

Appendices for COVID-19 Living Evidence Profile #5

(Version 1: 15 June 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 control trials. We were prepared to complete quality assessments for experimental studies using the Cochrane risk of bias assessment had we found any. For the next update of this LEP, we will present quality appraisals for highly relevant quantitative observational studies, (using ROBINS-I) and highly relevant qualitative studies (using either CASP or JBI).

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 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 vs provincial (vs 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 vs provincial (vs 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 vs provincial) and by shift in policy instrument;
 - governance arrangements (e.g., dividing up or keeping public-health functions together),
 - financial arrangements,
 - delivery arrangements; and
- economic and social, by sector and by federal (vs provincial) (vs 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>Lesson from Germany</i></p> <ul style="list-style-type: none"> • A single study reported that existing research supports such as the Robert Kock 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 re-opening 	<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' decision 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 4 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"> ○ Found that 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 contract 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 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 <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

	<ul style="list-style-type: none"> • 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 <p><i>Lessons from Israel</i></p> <ul style="list-style-type: none"> • A study examined Israel's drive-through testing complexes 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 ○ 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 smaller number of larger expensive centers ○ 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 	<p>England, with a focus on the performance of national bodies in obtaining and distributing PPE to local 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:</p> <ul style="list-style-type: none"> ○ 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 <ul style="list-style-type: none"> • 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
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	<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 health care 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) <p><i>Lessons from South Africa</i></p> <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 <ul style="list-style-type: none"> ○ 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 	
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	<p>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</p> <ul style="list-style-type: none"> • A review examined contact tracing experiences, challenges and lessons learned from four Africa countries, including South Africa <ul style="list-style-type: none"> ○ South Africa experienced an overwhelming load of contact tracing for the number of workers as well as an underutilization 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><i>Lessons from the U.K.</i></p> <ul style="list-style-type: none"> • A multi-country analysis compares the public health measures taken in nine high-income countries, including England, that have started to ease restrictions <ul style="list-style-type: none"> ○ 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 <p><i>Lessons from the U.S.</i></p> <ul style="list-style-type: none"> • 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 	
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	<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 provides ○ Cities with large outbreaks shifting 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 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, immediate post-exposure epidemiological studies, and early preparation and readiness	
Health-system arrangements	<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 how it impacted 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 rollout ◦ 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 the 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 <p><i>Lessons from France</i></p>

	<ul style="list-style-type: none"> ○ 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 <ul style="list-style-type: none"> ▪ 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 individual ▪ 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: <ul style="list-style-type: none"> ○ 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 <p><i>Lessons from Brazil</i></p> <ul style="list-style-type: none"> ● 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 	<ul style="list-style-type: none"> ● 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: <ul style="list-style-type: none"> ○ 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 <p><i>Lessons from Israel</i></p> <ul style="list-style-type: none"> ● A special interim report from Israel’s State Comptroller published in October 2020 outlined key recommendations to the government: <ul style="list-style-type: none"> ○ 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 South Africa</i></p>
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	<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, 	<ul style="list-style-type: none"> • In the chapter on gender equity in a country report on 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 were negatively 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 response to the COVID-19 pandemic to support its own evaluation of its performance, including:
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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, 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 	<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 ● Government fiscal stimulus can partially mitigate the reduction in GDP during the COVID-19 outbreak 	<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 support businesses but there 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 most severely impacted 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 3 and 6 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 are 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 but had negative effects on individual's 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 success 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 approached 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 engaged 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 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 that 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 more provide 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 function that serve department-wide roles as direct reports to the Deputy Secretary
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Appendix 3: Key findings from 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"> 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 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 The U.K. government should with in collaboration with local councils for surveillance, isolation, and quarantine Regular organizational and company-wide testing for the safe resumption of economic activities Testing should be a border control measure for all travelers Source	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 	Published 1 October 2020

