

Emergency Preparedness Exercises

An Inventory of Public Health Planning Resources



Report
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Public Health Ontario

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Purpose of this Document

This document provides an inventory of resources for public health practitioners tasked with planning, designing, conducting or evaluating emergency preparedness exercises. Resources featured cover practical information, important steps and decision-making considerations along with relevant tools and templates. This inventory also features off-the-shelf exercises that users can adapt to their needs and context.

Resources were identified from a grey literature search of public health agencies and other relevant emergency management websites. More details on the methods can be found in [Appendix A](#). To support the use of the resources included in this inventory, the '[Guiding Concepts](#)' section summarizes evidence-informed practices and principles, identified through a rapid review conducted by Public Health Ontario (PHO), that can enhance all-hazards emergency preparedness exercises.¹

Note: this document does not replace existing manuals that provide detailed guidance on emergency preparedness exercises; rather it features important insights from a review of the literature on this topic.

Why this Work is Important

Strengthening public health workforce capacity has been identified as an important goal for Canada's public health system.² To align with this goal, PHO's strategic directions (2024-2029) include a focus on advancing public health workforce capacity. To support this strategic direction, PHO has been exploring opportunities to enhance capacity building in several key areas. A PHO situational assessment on opportunities to strengthen workforce capacity in emergency management among Ontario public health units (PHUs) identified emergency preparedness exercises as an important topic and emphasized the need for practical resources and tools. This inventory represents one component of the products and resources PHO aims to share based on insights gathered from the situational assessment.³

This work also supports capacity building for Ontario local PHUs around learning, practice, training and engaging in regular exercises. Emergency preparedness exercises are a foundational activity in the public health emergency preparedness cycle.³ As there are regular updates to available resources and tools, this inventory will be updated on an ongoing basis.

Guiding Concepts

Two broad types of exercises will be referred to in this inventory:

- **Discussion-based exercises:** simulate emergency situations in an informal environment with the use of a scenario to encourage constructive and in-depth discussion—they require less planning, capacity and resources when compared to operations-based exercises^{4,5}
 - Examples include seminars, workshops and tabletop exercises
- **Operations-based exercises:** simulate emergency situations by incorporating a heightened use of realism (e.g., time pressures) and the execution of actual response tasks or conditions
 - Examples include drills, functional exercises and full-scale exercises

This inventory includes several guides and tools to support the planning process that will set the foundation for a successful exercise, while helping to validate and enhance preparedness and response plans. When navigating these resources, consider the following practices to enhance exercise planning:

- Engage interest holders (e.g., leadership, external partners) early to understand their needs (e.g., reasons to conduct the exercise) and opportunities (e.g., areas to be tested) to effectively scope the exercise
- Identify the primary exercise purpose and exercise objectives early on—a clearly defined purpose and set of objectives directly informs other exercise design choices^{1,4,6,7}
- Use the primary purpose of the exercise and agreed-upon exercise objectives to help select the type of exercise (e.g., seminar, tabletop exercise, drill, functional exercise) needed

Resources to help with needs assessment and exercise scoping are included in this inventory, in addition to practical guidance on the important roles (e.g., exercise facilitators, exercise evaluators) required to help design, conduct and evaluate the exercise.

The design and development phase in the exercise cycle involves working on an exercise scenario. As you navigate available resources, consider the need for:

- **Basic scenarios:** simple descriptions of an event can be used effectively to prompt discussion about roles, procedures or decision-making in discussion-based exercises
- **Complex scenarios:** event information and context evolve overtime with the use of injects and the scenario increases in complexity during the exercise (e.g., resource constraints, multiple incidents, incomplete information)

Other aspects to consider when designing the scenario are the **psychological fidelity** of the scenario (i.e., the degree to which the scenario prompts cognitive and behavioural responses that would be similar to responses in an actual event⁸) and **injects**, scripted written or oral information, “injected” into an exercise at different stages to evoke a specific response and help facilitate the flow of the exercise.^{9,10}

Resources in this inventory describe strategies to increase learning and participation, including how to increase psychological fidelity in the design of exercise. Examples include mirroring a realistic time frame, incorporating ambiguity in illness presentation, participants becoming infected, incorporating contextual factors such as resource availability and details from real events.^{11,12}

In addition to scenario design, the featured resources can be used to inform other considerations at the exercise design and development stage including selecting participants and preparing them for the exercise, developing effective discussion questions and activities and strategies to support participant engagement and collaboration.

