Public Health Resilience in Ontario

CLEARING THE BACKLOG, RESUMING ROUTINE PROGRAMS, AND MAINTAINING AN EFFECTIVE COVID-19 RESPONSE

Association of Local Public Health Agencies
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Since the beginning of the COVID-19 pandemic, Ontario's 34 local public health agencies (LPHAs) have been at the forefront of the ongoing response. They have prevented COVID-19 transmission, hospitalizations, and death through enactment and enforcement of public health measures, case and contact management, outbreak management, infection prevention and control, communication of credible advice to the public, coordination with local and provincial partners and leadership of the vaccination campaign.

These extraordinary efforts have come at the expense of nearly all the routine programs and services mandated by the Ontario Public Health Standards (OPHS) as their resources were redeployed almost exclusively to the pandemic response. This has resulted in a backlog of public health work that will have immediate and longer-term impacts on population health.

The purpose of this report is to demonstrate the need for additional investments in public health that will be required to clear the backlog, resume routine programs and services, and maintain an effective pandemic response. The content is adapted from an earlier and more detailed draft report that the Council of Ontario Medical Officers of Health (COMOH) submitted to the Chief Medical Officer of Health in early October. This was informed largely by a survey of all 34 public health units that gathered information about program deficits since 2020.

KEY FINDINGS: IMPACTS ON MANDATED PUBLIC HEALTH PROGRAMS AND SERVICES

Just like the widely reported "surgical backlog" in health care, a health promotion and protection backlog has accumulated since March 2020, which is certain to have a significant and measurable effect on the health of Ontarians for years to come.

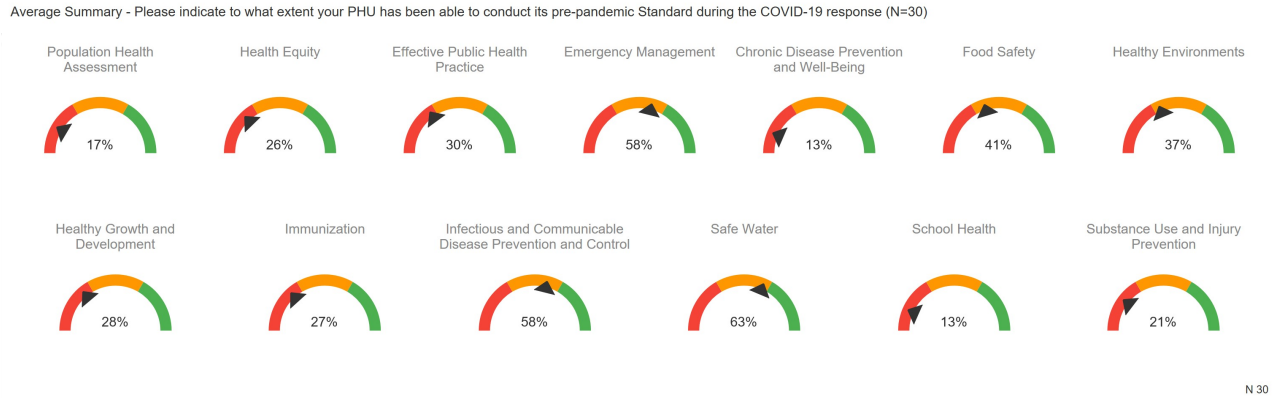
OPHS mandated public health programs and services have been significantly curtailed for nearly two years, with an average of 74% of 2020 LPHA resources and 78% (to date) of 2021 LPHA resources having been diverted to the COVID-19 response. This increase reflected a general upward trend as the pandemic evolved, and additional resources had to be secured to meet the demand throughout the province. Uncertainties about funding sources presented a challenge to managing extraordinary costs and allocating resources.

Health protection programs such as Safe Water, Infectious and Communicable Disease Prevention and Control, and Emergency Management Standards had the highest rates of completion, but most were response-driven and prioritized according to the level of risk, which in turn would focus primarily on COVID-19 related threats.

The Chronic Disease Prevention and Well-being and School Health Standards, which include injury prevention, healthy eating and physical activity, immunization, mental health, and substance use, had the lowest rates of completion. The population health impact of these deficits will be felt over a longer period and will almost certainly be magnified by the effects of the pandemic, which will in turn add to the cost of catching up on the OPHS mandates in these areas.

