McMaster University | HEALTH FORUM

COVID-END COVID-19 Evidence Network to support Decision-making ... in Canada

COVID-19 Living Evidence Profile #5

(Version 3: 13 August 2021)

Question

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 future given any available foresight work being conducted?

Background to the question

With increasing numbers of citizens getting vaccinated in countries around the world, now is the time to examine the response to the COVID-19 pandemic in select countries while it is still fresh in the minds of policymakers and stakeholders. The countries include Australia, Brazil, France, Germany, South Africa, the United Kingdom, and the United States. Answers to questions about what was done well and what could have been better in other countries are necessary to allow us to learn from both the missteps and the successes in the COVID-19 responses that were implemented during the pandemic. This reflexive lens will help to ensure that Canada and other countries are well positioned for future waves of the pandemic, for any future pandemics, and for future public-health challenges that share characteristics with this one. We have used the two organizing frameworks below to provide a thematic analysis of lessons learned from evidence documents, opinion pieces that meet one or more explicit criteria (explicit assessment of pros and cons, cited data and/or evidence that was explicitly used in deriving lessons learned, documented stakeholder-engagement process, or endorsements of lessons learned by a formal group or a large, informal group of signatories), and the experiences of governments and government agencies. We have also developed a complementary summary of lessons learned from Canadian federal, provincial and territorial responses using the same organizing frameworks (which can be found on this webpage as living evidence profile 4.4).

Box 1: Our approach

We identified research evidence addressing the question by searching the COVID-END inventory of best evidence syntheses, the COVID-END guide to key COVID-19 evidence sources (which includes several databases containing COVID-19-specific single studies and COVID-19 specific pre-prints, such as COVID-19+, L*VE and TRIPP), EMBASE, and select additional grey-literature sources in the 29 July to 9 August 2021 period. Searches were conducted in English, French, German and Portuguese.

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-, German-, and Portuguese-language websites in this update. We also contacted key individuals familiar with the COVID-19 response in their respective country and asked that they send us relevant documents (or point us to relevant websites).

We searched primarily for empirical studies (including those published in the peer-reviewed literature, as pre-prints, and in the 'grey' literature) and opinion pieces (specifically those that justify the position(s) taken in one or more ways described in Appendix 1). As part of the search for empirical studies, we also searched for full systematic reviews (or review-derived products such as overviews of systematic reviews), rapid reviews, protocols for systematic reviews, and titles/questions for systematic reviews or rapid reviews that have been identified as either being conducted or prioritized to be conducted. Empirical studies, reviews and opinion pieces have been included when they have an explicit assessment of the pros and cons of a course of action compared to the alternatives available. However, for some documents, this assessment has been difficult to apply and we will continue to refine our assessments for future updates of this living evidence profile (LEP).

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Organizing framework

We organized our results by COVID-19 response type (rows in Table 1) and by the part of the question being addressed (columns in Table 1) using an explicit equity lens. We used different treatment of fonts to profile the gradation in evidence, with **bolded** text representing themes that are found in multiple sources of evidence documents or government and agency reports. We use *italicized* text to represent themes that are newly identified or re-iterated in this update. The combination of bolded and italics represents newly identified or reiterated themes found in multiple evidence documents or government reports.

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

- cross-cutting by federal versus provincial (versus municipal) and by shift in policy instrument (and/or condition, treatment, sector, or population);
- public-health measures (e.g., stockpiling personal protective equipment), by federal versus provincial (versus municipal) and by shift in policy instrument;
- clinical management, by condition and/or treatment (typically provincial for topics like drug formularies);
- health-system arrangements, by sector (e.g., long-term care) and population (e.g., essential workers and racialized communities), and by federal/pan-Canadian/cross-provincial (versus provincial) and by shift in policy instrument;
  - governance arrangements (e.g., dividing up or keeping public-health functions together),
  - financial arrangements, and
  - delivery arrangements; and
- economic and social, by sector and by federal (versus provincial) (versus municipal) and by shift in policy instrument.

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

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

Box 1: Our approach (continued)

For this update, we used AMSTAR to appraise the methodological quality of full systematic reviews and rapid reviews deemed to be highly relevant. We also identified the methodology of included empirical studies deemed to be highly relevant and undertook quality assessments for time-series studies using the Maryland Scientific Methods Scale, and other types of quantitative observational studies of interventions using ROBINS-I. We were prepared to complete quality assessments for experimental studies using the Cochrane risk of bias assessment had we found any. Lastly, we used the JBI checklist for qualitative research to assess the methodological rigour of highly relevant qualitative studies and used this to determine their inclusion in this LEP. We provide more information in Appendix 1 about our approach to applying each of these tools and interpreting assessments from them.

