COVID-END
COVID-19 Evidence Network to support Decision-making

COVID-END horizon scanning global panel
Briefing note
(Last updated 28 September 2020)

Current pandemic context

Confirmed COVID-19 cases are over 32 million worldwide with about 300,000 cases added daily. The pandemic is now well-established globally and many countries are settling into long-term management strategies, with some needing to re-initiate public-health measures that were previously relaxed. As fall and winter approach for the northern hemisphere, many countries are anticipating additional challenges related to flu season, while countries in the southern hemisphere are having some success with getting caseloads under control.

Potential issues for consideration from the scan

To inform panelists' deliberations about potential long-term, recurring and emergent issues that need to be prioritized, the COVID-END team has prepared the following bulleted summary of issues identified through available documents (e.g., academic journals and magazines), websites (e.g., international organizations and traditional media), and social media (e.g., Twitter), which are organized using the four parts of the COVID-END taxonomy of decisions related to COVID-19.

1) Public-health measures
   - ***Identification and contact tracing across borders have caused challenges due to differing national policies and lack of coordination, but have also spurred innovative approaches, such as using sniffer dogs for COVID-19 detection at airports.***
   - ***Innovations in testing being contemplated or implemented include: self-swabbing, developing national capacity to produce testing kits and related resources (and not relying on imports), using pooled testing, and rapid testing in congregate settings such as schools and workplaces.***

2) Clinical management of COVID-19 and pandemic-related conditions
   - ***While once only used for hospitalized patients, anti-viral therapy is starting to be made available by prescription to outpatients (in Russia).***
   - ***Many countries are noting rising rates of COVID-19-related mental-health problems for COVID-19 patients as well as members of the public, such as children who faced school closures and those with multiple social and economic disadvantages.***

3) Health-system arrangements
   - ***Vaccine-allocation decisions can take into account principles of allocation to prevent harm, prioritization of people who are disadvantaged, and achieving equal treatment, which can lead to a focus on prioritizing healthcare workers, people in high-risk occupations (such as educators) and housing, and people with high-risk conditions.***
   - ***The recovery of the health system risks exacerbating inequalities and vulnerabilities if pre-existing challenges are not also addressed, including: promoting health and not just healthcare; re-balancing health and social care systems; changing the health system from one that does things 'to' patients to one that supports people to stay healthy and manage their conditions; encouraging innovation and learning; cutting carbon emissions; and attending to the well-being of healthcare workers.***

4) Economic and social responses

- *Policies to support caregiving from both government and employers are needed to avoid exacerbating gender inequalities in the labour market and to ease childcare responsibilities that are often shouldered by women.*
- *Tax-reform strategies and other monetary and fiscal responses to COVID-19 include raising tax revenues through structural reforms, boosting aggregate and investment demand, maintaining a competitive exchange rate, promoting job creation, and creating stability for the financial sector and for public-finance pressures.*
- *Migrant workers make up a significant portion of essential workers; conflicts and political/economic unrest may fuel displacement in many regions; and migration patterns may be disrupted due to public-health restrictions, thereby limiting protections to the vulnerable and their ability to send home remittances.*
- *Cities have acted mostly independently of one another in their responses to the pandemic; however, 'networks of cities' may better respond to COVID-19 by sharing lessons learned and coordinating planning for future risks such as climate change.*
- *Centres of government (e.g., the Privy Council in Canada and the Office of the Presidency in South Africa) have played an important role during the pandemic, such as supporting horizontal and vertical coordination within and across governments, nurturing evidence-informed decision making, and communicating with a single government voice to the public; best practices for these domains need to be established.*

The team has also prepared a more detailed appendix containing lists of hyperlinked descriptors of the issues addressed in identified documents, websites, and social media (Appendix 1).