Specific concerns were expressed about the program backlogs related to children's health. Since the onset of the pandemic in March 2020, oral health screening in schools effectively ceased, and the Healthy Babies Healthy Children (HBHC) visits for vulnerable families and children were significantly reduced. Additionally, approximately 80% of the routine school immunization program was not completed during this time. Estimates indicate that this could account for a current backlog of up to 300,000 school-based vaccinations/year across the province.

Summary of PHUs self-reported completion of OPHS Standards in the context of the COVID-19 pandemic:



LESSONS LEARNED: PROCESS IMPROVEMENTS AND REINFORCEMENT OF PARTNERSHIPS AND COLLABORATION

The COVID-19 pandemic presented opportunities for public health to demonstrate its resilient and innovative capacity to meet local needs despite major resource challenges. Technological innovation, enhanced coordination with a wide range of partners, improvements to processes such as data analysis, reporting, surveillance, and communications, and the application of data to inform health equity approaches were highlighted. Each of these is expected to yield lasting benefits beyond the COVID-19 response.

RESTORING PUBLIC HEALTH'S WORK TO IMPROVE THE HEALTH OF ONTARIANS

LPHAs are beginning to develop recovery plans, which are aimed at resuming their vital and mandated programs and services under the OPHS while continuing to provide an effective ongoing response to COVID-19. These plans include ongoing assessments of program deficits that have resulted from the pandemic response and recommendations for a phased and priority-based approach to returning to full service while giving special attention to the public health needs of populations that have been disproportionally affected. Program areas that address mental health, substance use and harm reduction, child immunization catch-up, food safety inspection, and oral health were cited as priorities for the earliest stages of the recovery.

STRENGTHENING PUBLIC HEALTH FOR A MORE RESILIENT ONTARIO

Substantial recovery efforts will not be possible if the pandemic response continues to consume the bulk of local public health resources. While mitigation funding from the Province has been helpful, clearer and more timely assurances of funding for both routine and extraordinary public health activities will be required to inform budgets over multiple years. Additional and immediate investments will be required as maintaining COVID-19 response activities while resuming OPHS activities will not be feasible without additional resources. Recovery will also require addressing high levels of stress and burnout among public health staff to support their personal recovery.

RECOMMENDATIONS

Provincial support for an ongoing pandemic response: Maintain ongoing provincial investments in science, structures, and resources in support of the multi-sector effort required to effectively manage the COVID-19 pandemic.

- Ongoing provincial coordination of the response between sectors
- Maintenance and review of provincial guidelines and tools, commitment to effective communications, and central support for local public health implementation and adaptation of provincial guidance based on local community needs.
- Strengthening Public Health Ontario's capacity to provide scientific and technical advice to government, public health, health care, and related sectors

Provincial support for Local Public Health Agencies: Protect and promote the health of Ontarians through financial investments in PHUs that are clearly communicated and committed early in the fiscal year:

- Ongoing one-time COVID-19 funding for 2022 to support the COVID-19 response and ensure the ability to maintain required staffing level.
- One-time recovery funding to support recovery efforts, as outlined in this report, and to allow PHUs to address priority areas.
- Increase base funding, including but not limited to the addition of COVID-19 as a disease of public health significance beyond 2022.

Provincial support for evaluation and renewal: Continue to work with Ontario's public health stakeholders (Public Health Ontario, Office of the Chief Medical Officer of Health, Local Public Health Agencies) to develop the vision for a stronger responsive public health sector with the capacity to address population health needs through various partnerships into the future.

- Ensure that Ontario launches a comprehensive review and assessment of all aspects of the pandemic response to inform strategies for improvement.
- Ensure that public health stakeholders have the capacity and resources to participate fully in the review and in formulating recommendations.

PUBLIC HEALTH RESILIENCE IN ONTARIO

INTRODUCTION

Since the beginning of the pandemic, Ontario's 34 local public health agencies (LPHAs) have been at the forefront of the ongoing pandemic response. Led by dedicated local medical officers of health, boards of health, and a diverse and skilled workforce, these agencies have been instrumental in preventing COVID-19 transmission, hospitalizations, and death through enactment and enforcement of public health measures, case and contact management, infection prevention and control, communication of credible advice to the public, and leadership of the vaccination campaign. These activities have been crucial to preserving the capacity of Ontario's health care system as well as allowing for cautious and measured steps towards reopening the economy.