This LEP was prepared in the equivalent of three days of a 'full-court press' by all involved staff.

What we found

In this second update, we identified 15 new evidence documents, of which we deemed 11 to be highly relevant:

- one full systematic review;
- one protocol for a systematic review;

- one single study; and
- eight opinion pieces.

This LEP also includes evidence documents from the previous versions that we deemed to still be highly relevant, for a total of 48 highly relevant evidence documents.

In the thematic analysis below (Table 1), we itemize lessons learned from the new highly relevant evidence documents and from government and government agency reports included in the jurisdictional scans. Where equity-related findings appear in documents, we have explicitly drawn these out and included them in the lessons below. The table includes lessons learned from any point in the pandemic, however where specified in included documents, we have attributed any new lessons to a specific wave or stage in the pandemic. We outline the type and number of all documents that were identified in Table 2.

For those who want to know more about our approach, we provide a detailed summary of our methods in Appendix 1. We provide a summary of key findings from the newly identified evidence documents and government reports and analyses in Appendix 2, while those identified in previous updates are included in Appendix 3. Detailed insights from newly identified evidence documents are provided in Appendix 4 (including their relevance to the categories in the organizing frameworks, key findings, and when they were conducted or published), while highly relevant evidence documents and previous updates can be found in Appendix 5. We provide detailed summaries of reports by government and government agencies for each province and territory in Appendix 6. Documents excluded at the final stages of reviewing are provided in Appendix 7.

Thematic analysis

In this update of the LEP, we identified lessons learned across four of the five response types in the organizing framework (i.e., cross-cutting, public-health measures, health-system arrangement, and social and economic responses). We did not identify any lessons learned that related to clinical management.

Compared to previous versions of this LEP, we identified fewer lessons learned. However, while undertaking the jurisdictional scans we noted that many countries have pending audits or reviews (which where relevant have been identified in Appendix 6). In addition, the government's or relevant health authorities of many of included countries have recently published changes to public-health restrictions and/or roadmaps to recovery from the pandemic. Given that vaccine coverage is increasing in many of the countries included in this document, we may be seeing a shift in public policies away from management of the pandemic and towards longer-term prevention and recovery, which will need time before being evaluated.

Similar to the previous version of this LEP, many of the findings relating to what went well are specific to each country's response. Lessons learned on 'what went well' in this update are all related to innovative programs or partnerships in each country. In France, the extension of the use of the health pass, which provides proof of a negative PCR-test or positive vaccination status, was associated with an increase in vaccine uptake. In South Africa, a partnership with the Medicines Patent Pool, World Health Organization and Africa Centre for Disease Control and Prevention has led to the creation of an mRNA technology hub to increase local vaccine production to be distributed across African countries. While in the U.S., the government's investment in the Rapid Acceleration of Diagnostics Initiative was found to have sped up the development, commercialization, and implementation of accurate point-of-care testing.

Lessons on 'what went well' from previous updates focused on the importance of 'solidarity funds' and job-protection schemes in protecting the incomes and jobs of many workers. In the acute-care sector, increased capacity in Germany and the U.K. was secured in the early days of the pandemic by engaging the private sector, discharging patients with stable condition, and recruiting medical and nursing students to support existing staff.

Four lessons were reiterated in this update about 'what could have gone better'. The first is that the lack of transparency in governance and communication in Australia, U.K. and the U.S. undermined public trust in the pandemic response. The second is that contact-tracing apps underperformed due to low-public uptake related to concerns about privacy and surveillance (Australia, Germany, U.K., and U.S.). The third is that delays in implementing public-health measures including testing and contact-tracing at the beginning of the pandemic led to high infection and mortality rates (France, U.S., and U.K.). Finally, the U.S. delays in distributing tests in the first wave of the pandemic due to a lack of collaboration between federal agencies (Centre for Disease Control, Food and Drug Administration, and Centre for Medicare and Medicaid) led to an incomplete epidemiological picture and increase in initial spread.