		<ul style="list-style-type: none"> Obstacles to implementing telemedicine included a lack of reimbursement parity, telemedicine infrastructure capabilities, regulatory and HIPAA (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 <p>Source</p>	
	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> In this scoping review, the provision of safe supply of legal and regulated drugs during pandemics and other emergencies was evaluated Some of the identified barriers to safe supply of drugs during pandemics include distrust of healthcare providers and institutions by users, user discrimination and stigma, hesitancy of physicians to prescribe drugs to users coupled with limited prescribing powers, a lack of adequate and reliable evidence surrounding safe supply procedures, prohibitive system-level costs for safe drug supply programs along with limited program capacity, profit-driven drug industry practices, and a lack of governance and enforcement of regulatory policies Temporary legal or regulatory exemptions during crisis were also found to be potentially harmful to drug users due to a lack of physical consultation to evaluate users before prescribing drugs in response to public health restrictions It is recommended that to address the barriers identified, supply of drugs should be tailored to the particular social and cultural context of the local user population and the geographical region using a health equity approach that will provide the conditions for sustained use <ul style="list-style-type: none"> Additional support and training for physicians and other healthcare providers about harm reduction and trauma-informed care could also be beneficial A decriminalization approach to ensure timely and respectful access to safe supply for drug users should also be recognized by the policy and legal sectors <p>Source</p>	Published 12 January 2021

Rapid reviews	<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 impacted 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 <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>	Literature last searched 31 May 2020
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	<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 counseling and housing support on the phone or 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, access to medical help and treatment, were maintained because organizations were able to adapt quickly and effectively ○ The pandemic gave organizations the opportunity to revise and improve some of their practices so that their services were delivered more efficiently 	Published May 2020
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		<ul style="list-style-type: none"> ○ 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 wastage 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 of 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 <p>Source (AMSTAR rating 1/9)</p>	
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	<ul style="list-style-type: none"> • Public health measures • Health-system arrangements 	<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 impacted 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 programmes, which were more negatively impacted 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>	Literature last searched 9 June 2020
	<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., 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-centered 	Published 25 June 2020

		<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 • 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 • 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			

Single studies	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> An interrupted time series design study of 4 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 Source	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 Source	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 Source	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 	Published May 2021

		capabilities, immediate post-exposure epidemiological studies, and early preparation and readiness Source	
	<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 smaller number of larger expensive centers 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) Source	Published 13 February 2021
	<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 health care providers, well-trained, salaried, community-based nurses directly employed by providers, effective cooperation among government, health plans, hospitals, 	Published 26 January 2021

		<p>and emergency care providers, tools an decision-making frameworks to support vaccination campaigns)</p> <ul style="list-style-type: none"> • 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) <p>Source</p>	
	<ul style="list-style-type: none"> • Public-health measures 	<ul style="list-style-type: none"> • Study compares the public health measures taken in nine 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 re-opening 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 • In Germany has been using epidemiological thresholds for states to lift lock-down 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 1m being suggested while 2m 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, socioeconomically deprived populations and workers on 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 policy making 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 working groups and helped to gain public trust throughout the pandemic • The National Academic 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>	Published 16 February 2021
	<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 underutilization 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>	Published 11 February 2021
	<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 provides • Cities with large outbreaks shifting 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: 	Published February 2021

		<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 ● 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 who 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
	<ul style="list-style-type: none"> ● Public-health measures 	<ul style="list-style-type: none"> ● Study examines the challenges and solutions used in Israel to scale up drive and test facilities ● While initially drive and test facilities suffered from capacity problems, inconsistent training, mistakes in testing approaches which led to inconclusive results, and timing challenges of training volunteers 	Published 6 April 2020

