COVID-19 Rapid Evidence Profile #15 (24 July 2020)

Questions

What frameworks from available evidence and experiences in other countries can inform what needs to be done to plan for future waves of COVID-19?

What we found

We included documents that provide frameworks or plans for managing future waves of increased COVID-19 infection in sectors of the health system that are most directly affected by COVID-19, as well as conditions and populations that are especially vulnerable to COVID-related constraints on the health system (e.g., because of major health-related impacts from the first wave of COVID-19 and/or from lack of capacity due to essential COVID-19 services). We have organized the findings according to sectors, conditions and populations that the requestor of this rapid-evidence profile identified as areas of focus for planning for future waves of COVID-19.

Organizing framework

- Specific sectors of the health system (and treatments/services within them)
  - Primary care (including general, influenza and COVID immunizations)
  - Specialty care
    - Diagnostic services (both community and hospital based)
    - Hospital emergency departments
    - Hospital admissions/occupancy (e.g., target maximum occupancy rate ahead of any surge; and visitor policies)
    - Hospital intensive-care units
    - Surgical services
  - Long-term care, including assisted living facilities (including visitor policies)
  - Virtual care as an alternative to some forms of any of the above
    - How will virtual care be employed during increases in transmission
    - Remote patient monitoring - providing care for patients outside of a clinical healthcare setting (e.g., at home or in a remote area)

Box 1: Our approach

We identified documents addressing the question by searching the guide to key COVID-19 evidence sources from 21-23 July 2020.

We searched for guidelines that were developed using a robust process (e.g., GRADE), 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. Single studies were only included if no relevant systematic reviews were identified.

We appraised the methodological quality of full systematic reviews and rapid reviews using AMSTAR. AMSTAR rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that: 1) the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial, or governance arrangements within health systems; and 2) quality-appraisal scores for rapid reviews are often lower because of the methodological shortcuts that need to be taken to accommodate compressed timeframes.

We identified experiences from select other countries and from Canadian provinces and territories by searching jurisdiction-specific websites (e.g., government ministries and webpages dedicated to COVID-19). Our scan of experiences from other countries focused on those that have experienced, are experiencing and/or are planning for future waves of COVID-19.

This rapid evidence profile was prepared in three days to inform next steps in evidence synthesis, guideline development and/or decision-making related to the question that was posed.

- Priority conditions
  - Care for people with mental health and addictions issues (including overdose prevention)
- Priority populations
  - Care for vulnerable and underserved populations (including Indigenous people, people of color)
- Combinations of sectors, conditions and populations

We included a total of 32 evidence documents, of which we deemed eight to provide highly relevant evidence in relation to one or more of the above categories:

- six guidelines developed using a robust process (e.g., GRADE);
- one low-quality rapid review; and
- one primary study with additional insights.

We provide below a brief summary of the key findings from the highly relevant evidence documents, which is supplemented with findings from those deemed to be moderately relevant where no highly relevant documents were identified. We also provide a brief summary of the key lessons learned from international and Canadian experiences with planning for a second wave of COVID-19.

Additional details for those who want to know more are in Table 1 (the type and number of all documents that were identified), Table 2 (the full list of included evidence documents, which are assessed for relevance to the question using a colour gradient to reflect high (darkest blue) to low (lightest blue) relevance), Table 3 (for experiences from other countries), and Table 4 (for experiences from Canadian provinces and territories). In addition, we provide a detailed summary of our methods in Appendix 1, abstracts for highly relevant documents in Appendix 2, and hyperlinks for documents excluded at the final stage of reviewing in Appendix 3.

Key findings from frameworks identified from highly relevant evidence documents about planning for a second wave of COVID-19

Most of the evidence documents provided insights about planning for a second wave of COVID-19 in relation to specialty care, and approaches that combine considerations across one or more sectors, conditions and/or populations. None of the evidence documents provided frameworks in relation to primary care or virtual care, but two protocols and two titles have been registered that at least partially focus on primary care (see Table 2).

For specialty care, we identified one highly relevant guideline that was developed using a robust process and one low-quality quality rapid review. The guideline, which was was last updated on 17 April 2020 and produced by the American College of Surgeons, American Society of Anesthesiologists, Association of periOperative Registered Nurses, and American Hospital Association, focused on speciality care and empahsizes that:

- for COVID-related safety and risk mitigation for a second wave, planning for the resumption of care in operating rooms and all procedural areas, facilities should have and implement a social-distancing policy for staff, patients and patient visitors in non-restricted areas in the facility which meets then-current local and national recommendations for community isolation practices.

The rapid review review focused on long-term care, which included:

- a small number of studies that addressed strategies to reduce the impact of a second wave on long-term care facilities, but the lessons learned from the first wave show that changes should be made in managing and supporting residents, healthcare workers, and visitation and facilities.

In addition, the remaining five highly relevant guidelines that were developed using a robust process focused on second-wave planning for a combination of sectors, conditions and poulations, and highlighted the following:

- COVID-19 response measures should lead to longer-term strengthening of capacities for health-emergency preparedness (WHO technical guidance; last updated 6 July 2020);
- measures that are essential to maintain a reduced level of transmission and avoid or limit resurgence of COVID-19 include: 1) a robust monitoring framework; 2) an expanded testing strategy; 3) a framework for contact tracing; 4) prompt identification and investigation of clusters/outbreaks associated with specific settings; 5) long-term sustainable implementation of essential non-pharmaceutical interventions; and 6) a strong risk-communication strategy (European Centre for Disease Prevention and Control; last updated 2 July 2020);
- all countries should increase their level of preparedness, alert and response to identify, manage and care for new cases of COVID-19, as well as prepare to respond to different scenarios (WHO technical guidance; last updated 24 June 2020);
- countries should use indicators for monitoring essential health services to help determine when to stop and restart services as COVID-19 transmission recedes and surges (WHO technical guidance; last updated 1 June 2020); and
- sectors that should be involved in COVID-19 preparedness in urban settings include health, social services/protection, mental health services, transport, housing and energy, education, communication, water, sanitation, hygiene, civil defence and security (WHO technical guidance; last updated 28 April 2020).

In addition, the highly relevant single study that we identified emphasized that improved case detection and contact tracing will play a critical role in reducing the impacts of a second wave of COVID-19 in Ontario, Canada.

The documents we assessed as being moderately relevant focus on a range of topics in relation to areas of the framework below.