Lessons about what could have gone better from previous versions include:

- lack of coordination between different levels of governance, including the European Union, national governments, regional governments (i.e., governments that are sub-national but supra-municipal), and municipalities, delayed the initiation of government responses to the pandemic;
- challenges in procuring personal protective equipment due to limited pre-pandemic stockpiles;
- the effect of the pandemic on elective procedures, which are now experiencing significant backlogs across multiple countries; and
- inadequate preparation for aspects of the pandemic beyond the health system, such as the development of employment-support schemes or providing financial support to local authorities, led to delays in implementing these supports

We did not identify any new lessons related to equity. The previous three lessons learned on equity from the last edition of the LEP are all relevant to what could have gone better. These include:

- the disproportionate effect that COVID-19 has had on exacerbating health disparities among communities of colour and those of lower socio-economic status;
- the disparate effect of interruptions in school between high- and low-income students; and
- disparate effect of front-line work on Black, Asian and minority ethnic groups.

Fewer common recommendations among comparator countries were found in this update. Two that were reiterated from previous editions of the LEP focus on:

- ensuring the complete reporting of race and gender information for pandemic-related statistics; and
- adding to regional (e.g., European) and national production capacity to ensure supplies of medical equipment in the event of a future public-health crisis.

Recommendations from multiple countries included in the previous updated focused on:

- updating response plans based on learnings from the pandemic and undertaking robust risk planning, notably to ensure frameworks include details about logistics and the roles and responsibilities of various ministries and agencies;

- improving the accuracy, completeness and interoperability of key datasets and sharing them promptly across delivery organizations;
- stockpiling personal-protective equipment in the event of a future public-health crises; and
- investing in research to evaluate the effects of the pandemic on mental health, with a focus on the most vulnerable.

Table 1: Lessons learned from other countries (**bolded** text representing themes found across multiple countries and *italicized* text represents themes newly identified or re-iterated in this update, with the combination of bolded and italics representing newly identified or reiterated themes found in multiple evidence documents or government reports)

Organizing framework	What went well?	What could have gone better?	Recommendations for what will need to go well in the future
Cross-cutting	• In France, the mobilization of the research community and the development of new reporting structures between research groups and the Ministry of Health led to quick adoption of innovative solutions (one government report) • In Germany, the use of existing scientific expertise through the Robert Koch Institute and Max Planck Institute supported the co-production of policy approaches and helped to gain public trust throughout the pandemic (one qualitative study and one opinion piece) • In South Africa, leadership and communication from the president, provincial leaders and municipal leaders has been strong and enabled governmental and societal mobilization to combat the pandemic (one government report) • In the U.K., the pandemic response involved examples of effective cross-	• ***In Australia, the U.K. and the U.S., a lack of transparency in governance and communication undermined public trust in the pandemic response*** (four government reports – 1-AUS, 2-U.K. 3-U.S., 4-U.S.; and two opinion pieces - 1- U.S., 2- U.K.) • **In France and Germany, lack of coordination between different levels of governance including the European Union, national governments, regional governments, and municipalities delayed initiation of government response to the pandemics** (two government reports - 1; 2) • **In the U.S. and the U.K., COVID-19 was found to exacerbate health disparities among communities of colour and those of low socio-economic status** (three government reports - 1-U.S., 2-U.S., 3-U.K.; one qualitative study; and one opinion piece - U.S.) • In France, the late activation of the inter-ministerial crisis unit and	• **Governments in France, Germany the U.S. and the U.K. need to update their response plans based on learnings from the pandemic and undertake robust risk planning, notably to ensure frameworks include details about logistics and the roles and responsibilities of various ministries and agencies** (one opinion piece - GER; four government reports -1- FR, 2-U.S., 3-U.S., 4-U.K.) • **Governments in the U.S. and the U.K. should consider focusing on improving the accuracy, completeness and interoperability of key datasets and sharing them promptly across delivery organizations** (two government reports – 1-U.K., 2-U.S.) • The French government should create a single national body of scientific expertise responsible on advising public authorities in crisis