Off-the-shelf exercises: Many public health agencies have created fully developed exercises in a format that can be adapted and used by other organizations. These are commonly referred to as "off-the-shelf" exercises. When selecting an off-the-shelf exercise:

- Consider the fit between the exercise objectives and what you hope to achieve in planning an exercise
- Adapt the scenario to your local context, such as incorporating real names of individuals and organizations and to reflect roles and responsibilities of your agency/partners and context

Evaluation and improvement: This inventory features several resources to guide evaluation and improvement planning, which are essential steps in the exercise cycle and should be considered early in the process. When navigating available resources for exercise evaluation:

- First determine whether the evaluation objective is to assess the quality of the exercise, identify improvements during the exercise, and/or measure performance. Based on this decision, select and tailor the appropriate evaluation methods
- Integrate evaluation planning with the planning of the exercise to make sure evaluation methods and data collection tools (e.g., participant surveys, exercise observations, debriefing) help you achieve the overall purpose and objectives of the exercise

For additional insights into how to enhance exercises at all stages of the exercise cycle, see PHO's publication [Enhancing the design, conduct and evaluation of public health emergency preparedness exercises: a rapid review](#).¹

Featured Resources

The publicly available resources featured in the following sections are tailored to a public health audience. The grey literature search also identified relevant resources developed for a general emergency management audience at local, provincial/state/regional, national, or international levels that are adaptable to public health contexts. The additional resources are listed in [Appendix B](#).

The resources are organized under the following sections:

- [General Guidance Resources](#)
- [Resources for Enhancing Exercise Design](#)
- [Published Exercises and Off-the-Shelf Exercises – By Topic](#)

General Guidance Resources

This section includes nine resources that provide general guidance for different types of exercises (e.g., discussion-based and operations-based) in the form of a manual, handbook or step-by-step guide. Many of the resources featured in this section include accessible templates that can be used when planning, designing, conducting and evaluating a simulation exercise.

1. Introduction to Exercise Programs (EM 125)

Emergency Management Ontario

Description: While this is an online, self-directed training course and not a general guide for exercise planning, it is featured as it contains a toolkit with templates for exercise planning, development and evaluation. This introductory course provides an overview of the concepts for emergency preparedness exercises versus a step-by-step guide. The downloadable toolkit includes templates for the planning process, setting exercise objectives, developing the scenario narrative, developing exercise resources and evaluation planning.

How to access: A [training portal account](#) is required; option to sign-up for various emergency management courses are available.¹³ The course is designed for the Ontario and local context, though not specifically for a public health audience, and offered in English and French.¹⁴ This is a prerequisite for EMO – EM 225 Exercise Program Management.

For additional courses, see PHO's [Emergency Management Learning Resource Inventory](#).¹⁵

2. Homeland Security Exercise and Evaluation Program (HSEEP)

Description: This resource outlines fundamental exercise program principles along with an approach to exercise program management covering exercise design and development, conduct, evaluation, and improvement planning. Both discussion and operations-based exercises are covered and described in terms of their purpose, structure, participant goals, characteristics and outcomes. Though this resource isn't explicitly tailored to a public health audience, the overall guidance provided could be adapted.

How to access: [Homeland Security Exercise and Evaluation Program \(HSEEP\)](#)¹⁶

3. Simulation Exercises

Description: This is the landing page for [simulation exercises](#) and key publications and some resources/templates (e.g., simulation exercise manual templates) from the WHO:¹⁷

- [Simulation Exercise Manual](#) is a practical guide and tool for planning, designing, conducting and evaluating all types of public health simulation exercises, and guidance for which simulation exercise type to use.⁶ It includes guidance on the importance of establishing an overarching exercise project cycle, implementation, and adaptable templates for each type of exercise.
 - The list of templates included in the Simulation Exercise Manual document annex are broken hyperlinks. Instead, they can be accessed via the 'SimEx toolbox' section on the landing page, as downloadable zip files.
- [Mass Gathering Practical Guide for Simulation Exercises and After Action Reviews](#) compliments the Simulation Exercise Manual by providing key guidance when planning, designing, conducting, and evaluating exercises that have a focus on mass gatherings.¹⁸ The resource also includes tools, templates, and four hazard-specific scenario examples (see below [Mass Gatherings](#) section for more details about the exercise scenarios).
- [National Health Simulation Exercise Programme: Implementation Guidance to Strengthen Emergency Preparedness, Readiness and Response](#) provides essential components and steps for implementing and sustaining a simulation exercise program beyond sporadic or ad hoc initiatives.¹⁹

