COVID-END global horizon-scanning panel
Insights from panelists from the panel meeting on 28 April 2021
(Last updated on 2 May 2021)

Panelists identified a number of emergent issues (or previously missed long-term and recurring issues and/or elaborations on these issues) related to COVID-19 for which evidence syntheses are or will be needed. The points raised for consideration spanned all four areas of the COVID-END taxonomy and are listed below.

Panelists also reviewed a list of priority topics for 'living' evidence syntheses that was developed by identifying when issues they had identified in past calls were not addressed by high quality, recently updated evidence syntheses included in the COVID-END inventory of 'best' evidence syntheses. They provided feedback about how these topics can be framed in ways that are optimal to support decision-making and completed an online poll that allowed them to re-order the topics to reflect their urgency or importance (within each of the four parts of the COVID-END taxonomy and cross-cutting themes).

This summary of insights is divided into two sections to reflect these separate, but linked, discussions.

Emergent issues (and previously missed long-term and recurring issues and/or elaborations on these issues)

Cross-cutting
1) Understanding how **COVID-19 has shaped politics** and how politics has shaped COVID-19, as well as the future consequences of such shifts
2) Clarifying the role of police and specifically **police enforcement** during the COVID-19 response

Public-health measures
1) Making changes to public-health measures and related guidelines in response to understandings about the role of **aerosol transmission**
2) Refining understanding of **when to relax public-health measures** in relation to infection and vaccination rates
3) Revisiting **testing**, including the use of **self-testing kits** as they become more publicly available, and monitoring for **fraudulent testing sites**
4) Understanding the **efficacy of vaccines against variants**, especially when only one dose has been delivered, and related changes to the level of vaccination needed to reach herd immunity

Clinical management of COVID-19 and pandemic-related conditions
1) Understanding the increasing severity of COVID-19 infections in **children** due to variants
2) Building a better understanding of the **rehabilitation needs** and interventions for people experiencing long-COVID
3) Tracking access to and use of **drugs** that treat COVID-19 and impacts on their availability for other health conditions
4) Managing the **backlog in care** across non-COVID-19 conditions and the impacts of provider re-deployment

Health-system arrangements
1) Transitioning to a **new post-COVID-19 health system** that includes a better, more resilient health system capitalizing on the many positive advances such as virtual care
2) Addressing vaccine hesitancy in **healthcare workers**

Economic and social responses
1) Understanding the impact of COVID-19 on **businesses** and when and how it is appropriate to intervene, including the conditions under which government bailouts make sense

2) **Re-skilling the workforce** for the post-COVID-19 economy and the comparative effectiveness of re-skilling initiatives
3) Using public-health indicators, such as community infection and vaccination rates to identify the optimal conditions for full **school re-opening**
4) Unpacking the complex interplay between **levels of government** and the pandemic response
5) Documenting the long-term impacts of COVID-19 on **children**, such as nutrition, obesity, and social impacts

Considerations raised related to the evidence ecosystem
1) Bringing back online **clinical research** that has been paused due to COVID-19

Priority topics for living evidence syntheses

The following list reflects the re-ordering of topics by panelists, changes to the wording of topics by panelists (highlighted in yellow), and the addition of new topics by panelists (with these new rows added to the bottom of each part of the list and with a blue row header). Topics for which at least some evidence syntheses are available have a light-green row header, and topics for which we are aware of existing or planned living evidence syntheses have a dark-green row header.

Rank	Prioritized topics from panel
1	Understanding real-world comparative **vaccine effectiveness** (in addition to trials data about safety and efficacy), including in relation to variants of concern, and the implications for public-health measures (e.g., vaccine substitution and timing for second dose; changes to infection prevention and control measures; and when herd immunity will be reached) and health-system arrangements (e.g., PPE, cohorting, and HVAC) *** see health-system arrangements for vaccine roll-out ***
2	Engaging vulnerable groups in society to develop and customize packages of public-health measures, clinical-management approaches, health-system arrangements, and economic and social responses that are sensitive to **equity, diversity and inclusion** considerations and that address inequalities in COVID-19 burden
3	Optimizing **packages of responses** (public-health measures, health-system arrangements, and economic and social responses), including combinations of centralized and decentralized approaches, in terms of both their health benefits and their economic and social costs
4	Understanding the 'pipeline' of **SARS-CoV-2 variants**, the conditions under which they become 'variants of concern,' their transmission characteristics, and their implications for public-health measures (e.g., vaccine choice and sequencing, double masking, quarantine length, and border closures) and for health-system arrangements (e.g., capacity planning, PPE, cohorting, and HVAC systems)
5	Supporting **coordination** across government sectors and across non-governmental organizations, citizen groups, academia, and others, including 'non-typical' stakeholders (both in general and specifically to avoid future cycles of lockdowns and re-openings) and increasing capacity for policy learning across jurisdictions
6	Integrating **data systems** and monitoring and evaluation mechanisms to support pandemic response
7	Capturing **lessons learned** from this pandemic from the perspective of **individual citizens/households** in clear and concise ways in order to effectively apply them in future
New	Documenting and addressing the long-term **impacts** of the pandemic **on children** (e.g., nutrition, obesity, sport participation rates and social impacts)
Public-health measures	
1	Supporting **adherence to public-health measures**, including addressing barriers to adherence (e.g., safe transportation to testing and vaccination sites, paid time off work, and publicly funded isolation facilities), recognizing pandemic fatigue, optimizing public messaging about individual- and household-level measures (and using creative formats to convey these messages), and using appropriate behavioural interventions
2	Building **rapid-response mechanisms** to support interdisciplinary outbreak studies (and addressing litigation and other concerns related to sharing information about outbreaks) and to support timely study