	government and public-private sector collaboration (one government report)	uncertainty around how it functions led to a delayed response in the first few weeks of the pandemic (one government report) • In the U.K., cuts to health and social services prior to the pandemic limited the preparation for the pandemic and hindered the initial pandemic response (one opinion piece) • In South Africa, while the Disaster Management Act enabled some degree of management, the lack of capacity and under resourcing led to poor preparation (one government report) • In the U.S., delegated responsibility to the state level deviated from established protocols and led to confusion and fragmented responses across states (one government report)	management and mobilize and coordinate existing sources of expertise during times of national crisis (one government report) • Public Health France should work with the government to develop an organizational plan that can be deployed in a subsequent pandemic (one government report) • In the U.K., the National Health Service should consider the equitable allocations of measures to prevent COVID-19, including vaccinations and supporting those in particularly high-risk occupations in select geographic areas (one government report) • In the U.K., the government should consider including audit trails to ensure accountability as part of key decisions, particularly when the areas where other controls such as competitive tendering are not in place (one government report)
Public-health measures	• *In France, the extension of the use of the Health Pass, which provides proof of either a negative PCR-test or positive vaccination status, was associated with an increase in booking vaccine appointments throughout*	• ***In Australia, Germany, the U.K. and the U.S., contact-tracing apps underperformed due to low-public uptake related to concerns about privacy and surveillance*** (one	• ***The French, South African, and U.S. governments should take steps to remove barriers from the complete reporting of race and gender information*** (four

	*July, following a lull in uptake earlier in June (*one government report) • *In South Africa, a partnership with the Medicines Patent Pool, World Health Organization, and Africa Centre for Disease Control and Prevention has created an mRNA technology hub to increase local vaccine development capacity and distribution across African countries* (one opinion piece) • *In the U.S., the implementation of the Rapid Acceleration of Diagnostics Initiative has sped up the development, commercialization and implementation of accurate point-of-care testing* (one opinion piece) • In Germany, the in-country development of a COVID-19 test and the requirement that all insurance companies cover tests at no cost supported the quick scale up of testing capacity (one qualitative study and one opinion piece) • In Israel, the General Security Service acted quickly when alerted to the pandemic despite technological challenges and were successfully able to identify individuals with positive cases of COVID-19 early on (one government document) • In the U.S., the large majority of states have adopted indices of disadvantaged	government report – AUS; one full-systematic review AMSTAR 5/9; and one opinion piece -GER) • ***In France, the U.S. and the U.K., delays in implementing public-health measures including testing and contact tracing at the beginning of the pandemic led to high infection and mortality rates*** (one government report-FR; and one qualitative study; one opinion piece -U.S.) • ***In the U.S., delays in distributing tests in the first wave of the pandemic led to an incomplete epidemiological picture and increased initial spread of the virus*** (two opinion pieces - 1; 2) • **Australia, France, Germany, U.K., and the U.S. all faced challenges procuring personal protective equipment due to limited pre-pandemic stockpiles and challenges procuring additional stock** (Seven government reports -1-AUS, 2-AUS, 3-U.S., 4-U.S., 5-FR, 6-FR, 7-FR; and one opinion piece) • **In Germany and the U.K., different physical-distancing guidelines across countries (U.K.) and regions (Germany) led to confusion among the public** (one qualitative study – U.K.; and one opinion piece - GER)	government reports – 1- FR, 2-U.S., 3-U.S., 4-SA; and one opinion piece) • ***The French and German governments should consider adding to the existing national and European production capacities to secure supplies of needed equipment for future public-health crises*** (three government reports - 1 - FR, 2 - FR, 3 – FR, 4- GR; and one opinion piece) • **The French and the U.K. governments should stockpile PPE for future public-health crises** (Three government reports - 1-FR, 2-FR, 3-U.K.) • *The German government should consider implementing electronic reporting systems for infectious diseases as well as a national mortality database that link local health authorities to federal statistics reporting* (one opinion piece) • To prepare for a possible resurgence, the government of South Africa should put emphasis on: increasing testing and isolation capacity, strengthening enforcement of public-health measures, and protecting high-risk