		<ul style="list-style-type: none"> To solve these, the Ministry of Health issued training and onboarding through a digital app followed by in-person mentorship between an experienced staff and a new volunteer Source	
	<ul style="list-style-type: none"> Public-health measures 	<ul style="list-style-type: none"> Observational study that uses survey methods to examine the impact of the lockdown in France on individual's behaviour Movement control through lock-down measures was associated with a high decrease in COVID-19 transmission Three participant profiles were identified based on their situation perception <ul style="list-style-type: none"> The first reported the highest acceptance of lockdown measures viewing it as essential, however this proportion of the population decreased overtime The second profile tended to view lockdown measures as a punishment, even if they were worried about COVID-19 and had the lowest satisfaction with governmental measures The third group also presented lower adherence to measures but did so out of concern for friends and family members and had confidence that the government measures were sufficient to control the virus There was greater representation of individuals with low purchasing power and unemployment rates fitting profile 2 and greater representation of high-graduate individuals under profile 3 Respecting lock-down measures was altered by an unfavourable living environment, a lack of trust towards governmental measures, and a low risk perception of falling ill Source	Published 19 March 2021
	<ul style="list-style-type: none"> Economic and social responses 	<ul style="list-style-type: none"> This evaluation study rated state-level distance learning strategies in Brazil across several domains and demonstrates that students in states with stronger distance learning plans have higher rates of access to remote classes and study for more hours Source	Published 29 January 2021

	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> A modelling study found that isolating Brazilian adults 60 and over during the COVID-19 pandemic is important for reducing COVID-19 related hospitalizations and deaths Source	Published 13 January 2021
	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> This modelling study based in Brazil found that maintaining social distancing measures is necessary for managing the demand for ICU beds Maintaining adherence to the 58% isolation level demonstrated a peak of up to 792 ICU admissions between 5 November 2020 to 15 January 2021 while the absence of social distancing demonstrated a peak of up to 7,331 ICU admissions Source	Published 28 May 2020
	<ul style="list-style-type: none"> Public-health responses 	<ul style="list-style-type: none"> A study using other states as a synthetic control found that between 9.5% and 40.4% of new COVID-19 infections between 23 April and 14 May 2020 in a Brazilian state could be attributed to the reopening policy Source	Published 16 June 2020
	<ul style="list-style-type: none"> Health-system arrangements 	<ul style="list-style-type: none"> After rolling out COVID-19 vaccines prioritizing adults over 80 years old, Brazil was able to lower 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 Source	Published 24 May 2021
	<ul style="list-style-type: none"> Economic and social responses 	<ul style="list-style-type: none"> An economic modelling study in Brazil estimates that government fiscal stimulus can mitigate reductions in GDP due to COVID-19 and related public restrictions by more than a 3 after both 3 and 6 months since the start of the pandemic Source	Published 21 September 2020
	<ul style="list-style-type: none"> Economic and social 	<ul style="list-style-type: none"> The aim of this study was to evaluate the social protection programs (SPPs) of countries most affected by the COVID-19 pandemic and to provide lessons learned for countries that had not previously considered social protection programs until the pandemic happened 	Published 1 September 2020

		<ul style="list-style-type: none"> Findings indicated that social protection programs became a flexible tool for high-, middle-, and low-income countries to respond to short- and long-term negative consequences of the pandemic <ul style="list-style-type: none"> Most countries implemented in-kind and cash transfer assistance programs most likely because of their ease of implementation and their targeted benefit for people coping with the direct financial consequences of pandemic restrictions Labour market programs were also implemented to support firms and businesses in overcoming increasing unemployment rates, and social insurance programs targeting the elderly, disabled, people with COVID-19, and workers who could not work remotely or were not covered by social insurance were also implemented While some countries built on existing SPP to increase coverage, others implemented new programs The study showed that implementing SPPs helped countries to stabilize the macroeconomic impacts of the pandemic and enhance the living conditions of the poor and vulnerable <p>Source</p>	
	<ul style="list-style-type: none"> Clinical management Health-system arrangements 	<ul style="list-style-type: none"> This national survey aimed to evaluate pregnant women's perceptions of COVID-19 and their healthcare experiences in the U.K. in May 2020 Women receiving antenatal care reported that they felt reluctant to seek medical services or support during the pandemic because they were concerned about exposure to COVID-19 at a hospital or medical center, experienced issues with traveling to access care, were uncomfortable communicating their mental health concerns over videoconference or on the phone, and, at times, did not view their concerns as 'serious enough' to warrant the attention of their healthcare providers <ul style="list-style-type: none"> Some women also reported that the frequency of services such as fetal scans were reduced and that sometimes their doctors did not have full access to their medical records when conducting virtual appointments 	Published 7 October 2020