- Specialty care
  - e.g., a guideline that outlines a preparedness to return to activity scale, a medium-quality rapid review highlighting the organizational, collegial and family factors for supporting mental health among healthcare workers, and a low-quality rapid review underscoring the need to balance scaling up usual care while ensuring slack capacity to deal with a second, wave and the ability to scale down elective proceures again if needed
- Long-term care
  - e.g., guideline that outlines a flowchart and preparedness checklist for preventing and managing COVID-19 in residential care facilitaties, and a low-quality rapid review highlighting areas for action to prevent transmission in care homes
- Care for vulnerable and underserved populations
  - e.g., a medium-quality systematic review highlighting that rural populations should prepare for COVID-19 outbreaks by addressing lack of healthcare infrastructure, large frail and vulnerable

populations, low health literacy and general lack of pandemic preparedness or planning to date, and a low-quality rapid review highlighting the need to address the risks of disrupted care and diversion of care as a result of COVID-19

- Combination of sectors, conditions and populations
  - e.g., a low-quality rapid review highlighting the risks for premature lifting of lockdown measures

Lessons learned from international and Canadian experiences with planning for a second wave of COVID-19

We found few frameworks that have been developed directly as a response to a potential second wave, however numerous mitigation strategies are being adopted across international and Canadian jurisdictions to avoid a second wave. In Australia (Victoria), Germany, and Israel this includes reinstating local stay-at-home or shelter-in-place orders. In addition to these actions, restrictions on the use of non-essential businesses that result in gatherings such as bars, gyms and theatres are being implemented. In Australia, priority access to schools has been given to older students in years 11 and 12, while those in earlier years were set to wait to return to school until later in July.

We found additional details related to health-system strategies in China and New York. In China, preparation for a second wave has focused on strengthening health-system capacity including:

- establishing dedicated isolation areas and buffer wards for COVID-19 patients to reduce cross-infection;
- developing plans for prioritization of particular conditions;
- developing community-based solutions for the care of patients with particular health risks (e.g., those on hemodialysis);
- optimizing the use of internet and online consultations particularly for vulnerable populations such as the elderly; and
- delaying some visits to health providers by, for example, writing longer-term prescriptions.

In New York, to monitor the reopening (and potential shutdown should there be a threat of a second wave) Regional Control Rooms have been established. These are used as a dedicated space for monitoring key indicators of the capacity to absorb a resurgence of cases, including: hospitalization rates; death rates; number of new hospitalizations; hospital-bed capacity; ICU-bed capacity; and testing and contact-tracing capacity.

In Canada, though no federal strategy has been released to address a second wave of COVID-19, the Canadian Medical Association has identified five issues that need to be addressed in Canada's preparation for a resurgence of cases:

1) continuing to deliver clear and consistent messaging to Canadians so they continue to adhere to public-health measures;
2) gaining widespread access to effective testing and contact-tracing tools;
3) protecting the safety of frontline healthcare workers;
4) protecting the safety of marginalized and high-risk groups; and
5) managing the ability to contend with other healthcare issues.

We were unable to find any specific provincial frameworks or strategies that have been developed to plan for a second wave of COVID-19. Most provinces are instead relying on the flexibility built into

their existing phased approaches should it be necessary to reverse course given a surge in COVID-19 cases. This includes Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island. In British Columbia, the focus for the second wave has been on monitoring incubation periods, as well as confirmed and recovering cases while learning from the experiences of other jurisdictions that are further along. Similarly, the province of Alberta has put forward a request for proposals for an external review of the province's pandemic response to guide planning for a next wave. In Ontario, the Ontario Medical Association has suggested that prior to a second wave of COVID-19, the province should focus on: creating regional health servicing and staffing plans; expanding home care and community services, virtual care, and paramedicine; and maintaining or creating new infrastructure. In addition, the Ontario government has invested in an enhanced contact-tracing and case-management strategy. No specific frameworks beyond those to guide re-opening from the initiatial response were found for any of the three territories. However all three are continuing to enforce travel restrictions given the potential for a second wave of COVID-19 to take place.

Table 1: Overview of type and number of documents that were identified

Type of document	Total	Specific sectors of the health system (and treatments/ services within them)	Priority conditions	Priority populations	Combinations of sectors, conditions and populations
Guidelines developed using a robust process (e.g., GRADE)	8	3	0	0	5
Full systematic reviews	4	2	0	1	1
Rapid reviews	10	5	1	2	4
Guidelines developed using some type of evidence synthesis and/or expert opinion	0	0	0	0	0
Protocols for reviews that are underway	2	2	0	0	0
Titles/questions for reviews that are being planned	2	2	0	0	0
Single studies in areas where no reviews were identified	6	2	1	0	3

Table 2: Evidence documents that address the question, organized by document type and sorted by relevance to the question and COVID-19

Type of document	Relevance to question	Focus	Recency or status
Guidelines developed using a robust process (e.g., GRADE)	• Specific sectors of the health system (and treatments/services within them) o Specialty care ▪ Surgical services	For COVID-related safety and risk mitigation for a second wave, planning for the resumption of care in operating rooms and all procedural areas, facilities should have and implement a social-distancing policy for staff, patients and patient visitors in non-restricted areas in the facility which meets then-current local and national recommendations for community isolation practices (American College of Surgeons, American Society of Anesthesiologists, Association of periOperative Registered Nurses, American Hospital Association)	Last updated 17 April 2020
	• Combinations of sectors, conditions and populations	Sectors that should be involved in COVID-19 preparedness in urban settings include health, social services/protection, mental health services, transport, housing and energy, education, communication, water, sanitation, hygiene, civil defence and security (WHO technical guidance)	Last updated 28 April 2020
	• Combinations of sectors, conditions and populations	COVID-19 response measures should lead to longer-term strengthening of capacities for health emergency preparedness (WHO technical guidance)	Last updated 6 July 2020
	• Combinations of sectors, conditions and populations	All countries should increase their level of preparedness, alert and response to identify, manage and care for new cases of COVID-19, as well as prepare to respond to different scenarios (WHO technical guidance)	Last updated 24 June 2020
	• Combinations of sectors, conditions and populations	Countries should use indicators for monitoring essential health services to help determine when to stop and restart services as COVID-19 transmission recedes and surges (WHO technical guidance)	Last updated 1 June 2020
	• Combinations of sectors, conditions and populations	Measures that were essential to maintain a reduced level of transmission and avoid or limit resurgence of COVID-19: 1) a robust monitoring framework; 2) an expanded testing strategy; 3) a framework for contact tracing; 4) prompt identification and investigation of clusters/outbreaks	Last updated 2 July 2020

