Public Health Physicians of Canada
Medical Experts for Healthy Communities

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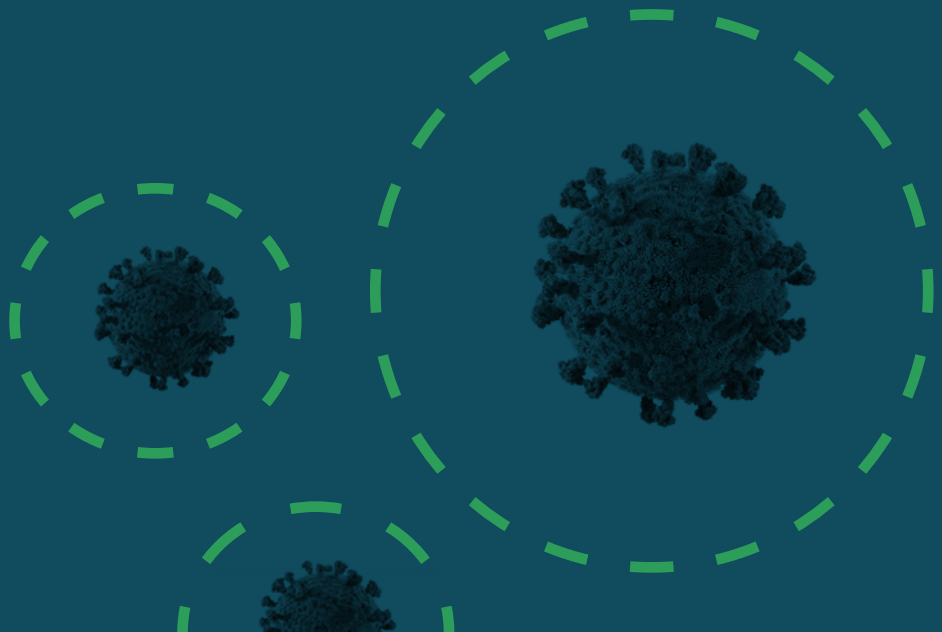
Médecins de santé publique du Canada
Les experts médicaux pour des communautés en santé

Public Health Lessons Learned from the COVID-19 Pandemic

Public Health Physicians of Canada (PHPC)
www.phpc-mspc.ca

January 2022



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Public Health Physicians of Canada (PHPC)

Public Health Physicians of Canada (PHPC, www.phpc-mspc.ca) is the national specialty society for Public Health and Preventive Medicine (PHPM) specialists. We are a voice for public health physicians and represent the interests of both PHPM specialists and other physicians working in public health across Canada. PHPC was originally established as the National Specialty Society for Community Medicine (NSSCM) and became the Public Health Physicians of Canada in 2012. Our objectives include (1):

- To support public health physicians in their practice through networking, knowledge exchange, and continuing professional development.
- To promote the educational and scientific advancement of public health medical practice, through liaisons with the Royal College of Physicians and Surgeons of Canada and other education, research, and training organizations.
- To promote the role of PHPM specialists and other public health physicians in the Canadian health system.

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EXECUTIVE SUMMARY

The impact of COVID-19 (coronavirus disease 2019) is significant and complex. After emerging in 2019, COVID-19 continues to spread throughout the world, overburdening public health and health care systems and leading to many consequences, including economic and social impacts that will be experienced for years to come.

Public health physicians have an important role in managing and mitigating the impacts of the pandemic. While there are challenges and concerns about under-resourcing the country's public health systems, there are significant strengths in Canada's COVID-19 response. Based on deaths adjusted for population and vaccine uptake, Canada has done well at managing many elements of its response. This was achieved in no small part due to the dedication and resilience of public health and health care staff who have been integral to the sustained response. Compared with previous pandemics, coordination across jurisdictions and departments has also improved throughout COVID-19; rapid delivery and iteration made it possible to implement evolving best practices in real time. Ongoing reliance on science has helped shape and ensure an evidence-informed strategy.

This report has been prepared from the perspective of public health physicians. Public health focuses on preventing illness, decreasing inequities, and improving overall quality of life for entire communities. It uses data, evidence, public engagement, research, education and more to inform public health policies, develop programs, and respond to emergencies like the COVID-19 pandemic. Public health physicians are experts in integrating medical and broader societal considerations with public health practice. After completing medical school, those pursuing a career as a Public Health and Preventive Medicine (PHPM) physician must complete an additional five years of residency that includes clinic and hospital training, courses in public health sciences, and clinical experience in public health settings. Once certified, these medical specialists work in public health across governmental and non-governmental settings. They use their medical training differently from many physicians, as most public health physicians work behind the scenes, having limited contact with individual patients in clinics and hospitals. This view of care by PHPM physicians complements and supports delivery of acute care and primary care for a comprehensive health system.

The pandemic has increased interest in and awareness of public health systems, but the expertise and scope of public health includes much more than communicable disease and outbreak control. Due to a historical lack of funding, the public health community's focus on the pandemic over the past two years has only been possible at the expense of other core public health work. This work includes programs aimed at addressing factors known as ecological and social determinants of health, the non-medical factors—including social, economic, and political systems—that impact health and well-being.

The pandemic continues to highlight the health impacts of inequities and the ways existing health, government, and social systems fail to meet the needs of Indigenous Peoples and marginalized communities. Significant work and adequate resources must be dedicated to improving equitable health outcomes. We encourage the amplification of reports and articles on the COVID-19 pandemic effects and response written by Indigenous Peoples (First Nations, Inuit, and Métis) to understand the best actions to take in support of Indigenous community health and autonomy (see examples in Appendix 3).

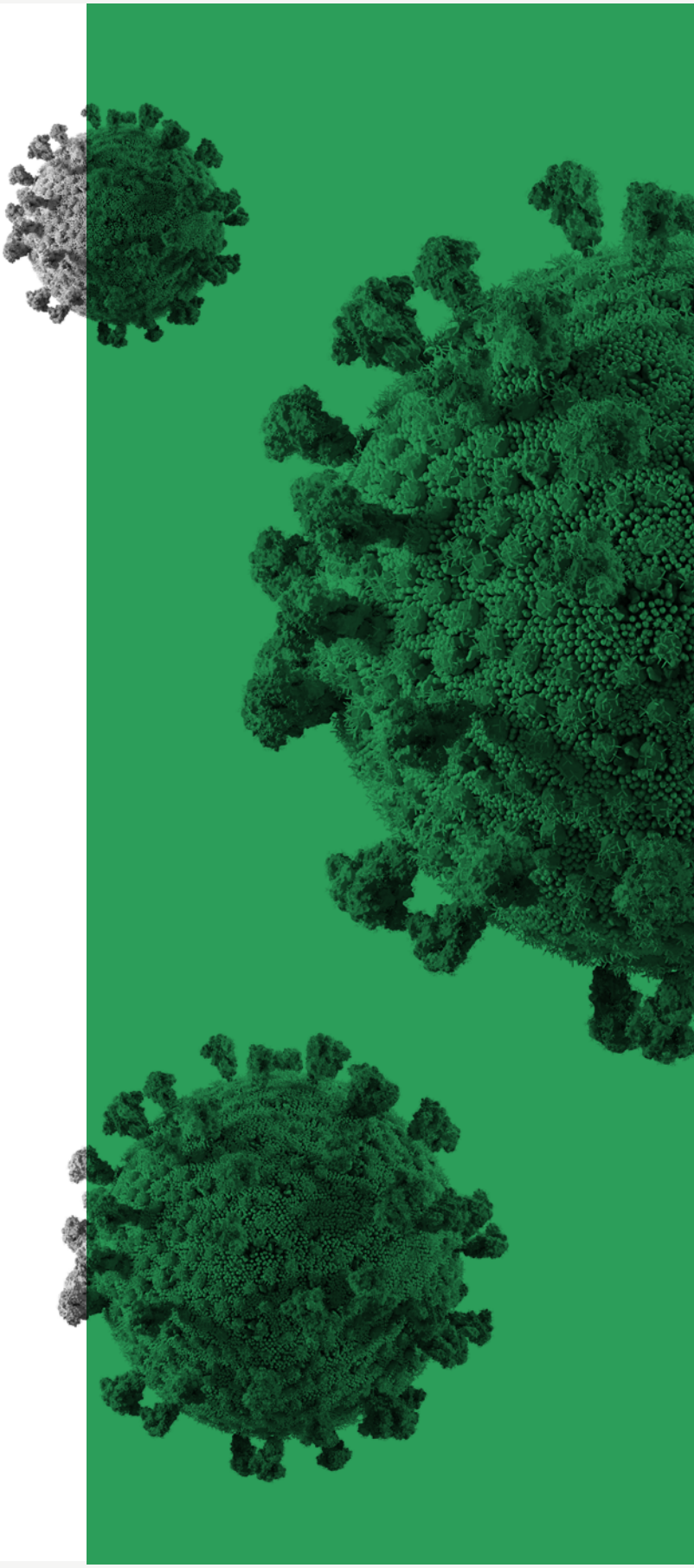
To improve the impact of public health measures and health outcomes across Canada, this report provides detailed recommendations for rebuilding, resourcing and re-imagining our public health systems. These include:

Funding: Increase funding and resourcing of public health teams and organizations.

Defining: Increase awareness of the role of public health physicians and public health practice and service delivery. Misunderstandings about the scope of public health adversely impacted the COVID-19 response. This includes expertise being attributed to physicians with non-public health specialties and misguided advocacy.

Managing: Prioritize sustainable investment and staffing capacity. Acknowledge and address the significant burnout among public health and health care teams.

Monitoring: Invest in and develop public health information systems.



Decision-making: Improve and prioritize community engagement. Clarify distinctions between public health expertise and advice and political decision-making, where feasible.

Prevention and promotion: Maintain a focus on the importance of health promotion and prevention, alongside treatment.

Communicating: Modernize communications training and strategies and ensure there are clear distinctions between public health and health care expertise.

Studying: Invest in practical research that is timely and informed by the needs of public health service delivery.

Reforming: Collaborate with communities to address systemic discrimination in health care and public health, including with respect to Indigenous health, with dedicated funding.

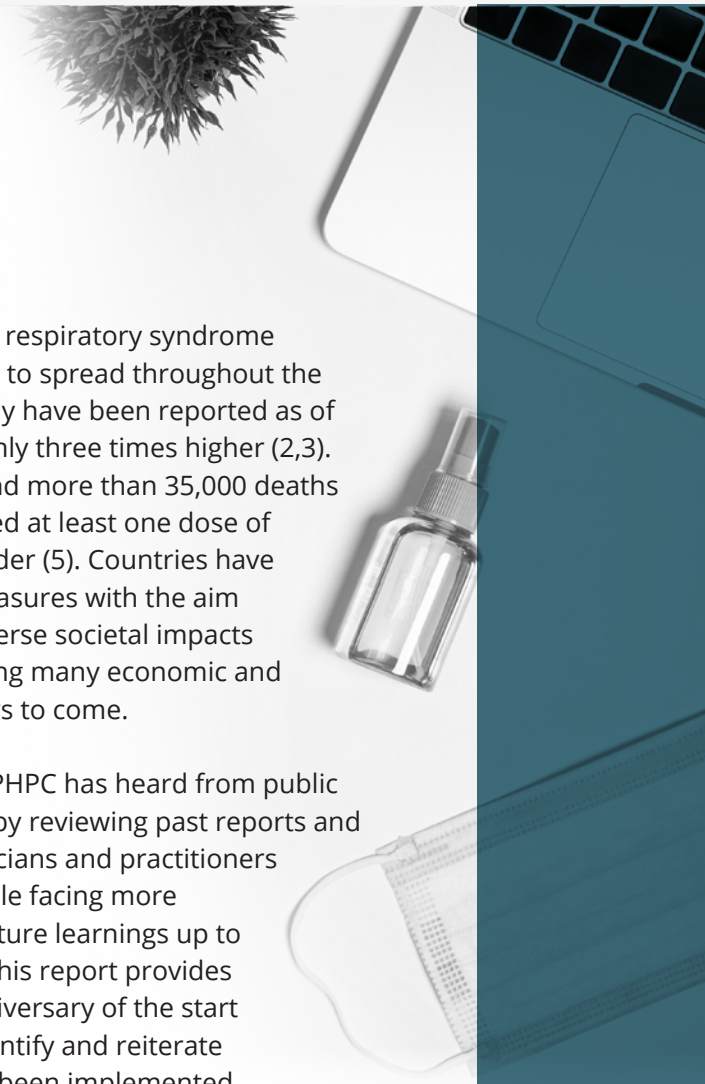
We also support revisiting the recommendations from previous reports, such as those outlined in Appendix 1, and implementing those that have not been or are only partially implemented.