The unfortunate consequence of the extraordinary efforts required to limit the spread of COVID-19 and decrease its impact on the population at the local level is that LPHAs have had to suspend a significant proportion of the routine programs and services mandated by the Ontario Public Health Standards (OPHS) and redeploy their resources to the pandemic response.

This has resulted in a backlog of public health work that includes both quantifiable and less quantifiable impacts. Quantifiable impacts include services not performed, such as inspections, immunizations, disease investigations, and family visits to support early childhood development. Less quantifiable are the population health impacts of the reduction of public health programs and services, including health equity, active living and healthy eating, mental health, substance use including addressing the opioid epidemic, and poverty.

The purpose of this report is to summarize the backlog of public health programs and services created by the pandemic response, to outline the requirements for additional investments to support the resumption of these routine activities as the response continues, and to identify key secondary population health impacts of the pandemic that will require additional resources to tackle. Its content is derived almost exclusively from an earlier and more detailed report by the Council of Ontario Medical Officers of Health (COMOH) that was submitted to the Chief Medical Officer of Health in early October.

Information Sources

In the developmental stages of the COMOH report to the CMOH in the late summer of 2021, all 34 LPHAs in Ontario were invited to complete a 62-question survey designed to assess the proportion of resources reallocated to COVID-19 response and the consequent impact on OPHS programs and services requirements. It also asked for an outline of reasons for the program backlog and a ranking of public health topics for priority focus during the recovery stages. The survey also invited LPHAs to submit additional material related to recovery and priorities, which included recovery plans, reports,

presentation slide decks, and reports on indirect harms associated with the COVID-19 pandemic (the pandemic itself, and the public health measures).

Other sources of information also contributed to our understanding of the indirect impacts of the COVID-19 pandemic, the unintended consequences of public health measures used to slow COVID-19 transmission, and the effects of the curtailment of public health services on the health of the population. Discussions involving the Council of Ontario Medical Officers of Health and Ministry colleagues, various letters to the Ministry from Boards of Health on recovery, the Ontario Health dashboard for recovery topics, and public reports released by Public Health Ontario were invaluable to identifying priority population health issues that were aggravated by the pandemic. Mental health, substance use, healthy growth and development, chronic disease, health equity, income, violence/family violence, oral health, and racism emerged as the most significant.

KEY FINDINGS: IMPACTS ON MANDATED PUBLIC HEALTH PROGRAMS AND SERVICES

As noted in the Ontario Public Health Standards, the role of LPHAs is to "support and protect the physical and mental health and well-being, resiliency and social connectedness of the health unit population, with a focus on promoting the protective factors and addressing the risk factors associated with health outcomes", through the core functions of population health assessment and surveillance, health promotion and protection, disease prevention and emergency management.

Simply put, public health keeps people and communities healthy, saves lives and saves money. Public health programs and services prevent health problems from occurring in the first place and help prolong healthy lives, which reduces the need to draw on expensive and increasingly scarce resources of the health care system.

These routine public health supports to population health were significantly diminished throughout the pandemic. The survey data provided by LPHAs revealed that, on average, 74% of their 2020 resources and 78% (to date) of their 2021 resources were allocated to the COVID-19 response, with ranges of 20% to 100% in 2020 and 40% to 90% in 2021. A more fulsome analysis of what factors may have accounted for placement within these ranges was not completed, but the figures below demonstrate a general upward trend in resource diversion to the COVID-19 response between 2020 and 2021.

Figure 1. Public Health Unit reports of proportion of PHU resources allocated to COVID 19 response during the pandemic for 2020.

