have concerns about returning to school 	Published 8 July 2021

		<ul style="list-style-type: none">○ Learning loss has been due to rotating school timetables and limited internet access for online learning○ In addition, while there have been excess deaths of during the pandemic, they have been concentrated during peaks of infections and do not seem strongly associated with schools being open● With respect to employment, lockdowns immediately and temporarily pushed down employment rates when they were imposed, but employment rates partially recovered as successive lockdowns were lifted<ul style="list-style-type: none">○ There have been gendered differences in employment recovery as women's employment level remained 8% than pre-pandemic in March while men's fully recovered○ Receipt of the national Unemployment Insurance Fund Temporary Employee Relief Scheme was associated with job retention (the aim of the policy) during lockdown periods, but women did not benefit from this form of government income support as men● With respect to vaccinations, interventions aimed at encouraging vaccine acceptance seem to be working as vaccine acceptance rates have improved over time<ul style="list-style-type: none">○ However, acceptance rates have not fully translated into registering for vaccination amongst the elderly, suggesting that there are barriers for people to translate intention into action○ The authors suggest that a lack of weekend vaccination appointments is a major constraint on the vaccine rollout and the campaign would be further along had such appointments been made available● With respect to hunger, the authors suggest that the revocation of a national monthly 350 rand Social Relief of Distress grant for those with no other income, along with a continuing tight economic situation, have contributed to a hunger rate that remains stubbornly high<ul style="list-style-type: none">○ Rates of hunger and running out of money for food were highest during the initial pandemic waves and the restrictive lockdowns that accompanies them	
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		<ul style="list-style-type: none"> ○ The real value of the Child Support Grant has fallen over the course of the pandemic due to inflation which the authors posit will further contribute to child hunger ● Shack residents (who are particularly disadvantaged and vulnerable) have been hit particularly hard by the pandemic and lockdowns and have had a fairly muted recovery thus far <ul style="list-style-type: none"> ○ Shack residents have received and relied on the Social Relief of Distress grant at the highest rate of any population group, and the authors suggest that the termination of this grant will contribute to hardship ○ Hard lockdowns that prohibited informal trading hit the employment situation of shack residents particularly hard and their recovery from this has been muted ● With respect to mental health, household food security and children’s access to school feeding has been found to be an important determinant of adult worry and depressed mood <ul style="list-style-type: none"> ○ Parent and caregiver worry has been correlated with greater socioeconomic precarity and COVID-19 risk perception, and those with more consistent access to government grants are less likely to be worried <p>Source</p>	
	<ul style="list-style-type: none"> ● Public-health measures 	<ul style="list-style-type: none"> ● This opinion piece explores the COVID-19 pandemic response during the first wave and subsequent resurgences in France, Israel, and the U.K. in an effort to understand what should be expected and to mitigate a possible COVID-19 resurgence in South Africa ● Containment measures implemented in Israel in February 2020 to respond to the first wave included a 14-day home quarantine for all travelers arriving from outside Israel and primary contacts of confirmed cases, restriction of movement to essential workers only, and a national curfew in April 2020 <ul style="list-style-type: none"> ○ Although restrictions were gradually eased by early May, the government decided to define reasons to return to lockdown: 100 or more daily new cases, a viral replication rate of less than 10 days, and/or 250 patients in critical condition 	<p>Published 19 April 2021</p>

	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • A lockdown was also implemented in France in March 2020 for 15 days and then extended for another month after France saw a sharp rise in cases and deaths; most restrictions were eventually lifted by July 2020 • After trying to contain COVID-19 transmissions for two weeks in March 2020 unsuccessfully, the U.K. went under national lockdown on 23 March 2020 and implemented a range of public health measures and border restrictions to curb the spread of COVID-19 <ul style="list-style-type: none"> ○ Restrictions were eventually eased in May 2020, reopening businesses and allowing most employees to return to work by July with social distancing requirements remaining in place • South Africa implemented one of the strictest lockdowns globally on 26 March 2020 when all non-essential establishments were closed, a curfew was enacted, and the sale of alcohol and tobacco products was banned <ul style="list-style-type: none"> ○ The lockdown was eased on 1 June 2020 and alcohol was allowed to be sold again, but when cases started to increase again in July, the curfew was reintroduced and the ban on alcohol was reinstated • All of these countries reinstated containment measures when cases resurged during the fall and winter of 2020; most of the public health measures put in place were even more strict than those of the first wave due to very sharp surges in cases and deaths • The researchers concluded that to prepare for a possible resurgence, South Africa should put emphasis on increasing testing and isolation capacity, strengthening enforcement of public health measures, and protecting high risk populations since strict lockdowns alone proved to be ineffective at stopping transmission at the anticipated rates <p>Source</p> <ul style="list-style-type: none"> • In this article, the progress and challenges of the U.K.'s mental health community during the COVID-19 pandemic was explored and suggestions for mental health research and 	<p>Published 8 April 2021</p>
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		<p>future responses were offered after considering the study findings</p> <ul style="list-style-type: none"> • Challenges identified for improvement included the fragmented mental health system infrastructure, overlooking the importance of public involvement in the mental health research process, sacrificing quality care when responding quickly to research requests, and inequalities exposed in the U.K.'s mental health workforce <ul style="list-style-type: none"> ○ In terms of mental health infrastructure, the limited and competitive funding schemes for mental health research and the preferences for short-term research responses calls for more diversified funding options and collaboration between researchers ○ Even when pandemic situations call for more rapid research responses, the involvement of individuals with lived mental health experiences should be prioritized for mental health research so that more highly relevant and nuanced outputs can be gained ○ Reflecting on the speedy responses during the pandemic also highlighted the lack of value of qualitative research compared to quantitative research, the questionable methodological choices for public surveys and study sampling, and the importance of open science practices so that more knowledge can be openly shared amongst the healthcare community ○ Lastly, the exasperation of inequalities within academia during the pandemic calls for the need to address systemic issues that affects the U.K.'s ability to recruit and retain early career researchers who are typically women and/or ethnic minorities <p>Source</p>	
	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • A discussion paper from the National Academy of Science described the response from leaders in the payer sector on the experience of health insurers during COVID-19 and identify the key challenges and opportunities learned from the pandemic and beyond, including: <ul style="list-style-type: none"> ○ Accelerating the transition to value-based payment 	<p>Published 17 May 2021</p>

		<ul style="list-style-type: none"> ○ Extending flexibilities for virtual health services and capabilities ○ Aligning incentives and investments to address health inequities ○ Creating mechanisms for collective action during public health emergencies ○ Coordinating payment reforms with public health functions <p>Source</p>	
	<ul style="list-style-type: none"> ● Health-system arrangements 	<ul style="list-style-type: none"> ● A discussion paper from the National Academy of Science described the response and experience of hospitals and health systems within the U.S. health care system during the COVID-19 pandemic, including commentaries from leaders in the care delivery sector exploring how pandemic-related challenges and innovations provide health systems with opportunities for delivery reform to become more efficient, accessible, and equitable, including key policy considerations such as: <ul style="list-style-type: none"> ○ Enhancing financial resiliency ○ Creating surge capacity in the medical supply chain ○ Investing in new workforce support and development programs and staffing models ○ Improving flexibility and built-in capacity for inpatient care ○ Building upon renewed commitments to address health inequities ○ Fostering linkages between health systems and other sectors such as public health <p>Source</p>	Published 7 April 2021
	<ul style="list-style-type: none"> ● Health-system arrangements 	<ul style="list-style-type: none"> ● The Nuffield Trust descriptively analysed the quality and consistency of ethnicity coding in commonly used health datasets ● The report found that 87% of NHS health records contained the patient’s ethnicity code, but records of the same patient were inconsistent over time ● Independent health care providers only had 62% of records with a known ethnic code 	Published June 2021

