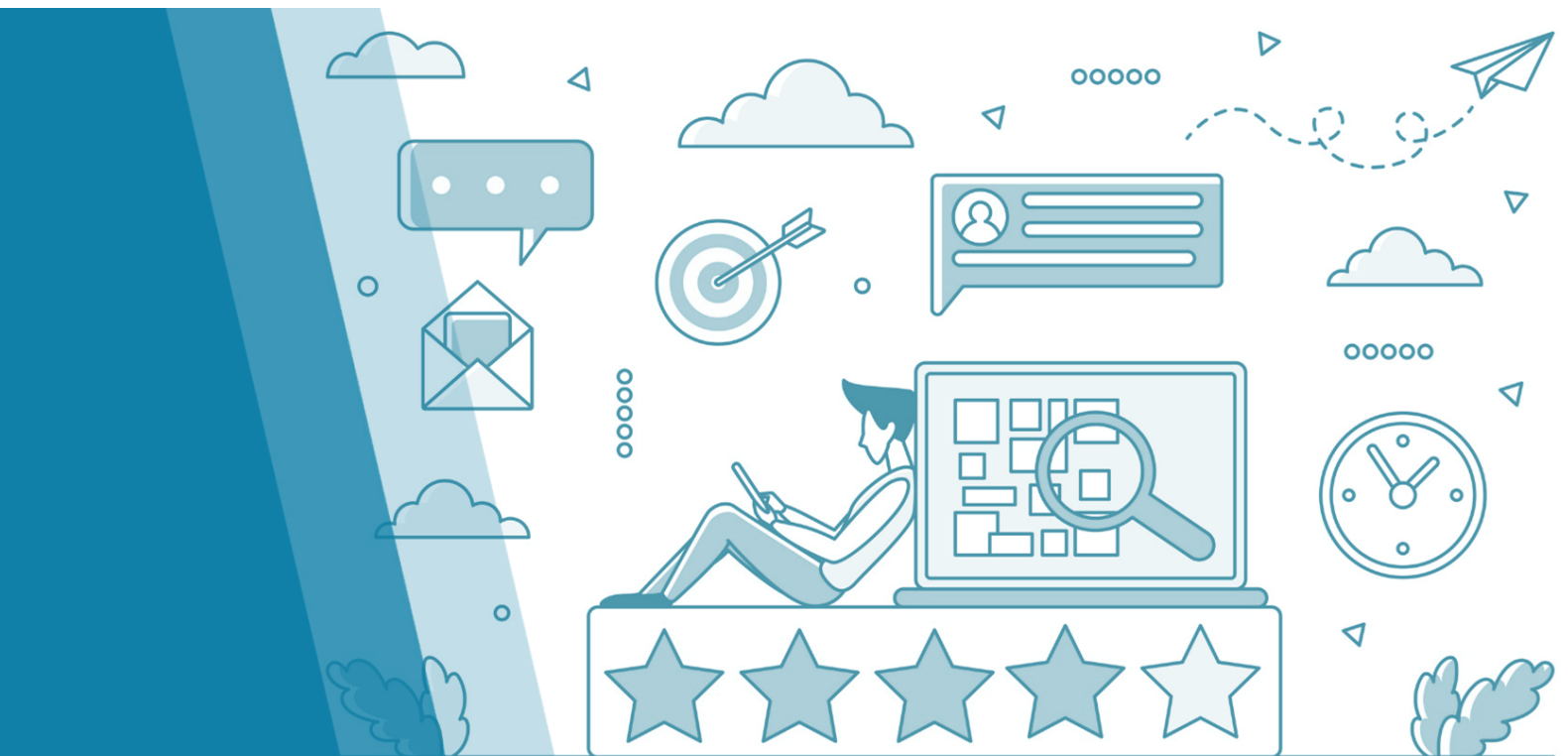# Strengthening Workforce Capacity in Emergency Management

A Situational Assessment

Public Health Ontario

Public Health Ontario is an agency of the Government of Ontario dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. Public Health Ontario links public health practitioners, frontline health workers and researchers to the best scientific intelligence and knowledge from around the world.