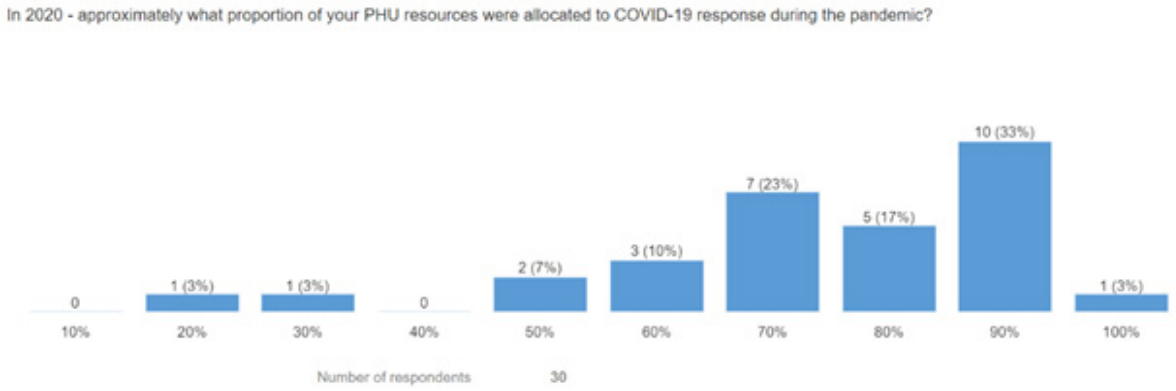
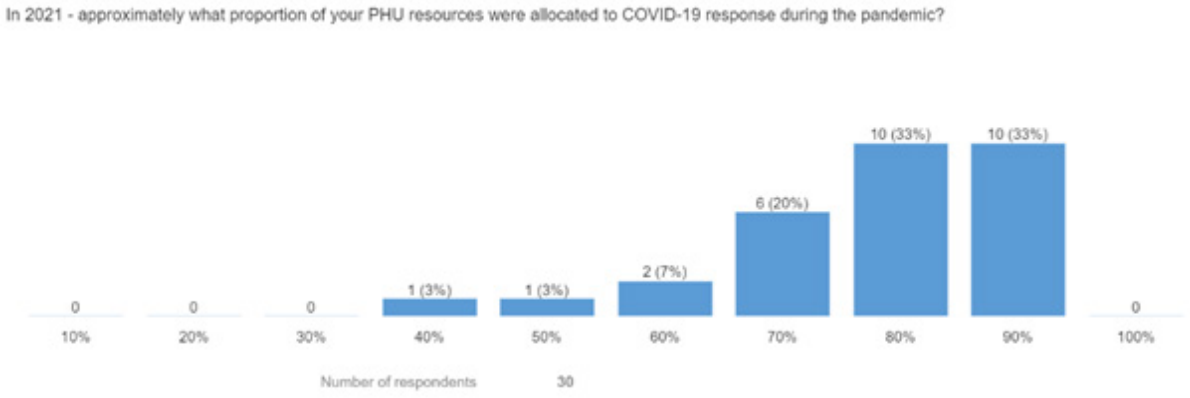


Figure 2. Public Health Unit reports of proportion of PHU resources allocated to COVID 19 response during the pandemic for 2021.



The increase in resource redeployment to COVID-19 responses from 2020 to 2021 reflects the rapidly evolving context of the pandemic, which placed a heavy workload on all LPHAs. When the pandemic began staff were faced with receiving and processing large and rapidly changing volumes of information, adapting guidance and public messaging to emerging science, and developing new processes to engage with community partners, decision makers and the public. As the pandemic evolved, response activities were modified according to the rise and fall of case counts, the emergence of more dangerous variants, and the rollout of an unprecedented and complex vaccination campaign.

In addition to redeployment of existing resources, all LPHAs that responded to the survey reported increasing their staff complement through temporary hiring to manage the demands. In addition to the added financial and administrative procedures, training and orientation of new staff added to the already burdensome load. A clear majority of the LPHAs reported having accessed the provincial workforce for case and contact management to assist with the response. Some also reported that the uncertainty related to funding impacted their ability to make timely decisions regarding the augmentation and allocation of resources to both urgent non-COVID-19 related activities along with the COVID-19 response.