Type of document	Relevance to question	Focus	Recency or status
		associated with specific settings; 5) long-term sustainable implementation of essential nonpharmaceutical interventions; and 6) a strong risk-communication strategy (European Centre for Disease Prevention and Control)	
	• Specific sectors of the health system (and treatments/services within them) o Specialty care ▪ Surgical services	Considerations relevant to the return to planned surgery should be addressed in four broad categories: space, staff, stuff (equipment) and systems (the four S's). Within each category, preparedness for a return to activity is RAG-rated, i.e., Red (not ready for a return), Amber (close to being ready for a return) and Green (ready for a return). (Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society, The Faculty of Intensive Care Medicine)	Last updated 1 May 2020
	• Specific sectors of the health system (and treatments/services within them) o Long-term care, including assisted-living facilities (including visitor policies)	Flowchart and preparedness checklist for the prevention and management of COVID-19 outbreaks in residential-care facilities (Communicable Diseases Network Australia)	Last updated 13 March 2020
Full systematic reviews	• Priority populations o Care for vulnerable and underserved populations	Given population dynamics, rural populations may be at risk for higher morbidity and mortality due to COVID-19 compared to urban areas, and should prepare for COVID-19 outbreaks by addressing lack of healthcare infrastructure, large frail and vulnerable populations, low health literacy and general lack of pandemic preparedness or planning to date (7/9 AMSTAR rating)	Published 15 June 2020
	• Specific sectors of the health system (and treatments/services within them) o Specialty care ▪ Diagnostic services (both community and hospital based)	Controlling the COVID-19 pandemic will require increases in testing, and the identification and isolation of cases not currently being documented (1/9 AMSTAR rating)	Literature last searched January 2020
	• Specific sectors of the health system (and treatments/services within them) o Specialty care	As the COVID-19 pandemic progresses, contact tracing and isolation strategies should explicitly account for the variability of virus transmission across different settings, with targeted strategies adopted to focus on high-density	Literature last searched 15 May 2020

Type of document	Relevance to question	Focus	Recency or status
	▪ Diagnostic services (both community and hospital based)	enclosed settings and with the aim of quarantining contacts within three days of symptom onset (7/11 AMSTAR rating)	
	• Combinations of sectors, conditions and populations	Medical student disaster-training programs can improve student disaster and pandemic preparedness, and should be considered when recruiting medical students to help during the COVID-19 pandemic (8/10 AMSTAR rating)	Literature last searched 19 March 2020
Rapid reviews	• Specific sectors of the health system (and treatments/services within them) o Long-term care, including assisted-living facilities (including visitor policies)	A small number of studies addressed strategies to reduce the impact of a second wave on long-term care facilities, but the lessons learned from the first wave show that changes should be made in managing and supporting residents, healthcare workers, visitors and facilities (0/9 AMSTAR rating)	Published on 17 June 2020
	• Specific sectors of the health system (and treatments/services within them) o Specialty care ▪ Diagnostic services (both community and hospital based) ▪ Hospital emergency departments ▪ Hospital admissions/occupancy (e.g., target maximum occupancy rate ahead of any surge; and visitor policies) ▪ Hospital intensive care units ▪ Surgical services	Interventions that address organizational, collegial and family factors associated with mental health and that establish social support are necessary for supporting sustained mental health among healthcare workers for the duration of the COVID-19 pandemic (6/10 AMSTAR rating)	Literature last searched 11 May 2020
	• Specific sectors of the health system (and treatments/services within them) o Specialty care ▪ Surgical services	In resuming elective surgeries after the COVID-19 outbreak, health systems are challenged to scale up usual care, while continuing to ensure slack capacity to deal with a potential second wave, and guidelines suggest the need to closely monitor local outbreak trends and intensive-care needs, with plans in place to scale down elective procedures if conditions change (1/9 AMSTAR rating)	Published on 5 May 2020
	• Specific sectors of the health system (and treatments/services within them)	Measures should be considered to contain and prevent further pandemic spreads in care homes, including: 1) improving hand hygiene; 2) supporting environmental	Published 14 April 2020

Type of document	Relevance to question	Focus	Recency or status
	○ Long-term care, including assisted-living facilities (including visitor policies)	decontamination; 3) limiting movement of staff between care homes; 4) restricting visitation to emergency or critical cases; and 5) rapidly identifying cases among staff and residents through testing (1/9 AMSTAR rating)	
	• Priority populations ○ Care for vulnerable and underserved populations (including Indigenous people, people of colour)	Patients with long-term conditions (e.g., diabetes, cardiovascular disease), older people and people in deprived areas were at increased risk to disruption of care and diversion of healthcare resources during COVID-19 pandemic, and mitigation strategies could be grouped into planning and response phases, and broadly focused on collaboration, communication and continuity planning (1/9 AMSTAR rating)	Published 25 March 2020
	• Combinations of sectors, conditions and populations	Several models show that premature lifting of lockdown measures or short periods of confinement could lead to subtantial second waves of COVID-19 infections in several parts of the world, and there is published guidance on what needs to be in place to lift restrictions (epidemiological control, sufficient health-system capacity, massive testing and contact tracing, and sustained preventive measures), requirements of a confinement exit strategy (timely information on the cases and community transmission), and easing lock-down implementation (carefully lifting social distancing, gradual reopening prioritizing public heatlh over economic considerations, and carefully monitoring transmission) (0/9 AMSTAR rating)	Published on April 2020
	• Combinations of sectors, conditions and populations	It is unwise to make absolute statements of certainty about "second waves" given substantial uncertainties and novelty of the evidence, and the preparedness planning should be inspired by robust surveillance, the flexibility of response and rigid separation of suspected or confirmed cases (0/9 AMSTAR rating)	Published 30 April 2020
	• Priority populations	Research shows that winter and humidity might influence the spread and severity of COVID-19, although physical distancing and other public policy measures will have greater	Published on 15 April 2020