Public Health Ontario provides expert scientific and technical support to government, local public health units and health care providers relating to the following:

- communicable and infectious diseases

- infection prevention and control

- environmental and occupational health

- emergency preparedness

- health promotion, chronic disease and injury prevention

- public health laboratory services

Public Health Ontario's work also includes surveillance, epidemiology, research, professional development and knowledge services. For more information, visit publichealthontario.ca.

Acknowledgements

Disclaimer

Executive Summary

The purpose of this report is to summarize the results of a situational assessment designed to identify opportunities to support workforce capacity building in public health emergency management. This work supports one of Public Health Ontario's (PHO) strategic directions to advance public health workforce capacity with a focus on workforce readiness to respond. It aims to build on provincial and national efforts to strengthen public health workforce capacity to respond to public health emergencies. The situational assessment provided an opportunity to take a collaborative approach to setting priorities and to better understand the strengths, needs and interests of public health units (PHUs) in Ontario.

The situational assessment involved a virtual consultation with 42 public health professionals representing 20 PHUs in Ontario and a search of grey literature sources to identify existing learning resources on priority topics. The consultation focused on a range of topics specific to public health emergency preparedness. When participants shared existing strengths in emergency preparedness workforce capacity, several examples referred to their experiences in enacting coordination structures including the incident management system (IMS), conducting post-response learning and evaluation activities (e.g., after-action reviews, debriefs) and applying collaborative processes to preparedness activities (e.g., engagement with municipal partners, community partners and industry groups in risk assessments, training and creating/participating in exercises). Participants indicated that their PHUs have select staff members with significant expertise and experience in public health emergency management, supported by strong organizational leadership committed to workforce development in this area. The consultation findings indicated a strong interest among PHUs to further workforce capacity building in foundational topics to public health emergency management including:

- **Emergency response coordination structures, including the IMS** with specific interests in roles, responsibilities and processes internally and among external partners; applying IMS structures and concepts to complex emergencies; understanding scalability and flexibility of the IMS; and enhancing leadership awareness and adoption of IMS.

- **Emergency preparedness plans** including roles and responsibilities at different levels of the system and for different preparedness and response functions in addition to foundational knowledge, tools and templates to support the development of plans and protocols.

- **Participating in simulation exercises** that test various response capacities including coordination structures, such as the IMS. Additionally, there is an interest in understanding and strengthening the ability to plan and execute successful exercises.

- **After-action reviews (AAR) or debriefs** including improving all staff awareness about the purpose of post-response learning and evaluation activities and understanding of how after-action reviews flow into corrective actions plan.

- **Crisis and risk communication** including a need for general awareness and support for applying concepts and principles.

- **Applying an equity lens to emergency preparedness activities** with a focus on developing knowledge and skills to integrate an equity lens; ensuring that core response and leadership staff involved in incident planning have a strong understanding of how to examine unintended consequences; and improving understanding of Indigenous cultural safety, including improving understanding of considerations for relocation during emergencies.

PHUs are interested in applied learning resources including tools and templates supported by evidence-informed practices in addition to training and other types of knowledge exchange events. The importance of having access to guidance, tools and training that relate to emergency management core competencies specific to *public health* was emphasized and raised as an important gap to fill. Participants acknowledged challenges in creating new learning resources for professional development and there were requests for centralized development of learning that could be adapted locally. Some PHUs have made progress developing new learning resources and tools for their staff suggesting that PHO could support knowledge exchange and dissemination of existing learning resources and tools as part of future work.

The search of grey literature sources returned several existing learning resources and tools relevant to priority topics in public health emergency management that were discussed during the virtual consultations. However, it was noted that not all resources have a public health specific focus. Furthermore, while aligned with areas of interest, they may not be the most current or specifically tailored to the unique needs and context of PHUs in Ontario. Next steps will involve a close review of these resources to assess their relevance and suitability. PHO will work with partners to validate the results of this situational assessment and explore how the findings can be applied to guide capacity building initiatives for PHUs in Ontario.