		<ul style="list-style-type: none"> • Minority ethnic groups that were commonly misclassified included White Irish, Asian and Black ethnic groups • The report provided specific recommendations to address these data quality issues <ul style="list-style-type: none"> ○ NHS Digital should include data on proportion of records coded as “not known” or stated “other group” ○ UK Statistics Authority should review the quality of ethnic coding ○ Routine inclusion and reporting of ethnicity in data collection and research ○ NHS should develop and implement guidance on ethnicity coding ○ Integrated care system leaders, executive boards, NHS providers and GP practices should champion for reduced inequalities and improve quality of ethnicity coding in health records <p>Source</p>	
	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • This opinion piece highlights the challenges experienced in the social care sector in England during the pandemic, particularly for social care provided to older adults • During the first wave of the pandemic, central government support for social care was slow leading to inadequate protection for people using and providing care • Support in select areas improved throughout the pandemic such as access to testing and PPE and the priority given to social care increased throughout the pandemic • Social care providers and recipients were also prioritized for vaccinations which was found to be helpful • Challenges still remained including government policy on social care was often fragmented and short-term creating uncertainty for the sector and making it hard to plan • A lack of publicly available data means that only so much is known about the effects of the pandemic on social care, and the success of policies used to support the sector 	<p>Published May 2021</p>

		<ul style="list-style-type: none"> Major structural issues in social care including chronic underfunding, workforce issues, system fragmentation and others were exacerbated during the pandemic <p>Source</p>	
	<ul style="list-style-type: none"> Clinical management 	<ul style="list-style-type: none"> An article summarizes lessons learnt and “what went well” from the perspectives of hospital personnel in Germany: <ul style="list-style-type: none"> Improve management of clinical capacities and patient flow Determine therapy goals early, considering patient’s preferences, to improve use of available resources Improve transfer of critically ill patients across departments Facilitate quick capacity-building for nurses to enable them to work in intensive care Foster clear communication through expert group as well as bottom-up communication Optimize use of existing intensive care capacity before expansion <p>Source</p>	Published 11 January 2021
	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> A paper by the Barmer Institute for Health Systems Research, Bertelsmannstiftung and Robert Bosch Stiftung in Germany summarizes the following lessons for the future: <ul style="list-style-type: none"> Strengthen health authorities and networks of general practitioners Create more specialized hospitals, more integrated centers for basic care and cross-sectoral remuneration models Ensure more skills for nurses Foster more consistent use of the possibilities of digitization <p>Source</p>	Published 24 November 2020
	<ul style="list-style-type: none"> Health system arrangements 	<ul style="list-style-type: none"> The opinion piece documents the experience of launching a COVID-19 specific palliative care team entitled the Palliative Care Compassion Unit The unit consisted of a 12-bed unit and an interdisciplinary team to provide 24-hour coverage to meet the psychosocial needs of patients, including using technology to connect patients with loved ones when hospital visitation was not permitted 	Published 4 June 2021

		<ul style="list-style-type: none"> • Geographic location within the hospital was found to be a critical aspect to the success of the unit as the proximity to surge teams supported the provision of curbside palliative care • The 24-hour care was also critical to success of the unit as the team was able to evaluate, provide comfort, make medication changes, and update families in real time • The most significant challenge was the uncertainty around COVID-19 and determining whether or not patients were entering end-of-life stages • Another challenge was clinician sustainability given the significant number of deaths within the unit <p>Source</p>	
	<ul style="list-style-type: none"> • Health system arrangements 	<ul style="list-style-type: none"> • The opinion piece examines the changes that took place within a single hospital during COVID-19 and the lesson learned • The piece documents that all elective surgeries were put on hold during the pandemic • Residents were told to remain at their clinical assignments to maintain the familiarity with the safety protocols and prevent transmission between residents • Additional training was provided to residents on donning and doffing of PPE • Residents were split into three teams including: 1) a call team that would provide routine floor work, support medical services by providing emergency resuscitations; 2) a surgical emergency advanced line service team who were assigned to assist with procedural solutions for all inpatients; and 3) residents redeployed to the medical floors, emergency department and ICUs <p>Source</p>	<p>Published 04 August 2020</p>
	<ul style="list-style-type: none"> • Economic and social 	<ul style="list-style-type: none"> • Prisons in Australia experienced significant challenges from COVID-19 particularly among older inmates among whom there was a high rate of infection and mortality • The opinion piece notes that while prisons have acknowledged the vulnerability of older persons more focused adaptation of COVID-19 related policies is necessary 	<p>Published 17 April 2021</p>

		<ul style="list-style-type: none"> • Appropriate ethical identification and management of cases among those older than 45 is needed, which may included discussion of decarceration and medical release <p>Source</p>	
	<ul style="list-style-type: none"> • Economic and social 	<ul style="list-style-type: none"> • School closures in Australia have had a negative effect on children and adolescents, particularly among the most disadvantaged creating significant educational gaps • In general studies have shown mixed effects on the transmissions of COVID-19 from children and young adults, varying significantly with age • COVID-19 infections in schools were found to be higher when there were high rates of community transmission and are lowered with the implementation of public health mitigation measures including tracing and isolating • The opinion piece recommends that closing schools and early childhood education centres be a last resort and that a staged mitigation approach implemented proportionate to the local COVID-19 incidence rate <p>Source</p>	<p>Published 08 June 2021</p>

Appendix 4: Key findings from highly relevant evidence documents included in previous updates related to what went well and what could have gone better in the COVID-19 response in other countries, as well as what will need to go well in the future given available foresight work

Type of document	Relevance to question	Key findings	Recency or status
Full systematic reviews	<ul style="list-style-type: none"> Public-health measures 	<ul style="list-style-type: none"> A systematic review compared mass testing and contact tracing with conventional test and trace methods in suppressing COVID-19 infections in the U.K., and found that mass testing and contact tracing could be more effective in bringing COVID-19 infections under control and even more effective if combined with social distancing and face coverings Implementation of test and trace should be conducted at mass sites irrespective of symptoms Present test and trace program should be taken over by a decentralized and continuous mass-testing program with rapid tests, championed by community services with low resource needs Regular organizational and company-wide testing for the safe resumption of economic activities Testing should be a border-control measure for all travellers <p>Source</p>	Published 12 April 2021
	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> A review examined the impact that COVID-19 had on the provision of care through telemedicine across various health service lines, including dermatology, oncology, obstetrics and gynecology, and mental health, and found that the aforementioned service lines demonstrated effective responses to COVID-19 through workflow adaptations via telemedicine Telemedicine has been effective through risk mitigation, improved access, convenience, lower cost, and patient satisfaction Mental health service lines had the most documented outcomes with the use of telemedicine Obstacles to implementing telemedicine included a lack of reimbursement parity, telemedicine infrastructure capabilities, regulatory and HIPAA (Health Insurance Portability and 	Published 1 October 2020

		<p>Accountability Act of 1996) compliance guidelines, lack of internet connectivity, and patient and provider discomfort with technology, however each health service line developed the capacity to accelerate telemedicine adoption</p> <p>Source</p>	
<p>Rapid reviews</p>	<ul style="list-style-type: none"> • Public-health measures • Economic and social 	<ul style="list-style-type: none"> • A rapid review of the legislation related to South Africa’s 15 March to 31 May 2020 lockdown in response to the COVID-19 pandemic was conducted to determine how the legislation advanced or constrained South African children’s vulnerability to abuse and neglect • The review found that the strict lockdown regulations put in place prioritized the maintenance of children’s physical health by restricting their movement, but at the same time obstructed their social circles with extended family members and friends, and access to school-based food programs, and in some cases, formal education because of lack of digital technology needed for virtual learning • Children’s rights to protection from abuse were prioritized by legislators during the pandemic as the judiciary was advised to prioritize family law matters involving children and reports by social workers were used to authorize child-protection services • Social-support measures were also put in place to help families who were affected financially by the lockdowns, including grant extensions, food-delivery programs, and protected and temporary housing <ul style="list-style-type: none"> ○ Some support legislation, however, was inadequately operationalized and led to a significant number of households being unable to benefit from programs such as the ‘knock-and-drop’ food distribution directive ○ Operational capacity is most likely to advance when ministries and civil society collaborate to implement initiatives • The review suggests that social work, education, and mental health professionals should be actively involved in the development processes of COVID-19 legislation that affect children, to ensure that their intellectual, mental and social needs are not neglected 	<p>Literature last searched 31 May 2020</p>