Adequate public health resources, funding and training must be actively pursued to continue to support the health of all people who live in Canada today and in the future. With additional intersecting health challenges associated with income disparity, food security, climate change and other current issues, it is urgent that more resources are allocated to public health.

The recommendations in this report span a wide range of issues. A recurrent theme is the need to prioritize perspectives from the on-the-ground work of local and regional public health service delivery in Canada—and ensure that systems (financial and human resourcing, technological, data, research and others) support their work and their practitioners. There are often periods of investment and cycles of de-investment that occur in public health, but sustained support for our public health systems is crucial, not only in times of crisis.

We hope that the recommendations contained in this report will contribute to improving public health, while also decreasing inequity between communities and across the country—and not one without the other.

INTRODUCTION



COVID-19 (coronavirus disease 2019), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus, emerged in 2019 and continues to spread throughout the world. More than 400 million cases and five million deaths globally have been reported as of early 2022, with some estimates that the actual death toll is roughly three times higher (2,3). As of early 2022, Canada has reported over three million cases and more than 35,000 deaths (4). More than 84% of the total population in Canada have received at least one dose of vaccine, including more than 97% of those 70 years of age and older (5). Countries have implemented health care, public health, and whole-of-society measures with the aim of decreasing serious illness and death, while minimizing the adverse societal impacts of the pandemic and its response. The impact is complex, including many economic and social consequences that will continue to be experienced for years to come.

The recommendations in this report were developed from what PHPC has heard from public health physicians since the start of the COVID-19 pandemic, and by reviewing past reports and recommendations. At the time of publication, public health physicians and practitioners across Canada remain committed to managing the pandemic while facing more transmissible variants. Publication at this time was chosen to capture learnings up to this point, with an understanding that this response is ongoing. This report provides guidance for strategic investment in advance of the two-year anniversary of the start of the COVID-19 pandemic. It also serves as an opportunity to identify and reiterate recommendations made in previous reports, which have still not been implemented.

In Canada, the ongoing COVID-19 pandemic has demonstrated the dedication and adaptability of the public health and health care systems (both primary and acute care), including their workforce. It has also exposed challenges and systemic weaknesses in the health system that negatively impact people's health. For this report, "health system" refers to both health care and public health components. The health system has local/regional, provincial/territorial, and federal (pan-Canadian) elements, across both governmental and non-governmental agencies. We acknowledge that in some parts of the country, public health is municipally based.

The recommendations in this report focus on rebuilding, resourcing and re-imagining within our public health systems across Canada. The recommendations cover a range of issues, all of which prioritize the experiences and requirements of frontline local and regional public health service providers and emphasize the essential role that systems, including financial and technological systems, play in supporting these efforts.

PURPOSE

This report is intended for senior health decision-makers and policymakers, within and outside government, whose expertise is primarily outside of public health. We also hope it will be helpful for those in the public health system to communicate about public health systems and recommendations.

The pandemic response has involved public health, health care and whole-of-government interventions. The focus of this report is on insights related to the public health system, and recommendations related to core public health services and functions. The report includes public health experts' recommendations to improve the system and support the health of people living in Canada. After nearly two years of first-hand experience managing this crisis, and decades of public health practice and expertise, including pre-pandemic management of communicable disease control, general prevention programs and emergency management, these recommendations should be acted upon.

This report does not explore other aspects of the health care response in depth (e.g., treatment, including ICU and medications), nor whole-of-government measures in depth (e.g., business closures and financial supports). It is acknowledged that public health plays a significant role in advising on and implementing public health measures; public health works closely with others on these measures. Unfortunately, a detailed examination of these measures and their implications is out of scope for this report. A non-exhaustive list of other resources, some relevant to these measures, can be found in Appendix 3.

This report also does not detail the exceptional and ongoing work of laboratory teams and systems in Canada on COVID-19 testing throughout the pandemic.

The report will clarify the scope and meaning of public health services. Many issues with public perception of management and institutional decisions during the pandemic have emerged from misunderstandings about what public health leads and partners on, and what is beyond its scope.

We acknowledge that the pandemic and its response are ongoing. There will be future reports and learnings to come. We thank all those who have worked on the response and who also kept other health care and public health services going.

ROLE OF PUBLIC HEALTH

Public health systems and physicians have been integral to the pandemic response. Public health practitioners work together to implement and adjust public health guidance based on evidence and best practices that are constantly evolving.

Public health is described, as in the definition from Wilson in 1920 and adapted by Acheson in 1988, as "the science and art of preventing disease, prolonging life, and promoting [health] … through the organized efforts of society" (6,7). The work of local, regional, provincial/territorial and national public health systems and organizations in Canada can be considered in the context of the six core functions of public health: Population Health Assessment, Health Surveillance, Health Protection, Health Promotion, Disease and Injury Prevention, and Emergency Preparedness and Response. These functions have been described in several documents, including the Chief Public Health Officer's "Report on the state of public health in Canada 2008: Addressing health inequities," and are outlined further with examples from COVID-19 in Appendix 2.

In the context of COVID-19, the aim of any decision-making processes has been to minimize serious illness and death due to the virus, while also reducing the broader societal impacts of the pandemic and response measures. Public health experts have led work related to epidemiology, on-the-ground case and contact management, cluster and outbreak management, isolation and testing recommendations, other non-pharmaceutical interventions such as distancing, vaccine roll-out, and communications, and other areas. We have worked with and in schools, workplaces, long-term care and health-care facilities, homes, and many other settings.

As medical experts in public health science, public health physicians assess, plan, implement and evaluate complex population health interventions across government and other sectors. During COVID-19, our clinical expertise has been applied extensively—for example, with managing and interpreting COVID-19 testing and working in partnership with medical microbiologists and laboratory teams. Our role has also included identifying and mitigating the unintended consequences associated with non-pharmaceutical interventions such as social distancing. In addition, our role has included decision-making or advising politicians on decision-making, as appropriate in the context, on measures such as travel, school and business closures. Many have worked to oversee the largest vaccine rollout in Canada's history.

These public health actions are among many that have kept people out of hospital and thousands out of primary care offices (e.g., with support and guidance to isolate at home). These actions have promoted health and worked to decrease inequity, while reducing burdens on our health care systems.

SIX CORE FUNCTIONS OF PUBLIC HEALTH:

- Population Health Assessment
- Health Surveillance
- Health Protection
- Health Promotion
- Disease and Injury Prevention
- Emergency Preparedness and Response.

The teams delivering these services are primarily public health physicians (such as Public Health and Preventive Medicine [PHPM] specialist physicians), public health nurses, public health inspectors and environmental health officers, epidemiologists, administrators, and other team members such as social workers. This expertise differs significantly from those who work in clinic and hospital settings, such as primary care physicians, infectious disease specialists, or critical care physicians who complete residency training in clinic or hospital settings, as opposed to public health organizations.

After completing medical school, those pursuing a career as a PHPM physician must complete an additional five years of residency that includes clinic and hospital training, courses in public health sciences, and clinical experience in public health settings. Once certified, these medical specialists work in public health across governmental and non-governmental settings. Public health physicians focus on skills necessary to make public health decisions that consider a range of factors at the population level, including environmental health, mental health, and others, including pandemics. To that end, they work closely with the research community in Canada, the health care community (e.g., emergency room teams, ICU teams and infectious disease physicians in hospitals), non-governmental organizations (NGOs), other civic-minded organizations, and elected governments at municipal, provincial/territorial and federal levels. Many describe a responsibility within public health to partner and support community, bureaucratic and political decision-making. To understand more about the scope of these and other roles, the core competencies (8) and specialty training objectives (9) for PHPMs are useful resources.

"The public health and preventive medicine residency training for physicians is quite different to other specialty programs where most of the residency training occurs in clinic and hospital settings. The training includes foundations in surveillance, population health assessment, health promotion, emergency preparedness and response, and disease prevention across a range of public health organizations. This experience allows me to make critical public health decisions that integrate a range of factors from a population perspective. We can apply these skills to improve health in many areas, including environmental health, mental health and others, including the current COVID-19 pandemic."

Although the pandemic has brought awareness of public health systems into the spotlight, it is important to note that the expertise and scope of public health is much wider than just communicable disease and outbreak control. Public health is focused on preventing illness and improving overall quality of life for entire communities, as well as decreasing inequity. It considers a wide range of quantitative and qualitative data sources to inform public health policies, develop programs, and respond to emergencies like the COVID-19 pandemic. This encompassing view of care complements and supports delivery of acute care and primary care. It is important to address ongoing misconceptions. Public health is not oriented toward advocacy alone and is not primarily about publicly funded health care services, nor personal or one-on-one health care services.

The pandemic is highlighting how existing inequities impact health and well-being, and the importance of social determinants of health. In addition to the toll on seniors in underfunded, under-resourced care homes, the data shows that people who live in Canada in certain types of employment, lower income neighbourhoods, neighbourhoods with more people who are visible minorities, and those who have recently immigrated to Canada, are more susceptible to and affected by the measures taken to control the spread of the SARS-CoV-2 virus (10). While managing the change from pandemic to endemic COVID-19 is a current priority, impacts from the pandemic will continue to be felt in years to come. In the health system, backlogs in services are important to address from both a public health and health care perspective (11).

LESSONS LEARNED

RECOGNIZING WHAT'S WORKING

While there are challenges and concerns about under-resourcing the country's public health systems, there have been significant strengths in Canada's COVID-19 response. Based on deaths (adjusted for population size) and vaccine uptake, Canada has emerged as a global leader in many elements of its response.

Dedication and resilience of public health and health care staff has been integral to the sustained response. Through waves and variants, day after day, teams across the country have showed up to determine best practices, educate, pivot and coordinate the pandemic response. Public health teams have managed large groups of staff brought in from other parts of the health system and beyond, with significant associated human resources and management challenges. Many individuals have worked through evenings and weekends, been away from their family, changed jobs overnight and responded to constant change, often at the expense of their own well-being. While impressive and vital, the adverse impacts of these efforts are discussed further in the recommendations below.

Coordination across jurisdictions and departments has improved through COVID-19, compared with previous pandemics. Public health teams report that, although there are still significant improvements needed, the sharing of information and resources as well as strategically coordinated program approaches have helped to create a stronger response. For example, the nation-wide vaccine prioritization, including of remote and Indigenous communities, has been identified as a strength that should be incorporated into future pandemic plans. Frequent meetings of the Special Advisory Committee (SAC), Technical Advisory Committee (TAC),[1] Deputy Ministers, Ministers, and others contributed to this alignment. Public health teams have also reported building on existing and new collaborations with other sectors, such as education and justice.