Direct and indirect impacts on PHUs and public health programs and services

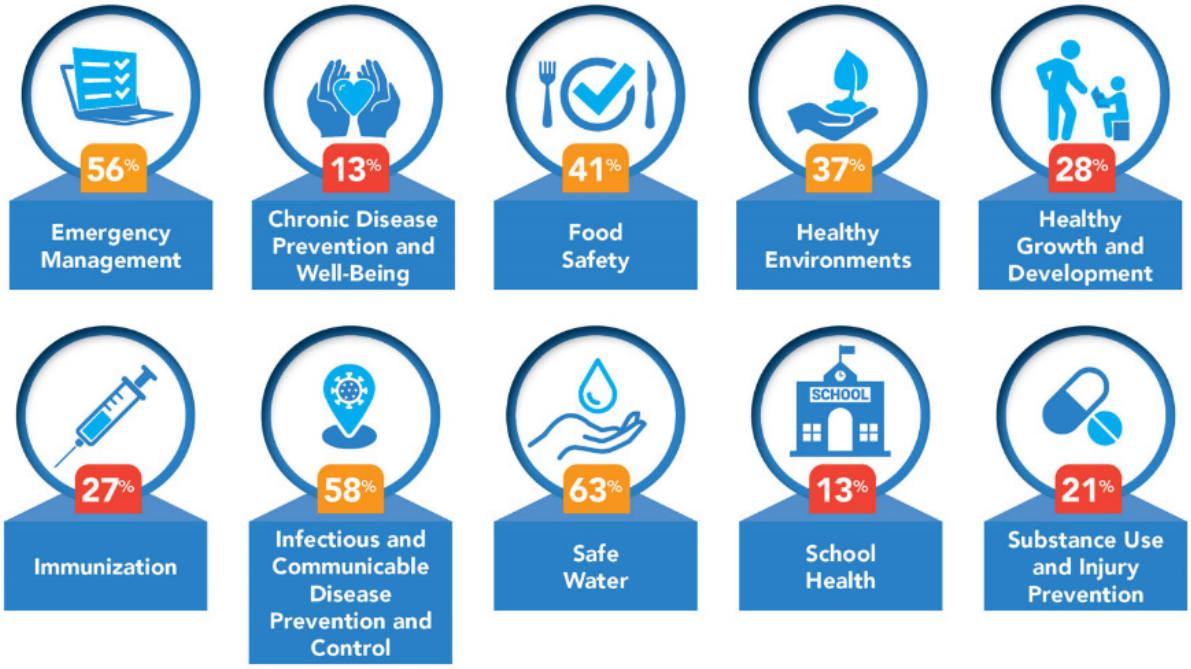
The redirection of resources to COVID-19 response efforts has led to a tremendous backlog of programs and services that will require equally tremendous commitment to resolve. Just like the widely reported “surgical backlog” in health care, the health promotion and protection backlog that has built up over nearly 2 years is certain to have a significant and measurable effect on the health of Ontarians for years to come. In the meantime, the pandemic itself has caused or magnified indirect harms to population health, including health inequities, impacts on mental health, increased substance use, and neglect of chronic diseases.

Specific questions were asked in our survey of LPHAs about the impact of the near-exclusive focus on COVID-19 response on their ability to carry out the full scope of the OPHS. The extent of completion of OPHS mandated activities ranged from 13% to 63%, and many respondents emphasized that most of the

work that was completed under each standard was linked in some way to the COVID-19 response. Non COVID-19 related activities overall were limited. Figures 9 and 10 below illustrate the average deficits for each OPHS Standard calculated from the survey data.

Figure 3: Summary of PHUs self-reported completion of OPHS Foundational Standards in the context of the COVID-19 pandemic

Figure 4: Summary of PHUs self-reported completion of OPHS mandated Program Standards in the context of the COVID-19 pandemic



Other Notable Findings from the Survey

- None of the OPHS requirements were completed to pre-pandemic levels due to the extensive redeployment of staff required to provide COVID-19 response activities including surveillance, case and contact investigation, outbreak and Infection Prevention and Control (IPAC) responses, enforcement, communications, vaccination and responding to public inquiries.
- The Safe Water, Infectious and Communicable Disease Prevention and Control, and Emergency Management Standards had the highest rates of completion but in many cases, the work was modified, response-driven and prioritized. Due to capacity constraints, many health units were required to triage their response to reportable diseases, IPAC complaints and inspections according to the level of risk.
- The Chronic Disease Prevention and Well-being and School Health Standards had the lowest rates of completion, a particular concern given the broad scope and far-reaching influence of each of these on overall population health. Injury prevention, healthy eating and physical activity, immunization, oral health, mental health, substance use, UV exposure, and violence and bullying are just some of the topics that LPHAs are required to address under these two Standards.

Service backlogs specifically related to children's health were also emphasized by respondents to the survey.

- Oral health screening in schools effectively ceased in March 2020 with the onset of the pandemic. Data from 16 LPHA respondents indicated that 2,602 children were screened in schools in the 2020-2021 school year, which is less than 1% of the 301,830 children who received oral health screening in the 2019-2020 school year.
- Healthy Babies Health Children (HBHC): overall, just over three quarters of public health agencies recommended or required the reduction of in-person home visits due to public health measures. In addition, many public health nurses from HBHC were redeployed to COVID-19 response activities creating waitlists and backlog of services for vulnerable families and children. Although many health agencies transitioned to virtual service delivery, when asked what percentage of HBHC families were receiving home visits using interactive video conferencing, 50% of public health agencies (17/34) reported <10% of their families were receiving video 'home visits'.
- School immunizations: 24 health agencies reported that approximately 80% of the school immunization program was not completed during the pandemic so far. Estimates provided by one health unit indicate that this would account for up to 300,000 school-based vaccinations/year that have not been administered across the province.