How to access: [Simulation Exercises](#)¹⁷

4. Exercise Toolkit

Description: This resource is both a guide and a collection of practical templates for exercise planning (including a template for a tabletop exercise plan). A comprehensive overview of different types of exercises is included, and guidance is provided on the exercise planning process including how to structure and organize the planning team, setting exercise objectives and tips for developing a scenario. This resource provides an overview of the various exercise resources and reports that should be developed and includes worksheets, checklists and guidelines. Guidance and resources are also included on exercise evaluation including exercise observations and participant feedback.

How to access: [Exercise Toolkit](#)²⁰

5. Virtual Exercise Best Practices

Description: This resource is applicable to professionals and organizations conducting virtual tabletop simulation exercises. The guide provides best practices and practical tips, considerations for platform testing and pre-conduct logistics, and actions to take before, during and after the exercise.

How to access: [Virtual Exercise Best Practices](#)²¹

6. Handbook on Simulation Exercises in EU Public Health Settings

Description: This handbook was developed for professionals responsible for exercise planning and provides guidance on how to establish strategic-level support and navigate the necessary steps in conceptualizing, designing, planning, coordinating, conducting and evaluating exercises. The presented framework applies to exercises related to communicable diseases, outbreaks, and epidemics, with the option to adapt for specific needs, circumstances, and context or organizational structure. The handbook is divided into six sections, with the first five following the phases of the emergency preparedness cycle, and the last providing details and guidance on building a simulation exercise scenario, for both discussion-based and operations-based exercises.

How to access: [Handbook on Simulation Exercises in EU Public Health Settings](#)⁷

7. Simulation Exercises in Public Health Settings – Step-by-Step Exercise Design

Description: A companion guide to the ‘Handbook on Simulation Exercises in EU Public Health Settings’ (2014)⁷ that provides additional practical advice regarding planning, conducting and evaluating public health emergency exercises. Material is structured in two sections:

1. How to design, develop, conduct and evaluate a tabletop exercise (TTX)
2. How to design, develop, conduct and evaluate a functional exercise (FX)

This resource provides guidance on incorporating lessons learned from exercise evaluations including the development of improvement plans.

How to access: [Simulation Exercises in Public Health Settings – Step-by-Step Exercise Design](#)⁴

Note: templates and tools are accessible via the [ECDC Learning Portal](#) in the course ‘e-learning course on how to design a Table-top Exercise (TTX)’ under ‘related resources.’²² A learning account must be created to access the portal, course and related materials.

8. Public Health Emergency Exercise Toolkit: Planning, Designing, Conducting, and Evaluating Local Public Health Emergency Exercises

Description: This toolkit was developed specifically for local public health agencies. It provides guidance on developing, implementing and evaluating internal exercises and facilitating the public health aspects of larger, multi-agency emergency exercise events. The toolkit provides an overview of exercise types and provides guidance to assist with each stage of the exercise process, including practical examples. A planning checklist and a dedicated section on developing an exercise evaluation plan are included.

How to access: [Public Health Emergency Exercise Toolkit: Planning, Designing, Conducting, and Evaluating Local Public Health Emergency Exercises](#)²³

9. Handbook for developing a Public Health Emergency Operations Centre: Training and Exercises

Description: The WHO developed this handbook to support the development and management of a public health emergency operations centre (PHEOC) and to guide training and exercises. While specific to PHEOC staff exercises, the content can be adapted to fit most public health agency training exercises. The handbook provides guidance on how to plan, develop and implement simulation exercises including: assembling a planning team; setting the purpose, objectives and scope for the exercise; developing scenarios and injects; developing supporting materials; and approaching the selection of participants.