Public health organizations offer benefits. Having federal and provincial public health agencies in place, such as the Public Health Agency of Canada (PHAC), Public Health Ontario (PHO), the B.C. Centre for Disease Control (BCCDC) and Institut national de santé publique du Québec (INSPQ), provided more streamlined expertise, communications and response strategies. It is important to note that the success of these agencies depends upon the support they receive. Access to the services of these agencies varies considerably across the country, for example by geographical location.

Rapid delivery and iteration made it possible to implement new best practices in real-time. Efficient decision-making processes and the incorporation of evidence has made the response nimbler and more successful. The best and most recent findings were used to adapt guidelines and improve health outcomes. The hard work of laboratory teams to rapidly develop tests and adapt as evidence and technology continually changed, with such high volumes, is a strong example.

Ongoing reliance on science has helped shape an evidence-informed strategy. Science and data, including best practices, evidence, and expertise of public health specialists, have been at the forefront of strategic decision-making. This includes, but is not limited to, the use of epidemiologic analysis to understand risks and patterns of spread, modelling analysis (and public sharing of modelling) to help support public health planning, and rapid incorporation of new studies and evidence.

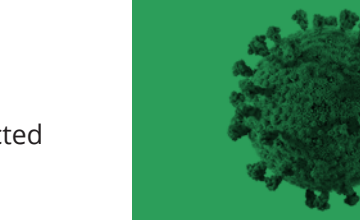
[1]More information on these committees is available at http://www.phn-rsp.ca/sac-covid-ccs/index-eng.php.

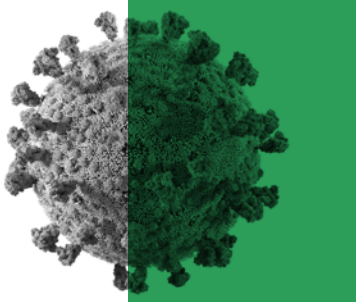
RECOMMENDATIONS FOR IMPROVEMENT

There are other areas where the pandemic response in Canada has had identifiable gaps, oversights and challenges. The lack of capacity and resourcing of public health systems impacted the ability to respond effectively and quickly in many instances. Many important public health functions, such as health promotion activities or non-communicable disease data system improvements, were postponed as resources were diverted. Data capture, collation, analysis and sharing often struggled with timeliness and consistency. Many other well-known public health challenges were evident, despite appearing in reports following, for example, SARS, Walkerton and H1N1. Appendix 1 shares examples of some of these recommendations.

The nine recommendations below focus on resourcing, rebuilding and innovating in public health. They identify priority areas for investment and cover a broad range of issues facing the sector. While each recommendation addresses a distinct challenge, they all call on us to support and prioritize local and regional public health service providers' on-the-ground perspectives. These recommendations should be implemented as soon as feasible to ensure the relevance and effectiveness of the ongoing management of COVID-19. They are also important to be able to return to when providing core public health services and preparing for future public health challenges. This means getting back to a level of public health resourcing and services that is the same or increased as compared to before the pandemic. COVID-19 has highlighted the importance of maintaining vigilance in public health matters. As such, additional resourcing, including dedicated funding—as multiple organizations have called for—is required to implement these recommendations.

Many of these recommendations are complementary to Canadian Medical Association (CMA)'s Impact 2040 Strategy, which takes a 20-year outlook and highlights the importance of a responsive process. The strategy focuses on a shift in medical culture, health system structures and health workforce supports. Advocating for a shared understanding of the public health approach can help integrate population health with other health care structures.





1

FUNDING: Increase funding and resourcing of public health teams and organizations.

Funds are urgently needed for public health staffing, budgets and capacity. The pandemic has put additional stress on an already overburdened and underfunded system. While the dedication of staff has kept the response in motion, pandemic response efforts have come at the expense of other core public health work. This includes childhood vaccinations, substance use, early childhood work, sexual health and more. These trade-offs will have impacts in the mid- and longer-term and ultimately, will lead to continued costs for the health of people living in Canada.

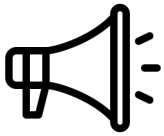
There is a lack of comprehensive, regularly updated, transparent information about public health system funding in Canada. Available information, such as from the Canadian Institute for Health Information (CIHI), mixes funding for public health services with that of one-on-one health care and personal care services. There are cycles where public health funding is increased after a crisis and then goes through a series of cuts. Sometimes health care funding is expanded further while public health systems face cuts. Public health struggles at times to demonstrate the value of its services, particularly when we are preventing bad outcomes from occurring. We echo the calls from others for more specific estimates of the funding, resourcing and investment needed.

Next steps:

- Increase clarity on the amount spent on public health systems in Canada, separate to one-on-one health care and personal care services.
- Support a strong research agenda focused on the public health system.
- Continue developing best practices for how to evaluate and communicate regarding the effectiveness of public health interventions and the structures of public health systems.
- Look to other past and upcoming reports and recommendations on public health system funding to adequately resource broader public health infrastructure.

There is a lack of comprehensive, regularly updated, transparent information about public health system funding in Canada.

2



DEFINING: Increase awareness of the role of public health physicians and public health practice and service delivery.

Misunderstandings about the role of public health adversely impacted the response. While public health teams are clear on their scope, roles and responsibilities, there are many misunderstandings among the public, politicians, and colleagues in the health care system about what public health services include.

Public health needs to be distinguished from health care. While public health may advise politicians and government actors and have significant influence on policy decisions, there must also be some separation from politics. The jurisdiction of public health at each local and regional, provincial/territorial, and federal level has specific responsibilities. For example, outbreak management is often done more locally and regionally, COVID-19 data dashboards are maintained at a provincial or territorial level, and vaccine regulatory approval is a national function. These responsibilities are typically more adapted to the community's context, particularly locally and regionally.

The more dominant health care focus on excellence in primary and acute care is important, but is different from public health services that focus primarily on reaching individuals where they live, work, learn and play. We can do better in public health at communicating our work and role, but we request others recognize and defer to the expertise in the public health system as it relates to population health, just as we would defer to expertise in health care as it relates to an individual patient. We heard clearly from public health physician leaders that a key challenge adversely impacting their work and the COVID-19 response was the lack of recognition of public health experience by other generalist and specialist physicians who did not work full-time in public health systems.

"I would never do a project or master's degree in orthopedic surgery wait times and then walk into an OR and say, 'I'm ready to replace that hip.' Yet similar situations happen for us in public health practice often—where another physician shares thoughts publicly on different recommendations for community outbreak management or approaches in schools and [they are] framed as public health medical expert advice. The expertise gained in clinic and hospital settings is very different than that gained in community settings, and we feel like this approach has undermined the pandemic response outcomes at times. The training paths give us different kinds of expertise. Physicians who are primarily trained and experienced in treating patients in one-on-one health care settings don't have the same kind of expertise in population health or public health services. We all have roles to play and can partner together to improve health in line with our specific scopes."

For example, public health systems are responsible for specific cases and contact management decisions for a known positive COVID-19 case and their contacts. Here, public health teams make decisions about tracing, follow-up, and recommendations. Conversely, for government decisions about border or airport closures, public health teams may provide expert advice and information based on the available evidence, but ultimately, any decision to intervene in these scenarios is undertaken by political and government leaders. These dynamics do not always have obvious solutions and involve considerable collaboration, but there are distinct functions and

roles to acknowledge.

Next steps:

- Ensure there are mechanisms to prioritize feedback and input from local and regional public health practice into provincial/territorial and national decision-making systems.
- Related to public health physician roles:
    - Fund adequate public health specialist physician roles as needed per jurisdiction.
    - Continue to improve training of public health specialist physicians and ensure enough residency and training positions to meet system need.
    - Ensure the term Public Health and Preventive Medicine (PHPM) specialist physician is exclusive, with defined expertise, and respect the scope of practice.
    - Prioritize the hiring of public health specialist physicians into public health physician and Medical Officer of Health roles.
    - Ensure adequate availability of on-call public health specialist physicians across the country.
- Ensure training and placement opportunities in the North, Atlantic and rural regions to ensure more equitable distribution of experienced public health physicians and PHPM specialists across the country.

We can do better in public health at communicating our work and role, but we request others recognize and defer to the expertise in the public health system as it relates to population health, just as we would defer to expertise in health care as it relates to an individual patient.

3

MANAGING: Prioritize sustainable investment and staffing capacity. Acknowledge and address the significant burnout among public health and health care teams.

Enhancing the capacity for surge and sustained responses requires financial and human resources. This is urgent given the impact of the pandemic on public health and health care team wellness, and the pervasive burnout that has resulted from more than 20 months of pandemic-driven work. The backlog of public health services is extensive and will have long-term impacts on people who live in Canada, such as postponed childhood vaccination programs and public health inspections from when resources were diverted to the pandemic response. Addressing these will add additional strain on already stretched staff and public health systems.

This surge capacity needs to be culturally appropriate, modular, and scalable as needs ebb and flow. For example, different parts of the country have experienced different levels of disease activity and outbreaks, geopolitical considerations, socioeconomic impacts and health care capacity changes over time. Preparation to minimize time and energy spent clarifying demands for help, following those processes, and onboarding new supports are all important. Translation and interpretation services need to be considered and set up in advance. Prioritizing, defining and communicating what not to do or what to stop doing in these responses is also hugely important.

Strong program assessment, planning, implementation and evaluation approaches are crucial. Too often, the focus is on implementation with limited planning and evaluation supports. This also makes it difficult to consider the opportunity cost of interventions and where best to place resources in an over-burdened and strained health system.

It has been noted that best practices in Incident Command Systems (ICS) and Incident Management Systems (IMS), with clear back-ups for roles and rotations in and out of roles so people could have breaks, were not followed. Cross-coverage training and systems are crucial; many felt unable or uncomfortable taking time off due to not wanting to add to a colleague's workload. There are significant learnings in both the public health and health care sectors on these fronts that should be implemented in this and future emergency responses.

Some specific regional and national supports that have been suggested:

- Establish regional hubs of expertise. Certain provinces (Ontario, B.C., and Quebec, for example) have dedicated provincial public health organizations. Establish support for North, Atlantic, and Central Canada to create or be able to access similar institutions or arrangements. This would be particularly helpful for jurisdictions with no or limited university institutions. These agencies provide a different function to PHAC, as they often support provincial public health action and provide expertise that is complementary to the local/regional level.
- Create a "National Microbiology Lab (NML) of the North" satellite site that can support the territories' laboratory capacity, and potentially northern and remote provincial jurisdictions as well.
- Support research into public health systems and structures.
- Better align PHAC support with local and regional public health needs, including consideration for:

- Training and capacity-building (such as re-instating the Skills Online program that was discontinued and updating the now decade-old Core Competencies for Public Health Practitioners).
- Hiring individuals within PHAC who have worked in local and regional public health systems, and/or supporting an increased understanding of the local/regional context. For example, public health physicians and/or practitioners at PHAC could spend one to three months each year working at the local/regional level on a rotational basis to better understand the local/regional public health context and service delivery.
- Supporting Field Epi deployments lasting a minimum of three to five weeks and improving cultural competency training for these epidemiologists.
- Decreasing administrative workload for accessing federal surge supports.
- Improving the understanding of local/regional and provincial/territorial public health practice within PHAC. This is also anticipated to help with aligning accountability and reporting on funding distributed by PHAC.
- Improving clarity as to differences in public health and political roles where feasible, particularly given the crucial role public health plays in advising political decision-making.
- Continuing the use of ethical frameworks applied in practice (separate to academic assessments), such as those that prioritize transparency and good governance.
- Improving pandemic preparedness (e.g., through routine table-top exercises and updates to contact lists and other elements of pandemic plans).