Overall, the program areas for which there is the greatest deficit are those in health promotion. These programs yield results over longer periods of time, and the effects of deficits in this area may not be immediately observed. Delays in addressing this backlog will magnify these effects, which include impacts on quality and quantity of life years and increased costs to the health care system.

Lessons Learned: process improvements and reinforcement of partnerships and collaboration

The COVID-19 pandemic presented many opportunities for public health to demonstrate its resilient and innovate nature through the enhancements to its traditional delivery of local public health programs and services to meet the local response needs. As reported in the survey and anecdotally through conversations amongst health units, new organizational processes were established, along with improved coordination of public health response among partners in health care and non-health care sectors. These enhancements could be further explored and considered during recovery for the effective and efficient operations of public health.

Improvements to processes because of the COVID-19 response were noted for the following activities by most respondents:

- data analysis, management, reporting, and visualization
- surveillance
- public and partner communications
- stakeholder engagement and collaboration
- public and partner education
- data driven health equity approaches
- emergency management

Some LPHAs noted that their processes for conducting case and contact management and IPAC management were supported by new technologies (e.g., PowerBI for enhanced data visualization, remote call centres, etc.) that will have lasting benefits beyond the COVID-19 response.

Support from the Office of the Chief Medical Officer of Health and Public Health Ontario were also identified as integral to the local response. The professional resources and tools including provincial guidelines, reference materials, legislation, emergency orders, and orders in council were essential to a coordinated public health response. Additional centralized human resources including the provincial workforce for case and contact investigation were also invaluable.

The importance of the existing network of local relationships among LPHAs, local health care providers, municipalities, social services, boards of education, and businesses was simultaneously demonstrated and enhanced during the COVID-19 response. Coordination of efforts to support public health measures, communicate information, implement assessment and testing strategies, and execute the mass vaccination campaign benefited significantly from local collaborative efforts, which will also be essential in the recovery phase.

RESTORING PUBLIC HEALTH'S WORK TO IMPROVE THE HEALTH OF ONTARIANS

The OPHS represents a broad range of often interrelated programs and services that address an equally broad range of population health determinants and outcomes. OPHS guidelines and protocols give LPHAs more detailed information to support their activities. These are Ministry mandated requirements and the basis of the related accountability and funding agreements.

LPHAs are beginning to develop recovery plans, which are aimed at resuming their vital and mandated programs and services under the OPHS while continuing to provide an effective ongoing response to COVID-19. These plans include assessments of program deficits that have resulted from the pandemic response and recommendations for a phased and priority-based approach to returning to full service

while giving special attention to the public health needs of populations that have been disproportionally affected.

This last point is noteworthy in its recognition that the pandemic and the response to it will have long lasting indirect health impacts on certain populations, which will put additional demands on LPHAs even within their OPHS mandate. Health equity has been identified as a foundational theme for recovery planning and will be a primary consideration in prioritizing activities. The core function of population health assessment will be critical here and given that this was one of the highest program standard deficits, it must be recognized that additional supports will be required to close this gap so that the other program gaps can be properly addressed.

LPHAs were also asked in the survey to rank program recovery priorities to address the public health backlog. The topics prioritized included mental health promotion, substance use and harm reduction including a focus on the opioid crisis, child immunization catch-up, food safety inspection, and oral health. Results are illustrated below in Figure 5.

The following specific priorities were identified for attention in the earliest stages of resuming routine activities:

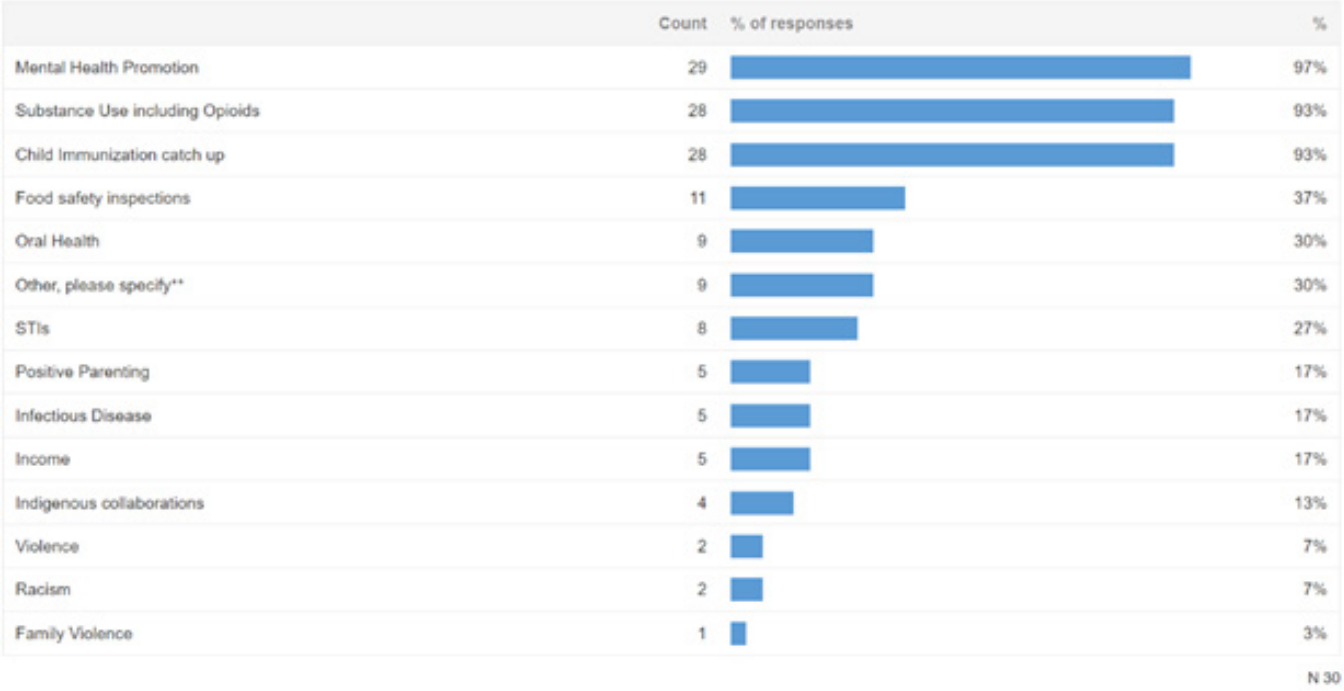
- Continue to provide a sustainable COVID-19 response to prevent transmission with a focus on protecting vulnerable populations.
- Offer school immunization catch-up to students who did not receive their full series of Grade 7 immunizations in the 2021/2022 school year.
- Reinstate/implement public health programs that support Mental Health Promotion as per the 2018 Ontario Public Health Standard Mental Health Promotion Guideline (2018) with special considerations for marginalized populations.
- Reinstate PHUs resources that support the prevention of substance use and local planning related to the opioid epidemic.

It is important to note that geographic and sociodemographic diversity is one of the features of Ontario's locally based public health system and this is recognized in the flexibility built in to the OPHS to allow for the tailoring of programs and services to address local needs and circumstances. It is therefore important to ensure that the relative ranking of priority areas for recovery does not preclude addressing the specific local needs of any given Board of Health.

This variation will also underlie differing states of readiness for and progress towards recovery, and the unpredictability of the future course of the pandemic will necessitate flexibility in planning. In any case, substantial recovery efforts will not be possible if the pandemic response continues to consume the bulk of local public health resources. Additional and immediate investments will be required.

Figure 5. Listing of priority topics and public health agencies responses

The following topics have been mentioned in various documents and communications as emerging population health priorities due to indirect impacts of the pandemic and public health measures. Other than Covid-19, please select the top 5 priorities in your catchment area. If your top 5 choices are not listed, please add them in the "Other, please specify" response field.



	Count	% of responses	%
Mental Health Promotion	29		97%
Substance Use including Opioids	28		93%
Child Immunization catch up	28		93%
Food safety inspections	11		37%
Oral Health	9		30%
Other, please specify**	9		30%
STIs	8		27%
Positive Parenting	5		17%
Infectious Disease	5		17%
Income	5		17%
Indigenous collaborations	4		13%
Violence	2		7%
Racism	2		7%
Family Violence	1		3%

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STRENGTHENING PUBLIC HEALTH FOR A MORE RESILIENT ONTARIO

All respondent LPHAs indicated that they would need additional dedicated resources to support ongoing COVID-19 response and resumption of routine activities into 2022 and beyond. The pandemic response has clearly demonstrated that LPHAs cannot do both. While mitigation funding from the Province has been helpful, clearer and more timely assurances of funding for both routine and extraordinary public health activities will be required to inform budgets over multiple years.