		<ul style="list-style-type: none"> ○ These professionals can also be instrumental in communicating how families and institutions championed child protection at the local level <p>Source (AMSTAR rating 5/9)</p>	
	<ul style="list-style-type: none"> • Cross-cutting • Health-system arrangements 	<ul style="list-style-type: none"> • This scoping review aimed to identify the major cross-cutting challenges and lessons learned by national and regional authorities and civil-society organizations in the European Union (EU) during the period of March to May 2020 when stay-at-home and other measures were implemented in response to the COVID-19 pandemic • Medically and socially vulnerable populations that were serviced during early 2020 by the organizations reviewed in this study include ethnic minorities, irregular migrants, members of the LGBTQI community, people experiencing homelessness, people living in abusive households, immunocompromised individuals, individuals with comorbidities, people with disabilities, sex workers, and people with alcohol or drug dependence • When surveyed, organizations that typically provide services for vulnerable populations in the EU said that they experienced significant challenges in making their services accessible when stay-at-home measures were enacted, and made several adjustments to respond: <ul style="list-style-type: none"> ○ Increased outreach ○ Moved services online where possible ○ Provided counselling and housing support on the phone or by videoconference ○ Delivered food, testing and treatment supplies to vulnerable groups ○ Only allowed face-to-face contact for services when absolutely necessary • Similar successes and lessons learned from the experience were reported by these organizations: <ul style="list-style-type: none"> ○ Most services, such as providing housing, and access to medical help and treatment, were maintained because organizations were able to adapt quickly and effectively 	<p>Published May 2020</p>

		<ul style="list-style-type: none">○ The pandemic gave organizations the opportunity to revise and improve some of their practices so that their services were delivered more efficiently○ Social media, mobile phones and videoconferencing were very useful tools that helped organizations facilitate their work and maintain contact with their clients○ Collaboration and coordination between organizations and provider stakeholders allowed for sharing of information and experiences and to prevent the waste of resources and duplication of activities○ Organizations found that reliable data collection and reporting on impact indicators is important, in part because this data can provide evidence to support advocacy work○ Dedicated staff and volunteers who managed COVID-19 cases effectively and minimized infection were also considered a success○ Community engagement and flexibility in tailoring services to the varying needs of individuals within vulnerable populations remained important throughout the pandemic● Several ‘good practices for action’ were suggested to optimize service provision during the pandemic:<ul style="list-style-type: none">○ Consider extending financial support to civil-society organizations that support vulnerable groups○ Continue to use online and digital technologies as well as alternative methods of communication for people who have limited or no internet services○ Make every effort to minimize the risk of infection for both service users and service providers○ Engage with representatives of vulnerable populations throughout all stages of the pandemic and ensure that communication is clear, appropriate and effective○ Ensure that the principles of equity and human rights are always considered when making decisions about how services will be provided○ Be flexible when implementing and enforcing legislation that affect vulnerable people, and also be targeted in how resources will be used to meet their needs	
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	<ul style="list-style-type: none"> • Public-health measures • Health-system arrangements 	<p>Source (AMSTAR rating 1/9)</p> <ul style="list-style-type: none"> • In this review, the impact of surgical-training disruptions during the COVID-19 pandemic and the mitigation efforts carried out in Canada, the U.K., the U.S., Australia and New Zealand were studied • Findings highlighted that international surgical-training bodies were agile and resident-centred in their collective response <ul style="list-style-type: none"> ○ Non-urgent elective surgeries were completely stopped in the U.K. for a minimum of three months, while health officials in the U.S. and Canada recommended a reduction of elective surgical activity on a regional level based on local healthcare need; Australia and New Zealand were the first countries to reopen surgical services in May 2020 ○ Recruitment and selection for 2020 residency went ahead in all countries, but the recruitment system in the U.K. was greatly affected by the pandemic and in turn had to rely solely on self-assessment scores submitted with applications ○ In all countries, flexibility was given to board examination participants who had their examinations cancelled or postponed because of pandemic restrictions to reschedule examination dates or meet the requirements for their training programs in an alternative way • Canada’s surgical residency training is notably unique in that it has a larger portfolio of competency-based rather than time-based residency programs, which were more negatively affected by evolving pandemic restrictions • Videoconferencing was used in Canada to conduct interviews remotely for training programs, and this convenience may be useful for recruitment and teaching after the pandemic <p>Source (AMSTAR rating 2/9)</p>	<p>Literature last searched 9 June 2020</p>
	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • A rapid review describes COVID-19-related impacts on surgical training and the strategies put in place to mitigate disruptions in the U.S., the U.K., Canada, Australia and New Zealand, and found that the collective response by the main surgical-training bodies in those included countries has been agile and resident-centred 	<p>Published 25 June 2020</p>

		<ul style="list-style-type: none"> • Surgical residency in the U.K. remains largely time based rather than competency based • Hypothesized that suspension of elective surgical services in the U.K. will inevitably jeopardize the attainment of competencies required for progression within surgical-training programs • The U.K. introduced a special COVID-19 ‘no-fault’ training extension outcome code for the Annual Review of Competency Progression assessment to circumvent traditional stigma associated with training extensions • It is anticipated that in the U.K., training extensions will be largely restricted to residents at critical progression points or at the very end of training • COVID-19 has exposed weaknesses in the U.K.’s recruitment systems as training bodies have become reliant on using self-assessment scores alone to appoint new residents • Surgical residency in the U.S. remains largely time based rather than competency based • It is anticipated that the widespread suspension of elective surgical services in the U.S. during the pandemic will inevitably jeopardize the attainment of competencies required for progression within surgical-training programs • It was found that the U.S. resident recruitment rounds were largely complete before the onset of the pandemic and have hence been relatively unaffected <p>Source (AMSTAR rating 2/9)</p>	
Protocols for reviews that are underway	<ul style="list-style-type: none"> • Public-health measures • Clinical management 	<ul style="list-style-type: none"> • Learning from public health and hospital resilience to the SARS-CoV-2 pandemic: protocol for a multiple case study (Brazil, Canada, China, France, Japan, and Mali) <p>Source</p>	Published 6 May 2021
Titles/questions for systematic and rapid reviews that are being planned			

YouSingle studies	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> An interrupted time series design study of four Brazilian cities demonstrated that lockdown policies reduced COVID-19 cases and deaths The study found a reduction of COVID-19 related deaths ranged from 37.85% in São Luís to 16.77% in Belém <p>Source</p>	Published 19 October 2020
	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> A time series analysis conducted with data from the state of São Paulo, Brazil demonstrated a significant reduction in COVID-19 deaths attributable to social-distancing strategies The study estimated through the same data that a Social Distancing Index (defined by the State Government) higher than 55% may be necessary to reduce the number of COVID-19-related deaths <p>Source</p>	Published 22 June 2020
	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> A Brazilian study employing a difference-in-difference approach found that higher levels of social-isolation policies are associated with a reduction in the number of COVID-19 cases and deaths <p>Source</p>	Published February 2021
	<ul style="list-style-type: none"> Clinical management 	<ul style="list-style-type: none"> A study examined the establishment of a COVID-19 treatment centre in Israel and described lessons learned <ul style="list-style-type: none"> Facility modifications should occur at the initial stages of the outbreak Ability to rapidly differentiate patients with or without diagnosed COVID-19 is important (e.g., designated isolation space and prioritization of swab testing of ED patients) Prioritization of PPE to ED staff Different zones for patients were effective, but required constant adjustments (e.g., staff allocation, increasing laboratory testing capabilities, channels for early discharge) Other strategies were developed such as agility, continuous real-time planning and learning processes, constant adjustments to PPE policy, effective communication with staff, maintenance of non-COVID care, increased logistical capabilities, immediate post-exposure epidemiological studies, and early preparation and readiness <p>Source</p>	Published May 2021