Strong program assessment, planning, implementation and evaluation approaches are crucial.

4

MONITORING: Invest in and develop public health information systems.

For any public health intervention to be effective and strategic from the start, and especially a public health response to a pandemic, strong health data systems need to be accessible. In the case of the COVID-19 pandemic, this includes data for case counts, vaccine coverage, acute care metrics and lab results—as well as data that helps with understanding inequities, such as race-based data and type of residence (e.g., long-term care, underhoused, multi-family occupancy, rural, urban). As it stands, these systems lack consistency and the ability to easily share data, and are under-resourced. This hinders our ability to understand and respond to the virus. Coordinating the disparate federal and provincial/territorial systems, with strong relationships and trust in decision-making processes for the use of data, is an important component of improving information sharing.

Current systems offer some strengths for adapting data to the unique contexts of Canada's huge geography, but ultimately make it difficult to get real-time information, and at times must be side-stepped for outdated analog methods of data tracking (e.g., paper records). Often, we rely on outdated methods to be the "eyes and ears" of the crisis response. As a result, costly delays and avoidable gaps emerge in the absence of updated data systems and clear decision-making on the use of health data.

Monitoring, evaluation, and learning—linked together—are critical. Both qualitative and quantitative data should be captured consistently. While this has been difficult to do while responding to the pandemic, evaluations are critical in understanding what is working (and for who) and adjusting accordingly. This is important for COVID-19, but also for the unintended consequences of the response and for elements beyond communicable disease control.

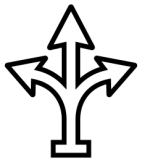
Similarly, robust and timely population health assessments are important to guide decision-making for interventions. The B.C. COVID-19 SPEAK survey is a good example of work that can help with understanding unintended consequences of the pandemic response. One practitioner described the analogy that these types of tools are our "CT scanners," that is, they are diagnostic assessment tools that allow us to do our jobs.

Next Steps

- Continue efforts to ensure surveillance data systems are resourced, maintained, and able to talk to each other. To move this forward, it is critical to build trust within health systems and with the public in knowing how the information will be owned, analyzed, used and published publicly.
- Invest in outbreak management communication tools that allow communication with individuals and members of public health across multiple channels (e.g., texting regarding isolation dates, contacting people through social media messenger systems to answer questions).
- Invest in ongoing communications training on how to use the above-noted tools and effectively communicate risk in a changing risk landscape.
- Support the implementation of outbreak management tracking systems (e.g., for outbreak team notes and direction) more consistently across the country.
- Establish national data standards for public health, as have been developed for health care.
- Consider balancing the use of both quantitative and qualitative data to leverage the strengths of each.
- Leverage and apply learnings from the pan-Canadian Health Data Strategy Expert Advisory Group (EAG) report published in 2020, "Charting a path toward ambition" (12). For example, the EAG recommends:
    - pursuing social license and education to build transparency;
    - establishing a data policy for the digital age to meet data policies, consent and custodian requirements;
    - building accountable alliances across all levels of government;
    - establishing a data interoperability and architecture model to maximize real-time data sharing and support policy and research development (12). (p 7-8)

> *One practitioner offered an analogy: Apple computers can talk to PCs, but this requires shared data standards and resources for maintenance and reintegration when systems are updated.*
>
> *— PHPC Member*

5



DECISION-MAKING: Improve and prioritize community engagement. Clarify distinctions between public health expertise and advice and political decision-making, where feasible.

Health systems would be strengthened by improved community engagement, which is key to delivering a solid, collaborative, respectful and inclusive response. This applies across all the recommendations in this report. Community engagement was ad-hoc and often an afterthought in COVID-19 response planning, despite its key role in public health and health care service delivery. This recommendation includes continuous learning that needs to happen in the public health system itself, regarding community engagement, public communication strategies and behavioural science. These approaches would help enhance equity in the health system and improve health outcomes for all members of the public.

There are still opportunities to strengthen coordination between and within health and government systems. The COVID-19 experience has reinforced calls from National Advisory Committee on SARS and Public Health. for a National Public Health Strategy that strengthens links between public and personal care systems (e.g., primary and acute health care systems in clinics and hospitals) and is built "in collaboration with provincial and territorial governments and in consultation with a full range of non-governmental stakeholders" (13). (p 215)

Some have suggested that more explicit and documented use of ethical frameworks in decision-making could be helpful as well, particularly when response measures have been so broad in impact.

Next steps:

- Document best practices and leverage successful examples for community engagement to increase its use as a public health strategy.
- Encourage reflection on lenses, assumptions, bias and privilege.
- Prioritize honest conversations about the dominant perspectives in governance and decision-making; find ways to ensure a range of voices are heard and acted upon.
- Continue to support cultural competency training in health care, public health and government settings.
- Collate community engagement and behavioural science approaches at a national level.
- Create staffing positions with a focus on community engagement and resourcing mechanisms to inform public health programming with social and behavioural science.
- Build bridges between public and personal care health systems through local roundtables, cross-training, and other strategies to enhance alignment.

6

PREVENTION AND PROMOTION:
Maintain a focus on the importance of health promotion and prevention, alongside treatment.

Keeping a view on health and well-being that is broader than communicable disease is crucial. The unintended consequences of the pandemic and its response require further understanding. Health promotion interventions (such as those that support mental well-being and social connection) and prevention (such as preventing tobacco use and chronic disease) are critical for the overall health of people who live in Canada.

Within prevention, vaccination remains our best preventive measure against COVID-19. The prioritization of northern territorial and Indigenous populations in Canada for initial vaccine supply was an important decision and it is suggested this should be institutionalized and formalized in plans to respond to future pandemics.

According to the Government of Canada, approximately 85% of Canadians have received at least one dose of vaccine, and almost 80% have at least two doses (5). In comparison, according to Our World in Data, as of January 2022, only approximately 10% of people in low-income countries have received at least one dose of vaccine, in part due to unequal access and supply (14). Global vaccine inequity, and the emergence of new variants, remain significant concerns.
.

The prioritization of northern territorial and Indigenous populations in Canada for initial vaccine supply was an important decision and it is suggested this should be institutionalized and formalized in plans to respond to future pandemics.

7

COMMUNICATING: Modernize communications training and strategies and ensure there are clear distinctions between public health and health care expertise.

Communication has improved greatly from previous pandemics. Notably, after SARS, communication was considered a major shortcoming of the response. While COVID-19 communication has been better, there is still room for improvement in reaching and resonating with people who live in Canada.

Social media has fundamentally changed communication channels and is an important development in responding to health concerns. The use of social media by public health and health care teams can be improved and expanded. Complex technical and scientific concepts need to be clearly communicated, using risk communication strategies adapted to the context. It is critical for public health teams to have an increased understanding of social media. Whenever possible, plain language should be used, and focus must be placed on comprehension. Graphic design and visual communications should be a key part of messaging from the start. Misinformation and disinformation have also been raised as significant concerns requiring action.

Beyond sharing actions and restrictions, communications should continue to highlight the intent and outcomes of public health strategies. These efforts should also be resourced and undertaken between pandemics and public health crises, to establish credibility and build trust with the public in an ongoing, stable way. The transparent and public approach to learning and iterating as more information became available has been a great

> *"We redeployed most of the health unit to the response but one of the biggest redeployments was to support communications, knowledge translation, and creating materials. Many smaller agencies didn't have resources to do that and need funding, resources and independence to build on their strengths."*
>
> *— PHPC Member*

strength in some ways. In other ways, it has given cause for concern and eroded confidence in public health expertise. There is a challenging balance to maintain with all these approaches.

Next Steps

- Leverage behavioural science and evidence-based approaches to inform strategic messaging that motivates behavioural change.
- Implement a process for review and decision-making that ensures evidence, not political considerations alone, remains the guiding force, and that political and operational needs are kept in balance.
- Advocate for media standards that define who qualifies as a public health expert to increase accountability.
- Increase use of social media by public health organizations.
- Hire more individuals with graphic design, marketing and communications skills in public health agencies to establish ongoing public communication strategies.
- Ensure availability of visually appealing, plain language resources.
- Ensure translation to multiple languages as appropriate.
- Hire or train individuals with skills in how to address misinformation.

> *"Media contributed to a huge problem with misinformation, as they would take anyone with an MD on Twitter and call them an 'expert.' It was aggravating to see doctors without public health specializations commenting on the response and being presented as experts."*
>
> *— PHPC Member*

8

STUDYING: INVEST IN PRACTICAL RESEARCH THAT IS TIMELY AND INFORMED BY THE NEEDS OF PUBLIC HEALTH SERVICE DELIVERY.

Multiple organizations have flagged the divide between academia and practice and the need to strengthen these relationships. There are opportunities to have beneficial partnerships between academics and public health practitioners, for example on evaluation. It would also be useful to have timely, confidential, interim research products shared with partner public health organizations. It would be beneficial to have results made available prior to publicly available conference and journal presentations, while still being mindful of the publishing constraints and timeframes of academic practice. Recent federal investments in this area are noted and appreciated. The shared understanding of public health referred to above is also important in this discussion.

It would also be useful to have timely, confidential, interim research products shared with partner public health organizations.

9

REFORMING: Collaborate with communities to address systemic discrimination in health care and public health, including with respect to Indigenous health, with dedicated funding.

Efforts toward Truth and Reconciliation must address Indigenous (First Nations, Inuit, and Métis) health disparities and governance. Indigenous health is negatively impacted by colonization and racism, with resulting impacts across social determinants of health. These include urgent basic human rights requirements like clean drinking water and ongoing support for mental health, food security and access to culturally competent care.

We acknowledge that those involved with the creation of this report are primarily non-Indigenous and are not equipped to provide the solutions. Adequate collaboration has not been solidified to bridge gaps in understanding and trust in non-Indigenous health practices. Significant work must be done in our present health and educational systems to provide culturally competent care and improve our awareness of power structures, lenses, and biases.

As a result of the complex relationship between Indigenous communities and governments in Canada, COVID-19 and its response must continue to be reframed in the context of equity. We encourage the amplification of reports and articles on the COVID-19 pandemic and the effects of the response on Indigenous communities that have been written by Indigenous Peoples, across the many different First Nations, Inuit, and Métis communities, each with their own identity, culture, and often language. We support the recommendation that everyone living in Canada should read the Truth and Reconciliation Commission reports, including the recommendations, available here. Table 4 in Appendix 3 includes examples from other Indigenous-led organizations across Canada.

Systemic discrimination in health systems across Canada against Indigenous and racialized populations must also be addressed. Given the pandemic's disproportionate impacts on certain populations, including racialized and low-income communities and Indigenous populations, elected leaders and public health officials must do more, and must work together to provide fair, equitable support to all communities throughout Canada. People who live in Canada, regardless of their income or how they look or identify, should be able to seek care comfortably and confidently. We must unpack the roots of colonialism in public health systems and through education to create a system that is safe, representative, and successful in supporting the health of all people who live in Canada.

Next Steps

- Learn from the experience of establishing Indigenous-led public health infrastructure, using existing models like the First Nations Health Authority (FNHA) in B.C.
- Implement mandatory equity training in public health organizations.
- Prioritize strengths-based as opposed to deficit-based approaches, being mindful of the strengths of Indigenous and traditional cultures, knowledge and healing.
- Value Indigenous and other lived experience as expertise. Acknowledge that although it may differ from Western academic teachings, it is still expertise.
- Continue to collect data related to social determinants of health to get a full picture of the

state of health in Canada and identify inequity and areas for improvement.