	when planning for vaccine roll-out, helping to ensure that vaccines are appropriately prioritized within states (one rapid review – AMSTAR 5/9) • In Brazil, lockdown policies significantly reduced COVID-19 cases and deaths (three quasi-experimental studies - 1 – rated level 3; 2 – rated level 2; 3 - rated level 3) • In France, partnership between the Ministry of Transportation and Air France successfully brought home French residents from abroad at the beginning of the pandemic (one government report) • In France, passing legislation allowed for the sharing of personal data of infected individuals between health workers and health authorities (one government report) • In France, the training of health-insurance agents to contact trace helped to fill a gap in the workforce (one government report) • In Germany, cooperation between national and regional governments with local councils for surveillance, isolation and quarantine reduced the spread of COVID-19 (one systematic review – AMSTAR 5/9)	• *In Germany, the slow flow of information from local health authorities to the Robert Koch led to delays in measures to contain the pandemic as well as a reliance on external data by members of the media when reporting daily rates of COVID-19* (one opinion piece) • *In the U.S., a lack of interagency collaboration between the Centre for Disease Control, Food and Drug Administration, and the Centres for Medicare and Medicaid Services led to avoidable delays in the development and dissemination of accurate diagnostic tests early on in the pandemic* (one opinion piece) • In France, the historical weakness of public health within the health system and lack of 'preventive' culture reduced the effectiveness of the response (one government report) • In France, insufficient attention was put on public-health measures to protect older adults, leading to higher mortality among older adults both for residents in long-term care and nursing homes as well as among those in the community (one government report) • In Israel, bottlenecks in the supply chain for testing (e.g., purchasing of supplies which did not match lab	populations given strict lockdowns proved to be ineffective at stopping transmission at the anticipated rates (one opinion piece) • The federal government of Australia should consider the development of a national Centre for Disease Control to enhance capacity to address future public-health crises (one government report) • The French government should entrust the management of stockpiling personal protective equipment and supervision of logistics to a single operator who should be required to publicly report on available stock (one government report) • The Israeli government should consider the development of a national plan that includes building trust in the country's leadership and tailoring public-health measures for minority populations (one opinion piece) • The U.K. government should consider implementing a decentralized mass-testing program with rapid tests instead of the

	• In Israel, drive-through testing complexes using pre-registration and identification at site by QR-code was a cost-effective and efficient method of performing mass testing (one observational study with serious risk of bias) • In Israel, specific government funding for vaccine purchase and distribution, unified planning and execution of the vaccine strategy, timely contracting for vaccines, creative responses to storage and handling of vaccines, a well-developed primary-care system to deliver vaccines, and tailored outreach efforts were all characteristics that contributed to a rapid vaccine roll-out (one qualitative study and one opinion piece) • In the U.S., emergency-use authorizations were critical to increasing the supply chain of medical devices including ventilators (one government report)	equipment) led to backlogs in testing during the first wave of the pandemic (one government report) • In the U.K., the NHS test-and-trace facilities have not been as successful as anticipated in having individuals with symptoms come forward, which has led to under reporting of COVID-19 infections (one government document) • In Australia, pre-pandemic planning was found to be inadequate with the initial response having several key gaps including closing of borders that left many Australians stranded abroad (one government report) • In France, global demand for testing materials led to a backlog in testing early in the pandemic (one government report) • In France, the implementation of the second lockdown in November without pre-established rules about how businesses would function led to confusion and undermined its effectiveness (one government report) • In the U.K., private procurement of personal protective equipment through a parallel supply chain led to waste when it failed to comply to U.K. standards (one opinion piece)	present test and trace program (one systematic review – AMSTAR 5/9) • The U.S. government should further invest in public-health leadership and workforce development (one government report and one opinion piece) • The U.S. government should modernize data and information technology capabilities at all levels of government and establish national standards to enhance public-health system interoperability (one government report; and one opinion piece) • The U.S. should allow for more flexibility in routine and emergency program-funding streams to enable jurisdictions to directly meet the needs for public-health surge capacity (one opinion piece)

		• In the U.S., limited integration between diagnostic technologies for testing and the technology in local public-health departments slowed the pandemic response (one government report and one opinion piece) • In the U.S., a lack of national standards for the implementation of contact-tracing programs, unclear job functions within contact tracing and case-investigation units, and challenges with mass training limited the scale up and reach of contact tracing within states, and led to many municipalities concentrating exclusively on congregate-living facilities and high-density employment settings (one qualitative study) • In the U.S., understaffing of the public-health workforce and limited equipment hindered the ability of teams to benchmark their capacity and articulate community-specific needs (one opinion piece) • In South Africa, strict lockdown had a negative effect on some children, reducing access to school-based food programs, and in some cases, formal education due to inequities in access to digital technology needed for virtual	

		learning (one rapid review, AMSTAR 5/9)	