Top priorities for 'living' evidence syntheses where they are currently lacking

We have also reviewed priorities identified by the panel in the past two months and compared them with a developing inventory of 'best' evidence syntheses to identify areas where research syntheses do exist as well as areas that are not currently addressed by these sources. This will help the panel to identify top priorities for living evidence syntheses where they are currently lacking and to assist us in framing them in ways that are optimal to support decision-making. It is important to note that at the time of writing, the inventory is not yet fully populated based on the nearly 2,000 evidence syntheses that have been harvested from high-yield, high-quality sources, and this brief will therefore focus only public-health measures, clinical management, and health-system arrangements. Economic and social responses will be covered as well in the October briefing note. This is our first effort to move from a long list of potential priorities to a short list of top priorities for living evidence syntheses and we welcome feedback on how to do this better.

Prioritized topics from past panel meetings	Available 'best evidence' syntheses
Public health	
Adoption & adherence to public-health measures *(e.g., mask wearing, hand washing, physical distancing, and surface cleaning)* • *Sustaining and/or increasing adherence to public-health measures* • *Politicization of adopting some evidence-informed public-health measures (e.g., mask use)* *Leveraging the insights from the behavioural sciences to support communication to citizens about the powerful role they can play in reducing transmission and to address the increasing behavioural fatigue citizens have with current public-health measures*	• *One synthesis addressed adherence to masks* • *Two syntheses address behaviour-change support (synthesis 1, synthesis 2), but only for healthcare workers*
Balance of public-health considerations with economic and social costs • *Approaches to consolidating limited screening resources in airports and other points of entry*	• *No best evidence syntheses identified*

• *Benefits, harms and trade-offs of border closures and re-openings, especially those involving countries that share similar COVID risk profiles, both alone, and in-comparison to other modes of virus transmission, such as public transit*	

COVID-19 testing policy
• *Adjusting testing policies to address shifts from testing for purely clinical reasons to testing for a range of reasons to:*
  • *accommodate the need for triaging testing, and*
  • *mitigate the impacts of the northern hemisphere's upcoming cold and flu season on testing capacity*
	• *No best evidence syntheses identified*

Test-track-trace • *Reducing turn-around times in test-track-trace systems to increase their effectiveness* • *Understanding and harnessing innovations in testing technology and developing a framework for their use*	• *One synthesis addressed reducing turn-around times via rapid point-of-care testing* • *One synthesis addressed innovations in testing technologies* • *One synthesis addressed contact tracing*
Developing nuanced and localized understanding of outbreaks *Informed by genomics and analyses of room dimensions and heating, ventilation and air-conditioning systems, among other considerations*	• *One synthesis addressed genetic susceptibility to COVID-19*
Investing in public health capacity and linkage *Appropriately resourcing and building or renewing capacity in the public-health sector and ensuring strong connections between the public-health sector and other parts of the health system*	• *No best evidence syntheses identified*
Clinical management of COVID-19 and pandemic-related conditions	
Medium-to-long term effects of COVID-19 (i.e. long COVID) • *In adult population* • *In children*	• *No best evidence syntheses identified*
Mental health and COVID-19 • *Who is at risk for mental-health issues* • *How to screen them* • *How to provide effective treatment and supports*	• *Three syntheses address who is at risk for mental-health issues and effective treatment and supports (synthesis 1, synthesis 2, synthesis 3), but not how to screen them* • *Two syntheses address mental-health concerns related to healthcare workers specifically (synthesis 1, synthesis 2)*

Concurrent management of COVID-19 and other (seasonal) infections
• *Wave 2 planning where countries will need to concurrently manage COVID-19, influenza and undifferentiated chest and other infections*
  • *Risks to influenza-vaccination programs*
  • *Learning from the flu season experience of the southern hemisphere*
	• *No best evidence syntheses identified*

Health-system arrangements	
Private-sector involvement • *Private sector involvement in test-track-trace apps, and other responses* • *Governance of private sector service delivery to clarify the sector's obligations, particularly in LMICs*	• *No best evidence syntheses identified*
National vs local responses	• *No best evidence syntheses identified*