In addition to the recommendations above, other important learnings and recommendations based on frontline experience have been shared. We support revisiting the recommendations from previous reports, such as those outlined in Appendix 1, and implementing those that have not been implemented at all or were only partially implemented. The CMA published short-term recommendations in August 2020 (15) and a long-term considerations report in March 2021 (16) related to COVID-19. The Canadian Public Health Association (CPHA) published a report titled "Canada's initial response to the COVID-19 pandemic" in February 2021 that includes an overview and recommendations for emergency response measures (17). Recommendations specific to the Global Public Health Intelligence Network (GPHIN) have been developed (18). Past Chief Public Health Officer of Canada (CPHO) reports, including the 2019 report "Addressing stigma: Towards a more inclusive health system" (19) and the 2020 report "From risk to resilience: An equity approach to COVID-19" (20), are also relevant to understanding and implementing more broad public health learnings. The CPHO has also published more specific reports[2] on the COVID-19 response, including "What we heard: Indigenous Peoples and COVID-19: Public Health Agency of Canada's companion report" (21). Auditor reports are also being produced, including the Health Canada and PHAC Internal Audit Performance Result (22).

We must unpack the roots of colonialism in public health systems and through education to create a system that is safe, representative, and successful in supporting the health of all people who live in Canada.

[2]Note: This PHPC report was drafted prior to the release of the 2021 CPHO Report and therefore does not incorporate information from the CPHO document.

MOVING FORWARD

The recommendations from the Public Health Physicians of Canada (PHPC) and the Canadian Medical Association (CMA) reflect lessons learned by public health experts through the COVID-19 pandemic thus far.

WHAT WORKED, WITH EXAMPLES

Dedication and resilience of public health and health care staff has been integral to the sustained response.

Many individuals have worked through evenings and weekends, been away from their family, changed their jobs overnight, and responded to constant change, often at the expense of their own well-being. Adverse impacts of these efforts are discussed further in the recommendations below.

Coordination across jurisdictions and departments has improved throughout COVID-19, compared with previous pandemics.

The nation-wide vaccine prioritization, including of remote and Indigenous communities.

Having key public health organizations in place has offered benefits.

The existence of federal and provincial public health agencies, such as the Public Health Agency of Canada (PHAC), Public Health Ontario (PHO), B.C. Centre for Disease Control (BCCDC) and Institut national de santé publique du Québec (INSPQ), has provided more streamlined expertise, communications, and response strategies.

Rapid delivery and iteration made it possible to implement new best practices in real time.

The hard work of the laboratory teams to rapidly develop tests and adapt as evidence and technology continually changed, and with such high volumes.

Ongoing reliance on science has helped shape an evidence-informed strategy.

Use of epidemiologic analysis to understand risks and patterns of spread, modelling analysis (and public sharing) to help support public health planning, and rapid incorporation of new studies and evidence.

RECOMMENDATIONS, WITH EXAMPLES

1 Funding: Increase funding and resourcing of public health teams and organizations.

Support increased budgets to scale up staff capacity, establish new systems, and improve a sustained public health system in Canada.

2 Defining: Increase awareness of the role of public health physicians and public health practice and service delivery.

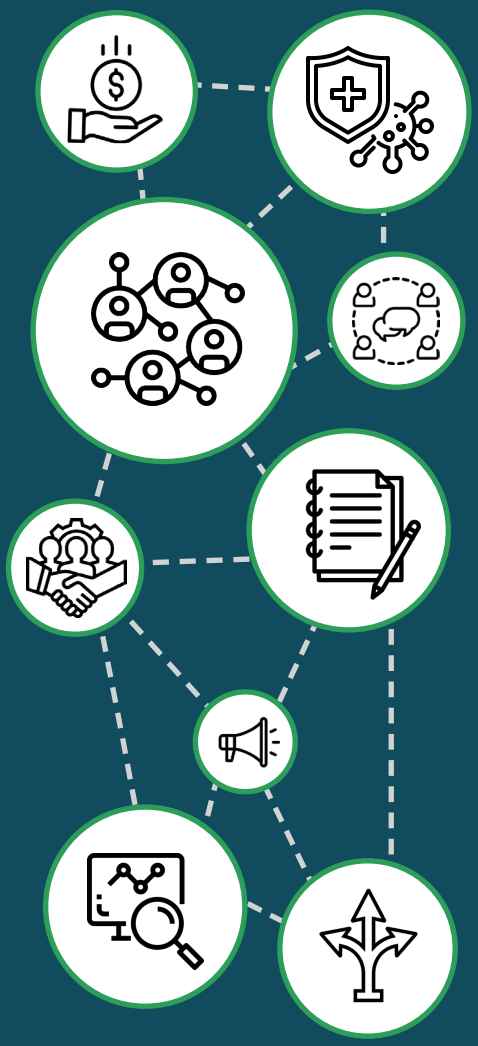
Misunderstandings about the scope of public health adversely impacted the response. This includes expertise being attributed to physicians with non-public health specialties and misguided advocacy.

3 Managing: Prioritize sustainable investment and staffing capacity. Acknowledge and address the significant burnout among public health and health care teams.

Enhance training and staffing to bolster public health and health care workforce and establish regional hubs of expertise to support surge capacity needs and learning.

4 Monitoring: Invest in and develop public health information systems.

Develop systems and processes to better monitor public health and health data for more consistent, up-to-date, useful insights on the pandemic and other health metrics.



5 Decision-making: Improve and prioritize community engagement. Clarify distinctions between public health expertise and advice and political decision-making, where feasible.

Document and implement best practices for community engagement that elevates the role and voices of communities in leading their own care initiatives, and expand cultural competency training in the public health field.

6 Prevention and promotion: Maintain a focus on the importance of health promotion and prevention, alongside treatment.

Continue and scale learnings from vaccination efforts and advocate for global vaccine equity.

7 Communicating: Modernize communications training and strategies and ensure there are clear distinctions between public health and health care expertise.

Expand public health agencies' skills in social media communications by hiring in key communications positions.

8 Studying: Invest in practical research that is timely and informed by the needs of public health service delivery.

Strengthen ties between academic and public health practitioners to ensure beneficial research and findings can be applied in the field in a timely and relevant manner.

9 Reforming: Collaborate with communities to address systemic discrimination in health care and public health, including with respect to Indigenous health, with dedicated funding.

Actively fund and prioritize the Truth and Reconciliation Commission report recommendations, address inequities in data as it relates to race, income level, and other marginalized communities, and elevate strengths-based approaches.

CONCLUSION

The recommendations from this report reflect growing pressures in a world with intersecting challenges. Throughout the COVID-19 pandemic, these pressures were exacerbated, highlighting the need for a clearer and more consistent role for public health experts in government decision-making and emergency response planning and delivery.

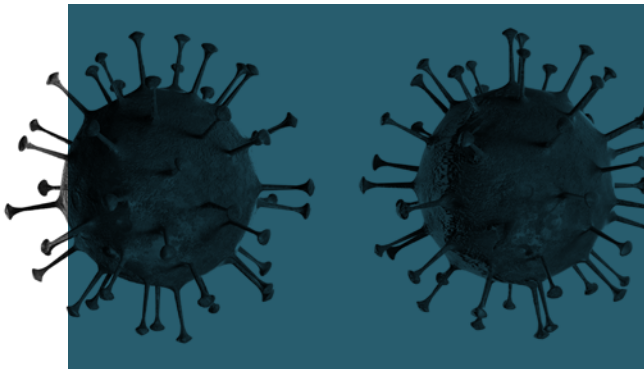
We strongly support calls for additional financial investment in public health systems in Canada, towards the recommendations listed. While the recommendations provided here focus on different challenges facing public health, they share a consistent requirement for more dedicated investment in systems (including financial, human resources, technology, data, research, and others) and prioritization of those providing regional and local public health service delivery in Canada.

We also support following documented best practices, revisiting the recommendations from previous reports such as those outlined in Appendix 1 and implementing those that have not been implemented, or were only partially implemented. It has been noted throughout the COVID-19 pandemic that lessons and recommendations from previous pandemics were not fully implemented, and best practices for ICS and IMS, notably backups and rotations for key public health and health care roles, were not followed.

Expanding and revising public health funding models ensures we can monitor public health information with ease and accuracy, and manage ongoing and urgent public health work with adequate staff and expertise. This can expand practices for community engagement to improve population health and strengthen links between public and personal health systems. Strategic investment can ensure people who live in Canada remain informed about the public health risks, recommendations, and services that impact them, in ways that make sense to them and articulate the intended outcomes of public health measures. These resources can also keep Canada at the forefront of public health innovation and research. Finally, this funding can help avoid misunderstandings around roles and responsibilities throughout emergency responses and in Canada's public health system.

Far more than COVID-19 and communicable disease impact the health of people who live in Canada. The structures that protect and promote the health of the population must be supported, resourced and built now so that they do not come up short when they are needed. Prepared public health systems will provide essential responses to future pandemics, impacts from climate change and other challenges we face. Making investments in the future today is cost-effective, offering substantial savings in primary and acute care. This forward-thinking approach will save lives of people who live in Canada. We are fortunate to have talent and expertise in Canada, but we need future-focused investments and resources to prioritize public health.

For comments, questions, and discussion, please contact phpc@cpha.ca.



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APPENDIX 1. PAST CALLS TO STRENGTHEN PUBLIC HEALTH INFRASTRUCTURE

Many of the challenges identified in this report are well recognized in the public health community. As a result, recommendations in this report echo and reinforce those delivered in previous reports. One such example, the 2003 report "Learning from SARS: Renewal of public health in Canada," published by Health Canada (13), identified the recommendations summarized in the table below.

National Advisory Committee on SARS and Public Health's vision for a National Public Health Strategy that "delineate[s] priorities and goals for key categories of public health activity along with provisions for public reporting across jurisdictions of progress towards achieving goals" remains valid and necessary and is reflected in our "Monitoring" recommendation (13). (p 215) A strategy that prioritizes a health data system will enable timely access to laboratory testing and results, ensure protocols are in place for data and information-sharing across levels of government, and eliminate uncertainties about data ownership.

These recommendations also included the need for new public health structures. A National Public Health Advisory Board, with nominations from provincial/territorial and federal channels for board members was recommended, with a mandate "to advise the Chief Public Health Officer of Canada on the development and implementation of a truly pan-Canadian public health strategy." (13). (p89) The resulting implementation of the Chief Public Health Officer of Canada (CPHO) position, the Public Health Agency of Canada (PHAC), the Pan-Canadian Public Health Network, and other structures is indeed a success, but COVID-19 has highlighted the fact that more needs to be done.

The report also called for "a national strategy for the renewal of human resources in public health" and a federal, provincial and territorial approach "developed in concert with a wide range of non-governmental partners, [with] funding mechanisms to support public health human resource development on a continuing basis" (13). (p138) We echo this call in our "Managing" recommendation.

Table 1. 2003 Report recommendations

Note: The recommendations below are mostly taken verbatim from the 2003 report by the National Advisory Committee on SARS and Public Health, chaired by Dr. Naylor.

Recommendation	Details
New Structures for Public Health	• Establishing a Canadian public health agency, which should cover all areas of public health and connect with governments, following a wheel hub and spoke model with a Chief Public Health Officer of Canada who informs the federal Minister of Health and National Advisory Board, which advises the Chief Officer on developing and implementing public health strategies in Canada. • Starting a Network for Communicable Disease Control (federal, provincial/territorial [F/P/T] Conference of Deputy Ministers of Health) and integrating it into the F/P/T network Network for Emergency Preparedness and Response. • Creating a Public Health Ethics Working Group to inform public health systems and determine authorship on related research, publications, etc.
New Funding for Public Health	• Increasing the Government of Canada budget for public health agency, funding a new Public Health Partnerships Program, providing funding at a provincial/territorial [P/T] level, investing in the National Immunization Strategy, and allocating funds for a Communicable Disease Control Fund.
National Public Health Strategy	• Developing a National Public Health Strategy to work with P/T governments and non-governmental stakeholders to determine priorities for key areas in public health goals. • Adding grants and programs to the Population and Public Health branch that need to be reviewed.