Type of document	Relevance to question	Focus	Recency or status
	○ Care for vulnerable and underserved populations (including Indigenous people, people of colour) • Combinations of sectors, conditions and populations	impact, and because the onset of winter might also create concurrent infections such as influenza, this would exacerbate the demands of health services, especially for vulnerable populations (0/9 AMSTAR rating)	
	• Combinations of sectors, conditions and populations	Models to predict what impact seasonal changes will have on the COVID-19 pandemic show that the spread will be affected by the weather humidity, and there is insufficient evidence to tell if COVID-19 will become a seasonal infection (0/9 AMSTAR rating)	Literature last searched 1 April 2020
	• Specific sectors of the health system (and treatments/services within them) ○ Specialty care ▪ Diagnostic services (both community and hospital based) ▪ Hospital emergency departments ▪ Hospital admissions/occupancy (e.g., target maximum occupancy rate ahead of any surge; and visitor policies) ▪ Hospital intensive-care units ▪ Surgical services • Priority conditions ○ Care for people with mental health and addictions issues (including overdose prevention)	Evidence with low or very low certainty indicates that education, organizational changes, psychotherapy and multi-faceted interventions might increase healthcare workers' resilience, reduce their anxiety, improve their sleep quality and enable them to avoid mental health challenges or burnout during pandemics (9/11 AMSTAR rating)	Literature last searched 23 March 2020
Guidelines developed using some type of evidence synthesis and/or expert opinion	None identified		

Type of document	Relevance to question	Focus	Recency or status
Protocols for reviews that are underway	• Specific sectors of the health system (and treatments/services within them) o Primary care (including general, influenza and COVID immunizations) o Specialty care o Long-term care, including assisted-living facilities (including visitor policies)	Preparedness interventions for healthcare professionals to design coping strategies beyond COVID-19	Expected completion date 09 September 2020
	• Specific sectors of the health system (and treatments/services within them) o Primary care (including general, influenza and COVID immunizations) o Specialty care o Long-term care, including assisted-living facilities (including visitor policies)	Education or training programs related to disaster preparedness designed for the patient population beyond COVID-19	Expected completion date 31 October 2020
Titles/questions for reviews that are being planned	• Specific sectors of the health system (and treatments/services within them) o Primary care (including general, influenza and COVID immunizations)	Review of guidelines: What infection-control practices should be used in primary care in the context of COVID (includes general practice, community pharmacies, dental, optometry)	Question in development
	• Specific sectors of the health system (and treatments/services within them) o Primary care (including general, influenza and COVID immunizations)	Review of guidelines: What infection-control practices should be used in non-healthcare settings relevant to primary care?	Question in development
Single studies in areas where no reviews were identified	• Combinations of sectors, conditions and populations	Improved case detection and contact tracing will play a critical role in reducing the impacts of a second wave of COVID-19 in Ontario, Canada	Published 26 May 2020
	• Priority populations o Care for vulnerable and underserved populations	Maintaining shelter-in-place is needed to prevent medical surges for vulnerable populations during a second wave of COVID-19	Published 08 May 2020
	• Specific sectors of the health system (and treatments/services within them) o Specialty care ▪ Hospital emergency departments	Preparing hospitals for an influx of critically ill patients with COVID-19 requires efforts focused on clinical decision-making, bed capacity and efficiency in ICUs, the novel use of technology to minimize staff exposure and to facilitate family engagement with patients, as well as ongoing	Published 1 June 2020

Type of document	Relevance to question	Focus	Recency or status
	▪ Hospital admissions/occupancy (e.g., target maximum occupancy rate ahead of any surge; and visitor policies) ▪ Hospital intensive care units ▪ Surgical services	education and communication, interdisciplinary collaboration, support for clinical and non-clincial staff and iterative surge planning	
	• Combinations of sectors, conditions and populations	Active strategies (e.g., large-scale testing, remote-symptom monitoring, isolation and contact tracing) need to be established after the confinement to avoid a new outbreak of COVID-19	Published 22 March 2020
	• Specific sectors of the health system (and treatments/services within them) o Primary care (including general, influenza and COVID immunizations)	The role of pharmacists and pharmacy professionals in the panedmic response should be supported, with a focus on engaging them in emergency preparedness and response efforts, operations management, and patient care and population-health interventions, while ensuring appropraite public-health pharmacy education (and continuing professional education), as well as evaluation, research and dissemination	Published 10 April 2020
	• Combinations of sectors, conditions and populations	Close monitoring of the reproduction number and case-fatality risk are important aspects of informing strategies against a second wave of COVID-19 in China	Published 8 April 2020

Table 3: International experiences with planning for a second wave of COVID-19

Country (and states or provinces of focus)	Key findings
Australia (Victoria)	• In response to a significant increase in community transmission of COVID-19 across Melbourne and Mitchell Shire in recent weeks, the Victorian Chief Health Officer has advised the Victorian government to re-instate Stage 3 Stay at Home restrictions on 8 July 2020 in specific areas until 19 August 2020. • Stage 3 restrictions allow individuals to leave the home for the following reasons only: shopping for food and supplies, medical care and caregiving, outdoor exercise and recreation limited to household members or one other person outside of the immediate household, and study and work if these cannot be completed at home (visting friends and family with a maximum gathering of 10 outdoors and five indoors is no longer acceptable). • Several non-essential businesses and facilities in metropolitan Melbourne and Mitchell shire must close, such as beauty and personal-care services, cultural and entertainment venues, community facilities, and dine-in restaurants, which will return to take-away and delivery only. • In terms of schooling, all Year 11 and Year 12 students will return to school for Term 3 from 13 July, along with students attending special schools; however, Prep to Year 10 will return to school on 20 July through remote and flexible learning, with restrictions planned until 19 August 2020. • In terms of the areas of Victoria that have not had Stage 3 Stay at Home orders re-instated, the only reasons to cross the border into Stage 3 areas are: shopping for food and supplies, medical care and caregiving, and study and work if these tasks cannot be completed at home. Exercise and recreation are not acceptable reasons to cross the borders. • Individuals living in metropolitan Melbourne and Mitchell Shire will also need to wear a face covering outdoors from 22 July 2020, with a $200 fine if a face covering is not worn. • Legitmiate reasons for not wearing a mask in public spaces include: medical reasons, being under the age of 12, professional reasons, and strenuous exercise (exercisers must still carry a face covering at all times for before and after exercise).
China	• During the second outbreak in Beijing (the capital of China) in June of 2020, its ways of containing the second wave of COVID-19 were widely recognized. On 29 June of 2020, Beijing Municipal Health Commission proposed eight measures to strengthen the medical services during the relatively stable period of epidemic prevention and control: o strengthening the treatment of acutely and critically ill patients by establishing COVID-free channels (used by patients with green QR codes) for treating critically ill patients, and set up emergency isolation areas and buffer zones for emergency treatment of critically ill patients waiting for nucleic acid test results; o strengthening hospitalization management by establishing comprehensive transition (buffer) wards for inpatients, and conducting classified screening based on the patient's condition to reduce the potential risk of cross-infection in the hospital; o strengthening emergency surgery and related management by prioritizing emergency mechanisms for acute cerebral hemorrhage, acute myocardial infarction, severe trauma, gastrointestinal hemorrhage, high-risk pregnant women, aortic dissection and other surgical treatment of critically ill patients;