	<ul style="list-style-type: none"> Public-health measures 	<ul style="list-style-type: none"> A study examined drive-through testing complexes run by the Magen David Adom (MDA), the Israeli National Emergency Medical Services Organization, and derived key lessons learned from an analysis of these centres <ul style="list-style-type: none"> The drive-through complexes were cost-effective and efficient in performing mass testing Prior experience with mass-casualty incidents was beneficial, especially with national-level protocols and procedures in place Use of unique features such as preregistration with a national call number, text message, and identification at site by QR code provided optimal physical distancing between staff and patients More mobile complexes close to outbreaks compared to a smaller number of larger expensive centres may be more valuable Reduce mass testing sites during religious holidays to preserve staff capacity Engage stakeholders with experience in process improvement to develop or update clinical operations (e.g., industrial engineering consultant) <p>Source</p>	<p>Published 13 February 2021</p>
	<ul style="list-style-type: none"> Public-health measures 	<ul style="list-style-type: none"> A study described key characteristics that contributed to Israel's rapid vaccination roll-out, including: <ul style="list-style-type: none"> Long-standing characteristics extrinsic to health care (e.g., small geographical and population size, relatively young population, warm weather, centralized national government, well-developed infrastructure) Health-system specific characteristics (e.g., organizational, IT, and logistical capabilities of community-based healthcare providers, well-trained, salaried, community-based nurses directly employed by providers, effective cooperation among government, health plans, hospitals, and emergency-care providers, tools and decision-making frameworks to support vaccination campaigns) COVID-19 vaccination effort specific characteristics (e.g., special government funding for vaccine purchase and 	<p>Published 26 January 2021</p>

		distribution, timely contracting, clear and simple implementable vaccination criteria, creative technical responses to storage and handling, and tailored outreach efforts)	
	<ul style="list-style-type: none"> Public-health measures 	<p>Source</p> <ul style="list-style-type: none"> Study compares the public health measures taken in eight high-income countries and regions that have started to ease restrictions including: Hong Kong, Japan, New Zealand, Singapore, Germany, Norway, Spain and the U.K. In England, a three-phased plan for reopening has been used using the reproduction number to guide decision-making, however no explicit public criteria has been used to guide which restrictions to relax, undermining public trust Germany has been using epidemiological thresholds for states to lift lockdown restrictions, and while this has been useful for maintaining public trust it has resulted in increases in daily cases in select states Messaging in England around physical distance has been found to be inconsistent and leading to confusion, with one metre being suggested while two-metres distance is still recommended in other parts of the U.K. In the U.K. COVID-19 mortality has been disproportionately high among residents of care homes, Black, Asian and minority ethnic groups, socio-economically deprived populations and workers with low wages; while these may exist in Germany as well no data is collected to allow for the analysis In Germany, experts on infectious disease within established public-health institutes are responsible for ensuring that scientific evidence drives policymaking while this level of transparency did not exist in the U.K. <p>Source</p>	
	<ul style="list-style-type: none"> Cross-cutting 	<ul style="list-style-type: none"> Study examines the use of co-production of policymaking in Germany between researchers and national policymakers Existing structures in Germany through the Robert Koch Institute and Max Planck institute were critical to the co-production of policy including in both formal and informal 	Published 16 February 2021

		<p>working groups, and helped to gain public trust throughout the pandemic</p> <ul style="list-style-type: none"> • The National Academy of Sciences was tasked with convening an expert group including philosophers, theologians and jurists to advise the government on how to emerge ethically from the initial shutdowns and loosen its restriction policies – this inclusive approach was an anomaly across other jurisdictions <p>Source</p>	
	<ul style="list-style-type: none"> • Public-health measures 	<ul style="list-style-type: none"> • South Africa experienced an overwhelming load of contact tracing for the number of workers as well as an under-utilization of quarantine facilities due to enacted stigma, fear of in-facility property loss, and unwillingness to isolate away from family • Contact tracing was reliant on public-health specialists, however additional involvement of community health workers helped to alleviate some of the capacity concerns • Proposed solutions included building decentralized contact-tracing activities and leveraging of telephone and digital solutions <p>Source</p>	<p>Published 11 February 2021</p>
	<ul style="list-style-type: none"> • Public-health measures 	<ul style="list-style-type: none"> • Ability to scale up contact tracing in the U.S. was limited and many jurisdictions grappled with uneven adoption of electronic case reporting from laboratories and providers • Cities with large outbreaks shifted to focusing exclusively on contact tracing in congregate-living settings and high-density employment places, while smaller cities were able to rely upon contact tracing as a containment strategy • Three challenges emerged with respect to contact tracing: <ul style="list-style-type: none"> ○ Having to develop a set of standards for the implementation of COVID-19 case investigation and contact-tracing programs ○ Characterizing job functions within contact tracing and case-investigation units ○ Training new contact tracers and case investigators with limited previous experience 	<p>Published February 2021</p>

		<ul style="list-style-type: none"> • Partnering with other jurisdictions that had demonstrated promising approaches appeared to help a number of states that were falling behind • Community engagement was critical to contact tracing and using community-based organizations could more easily elicit information from exposed individuals <p>Source</p>	
	<ul style="list-style-type: none"> • Clinical management 	<ul style="list-style-type: none"> • The study examined the implementation of telehealth due to COVID-19 and assessed how it impacted youth mental health care and services in Australia • Related to service quality, young people were more likely to rate a positive experience with telehealth than clinicians <ul style="list-style-type: none"> ○ Most clinicians indicated that telehealth is not appropriate for complex or high-risk conditions or individuals with limited access to technology • Most of the clinicians were interested to continue telehealth • The authors identified challenges such as the need for more long-term, stable and purpose-built telehealth platforms, identify when telehealth is appropriate to use and for which population groups, and to understand time burdens for telehealth and technical challenges <p>Source</p>	Published May 2021
Opinion pieces	<ul style="list-style-type: none"> • Public-health measures • Health-system arrangements • Economic and social responses 	<ul style="list-style-type: none"> • This opinion piece on Germany provides an overview of the elements of success and challenges experienced that have been critical to its response between October 2020 and January 2021, including: <ul style="list-style-type: none"> ○ Entering the pandemic with a detailed National Pandemic Plan that was updated following the Middle East respiratory syndrome and allowed the government to act quickly and decisively ○ The Robert Koch Institute was put in charge of risk assessments, strategy documents, response plans and developing technical guidance which provided the federal government with a steady stream of information from a centralized source allowing the government, as well as local public-health authorities, to make informed decisions 	Published 20 March 2021

		<ul style="list-style-type: none"> ○ Scientists in Germany were responsible for the early development of a SARS-CoV-19 test and as a result they were able to quickly turn their attention to increasing testing capacity <ul style="list-style-type: none"> ▪ Requiring all insurance companies to pay for COVID-19 tests for symptomatic people in turn incentivized private laboratories to scale up their capacity and test asymptomatic individuals ▪ At its peak, the testing capacity was approximately 1.1 million tests per week ○ Two apps were launched in Germany, the Corona-Warn-App and the Corona Data Donation App, however both were criticized for being only minimally effective ○ Germany faced human resource constraints for contact tracing and while they were initially able to keep up with demand, by November 2020, 75% of the cases were not traceable ○ Physical distancing efforts were complicated in Germany from the federal system as states enacted requirements that differed from national guidelines, often confusing the public <ul style="list-style-type: none"> ▪ With unanimous consent from states, Germany enforced strict physical-distancing guidelines banning groups of more than two people in public ○ Germany faced a crisis with PPE supplies early on in the pandemic with significant shortages of masks and disposable gloves ○ An economic rescue package was announced, including 800 billion euros in March 2020 and 130 billion in June which were earmarked for business and job protection, direct relief payments and tax cuts to keep consumer spending at reasonable levels. These supports are estimated to help Germany recover better than other EU member states <p>Source</p>	
	<ul style="list-style-type: none"> • Health-system arrangements 	<ul style="list-style-type: none"> • Primary-care professionals around the world have initiated ‘on the spot’ innovative approaches to continuing delivery of care while allowing for medical distancing through virtual 	<p>Published 28 September 2021</p>

		<p>consultation and monitoring, and the use of apps where possible</p> <ul style="list-style-type: none">○ Options to move to virtual consulting are limited in resource-constrained settings○ Laws, practice guidelines and reimbursement codes have been adjusted rapidly to overcome barriers to telehealth○ Primary-care providers have experienced a sharp decline in non-COVID-19 contacts in many countries○ This postponement of regular care risks losing contact with vulnerable groups who require different types of care● Five main points were identified for health systems and health policy to support primary care:<ul style="list-style-type: none">○ The need to better understand the importance of primary care in responding to a pandemic and the value of primary care's ability to adapt rapidly to new and changing circumstances while keeping contact with the local population○ The need to support primary-care professionals to cope with stress and strains of working during a pandemic, such as through balanced work scheduling and collaborative working relationships within defined geographical areas○ The need to protect primary-care services and make them available to those who need them○ The understanding that COVID-19 stresses the importance of partnerships between primary care and public health○ The need to use the experiences collected during COVID-19 to educate and train health professionals● Three major learning points for primary care were:<ul style="list-style-type: none">○ Primary care has been able to rapidly innovate and change in response to redirected patient flow, although this has brought on new challenges○ Maintaining access to primary care and the ongoing management of all health problems is necessary○ Collecting and disseminating finely tuned information to different users (e.g., public, patients, clinicians and policymakers) is important to avoid misinformation and	
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		<p>avoid overwhelming the public with epidemiological data disseminated by the media</p> <p>Source</p>	
	<ul style="list-style-type: none"> Public-health measures 	<ul style="list-style-type: none"> An opinion piece described the need for tailoring public measures for minority populations in Israel, such as developing a comprehensive national plan that includes building trust among leadership in certain communities and civil-society networks, in addition to other factors (e.g., consideration of religious holidays, improved access to healthcare, diagnostic screening, and humanitarian responses) <p>Source</p>	<p>Published 19 May 2021</p>
	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> In an opinion piece published in the Israel Journal of Health Policy Research, the author derived policy lessons for Canada based on Israel’s vaccine roll-out successes and advantages such as: <ul style="list-style-type: none"> Well-developed primary-care system to deliver vaccines Delivery systems that were responsible for different priority groups (e.g., a national medical emergency-services organization that solely vaccinated residents living in long-term care) A centralized and developed electronic medical record system Unified and strategic planning and execution of vaccination strategies <p>Source</p>	<p>Published 19 May 2020</p>
	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> A discussion paper from the National Academy of Science examined the U.S. public health sector’s experience during the COVID-19 pandemic, including legacy systems, health departments’ key contributions and challenges, and identified priority areas and policy considerations for the public-health sector, such as: <ul style="list-style-type: none"> Closing funding gaps for foundational capabilities Affirming a mandate for public health Promoting structural alignment Investing in workforce development Modernizing data capabilities Supporting cross-sector partnerships <p>Source</p>	<p>Published 7 April 2021</p>