Clinical management	• In France, the development and implementation of an action plan to manage medicines supported centralized information on available stocks and distribution of essential medicines throughout the country, and avoided breaks in care (one government report)
	• In Germany, a range of new processes were put in place in hospitals which were found to support the clinical management of COVID-19, including:
	  ○ Stop-triage points to ensure patients were separated by infection status and prioritized according to urgency at an early stage
	  ○ A new checklist to define types of therapeutic goals for admitted patients and outpatients
	  ○ A cross-departmental process for patient transfer improved care (one opinion piece)
		None identified	None identified

Health-system arrangements	By sector
	• Cross-sectoral
	  ○ In Germany, tiered levels of outpatient care was critical to ensuring hospital capacity as well as to contain infections (one opinion piece)
		By sector
		• Cross-sectoral
		  ○ *In the U.S., delays in care for preventative and diagnostic services were associated with fear of contracting COVID-19 particularly among older*
			By sector
			• Cross-sectoral
			  ○ **The French government and U.K. government should invest in research to evaluate the effects of the pandemic on mental health** (one

	○ In the U.S., The Centres for Medicare and Medicaid Services' use of blanket program waivers led to expanded access to services across home and community care, acute care, and long-term care as well as to expand use of telehealth and mobile health services (one government report and one opinion piece) ○ In the U.S., strategies including limiting clinician activities across sites, reducing the total number of staff at risk of exposure, and ensuring the availability of substitute team members helped to maintain workforce capacity throughout the pandemic (one opinion piece) ○ In France, the development of a national platform for health workers and volunteers supported inter-regional mobilization of the health workforce and deployment of staff and volunteers to the most affected areas (one government report) ○ In South Africa, the pandemic spurred advances in self-managed care, telehealth and a lesser reliance on a facility-based system which	*adults* (one observational study with a moderate risk of bias) ○ In the U.K., limited workforce capacity and high vacancy rates in nursing and social care led to unequal responses across the four countries and between regions (one government document and one opinion piece) ○ In the U.K., inequities faced by Black, Asian and minority ethnic front-line care workers (e.g., disproportionate deployment compared to white counterparts, challenges with access to PPE) led to higher rates of COVID-19 infections and increased mental health challenges (one rapid review – AMSTAR 0/9) ○ In the U.S., obstacles in the implementation of telemedicine during the pandemic included a lack of reimbursement parity, telemedicine-infrastructure capabilities, lack of internet connectivity in certain areas, and patient and provider discomfort with technology (one systematic review – AMSTAR 5/9) ○ In the U.S., care delays and cancellations disrupted revenue streams, which is now placing	government report and one opinion piece) ○ *In the U.S., targeted communication should be implemented to guide individuals on how to safely access preventative and diagnostic services to help clear the backlog* (one observational study with a moderate risk of bias) ○ The French government should create plans at the regional (i.e., sub-national) and inter-regional levels to guarantee continuity of care during times of crisis (one government report) ○ The German government should focus on enabling digital upgrades in the health system to simplify administrative processes, integrate management approaches, strengthen laboratories, and advance digital communications between sectors (two opinion pieces - 1, 2) ○ U.S. insurance companies should consider payment reform to better align with the principles of value-based insurance (one opinion piece) • Acute care

	may remain beyond the pandemic (one government report)
	• Home and community care
	  ○ In Australia, young adults rated their experience using telehealth for mental health concerns during the pandemic more highly than with face-to-face clinicians, however it was found to be inappropriate for complex or high-risk conditions (one observational study with a serious risk of bias)
	• Long-term care
	  ○ In the U.K., prioritization of social care staff and recipients for vaccinations helped to curb the high rates of morbidity and mortality in social care institutions during the first and second waves of the pandemic (one opinion piece)
	• Acute care
	  ○ **In Germany and the U.K., increasing service capacity by engaging the private sector, discharging patients with stable conditions, and providing roles for medical and nursing students protected the acute care sector early on in the pandemic** (one qualitative study)
		many hospitals and healthcare organizations at risk of significant financial losses beyond those alleviated by the CARES Act (one opinion piece)
		• Long-term care
		  ○ In Australia and the U.K., long-standing issues in long-term care homes contributed to high mortality and morbidity from COVID-19, including:
		  ▪ inadequate staffing levels
		  ▪ inadequate levels of personal protective equipment
		  ▪ failure to adequately plan for the sector
		  ▪ lack of publicly available data
		  ▪ failure for the national regulator of long-term care homes to use its regulatory powers to protect residents (one government report and one opinion piece)
		  ○ In France and the U.K., insufficient monitoring of COVID-19 in long-term care homes led to an incomplete epidemiological picture and delayed action to protect the residents (two government reports- 1, 2; and one opinion piece)
		• Acute care
			○ The European Centre for Disease Control should consider providing pop-up hospitals to reduce the effect of future public-health crises on standard care in European nations (one opinion piece)
			  ○ The French government should increase funding for critical-care equipment and critical-care personnel by including additional training for general-care nurses to ensure they can be called upon for future crises (one government report)
			• Public health
			  ○ *In the U.S., efforts should be made to foster linkages between state health systems, community-based providers, and public health departments* (one opinion piece)
			  ○ The Ministry of Social Affairs and Health in France should design an action plan aimed at increasing the role of public health in the training of health professionals (one government report)
			  ○ The German government should ensure appropriate resourcing of the public health