Country (and states or provinces of focus)	Key findings
	○ strengthening interventional diagnosis and treatment services including the classification and assessment of the risk of interventional diagnosis and treatment, promptly treating patients with acute critical illness and malignant tumours, and giving priority to patients with severe diseases; ○ strengthening health services for hemodialysis patients by establishing a coordinated service mechanism between hospitals and the community health-service organizations for the hemodialysis patients; ○ implementing mutual recognition of nucleic acid detection results among medical institutions; ○ optimizing appointments for diagnosis and treatment, and Internet+ medical services by implementing medical appointments and expanding appointment channels, encouraging medical institutions to conduct online follow-up consultations for patients with common and chronic diseases, and providing online prescription and payment, and drug delivery services to meet the diverse needs of patients; and ○ strengthening the services for non-emergency and non-critically ill patients in primary medical institutions by writing long-term prescriptions for patients with chronic diseases, providing online consultation and medical guidance, as well as on-site delivery services. • On 10 July of 2020, China's Joint Prevention and Control Mechanism of the State Council issued a document about regulating diagnosis and management of medical institutions under the relatively stable period of epidemic prevention and control, which includes: ○ implementing pre-examination and triage system for outpatient and emergency departments; ○ strengthening the treatment of acutely and critically ill patients; ○ strengthening the management of patients with regular follow-up visits and long-term treatment (e.g., patients needing hemodialysis, radiotherapy, chemotherapy, or regular antenatal examination); ○ strengthening the protection of providers and staff in medical institutions, including wearing masks and other personal protective equipment, improving hand hygiene and environmental disinfection; and ○ enhancing the awareness and ability of providers for addressing the COVID-19 epidemic through training. • On 29 May of 2020, the China National Committee on Aging issued a document about elderly care services during the stable period of the epidemic prevention and management which included: ○ reducing the waiting time of the elderly by prioritizing the use of internet or telephone appointments; ○ strengthening the work of signing services among family doctors, and using information technology such as WeChat and mobile apps to establish interactive communication channels between family doctors and the elderly and their caregivers; ○ conducting follow-up service by family doctors, and strengthening self-management of elderly patients with chronic diseases; ○ providing long-term prescriptions for elderly patients with chronic diseases and strengthening medication guidance for them; ○ conducting home health assessments and services for disabled elderly people; ○ providing support for elderly with living difficulties; and ○ strengthening support for long-term care organizations and nursing homes.

Country (and states or provinces of focus)	Key findings
Germany	• No specific frameworks were found to address secondary waves of COVID-19. However, in efforts to delay second waves, governments have implemented regional lockdowns and are limiting travel in and out of areas that are experiencing surges in COVID-19 cases (e.g., placing the western region into lockdown after a major outbreak of coronavirus infections linked to a slaughterhouse occurred).
Israel	• No specific frameworks were found to address secondary waves of COVID-19, however since the second wave began, Israelis have been orderered into quarantine, while localized lockdowns are being implemented in neighbourhoods that have seen increases in cases.
Japan	• In response to the ongoing threat of COVID-19 and a potential second wave, the Government of Japan has passed the Act on Special Measures for Pandemic Influenza and New Infectious Disease Preparedness and Response, which differentiates between actions taken during "normal time" and those in the event of a declaration of emergency regarding a pandemic. In normal times, which as of 25 May 2020 is the case across the country, actions include: 1) the ongoing formulation of action plans by municipal governments; 2) stockpiling supports and goods including medical products and masks; and 3) implementing and maintaining border-control measures. • In the event of a declaration of emergency or second wave of COVID-19, the following actions may be taken: 1) requesting people to refrain from going out; 2) requesting and issuing an order to restrict the use of facilities including schools; 3) requesting and issuing an order to restrict the holding of events; 4) emergency permission for the use of temporary medical facilities; 5) requesting and issuing an order to transport emergency supplies; 6) requesting the sales and the seizure of specific goods; 7) extending the expiration date of drivers' licences; and 8) provision of loans by public financial institutions.
South Korea	• No specific frameworks were found to address future waves of COVID-19.
United States (Arizona, California, New York)	• Arizona o No specific frameworks were found to address secondary waves of COVID-19. However, in response to a surge in COVID-19 cases, the Arizona government delayed school opening, limited mass gatherings, closed bars, gyms, theatres and water parks, and mandated physical distancing and mask covering in restaurants and businesses. • California o No specific frameworks were found to address secondary waves of COVID-19 in California. In response to a surge in COVID-19 cases California closed dine-in services, bars, movie theaters, zoos and museums across a majority of counties. • New York o Govenor Andrew Cuomo announced a Guide to Reopining New York which outlines several core factors that must be considered, including the capacity to absorb a resurgence in new cases, high diagnostic testing capacity to detect and isolate a resurgence in new cases, and high contact-tracing capacity to help contain the spread of the virus. o Regional Control Rooms were instituted as a method to monitor: a) hospitalization rates; b) death rates; c) number of new hospitalizations; d) hospital bed capacity; e) ICU bed capacity; and f) testing and contact-tracing capacity, whereby an automatic alert to the state would happen if metrics no longer met reopening guidelines and regional adjustments would be made.

