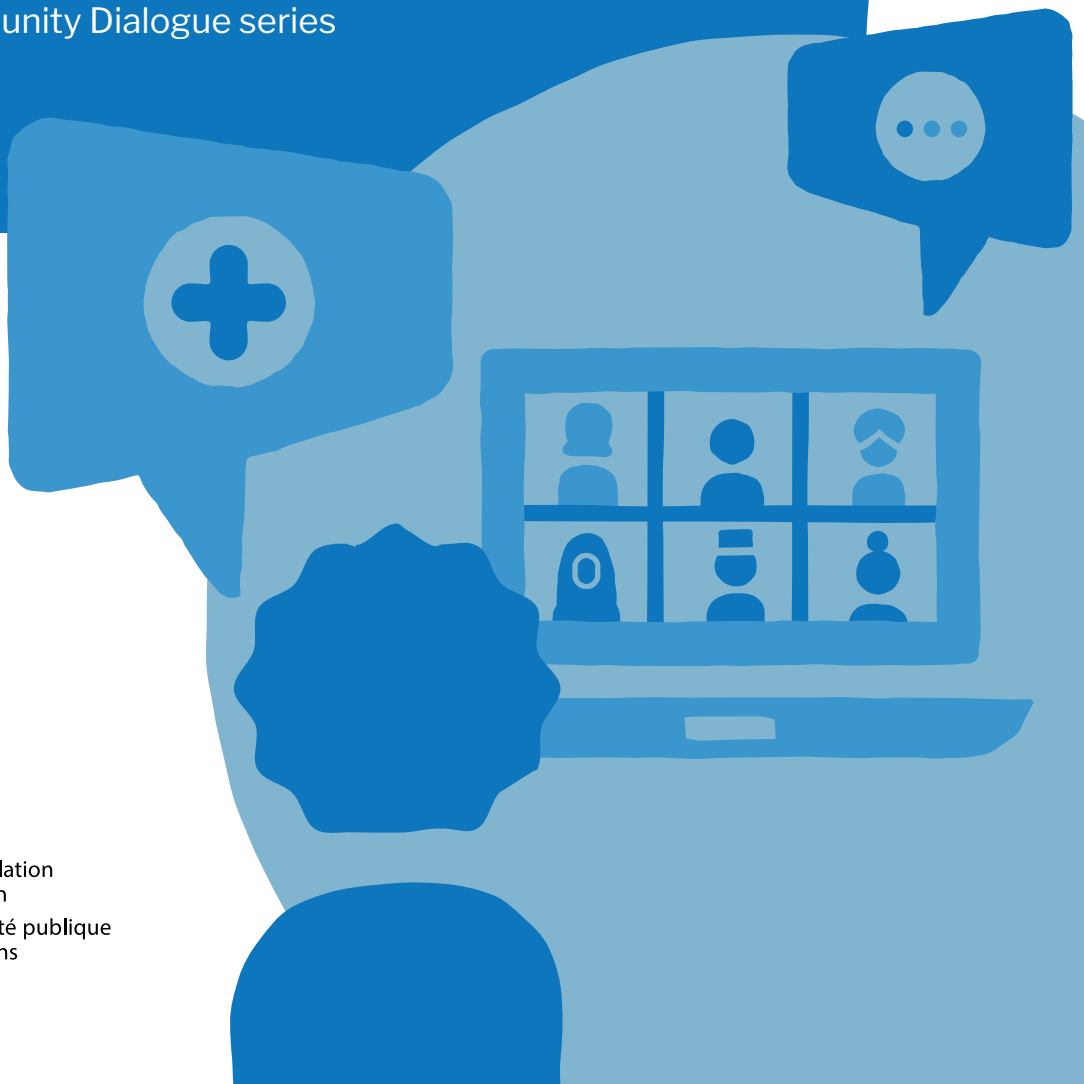
Moving Forward from the COVID-19 Pandemic:

10 Opportunities for Strengthening Canada's Public Health Systems

A summary of discussions from the CIHR Institute of Population and Public Health's Community Dialogue series



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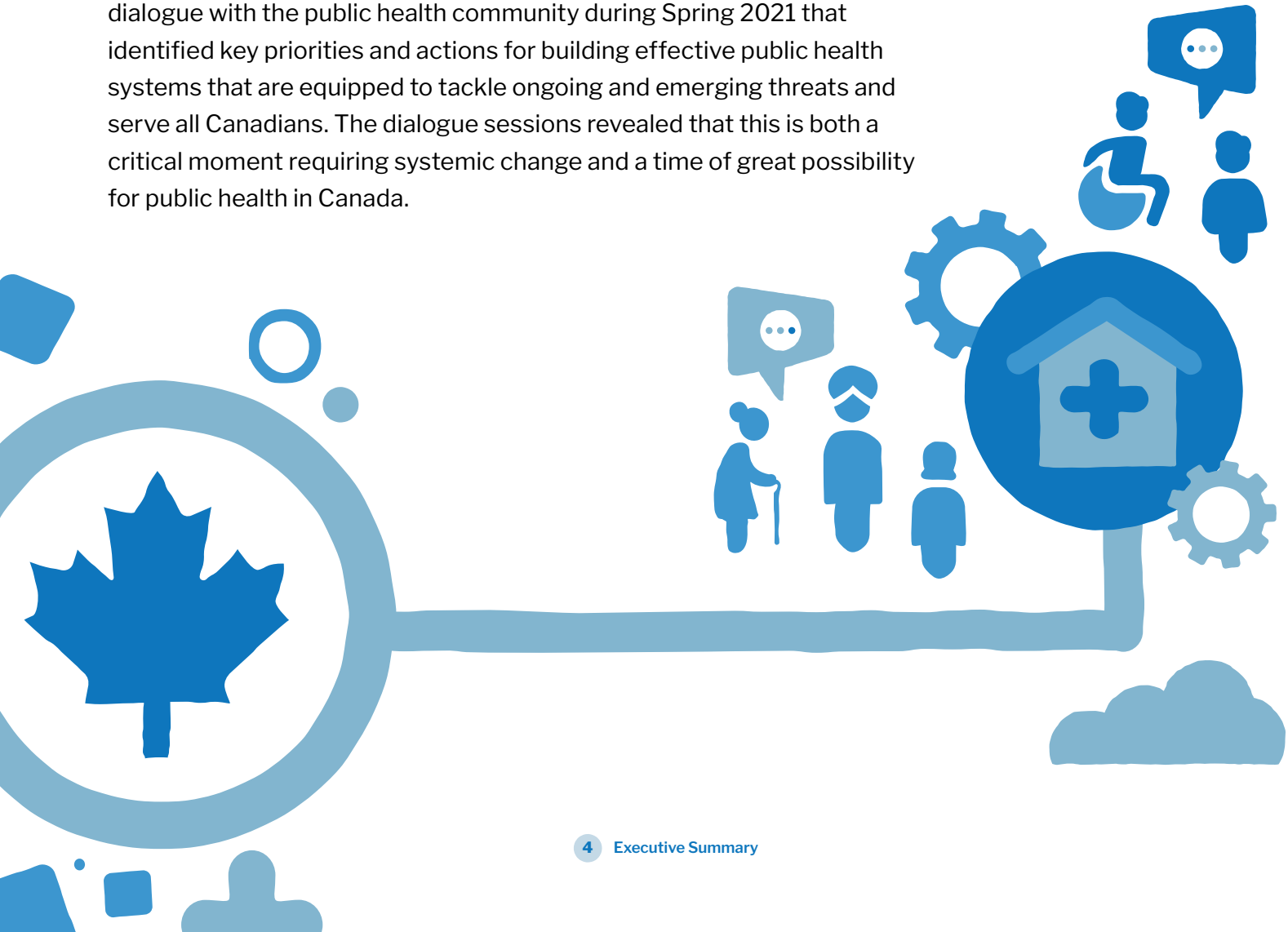
Executive Summary

The widespread impact of the COVID-19 pandemic and the highly visible nature of the public health response have created a unique opening to take stock of the enduring challenges and novel opportunities facing Canada's public health systems. We use the plural here intentionally as rather than a single national system, public health in Canada can be more accurately described as an amalgamation of multiple national, provincial, territorial, Indigenous and local public health organizations and bodies. To leverage this opportunity, the Canadian Institutes of Health Research (CIHR) Institute of Population and Public Health convened a broad national dialogue with the public health community during Spring 2021 that identified key priorities and actions for building effective public health systems that are equipped to tackle ongoing and emerging threats and serve all Canadians. The dialogue sessions revealed that this is both a critical moment requiring systemic change and a time of great possibility for public health in Canada.



Participants highlighted several longstanding stresses on Canada's public health systems that hindered the COVID-19 response and continue to weaken the capacity to tackle other urgent public health challenges, such as health equity and the effects of climate change. Although recognition of these systemic issues predates the COVID-19 crisis, the pandemic acutely demonstrated the unsustainability of the status quo and the need for a renewed focus on fundamental change across public health systems. Key challenges identified by dialogue participants include:

- Sector-wide failures to put equity at the core of public health and build systems that are anti-racist and anti-colonial, which leads public health governance, practice, research, and training to perpetuate structural inequities.
- Chronic underfunding of public health and public health research that inadequately supports the broad scope of public health needed to address social, structural, and ecological health determinants.
- An absence of national agreement on the scope and functions of public health systems across the country, which leaves the public health sector vulnerable to budget cuts and restructuring, paralleled by a lack of coherence in the public health and global health goals of Canada's governments.
- Insufficient clarity regarding roles, responsibilities, and authority within governance structures, which weakens accountability, hinders coordination, and is complicated by the need for public health officials' positions to balance the goals of independence and policy influence.
- A lack of surge capacity within public health systems, which impedes the ability to meet expanded human resource needs during crises and reduces opportunities to integrate community knowledge into emergency interventions.
- A widespread data and research gap regarding public health systems, workforces, and needs across Canada, which creates barriers to measuring, evaluating, and comparing different systems and approaches and stalls progress in addressing equity challenges.
- A lack of recognition of public health's community focus among different orders of government, which sidelines the local expertise of practitioners who engage with communities on the frontlines in policy discussions.
- Inadequate structures for community participation and power-sharing in decision-making and research processes, which can result in public health interventions and knowledge outputs that are irrelevant and harmful.
- Weaknesses in communicating and targeting public health recommendations, which can lead to messaging that overlooks the circumstances of specific groups, fails to address mistrust of the system, and leaves individuals vulnerable to misinformation.
- Insufficient alignment and relationships among public health research, training, and practice communities, which hinders knowledge creation and mobilization on operational issues and creates a gap between research focus, training programs and system needs.