		<ul style="list-style-type: none"> ○ Participants with mental health problems also expressed concerns about feeling stigmatized through the lack of support services that were available ● Those seeking intrapartum care were most concerned about passing COVID-19 on to their unborn babies, but also expressed concerns about reductions in birthing options and restrictions that would prevent their partners from being present during delivery ● Breastfeeding support from midwives was the biggest concern for women receiving postnatal care, but some were also uncertain about how to seek support for postnatal depression especially because they were socially isolated from family and friends due to pandemic restrictions on movement ● The media had a significant impact on the way pregnant women perceived their risk of contracting COVID-19 at hospitals ● The findings of this study raise questions about the way services are delivered to pregnant women and highlight the importance of patient communication and engagement when considering service provision <p>Source</p>	
	<ul style="list-style-type: none"> ● Economic and social responses 	<ul style="list-style-type: none"> ● This study includes a model that estimates a significant decrease in Portuguese and math proficiency relative to if COVID-19 and related school changes and restrictions were not occurring, with greater decreases for younger students <p>Source</p>	Published 5 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, these include: <ul style="list-style-type: none"> ○ Entering the pandemic with a detailed National Pandemic Plan that was update 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 	Published 20 March 2021

		<p>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</p> <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 individual ▪ At it's 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 for masks and disposable gloves ○ An economic rescue package was announced including 800 billion euros in March 2020 and 130 billion in June which are earmarked for business and job protection, direct relief payments and tax cuts to keep consumer spending at reasonable levels. These supports are 	
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		estimated to help Germany recover better than other EU member states. Source	
	<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 consultation and monitoring and the use of apps where possible <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 counties <ul style="list-style-type: none"> 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 as follows: 	Published 28 September 2021

		<ul style="list-style-type: none"> ○ Primary care has been able of 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 avoid overwhelming the public with epidemiological data disseminated by the media <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>	Published 19 May 2021
	<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>	Published 19 May 2020
	<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 	Published 7 April 2021

		<p>priority areas and policy considerations for the public health sector, such as:</p> <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>	
	<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 identified policy lessons for the U.S. based on Israel's successful COVID-19 vaccine experience, including: <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, in which the U.S. public health infrastructure was ill-prepared and functioning on staff shortages <p>Source</p>	<p>Published 19 February 2021</p>

Appendix 4: 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 	<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 contract 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 rollout 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 	<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 support businesses but there 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 most severely impacted groups of workers The committee also notes that the government's fiscal response failed to identify and correct for the gendered

	<p>(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</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 			<p>aged care and the 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 the 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, 	<p>impact of the pandemic, and the 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
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	<p>transparency regarding the inputs the Australian Health Protection Principal Committee provided the federal government to 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>personal protective 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 	<p>facilitate economic recovery</p> <ul style="list-style-type: none"> The committee also notes that the stimulus program's initiative aimed at residential construction missed an opportunity to invest in social and affordable—an investment that would have served as a rapid and effective form of stimulus and brought additional social benefit The committee further notes that the government's economic stimulus via the JobMaker program missed the opportunity to take meaningfully action on other priority areas (such as investing in childcare to boost economic participation, investing in renewable energy, and developing domestic manufacturing capacity)
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 	<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 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 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 	<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

