



December 7, 2023

Please see the comments and request from the Canadian Aerosol Transmission Coalition and the signatories in the attached document. (This is our updated list of signatures. The comments have not changed from what we submitted yesterday.)

Thank you for considering our input about the *Review*. We look forward to hearing your response.

Sincerely,

The Canadian Aerosol Transmission Coalition

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# **A response to the *Review of the Federal Approach to Pandemic Science Advice and Research Coordination***

## **Executive summary**

There are many lessons from this COVID-19 pandemic, far more than considered in the *Review*. They include the failure to use the precautionary principle and other recommendations from the SARS-1 Campbell Commission and other enquiries. Belated and insufficient acceptance of aerosol and airborne transmission of this virus is another key lesson. Inter- and multidisciplinary knowledge and skills are essential in any public health activity, especially in complex situations like pandemic responses.

The consultation needs to be extended to January 31 and expanded to hear the voices of other professionals beyond medicine, as well as the many individuals and organizations in our society affected by the pandemic, so that the review is complete and leads to effective changes. We also request the Coalition (as the broadest-based inter- and multidisciplinary citizen-scientist and community-based organization in Canada focused on pandemic protections) be added as an official consulting organization to the Federal Approach to Pandemic Science Advice and Research Co-ordination.

## **Introduction**

The Canadian Aerosol Transmission Coalition (CATC) is pleased to contribute to the consultation about the federal approach to pandemic science advice and research co-ordination. This is a vital topic to address as Canada takes stock of the various aspects of its responses to the COVID-19 pandemic.

The stakes are high. Although Canada performed adequately in some areas, we were not fully prepared for a pandemic and the human and economic impact was greater than it should have been. In our view, thousands of the deaths, many more infections, and some economic impacts were preventable. The lessons learned must be heeded.

To supplement our comments, we also are attaching a list of selected references, some of which are cited through links in our comments.

## **The CATC**

The Canadian Aerosol Transmission Coalition (CATC) is a volunteer group of public and occupational health professionals and citizen scientists/community

activists. We came together early in the pandemic out of concern that aerosol transmission of the virus was not being taken into account in Canada's responses.

We have modelled the interdisciplinary approach to our work. We benefit from the participation of occupational hygienists and other occupational health professionals, engineers (including ventilation specialists), medical professionals (including infectious disease physicians, epidemiologists, emergency room MDs, the nursing professions), aerosol and other research scientists, legal professionals, and former government occupational health regulators. Citizen scientists (e.g., from Protect our Province groups) and immunocompromised individuals also have played key roles. There is more information about us, including various statements and reports, at our [website](#).

### **The COVID-19 context**

Some of us were very involved in pandemic responses and planning during and after SARS-1 in 2003. As a result, we have a keen sense of the reforms enacted during those years. So we were shocked to learn at the beginning of COVID-19 that many of the protective measures put in place following Ontario's Campbell Commission and other enquiries had been dismantled or abandoned.

Significantly the strategic stockpiles of personal protective equipment (especially N95 respirators) were [destroyed](#) by 2019 and not renewed. In April 2019, Canada's pandemic early warning system, the Global Public Health Intelligence Network, had been effectively [shut down](#). Infectious disease prevention inspections of long-term care facilities (notably in Ontario) were eliminated, leaving conditions in those facilities largely unmonitored for residents and staff alike. Similarly, occupational health workplace inspections and enforcement were curtailed, leading to outbreaks amongst "essential" workers, which then spread to their families and communities. The combination of these developments effectively disarmed government, public health, workplaces' and the citizenry's ability to respond to the pandemic.

The most significant lapse was the refusal by many in public health leadership positions to apply the precautionary principle articulated by Justice Archie Campbell in his 2006 SARS Commission Report, [The Spring of Fear](#).

In the context of the SARS-CoV-2 pandemic, this would have meant recognizing the likelihood of aerosol transmission and proceeding in a precautionary manner. Early studies about the transmission of COVID-19 (such as [here](#) and [here](#)), which strongly indicated aerosol transmission, were ignored or dismissed, with strong public health focus instead on transmission by droplet and contact and advice to "clean and disinfect surfaces" instead of the air. This led the [Lancet Commission](#) on lessons for the future from the COVID-19 pandemic to name "costly delays in acknowledging the crucial airborne exposure pathway of SARS-

CoV-2, the virus that causes COVID-19, and in implementing appropriate measures at national and global levels to slow the spread of the virus” as the second of 10 lessons.