Emergency Planning, Outbreak Management, and Crisis Communications	• Collaborating between the F/P/T Network for Emergency Preparedness and Response and F/P/T Network for Communicable Disease Control, and developing a plan to manage public health emergencies that:
	  • Coordinates emergency preparedness and response on P/T/F levels.
	  • Includes response capacities.
	  • Builds an integrated F/P/T planning, training and exercising platform for public health emergencies.
	  • Creates and applies principles to large-scale outbreaks.
	  • Links to employers, certain industries (travel and hotel) and non-governmental organizations (NGOs).
	• Developing a unified response to public health emergencies.
	• Incorporating health emergency management for national health emergencies into legislation (would be activated in lockstep with provincial emergency acts).
	• Developing training programs at F/P/T levels to support local public health units and institutions regarding crisis and emergency risk communication strategies.
	• F/P/T Conference of Deputy Ministers of Health supporting the continued activity of the F/P/T Network for Emergency Preparedness and Response, with a view to enhanced surge capacities in all jurisdictions, including:
	  • Developing an integrated risk assessment capability for public health emergency response.
	  • Assessing the National Emergency Stockpile System [NESS] to optimize its role in supporting the response to large-scale disease outbreaks.
	  • Developing and funding the Health Emergency Response Team concept, including a psychosocial response component, as a practical, flexible mechanism for addressing the need for human resource surge capacity.

Recommendation	Details
Surveillance/Data Gathering and Dissemination	• Prioritizing infectious disease surveillance in F/P/T Network for Communicable Disease Control, and funding programs to support training needed to implement surveillance programs and work on long-term development of a surveillance system to collect, analyze and disseminate laboratory and health care facility data on non/infectious diseases relevant to stakeholders. • Recognizing the time needed to establish a pan-Canadian public health agency, arriving at business process agreements for collaborative surveillance of infectious diseases and response to outbreaks. • Creating a working group to focus on public health infostructure and potential investments to enhance disease surveillance and link public health and clinical information systems.
Clarifying the Legislative and Regulatory Context	• Launching a review of the application of the Protection of Information Privacy and Electronic Documents Act to the health sector (Government of Canada) and reviewing the treatment of personal health information under the Privacy Act. • Government of Canada starting an initiative to renew the legislative framework for disease surveillance and outbreak management and working with emergency legislation and its impact on public health emergencies. • f the above cannot be instated, Government of Canada drafting a default legislation to set up such a system of rules, clarifying F/P/T interactions.
Renewing Laboratory Infrastructure	• Reviewing public health labs nationally to ensure capacity and protocols will be effective for next outbreak. • P/T authorities with Health Canada developing a system to meet the information management needs of a major outbreak or epidemic. • F/P/T Conference of Deputy Ministers of Health launching a full review of the role of laboratories in national infectious disease surveillance systems. • Government of Canada expanding funding for the Canadian Public Health Laboratory Network to integrate hospital and community-based laboratories. • Strengthening P/T laboratories and testing for infectious diseases. • Supporting participation in international laboratory networks. • Canadian Public Health Laboratory Network and/or the F/P/T Network for Communicable Disease Control reporting on performance and gaps.
Building Research Capacity	• Allocating funding to national capacity for research into epidemiologic and laboratory aspects of emerging infectious diseases and other threats to population health. • Investing in P/T and regional public health science capacity. • F/P/T Network for Communicable Disease Control, in partnership with the CIHR and the Canadian research community, developing clear protocols for leadership and coordination of future epidemic research responses. • Ensuring Health Emergency Response Team does not only provide surge capacity for outbreak containment. • P/T/F organizations sharing information and establishing databases. • Establishing a task force on emerging infectious diseases to recommend research priorities and funding mechanisms. • Working with universities to improve research training opportunities in infectious diseases and outbreak management for the full range of involved disciplines. • Strengthening research and development (R&D) functions in international health outreach regarding infectious diseases emerging globally. • Fostering workable public-private partnerships with the biotechnology, information technology and pharmaceutical industries.

Recommendation	Details
Renewing Human Resources for Public Health	• Engaging relevant stakeholders at P/T levels and in NGOs for a renewal of human resources in public health strategies. • Supporting training in public health in careers where there is need and strengthening careers available. • Developing contingency plans to limit the adverse impact on students and trainees from infectious disease outbreaks and maximize learning opportunities.
International Issues	• Enhancing the Global Public Health Intelligence Network. • Canadian Agency for Public Health having a mandate for greater engagement internationally in the emerging infectious disease field. • Canadian Agency of Public Health being responsible for communicating with (public) health organizations globally, e.g., the World Health Organization (WHO) and U.S. Centers for Disease Control and Prevention (CDC). • Reviewing travel screening techniques and protocols to ensure the measures are based on public health effectiveness, and considering the financial and human resources needed for implementing and sustaining them and working with other countries to determine their modifications. • Working with international partners to launch a multilateral process (under the WHO) to determine standards for travel advisories and alerts. • Implementing quarantine nationally at points of entry with trained quarantine officers available to deal with health threats and provide information to customs, airport and airline personnel, and working with air travel authorities to ensure this. • Providing incoming and outgoing passengers with health information about where and when health threats exist, including any precautionary measures to take, how to identify symptoms of the disease, and what first steps to take in case of suspected infection. • F/P/T and municipal response plans including protocols specific to the mode of entry for infectious diseases, as well as protocols for employee protection guidelines and decontamination of aircraft, ships, and/or facilities.

Recommendation	Details

Clinical and Local Public Health Issues	• F/P/T Ministries of Health facilitating a dialogue with health care workers, their associations, regulatory bodies, and unions, experts in employment law and ethics, and other relevant government departments regarding rights in health care settings.
	• CEOs of hospitals and health regions ensuring there is a formal Regional Infectious Disease Network to design and implement hospital strategies for responding to outbreaks of infectious disease, and connecting with institutions and a national surveillance program.
	• P/T Ministries of Health:
	  • Ensuring emergency plans include provisions for appropriate compensation of those individuals required to respond to and those affected by an emergency.
	  • Revising statutes and regulations to require that every hospital or health region has formalized and updated protocols for outbreak management.
	  • Ensuring emergency departments have the physical ability to isolate, contain and manage incidents of infectious disease, and providing the funding needed to achieve this in emergency departments.
	  • Ensuring hospitals have enough negative pressure rooms for treating patients with infectious disease.
	  • Ensuring that for emergencies, at least one hospital per region has enough facilities and other infrastructure to be a regional hub for infectious disease outbreak response.
	  • Ensuring systems are developed for information on an infectious disease outbreak to be distributed consistently.
	  • Engaging the Canadian Council for Health Services Accreditation to work with appropriate stakeholders to strengthen infection control standards, surveyor guidelines, and tools that are applicable to emergency services, as well as outbreak management in health care institutions.
	• CEO of each hospital or health region ensuring each hospital's protocol for outbreak management incorporates an understanding of the hospital's interrelationships with local and provincial public health authorities.
	• Providing continuing education for hospital staff, and training in crisis communication for key health leaders.
	• Public health managers and facility/regional health authority CEOs, in collaboration with relevant unions, professional associations and individuals, creating a process or mechanism to include front-line public health and health care workers in advance planning to prepare for outbreaks of infectious diseases and other health emergencies.

APPENDIX 2. PUBLIC HEALTH FUNCTIONS

Like health care, public health services in Canada are primarily a provincial and territorial (P/T) responsibility. This means most of these services are delivered within P/T structures that have similarities and differences. In recent decades, most P/Ts have shifted to regionally based health authority systems. More information is available in the Public Health Systems in Canada report available here: https://www.phpc-mspc.ca/page-1842209.

Some provinces, particularly those with larger populations, have province-wide agencies relevant to public health, such as the B.C. Centre for Disease Control (BCCDC), Public Health Ontario (PHO), and the Institut national de santé publique du Québec (INSPQ).

The federal government has a role with respect to public health services that occur in correctional facilities, with Indigenous partners, and in other specific settings. In addition, the Public Health Agency of Canada (PHAC) plays an important role in supporting national coordination among P/Ts and producing guidance and resources that can be adapted to P/T contexts as required. There are other national organizations that have key roles in advocacy, research, and other public health-related work as well.

Core public health functions, as they are typically described in Canada, are listed below with examples relevant to COVID-19. Many of these happen in partnership with others, but public health teams lead or play a key role in these areas. While not explicitly mentioned with each function below, the impacts of delays and pauses to all the non-COVID-19 public health work is also of significant concern.

1. **Population Health Assessment:** Population Health Assessments articulate the health status and needs of a defined group of people, using both quantitative and qualitative approaches. They are critical in better understanding health outcomes, health-related behaviors, and social determinants of health. Along with health surveillance mechanisms, they provide population data for public health practice. These assessments have been crucial during COVID-19 to understand the health outcomes and equity impacts—both intended and unintended—of the virus and the response measures.
2. **Health Surveillance:** Public health organizations initiate, guide, and synthesize data tracking of cases, hospitalizations, deaths, testing, and vaccination rates. They also collect and manage data about co-morbidities and social determinants of health and emerging information about long COVID.
3. **Health Protection:** Public health teams are experts in providing evidence-based public health services for communicable disease control, including case and contact management and outbreak management, for many communicable diseases, including COVID-19. They also work to address other health hazards and ensure our air, food, and water is safe.
4. **Health Promotion:** Health promotion allows individuals and communities to have more control over their health and improve health outcomes. Intersectoral work related to social determinants of health can be a part of this. Support for mental wellness has been important during the pandemic as well.
5. **Disease and Injury Prevention:** This core function includes things such as screening programs, vaccination efforts, and preventive health care programs. Public health teams are responsible for managing, promoting, and tracking rates for COVID-19 vaccination. More broadly, public health is concerned with chronic disease,

and other illnesses like cancer, with emphasis on strategies for prevention. The backlog on surgeries and screenings for other diseases, as a result of the COVID-19 pandemic, will present significant challenges in this area in the short- and long-term.

6. **Emergency Preparedness and Response:** This has emerged more recently in the past few decades as a core public health function. Public health teams work in partnership with others on the design, development, and implementation of emergency response structures and response plans. These are continuously updated based on the most recent evidence and are implemented in collaboration with governments.

APPENDIX 3. LINKS TO OTHER PUBLICLY AVAILABLE, RELEVANT REPORTS

Note: This list is not exhaustive or complete, but we hope it may be of use to others. Academic literature and international organizations are not addressed in these tables.