Although these challenges are not new, the unprecedented and whole-of-society nature of the COVID-19 pandemic and response has created an opening for systemic change at a time of rapid technological innovation, increased awareness of institutionalized racism, colonialism, and inequities, and expanded public engagement in public health decision-making processes. Dialogue sessions highlighted 10 interconnected opportunities and pathways to translate today's unique context into system-wide action. In particular:

1. Advance equity

The growing awareness and efforts among some public health institutions to create equitable, anti-racist, and anti-colonial systems should be built on to establish long-term, well-resourced, and accountable strategies led by the knowledge and priorities of relevant communities.

2. Increase investment

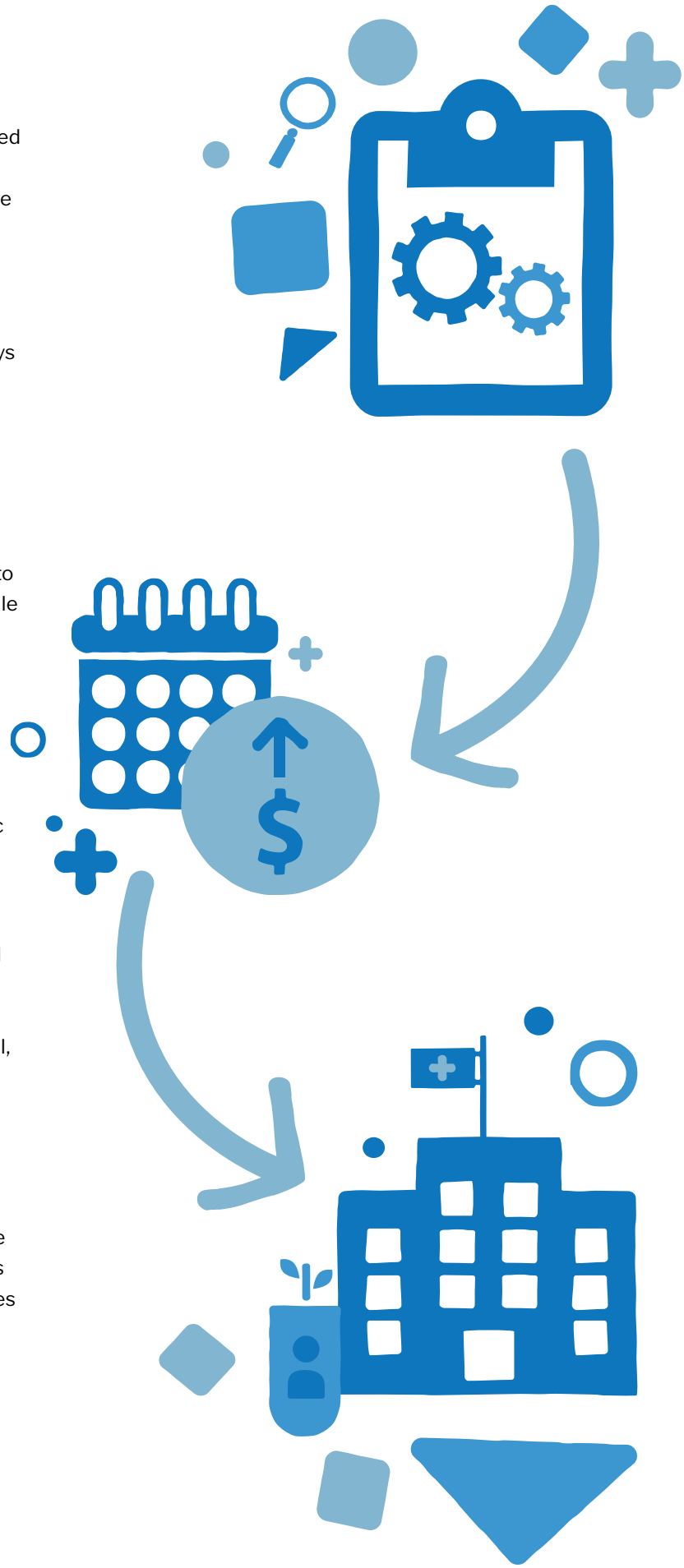
The high profile of the public health system's pandemic response should be leveraged to call for an increase in investment in public health and public health research that is stable over time.

3. Create governance structures

The collaboration across sectors that characterized the pandemic response has created a promising foundation and a crucial opportunity to entrench governance structures that support an intersectoral, Health in All Policies approach to addressing the determinants of health and health equity.

4. Align globally

The pandemic's vivid illustration of the connections between local and global health should motivate the development of a long-term coherent plan that links Canada's domestic public health goals and strategies with its global health policy and advocacy.



5. Define standards

The increased profile of public health, recognition of upstream and intersectoral contributions to health and health equity, and calls for urgent and coordinated action to address ongoing threats create an opportune window to define a coherent set of core functions and services for Canada's public health systems.

6. Revisit core competencies

The pandemic response challenges that were experienced in areas such as emergency preparedness, public communications, and community relationships should motivate action to develop a modernized and strengthened set of competencies that accounts for future public health threats, system needs, and equity gaps.

7. Generate evidence

Building public health systems of the future will require better understanding how to plan, deliver, structure, and evaluate public health which must be based on context-specific research evidence and robust data.

8. Reinforce foundational resources

The pandemic's lessons on the implications of inadequate surge capacity should translate into investment in the system's ability to adapt and mobilize in times of need, including by strengthening data systems, building training-practice linkages, and investing in frontline community relationships that bring local knowledge into future emergency responses.

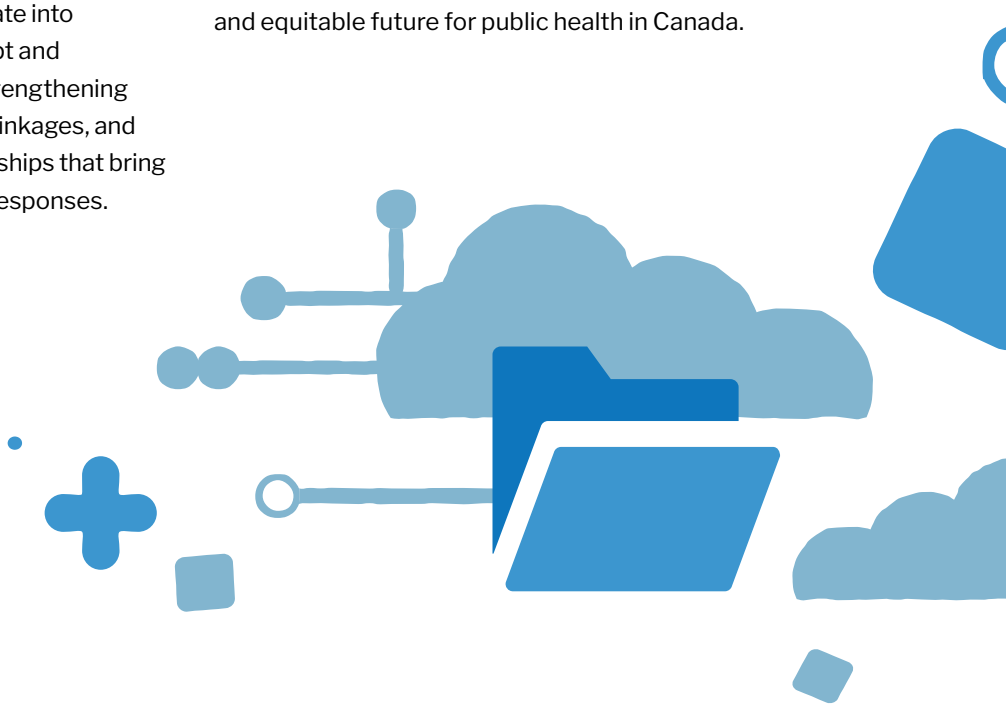
9. Strengthen community partnerships

The visible achievements of grassroots initiatives, co-planning approaches, and public engagement to inform equitable pandemic responses should lay the basis for long-term strategies to increase the participation and authority of those with local knowledge and lived experience in public health governance, planning, and implementation.

10. Link research and practice

The challenges of linking research, training, and practice before and during the pandemic – and the effectiveness of rapid initiatives to bring new data and knowledge into public health responses – should trigger efforts to expand and strengthen researcher-practitioner positions, embedded training programs and knowledge creation and mobilization networks.

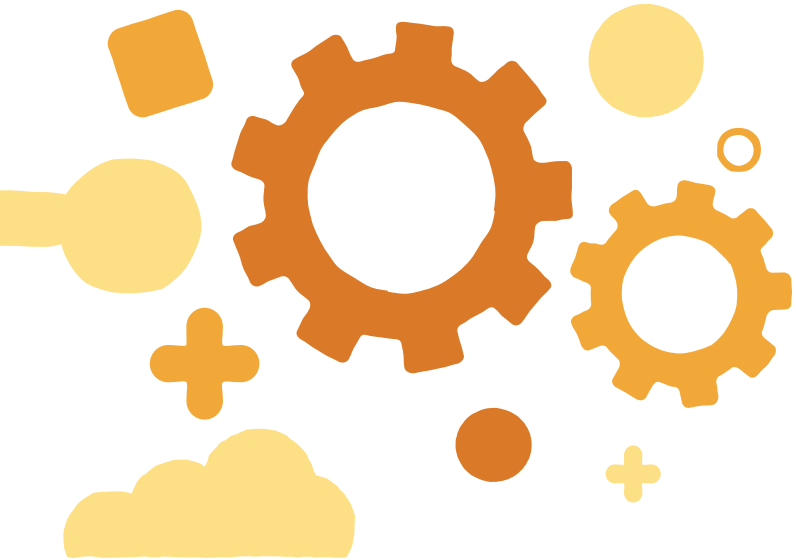
At a time when urgent action is needed to address the health of our communities, country, and planet, the insights distilled in this document can provide a roadmap for thinking about target areas for increased investment and systemic change in the public health sector. Future decisions, however, should be informed by evidence and for many of the opportunities above more research is needed to understand how to tackle future challenges and improve health across populations. We hope that sharing what we heard will inspire the action needed to build a more robust and equitable future for public health in Canada.