How to access: [Handbook for developing a Public Health Emergency Operations Centre: Training and Exercises](#)⁹

Resources for Enhancing Exercise Design

PHO's rapid review on insights and strategies to improve emergency preparedness exercises features opportunities to strengthen exercise planning, design and evaluation. This section highlights additional articles that provide practical guidance and strategies to address common challenges impacting exercise effectiveness identified in the review.

1. Use of After-Action Reports (AARs) to Promote Organizational and Systems Learning in Emergency Preparedness

Description: This article discusses how a US-based [online repository of lessons learned](#)²⁴ from AARs following real incidents was used to improve the design of preparedness exercises. The AARs analyzed were drawn from two response incidents: hurricanes and the H1N1 pandemic. Themes and subthemes of common issues and lessons learned were reported, which can help focus exercise scenarios, so simulations are realistic and address challenges participants are likely to encounter. The content analysis of the AARs was organized into three areas: emergency public information and warning, information sharing, and emergency operations coordination. Further analysis identified themes such as challenges communicating about the vaccine, difficulties sharing information with external partners, and unclear roles and responsibilities within the incident command system.

How to access: [Use of After-Action Reports \(AARs\) to Promote Organizational and Systems Learning in Emergency Preparedness](#)²⁵

2. Developing a Tabletop Exercise to Test Community Resilience: Lessons from the Los Angeles County Community Disaster Resilience Project

Description: This article provides an example of mapping essential elements of a response (or response capabilities) to the scenario elements and discussion questions to ensure specific competencies are included in an exercise. This can be particularly helpful when developing an exercise that aims to assess performance of teams, organizations or systems.

How to access: [Developing a Tabletop Exercise to Test Community Resilience: Lessons from the Los Angeles County Community Disaster Resilience Project](#)²⁶

3. A Conceptual Framework to Measure Systems' Performance during Emergency Preparedness Exercises

Description: This article describes key elements for applying performance measurement to public health emergency exercises. It clarifies how exercises may have different primary aims (e.g., learning, improvement and performance) and how these aims, along with exercise characteristics, should inform exercise evaluation design. The authors propose a conceptual framework to help practitioners and researchers enhance the value of exercise evaluations to improve public health emergency preparedness. The framework highlights four elements:

1. The purpose of the measurement,
2. The exercise (including type and quality of delivery),
3. The unit (the level which data are gathered and analysed)
4. The measurement instrument (including considerations of reliability, validity, and feasibility)

How to access: [A Conceptual Framework to Measure Systems' Performance during Emergency Preparedness Exercises](#)²⁷

Published Exercises and Off-the-Shelf Exercises – By Topic

This section features off-the-shelf exercises. While the resources are organized by the type of hazard featured in the scenario, it is important to review the primary purpose and exercise objectives to ensure there is alignment with the needs of your organization. The resources are organized under the following sections:

- [All Hazards](#)
- [Bioterrorism](#)
- [Environmental](#)
- [Influenza/Respiratory](#)
- [Mass Gatherings](#)
- [Radiation or Chemical](#)
- [Sexually Transmitted Infections](#)

All Hazards

1. Infectious Disease Self-Administered Tabletop Exercises

Description: A series of six TTX scenarios that are tailored to public health, adaptable and linked as downloadable ZIP files (also called “exercise in a box”). Each infectious disease-specific file includes a situation manual, getting started document, facilitator material, exercise briefing slides, feedback forms, evaluation and after-action materials. Tools and templates are included.

Hazard topic(s): Botulism, Ebola, HIV/AIDS, measles, mpox, or Zika to choose from

How to access: [Infectious Disease Self-Administered Tabletop Exercises](#)²⁸

2. Off-The-Shelf Exercise Handbook: Health Systems Resilience Exercises

Description: This handbook contains two off-the-shelf exercises: an avian influenza outbreak scenario and a mass casualty event involving toxic industrial chemicals. Each scenario splits into two levels (local and national) to test health service resilience in both contexts. The TTXs are divided into three work sessions which focus on a different function of the health system response to the simulated emergency, with guided injects and discussion questions. The scenarios are adaptable across agencies and contexts and contain an exercise preparation and delivery checklist, defined purpose and scope, injects, participant roles and responsibilities, and debrief guidance. Video clips and tasks for participants are also included.