Table 2. SARS, H1N1, COVID-19 and Other Key Reviews and Reports

Report Title	Organization / Author	Jurisdictional focus	Month & Year	Link
SARS Reviews				
Learning from SARS: Renewal of Public Health in Canada	Health Canada	National	October 2003	Report link
Reforming Health Protection and Promotion in Canada: Time to Act	The Standing Senate Committee on Social Affairs, Science and Technology	National	November 2003	Link to report
The SARS Commission	Mr. Justice Archie Campbell	Provincial (Ontario)	December 2006	Report link
Final Report of the Ontario Expert Panel on SARS and Infectious Disease Control	Ministry of Health and Long-Term Care (Government of Ontario)	Provincial (Ontario)	April 2004	Link to introduction
Severe acute respiratory syndrome (SARS): Status of the outbreak and lessons for the immediate future	World Health Organization (WHO): Communicable Disease Surveillance and Response	International	May 2003	Link to report
H1N1 Reviews				
CMA's Presentation to the House of Commons Standing Committee on Health H1N1 Preparedness and Response	Canadian Medical Association (CMA)	National	October 2009	Report link
H1N1 Letter to Dr. David Butler-Jones	Canadian Medical Association (CMA), Canadian Public Health Association (CPHA), National Specialty Society for Community Medicine (NSSCM) & College of Family Physicians of Canada (CFPC)	National	August 2009	Report link

Report Title	Organization / Author	Jurisdictional focus	Month & Year	Link
Lessons from the frontlines: A collaborative report on H1N1	Canadian Medical Association (CMA), College of Family Physicians of Canada (CFPC) & National Speciality Society for Community Medicine (NSSCM)	National	July 2010	Report link
Lessons Learned Review: Public Health Agency of Canada and Health Canada Response to the 2009 H1N1 Pandemic	Public Health Agency of Canada & Health Canada	National	November 2010	Report link
Canada's Response to the 2009 H1N1 Influenza Pandemic	Standing Senate Committee on Social Affairs, Science and Technology	Municipal, Provincial/Territorial, National	December 2010	Report link
Main operational lessons learnt from the WHO Pandemic Influenza A(H1N1) Vaccine Deployment Initiative	World Health Organization (WHO)	International	December 2010	Report link
Evolution of a pandemic A(H1N1) 2009	World Health Organization (WHO)	International	April 2009 – August 2010	Report link
The Impact of the H1N1 Pandemic on Canadian Hospitals	Canadian Institute for Health Information		November 2010	Link not found.
COVID-19 Reviews				
COVID-19 Response Information	Government of Canada	National		Link to response
COVID-19 Announcements	Government of Canada	National		Link to announcements
Canada's Initial Response to the COVID-19 Pandemic: A Review	Canadian Public Health Association (CPHA)	National	February 2021	Link to review
Pan-Canadian Health Data Strategy Expert Advisory Group Report 1: Charting a Path toward Ambition	pan-Canadian Health Data Strategy Expert Advisory Group, Public Health Agency of Canada (PHAC)	National	June 2021	Link to report
The pan-Canadian Health Data Strategy: Expert Advisory Group Reports and Summaries	pan-Canadian Health Data Strategy Expert Advisory Group, Public Health Agency of Canada (PHAC)	National	Various dates 2020 – 2021	Link to meeting summaries
Link to all Public Policy Forum (PPF) publications	Public Policy Forum (PPF)	National	Various dates	Link to publications
Report 1: The Waiting is the Hardest Part	Public Policy Forum (PPF)	National	January 2021	Link to report
Report 2: Support for a Canadian "Vaccine Passport"	Public Policy Forum (PPF)	National	February 2021	Link to report

Report Title	Organization / Author	Jurisdictional focus	Month & Year	Link
Report 3: Do Vaccine Brand Preferences Exist?	Public Policy Forum (PPF)	National	March 2021	Link to report
Report 4: Do We Still Have a Consensus Around COVID-19	Public Policy Forum (PPF)	National	April 2021	Link to report
Report 5: Reaching the Vaccine Hesitant	Public Policy Forum (PPF)	National	May 2021	Link to report
Report 6: Three Areas in Which Pandemic Management Could Have Been Better	Public Policy Forum (PPF)	National	July 2021	Link to report
Other				
Revitalizing Ontario's Public Health Capacity: The Final Report of the Capacity Review Committee		National	May 2006	Link to review
alPHa Response to Final Report	Association of Local Public Health Agencies	National	July 2006	Link to response
Walkerton Inquiry	Ontario Ministry of the Attorney General	National	September 2002	Link to report
Public Health Agency of Canada Act	Minister of Health	National	Last amended February 5, 2015	Link to legislation
Building on values: the future of health care in Canada (Romanow report)	Commission on the Future of Health Care in Canada	National	November 2002	Link to report
Report of the Health Planning Task Force	Health Planning Taskforce, Ontario Ministry of Finance	Provincial (Ontario)	1974	Link to report
Canadian Public Health Association (CPHA)				
Public Health in the Context of Health System, Renewal in Canada	CPHA	National	May 2019	Link to background document
Public Health in the Context of Health System Renewal in Canada	CPHA	National	May 2019	Link to position statement
Public Health: A Conceptual Framework	CPHA	National	March 2017	Link to working paper
Canada's Initial Response to the COVID-19 Pandemic A Review (also listed above)	CPHA	National	February 2021	Link to review
Recent Chief Public Health Officer's Reports, Public Health Agency of Canada				
Addressing Stigma: Towards a More Inclusive Health System: The Chief Public Health Officer's Report on the State of Public Health in Canada 2019	Public Health Agency of Canada	National	December 2019	Link to report

Report Title	Organization / Author	Jurisdictional focus	Month & Year	Link
From risk to resilience: An equity approach to COVID-19: Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2020	Public Health Agency of Canada	National	October 2020	Link to report
Best Brains Exchange proceedings report: Strengthening the structural determinants of health post-COVID-19	Public Health Agency of Canada	National	November 2020	Link to report
What we heard: Indigenous Peoples and COVID-19: Public Health Agency of Canada's companion report	Public Health Agency of Canada	National	February 2021	Link to report

Table 3. Public Health Organization Website Links

Organization	Jurisdictional Focus	Link
Public Health Agency of Canada	National	Link to "about us" page
Canadian Public Health Association	National	Link to "about us" page
Public Health Association of BC	Provincial (BC)	Link to "about us" page
British Columbia Centre for Disease Control	Provincial (BC)	Link to "about us" page
Alberta Public Health Association	Provincial (Alberta)	Link to "about us" page
Saskatchewan Public Health Association	Provincial (Saskatchewan)	Link to "about us" page
Manitoba Public Health Association	Provincial (Manitoba)	Link to "about us" page
Public Health Ontario	Provincial (Ontario)	Link to "about us" page
Ontario Public Health Association	Provincial (Ontario)	Link to "about us" page
Association pour la santé publique du Québec	Provincial (Québec)	Link to "about us" page
Institut national de santé publique du Québec	Provincial (Québec)	Link to "about us" page
Public Health Association of New Brunswick and Prince Edward Island	Provincial (New Brunswick & PEI)	Link to "about us" page
Public Health Association of Nova Scotia	Provincial (Nova Scotia)	Link not found (www.phans.ca).
Northwest Territories and Nunavut Public Health Association	Provincial (Northwest Territories and Nunavut)	Link to "about us" page

Table 4. Examples of Indigenous Tools and Resources

Region	Organization	Link
First Nations		
National	Assembly of First Nations COVID-19 National Task Force	Link to website
	Assembly of First Nations COVID-19	Link to information on COVID-19
British Columbia	First Nations Health Authority	Link to COVID-19 section of website
	Union of B.C. Indian Chiefs	Link to resources page
	First Nations Summit of BC	Link to resources page
Alberta	Confederacy of Treaty No. 6 First Nations	Link to resources page
	Treaty 8 First Nations of Alberta	Link to resources page
Saskatchewan	Federation of Sovereign Indigenous Nations	Link to emergency management page
Manitoba	Assembly of Manitoba Chiefs	Link to COVID-19 updates page
	Manitoba Keewatinowi Okimakanak (MKO)	Link to information page
	Southern Chiefs Organization	Link to resources page
Ontario	Chiefs of Ontario	Link to updates and resources page
	Anishinabek Nation	Link to resources and March 2020 to May 28, 2020 updates webpage
	Association of Iroquois and Allied Indians	Link to COVID-19 updates
	Grand Council Treaty No. 3	Link to COVID-19 updates and resources webpage
	Nishnabwe-Aski Nation	COVID-19 call to action statement
Québec	Grand Council of the Crees	Link to COVID-19 updates page
Atlantic Region	Atlantic Policy Congress of First Nations Chiefs Secretariat	Reports from the Atlantic Provinces Economic Council (APEC) COVID-19 information for First Nations fisheries in the Atlantic region
Yukon	Council of Yukon First Nations	Link to webpage with updates
Métis		
National	Métis National Council	Link to vaccine information webpage Link to COVID-19 information, resources, and response
British Columbia	Métis Nation of British Columbia	COVID-19 news webpage
Alberta	Métis Nation of Alberta	Link to COVID-19 resources webpage
Saskatchewan	Métis Nation of Saskatchewan	Link to COVID-19 information webpage

Region	Organization	Link
Manitoba	Manitoba Métis Federation	Link to COVID-19 information webpage Link to COVID-19 bulletin videos The Manitoba Métis Federation posted almost daily videos from April 2, 2020 to September 11, 2020 and has videos addressing vaccine hesitancy in the Indigenous community.
Ontario	Métis Nation of Ontario	Link to COVID-19 supports webpage
Inuit		
National	Inuit Tapiriit Kanatami (The National Representational Organization Protecting and Advancing the Rights and Interests of Inuit in Canada) report on the potential impacts of COVID-19 across Inuit Nunangat	Link to report Link to resources page
National	Pauktuutit Inuit Women of Canada	Link to COVID-19 resources

Table 5. Select Auditor Reports

Auditor reports				
Health Canada and the Public Health Agency of Canada Internal Audit Performance Results	Health Canada and the Public Health Agency of Canada	National	2012-2021	Link to reports
Departmental Results Reports	Public Health Agency of Canada	National	2006 – 2020	Link to reports
Health Canada's transparency	Government of Canada	National		Link to webpage
Reports to Parliament by Federal Institution	Health Canada	National	2015-2021	Link to reports
Audit Report - Immunization Program	Public Health Agency of Canada	National	April 2012	Link to report
Audit of the Management of Public Health Workforce Development	Public Health Agency of Canada	National	January 2013	Link to report
Management Response and Action Plan – Audit of the Management of Public Health Workforce Development	Public Health Agency of Canada	National	January 2013	Link to report
Final Audit Report – Follow-up Audit of Crisis Communications	Public Health Agency of Canada	National	March 2013	Link to report
Final Audit Report – Follow-up Audit of Emergency Preparedness and Response	Public Health Agency of Canada	National	March 2013	Link to report
Final Audit Report – Follow-up Audit of Laboratory Management	Public Health Agency of Canada	National	March 2013	Link to report

Final Audit Report – Audit of Values and Ethics	Public Health Agency of Canada	National	June 2013	Link to report
Management Response and Action Plan Audit of Values and Ethics	Public Health Agency of Canada	National	June 2013	Link to report
Final Audit Report – Audit of Surveillance Activities	Public Health Agency of Canada	National	October 2013	Link to report
Management Response and Action Plan Audit of Surveillance Activities	Public Health Agency of Canada	National	October 2013	Link to report
Audit of Procurement and Contracting at Health Canada and the Public Health Agency of Canada – Final Report	Public Health Agency of Canada	National	October 2019	Link to report
Audit of Surveillance Activities	Health Canada and the Public Health Agency of Canada	National	September 2020	Link to report
Audit of Surveillance - Management Response and Action Plan	Health Canada and the Public Health Agency of Canada	National	September 2020	Link to report
Audit of Information Technology Systems Development at the Public Health Agency of Canada and Health Canada – Final Report	Health Canada and the Public Health Agency of Canada	National	March 2020	Link to report
Audit of Information Technology Systems Development at the Public Health Agency of Canada and Health Canada Management Response and Action Plan	Public Health Agency of Canada	National	2020	Link to report
Audit of Staffing Service Delivery	Health Canada and the Public Health Agency of Canada	National	March 2021	Link to report
Health Canada Audit - Staffing Service Delivery	Public Health Agency of Canada	National	March 2021	Link to report
Audit of Staffing Service Delivery- Management Response and Action Plan	Public Health Agency of Canada	National	March 2021	Link to report
Other provincial and territorial auditor reports		Provincial/ Territorial		See provincial / territorial websites