	○ In Germany, changes to internal hospital communication including posting all minutes from the crisis team meetings, procedural instructions, standard operating procedures, and checklists on the employee intranet and sent via email to all staff, supported clear and transparent decision-making (one opinion piece) ○ In Israel, designating facilities for treatment of COVID-19 patients conserved the operational continuity of acute care and the ability to continue to deliver acute services to non-COVID-19 patients (one opinion piece) ○ In France, rapid restructuring of hospitals and deployment of field hospitals allowed for the system to double its treatment capacity for COVID-19 patients (one government report) ○ In the U.K., the introduction of a 'no-fault' training extension for surgical residents was put in place to reduce the stigma normally associated with training extensions (one rapid review – AMSTAR 2/9) ○ In the U.S., emergency-use authorizations have been critical to increasing the supply chain of	○ **In France, the U.K. and the U.S., significant backlogs in elective surgeries have been reported as a result of pauses in elective procedures** (one rapid review – AMSTAR 2/9; one opinion piece; two government documents - 1-FR, 2-FR) ○ In the U.S., pre-pandemic staff shortages for critical care led to increased demand among state health systems for temporary clinicians and elevated rates of stress, anxiety, depression and post-traumatic stress among those in the existing workforce (one opinion piece) ○ In France, an insufficient amount of resuscitation equipment led to significant inequalities in the management and treatment of COVID-19 across regions (one government report) ○ In the U.K., a long-standing focus on hospitals within the National Health Service and unequal footing between health and social care made responding to the pandemic more difficult for community-health and social-care providers who lacked necessary resources (one government document)	sector and improve its coordination with primary and secondary care (one opinion piece)

	critical medical devices including ventilators (one government report)	• Public health ○ In the U.K., absence of integration of public-health capacity at the national and local levels led to fragmentation and unpreparedness to provide the necessary response (one opinion piece)	

Economic and social responses	By sector
	• Agriculture
	  ○ In South Africa, strong collaboration between industry and government enabled quick resolution of bottlenecks due to public-health related restrictions and enabled food production to operate at pre-pandemic levels (one government document)
	• Children and youth services
	  ○ In South Africa, legislation to enforce lockdown included provisions that prioritized children's rights to protection from abuse within the judiciary (one rapid review – AMSTAR 5/9)
	• Employment
	  ○ **In Australia, Brazil, France, South Africa and the U.K., the implementation of 'solidarity funds' and job-protection schemes have protected the incomes and jobs of many**
		By sector
		• Cross-sectoral
		  ○ **In Israel and the U.K., the government was not prepared for the aspects of pandemic planning beyond the health system, including for the development of employment-support schemes and providing financial support to local authorities, which led to delays in the implementation of these programs** (two government reports - 1- U.K., 2 -IS)
		• Agriculture
		  ○ In South Africa, the lack of support for and restrictions placed upon informal traders had a negative impact on the food supply chain as well as on the ability of vulnerable people to access and afford food (one government document)
		• Children and youth services
			By sector
			• Education
			  ○ The Ministry of Education in France should develop an operational plan for school continuity during times of crisis, which could include providing free access to internet and data to facilitate continued learning (one government report)
			• Employment
			  ○ *In South Africa, it is recommended that the Social Relief and Distress Grant be transitioned into a basic income support program for those aged 18 to 59* (one opinion piece)
			  ○ The State Comptroller in Israel recommended that the government evaluate the economic damage to businesses from the pandemic and develop plans in case of future pandemics (one government report)