Section 1

What did we do, and why?

The COVID-19 pandemic brought unprecedented attention to public health. It exposed longstanding stresses on the system while also demonstrating the sector's remarkable capacity to act when resources are devoted to it. As the public health community takes stock of the COVID-19 crisis and looks ahead to other ongoing and emerging threats, it has a critical opportunity to articulate the need for increased investment and fundamental rebuilding in this sector. With a keen interest in this area and relationships spanning public health academia, research, funding, policy, and practice, the CIHR Institute of Population and Public Health (IPPH) was well-placed to convene a broad national dialogue with the public health community to identify unified priorities and accompanying strategies for public health systems that are prepared to address current and future challenges.



Between April and June 2021, IPPH led an engagement process that convened researchers, policymakers, practitioners, members of community organizations, and other key stakeholders in a series of dialogues. These virtual sessions included seven open-invitation events on focused topics that were hosted by collaborating partners, two discussions with key stakeholder groups, and three invitation-only sessions. The dialogues were designed to elicit insights, ideas, and actionable solutions on a range of issues facing public health. An initial background paper helped to orient the conversations, and several sessions were organized around guiding questions. At each event, participants had the opportunity to contribute to open discussions and to share additional comments and resources in text through the chat function. Written submissions were also accepted by email. Participants had the option to contribute to the dialogues in English or French.

The dialogue sessions were attended by 214 unique participants (a total of 484 attendees overall when counting instances where participants attended multiple events). Participants included individuals working in government (32%), researchers (28%), students (15%), members of the NGO sector (6%), and members of other sectors (19%). **Appendix 1** contains additional demographic information about the attendees. **Appendix 2** links to the detailed meeting reports for the open-invitation events and a summary of additional topics discussed at the key stakeholder and invitation-only sessions.

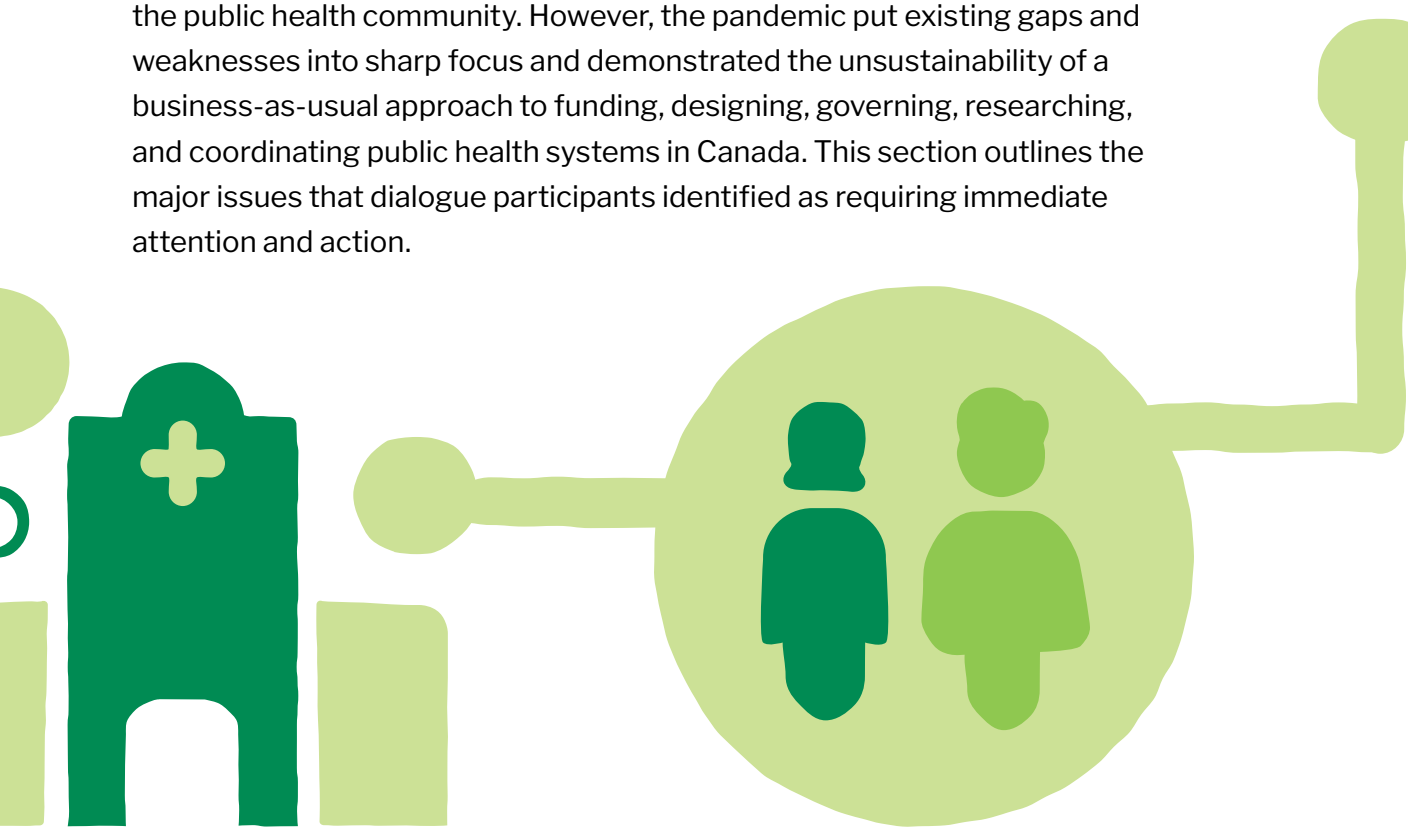
Recognizing that many other public health actors and organizations are similarly grappling with the long-standing challenges facing and renewed attention on public health, IPPH worked closely with other public health organizations such as the Canadian Public Health Association, the National Collaborating Centres for Public Health, the Network of Schools and Programs of Population and Public Health, the Public Health Agency of Canada (PHAC), and the Urban Public Health Network. This coordinated approach sought to ensure that these dialogues would inform a range of different planning and decision-making processes by these and other public health actors without duplicating efforts. IPPH also benefitted from work of partners, most notably the concurrent work of the Chief Public Health Officer (CPHO) whom shared background information from the 2021 CPHO report and collaborated on a Best Brains Exchange to inform both organizations work. Many of our collaborating partners have already made use of these dialogues. IPPH will use these conversations to identify priorities for how we can collectively build future-proof public health systems and to inform our Institute's refreshed Strategic Plan to be released in 2022.

This report highlights the key challenges, priorities for action, and 10 key opportunities that dialogue participants identified for Canada's public health systems. Their insights signal that this is both a critical juncture and a time of unprecedented opportunity for public health in Canada. We hope that sharing what we heard will help to inform the systemic change that is necessary and possible at this unique moment.

Section 2

What are the key challenges facing Canada's public health systems?

Across dialogue sessions, participants identified several longstanding challenges that must be addressed towards building robust and equitable public health systems that are equipped to take on the urgent threats facing Canada, the global community, and the planet. These challenges predate the COVID-19 crisis and have long been recognized and debated by the public health community. However, the pandemic put existing gaps and weaknesses into sharp focus and demonstrated the unsustainability of a business-as-usual approach to funding, designing, governing, researching, and coordinating public health systems in Canada. This section outlines the major issues that dialogue participants identified as requiring immediate attention and action.



CROSS-CUTTING THEMES FROM DIALOGUE SESSIONS

These boxes summarize key priorities, and critical questions associated with addressing them, that were raised by participants across dialogue sessions.

Putting Equity, Anti-Colonialism, and Anti-Racism at the Core of Public Health

"The remedy must match the harm"

- Existing public health governance, practice, research, and training systems perpetuate colonial and racist approaches
- Critical examination, listening, and learning is needed to build systems that are actively anti-racist and anti-colonial
- Action is required at all levels of government, within public health organizations from senior leadership to the frontline workforce, and across public health faculties, competencies, curricula, and funders
- Change must be guided by input from relevant communities and accompanied by long-term resource commitments and accountability mechanisms
- How can the public health community ensure that anti-racist and anti-colonial work goes beyond the surface level to tackle structural issues and does not rely only on technical or individual-level fixes?

Participants consistently identified the persistent challenge of addressing the structural inequities and discrimination that are embedded in and perpetuated by Canada's public health systems. **Across governance, practice, research, training, and data, and from the local to the global levels, there is an urgent need to put equity at the core of public health and an enormous amount of work to be done to build systems that are anti-racist and anti-colonial.** The pandemic highlighted this challenge in multiple ways, including the heightened risks faced by communities experiencing conditions of marginalization, governments' failures to consistently address equity considerations and the circumstances of specific groups in recommendations and interventions, and a lack of pre-existing systems to collect race-based data, which led to ad hoc processes that did not always produce high-quality information. Participants emphasized that change is required at the individual and institutional levels. At the individual level, there is a need for critical and ongoing self-examination among those who have been privileged within and played a role in perpetuating the status quo. This reflection must involve a willingness to be uncomfortable and should be linked with ongoing action to ensure that colleagues who are Indigenous, Black and People of Colour (IBPOC) are not asked to do the heavy lifting to effect change. At the institutional level, change must begin with recognizing that existing public health systems have their roots in a colonial and racist society and naming the ways in which these systems have perpetuated colonialism, racism, and other forms of structural violence. This system-wide reckoning must be accompanied by a long-term, well-resourced, and accountable commitment to legislative, policy, and organizational action in partnership with relevant communities – including revisiting how different orders of government address the rights and self-determination of Indigenous peoples within and outside of public health governance.