Table 6. National Specialty Society Statements on COVID-19 Related Topics

(Note: this is list is not exhaustive and would not include member-only resources)

Statement Title	Organization	Date	Link
COVID-19 Resources Webpage	Association of Medical Microbiology and Infectious Disease Canada		Link to webpage
AMMI Canada urges political leaders and healthcare organizations across Canada to make COVID-19 vaccination a condition of employment for healthcare workers	Association of Medical Microbiology and Infectious Disease Canada	September 8, 2021	Link to statement
CACAP Statement on the COVID-19 Pandemic's Effects on Child and Adolescent Mental Health	Canadian Academy of Child and Adolescent Psychiatry	June 4, 2021	Link to statement
Position Statement for Mental Health Care in Long-Term Care During COVID-19	Canadian Academy of Geriatric Psychiatry	February 22, 2021	Link to statement
"Stay Active, Stay Safe": CASEM Statement on Access to Physical Activity during COVID-19	Canadian Academy of Sport and Exercise Medicine	April 27, 2020	Link to statement
Ethical Considerations of Personal Protective Equipment (PPE) During Scarcity	Canadian Anesthesiologists' Society	April 8, 2020	Link to statement
Position Statement - Reinstitution of Elective Operations following COVID-19	Canadian Anesthesiologists' Society	June 1, 2020	Link to statement
Canadian Society of Breast Imaging and Canadian Association of Radiologists Joint Position Statement on COVID-19	Canadian Association of Radiologists & Canadian Society of Breast Imaging	March 16, 2020	Link to statement
Canadian Association of Radiologists Statement on Access to COVID-19 Vaccination for Medical Imaging Professionals	Canadian Association of Radiologists	December 16, 2020	Link to statement
Canadian Society of Thoracic Radiology/Canadian Association of Radiologists Consensus Statement Regarding Chest Imaging in Suspected and Confirmed COVID-19	Canadian Society of Thoracic Radiology & Canadian Association of Radiologists	May 8, 2020	Link to statement
The Canadian Society of Breast Imaging and Canadian Association of Radiologists' Recommendations for the Management of Axillary Adenopathy in Patients with Recent COVID-19 Vaccination – Update	Canadian Association of Radiologists & Canadian Society of Breast Imaging	March 23, 2021	Link to statement
Cell Therapy Transplant Canada Position Statement on COVID-19 Vaccination	Cell Therapy Transplant Canada (Dr. K Paulson on behalf of the CTTC BMT Directors Committee)	January 5, 2021	Link to statement
Position Statement on COVID-19	Cell Therapy Transplant Canada	October 30, 2020	Link to statement
Cell Therapy Transplant Canada Position Statement on COVID-19	Cell Therapy Transplant Canada	July 23, 2020	Link to statement
Safe Reintroduction of Cardiovascular Services During the COVID-19 Pandemic: From the North American Society Leadership	Canadian Cardiovascular Society	July 1, 2020	Link to statement

Statement Title	Organization	Date	Link
COVID-19 Resources	Canadian Cardiovascular Society		Link to resources
Canadian Dermatology Association Position Statement SC2 / SARS-2 / SARS-Cov-2 (SC2) vaccination of patients on systemic therapies	Canadian Dermatology Association	January 30, 2021	Link to statement
COVID-19 Updates Webpage	Canadian Fertility and Andrology Society		Link to webpage
Fertility care during the COVID-19 pandemic: Guiding principles to assist Canadian ART clinics to resume services and care	Canadian Fertility and Andrology Society	June 3, 2020	Link to statement
CHRS Position Statement Regarding Procedure Prioritization During the COVID-19 Pandemic	Canadian Heart Rhythm Society	April 8, 2020	Link to statement
COA Position Statement on Remuneration for Orthopaedic Surgeons During the COVID-19 Pandemic	Canadian Orthopaedic Association	2020	Contact policy@canorth.org to obtain a copy of the position statement
The acute management of COVID-19 in paediatrics	Canadian Paediatric Society	May 3, 2021	Link to statement
COVID-19 vaccine for children	Canadian Paediatric Society	July 12, 2021	Link to statement
COVID-19 and Canadian Psychiatry	Canadian Psychiatric Association	July 1, 2020	Link to statement
Canadian Rheumatology Association Position Statement on COVID-19 Vaccination	Canadian Rheumatology Association	January 21, 2021	Link to statement
Canadian Rheumatology Association Position Statement on Virtual Care	Canadian Rheumatology Association	April 29, 2021	Link to statement
Canadian Rheumatology Association Position Statement on COVID-19 and Hydroxychloroquine Supply	Canadian Rheumatology Association	April 1, 2020	Link to statement
How COVID-19 Is Changing Addiction Medicine	Canadian Society of Addiction Medicine	May 2021	Link to meeting summary
Untitled Statement on Pfizer Vaccine	The Canadian Society of Allergy & Clinical Immunology	December 15, 2021	Link to statement
COVID-19 Resources Webpage	The Canadian Society of Allergy & Clinical Immunology		Link to webpage
The Canadian Society of Breast Imaging (CSBI) and the Canadian Association of Radiology (CAR) Guidelines for Breast Imaging during the COVID-19 Pandemic	The Canadian Society of Breast Imaging & the Canadian Association of Radiology	April 2, 2020	Link to guidelines
Canadian Society of Breast Imaging and Canadian Association of Radiologists Joint Position Statement on COVID-19	The Canadian Society of Breast Imaging & the Canadian Association of Radiology	March 16, 2020	Link to statement
Urgent Prioritization of Dialysis Patients for COVID-19 Vaccinations	Canadian Society of Nephrology	January 18, 2021	Link to statement

Statement Title	Organization	Date	Link
Canadian Society of Otolaryngology - Head & Neck Surgery (CSO) Position Paper on Sinus and Skull Base Surgery during the COVID-19 Pandemic	Canadian Society of Otolaryngology - Head & Neck Surgery	July 14, 2020	Link to statement
Return to Otolaryngology – Head & Neck Surgery Clinic Practice During the COVID-19 Pandemic Recommendations from the CSO-HNS Taskforce	Canadian Society of Otolaryngology - Head and Neck Surgery	May 23, 2020	Link to statement
Input to the Public Health Agency of Canada: Palliative Care as Part of Pandemic Planning	Canadian Society of Palliative Care Physicians	May 19, 2020	Link to statement
Immediate Issues and Recommendations Regarding Provision of Palliative Care During the COVID-19 Pandemic	Canadian Society of Palliative Care Physicians	April 22, 2020	Link to brief
Ibuprofen Use and COVID-19: What Do the Data Say?	Canadian Society of Pharmacology and Therapeutics		Link to statement
COVID-19, Chloroquine and Hydroxychloroquine: Is There Fire Beneath the Smoke?	Canadian Society of Pharmacology and Therapeutics		Link to statement
Bronchoscopy during the COVID-19 pandemic: A Canadian Thoracic Society position statement	Canadian Thoracic Society	June 14, 2021	Link to statement
Resumption of Pulmonary Function Testing during the Post-Peak Phase of the COVID-19 Pandemic	Canadian Thoracic Society & Canadian Society of Respiratory Therapists	November 16, 2021	Link to statement
SOGC Statement: Prenatal Screening Update during the COVID-19 Pandemic	Society of Obstetricians and Gynaecologists of Canada	August 20, 2021	Link to statement
SOGC Statement on COVID-19 Vaccination in Pregnancy	Society of Obstetricians and Gynaecologists of Canada	November 4, 2021	Link to statement
SOGC Statement on Choosing Wisely in Obstetrics & Gynaecology During & After the COVID-19 Pandemic	Society of Obstetricians and Gynaecologists of Canada	May 5, 2021	Link to statement
SOGC Statement on the COVID-19 vaccines and rare adverse outcomes of thrombosis associated with low platelets	Society of Obstetricians and Gynaecologists of Canada	April 20, 2021	Link to statement
SOGC statement regarding pregnant women and individuals with COVID-19 in ICUs in Ontario	Society of Obstetricians and Gynaecologists of Canada	April 15, 2021	Link to statement
SOGC Statement on Pregnant Workers during the COVID-19 Pandemic	Society of Obstetricians and Gynaecologists of Canada	Reaffirmed February 15, 2021	Link to statement
Statement on Pediatric and Adolescent Gynecologic Care During and After the COVID-19 Pandemic	Society of Obstetricians and Gynaecologists of Canada	December 15, 2020	Link to statement
Summary of Provincial and Territorial Covid-19 Reporting Dashboards	Public Health Physicians of Canada	June 15, 2020	Link to summary
Snapshot of Long-Term Care Facility Visitation Policies Across Canadian Province and Territories	Public Health Physicians of Canada	June 18, 2020	Link to summary

Statement Title	Organization	Date	Link
Snapshot of Non-Medical Mask Recommendations Across Canadian Provinces and Territories	Public Health Physicians of Canada	August 31, 2020	Link to summary
Snapshot of Back-to-School Recommendations Across Canadian Provinces and Territories	Public Health Physicians of Canada	September 15, 2020	Link to summary
PHPC Quick Scan – Resources on Wellness and Burnout	Public Health Physicians of Canada	January 1, 2021	Link to quick scan
Rapid Review: COVID-19 Case and Contact Management Strategies in Canada	Public Health Physicians of Canada	November 2020	Link to rapid review
PHPC Primer: Case and Contact Management	Public Health Physicians of Canada	September 2020	Link to primer
Snapshot of Vaccine Passports Policies Across Canadian Provinces & Territories	Public Health Physicians of Canada	September 23, 2021	Link to summary

Table 7. CMA Statements on COVID-19 Related Topics

(Note: this is list is not exhaustive and would not include member-only resources)

Report Title	Date	Link
COVID-19 Short-Term Executive Report	August 2020	Link to executive report
CMA 2022 Pre-Budget Submission	August 5, 2021	Link to report
CMA Pre-Budget Submission	August 7, 2020	Link to report
A new mission for health care in Canada: Addressing the needs of an aging population. 2016 pre-budget submission to the Minister of Finance	February 29, 2016	Link to report
A More Robust Economy through a Healthier Population: Canadian Medical Association 2012-2013 pre-budget submission	November 1, 2012	Link to report
Letter - CMA's 2006 Pre-Budget Submission to the Minister of Finance	April 19, 2006	Link to report
A Prescription for Productivity: Toward a more efficient, equitable and effective health system: CMA's 2005 Pre-Budget Submission to the Standing Committee on Finance	October 24, 2005	Link to report
Aligning health and economic policy in the interest of Canadians: CMA's 2004 Pre-Budget Submission to the Standing Committee on Finance	November 18, 2004	Link to report
Healthy Canadians lead to a Productive Economy: Canadian Medical Association 2011 pre-budget consultation submission to the Standing Committee on Finance	August 13, 2010	Link to report
A Healthy Population for a Stronger Economy: CMA pre-budget consultation submission to the Standing Committee on Finance	August 12, 2011	Link to report

Healthier Generations for a Prosperous Economy: Canadian Medical Association 2013-2014 pre-budget consultation submission to the Standing Committee on Finance	November 6, 2013	Link to report
CMA's Submission to Finance Canada's 2012 Pre-budget Consultations	January 12, 2012	Link to report
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Documents relating to recommendations		
Recommendations for Canada's long-term recovery plan - open letter	August 27, 2020	Link to report
National Standards for Long-Term Care: The art of the possible?	December 8, 2020	Link to report