The highly respected Z94.4 [standard](#) about the selection, use and care of respirators, from the Canadian Standards Association, also was largely ignored, despite its long-time use in occupational health regulations and guidance across the country. A long-standing disagreement between occupational hygienists and respiratory protection specialists, on the one hand, and some physicians and infectious disease specialists on the other -- about the need for respirators -- led to studies that proved to be very [problematic](#) and widespread public confusion about the roles of masks and respirators.

As a result, an effective layered (multi-disciplinary) preventive approach was not used, although some aerosol-related measures were ultimately adopted, albeit gradually and unevenly. There were significant and on-going failures related to the non-use of N95 or other effective respiratory protection in congregate, school, healthcare and other workplace settings, and failure to use effective tools such as ventilation and air filtration.

Properly deployed, a layered prevention approach acknowledging the dominant aerosol and airborne character of the virus with the resulting need to clean the air inside spaces, combined with vaccination, work at home where possible, and administrative controls (e.g., distancing people in congregate settings, fewer people in interior spaces at once) would have limited lockdowns and the devastating health, economic, human and political consequences, which Canadians have now suffered for more than three years. The long-term effects of Long-COVID have consequences on all those spheres too.

### **The CATC’s recommendations for Canada’s approach to science advice and research co-ordination to improve our preparedness for, and response to, health emergencies**

In our view, the final question posed in the consultation document is the most important, so we will start there. We will also comment briefly on some of the other questions and observations from the consultation.

As others have said (e.g., the *British Medical Journal*’s “[Accountability for Canada’s covid-19 response](#)”, Canada must make some significant changes, starting with examining the full range of lessons from the pandemic.

### **An inter- and multidisciplinary approach**

First and foremost, science advice and research coordination must be inter- and multidisciplinary. This means that the current system, directed mainly by physicians, must be greatly broadened out to include **all** relevant expertise.

An inter- and multidisciplinary public health response is essential for several reasons. It starts with the [essence](#) of public health: “(W)hat we, as a society, do collectively to assure the conditions in which people can be healthy”. or, as the Canadian Public Health Association [defines](#) it:

*Public health is the organized effort of society to keep people healthy and prevent injury, illness and premature death. It is a combination of programs, services and policies that protect and promote the health of all Canadians.*

First, in dealing with complex and multifaceted issues, effective public health activities require a broad range of skills, knowledge and experiences. For example, the COVID-19 pandemic has highlighted the need for collaboration amongst epidemiologists, clinicians, occupational health and safety specialists, engineers, evolutionary biologists, and others, working with public health officials to develop effective prevention strategies.

Second, interdisciplinary activities and research can provide a more comprehensive understanding of public health issues by drawing on multiple perspectives and methodologies. This can lead to more innovative, effective, and practical solutions to public health problems. Third, interdisciplinary collaboration can help bridge gaps between different sectors and stakeholders, leading to more coordinated and sustainable public health interventions.

Finally, a multidisciplinary and interdisciplinary approach to public health response is crucial for addressing complex public health issues, developing innovative solutions, promoting coordinated and sustainable interventions, and sustaining public trust and acceptance of necessary protections.

In addition, the emphasis on a traditional biomedical lens implicitly downplayed the importance of understanding human behavior. The behavior of pathogens and immune systems is somewhat predictable, but the behavior of human populations, particularly under stress and exposed to torrents of misinformation and disinformation via social and other media, was not. Failure to include behavioral sciences in the pandemic response was a mistake.

Overall, this means that the governance and research agenda must be multi- and interdisciplinary. This would have tremendous benefits – avoiding the unfortunate situation in Canada where whole professions, such as occupational hygiene and engineering, were largely marginalized by the decision-making and other processes in place.

### **Key stakeholders must be part of conversations**

The deep and active engagement of key stakeholders has been essential in this pandemic. Most important, this included employers and unions, organizations at the centre of our economic life. At the beginning of the pandemic, the Canadian

Chamber of Commerce CEO and the president of the Canadian Labour Congress jointly engaged with the prime minister to model the kind of collaboration vital to confronting a multi-faceted challenge such as COVID-19.

However, stakeholders too often were treated as “recipients” of research and scientific/medical findings and recommendations, not agents in their own right or collaborators in the process. Frankly, we think it is an embarrassment to Canada that unions had to resort to high profile legal actions just to be heard about protecting their members.

If vital civil society groups, including Indigenous organizations, employer and union organizations, and highly affected groups (e.g., disability organizations), and citizen scientists (e.g., Protect our Province groups) had been properly included in scientific and research discussions, priorities and activities, much of the polarization and erosion of trust in institutional public health and medicine that we now face could have been avoided.