Dialogue sessions also highlighted that public health is a broad field with many goals, definitions, functions, and specializations. **As a result, the importance of the public health sector, its upstream and intersectoral scope, and its role in relation to the broader health and care systems are not always clearly understood and adequately supported.** There may not always be agreement about what public health "is" and "does" even within the public health community. At the same time, there was a clear consensus among participants that despite the critical role of public health institutions and practitioners during the COVID-19 pandemic, the scope of this sector extends far beyond infectious disease control. Participants emphasized several areas that will remain core to public health's mandate in the coming years, including upstream work on the social, structural, and ecological determinants of health and the continuing challenges of promoting mental health and tackling non-communicable diseases. Fulfilling this mandate requires sustained public investment and the creation of governance structures that support an intersectoral and whole-of-government policy approach. However, participants noted that the public health sector has been chronically underfunded across orders of government and its upstream functions are particularly vulnerable to disinvestment and displacement, with serious consequences for health outcomes in crisis and non-crisis times.

No nationally agreed-upon basket of essential programs and services or minimum standards for public health delivery exist

Participants noted that the public health sector's vulnerability to funding shortfalls is in part linked to a lack of national standards regarding what provincial and territorial systems are expected to deliver. Despite the country-wide implications of, and importance of coordinated action on, existing public health challenges – including infectious diseases such as COVID-19 as well as issues like climate change and health inequities – no nationally agreed-upon basket of essential programs and services or minimum standards for public health delivery exist. This results in a lack of consistency in the scope and functions of public health systems across the country and leaves public health unprotected when budgets are cut and systems are restructured. Clarity regarding the federal government's role in public health both during and outside of emergencies is also lacking. This fractured approach to public health delivery domestically also extends to Canada's strategy beyond its borders. Participants described the lack of a coherent link between the country's domestic and global public health approaches and the absence of a strong voice for the public health sector in Canada's global health policy.

Investing in the Full Scope of Public Health

"Infectious disease is only part of public health"

- Public health's upstream functions are often poorly understood and overlooked outside the sector
- Work on social, structural, and ecological determinants of health is vulnerable to under-investment and displacement
- The pandemic highlighted the links among upstream determinants, underlying inequities, and population outcomes
- Sustained investment in public health's upstream work can save lives, reduce health care costs, and strengthen responses to current and future public health threats
- Amid pressure to balance budgets when the pandemic subsides, how can funding for public health's upstream functions be increased and protected?

Defining Public Health's Core Functions and Standards

"We need agreement on what public health is"

- Provincial and territorial public health systems lack consistent standards for the delivery of public health activities
- The absence of agreement on an essential set of programs and services leaves the sector vulnerable to funding cuts
- A Canada Public Health Act may increase coherence by outlining core functions and standards for public health systems and conditioning funding on their delivery
- Entrenched agreement on what public health systems are expected to deliver would also help to align public health competencies with system needs and increase accountability to the public
- How can the process be designed to secure agreement across orders of government, leave room for flexibility based on local needs, and learn from the implementation experience of the Canada Health Act?

Aligning Public Health Strategies from the Local to the Global

"Wherever you're practicing public health, global health is important"

- Canada's governments lack shared public health goals and strategies and do not function as a coherent system
- This disconnection impedes a coordinated response to public health issues both domestically and globally
- A whole-of-government approach is needed to tackle linked local and global challenges
- Increased coherence might be achieved through an integrated domestic and global action plan that is co-developed by the public health and global affairs sectors
- How can coordination be achieved across traditional areas of focus and jurisdiction to articulate an integrated domestic and global vision?

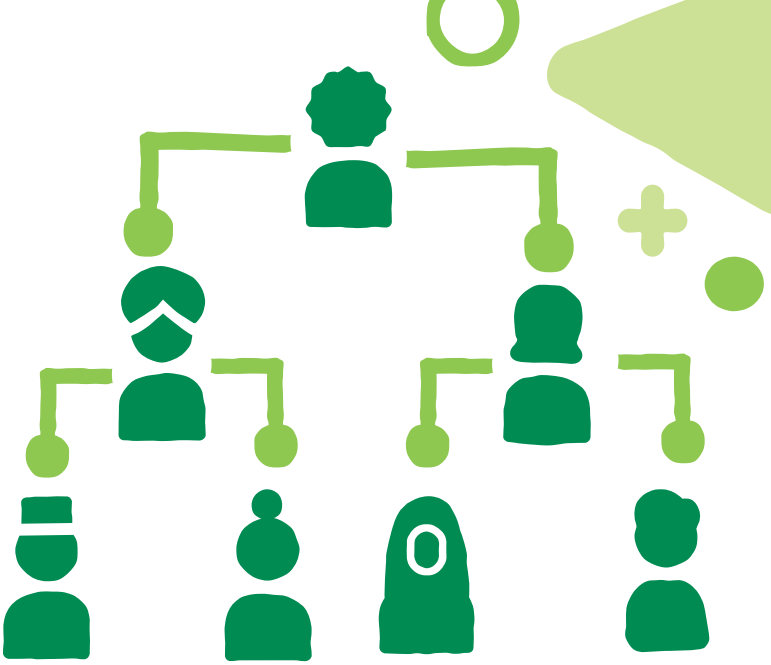
Designing the Roles of Public Health Officials

"Finding a way to strike that balance…is the challenge"

- Public health decisions are made within a political reality, but public health officials must remain non-partisan
- Positioning public health officials within executive government may reduce their autonomy to advocate externally
- However, public health officials can benefit from having direct access to elected officials to influence policy
- More interdisciplinary research is needed to determine effective institutional design linked to public health goals
- How can public health officials' roles balance the dual importance of having opportunities for policy influence and maintaining credibility and voice as independent experts?

Despite considerable differences in public health governance and delivery across provincial and territorial systems, dialogue sessions outlined some common institutional design challenges. **The COVID-19 pandemic highlighted a need to clarify roles, responsibilities, and authority within governance structures and raised questions about balancing the autonomy and policy influence of public health officials**. The lack of clarity in role definition across orders of government weakens accountability and creates challenges to mounting an efficient and coordinated public health response. In addition, the pandemic underlined an ongoing tension between the goals of having public health leaders who are able to access, work with, and advise elected officials in decision-making processes on one hand, and possess the autonomy to advocate externally and maintain credibility as independent experts on the other. For example, although some participants suggested that provincial Chief Medical Officers of Health (CMOHs) would gain autonomy if their role were structured to report to the legislature rather than to Ministry officials, others pointed out that being positioned within executive government can amplify CMOHs' internal policy influence.

Common challenges also exist within the public health workforce. Participants emphasized that **there is a longstanding shortage of surge capacity within public health systems across the country**, which impedes the ability to meet expanded human resource needs during crises, reduces opportunities to integrate frontline community knowledge into emergency interventions, and forces community agencies to step in when upstream public health services are disrupted by the system's shift to crisis response. During the COVID-19 pandemic, inadequate surge capacity was compounded by the lack of effective processes to rapidly connect public health trainees with system needs. It was also complicated by the lack of sufficient and comparable data about the distribution and skills of public health professionals in different parts of the system, including personnel who could perform functions such as testing and contact tracing.



This data challenge extends beyond surge capacity. Dialogue sessions repeatedly made clear that **a critical and widespread data gap impairs the ability to measure, evaluate, and compare public health systems, workforces, and needs across Canada**. Participants identified a lack of basic data about the number, structure, skills, and racial and Indigenous identities of the public health workforce; major gaps in information about the public health sector's constituent organizations, resources, programs, funding levels, inputs, and outcomes; inadequate data about social determinants of health and health equity; and insufficient public health systems research to inform institutional design and restructuring. This absence of data and research poses serious challenges to evaluating and coordinating work across provincial, territorial, and municipal public health systems and to scoping future needs. It also precludes adequate tracking of Truth and Reconciliation Commission and employment equity commitments. Dialogue sessions additionally highlighted challenges to cross-jurisdictional coherence in data governance and sharing, including barriers to accessing and linking different sources of public health data due to a lack of common standards or processes related to data ownership, collection, access, and use. In the context of the COVID-19 pandemic, participants noted the lack of interoperable vaccination data across jurisdictions that would have enabled the creation of a national vaccine registry.

Although the need for national coherence in public health system standards and information was a common theme across dialogue sessions, participants also emphasized the public health field's local roots. Public health delivery is fundamentally community-oriented, but decisions made by other orders of government do not always adequately consider local needs, processes, and knowledge – including the expertise of local Medical Officers of Health (MOHs) and other public health practitioners who engage with communities on the frontlines. Local expertise is particularly important to address different needs within jurisdictions and across geographic settings, such as urban, rural, remote, and Northern environments. A local approach is also essential in data collection. Gaps were identified in the availability of granular data to assess the needs and outcomes of different communities and address inequities among them, including insufficient race-based data and data regarding Indigenous peoples. Participants cautioned that although community-level data on needs and outcomes are necessary to address inequities, it is equally important to tackle stigmatization and discrimination in data collection, interpretation, and use. One example that was raised involved the risk that releasing race-based data on COVID-19 infection and vaccination rates could further marginalize certain communities that had not received adequate support or communication from the public health system.

Dialogue sessions identified that **fulfilling public health's local mandate also requires greater community engagement and public participation in decision-making processes**. Without input from relevant communities and individuals with lived experience, public health interventions can be ineffective and harmful in practice– such as hand-washing recommendations that ignore the federal government's failure to ensure adequate access to water in many Indigenous communities. Similar issues were identified regarding public health research processes. Participants noted that research questions frequently originate outside of the relevant communities, funding deadlines leave inadequate time to build trust and relationships with community partners, and the benefits of funding and research do not typically accrue to community members. Moreover, research that focuses on Indigenous communities too often fails to consider questions of equitable data stewardship, to ensure principled engagement based on authentic relationships, and to reflect Indigenous values, concepts, and ethics. Similar concerns about values, ethics, and community control and ownership were raised regarding research that focuses on Black communities. Much work remains to be done in scrutinizing the ways in which research funding systems and knowledge hierarchies within public health perpetuate colonial worldviews and structural inequities.