	<ul style="list-style-type: none"> ○ 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 COVID-19 crisis identified six lessons learned: <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 	<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"> ○ The sector as a whole was largely unprepared for the pandemic with insufficient number of resuscitation equipment with significant inequalities across regions ● Lessons learned from the report include: <ul style="list-style-type: none"> ○ Assessing the consequences of reducing non-essential care during the pandemic ○ 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 	<p>homeless people during</p> <ul style="list-style-type: none"> ○ Unemployment insurance ● 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 ○ 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
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	<p>professionals and other stakeholders</p> <ul style="list-style-type: none"> ○ The French economic response has been equal to the shock suffered in other comparator countries ● The same report also identified forty recommendations, which organized around three main themes: <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>to try to improve equity of access to digital education services</p> <ul style="list-style-type: none"> ● 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 but had negative effects on individual's health and integration ● 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
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					<ul style="list-style-type: none"> • 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 • 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 report from the German Court of Audits has warned that the continued use of

					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
Israel				<ul style="list-style-type: none"> • A special interim report from Israel's State Comptroller published in October 2020 outlined key recommendations to the government <ul style="list-style-type: none"> ○ 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 	

				<p>shorten testing processes</p> <ul style="list-style-type: none"> ○ 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 	
South Africa	<ul style="list-style-type: none"> ● The Department of Planning, Monitoring and Evaluation, the Government Technical Advisory Council, and the National Research Foundation are collaborating to produce papers analyzing and reflecting upon the measures taken by government and its partners to combat the COVID-19 pandemic <ul style="list-style-type: none"> ○ There are currently chapter available regarding the following themes: <ul style="list-style-type: none"> ▪ Leadership, governance and institutional arrangements ▪ Legal and regulatory responses 			<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 of women, girls, and other vulnerable groups were negatively impacted during the pandemic (for example access to contraception and HIV care suffered), but the pandemic period also caused some barriers to be removed ● 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 	<ul style="list-style-type: none"> ● The analysis report on education identified several success in the education sector during 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 approached to bringing students back in person ○ There was collaboration between the education and health sectors and no large-scale infections

	<ul style="list-style-type: none"> ▪ Legal and human rights consideration ▪ 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 ▪ Provincial and local case studies ▪ Review of the South African Police Service as a law enforcer during the pandemic <ul style="list-style-type: none"> • 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 			improve service delivery beyond the pandemic	<ul style="list-style-type: none"> ○ The analysis reports on education also identified several challenges for the sector and families ○ Vulnerable and low-income students had little opportunity to engaged 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
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	<p>governmental and societal mobilizations to combat the pandemic, but some serious lapses in leadership (most notably corrupt practices) have hindered the response</p> <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 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, 				<ul style="list-style-type: none"> ○ 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 provided with resources for remote learning ○ While vulnerable groups have been most heavily impacted by the COVID-19 pandemic, social assistance and social insurance programs have been fairly successful in providing progressive and
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	<p>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 behavioral 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 analyze how key variables in women's lives intersect to shape exclusion and marginalization ● The paper also highlights the need to collect data disaggregated by race and gender 				<p>targeted income supports</p> <ul style="list-style-type: none"> ○ 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-payment of grants to organization for social welfare services, major issues with corruption in procurement ○ It is also noted that programs that used existing
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					<p>infrastructure became functional faster than new programs</p> <ul style="list-style-type: none"> ○ 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
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 health and social care providers, and the Department of Health and Social Care's new PPE 		<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 	<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

		<p>strategy, with the following lessons to be learned:</p> <ul style="list-style-type: none"> ○ 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 		<p>announced 6.6 billion pounds funding from the Coronavirus Emergency Fund to 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 forced 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- 	<p>(SEISS) and whether the schemes have reached the people that 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 more provide timely assessments of the total value of error and fraud ○ HM Treasury and HMRC should specify how performance and
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		work to help understand how best to restore the NHS, public health and social care		<p>employed people and deferring tax payments The U.K. government announced support measures for businesses, including payments to businesses for laid off employees, 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 	value for money will be judged as the schemes progress, and monitor outcomes and adapt arrangements quickly if required
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				<p>public trust, efforts need to be made to produce clear and timely communications and provide clear documentation to support decision-making</p> <ul style="list-style-type: none">○ 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○ 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	
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				<p>involve multiple actors</p> <ul style="list-style-type: none"> ○ 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 improve their ability to respond to future emergencies ○ 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 	
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				in the COVID-19 recovery	
US		<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 a 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 Centres 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 • 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 function