• *Considering the balance between top-down (e.g., national) vs bottom-up (e.g., local) approaches to organizing the health-system response*	
Health human resource shortages • *Preparing for health-worker shortages if/when significant numbers of them develop COVID-19, especially in fragile health systems*	• *No best evidence syntheses identified*
Global vaccine management approach • *Considering global strategies to manage the emergence of promising vaccines, including access, distribution, trust and implementability across different country contexts*	• *No best evidence syntheses identified*
Shifts to virtual care • *Capitalizing on the increasing need for, and receptivity to, virtual care* • *Identifying optimal combinations of virtual and face-to-face care* • *Examining the effectiveness of virtual models of healthcare delivery that have been developed during the pandemic*	• *One synthesis addressed virtual care for people with COVID-19* • *Three syntheses addressed virtual care for other conditions (synthesis 1, synthesis 2, synthesis 3)* • *One synthesis addressed virtual care to reduce loneliness in older adults*
Access to supplies and equipment • *Improving access to supplies for case identification and management (e.g. PCR reagents and oxygen)* • *Identification of appropriate substitutes or resource-allocation guidance*	• *One synthesis addressed mask shortage management approaches*
Restoration of non-COVID services • *Best approaches to restoring non-COVID services against the backdrop of reduced operational capacity* • *Changes in healthcare-seeking behaviours*	• *Two syntheses address decisions related to restoration or delay of non-COVID services (synthesis 1, synthesis 2)*
Economic and social responses – Not yet available	

The team has also prepared a more detailed appendix that includes the declarative titles for the available 'best' evidence syntheses, quality ratings and the date of last literature search (Appendix 2).

Appendix 1: Potential long-term, recurrent and emerging issues for consideration identified from the monthly scan

1) Public-health measures

Theme	*Identification and contact tracing across borders*
Taxonomy component	*Infection prevention – travel restrictions (re-opening borders)* *Infection control – unconventional case identification* *Infection control – contact tracing*
Source(s)	• *Travelling across Europe has re-started but has exposed the fragmented state of cross-border contact tracing, especially as public health policies are national matters, and this could lead to another coronavirus peak. Link (Financial Times)* • *Helsinki airport is utilizing dogs' sense of smell to detect travelers' infections in sweat or urine samples as part of a pilot program, although fast scaling up may be challenging. Link (The New York Times, Twitter)*

Theme	*Innovations in testing*
Taxonomy component	*Infection control - testing*
Source(s)	• *Self-swabbing at home is comparable to clinician-collected nasopharyngeal swab collection for detection of Covid-19. Link (journal – JAMA)* • *Uruguay is leading Latin America in Covid-19 management, partly due to innovations in lab testing and domestic production of lab tests. Link (journal – BMJ)* • *There is scope for implementing rapid tests and deploying new strategies for testing in specific environments and layering different types of testing. Link (Twitter - CBC)*

2) Clinical management of COVID-19 and pandemic-related conditions

Theme	*Ventilation for COVID-19*
Taxonomy component	*Invasive ventilation and ICU use*
Source(s)	• *Mortality rates in Australian ICUs lower than global rates, perhaps because infected were younger, could stay in ICU longer because system capacity allowed for it. Link (journal – Medical Journal of Australia)* • *Italian patients with low Vitamin D levels more likely to need admission to ICU than have milder symptoms Link (news – Medscape)*

Theme	*Drugs for Covid-19*
Taxonomy component	*Anti-viral drugs*

Source(s)	• *Russia has approved a Covid-19 prescription antiviral for sale in pharmacies, based on a Japanese progenitor Link (News – Medscape)*

Theme	*Mental health and additions issues related to the pandemic response*
Taxonomy component	*Management of pandemic-related emergence of conditions*
Source(s)	• *School closure and Covid-19 lockdown results in rise in mental health problems in Chinese youth, particularly in the rate of suicidal ideation. Link (journal – JAMA)* • *Depression symptom prevalence is increasing in the US amid pandemic, and disproportionately affects the already disadvantaged. Link (journal – JAMA)* • *Mental health follow-on problems of COVID patients causing concern in under-resourced mental health system in India, is likely to be repeated in other countries. Link (news – BBC)* • *Survivors of COVID-19 carry guilt, anxiety and shame. Link (website – Elemental)*