Public health delivery is fundamentally community-oriented, but decisions made by other orders of government do not always adequately consider local needs, processes, and knowledge.

Partnering across Sectors for Public Health

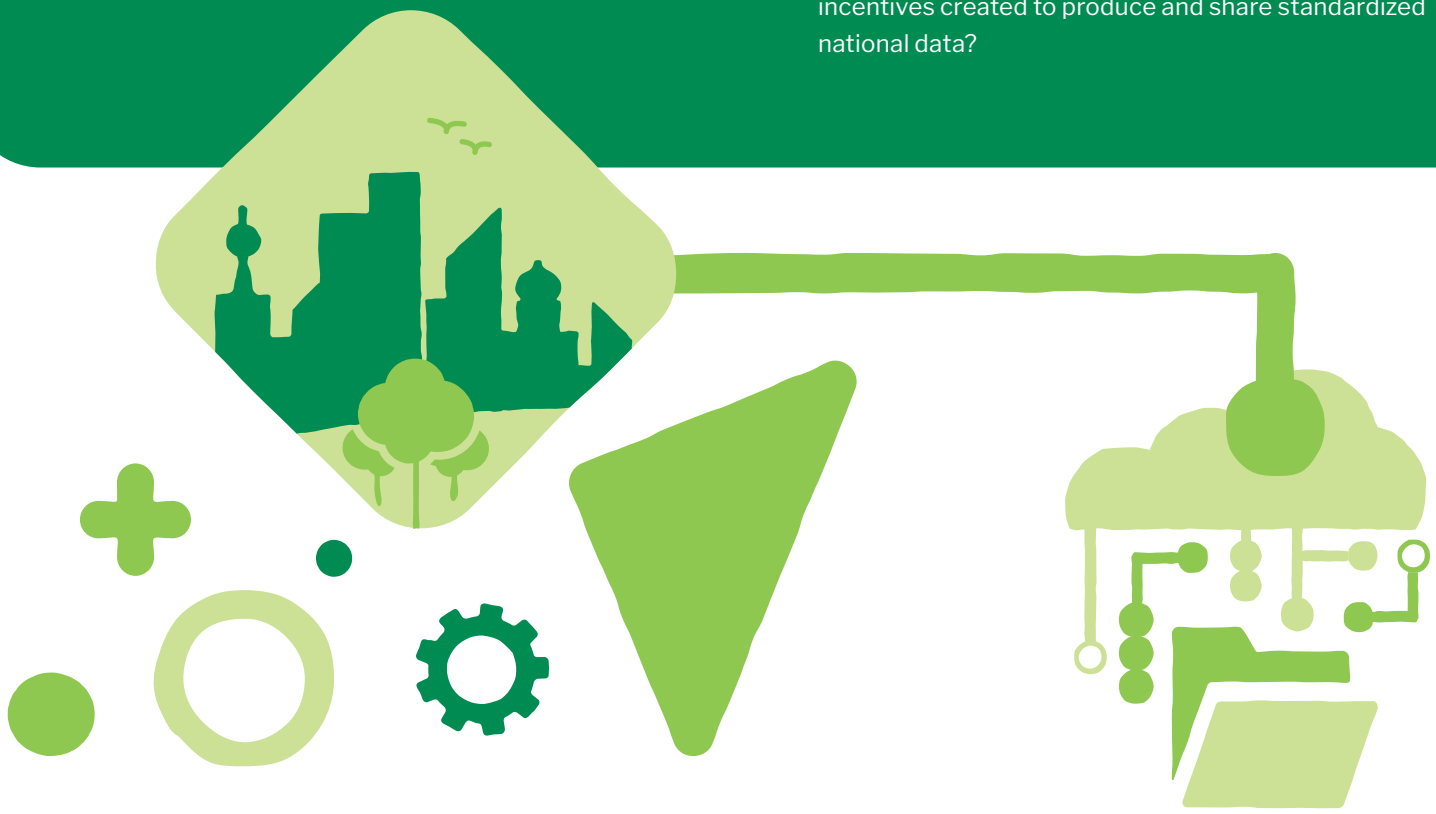
"We need a whole-of-society approach"

- The public health sector has a key role to play in tackling complex societal challenges
- Although current challenges require intersectoral action, governance systems are not set up to facilitate collaboration
- Coordination among sectors during the pandemic offers a foundation to entrench intersectoral structures
- The public health sector is well-placed to convene partnerships on intersectoral issues
- How can institutional silos be broken down to avoid fragmentation and duplication and instead create integrated strategies for addressing whole-of-society issues with accountability among partners?

Measuring and Evaluating Public Health

"What gets measured gets done"

- Critical gaps exist in data about public health systems, personnel, needs, and outcomes across Canada
- This absence of data impedes coordination and evaluation within the sector and hinders action on health equity
- Federal support is needed to develop accessible and interoperable data systems with appropriate privacy protections
- Community engagement is vital to develop ethical, equitable, and anti-racist data systems that address local needs
- Investment in interdisciplinary research on public health systems, services, and governance is also warranted
- How can jurisdictional barriers be overcome and incentives created to produce and share standardized national data?



Engaging and building trust with communities is also critical to increase the effectiveness of public health messaging. The COVID-19 pandemic highlighted that **there is a need to improve the clarity and targeting of public health communications and enhance transparency regarding decision-making processes**. This is particularly true in contexts where evidence is limited and changing rapidly, recommendations evolve quickly and differ across jurisdictions, misinformation is amplified on social media platforms, and community members may not trust public health professionals. For example, shifting pandemic recommendations regarding mask-wearing and vaccines highlighted the challenges of communicating rapidly-changing evidence and guidance to the public in an effective and credible way. Pandemic communications also demonstrated that when messaging and recommendations are framed at a population level, specific groups – such as Indigenous peoples and individuals with disabilities – can be overlooked or find recommendations inapplicable to their circumstances. Public health communications strategies also face a challenge in addressing the digital access and literacy divides and adopting alternative messaging modes to ensure that no one is left behind.

Several of the challenges discussed above – including gaps in community engagement, surge capacity, equitable response, and effective messaging – demonstrate that **a need exists to align public health training and competencies with current realities and system needs and to create stronger links among the public health research, training, and practice communities**. In addition to noting the importance of strengthening competencies in areas such as health analytics, policy and governance literacy, structural and ecological determinants of health, community relationships, management and leadership, and risk communication, participants emphasized the critical lack of training on Indigenous health, anti-racism, and anti-colonialism in public health schools and the gap in public health faculties' capacity to teach about these issues. Dialogue sessions also highlighted the need for more effective partnerships between the research and practice communities. Specific challenges that were raised included the limited exposure between these communities at the training level, a lack of research on topics of operational relevance, insufficient focus on translating academic research into public health practice, and inadequate opportunities for practitioners to undertake research in an embedded and supported way.

Rooting Public Health in Local Communities

"Public health is fundamentally local"

- Local expertise, capacity, and input are not adequately considered in public health planning and implementation
- Decisions made without consulting local communities and practitioners risk being ineffective and harmful
- All orders of government should recognize local MOHs' and frontline workers' knowledge about their communities
- Public health organizations must also invest in stronger community engagement structures, partnerships, and accountability, including through efforts to increase participatory decision-making and power-sharing
- A public health workforce with close community ties can bring local knowledge and partnerships to crisis response
- What are the governance and funding structures that can best support stable local capacity and sustainable community engagement mechanisms?

Communicating and Building Trust in Public Health

"Public health professionals are not necessarily the most trusted sources for everyone"

- Communicating credible information amid rampant misinformation is an uphill battle
- Conflicting messages across jurisdictions and over time further reduce public confidence
- Training in communications for public health professionals and in health literacy for the public is required
- Engaging partners who are trusted within their communities is critical to address the roots of mistrust and create targeted messaging campaigns
- Increased decision-making transparency may also enhance the effectiveness of communications
- How can governments communicate effectively and reduce vulnerability to misinformation when evidence is limited or rapidly changing?

Integrating Public Health Research, Training, and Practice

"There is a gap between the academic and practice contexts"

- The public health field lacks adequate connections among the research, training, and practice communities
- This results in a dearth of applied research of operational value and creates challenges in connecting trainees with organizations when demand for personnel surges
- The field's core competencies should be realigned with current system gaps and needs
- Other priorities for action include establishing joint research-practice positions, processes that connect trainees to public health organizations, and networks of public health authorities with mandates for research and education
- Systems must be created before crises occur to optimize responses and address ongoing public health threats
- How can funders and research institutions incentivize the research-practice collaborations that are not always rewarded within the academic ecosystem?

Section 3

What opportunities exist?

The public health challenges identified above are not new, and the COVID-19 crisis is only the latest stressor on the system. At the same time, the pandemic underscored the public health sector's vulnerabilities in a highly visible, global, and whole-of-society way, which creates an opening for systemic change. This opening exists at a time of incredible advances in data and technology, greater awareness of institutionalized racism, colonialism, and inequities, and growing access to and involvement in public health information and decision-making processes by the public. Although the need for a more robust and equitable public health system has long been recognized, dialogue participants highlighted that today's context provides unique opportunities and renewed momentum to achieve this goal. This section summarizes ten interconnected opportunities and actionable ideas that emerged across dialogue sessions.