Appendix 5: Lessons learned from the COVID-19 pandemic from other countries

Province/ territory	Cross-cutting	Public-health measures	Clinical management	Health-system arrangements	Economic and social responses
Australia	<ul style="list-style-type: none"> • The Australian Senate’s Select Committee on COVID-19 is inquiring into the government’s response to the pandemic and has thus far released two interim reports <ul style="list-style-type: none"> ○ The first interim report scrutinizes the federal government’s actions in the following domains: <ul style="list-style-type: none"> ▪ Preparation and initial response ▪ Health responses (managing COVID-19 in Australia and aged care) ▪ Economic responses (the immediate fallout and subsequent recession and jobs crisis) ▪ National governance, coordination and communication • With respect to national governance, coordination, and communication, the Senate Select Committee on COVID-19 found that the National Cabinet (made up of the Prime Minister and all state and territorial first 	<ul style="list-style-type: none"> • The Senate Select Committee on COVID-19 found that the government should have responded with greater urgency in January 2020 <ul style="list-style-type: none"> ○ The committee also found that pre-COVID-19 pandemic planning was inadequate and the initial response in February 2020 had several key gaps (notably gaps regarding international borders, aged care, care for those with disabilities, and mental health) ○ The committee noted that government actions and inactions had led to thousands of Australians being stranded abroad ○ The Senate Select Committee’s chapter on managing COVID-19 in Australia states that the national COVIDSafe contact-tracing application has under-performed in its ability to aid in contact tracing due to low uptake and performance issues with the Bluetooth-based system 		<ul style="list-style-type: none"> • The Senate Select Committee on COVID-19 found that the National Medical Stockpile was unprepared for the personal protective equipment needs of the pandemic despite prior warnings • The committee put forward its support of the national government’s strategy for procuring vaccines, but voiced concerns regarding the lack of diversification in the vaccine procured and lack of logistical planning for vaccine roll-out • The committee heard that the lack of a national Centre for Disease Control disadvantaged the national response and recommended that the government establish an Australian Centre for Disease Control • The Senate Select Committee on COVID-19 devoted significant attention to the issue of aged care and the 	<ul style="list-style-type: none"> • With respect to the immediate economic fallout and response, the Senate’s Select Committee on COVID-19 acknowledged that the government’s initial economic support packages in March 2020 were crucial in saving jobs, supporting low-income individuals, and supporting businesses, but there were challenges with the scale and timing of these packages <ul style="list-style-type: none"> ○ The committee notes that the wage-subsidy program (JobKeeper) came too late and deliberately excluded some of the most severely affected groups of workers ○ The committee also notes that the government’s fiscal response failed to identify and correct for the gendered impact of the pandemic, and the

	<p>ministers and formed to handle COVID-19) did not function in accordance with Westminster conventions on cabinet responsibility, solidarity, and transparency</p> <ul style="list-style-type: none"> ○ The committee also found that the Prime Minister contributed to national confusion and anxiety and fractured the national response by criticizing certain state premiers' decision and providing mixed messaging ○ The committee also found that the National COVID-19 Commission Advisory Board has lacked transparency, has had access to cabinet documents without commensurate accountability, has not released any work publicly, and has not adequately managed any potential conflicts of interest ● The committee also found that there was a lack of transparency regarding the inputs the Australian Health Protection Principal Committee provided the federal government to 			<p>significant impact of COVID-19 outbreaks in residential aged care settings</p> <ul style="list-style-type: none"> ○ The committee found that known vulnerabilities (such as inadequate staffing levels, inadequate personal protective equipment, and gaps in infection-control training) were not addressed, and the national government failed to implement a COVID-19 plan for the sector ○ The committee also posits that the crisis in aged care was avoidable and the national government failed to accept responsibility for this situation ○ The committee found that there was a failure to anticipate future challenges in the aged care sectors and learn from earlier outbreaks in the aged care sector (particularly regarding issues of staffing, personal protective 	<p>government should have undertaken a gendered impact analysis of its decisions</p> <ul style="list-style-type: none"> ○ Finally, the committee posits that the government's delay in implementing a national paid pandemic-leave program put lives, particularly those of low-income workers, at risk ● The committee found that an approximately \$41-billion early pension access scheme for individuals placed too much of the economic burden on the working people and will have a permanent and long-term negative impact on the retirement income system ● The committee noted that the government's economic stimulus via the JobMaker program is necessary, but the scale is inadequate to facilitate economic recovery <ul style="list-style-type: none"> ○ The committee also notes that the
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	<p>inform its COVID-19 response. This lack of transparency was, in part, due to this committee being designated a subcommittee of the National Cabinet and thus subject to cabinet privileges</p>			<p>equipment, and infection control)</p> <ul style="list-style-type: none"> • Finally, the committee found that the national regulator of state-funded aged care services failed to use its regulatory powers to protect aged care residents, was too reliant on a self-assessment tool for assessing aged care providers' preparedness for COVID-19, and the committee questioned the regulator's decision to suspend unannounced visits to facilities during the pandemic • The Australian National Audit Office conducted a performance review of COVID-19 related procurements and deployments of the National Medical Stockpile <ul style="list-style-type: none"> ○ With respect to procurement, it was found that processes were largely consistent with the proper use and management of public funds, but due diligence and record keeping could have been improved 	<p>stimulus program's initiative aimed at residential construction missed an opportunity to invest in social and affordable housing – an investment that would have served as a rapid and effective form of stimulus and brought additional social benefit</p> <ul style="list-style-type: none"> • The committee further notes that the government's economic stimulus via the JobMaker program missed the opportunity to take meaningful action on other priority areas (such as investing in childcare to boost economic participation, investing in renewable energy, and developing domestic manufacturing capacity)
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				<ul style="list-style-type: none">○ With respect to deployments, the Department of Health did not have a plan for deploying supplies in a pandemic context so processes were adjusted and enabled the distribution of supplies to eligible groups, but there was an absence of a performance framework and disaggregated data collected so it is not clear how effective the deployment was● The Australian National Audit Office conducted a performance review of the planning and governance of COVID-19 procurements to increase the National Medical Stockpile○ Pre-pandemic planning was partially risk-based, procurement planning was not well coordinated with states and territories, and pre-pandemic planning did not adequately consider emergency procurements	
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				<ul style="list-style-type: none"> ○ COVID-19 procurement involved the Department of Health and the Department of Industry, Science, Energy and Resources developing fit for purpose and flexible plans and taskforces, these procurements generally took risks into account, but there was a lack of documentation regarding risks and conflicts of interest ○ COVID-19 procurement needs were difficult to estimate for most products but needs were generally met or exceeded 	
Brazil					<ul style="list-style-type: none"> • Using modelling data to project different scenarios and across a range of government program responses, this study suggests that the expansion of the Bolsa Família (PBF), the Emergency Assistance program (Auxílio Emergencial; AE), the Emergency Employment and