Table 4: Canadian provinces' and territories' experiences with planning for a second wave of COVID-19

Province/ territory	Key findings
Pan-Canadian	• The federal government announced an investment of an estimated $19 billion, through the Safe Restart Agreement, to aid provinces and territories in reopening their economies and protect the country from future COVID-19 waves. o This investment has seven priority streams, whereby increases in testing, contact tracing, data management and information sharing, healthcare-system capacities, and mental health services will be implemented to help mitigate the potential of a second wave. • Although it is unclear if any specific framework regarding a resurgence of COVID-19 has been put forth on the federal level, the Canadian Medical Association has identified five critical issues that must be addressed in order for Canada to be prepared for a second wave: 1) continuing to deliver clear and consistent messaging to Canadians so they continue to adhere to public-health measures; 2) gaining widespread access to effective testing and contact-tracing tools; 3) protecting the safety of frontline healthcare workers; 4) protecting the safety of marginalized and high-risk groups; and 5) ability to manage other healthcare issues.
British Columbia	• *BC's Restart Plan* is the province's reaopening framework. • Movemenet between four phases of reopening is based on monitoring incubation periods in relation to reopening decisions, the number of confirmed and recovered cases, the occurrence of new outbreaks, and learning from other jurisdictions. • The plan does not explicitly address the potential for a second wave.
Alberta	• *Opening Soon: Alberta's Relaunch Strategy* provides a framework for the province's reopening. • Percent positivity of tests, and hospitalization and intensive-care unit occupancy rates are identified as key metrics to guide movement between phases, and the plan notes that localized changes in these measures may result in reapplying previously-lifted restrictions. • Rapid-response teams to address localized outbreaks were developed as a key condition for initiating the relaunch strategy. • Media reports state that the province has put forward a request for proposals for an external review of the initial pandemic response, to guide planning for a potential second wave.
Saskatchewan	• The Sakatchewan plan for resumption of health services identifies stages of resumption, as well as triggers for both resumption and slowdown. • Phases include: "everyday services," surgery, and imaging in phase one; speciality clinics in phase two; a wider range of "everyday" services in phase three; and full resumption in phase four. • Slowdown triggers include: need to prioritize to maintain COVID-19 services; increased COVID-19 hospitalizations; staff redeployment or illness; supply chain issues; public health orders; community transmission or outbreaks; and natural disasters. • *Re-Open Saskatchewan* is the province's framework for reopening. • Progression through five phases will be based on: controlled transmission; capacity to test, treat, and isolate; minimized outbreaks and establishment of preventive measures in schools, workplaces, and other settings; management of risks external to the province; and engagement of communities and businesses. However, the plan does not address a potential second wave.
Manitoba	• *Restoring Safe Services: Manitoba's Pandemic and Economic Roadmap for Recovery* lays out a staged plan for reopening. It does not address a potential second wave.

Province/ territory	Key findings
Ontario	• On 13 July 2020, the Ontario Hospital Association published a statement surrounding the potential of a second surge of COVID-19, and advised the government to consider the following recommendations when preparing for a second wave of COVID-19 patients: creating regional health servicing and staffing plans; expanding home care and community services, virtual care, and paramedicine; and maintaining or creating new infrastructure. • On 11 June 2020, the Ontario Hospital Association released a letter addressed to the premier urging the government to actively plan and develop a strategy to keep them best prepared for the arrival of a second wave of COVID-19. However, it is unclear if specific frameworks have yet to be put forth by the provincial government regarding the second wave. • On 9 July 2020, Ontario Health released a statement with an update on key aspects to consider in order to maintain a province-wide pandemic response; with one of these areas being stabilizing care and planning for a potential second wave. • On 18 June 2020, the provincial government developed an enhanced contact and case-management strategy in order to prevent the spread of COVID-19 and prepare for a potential second wave. o This strategy ensures: that all new cases are identified early, with a daily follow-up for up to 14 days; supports public-health units with supplemental staffing resources; improves technology tools; and launches a notification app alerting Ontarians of potential exposure. • In April 2020, the provincial government issued *A Framework for Reopening our Province*, which relays their framework for the province's reopening. • While a specific framework for addressing a second wave is not explicitly mentioned, they do note that virus spread and containment, health-system capacity, public-health system capacity, and incidence-tracking capacity will serve as the criteria for ongoing monitoring and progress - –with the ability to reapply public-health measures in the case of future outbreaks.
Quebec	• No publicly available framework was found about what needs to be done to plan for future waves of COVID-19. However, the Ministry of Health and Social Services, public-health authorities, other government departments and agencies involved in the economic and social response to the pandemic, and expert advisory committees continue to work in anticipation of a possible second wave. • The Ministry of Health and Social Services is following its contingency plan, which presents the four different alert levels, their activation criteria, the centres designated for each of these levels, as well as the actions expected by the different types of facilities. The ministry is also updating several of it guidelines in anticipation of the second wave, for example: o Guidelines on the use of NAAT analyzes with priority clienteles; o Guidelines on isolation measures in the general population; and o Hospitalization guidelines. • The Institut national d'excellence en santé et services sociaux (INESSS) produced seven reports to inform resuming of activities and the recovery phase for different populations (i.e., those requiring social and mental health services, young people in difficulty, elderly or people with loss of autonomy, people with addiction problems or homeless, people with mental health problems or disorders, people with physical disabilities, people with intellectual disabilities or autism spectrum disorder). While these reports focus on the recovery phase, they also address what measures should be put in place in anticipation of a second wave of COVID-19.