Contents

Introduction

Public Health Ontario's (PHO) strategic plan for 2024–2029 includes a strategic direction to advance public health and health workforce capacity and knowledge to improve population health outcomes. This aligns with a renewed commitment across all levels of the Canadian public health system to enhance workforce capacity. The importance of continuous learning and training for board of health staff is reflected in The Ontario Public Health Standards (OPHS).[1] Additionally, in Canada's Chief Public Health Officer's Report on the State of Public Health in Canada (2021), workforce expertise and human resource capacity was defined as one of the foundational building blocks supporting the public health system to carry out its key functions.[2] The report emphasized how the COVID-19 pandemic magnified challenges to ensuring that workers have the right training, experience and specialized expertise and noted specific gaps in emergency management, risk communication, policy and planning.[2] To help address these gaps, updated public health core competencies have been released by the National Collaborating Centres for Public Health with support from the Public Health Agency of Canada (PHAC), offering a common foundation to guide workforce development across essential public health functions relevant to Canada, including emergency preparedness and response.[3]

Enhancing workforce readiness to respond to emergencies has been identified as an important area of focus for PHO's work in supporting public health workforce capacity building. There is an opportunity to strengthen the capacities required to support essential public health emergency preparedness actions. In alignment with provincial and federal efforts and in support of PHO's mandate to provide scientific and technical support to the public health system, PHO's Emergency Planning, Response and Recovery team (EPRR) conducted a situational assessment with the following aims:

1. To identify workforce capacity building opportunities that could assist local public health units (PHUs) further enhance their workforce development plans specific to public health emergency management

2. To gain a better understanding of current learning resources available across public health emergency management topics

Methods

A situational assessment was used to guide this work. This approach involves a systematic process of collecting, analyzing and applying information to inform planning decisions.[4] This approach has been used previously at PHO to engage public health professionals in Ontario and to inform opportunities for PHO to support system-wide workforce capacity building across a range of topic areas.[5,6]

Below is an overview of two important concepts that underpinned this work.

Asset- and strengths-based approach: The situation assessment aimed to integrate an asset-based and strengths-based approach.[7,8] The goal was to identify and leverage existing strengths resources and capacities to understand what's working well and how to expand on or reinforce existing capacity.

Emergency preparedness: The focus of the situational assessment was on all-hazards emergency preparedness including the upstream activities that strengthen public health readiness and resilience throughout the emergency management cycle. More specifically, this work was guided by the Public Health Emergency Preparedness Framework which defines 11 essential elements of public health emergency preparedness for infectious and non-infectious emergencies.[9,10] Figure 1 outlines the 11 essential elements in the framework.

Figure 1: Public Health Emergency Preparedness Framework
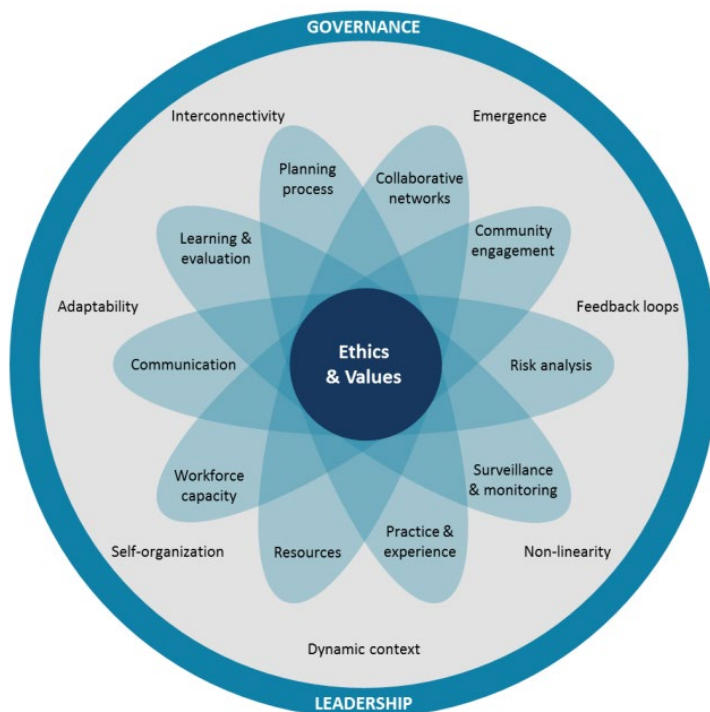
Source: Khan Y, O'Sullivan T, Brown A, Tracey S, Gibson J, Généreux M, et al. Public health emergency preparedness: a framework to promote resilience. BMC Public Health. 2018;18(1):1344. Available from: https://doi.org/10.1186/s12889-018-6250-7