Hazard topic(s): Avian influenza, mass casualty event (link for [scenario materials](#))²⁹

How to access: [Off-The-Shelf Exercise Handbook: Health Systems Resilience Exercises](#)³⁰

Bioterrorism

3. Emergency Dispensing Site Tabletop Exercises

Description: A series of eight TTXs designed to cover different planning areas in response to a bioterrorism event, including: incident command system, security, strategic national stockpile planning elements, inventory management, tactical communications, public information, site operations, and demobilization of site. The exercise resources (e.g., objectives) can be tailored based on local context. A situation manual, presentation and evaluation guide are included.

Hazard topic(s): Anthrax

How to access: [Emergency Dispensing Site Tabletop Exercises](#)³¹

4. Bioterrorism Preparedness Training and Assessment Exercises for Local Public Health Agencies

Description: A manual containing customizable TTXs that focus on the public health response to a bioterrorism emergency. Local public health agencies can choose between four short (two hours), four medium (four hours), and one long (six hours) exercise. Short exercises focus on topics of surveillance, detection, diagnosis and investigation while medium exercises go beyond these topics to discuss system wide coordination, risk communication, and disease control. The long exercise includes an additional topic of consequence management—actions that can be taken after an event to minimize impacts on individuals, infrastructure and essential services.

Hazard topic(s): Bioterrorism (i.e., smallpox, plague, botulism, anthrax, novel agent)

How to access: [Bioterrorism Preparedness Training and Assessment Exercises for Local Public Health Agencies](#)³²

Environmental

5. Drinking Water Emergency: Public Health Table Top Exercise³³

Description: This exercise provides participants with an opportunity to assess their preparedness, response, and recovery protocols, plans, and capabilities for a tabletop scenario. Individuals can participate in facilitated discussions within their organizations to address the challenges presented by the scenario and share outcomes with the community of participants. Discussions focus on response coordination, critical decision-making, and the integration of resources necessary to prepare for, respond to, and recover from the loss of a city's drinking water supply. The resource contains templates for participant feedback.

Hazard topic(s): Major water main break of a city's drinking water supply

How to access: [Drinking Water Emergency: Public Health Table Top Exercise](#)

6. Develop and Conduct a Water Resilience Tabletop Exercise with Water Utilities

Description: This series of US EPA TTX tools provides resources to plan, conduct and evaluate TTXs that focus on water sector-related incidents and challenges. The webpage has 'learn how to design a tabletop exercise' and 'design a tabletop exercise' sections. The TTX tool web application contains 15 all-hazards scenarios (e.g., natural disasters, man-made incidents) related to emergency preparedness and response. Tips for conducting a virtual TTX are also included.

Hazard topic(s): Black sky, cybersecurity, distribution system contamination, earthquake, supply chain disruption – emergency drinking water supply, flood, hurricane, ice storm, pandemic flu, radiological dispersion device, source water contamination, tornado, vandalism, wastewater contamination, or wildfire to choose from

How to access: [Develop and Conduct a Water Resilience Tabletop Exercise with Water Utilities](#)³⁴

Influenza/Respiratory

7. COVID-19 Pandemic Tabletop Exercise

Description: This TTX is prepared by the UN's Division of Healthcare Management and Occupational Safety and Health (DHMOSH)'s Public Health Unit. It is developed for ongoing response to the COVID-19 pandemic; however, it can be used to assess preparedness for other high impact respiratory pandemics. This exercise helps to raise awareness amongst participants of the mechanism to respond and manage a pandemic, identify any key gaps in preparedness and ensure business continuity in the face of a high impact pandemic.

Hazard topic(s): COVID-19 pandemic

How to access: [COVID-19 Pandemic Tabletop Exercise](#)³⁵

8. COVID-19 Simulation Exercises Packages

Description: This document contains various COVID-19 TTX and drill packages to support countries' COVID-19 preparedness efforts. Exercise examples include vaccination clinic site selection, clinic/site setup, clinic operation and management, and clinic closure, that can be used in conjunction with a country's COVID-19 vaccination program. Templates include PowerPoint presentations, participant and facilitator guides and reference documents.