Rank	Prioritized topics from panel
	appraisals and interpretation (and finding other ways to avoid preprints inappropriately driving action before their quality has been determined)
3	Adapting strategies for **testing** that optimize the use of existing capacity and incorporating neighbourhood-based approaches like sewage testing to identify outbreaks
4	Understanding patterns in and consequences of the greater **geographic dispersion** of infections, including the role of internal and international migration and of tourism in transmission, and of case fatality rates
New	Evaluating the use of **self-testing kits** as they become more publicly available and monitoring for **fraudulent testing sites**
Clinical management of COVID-19 and pandemic-related conditions	
1	Optimizing **packages** of COVID-19 treatments including drug treatments, respiratory support (including pulse oximetry), and physical interventions such as proning
2	Documenting and addressing **long-haul symptoms of COVID** (also known as 'long COVID') among people without severe COVID (including the long-term effects of COVID-19 on the body) and/or long-term sequelae of severe COVID
3	Understanding COVID-19 as a '**syndemic**' that co-occurs with a range of other communicable and non-communicable diseases that differentially affect population groups, and adjusting supports accordingly
4	Understanding the protective effects of antibodies (e.g., duration of protection) and the role of **auto-antibodies** in more severe illness
5	Screening for and managing emergent **mental health and substance use** issues and understanding the links with between substance use and pandemic-related increases in domestic violence and suicide
Health-system arrangements	
1	Optimizing **vaccine roll-out**, including securing and distributing a reliable supply of vaccines and ancillary supplies, allocating vaccines and ancillary supplies equitably, communicating vaccine-allocation plans and the safety and effectiveness of vaccines (and addressing the factors that contribute to vaccine hesitancy in particular population groups), administering vaccines in ways that optimize timely uptake (including tailoring vaccine messaging appropriately to racialized and vulnerable groups), and surveillance, monitoring and evaluation, and reporting (including the documentation of vaccination status and adverse events)
2	Restoring **non-COVID services** after surges (including prioritizing and sequencing service restoration based on risk) and addressing the effects of **interrupted care** on people with chronic conditions, including those with rare diseases
3	Leveraging **primary care** as the foundation for the health-system response to COVID-19
4	Addressing in an agile way **health worker** shortages, motivation and wellbeing, including strategies to build resilience, manage burnout, and recruit and retrain staff
5	Consolidating and optimizing the value achieved through shifts in **virtual care** (including developing or updating of legal frameworks and policies)
6	Strengthening health-system **governance** (including by addressing corruption and avoiding the politicization of decision-making processes)
7	**Strategic purchasing** of supplies and equipment (e.g., personal protective equipment and liquid nitrogen for vaccine storage)
Economic and social responses	
1	Financial protection – Enhancing **economic security** by addressing pandemic-related job losses and adjusting 'safety nets' (and keeping in mind differential impacts on women and other vulnerable populations) and enhancing workforce development (in healthcare as well as private businesses)
2	Economic development and growth – Embracing new approaches to **public financing** that support fairness and equity (especially for women and other vulnerable populations) while avoiding fiscal cliffs (expiring tax cuts and government spending cuts) and debt traps
3	Food safety and security – Addressing food supply-chain challenges and **food insecurity**, including both community-based and nationally led actions

Rank	Prioritized topics from panel
4	Education - Benefits and risks to students, educators and families arising from **school** closures, re-openings, **changes to operations** (e.g., school-year adjustments) and pedagogical innovations (e.g., e-learning) that can support ongoing education
5	Community and social services - Promoting children's resilience and recovery via social policy
6	Citizenship - Linking **citizen and community participation** in pandemic planning, policymaking and response with outcomes and capturing innovations in government approaches
7	Culture and gender – Understanding the additional risks of **gender-based and domestic violence** arising from restrictions and identifying appropriate ways to address such violence
8	Transportation - Safely re-opening the **tourism and travel** industry and managing the related risks (e.g., through testing protocols) and spill-over effects on other countries (e.g., testing requirements before travel)
9	Culture and gender – Confronting pandemic-induced or pandemic-exacerbated racism
10	Climate action – Maximizing the opportunity for synergies between the COVID-19 response and **climate action**, including exploring a 'green recovery'
11	Economic development and growth – Understanding and addressing the impacts of the abrupt shift toward **nationalism** as a governing strategy for the economy and of the 'new economy' imposed on many countries by COVOID-19
New	Transportation - Identifying best practices in restrictions on and supports for **domestic and international travel**, particularly in light of differences in adherence (to public-health measures), infection, and vaccination

Additional insights from Canadian horizon-scanning panel members

Canadian panelists met at two separate times to ensure participation was as high as possible across the Canadian time zones. What follows are the themes and ratings that collectively emerged from both meetings.