Data Sources and Analysis

Data sources used for the situational assessment included documentation from four virtual group consultations with PHUs and an inventory of resources gathered from a search of grey literature sources.

Virtual Group Consultations

PHO hosted four virtual group consultations with PHUs in June 2025. A purposive sampling strategy was used to recruit public health practitioners working within Ontario PHUs with specialized knowledge and experience in public health emergency management. Participants were recruited via email using the distribution list maintained for the Ontario Public Health Emergency Management Network (OPHEMN) which represents all Ontario PHUs. An online virtual whiteboard was used to document participant reflections and ideas during the sessions and written notes were taken to capture the discussion. The consultation questions were designed to capture the following:

- Current strengths in public health emergency management capacities among PHU staff

- Topics in public health emergency management that are most important to focus on for professional development to strengthen PHU ability to respond effectively to public health emergencies including specific gaps in knowledge and skills

- Additional learning resources needed to support professional development in emergency management

Discussions about strengths, areas to focus on professional development and gaps in knowledge and skills were guided with a list of topics informed by the search of grey literature (as described below) and relevant sections of the OPHS:[1]

1. Public health emergency management concepts and principles (e.g., phases of emergency management, definitions of key terms, emergency preparedness frameworks)

2. Legislation relevant to public health emergencies

3. Coordination structures, including the IMS

4. Applying collaborative processes to preparedness activities

5. Applying an equity lens to preparedness activities

6. Key concepts related to mental health and psychosocial support to strengthen resilience

7. Crisis and risk communication concepts and principles

8. Hazard identification and risk assessments (HIRAs)

9. Simulation exercises (e.g., designing and delivering exercise or developing an exercise program)

10. After-action reviews (AARs)/debriefing

11. Emergency preparedness plans/response protocols

Discussions centred around the needs primarily of core front-line staff involved in routine responses to emergencies (e.g., environmental assessments, outbreak investigations); however, participants were encouraged to consider specific subgroups in their responses (e.g., leadership, specialized roles, staff that might provide surge capacity support).

All discussion notes, documentation from the virtual whiteboard and chat comments from the four virtual consultation sessions were combined for analysis. A hybrid deductive-inductive approach was used to analyze the qualitative data from the consultation.[11] This approach involves starting with established categories or frameworks to code qualitative data while also staying open to discovering new ideas or patterns that are informed by participant reflections. Codes were initially developed from the descriptive topics and the essential elements of the Public Health Emergency Preparedness Framework.[9,10] Additional codes were generated to reflect recurring ideas, opportunities and priorities expressed by participants. To strengthen credibility, multiple team members were involved in the analysis and resolved discrepancies through discussion.

Grey Literature Search

A targeted search of public health agency websites and learning portals was completed to identify topics covered in existing training and educational resources related to emergency management. The search of grey literature sources was conducted using two custom search engines programmed to search the websites of:

1. Canadian federal, provincial and regional PHUs

2. Selected international public health agencies. Each item was reviewed to document the topic, type of resource and objectives.