Participants emphasized that despite the enormous amount of work that remains to move beyond public health systems that perpetuate colonialism, racism, and other forms of structural violence, **it is vital to build on the heightened awareness and existing efforts among some institutions to create equitable, anti-racist, and anti-colonial systems of governance, practice, research, and training**. We must also build on landmark documents such as the United Nations Declaration on the Rights of Indigenous Peoples in Canada (UNDRIP) and the final report of the Truth and Reconciliation Commission that provide roadmaps for more equitable and anti-colonial systems. Examples of existing initiatives that participants highlighted include strengthening capacity and competency in anti-racist approaches among public health staff, increasing the representativeness of public

health teams from entry-level to senior leadership positions, applying a health equity lens to programming, engaging stakeholders to ensure services are meeting community needs, collecting race-based data and linking it to action, working with Indigenous communities on their self-determined priorities in areas like cancer care, and creating publishing guidelines regarding equitable and ethical research engagement with Indigenous communities. British Columbia's establishment of a First Nations Health Authority and Council was also identified as a promising approach to health governance, delivery, and monitoring. Participants noted that funding bodies are implicated in inequities within the research system and should seize the opportunity to examine how their internal structures and policies perpetuate the status quo – including regarding how peer review is conducted, what types of knowledge are valued, and the criteria used to award grants. As dialogue sessions revealed, these challenges represent a steep hill, but different levers are available to reduce the incline. It is past time for the public health community and its partners to leverage all the pathways to action that are available to them.

Actionable idea 1

Implement concrete steps to build equitable, anti-racist, and anti-colonial systems of public health governance, practice, research, and training through strategies that focus on the knowledge and priorities of relevant communities and include long-term resource and accountability commitments.

> We must also build on landmark documents such as the United Nations Declaration on the Rights of Indigenous Peoples in Canada (UNDRIP) and the final report of the Truth and Reconciliation Commission that provide roadmaps for more equitable and anti-colonial systems.

Participants additionally emphasized that **the COVID-19 pandemic has generated renewed urgency and a unique window to promote much-needed investment in increasing the public health system's capacity to work across sectors to help address the upstream determinants of health, which is vital to respond to current and future threats and would translate into savings in health care and other sectors**. The widespread impact of the pandemic brought unprecedented attention to public health, demonstrated the potential for public support for investment in this sector, and shed light on the system's capacity to act and pivot when energy and resources are channeled towards it. The crisis also highlighted the ways in which social and structural determinants of health impact rates of illness and death – as well as what can be achieved when the system prioritizes the needs of groups who face conditions that put them at heightened risk. Leveraging this context to call for stable and long-term investment in addressing the social, structural, and ecological conditions that heighten vulnerability to public health threats and an increase in inter-disciplinary research on how to best address these determinants is not only wise, but essential to prevent another tragedy on (or exceeding) the scale of the COVID-19 pandemic. Making the most of this opportunity will also require efforts to increase public knowledge of public health's remit beyond infectious disease.

Investment in upstream public health interventions should go hand in hand with intersectoral partnerships. Participants highlighted the importance of building on the large-scale coordination among sectors that occurred during the COVID-19 pandemic, the increased visibility of public health across ministries and departments, and public health's contribution to key pandemic initiatives such as emergency income support programs. Combined with a growing global knowledge base about whole-of-government and Health in All Policies strategies, **the visibility and collaboration across sectors that was spurred by the COVID-19 crisis has created an indispensable opportunity to entrench an intersectoral approach within governance structures**. Owing to its fundamentally intersectoral focus, public health is particularly well-placed to play a convening role in bringing together different sectors that address the determinants of health and health equity, with the goal of tackling complex societal challenges more effectively.

Actionable idea 2

Leverage the public profile of the public health system's pandemic response to increase overall investment in this sector, including research, with a focus on building a healthy and resilient population through sustained investment and cross-sectoral partnerships.

Actionable idea 3

Create federal, provincial, territorial, and local governance structures that embed a whole-of-government and Health in All Policies approach to policymaking by bringing multiple sectors into partnership to address the determinants of health.

Actionable idea 4

Develop an integrated national action plan that aligns Canada's domestic and global approaches to public health and is co-developed by global affairs and public health officials and stakeholders.

The federal government's approach to global health was also identified as due for a stronger intersectoral voice for public health, particularly as the COVID-19 pandemic has heightened recognition of the global nature of public health at different orders of government. **The pandemic's lessons about the ties between local and global health action and outcomes should serve as an impetus to link Canada's domestic approach to public health with its global advocacy and participation in institutions like the World Health Organization (WHO)**. One strategy for achieving this involves the co-development of an integrated national plan that addresses both domestic and global health and engages global affairs and public health officials and stakeholders. Participants noted that this process could enhance intersectoral communication while streamlining the country's approach to challenges of national and global relevance, including climate change. In pursuing this goal, Canadian governments could also benefit from linking their strategies to existing global agendas for cross-sectoral action, such as the Sustainable Development Goals.

Participants also highlighted that the pandemic response, and particularly the guidance issued by the National Advisory Committee on Immunization (NACI), indicated the potential for national coordination to promote coherence in public health approaches. **Considering the current focus on public health, the opportunity to entrench the sector's upstream and intersectoral functions, and the need for nationally coordinated action to address pressing challenges, this is a critical time to define a set of programs and services that Canada's public health systems are expected to deliver**. This effort should clarify the mandates of the federal, provincial/territorial, and local governments, in order to increase coordination and accountability. It should also define the public health system's areas of compatibility and integration with – and specialization and differentiation from – other parts of the health and care sectors, including primary and acute care. Some participants supported the idea that a *Canada Public Health Act* would increase inter-jurisdictional coherence and protect public health budgets by enshrining a minimum set of expected public health activities (including in areas such as data sharing, programming, and surveillance) and conditioning funding on their delivery.

Actionable idea 5

Define the essential functions of provincial and territorial public health systems, and the minimum standards of programs and services that they are expected to deliver, including by exploring the possible role of a *Canada Public Health Act*.

Actionable idea 6

Launch a process to refresh the core public health competencies and ensure that they address the public health system's community focus, equity orientation, and anticipated needs.

Actionable idea 8

Build surge capacity to increase system responsiveness and nimbleness, including by dedicating reserve capacity to developing community relationships and knowledge and by solidifying processes to rapidly connect and onboard trainees with public health organizations.

Actionable idea 7

Commit federal resources and capacity to developing nationally consistent and interoperable data sources on public health systems and workforces in partnership with frontline practitioners, the public, and other orders of government – and pair this with an investment in interdisciplinary research on public health systems, services, and governance.

Others questioned whether national legislation would achieve the desired coherence in light of the difficulty of securing agreement across orders of government, and cautioned that any legislative efforts must consider the experience of the Canada Health Act, which is only weakly conditional and has not been consistently enforced. Outside of legislative approaches, participants suggested enhancing cross-jurisdictional coherence through a national public health guidance body similar to NACI and by facilitating trans-local learning through cross-country networks of MOHs and program-level teams.

Defining essential functions for public health systems across Canada would also provide an opportunity for greater alignment between core competencies and system requirements. Dialogue sessions revealed agreement that the moment is ripe to refresh the country's existing public health competencies, which have remained unchanged since 2008, and that this process should be linked to a stock-taking of anticipated needs. **It is imperative that the lessons of the COVID-19 pandemic in areas ranging from emergency preparedness to public communications and community relationships translate into a strengthened set of competencies that account for current and future public health challenges, system needs, and equity gaps**. As outlined in **Section 2**, participants mentioned a range of specific skills, literacy areas, and knowledge fields that should be considered in this process. One area that emerged as a particularly urgent focus of discussion in the context of the pandemic involved improving competencies in risk communication, public messaging, and combatting misinformation, including by leveraging novel digital and technological possibilities and community partnerships. A second key priority area involved strengthening competencies in anti-racism and anti-colonialism, including by developing a comprehensive set of competencies on Indigenous health, aligning with related calls to action from the Truth and Reconciliation Commission of Canada, and integrating a critical race theory lens.

Current public health challenges are occurring in the context of the proliferation of data sources (such as electronic medical records and social media), novel analytical tools (such as machine learning and artificial intelligence), emerging data integration and sharing platforms (such as Health Data Research Network Canada and Alberta's Connect Care system), and increased public data access and literacy. The power of this landscape to inform action was evident during the pandemic, when the collection and analysis of granular data enabled some public health units to target testing and vaccination strategies to communities that faced heightened risk. Today's unprecedented advances in data and technology must be leveraged for a more robust, equitable, and coherent public health sector. The federal government should invest in the development of interoperable data sources that can be used to measure, evaluate, coordinate, mobilize, and support public health systems and workforces more effectively as well as research that seeks to understand how to build better public health systems. Participants noted that such efforts should start by considering the purposes for which data will be collected and should emphasize interoperability with other sectors and across jurisdictions. It is also vital that the data infrastructure to achieve these goals is designed in collaboration with frontline practitioners and community members, to ensure that new systems address existing needs, consider privacy concerns, avoid increasing operational burdens, protect community relationships, and produce knowledge systems that are trusted, transparent, and accountable. This process should also involve working with communities to build ethical, equitable, and anti-racist data systems. In addition to data infrastructure, investment in interdisciplinary research on public health systems, services, and governance is critical to increase knowledge about the public health landscape in Canada and assess how governance structures and delivery systems might be improved.

Actionable idea 9

Restructure governance and decision-making bodies to increase the voice and authority of those with local knowledge and lived experience, including members of communities facing conditions of marginalization.

Actionable idea 10

Establish formal positions and processes that link public health research and practice, including by embedding researchers in public health organizations and practitioners in research institutions, creating networks of public health authorities with research and education mandates, and supporting the convening role of the National Collaborating Centres for Public Health.

Ensuring the collection of updated and detailed data on Canada's public health workforce and systems would also enhance the sector's ability to respond in times of crisis. Although the need for flexibility and surge capacity is most evident during public health emergencies, it is critical to develop this resource well before it needs to be deployed – as the above-mentioned obstacles to the COVID-19 pandemic response laid bare. **The post-pandemic period will represent a key moment to build a more flexible and resilient system that can rapidly mobilize appropriately trained human resources with the relevant skills and local knowledge in times of expanded need**. Creating this capacity requires having numbers in reserve, increasing public health training opportunities, and would also benefit from dedicating additional capacity within the system to working with communities and building partnerships with community organizations, so that public health professionals' local knowledge and trust can be brought to bear on activities like case investigation, contact tracing, and mass immunization during emergencies. Moreover, the challenges of linking public health trainees with public health organizations during the pandemic – and the experience of organizations that innovated systems for doing so – can provide important lessons for ensuring more efficient onboarding processes during crisis and non-crisis times.