					Income Maintenance Benefit (Benefício Emergencial de Manutenção do Emprego e da Renda; BEm) and the existing unemployment insurance provided by the Brazilian government collectively provided a robust response to mitigate the impact of COVID-19 for the poorest 40% of Brazil
France	<ul style="list-style-type: none"> • A report to the National Assembly on the impact, management and consequences of the COVID-19 pandemic provided an overview and lessons learned from: <ul style="list-style-type: none"> ○ The initial establishment of government’s public-health response; ○ Implementing a state of emergency ○ Mobilization and adaptation of the care system and research system ○ Economic and social measures taken to dealing with the crisis • The National Independent Audit on the evaluation of the management of 	<ul style="list-style-type: none"> • The Auditors Court (“Cour des comptes) has issued a report evaluating aid for returning French people abroad in foreign countries during the break of COVID-19 pandemic • The partnership established between the Ministry of Transportation and Air France was successful and brought citizens back in a timely and cost-efficient manner <ul style="list-style-type: none"> ○ The report noted that the telephone and email reception could be improved when taking calls from French citizens and residents abroad 		<ul style="list-style-type: none"> • A report on behalf of the commission for the evaluation of public policies examined the response of the French Government to the COVID-19 pandemic and includes four major sections on: <ul style="list-style-type: none"> ○ Pandemic preparedness ○ Hospital centric response ○ Implementation of test, trace and isolate approaches ○ Governance challenges that emerged during the pandemic • The same report put forward select recommendations for 	<ul style="list-style-type: none"> • The Auditors Court (“Cour des comptes) has issued a report of which the first eight sections relate to evaluating the COVID-19 response, including: <ul style="list-style-type: none"> ○ The contribution of the public service of digital education to school continuity ○ Accommodation and housing for homeless people during the pandemic ○ Unemployment insurance • The report that focused on digital education found challenges in continuity for middle- and high-school

	<p>COVID-19 crisis identified six lessons learned:</p> <ul style="list-style-type: none"> ○ The level of preparedness for the crisis was insufficient ○ A lack of foresight resulted in repeated delays in decision-making ○ The complexity of governance and excessive centralization led to a loss of efficiency managing the crisis and undermined the acceptability of the measures across the country ○ Government agencies learned from their experiences and improved management throughout the pandemic ○ There has been a strong mobilization of health professionals and other stakeholders ○ The French economic response has been equal to the shock suffered in other comparator countries <ul style="list-style-type: none"> ● The same report also identified 40 recommendations, which were organized around three main themes: 			<p>moving forward with the findings, including:</p> <ul style="list-style-type: none"> ○ Secure strategic stocks and develop French manufacturing capacity for protective masks ○ Guarantee the continuity of care for patients during times of crisis ○ Secure care for vulnerable people ○ Coordinate clinical research ○ Ensure the capacity and priorities for screening policies in times of crisis ○ Strengthen the consistency of scientific expertise and enhance transparency to the rest of society ○ Strengthen interministerial work and European coordination in the preparation and response to health emergencies ○ Clarify the distribution of responsibilities between health agencies and their supervisory authorities <ul style="list-style-type: none"> ● The French Senate is in the process of publishing 	<p>students, which was especially acute among students in disadvantaged areas</p> <ul style="list-style-type: none"> ○ Key lessons learned include the need to establish an operational school-continuity plan which includes procedures and tools ○ Create a digital data website for education that can house information related to equipment, connections and their use across schools ○ To provide students, during periods of crisis, with free access to internet or data by negotiating with telephone operators to try to improve equity of access to digital education services <ul style="list-style-type: none"> ● The report that focused on measures put in place during the pandemic for homeless and marginally housed individuals found that while confinement measures and use of hotels helped to contain
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	<ul style="list-style-type: none"> ○ Prepare for the next crisis ○ Strengthen public health, scientific expertise and management of the healthcare system ○ Organize feedback at the level of institutions and society and thoroughly assess the impacts of the crisis 			<p>additional reports focused on:</p> <ul style="list-style-type: none"> ○ the legal and operational responses to the pandemic ○ the scientific and technical aspects of the fight against COVID-19 ○ the vaccine strategy to be implemented to limit the fourth wave of the pandemic <ul style="list-style-type: none"> ● The Auditors Court (“Cour des comptes) has issued a report focused on resuscitation and critical care during the COVID-19 pandemic and found: <ul style="list-style-type: none"> ○ Mobilization of care to provide resuscitation and critical care was made possible by scaling back emergency care ○ The sector as a whole was largely unprepared for the pandemic with insufficient number of resuscitation equipment and significant inequalities across regions ● Lessons learned from the report include: <ul style="list-style-type: none"> ○ Assessing the consequences of 	<p>the spread of COVID-19, they had negative effects on individuals’ health and integration</p> <ul style="list-style-type: none"> ● Lessons learned from these measures include: <ul style="list-style-type: none"> ○ To generalize the adoption of and regular updating of business-continuity plans by all the actors involved in reception, accommodation, support and housing ○ To expand options for social housing and avoid over saturation of individuals in shelters in the event of a prolonged crisis ● A report on the solidarity fund which provided financial support for businesses during the pandemic found: <ul style="list-style-type: none"> ○ The support was rapidly deployed and successfully adjusted to support sectors most affected by the crisis, however the report found that the general operating principles did not evolve in parallel
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				<p>reducing non-essential care during the pandemic</p> <ul style="list-style-type: none"> ○ Increase critical-care equipment and critical-care personnel in select regions to reduce inequalities ○ Review the training for general-care nurses to incorporate critical-care training to ensure they are able to be called upon in the event of another pandemic ○ Identify a new funding model for critical care 	<ul style="list-style-type: none"> ● Lessons learned include: <ul style="list-style-type: none"> ○ Putting in place tools to prevent cumulation of aid paid out in excess of the damage suffered ○ To increase the amount of aid and extension of the fund to larger enterprises from the outset that have been hard hit by COVID-19
Germany	<ul style="list-style-type: none"> ● A government report published in March 2021 highlighted the need for digital transformation: <ul style="list-style-type: none"> ○ Simplify administrative processes and effectively distribute responsibilities in an interstate treaty, e.g., for uniform legal interpretation for the provision of data protection-compliant digital communication platforms ○ Speed up integration of new management approaches in public administration (e.g., agile management) 				<ul style="list-style-type: none"> ● A report from the German Court of Audits has warned that the continued use of the European Union Recovery Fund may weaken rather than strengthen the European recovery, and as a result the federal government should ensure that borrowing from the recovery fund is reduced

	<ul style="list-style-type: none"> ○ Strengthen use of “real-world laboratories”, in which companies can operate under specific regulatory systems to generate data for researchers and decision-makers ○ Shape data protection laws more effectively at German and European level ○ Further advance expansion of digital communication infrastructure (e.g., provision of internet vouchers to small and medium-sized businesses and households with school-aged children) ○ Further accelerate digital transformation of medium-sized companies through funding measures (e.g., provision of digital vouchers and training) 				
Israel		<ul style="list-style-type: none"> ● A special interim report from Israel’s State Comptroller published in October 2020 outlined what went well, what could have gone better, and recommendations related to epidemiological investigations <ul style="list-style-type: none"> ○ The General Security Service (GSS) acted 		<ul style="list-style-type: none"> ● A special interim report from Israel’s State Comptroller published in October 2020 outlined what went well, what could have gone better, and recommendations related to community medicine 	<ul style="list-style-type: none"> ● A special interim report from Israel’s State Comptroller published in October 2020 outlined what went well, what could have gone better, and recommendations