	workers (four government reports – 1-AUS, 2 – BR, 3-FR, 4-FR, 5-U.K., 6-U.K.; and one observational study with a moderate risk of bias) ○ In South Africa, programs to support income and employment that used existing infrastructure were in operation faster and were more successful than new programs (one government report) • Food safety and security ○ *In the U.S., a partnership between DoorDash and community service providers in New York City enabled the quick distribution of food vouchers to low-income families* (one opinion piece) • Housing ○ In France, the use of hotels helped contain the spread of COVID-19 among those who were homeless or marginally housed, however it increased feelings of isolation (one government report)	○ *In the U.S., fewer interactions with teachers and doctors during the pandemic has led to under-reported rates of child abuse and neglect* (one government report) ○ *In the U.S., court closures have led to delays in child-welfare hearings and reunification of children and parents* (one government report) • Education ○ **In Australia, South Africa, and the U.K., closures of schools have had a disproportionate effect on the educational attainment of low-income students** (one observational study with moderate risk of bias; two opinion pieces -1, 2; and one government report-U.K.) ○ In France, the greatest interruptions in school were reported for middle and secondary school-aged students, and significant variation was reported among students with different access to educational resources (one government report) ○ In the U.S., incomplete data of school and district spending of COVID-19 relief funds led to an incomplete picture of how the	○ In the U.K., HM Revenue and Customs should implement additional protection for employees against acts of fraud, and should dedicate additional resources towards recovering money from these instances where it is cost-effective to do so (one government report) • Housing ○ *In Australia, the government should consider transforming emergency solutions including income supports and housing supports into long-term strategies to combat homelessness* (one government report) • Policing ○ In South Africa, efforts should be made to maintain the intersectoral collaboration that emerged during the pandemic (one government report)

		funds were being used (one government report)
		• Employment
		  ○ *In South Africa, many process-related problems including glitches in the digital application platform, discrepancies between and errors in government databases, and lengthy appeal processes reduced the effectiveness of the COVID-19 Social Relief of Distress Grant* (one government report)
		  ○ **In Australia and South Africa, government supports failed to consider the particularly negative impact of the pandemic on women, and did not provide adequate support to help maintain their employment** (one observational study with moderate risk of bias; two government reports - 1-AUS, 2-SA)
		  ○ In the U.K., declines in income and employment have been greater among lower-income groups as compared to their higher-income counterparts (one government report)
		  ○ In the U.S., significant overpayments of the Pandemic Unemployment Assistance	

		program have been found (one government report)
		• Transportation
		  ○ In South Africa, transportation operators were assumed to implement and fund public-health measures, however, they faced cash-flow constraints that limited their ability to do so (one government report)
		  ○ In South Africa, conflicting medical advice regarding the safety of public transit led to uncertainty about its use, and insufficient efforts were aimed at promoting other safe modes of transportation such as walking and cycling (one government report)	

Table 2: Overview of type and number of documents related to lessons learned from the COVID-19 response

Type of document	Total (n= 58)*	Cross-cutting responses (n=4)	Public-health measures (n=25)	Clinical management (n=3)	Health-system arrangements (n=25)	Economic and social responses (n=8)
Full systematic reviews	4	-	2	1	3	-
Rapid reviews	7	1	3	-	6	1
Protocols for reviews that are underway	2	-	2	1	-	-
Titles/questions for reviews that are being planned	-	-	-	-	-	-
Single studies that provide additional insight	28	1	17	-	7	4
Opinion pieces	30	4	7	1	13	5

*Some documents were tagged in more than one category so the column total does not match the total number of documents.

Waddell KA, Wilson MG, Bain T, Bhuiya A, Al-Khateeb S, Sharma K, DeMaio P, Biermann O, Lavis JN. COVID-19 living evidence profile #5 (version 5.3): 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 future given any available foresight work being conducted? Hamilton: McMaster Health Forum, 13 August 2021.

To help health- and social-system leaders as they respond to unprecedented challenges related to the COVID-19 pandemic, the McMaster Health Forum is preparing rapid evidence profiles like this one. This rapid evidence profile is funded by the Public Health Agency of Canada. The opinions, results, and conclusions are those of the McMaster Health Forum and are independent of the funder. No endorsement by the Public Health Agency of Canada is intended or should be inferred.

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