					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
Full systematic reviews	A systematic review on COVID-19 mitigation strategies on transmission and social-economic impact and key lessons for low income countries (LICS)
	Lessons learned from the resilience of Chinese hospitals to the COVID-19 pandemic: a scoping review (Pre-print)
	Social protection as a key tool in crisis management: Learnt lessons from the COVID-19 pandemic
	Policing in pandemics: A systematic review and best practices for police response to COVID-19
	COVID-19 economic response and recovery: A rapid scoping review
	Economic evaluation of programs against COVID-19: A systematic review
	An economic evaluation of Influenza and COVID -19 pandemic prevention and control interventions: a systematic review
	A Rapid Scoping Review: What factors/criteria/considerations should be in place to move forward with lifting restrictions at a regional level?
	Systematic review of experiences of key actors and organisations at multiple levels within health systems internationally in responding to COVID-19
	Efficacy and safety of current therapeutic options for COVID-19 - lessons to be learnt from SARS and MERS epidemic: A systematic review and meta-analysis
	A systematic review on COVID-19 mitigation strategies on transmission and social-economic impact and key lessons for low income countries (LICS)
	Lessons learned from the resilience of Chinese hospitals to the COVID-19 pandemic: a scoping review (Pre-print)
	Social protection as a key tool in crisis management: Learnt lessons from the COVID-19 pandemic
	Policing in pandemics: A systematic review and best practices for police response to COVID-19
	COVID-19 economic response and recovery: A rapid scoping review
Rapid review	Strengthening the role of local and international non-governmental organizations in pandemic responses

	Review of international public policy responses to easing restrictions introduced to limit the spread of COVID19
	What factors may help protect Indigenous peoples and communities in Canada and internationally from the COVID-19 pandemic and its impacts?
	What is known about the impact of the COVID-19 pandemic on Indigenous communities in Canada?
	Les services sociaux et de santé mentale à maintenir, à remettre en place ou à déployer auprès de la population générale lors de la phase de rétablissement de la pandémie
	Problems with Evidence Assessment in COVID-19 Health Policy Impact Evaluation (PEACHPIE): A systematic strength of methods review
	Population-wide testing of SARS -CoV-2: Country experiences and potential approaches in the EU/EEA and gthe United Kingdom
	COVID-19: Regard sur la fréquentation des urgences par les adolescents pour certaines problématiques de santé mentale et psychosociales
	Impacts of health-related school closures on child protection outcomes: A review of evidence from past pandemics and epidemics and lessons learned for COVID-19
	Mental health of healthcare workers during the COVID-19 outbreak: A rapid scoping review to inform provincial guidelines in South Africa
	Strengthening the role of local and international non-governmental organizations in pandemic responses
	Review of international public policy responses to easing restrictions introduced to limit the spread of COVID-19
Single studies	What factors may help protect Indigenous peoples and communities in Canada and internationally from the COVID-19 pandemic and its impacts?
	Assessing the impact of COVID-19 pandemic on urban transportation and air quality in Canada
	Mental health consequences for healthcare workers during the COVID-19 pandemic: A scoping review to draw lessons for LMICs
	Neurological complications of coronavirus infection; a comparative review and lessons learned during the COVID-19 pandemic