Province/ territory	Key findings
New Brunswick	• New Brunswick has published a recovery plan which includes a framework for public-health phases and triggers depending on the spread of COVID-19. The framework outlines 'triggers to loosen' and 'triggers to tighten', which dictate the phase they are in (and the public-health measures they follow). The framework defines a 'minor trigger' to tighten as a "significant acceleration of the COVID-19 disease curve," and a 'major trigger' to tighten as "three unlinked community outbreaks in a six day period." A minor trigger appears to set the province back by one phase, whereas a major trigger appears to set the province back to the most restrictive phase.
Nova Scotia	• It is unclear whether Nova Scotia has developed specific frameworks to address future waves of COVID-19. Nova Scotia developed a re-opening plan and published guidance for Nova Scotians to plan for a new normal (in accordance with national frameworks), which emphasizes that early responses to outbreaks will be required over time, and if "rollbacks" are necessary assessing public tolerance will be key.
Prince Edward Island	• Prince Edward Island has published a framework to Renew PEI Together which contains "Forward Progress" and "Stop Or Reverse Progress" conditions for their phased approach to COIVD-19 re-opening. The "Stop Or Reverse Progress" conditions include: a significant increase in daily case rate; and/or multiple unlinked community case outbreaks; and/or the healthcare capacity becomes overwhelmed. Based on these conditions, P.E.I. will assess decision-making using a list of seven core criteria which include transmission control, public-health capacity, health-system capacity, risk to vulnerable settings, workplace measures, imported case management, and community empowerment.
Newfoundland and Labrador	• It is unclear whether Newfoundland and Labrador has developed specific frameworks to address future waves of COVID-19. They have developed a provincial Alert Level System, but the conditions that prompt shifts in public-health measures are unclear during a second wave.
Yukon	• No specific frameworks were found to address future waves of COVID-19. However, on 16 July 2020, the Government of Yukon announced plans to work with the federal government as well as other provincial/territorial governments to implement the Safe Restart Agreement. o The Safe Restart Agreement aims to (i) strengthen testing and contact tracing; (ii) expand health-system capacity, specifically as it pertains to mental health services; (iii) establish a pipeline of quick funding for municipalities; and (iv) improve access to PPEs for future COVID-19 waves. Other aspects of the agreement include working to increase access to child care and income support.
Northwest Territories	• In June 2020, the Government of Northwest Territories published a report (Emerging Wisely) to address easing restrictions and future COVID-19 waves. o It is unclear whether specific frameworks have been developed to address future waves of COVID-19. However, the report discusses the possibility of re-implementing restrictions should additional waves of COVID-19 arise. Restrictions may include banning travel between N.W.T. communities, isolating communities with outbreaks and increasing testing.
Nunavut	• No specific frameworks were found to address future waves of COVID-19. • In May 2020, the Governemnt of Nunavut published a report detailing Nunavut's plan to ease restrictions. While the report does not provide a specific framework for addressing the possibility of a second wave, it emphasizes maintaining travel restrictions until a vaccine is developed and the possibility of re-implementing restrictions should additional waves arise.

Wilson MG, Waddell K, Gauvin FP, Mansilla C, Moat KA, Wang Q, Bhuiya A, Voorheis P, Ahmad A, Gao C, Alam S, Lavis JN. COVID-19 rapid evidence profile #15: What frameworks from available evidence and experiences in other countries can inform what needs to be done to plan for future waves of COVID-19? Hamilton: McMaster Health Forum, 24 July 2020.

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The authors declare that they have no professional or commercial interests relevant to the rapid evidence profile. The funders played no role in the identification, selection, assessment, synthesis, or presentation of the research evidence or experiences profiled in the rapid evidence profile.

Appendix 1: Methodological details

We use a standard protocol for preparing each rapid evidence profile (REP) to ensure that our approach to identifying research evidence as well as experiences from other countries and from Canadian provinces and territories are as systematic and transparent as possible in the time we were given to prepare the profile.

Identifying research evidence

For each REP, we search our continually updated guide to key COVID-19 evidence sources for:
1) guidelines developed using a robust process (e.g., GRADE);
2) full systematic reviews;
3) rapid reviews;
4) guidelines developed using some type of evidence synthesis and/or expert opinion;
5) protocols for reviews or rapid reviews that are underway;
6) titles/questions for reviews that are being planned; and
7) single studies (when no guidelines, systematic reviews or rapid reviews are identified).

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 rapid 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.

During this process we include published, pre-print and grey literature. 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 and Spanish. 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 and from Canadian provinces and territories

For each rapid evidence profile we collectively decide on what countries to examine based on the question posed. For other countries we search relevant sources included in our continually updated guide to key COVID-19 evidence sources. These sources include government-response trackers that document national responses to the pandemic. In addition, we conduct searches of relevant government and ministry websites. In Canada, we search websites from relevant federal and provincial governments, ministries and agencies (e.g., Public Health Agency of Canada).

While we do not exclude countries based on language, where information is not available through the government-response trackers, we are unable to extract information about countries that do not use English, Chinese, French or Spanish as an official language.

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 and to COVID-19. We then use a colour gradient to reflect high (darkest blue) to low (lightest blue) relevance.

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.

Preparing the profile

Each included document is hyperlinked to its original source to facilitate easy retrieval. For all included guidelines, systematic reviews, rapid reviews and single studies (when included), we prepare declarative headings that provide a brief summary of the key findings and act as the text in the hyperlink. 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.

Appendix 2: Abstracts for highly relevant documents

Type of document	Abstract
Guidelines developed using a robust process (e.g., GRADE)	Sectors that should be involved in COVID-19 preparedness in urban settings include health, social services/protection, mental health services, transport, housing and energy, education, communication, water, sanitation, hygiene, civil defence and security (WHO technical guidance) **Abstract** This document is to support local authorities, leaders and policymakers in cities and other urban settlements in identifying effective approaches and implementing recommended actions that enhance the prevention, preparedness and readiness for COVID-19 in urban settings, to ensure a robust response and eventual recovery. It covers factors unique to cities and urban settings, considerations in urban preparedness, key areas of focus and preparing for future emergencies.
	COVID-19 response measures should lead to longer-term strengthening of capacities for health emergency preparedness (WHO technical guidance) **Abstract** This document is to help Member States build on actions taken during the COVID-19 pandemic to improve national medium- to long-term preparedness for future threats. It maps COVID-19 preparedness and response actions to the building of sustainable International Health Regulations (2005) core capacities, locates relevant supporting WHO resources that are not specific to the pandemic, and advocates for the conscious and effective allocation of COVID-19 funds to also meet countries' longer-term needs
	All countries should increase their level of preparedness, alert and response to identify, manage and care for new cases of COVID-19, as well as prepare to respond to different scenarios (WHO technical guidance) **Abstract** All countries should increase their level of preparedness, alert and response to identify, manage and care for new cases of COVID-19. Countries should prepare to respond to different public-health scenarios, recognizing that there is no one-size-fits-all approach to managing cases and outbreaks of COVID-19. Each country should assess its risk and rapidly implement the necessary measures at the appropriate scale to reduce both COVID-19 transmission and economic, public and social impacts.
	Countries should use indicators for monitoring essential health services to help determine when to stop and restart services as COVID-19 transmission recedes and surges (WHO technical guidance) **Abstract** Countries around the world are facing the challenge of increased demand for care of people with COVID-19, compounded by fear, misinformation and limitations on movement that disrupt the delivery of healthcare for all