3) Health-system arrangements

Theme	*Vaccine allocation decisions*
Taxonomy component	*Infrastructure planning and resource allocation*
Source(s)	• *Multiple groups suggest different methods of prioritising vaccine distribution within a single country – some focus on health workers, some on vulnerable populations. Link (journal – JAMA)* • *Educators should be regarded as essential workers and prioritized in the allocation of COVID-19 vaccines and treatments. Link (STAT)*

Theme	*Health system recovery*
Taxonomy component	*Governance & delivery arrangements*
Source(s)	• *Six steps to promote recovery of the health an social system include: promoting health and not just health care; re-balancing the health and social care systems; changing the health system from one that does things to patients to one that supports people to stay healthy and manage their conditions; encourage innovation and learning; cut carbon emissions; and pay more attention to the well-being of staff. Link (journal – BMJ)*

4) Economic and social responses

Theme	*Childcare and women's labour participation*
Taxonomy component	*Culture and gender*

Source(s)	• *Policies to support caregiving from both government and employers are needed to avoid exacerbating gender inequalities in the labour market and in bearing childcare responsibilities. Link (World Bank Blogs)*

Theme	*Tax reform strategies and other monetary and fiscal responses*
Taxonomy component	*Economic development and growth – Economic resilience and targeted support to most affected industries*
Source(s)	• *COVID-19 is adding to public finance pressures; raising tax revenues through structural reforms that lead to minimal distortions or that could broaden the tax base are more suited to a fragile economy. Link (Institute for Fiscal Studies)* • *In India there is a need to put forward monetary and fiscal policies that can boost aggregate and investment demand, maintain a competitive exchange rate, promote job creation, stabilize the financial sector, and stabilize public finance pressures. Link (News – Times of India)*

Theme	*Migration implications of COVID-19*
Taxonomy component	*Employment; Citizenship*
Source(s)	• *Migrant workers make up a significant portion of essential workers in Europe; conflicts and political/economic unrest may fuel displacement in many regions; and migration patterns may be disrupted due to public health restrictions, limiting protections to the vulnerable and their ability to send home remittances. Link (European Commission Competence Centre on Foresight)*

Theme	*Building networks of cities*
Taxonomy component	*Government services*
Source(s)	• *Cities' responses to COVID-19 have varied greatly and shown innovation; there is a need for cities to act in networks, share lessons learned, and coordinate planning for future risks such as climate change. Link (Journal - Nature)*

Theme	*Building a resilient centre of government*
Taxonomy component	*Government services*
Source(s)	• *Centres of Government (for example the Privy Council in Canada and the Office of the Presidency in South Africa) have played an important role during the pandemic and their resilience in the following three domains has been shown to be important: horizontal and vertical coordination within and across governments; nurturing evidence-informed decision making; and effectively communicating with the public. Link (OECD -Policy Responses)*

Appendix 2: Past topics that were prioritized by the panel and the 'best' evidence syntheses addressing them including declarative titles, quality ratings and date of last search