	<u>Adaptations of transfusion systems to the COVID-19 pandemic in British Columbia, Canada: early experiences of a large tertiary care center and survey of provincial activities</u>
	<u>Overall impact of the COVID-19 pandemic on interventional radiology services: A Canadian perspective</u>
	<u>Socio-demographic disparities in knowledge, practices, and ability to comply with COVID-19 public health measures in Canada</u>
	<u>Covid-19: regard sur la fréquentation dans les urgences au québec</u>
	<u>Unintended consequences of COVID-19: Impact on self-harm behaviour</u>
	<u>Unintended consequences of COVID-19: Impact on harms caused by substance use</u>
	<u>Potential earnings losses among high school and postsecondary graduates due to the COVID-19 economic downturn</u>
	<u>Uncertainties around COVID-19 from the perspectives of oral health care workers during the first wave of SARS-CoV-2 infections in British Columbia, Canada</u>
	<u>How did the COVID-19 pandemic affect the hours worked in Canada? An analysis by industry, province and firm size</u>
	<u>COVID-19 in Canada: A one-year update on social and economic impacts</u>
	<u>Impact of COVID-19 on businesses majority-owned by women, third quarter of 2020</u>
	<u>Impact of COVID-19 on small businesses in Canada, third quarter 2020</u>
	<u>Impact of COVID-19 on businesses majority-owned by specific populations, first quarter of 2021</u>
	<u>Impact of COVID-19 on businesses majority-owned by visible minorities, third quarter of 2020</u>
	<u>Impact of the COVID-19 pandemic on the NEET (not in employment, education or training) indicator, March and April 2020</u>
	<u>Economic impact of the COVID-19 pandemic on Canadian businesses across firm size classes</u>
	<u>Working from home: Potential implications for public transit and greenhouse gas emissions</u>
	<u>'Homeschooling' and the COVID-19 crisis: The insights of parents on curriculum and remote learning</u>

	The educational impact of the Covid-19 rapid response on teachers, students, and families: Insights from British Columbia, Canada
	Be Kind, be calm, be safe: Four weeks that shaped a pandemic
	Summary of COVID-19 pandemic funding allocations and other financial relief measures
	Fallout from the COVID-19 pandemic: A look back at selected industries in the service sector in 2020
	Household economic well-being during the COVID-19 pandemic, experimental estimates, fourth quarter 2020
	Does social isolation really curb COVID-19 deaths? Direct evidence from Brazil that it might do the exact opposite
	Physical distancing and future COVID-19 deaths in Brazil: Evidence of a paradoxical effect
	Patterns of COVID-19 testing and mortality by race and ethnicity among United States veterans: A nationwide cohort study
	Global health and health workforce development: What to learn from COVID-19 on health workforce preparedness and resilience
	Health systems resilience in managing the COVID-19 pandemic: lessons from 28 countries
	The educational impact of the Covid-19 rapid response on teachers, students, and families: Insights from British Columbia, Canada
	Summary of COVID-19 pandemic funding allocations and other financial relief measures
Opinion pieces	Policy makers must act on incomplete evidence in responding to COVID-19
	CADTH drug implementation advice: Bamlanivimab for mild-to-moderate symptoms of COVID-19
	Best Brains Exchange proceedings report: Strengthening the structural determinants of health post-COVID-19
	Recording COVID-19 measures in the national accounts
	Foresight on COVID-19: Possible shifts and implications
	Unpacking the health and social consequences of COVID-19 through a race, migration and gender lens
	Investing in Care, Not Profit: Recommendations to transform long-term care in Ontario

	Lessons learnt during the COVID-19 pandemic: For patients with end-stage renal disease, we should prioritize home-based treatment and telemedicine
	Lessons (so far) from the COVID-19 pandemic
	What can we learn from Israel's rapid roll out of COVID 19 vaccination?
	Blunting COVID-19's negative impact: Lessons from Israel's vaccination campaign
	Policy makers must act on incomplete evidence in responding to COVID-19
	Lancet COVID-19 commission
	Association between preparedness and response measures and COVID-19 incidence and mortality

Waddell KA, Wilson MG, Demaio P, Sharma K, Bain T, Al-Khateeb S, Bhuiya A, Lavis JN. Appendices for COVID-19 living evidence profile #5 (version 5.1): 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 June 2021.

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