If COVID-19 becomes endemic, we know that the requirement for additional human resources for case and contact investigation, outbreak management, and vaccination will become permanent. We also know that resources will be required to erase the program deficits outlined above. Both will be expenses on top of the typical funding for the basic public health mandate under the OPHS. A clear commitment by the Province to developing a process that ensures timely, predictable and sufficient funding to address each of these obligations would assist LPHAs in developing their budgets for 2022 and beyond. Recognizing that such funding would primarily be used for health human resources, recruitment and retention strategies may also need to be considered.

The demand for additional FTEs for Public Health Nurses, Public Health Inspectors, Immunizers, Contact Tracers, Epidemiologists/Data Analysts, Administrative/Program Assistants, and Management positions was significant and widespread during the pandemic. Some respondents also mentioned the need for Communications staff, Program Planners/Evaluators, and Health Promoters, and even mental health supports for their own staff. While the magnitude of these demands may diminish once the recovery phase begins, maintaining COVID-19 response activities while resuming OPHS activities will not be feasible without additional resources.

PHU recovery reports and frameworks also refer to staff experiencing high levels of stress and burnout and cite the importance of supporting public health staff through recovery. Strategies to support the recovery of the public health workforce are outlined in a report from PHO including recommendations for individuals, teams organizational and policy approaches including mental health supports and stigma reduction strategies. (Ontario Agency for Health Protection and Promotion (PHO), 2021).

Recommendations for supporting public health to improve the health of Ontarians

1. **Provincial support for an ongoing pandemic response**

   Maintain ongoing provincial investments in science, structures, and resources in support of the multi-sector effort required to effectively manage the COVID-19 pandemic.

   - Ongoing provincial coordination of the response between sectors (e.g. education, municipal, acute and long term care, public health, solicitor general, academic, etc.)
   - Maintenance and review of provincial guidelines and tools, commitment to effective communications, and central support for local public health implementation and adaptation of provincial guidance based on local community needs.
   - Strengthening Public Health Ontario's capacity to meet its mandate of providing scientific and technical advice to government, public health, health care, and related sectors

2. **Provincial support for Local Public Health Agencies**

   Protect and promote the health of Ontarians through financial investments in PHUs that are clearly communicated and committed early in the fiscal year:

   - Ongoing one-time COVID-19 funding for 2022 to support the COVID-19 response and ensure the ability to maintain required staffing level.
   - One-time recovery funding to support recovery efforts, as outlined in this report, and to allow PHUs to address priority areas including public mental health promotion, public health opioid crisis response, and child and school immunization catch-up, other service backlogs including oral health screenings and inspections, and organizational needs related to human resources, infrastructure, and technology.
   - Increase base funding, including but not limited to the addition of COVID-19 as a disease of public health significance beyond 2022.

3. **Provincial support for evaluation and renewal**

   Continue to work with Ontario's public health stakeholders (Public Health Ontario, Office of the Chief Medical Officer of Health, Local Public Health Agencies) to develop the vision for a stronger responsive public health sector with the capacity to address population health needs through various partnerships into the future.

   - Ensure that Ontario launches a comprehensive review and assessment of all aspects of the pandemic response to inform strategies for improvement.

- Ensure that public health stakeholders have the capacity and resources to participate fully in the review and in formulating recommendations.

CONCLUSION

The COVID-19 pandemic has clearly demonstrated the critical importance and proficiency of Ontario's public health system and the need to reinforce it. Lessons from past large scale infectious disease emergencies such as SARS and H1N1 helped to inform Ontario's and LPHAs' preparedness, but no sector was prepared for the scale, complexity, and duration of the response that this pandemic has required. As we have demonstrated here, the effectiveness of the local public health response has come at enormous cost, especially to the routine public health activities that are designed to protect and promote health at a population level every day.

It is anticipated that the need for ongoing COVID-19 response activities will continue for some time, and we can no longer ignore the suite of OPHS mandated activities that improve and protect the health and reduce health inequities well-being of the population of Ontario. COVID-19 programming will therefore need to be balanced with recovery efforts and integrated into existing OPHS accountabilities, and a strong commitment of provincial support, including the provision of sufficient, predictable and sustainable funding, will be required.