Rank	Prioritized topics from panel
1	Engaging vulnerable groups in society to develop and customize packages of public-health measures, clinical-management approaches, health-system arrangements, and economic and social responses that are sensitive to **equity, diversity and inclusion** considerations and that address inequalities in COVID-19 burden
2	Optimizing **packages of responses** (public-health measures, health-system arrangements, and economic and social responses), including combinations of centralized and decentralized approaches, in terms of both their health benefits and their economic and social costs
3	Understanding real-world comparative **vaccine effectiveness** (in addition to trials data about safety and efficacy), including in relation to variants of concern, and the implications for public-health measures (e.g., vaccine substitution and timing for second dose; changes to infection prevention and control measures; and when herd immunity will be reached) and health-system arrangements (e.g., PPE, cohorting, and HVAC) *** see health-system arrangements for vaccine roll-out ***
4	Understanding the 'pipeline' of **SARS-CoV-2 variants**, the conditions under which they become 'variants of concern,' their transmission characteristics, and their implications for public-health measures (e.g., vaccine choice and sequencing, double masking, quarantine length, and border closures) and for health-system arrangements (e.g., capacity planning, PPE, cohorting, and HVAC systems)
5	Supporting **coordination** across government sectors and across non-governmental organizations, citizen groups, academia, and others, including 'non-typical' stakeholders (both in general and specifically to avoid future cycles of lockdowns and re-openings) and increasing capacity for policy learning across jurisdictions
6	Integrating **data systems** and monitoring and evaluation mechanisms to support pandemic response
7	Capturing **lessons learned** from this pandemic from the perspective of **individual citizens/households** in clear and concise ways in order to effectively apply them in future
New	Documenting and addressing the long-term **impacts** of the pandemic **on children** (e.g., nutrition, obesity, sport participation rates and social impacts)
New	Understanding the **impact of global inequities** in the pandemic response (e.g., effects of vaccine nationalism, distribution of supplies, and variable government support for response) and the long-term global consequences
New	Identifying modifiable factors that promote **resilience and recovery**
Public-health measures	
1	Supporting **adherence to public-health measures**, including addressing barriers to adherence (e.g., safe transportation to testing and vaccination sites, paid time off work, and publicly funded isolation facilities), recognizing pandemic fatigue, optimizing public messaging about individual- and household-level measures (and using creative formats to convey these messages), and using appropriate behavioural interventions
3	Adapting strategies for **testing** that optimize the use of existing capacity and incorporating neighbourhood-based approaches like sewage testing to identify outbreaks
3	Building **rapid-response mechanisms** to support interdisciplinary outbreak studies (and addressing litigation and other concerns related to sharing information about outbreaks) and to support timely study appraisals and interpretation (and finding other ways to avoid preprints inappropriately driving action before their quality has been determined)
4	Understanding patterns in and consequences of the greater **geographic dispersion** of infections, including the role of internal and international migration and of tourism in transmission, and of case fatality rates
New	Evaluating the use of **self-testing kits** as they become more publicly available and monitoring for **fraudulent testing sites**
Clinical management of COVID-19 and pandemic-related conditions	

Rank	Prioritized topics from panel
1	Documenting and addressing **long-haul symptoms of COVID** (also known as 'long COVID') among people without severe COVID (including the long-term effects of COVID-19 on the body and available rehabilitation supports) and/or **long-term sequelae** of severe COVID
2	Understanding COVID-19 as a '**syndemic**' that co-occurs with a range of other communicable and non-communicable diseases that differentially affect population groups, and adjusting supports accordingly
3	Screening for and managing emergent **mental health and substance use** issues and understanding the links with between substance use and pandemic-related increases in domestic violence and suicide
4	Optimizing **packages** of COVID-19 treatments including drug treatments, respiratory support (including pulse oximetry), and physical interventions such as proning
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Health-system arrangements

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2	Restoring **non-COVID services** after surges (including prioritizing and sequencing service restoration based on risk) and addressing the effects of **interrupted care** on people with chronic conditions, including those with rare diseases
3	Addressing in an agile way **health worker** shortages, motivation and wellbeing, including strategies to build resilience, manage burnout, and recruit and retrain staff
4	Leveraging **primary care** as the foundation for the health-system response to COVID-19
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7	**Strategic purchasing** of supplies and equipment (e.g., personal protective equipment and liquid nitrogen for vaccine storage)

Economic and social responses

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1	Financial protection – Enhancing **economic security** by addressing pandemic-related job losses and adjusting 'safety nets' (and keeping in mind differential impacts on women and other vulnerable populations) and enhancing workforce development (in healthcare as well as private businesses)
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