Results

Consultations Results

Participants

The consultation involved 42 participants representing 20 of the 29 PHUs in Ontario. The 20 PHUs represented a balanced mix of urban and rural regions across all areas of the province and varied in terms of organizational size, resourcing and the populations served. The professional roles held by participants included manager/team lead (n = 16), coordinator (n = 8), advisor (n = 5), public health inspector (n = 4), health promoter (n = 3), in addition to a range of other roles (e.g., clinical leadership roles, directors, public health inspector). Most participants were part of the OPHEMN or had emergency preparedness or emergency management in their job title.

Strengths in Existing Capacities

To begin each consultation, participants were asked to share examples of existing strengths in emergency preparedness workforce capacity among staff at their PHU, reflecting on the list of 11 topics. Most examples described by participants referred to their experiences in enacting coordination structures including the IMS, conducting AARs/debriefing and applying collaborative processes to preparedness activities.

While this first activity was designed to identify strengths in *workforce capacity* (i.e., specific areas of strength in knowledge and skills), participants shared reflections about capacities referring to broader structures, processes, supports, investment in resources and collaborative activities. These strengths were found to align with the structural and process-oriented essential elements in the Public Health Emergency Preparedness Framework.[9,10] In addition to Workforce Capacity, which was the primary focus of the question, other essential elements mentioned were:

- Collaborative Networks

- Learning and Evaluation

- Governance and Leadership

Below are four additional themes that capture what was learned from participants' reflections about strengths in existing capacities:

- **Strong Emergency Management Expertise**: Comments reflected strengths in the level of experience responding to emergencies and access to expertise in emergency management within PHUs. This capacity could be leveraged to collaborate on developing learning resources and enable the use of different learning strategies.

- **Importance of Leadership Support**: Comments highlighted the importance of local health unit leadership support for emergency management workforce development, or more generally, how emergency management is seen as a priority.

- **Opportunities to Leverage a Strong Learning and Evaluation Culture**: There were several comments regarding strengths in AAR and debrief processes and use of tools and templates. This demonstrates a strong learning and evaluation culture that can be leveraged to support quality improvement in emergency management programs.

- **Integrated Communications Support**: Another area that stood out were comments about strengths in crisis and risk communication capacity including available support to response teams. This existing capacity presents an area of opportunity to leverage when developing or disseminating learning resources and other supports for risk communication and trust in public health.

Areas of Focus for Professional Development

Participants identified the top five most important topics needed to strengthen their PHU's ability to respond effectively to health emergencies:

- Coordination structures, including the IMS

- Emergency preparedness plans/response protocols

- Simulation exercises (e.g., designing and delivering exercises or developing an exercise program)

- AARs/debriefing

- Crisis and risk communication concepts and principles

Additional topics participants identified as needing professional development included: applying an equity lens, applying collaborative processes, HIRAs, mental health and psychosocial support, public health emergency management concepts and principles, cross-training to support surge capacity, business continuity planning, leadership training and hazard-specific knowledge.

In relation to the priority emergency preparedness topics identified above, participants were asked to identify what specific knowledge and skill areas need to be developed to support staff at their PHU to respond effectively to public health emergencies. The examples shared by participants helped capture where there is a need to improve awareness, knowledge, skill and experience. For instance, participants cited the need for improved awareness of key concepts relevant to HIRAs and defining and differentiating hazards. Similarly, participants cited the need for role-specific knowledge and skill development as it relates to the IMS structure, function, terminology and adoption in the event of an emergency. Below is a description of two related themes based on the feedback received on knowledge and skills requiring development.

Integrating a public health lens into emergency management practices and processes: Participants commented on the interdependencies of multiple sectors in emergency management. They described that existing learning resources being utilized at PHUs are often developed for the broader emergency management sector and are lacking a public health lens that can be tailored to their unique contexts. As such, participants noted that staff and leadership would benefit from a better understanding of public health approaches in emergency preparedness, especially for HIRAs, simulation exercises and using the IMS. The awareness of a public health perspective to emergency management is increasingly important when working with municipalities and community partners.