Future structures must include mechanisms to include these kinds of stakeholders, rather than regarding them as peripheral to the advisory and other processes. This could include formal stakeholder advisory groups which provide input into pandemic preparedness planning, receive and review research proposals, engage in nimble collaborative work in the course of pandemic responses, and ultimately strive to add the value their perspective brings. Stakeholders also need to receive regular and on-going reports about the state of research and knowledge mobilization in the pandemic preparedness and response space.

### **Comments on stakeholder input so far**

#### **Overall preparedness and governance - A need for greater preparedness for the next health emergency**

We agree with the vital need for greater preparedness. In doing that, we would emphasize the need for better integration and alignment of health data and health information systems. As the consultation group knows, some stakeholders resorted to creating their own capacity for data analysis and communication, largely because they did not see this coming from public health authorities. [COVID-19 Resources Canada](#) is an exemplary example of this.

### **The importance of central leadership and coordination of research priorities**

The document says that those consulted highlighted the need for a dedicated federal body to lead the above and work in co-ordination with stakeholders (including provinces and territories, research community, health system, industry, etc.) to establish data and research needs. This would include a standing federal expert advisory table to inform priority areas for research and provide advice on health matters in inter-emergency periods, and regular table-top and real-life exercises to test and refine protocols and processes, assess readiness and make required adjustments.

We commented extensively above on the need for any such body to be multi- and interdisciplinary and include key stakeholders. We are very concerned about the high degree of political influence and indeed interference in the process during COVID-19.

We would recommend that any such body be truly at arm's length from government, with independent governance and formal and transparent mechanisms for engaging with the political process. In our view, the most effective and trusted body that came into existence during COVID-19 was the Ontario Science Table, under its Scientific Director, Dr. Peter Juni. While even that body sometimes struggled with political interference, it made tremendous contributions to policy and situational awareness, not only in Ontario, but nationally. It is notable that the Ontario government appears to have been uncomfortable with an independent evidence-based process, even one that leveraged some of Ontario's best medical and epidemiological specialists and contributed greatly to the protection of Ontario's health and economy. Unfortunately, the independent existence of Ontario's Science Table ended a year ago.

### **Research co-ordination and data sharing**

The consultation revealed the troubling concern that many networks formed during the pandemic to improve surveillance and research coordination are winding down due to a lack of sustained funding. This suggests that Canada will revert to the poor pre-pandemic state of readiness and not be sufficiently prepared for the next emergency.

This is, of course, of great concern to us. As a country that was battered by SARS-1 and SARS-2, if we have learned anything, it is that research is not a luxury but a necessity. We need to sustain a robust research and knowledge mobilization agenda in our country, including harvesting the learnings from COVID-19 effectively. Many "natural experiments" took place – including organizations in health care and other sectors that excelled in management of the pandemic for extended periods. How did these high-performers achieve what they achieved? What can we learn from the most effective organizations? What can we learn from countries (like Japan) that notwithstanding older populations than Canada



outperformed Canada in prevention of pandemic-attributable mortality? How can those approaches be adapted and scaled in jurisdictions that performed less well?

### **Science advice**

The document notes concerns about the fragmentation of science advice processes and related co-ordination challenges.

We fully understand these concerns. Having said that, we have a competing concern: a centralization of the process, with one “definitive” source for scientific research and advice, has its own risks.

We are in a polarized political environment. COVID deniers and anti-vax, anti-“mask”, anti-science voices are powerful, and seem to hold sway with some otherwise mainstream politicians in Canada. If we put all of our hopes in one set of institutions, we risk having those institutions and processes eliminated or silenced by new political masters. We would advocate acceptance of a somewhat decentralized approach, especially recognizing the important role of science tables and similar bodies in the provinces. Their activities could be better co-ordinated and, as we recommended above, they should be inter- and multidisciplinary, including a broad range of stakeholders in their structures.

### **Next steps**

The consultation is incomplete. It needs to be expanded to hear from other voices concerned about this topic. After all, the pandemic has affected all of us in some way, inequitably for the most part. Too many voices of those affected or who could have contributed more are missing in what should be a society-at-large endeavour.

To hear from them, we ask you to extend the deadline for comments until the end of January, and to encourage and request input from the kinds of voices we have mentioned. The process should be opened to NGOs, community organizations, professional societies (e.g., those representing occupational hygienists, the Ontario Society of Professional Engineers which developed clear language [materials](#) about pandemic protections), the Canadian Standards Association, disability and injured workers groups, unions, the Protect our Province groups, and the public at large. We would be pleased to help in that effort.

With all our skills and knowledge, the Coalition also has much to offer. CATC is the broadest-based inter-and multidisciplinary citizen-scientist and community-based organization in Canada focused on pandemic preventions. We therefore ask to be included in the *Review of the federal approach to pandemic science advice and research co-ordination*.

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