Type of document	Abstract
	conditions. *Maintaining essential health services: operational guidance for the COVID-19 context* recommends practical actions that countries can take at national, subregional and local levels to reorganize and safely maintain access to high-quality, essential health services in the pandemic context. It also outlines sample indicators for monitoring essential health services, and describes considerations on when to stop and restart services as COVID-19 transmission recedes and surges. This document expands on the content of pillar 9 of the *COVID-19 strategic preparedness and response plan*, supersedes the earlier *Operational guidance for maintaining essential health services during an outbreak*, and complements the recently released *Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic*. It is intended for decision-makers and managers at the national and sub-national levels.
	Measures that were essential to maintain a reduced level of transmission and avoid or limit resurgence of COVID-19: 1) a robust monitoring framework; 2) an expanded testing strategy; 3) a framework for contact tracing; 4) prompt identification and investigation of clusters/outbreaks associated with specific settings; 5) long-term sustainable implementation of essential nonpharmaceutical interventions; and 6) a strong risk-communication strategy. (European Centre for Disease Prevention and Control) **Abstract** The COVID-19 pandemic is posing an unprecedented threat to EU/EEA countries and the U.K. as well as countries worldwide, many of which have been experiencing widespread transmission of the virus in the community for several months. There is still community transmission reported in most EU/EEA countries, the U.K. and EU candidate and potential candidate countries. Additionally, some countries are reporting a resurgence of observed cases or large localized outbreaks. The reasons behind this apparent increase in the number or resurgence of cases observed in these countries vary. The increase in the number of cases may reflect changes in case ascertainment (e.g., increasing testing, changes in the case definition) that does not necessarily indicate increased rates of transmission, or may reflect genuine increases in transmission (e.g., associated with the easing of non-pharmaceutical interventions (NPI), large localized outbreaks), or may be due to importation of cases. Some of the observed increases, particularly in countries with a small population, are associated with just a few additional new cases. Therefore, information must be interpreted with caution. In order to respond to these risks, the following measures continue to be essential to maintain a reduced level of transmission and avoid resurgence. • A robust monitoring framework to closely monitor the epidemiological situation, rapidly detect increased transmission, assess the impact of the interventions in place and avoid a resurgence of COVID-19.

Type of document	Abstract
	• An expanded testing strategy aimed at comprehensive testing of all individuals displaying symptoms compatible with COVID-19, independent from their country of origin or residency. • A framework for contact tracing, based on extensive testing, active case finding, early detection of cases, isolation of cases, quarantine and follow-up of contacts, possibly supported by electronic tools and applications. • Prompt identification and investigation of clusters/outbreaks associated with specific settings, with implementation of tailored control and prevention measures to minimize onward spread to others in the setting and to the wider community. • Long-term sustainable implementation of essential NPIs, irrespective of transmission rates, and the ability to amend strategies rapidly in response to indications of increased transmission, if appropriate, only restricting those to sub-national areas. • A strong risk-communication strategy should remind citizens that the pandemic is not over. National authorities should consider carefully analyzing every increase in incidence to assess whether these are associated with genuine increases in transmission and whether these involve populations with defined factors associated with elevated risk for COVID-19, including residents of long-term care facilities (LTCFs). Identifying possible outbreaks, other foci of transmission, or sustained community transmission due to the easing of the NPIs imposed in previous months is essential to control such increases in incidence and implement tailored control measures aimed at limiting population mobility and/or reducing exposure. ECDC does not consider travel restrictions within and to the Schengen area as an efficient way to reduce transmission within the EU since community transmission is already taking place in the EU/EEA, and data from The European Surveillance System (TESSy) show that, in June 2020, only 3% of confirmed cases were likely infected in a country different from the reporting country.
Full systematic reviews	
Rapid reviews	A small number of studies addressed strategies to reduce the impact of a second wave on long-term care facilities, but the lessons learned from the first wave show that changes should be made in managing and supporting residents, healthcare workers, and visitation and facilities **Abstract** Long-term care facilities need integrated infection prevention and control programs to both identify and effectively respond to COVID-19 outbreaks. Lessons learned from the first wave of COVID-19 must be implemented in operational practices and policies, including: better supports for residents; managing and supporting healthcare workers; and managing both visitation and facilities. Only a few of the articles included in this review speak directly to reducing the

Type of document	Abstract
	impact of a second wave of COVID-19 on long-term care facilities, including: Estabrooks et al. (2020), Duncan (2020), and Vogel (2020). These articles are highlighted below, under Expert Opinion.
Guidelines developed using some type of evidence synthesis and/or expert opinion	None identified
Single studies in areas where no reviews were identified	Improved case detection and contact tracing will play a critical role in reducing the impacts of a second wave of COVID-19 in Ontario, Canada **Abstract** Public health interventions have been implemented to mitigate the spread of coronavirus disease 2019 (COVID-19) in Ontario, Canada; however, the quantification of their effectiveness remains to be done and is important to determine if some of the social-distancing measures can be relaxed without resulting in a second wave. We aim to equip local public-health decision-makers and policymakers with mathematical model-based quantification of implemented public-health measures and estimation of the trend of COVID-19 in Ontario, to inform future actions in terms of outbreak control and de-escalation of social distancing. Our estimates confirm that: 1) social-distancing measures have helped mitigate transmission by reducing daily infection contact rate, but the disease transmission probability per contact remains as high as 0.145 and case-detection rate was so low that the effective reproduction number remained higher than the threshold for disease control until the closure of non-essential business in the province; 2) improvement in case-detection rate and closure of non-essential business had resulted in further reduction of the effective control number to under the threshold. We predict the number of confirmed cases according to different control efficacies including a combination of reducing further contact rates and transmission probability per contact. We show that improved case-detection rate plays a decisive role to reduce the effective reproduction number, and there is still much room in terms of improving personal-protection measures to compensate for the strict social-distancing measures.

Appendix 3: Documents excluded at the final stages of reviewing

Type of document	Focus
Guidelines developed using a robust process (e.g., GRADE)	None identified
Full systematic reviews	Preparing medical students for a pandemic: A systematic review of student disaster training programmes
	Ethical guidance for disaster response
	Hospital surge capacity during epidemics
	Preparedness strategies and interventions against influenza pandemics: Cost-effectiveness
Rapid reviews	None identified
Guidelines developed using some type of evidence synthesis and/or expert opinion	None identified
Protocols for reviews that are underway	None identified
Titles/questions for reviews that are being planned	None identified
Single studies in areas where no reviews were identified	None identified