		<p>promptly and despite technological challenges, their services were able to identify some individuals with positive cases of COVID-19</p> <ul style="list-style-type: none"> ○ The Ministry of Health did not have an effective system for epidemiological investigations (e.g., identification of positive cases, documentation and interrogation processes, lack of linkages to the Ministry of Education) ○ Day-to-day government activities were affected given the extra efforts towards GSS ○ The State Comptroller recommended that the epidemiological investigations with GSS requires further analyses to determine its value in future investigations ○ The State Comptroller recommended the development of an epidemiological system and identify barriers to investigations ● A special interim report from Israel's State Comptroller published in 2021 outlined what could have gone better, 		<ul style="list-style-type: none"> ○ The Ministry of Health did not address the public's concerns and fears about accessing health care services during the pandemic ○ The use of remote medical services increased, however disparities and gaps emerged among population groups (e.g., populations with low access to technology) ○ The State Comptroller recommended that the Ministry of Health should develop robust vaccination plans, refer to lessons learned in remote medicine and develop future remote medicine capacity for future emergencies ● A special interim report from Israel's State Comptroller published in 2021 outlined what went well, what could have gone better, and recommendations related to older adults and long-term care ○ There were limited number of beds for older adults seeking care 	<p>related to the economic responses</p> <ul style="list-style-type: none"> ○ The Tax Authority enacted emergency procedures and computerized systems to monitor progress throughout the pandemic ○ Reimbursements, grants, and payment schedules processes for consumers and businesses were unclear and faced technological challenges (e.g., overwhelmed call centers and computerized systems) ○ The State Comptroller recommended that the Tax Authority develop clearer and expedited processes for grant applications ○ The State Comptroller recommended that the Tax Authority should evaluate the economic damage to current businesses and develop plans for future emergencies
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		<p>and recommendations related to diagnostic laboratories</p> <ul style="list-style-type: none"> ○ There were challenges to testing capacity and meeting the needs of laboratories (e.g., purchased reagents did not align with equipment at some laboratories) ○ Wait times for test results were long (i.e., 74% of the subjects received test results after more than 36 hours) ○ The State Comptroller recommended that the Ministry of Health should identify bottlenecks in testing processes, develop better relationships and coordination with laboratories, and establish appropriate quality tests 		<ul style="list-style-type: none"> ○ The State Comptroller recommended that the Ministry of Health should continue to monitor COVID-19 testing and isolation protocols of long-term care home employees and residents, and identify barriers to access of health care 	<ul style="list-style-type: none"> ● A special interim report from Israel's State Comptroller published in October 2020 outlined what went well, what could have gone better, and recommendations related to social responses <ul style="list-style-type: none"> ○ Specific population groups did not have internet access ○ The State Comptroller recommended that the Ministry of Health should identify key population groups and areas with lack of internet access and resources ○ The State Comptroller recommended that there should be focus on developing and increasing the use of environmental spaces outside of schools
South Africa	<ul style="list-style-type: none"> ● The Department of Planning, Monitoring and Evaluation, the Government Technical Advisory Council, and the National Research 			<ul style="list-style-type: none"> ● The chapter on gender equity and the government responses to COVID-19 found that the sexual and reproductive health rights 	<ul style="list-style-type: none"> ● The analysis report on education identified several successes in the education sector during the pandemic

	<p>Foundation are collaborating to produce papers analyzing and reflecting upon the measures taken by government and its partners to combat the COVID-19 pandemic</p> <ul style="list-style-type: none"> ○ There are currently chapters available regarding the following themes: <ul style="list-style-type: none"> ▪ Leadership, governance and institutional arrangements ▪ Legal and regulatory responses ▪ Legal and human rights considerations ▪ Education ▪ Impact on vulnerable groups ▪ Gender equity ▪ Macroeconomic impact and policy ▪ Agriculture and the food supply chain ▪ Tourism and leisure sectors ▪ Transport ▪ Other economic sectors ▪ Infrastructure ▪ International cooperation and trade ▪ Civil-society responses 			<p>of women, girls and other vulnerable groups were negatively affected during the pandemic (for example access to contraception and HIV care suffered), but the pandemic period also caused some barriers to be removed</p> <ul style="list-style-type: none"> ○ The pandemic period spurred advances in self-managed care, telehealth, decentralized collection and delivery of medicines, and a lesser reliance on facility-based care – health-system responses that may improve service delivery beyond the pandemic 	<ul style="list-style-type: none"> ○ Some schools and post-secondary institutions adapted curricula and educational delivery models well ○ Institutions applied risk-based and differentiated approaches to bringing students back in person ○ There was collaboration between the education and health sectors and no large-scale infections ○ The analysis reports on education also identified several challenges for the sector and families ○ Vulnerable and low-income students had little opportunity to engage in remote learning and many parents were not equipped to teach their children from home ○ There were challenges in ensuring adequate social distancing and personal protective
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	<ul style="list-style-type: none"> ▪ Provincial and local case studies ▪ Review of the South African Police Service as a law enforcer during the pandemic • The review of leadership, governance and institutional arrangements noted that the leadership and communication from the president, provincial leaders, and municipal leaders has been strong, which has enabled governmental and societal mobilizations to combat the pandemic, but some serious lapses in leadership (most notably corrupt practices) have hindered the response <ul style="list-style-type: none"> ○ The institutionalized capacity for disaster management (via the Disaster Management Act) enabled some level of disaster management in every sphere of government, but this system was poorly located, under-resourced, and lacked capacity ○ Newly developed structures for disaster management that emerged in response to the pandemic enabled 				<p>equipment provision in schools</p> <ul style="list-style-type: none"> ○ Teachers and lecturers experienced burnout ○ Funding was diverted from the educational sector to respond to the pandemic ○ Based on the success and challenges in the educational sector several lessons learned are articulated ○ There is a need to invest in and upgrade infrastructure for education, including water, sanitation and information technology in schools, and connectivity infrastructure for students learning in the community ○ There is a need to invest in continuous teacher professional development ○ Parents and families need to receive regular and ongoing communication and be provided with resources for remote learning
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	<p>significant intergovernmental cooperation, but insufficient attention may have been given to their legal bases, there may have been too much of a reliance on security-related apparatuses, they lacked dedicated forward planning and operational structures, and there was a lack of transparency in decision-making</p> <ul style="list-style-type: none"> ○ While the pandemic response forged new relationships between government and society, the approach may have been too top-down and did not fully appreciate the difficulties placed on society and the economy, and the challenges associated with instilling behavioural change ● The chapter on gender equity and the government responses to COVID-19 found that the pandemic has had a particularly negative impact on women and stresses the importance of operationalizing gender mainstreaming of government interventions to 				<ul style="list-style-type: none"> ○ While vulnerable groups have been most heavily affected by the COVID-19 pandemic, social assistance and social insurance programs have been fairly successful in providing progressive and targeted income supports ○ However, some issues have arisen regarding excluding many unemployed women from a special COVID-19 grant program due to their receipt of a child-support grant, and the inability of a wage-subsidy program to reach informal workers and those in the poorest households ○ The chapter on macroeconomic impacts and policy states that the initial constraints in supporting families and businesses included issues with state capacity and corruption, the non-
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	<p>analyze how key variables in women’s lives intersect to shape exclusion and marginalization</p> <ul style="list-style-type: none"> • The paper also highlights the need to collect data disaggregated by race and gender • A government-supported national income dynamics survey has been collecting data on a nationally representative sample every few months over the course of the pandemic and reporting on the following topics: <ul style="list-style-type: none"> ○ Vaccines ○ Education ○ Employment ○ Mental health ○ Early childhood development ○ Hunger 				<p>payment of grants to organizations for social welfare services, and major issues with corruption in procurement</p> <ul style="list-style-type: none"> ○ It is also noted that programs that used existing infrastructure became functional faster than new programs ○ Both government capacity and the macroeconomy are highlighted as having been unprepared for a shock of the magnitude of the pandemic, and the authors suggest strong institutions, smart reforms, and greater accountability will be required to make progress on these issues • The review of the South African Police Service as a law enforcer during the pandemic led to several recommendations being made <ul style="list-style-type: none"> ○ The pandemic revealed the
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					<p>importance of intersectoral collaboration between the police service, members of other government departments, and non-governmental organizations, so it was recommended to further consider how to effectively implement these forms of collaboration</p> <ul style="list-style-type: none">○ With respect to human resources, it was recommended to provide officers with sufficient training in legislation before they are deployed, maintain the system of detailed briefings and debriefings implemented during the pandemic, and investigate the impact of having station-level workers exercise unprecedented levels of discretion○ It was recommended the police service improve its digital capacity and readiness to provide its workers with the
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					<p>necessary equipment to keep them safe</p> <ul style="list-style-type: none">○ It was recommended that the service work towards improving police-community relations and take into account the potential for confrontation when creating regulations● The chapter on transportation highlighted several lessons learnt:<ul style="list-style-type: none">○ The sector was severely impacted by the pandemic and in need of business continuity plans○ While transportation operators were assumed to implement and fund public-health measures they faced cash flow constraints that limited their ability to do so○ The public received conflicting medical advice regarding the safety of public transit, and there were insufficient efforts aimed at promoting safe
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					<p>modes of transportation such as walking and cycling</p> <ul style="list-style-type: none">• The chapter on agriculture and the food supply chain elaborates on several lesson learned<ul style="list-style-type: none">○ Public-health related restrictions did not have a significant impact on food production as strong collaboration between industry and government enabled quick resolution of bottlenecks○ The blanket financial relief program for the industry was likely unnecessary and costly; a better relief program would have been more targeted and needs-based○ The government's communication and cooperation with larger industry organizations was good, but was little communication with small businesses○ The lack of support for and restrictions
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					<p>placed upon informal traders had a negative impact on the food supply chain as well as on the ability of vulnerable people to access and afford food</p> <ul style="list-style-type: none"> ○ Unclear communication, differences in regulations between provinces, and intimidation from the police contributed towards creating a difficult environment for food businesses
U.K.		<ul style="list-style-type: none"> • The U.K.'s Comptroller and Auditor General released a report that summarizes the emergency response to personal protective equipment (PPE) shortages in England, with a focus on the performance of national bodies in obtaining and distributing PPE to local organizations, the experience of healthcare and social-care providers, and the Department of Health and Social Care's new PPE strategy, with the following lessons to be learned: <ul style="list-style-type: none"> ○ A comprehensive lessons-learned exercise involving all the main stakeholders, 		<ul style="list-style-type: none"> • A report undertaken by the National Audit Office to support the U.K. parliament examined the U.K. government's COVID-19 response and the funding provided to support responses in the administrations of Northern Ireland, Scotland and Wales, and found the following mobilized changes: <ul style="list-style-type: none"> ○ As of 13 April 2020, the U.K. government announced 6.6 billion pounds in funding from the Coronavirus Emergency Fund to 	<ul style="list-style-type: none"> • The U.K.'s Comptroller and Auditor General released a report that examines how well Her Majesty's Treasury (HM Treasury) and HM Revenue and Customs (HMRC) have managed risks in implementing employment support schemes, namely the Coronavirus Job Retention Scheme (CJRS) and Employment Income Support Scheme (SEISS), and whether the schemes have reached the people who