Improving understanding of emergency management roles and responsibilities: Participants acknowledged that emergencies are complex and emphasized the need for a clearer understanding of roles and responsibilities in emergency management. This includes internally within PHUs and across local, municipal and provincial partners. For example, participants described the importance of clarifying roles and responsibilities during various emergency preparedness activities (e.g., conducting a HIRA), including contributions from internal teams (e.g., epidemiology, risk, privacy) and external partners (e.g., municipalities). There was also a need for clearer understanding of roles and responsibilities of system-wide partners, such as Emergency Management Ontario (EMO) before, during, and after emergencies.

Types of Learning Resources

The last portion of the consultation session involved asking participants what types of learning resources would support professional development of staff at their PHU. Types of learning resources identified by participants included:

- Standard tools, templates and toolkits

- Training (e.g., online modules, in-person, learning platforms)

- Best practice documents

- Knowledge exchange events (e.g. webinars, forums, conferences, communities of practices)

- Central repository of resources

- Learning resource type not specified

Most often, participants highlighted the need for standardized tools, toolkits and templates to support their work. This was followed closely by training, including online training modules and learning platforms, train-the-trainer, in-person training, and best practice guidance documents. Best practice documents included tip sheets and evidence-informed strategies for emergency preparedness and response topics and are described further below.

Knowledge exchange events through webinars, communities of practice, forums or conferences were cited to share lessons learned from AARs/debriefs and PHU experiences during and after emergencies. A central repository of resources was identified by participants to facilitate collaboration and resource sharing across PHUs for emergency management resources, templates and plans across several topics described further below.

Participants also described other approaches and advice for learning resources that were not topic-specific but rather focused on the importance of broader structures, processes, support, funding, resources, and collaborative activities. This included the importance of:

- Leveraging and amplifying PHU's success stories as case studies, as well as any existing "in house" tools and resources for broader PHU use.

- Cross-sector training opportunities to demonstrate how PHUs and other partners can function collaboratively

- Considering available funding and resources for training

- Championing and support from PHU senior leadership and executive teams for emergency management professional development and training opportunities

Grey Literature Search Results

A total of 80 resources were identified from the search of grey literature. While the goal was to identify learning resources that focused on all-hazards public health emergency preparedness topics, the project team reviewed and documented some learning resources that were not public health specific (e.g., resources specific to disaster response). A brief overview of the findings is captured below, focusing resources that are related to the top five topics selected as needing professional development during the consultation. This overview does not include a fulsome discussion of what might be limitations or gaps in these resources for application at the local PHU level in Ontario.

Coordination structures including the IMS: Several learning resources were documented that covered information on emergency coordination structures, some focusing specifically on the IMS. Many of these were short training videos developed by PHAC covering concepts relevant to the use of IMS in public health.[12-19] Also documented were established trainings offered on the use of IMS by EMO (developed for the broader emergency management sector) and archived PHO content from modules and an in-person workshop.[20] The archived PHO content in the modules provided a detailed overview on the use of IMS in public health and the in-person workshop incorporated case studies to demonstrate applications of the IMS in public health and relationship to related preparedness activities: conducting a HIRA, creating an incident action plan, emergency response plans, continuity of operations planning, and post-response learning and evaluation.