Deepening the public health system's community focus is particularly timely as **the COVID-19 response demonstrated the power of grassroots initiatives, the benefits of co-planning approaches between public health and community organizations, and the potential for public engagement in decision-making to inform equitable action**. Two examples of the impact of community action on public health during the pandemic that participants raised included Vaccine Hunters Canada, a volunteer network that disseminated information about vaccine appointment availability through social media, and the coordination of COVID-19 action plans by community-based organizations with philanthropic funding in several of Montreal's most-affected neighborhoods. The experience of Toronto's Board of Health during the pandemic also showed that having public members on governing bodies can bring attention to community priorities, such as collecting race-based data, investing in community organizations, and supporting community leadership. Participants emphasized that rooting public health in community knowledge and relationships requires community organizations to be adequately supported by the public health system and to have the agency to address community issues where appropriate.

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The post-pandemic period will represent a key moment to build a more flexible and resilient system that can rapidly mobilize appropriately trained human resources with the relevant skills and local knowledge in times of expanded need.

It also requires structured and well-resourced strategies for engaging with and remaining accountable to communities. In addition, participants noted that truly power-sharing decision-making structures must consider who has voice and authority and must respect principles of self-determination. Fulfilling public health's commitment to communities also involves integrating multiple knowledge and evidence sources, including Indigenous knowledge systems and the expertise of those with lived experience, in order to address the limits and harms of a system that has its roots in colonialism and was not designed to consider the distinct needs of Indigenous peoples and other groups facing conditions of marginalization. In planning and implementation, public health must therefore centre the voices of those impacted by racism, colonialism, and other forms of structural violence. Building trust with communities and partnering with community organizations and leaders is also essential to improve the targeting of and public receptiveness to public health communications.

Participants also noted that several key pathways exist to enhance connections among public health research, training, and practice, including by building on initiatives that contributed to the pandemic response (such as rapid evidence reviews that supported decision-making processes) and strategies that predated the crisis (such as embedded trainee positions within public health practice). The dialogues highlighted that considerable benefits stand to be gained from strengthening research-practice collaborations, including generating more applied and operational research, enhancing practitioners' access to academic capacity in times of crisis, and improving knowledge mobilization efforts. Today's public health system also has a unique resource that can be leveraged towards these goals. The National Collaborating Centres for Public Health, which were established following the SARS crisis, have developed strong relationships with public health practitioners and organizations across the country in the intervening years. Participants identified the National Collaborating Centres as particularly well-placed to facilitate research-practice networks and relationships and improve knowledge mobilization – but noted that they require increased funding to seize these opportunities. Participants also proposed building better links among research and practice communities by including research and education in the mandates of public health authorities and by funding positions that embed researchers in public health organizations and practitioners in research institutions.

Section 4

Conclusion

When Canada's public health systems emerge from the COVID-19 crisis, they will face the daunting task of reckoning with the strengths and weaknesses of the pandemic response and translating the resulting lessons into the institutional changes necessary to address enduring public health challenges. The series of dialogues that is summarized above revealed a diversity of perspectives on these issues within the public health community, as well as important areas of convergence. The dialogues also highlighted the momentum and desire that exists to change governance, practice, research, and training systems in the wake of an unprecedented global crisis and in anticipation of continuing threats to the health of our communities, country, and planet.

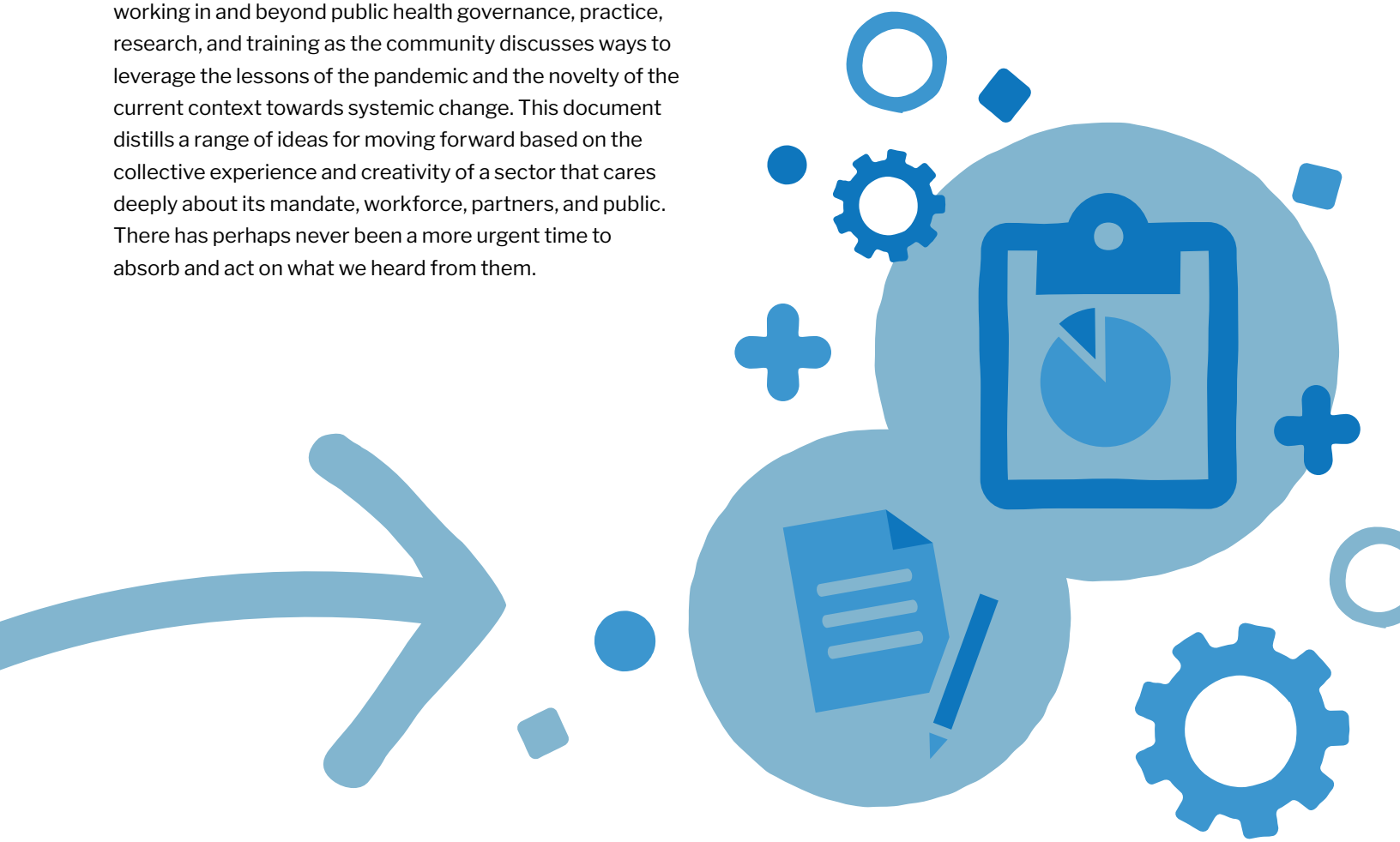
Although the COVID-19 pandemic provided a focal point for the dialogues, time and again the conversation centred on the longstanding challenges that worsened the crisis and complicated the response – including underlying inequities and systemic discrimination, a lack of adequate data and surge capacity, and chronic funding shortfalls for public health. Participants were also clear that the pandemic is but one stressor on a system that faces continuing challenges to address mental health, non-communicable diseases, the opioid crisis, and global climate change, among other threats.

At the same time, the overall tone of the dialogues was one of cautious optimism. Participants recognized the opportunities that exist in an era of unprecedented attention to public health, rapid technological innovation, greater awareness of institutionalized racism, colonialism, and inequities, and growing public engagement in this sector. The actionable ideas that they outlined can provide a starting point for thinking about the key areas of investment and rebuilding required for a robust and resilient system and an equitable distribution of health.

Evidence is lacking when it comes to informing how to best build, resource and structure Canadian public health systems. Undertaking action on the 10 key opportunities outlined in **Section 3** should be informed by research that seeks to understand and improve Canada's public health systems so that we are better prepared for the challenges ahead.

We hope that this document will prove useful for those working in and beyond public health governance, practice, research, and training as the community discusses ways to leverage the lessons of the pandemic and the novelty of the current context towards systemic change. This document distills a range of ideas for moving forward based on the collective experience and creativity of a sector that cares deeply about its mandate, workforce, partners, and public. There has perhaps never been a more urgent time to absorb and act on what we heard from them.

> The actionable ideas that they outlined can provide a starting point for thinking about the key areas of investment and rebuilding required for a robust and resilient system and an equitable distribution of health.