Prioritized topics from past panel meetings	Available 'best evidence' syntheses *(with quality ratings and date of last search)*
Public health	
Adoption & adherence to public health measures *(e.g., mask wearing, hand washing, physical distancing, and surface cleaning)* • *Sustaining and/or increasing adherence to public-health measures* • *Politicization of adopting some evidence-informed public-health measures (e.g., mask use)* • *Leveraging the insights from the behavioural sciences to support communication to citizens about the powerful role they can play in reducing transmission and to address the increasing behavioural fatigue citizens have with current public-health measures*	*One synthesis addressed adherence to masks:* • *Adherence to wearing masks was found to be significantly higher for surgical/medical masks, compared to N95/P2 respirators (AMSTAR 7/11; 2020-05-18)* *Two syntheses address behaviour change support, but only for health care workers:* • *The design and content of infection prevention and control guidelines, how they are communicated, and whether there is adequate organizational support, training, and access to personal protective equipment affects adherence among healthcare workers (AMSTAR 7/9; 2020-03-26)* • *Key factors affecting adherence to infection prevention and control guidelines among healthcare workers include their design and content, how they are communicated, and whether there is adequate organizational support, training, and access to personal protective equipment (AMSTAR 7/9; 2020-03-26)*
Balance of public-health considerations with economic and social costs • *Approaches to consolidating limited screening resources in airports and other points of entry* • *Benefits, harms and trade-offs of border closures and re-openings, especially those involving countries that share similar COVID risk profiles, both alone, and in comparison to other modes of virus transmission, such as public transit*	• *No best evidence syntheses identified*

COVID-19 testing policy
• *Adjusting testing policies to address shifts from testing for purely clinical reasons to testing for a range of reasons to:*
  • *accommodate the need for triaging testing, and*
  • *mitigate the impacts of the northern hemisphere's upcoming cold and flu season on testing capacity*
	• *No best evidence syntheses identified*

Test-track-trace • *Reducing turn-around times in test-track-trace systems to increase their effectiveness*	*One synthesis addressed reducing turn-around times via rapid point-of-care testing:*

• *Understanding and harnessing innovations in testing technology and developing a framework for their use*	• *There is no strong evidence to accurately indicate the sensitivity and specificity for available rapid point-of-care COVID-19 diagnostic tests (AMSTAR 8/11; 2020-04-13)* *One synthesis addressed innovations in testing technologies:* • *Limited evidence exists in the use of artificial intelligence to diagnose COVID-19 based on X-rays and CT scan images (AMSTAR 3/9; last s2020-05-05)* *One synthesis addressed contact tracing:* • *Digital contact tracing technologies used alongside manual methods and other public-health measures such as isolation may successfully identify secondary cases and could save time, but there is limited evidence about their acceptability and implementation in real-world outbreak settings (AMSTAR 10/10; 2020-05-05)*
Developing nuanced and localized understanding of outbreaks • *Informed by genomics and analyses of room dimensions and heating, ventilation and air-conditioning systems, among other considerations*	*One synthesis addressed genetic susceptibility to COVID-19:* • *The evidence of susceptibility to COVID-19 as a result of genetic factors has limited quality and is mostly indirect (AMSTAR 2/9; 2020-05-04)*
Investing in public health capacity and linkage • *Appropriately resourcing and building or renewing capacity in the public-health sector and ensuring strong connections between the public-health sector and other parts of the health system*	• *No best evidence syntheses identified*
Clinical management of COVID-19 and pandemic-related conditions	
Medium-to-long term effects of COVID-19 • *In adult populations* • *In children*	• *No best evidence syntheses identified*
Mental health and COVID-19 • *Who is at risk for mental-health issues* • *How to screen them* • *How to provide effective treatment and supports*	*Three syntheses address who is at risk for mental health issues and effective treatment and supports, but not how to screen them:* • *Influence of COVID-19 generally, and influence of government responses to pandemic specifically on mental health, vary across different populations, with the impacts on vulnerable populations and on effective interventions to support them an emerging area of interest (AMSTAR 9/9; 2020-09-12 and ongoing updates)* • *The COVID-19 pandemic has a large psychosocial impact on the general public (AMSTAR 7/11; 2020-05-25)* • *The current COVID-19 pandemic has substantially affected the prevalence of mental health conditions in the general population,*

	and the impacts vary among different populations (AMSTAR 7/11; 2020-05-01) *Two syntheses address mental health concerns related to health-care workers specifically:* • *The prevalence of depression and anxiety among health staff caring for COVID-19 patients may be as high as 30%, although infected personnel may have higher rates of mental illness (AMSTAR 7/11; 2020-05-25)* • *The prevalence of mental health outcomes among healthcare workers during the COVID-19 pandemic is uncertain (AMSTAR 7/10; 2020-05-11)*