		<p>including local government and representatives of the workforce and suppliers, would inform the planning for future emergencies</p> <ul style="list-style-type: none"> ○ Business-as-usual activities within government need to strike a balance between operational and financial efficiency versus the longer-term need for resilience and capability for dealing with shocks ○ Emergency plans for dealing with a pandemic must provide for appropriate stockpiles of high-quality PPE ○ Clear, timely, two-way information and communication are vital for both providing services at the front line and for managing the response at the national level ● People's Covid Inquiry, an inquiry body called upon by Keep our NHS Public will invite testimonials from NHS staff, front-line workers, and the public to develop a body of work to help understand how best to restore the NHS, public health and social care ● The U.K.'s Comptroller and Auditor General released a 		<p>support the health and social-care response, in addition to the routine Department of Health & Social Care budget that is being spent on COVID-19 response</p> <ul style="list-style-type: none"> ○ The U.K. government has taken a range of actions which are being delivered through re-prioritizing of existing resources, such as armed forces support, education, and children's services (e.g., supporting home schooling by providing laptops for disadvantaged and vulnerable students) ○ Support for individuals facing economic difficulties, including changes to benefits and statutory sick pay, direct support provided to individuals or households, financial support for self-employed people ○ The U.K. government announced support measures for businesses, including payments to businesses for laid-off employees, 	<p>it was intended for, including these following recommendations:</p> <ul style="list-style-type: none"> ○ HM Treasury and HMRC should consider how to ensure that reliable data covering as many people as possible can be used to determine eligibility so that fewer people suffering loss of income are excluded from future similar schemes ○ HM Treasury and HMRC should monitor how far employment-support schemes protect jobs ○ HM Treasury and HMRC should provide more timely assessments of the total value of error and fraud ○ HM Treasury and HMRC should specify how performance and value for money will be judged as the schemes progress, and monitor
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		<p>continually updated report on the U.K. government’s approach to test and trace services in England through NHS Test and Trace Service (NHST&T) and focused on the period from the beginning of November 2020 to April 2021, with the following conclusions:</p> <ul style="list-style-type: none"> ○ The success of the test and trace service relies on the public coming forward for tests when they have symptoms, carrying out asymptomatic tests when they do not, and complying with instructions to self-isolate where necessary ○ NHST&T is responsible for driving up public compliance, however the report suggests that only a minority of people who have COVID-19 symptoms come forward for testing ○ NHST&T was set up at speed with a workforce heavily reliant on consultants. It had planned to reduce its dependency on consultants but has not yet done so ○ There is a wide margin between the underspend of around 10% that NHST&T discussed with the 		<p>government-backed loan schemes, cash grants and additional reliefs</p> <ul style="list-style-type: none"> • The U.K.’s Comptroller and Auditor General released a report providing lessons from the U.K. government’s response to the COVID-19 pandemic to support its own evaluation of its performance, including: <ul style="list-style-type: none"> ○ For risk management, it is critical to identify the consequences of major emergencies, develop playbooks for the most significant impacts, and being clear about risk tolerance as the basis for choosing which trade-offs should be made in emergencies ○ To ensure transparency and public trust, efforts need to be made to produce clear and timely communications and provide clear documentation to support decision-making ○ Monitor how programs are operating, forecast changes in demand as 	<p>outcomes and adapt arrangements quickly if required</p>
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		<p>Committee of Public Accounts in January 2021, and the 39% underspend of its 2020-21 budget that it reported two months later in March 2021, and will take steps to increase the flexibility of its contracts for contact tracing, future laboratory use, and engagement with local authorities</p>		<p>far as possible, and tackle issues arising from rapid implementation or changes in demand</p> <ul style="list-style-type: none"> ○ Gather information from end-users and front-line staff more systematically to test the effectiveness of programs and undertake corrective action when required ○ For optimal coordination and delivery of models, responsibilities need to be clarified for decision-making, implementation, and governance, especially where delivery chains are complex and involve multiple actors ○ In order to support front-line and other key workers, appropriate measures need to be put in place to assist them in coping with the physical, mental and emotional demands of responding to the pandemic ○ Place the NHS and local government on a sustainable footing, to 	
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				<p>improve their ability to respond to future emergencies</p> <ul style="list-style-type: none"> ○ Ensure that existing systems can respond effectively and flexibly to emergencies, including provision for spare or additional capacity and redeploying staff where needed ● The U.K.'s parliament Science and Technology Committee is in the process of conducting various inquiries, such as on lessons learned and the role of technology, research and innovation in the COVID-19 recovery 	
U.S.		<ul style="list-style-type: none"> ● The U.S. Government Accountability Office's CARES act reports found challenges in the collection and sharing of vaccine data as well as in communicating pandemic data across the Department of Health and Human Services 		<ul style="list-style-type: none"> ● As part of testimony before the Committee on Finance in the U.S. Senate, the U.S. Government Accountability Office reported that the issuing of waivers from the Centers for Medicare and Medicaid allowed for: <ul style="list-style-type: none"> ○ Expansion of hospital capacity ○ Workforce expansion ○ Telehealth waivers 	<ul style="list-style-type: none"> ● The U.S. Government Accountability Office's CARES act reports found: <ul style="list-style-type: none"> ○ Small business loan fraud and overpayments throughout the pandemic ○ A lag between K-12 schools using pandemic funds and their reporting to the Department of Education

					<ul style="list-style-type: none">• The U.S. Department of Energy issued a report on lessons learned during the COVID-19 pandemic and identified:<ul style="list-style-type: none">○ Select challenges including establishing the necessary roles, responsibilities and authorities for response○ Two recommendations to address future challenges including revising all crisis response plans and placing the functions that serve department-wide roles as direct reports to the Deputy Secretary
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Appendix 5: Documents excluded at the final stages of reviewing

Type of document	Hyperlinked title
Rapid review	International travel-related control measures to contain the COVID-19 pandemic: A rapid review
Primary studies	Impact of the COVID-19 pandemic on U.K. medical school widening access schemes: Disruption, support and a virtual student-led initiative
Opinion piece	COVID-19 vaccine hesitance: Lessons from Israel

Waddell KA, Wilson MG, Demaio P, Sharma K, Bain T, Al-Khateeb S, Bhuiya A, Bierman O, Lavis JN. Appendices for COVID-19 living evidence profile #5 (version 5.2): What went well and what could have gone better in the COVID-19 response in other countries , as well as what will need to go well in the future given any available foresight work being conducted? Hamilton: McMaster Health Forum, 15 July 2021.

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