Simulation exercises: A number of learning resources covered information on developing simulation exercises.[21-27] In addition to toolkits and guides, e-learning modules from the European Centre for Disease Control and Prevention (ECDC), the World Health Organization (WHO), and the Government of British Columbia were identified.[22,23,25,26] While it was not within the scope of this scan to create an inventory of scenarios/exercise packages (off-the-shelf exercises), previous work by the EPRR team has identified examples of scenario/exercise packages from several agencies including: the ECDC through their learning portal, the WHO's off-the-shelf exercise handbook, the US Centers for Disease Control and Prevention (CDC) TEST simulation tool, and the Virginia Department of Health in the US.[22,28-31]

AARs/debriefs: Six resources were documented that focused on AARs/debriefs. The ECDC and the WHO have developed an introductory training module on in- and after-action reviews.[32,33]Additional resources are available in the form of tools and guides.[26,34-36]

Crisis and risk communication: The US CDC has developed a package of learning resources (training, webinars, manual) on crisis and emergency risk communication, including an evidence-informed framework.[37] Resources are designed for anyone who communicates on behalf of an organization that responds to public health emergencies. The WHO has also developed a series of modules covering risk communication in health emergencies that includes a focus on community engagement and integration of multidisciplinary perspectives to risk communication and community engagement strategies.[38] They also have a module dedicated to infodemic management.[39] Available e-learning on this topic is also available through the Pan American Health Organization (PAHO/WHO) and the US Public Health Sector Training Network.[40-42]

Emergency preparedness/response planning: There was some feedback from the consultation emphasizing the importance of increasing internal awareness of existing emergency preparedness and response plans and support continuity of operations planning. The Government of BC has designed resources to support the development of emergency management plans.[43] Various resources are available from the WHO to support preparedness planning including pandemic planning and planning and development of a public health emergency operation centre.[44,45] Lastly, one of the microlearning videos developed by PHAC provides orientation to the Foodborne Illness Outbreak Response Protocol in the context of a public health emergency response, which could be used as a model for orientations to other provincial and federal emergency response plans that aim to provide an overview of roles and responsibilities of different partners in the health system.[46]

Summary of Considerations

This situational assessment involved both a consultation with PHUs and search of grey literature sources to identify existing learning resources available from agencies known to host or develop public health emergency management resources. Findings from the consultation indicate an interest among PHUs to further workforce capacity-building in foundational topics to public health emergency management including: emergency response coordination structures, including the IMS; emergency preparedness plans including roles and responsibilities at different levels of the system and for different preparedness and response functions; designing and participating in simulation exercises; AARs/debriefs (post-response learning and evaluation); crisis and risk communication; and applying an equity lens to emergency preparedness activities. While these topics stood out as a priority for professional development, there were several additional and related emergency management topics of interest to participants. Participants identified a range of knowledge and skill areas that require further development across these topics.

There is an opportunity to build on existing strengths within PHUs. Participants indicated that their PHUs have select staff members with significant expertise and experience in public health emergency management, supported by strong organizational leadership that is committed to workforce development in this area. Some participants acknowledged the strain on resources for professional development, which limits the capacity of some PHUs to independently develop learning materials and train their staff. Some PHUs have already created professional development plans and supporting learning resources, although others are not yet at that stage. There was support for centralized development of learning resources as a more efficient and equitable strategy.

A search of grey literature sources to identify existing learning resources revealed several relevant materials aligned with the priority topics identified by participants. These included resources related to coordination structures including the IMS (with a public health lens), simulation exercises, AARs, and crisis and risk communication. These resources provide a strong foundation for future capacity-building opportunities. Participants emphasized the need for applied tools and templates supported by evidence-informed practice in addition to training and emphasized the value in knowledge exchange opportunities among PHUs. The consultation revealed an overall ongoing need for foundational training in public health emergency management stressing that many existing learning resources specific to emergency/disaster management are limited in their relevance to public health.

There are some limitations in this situational assessment that should be factored in when applying the results to inform next steps. It is important to consider that other positions across PHUs, including senior leaders and front-line response staff may have provided an alternative perspective on priority topics and advice for future capacity-building resources. While the consultation was successful in recruiting the majority of PHUs in Ontario (20 out of 29) to participate, not all PHUs are represented in the findings. The results of this situational assessment will be presented to the OPHEMN (representing all PHUs in Ontario) and other forums to validate and expand on the findings and to enable a collaborative approach to developing additional learning resources.

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