Concurrent management of COVID-19 and other (seasonal) infections
• *Wave 2 planning where countries will need to concurrently manage COVID-19, influenza and undifferentiated chest and other infections*
  • *Risks to influenza-vaccination programs*
  • *Learning from southern hemisphere flu season*
	• *No best evidence syntheses identified*

Health-system arrangements	
Private-sector involvement • *Private sector involvement in test-track-trace apps, and other responses* • *Governance of private sector service delivery to clarify the sector's obligations, particularly in LMICs*	• *No best evidence syntheses identified*
National vs local responses • *Considering the balance between top-down (e.g., national) vs bottom-up (e.g., local) approaches to organizing the health-system response*	• *No best evidence syntheses identified*
Health human resource shortages • *Preparing for health-worker shortages if/when significant numbers of them develop COVID-19, especially in fragile health systems*	• *No best evidence syntheses identified*
Global vaccine management approach • *Considering global strategies to manage the emergence of promising vaccines, including access, distribution, trust and implementability across different country contexts*	• *No best evidence syntheses identified*
Shifts to virtual care • *Capitalizing on the increasing need for, and receptivity to, virtual care* • *Identifying optimal combinations of virtual and face-to-face care* • *Examining the effectiveness of virtual models of healthcare delivery that have been developed during the pandemic*	*One synthesis addressed virtual care for people with COVID-19:* • *Patients who have received respiratory rehabilitation and have ongoing complications as a result of COVID-19 may require telemonitoring during the post-acute phase of their illness (AMSTAR 4/9; last search 2020-04-30)* *Three syntheses addressed virtual care for other conditions:*

	• *Studies from the pre-COVID era show that telehealth has been successfully used to provide ongoing care for a number of urologic conditions, including prostate cancer and urinary infection (AMSTAR 5/9; last search 2020-04-08)* • *Studies from the COVID-19 era and beyond suggest there is scarce evidence on the use of telemedicine for neurosurgical patients, although some results from resource-constrained settings show promise (AMSTAR 4/9; last search 2020-04-09)* • *Very little evidence exists regarding the use of psychosocial interventions for schizophrenia-spectrum disorders delivered through virtual care, but preliminary studies suggest that they may be feasible and acceptable (AMSTAR 2/5; last search 2020-05-01)* ***One synthesis addressed virtual care to reduce loneliness in older adults:*** • *The effects of using of videoconferencing interventions to reduce loneliness in older adults are uncertain (AMSTAR 7/10, 2020-04-07)*
Access to supplies and equipment • ***Improving access to supplies for case identification and management (e.g. PCR reagents and oxygen)*** • ***Identification of appropriate substitutes or resource-allocation guidance***	***One synthesis addressed mask shortage management approaches:*** • *In non-human, non-COVID-19 studies focused on influenza and bacterial infections, ultraviolet germicidal irradiation, moist heat, microwave generated steam, and hydrogen peroxide vapor were found to be effective at disinfecting and maintaining filtration efficiency in surgical and N95 masks (AMSTAR 6/9; 2020-04-11)*
Restoration of non-COVID services • ***Best approaches to restoring non-COVID services against the backdrop of reduced operational capacity*** • ***Changes in healthcare-seeking behaviours***	***Two syntheses address decisions related to restoration or delay of non-COVID services:*** • *Emergency surgery during the pandemic: what you need to know for practice (AMSTAR 2/9; 2020-03-30)* • *Studies from the pre-COVID era show that, aside from aggressive forms of cancer, many urologic oncology surgeries can be deferred if necessary (AMSTAR 3/9; 2020-04-01)*
Economic and social responses – Not yet available	

Citation: Bullock HL, Sharma K, MacLean A, Al-Khateeb S, Lavis JN. Potential long-term and emergent issues that may need to be prioritized. Hamilton, Canada: COVID-19 Evidence Network to support Decision-making about COVID-19 (COVID-END); 30 September 2020.