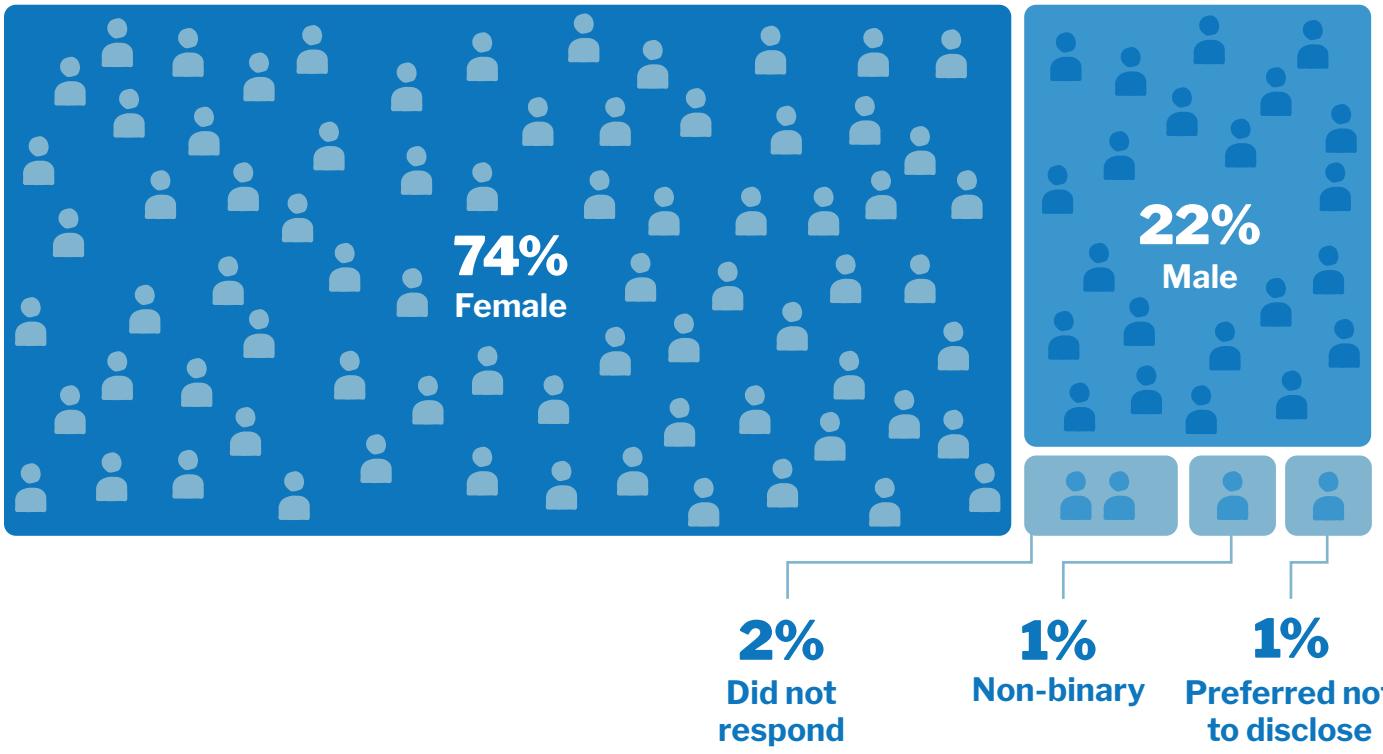


Appendix 1

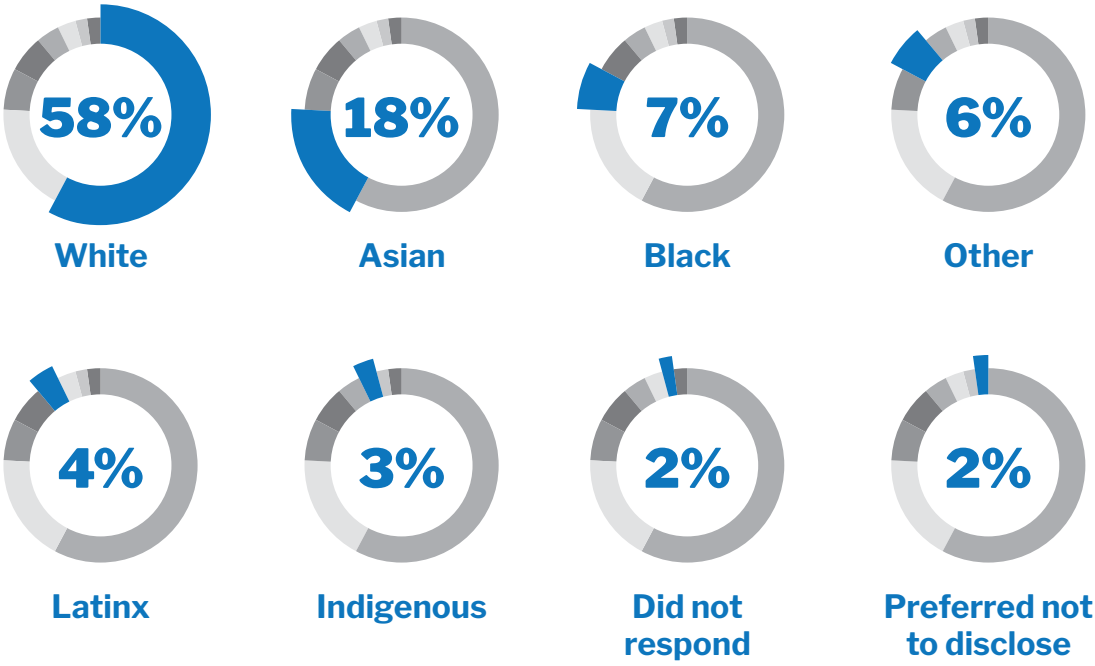
Summary of attendee characteristics

The dialogue sessions were attended by 214 unique participants (a total of 484 attendees overall when counting instances where participants attended multiple events). This appendix contains demographic information for the 214 individuals who participated in the events.

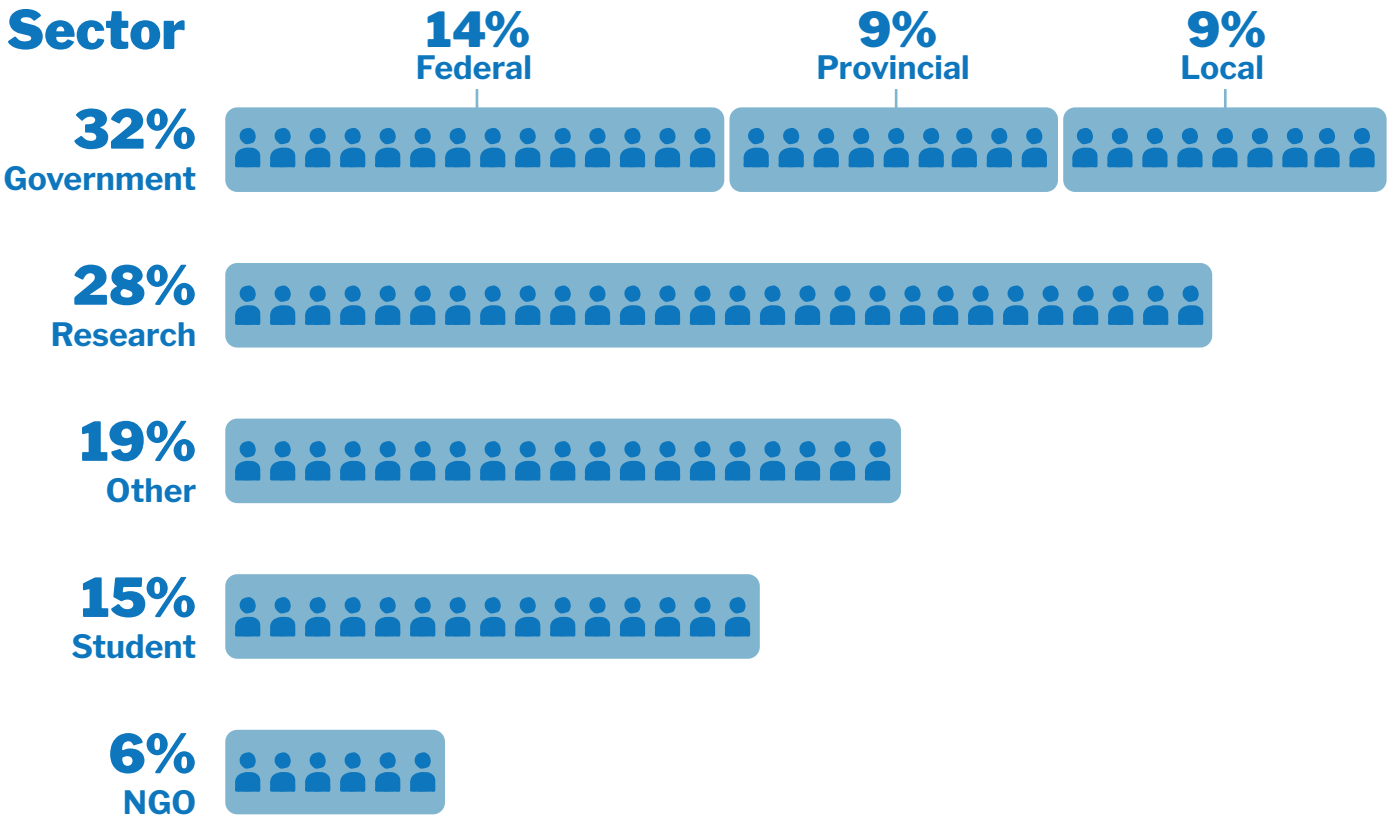
Gender



Racial Identity



Sector



Appendix 2

Meeting reports

Individual meeting reports are available upon request.

Please email **ipph-ispp@cihr-irsc.gc.ca** for full reports on the following meetings:

Dialogue events

Topic	Host
Public health data systems May 12, 2021	**David Buckeridge** Professor, McGill University
Public health workforce planning May 27, 2021	**Gail Tomblin Murphy** Vice President of Research and Innovation, Nova Scotia Health
Infodemiology – public trust and communication May 28, 2021	**Nicole Damestoy** Chief Executive Officer, Institut national de santé publique du Québec, **Lise Gauvin** Professor, Université de Montréal
Mobilizing communities and partnerships May 28, 2021	**Elaine Hyshka** Assistant Professor, University of Alberta
Governance of Public Health Systems June 4, 2021	**Jane Philpott** Dean, Faculty of Health Sciences and Director, School of Medicine, Queen's University **Ian Culbert** Executive Director, Canadian Public Health Association
Public health systems in a globalized world June 4, 2021	**Kelley Lee** Professor, Simon Fraser University
Strengthening the academic-practice interface in public health June 10, 2021	**Malcolm Steinberg and Greg Penney** Network of Schools and Programs of Population Public Health
Building anti-racist public health systems June 18, 2021	**Sume Ndumbe-Eyoh** Senior Knowledge Translation Specialist, National Collaborating Centre for Determinants of Health **Nancy Laliberté** Indigenous Health Consultant (Nêhiyaw/Métis)

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