Hazard topic(s): COVID-19 outbreak

How to access: [COVID-19 Simulation Exercises Packages](#)³⁶

9. Tabletop Exercises for Pandemic Influenza: Incorporating Evidence-Based Communications Best Practices into your Agency's PHEP Protocols

Description: A TTX on pandemic influenza that emphasizes evidence-based communication best practices for public health emergency preparedness. The exercise is in a PowerPoint slide deck format. Participants can evaluate their agency's communication strengths and gaps, review emergency protocols, and engage in scenario-based discussions to improve coordination and messaging. The exercise includes five stages depicting the progression of a hypothetical outbreak, with specific questions aimed at enhancing communication strategies among health agencies and the public. A template to conduct a hotwash after the exercise is included.

Hazard topic(s): Pandemic influenza

How to access: [Tabletop Exercises for Pandemic Influenza: Incorporating Evidence-Based Communications Best Practices into your Agency's PHEP Protocols](#)³⁷

10. Tabletop Exercise for Pandemic Influenza Preparedness in Local Public Health Agencies

Description: This manual presents a fully customizable template for a TTX for pandemic influenza preparedness. It can be used by regional or local public health agencies as an exercise for training, building relationships, and conducting evaluations. A “forced decision-making” framework is used requiring participants to make decisions after considering information provided at specific points in the scenario. The exercise has three sections: unfolding situation, later development and debriefing and self-evaluation. The resources cover design and methodology with exercise objectives, suggested participants, general exercise framework with facilitator instructions, and after-action report with the TTX general description and template exercise slides.

Hazard topic(s): Influenza

How to access: [Tabletop Exercise for Pandemic Influenza Preparedness in Local Public Health Agencies](#)³⁸

11. COVID-19 Tabletop Exercise Resource Packet for Local Public Health

Description: This resource packet supports local public health to conduct a COVID-19 outbreak related TTX, with the goal of stabilizing the spread of the outbreak in a facility or workplace. The resource includes how to get started, steps to conducting a successful exercise, participant roles and responsibilities, goals and objectives, sample exercise schedule and playbook. Additional [exercise facilitator guide](#).³⁹

Hazard topic(s): COVID-19 outbreak

How to access: [COVID-19 Tabletop Exercise Resource Packet for Local Public Health](#)⁴⁰

Mass Gatherings

12. Mass Gathering Simulation Exercise Toolkit

Description: Features four off-the-shelf exercises with different scenarios in the context of a mass gathering event. For each TTX, slides are provided to introduce the exercise including the agenda, the scenario and discussion questions (organized in three sessions). The slides also include simple exercise debrief questions and a list of questions to gather feedback from participants on the quality and usefulness of the exercise.

Hazard topic(s): Foodborne outbreak, crowd surge, chemical spill, or heat wave to choose from

How to access: [Mass Gathering Simulation Exercise Toolkit](#)¹⁸

Radiation or Chemical

13. This is a TEST (Training and Exercise Simulation Tool)

Description: This online resource hub provides tools to support a TTX specific to a radiation incident. The goal is to facilitate cooperation between different partner agencies. The exercise is described as a collaborative game that bridges the gap between discussion and operational exercises. The tool includes game content, a pre-recorded explanation video, as well as the intended audience, objectives and participant requirements.

Hazard topic(s): Radiation

How to access: [This is a TEST \(Training and Exercise Simulation Tool\)](#)⁴¹

14. Chemical Incident with Water Impact

Description: This exercise is designed to assist local health departments in creating effective public health emergency preparedness and response plans for low-probability, high-risk chemical incidents. A situation manual includes discussion questions tailored to various participant types (includes public health specific questions). The included handbook offers a framework for developing a chemical preparedness plan, with recommended content and key subject areas.

Hazard topic(s): Chemical incident

How to access: [Chemical Incident with Water Impact](#)⁴²

Sexually Transmitted Infections

15. STD Outbreak Response Resources

Description: This CDC landing page consists of a series of adaptable tools to guide a TTX focused on a local outbreak of antibiotic-resistant gonorrhea. There are downloadable links to various resources like a situation manual for participants, facilitation guide, facilitator slides, participant feedback form, and template for an after-action report/improvement plan. The objective of the exercise is to improve local and state capacity to effectively respond to an outbreak, assess their response plans, and identify future steps to improve response planning.

Hazard topic(s): Gonorrhea

How to access: [STD Outbreak Response Resources](#)⁴³

References

1. Chambers A, Khan I, Repchuck R, Muir S, Hanson H, Khan Y. Enhancing the design, conduct and evaluation of public health emergency preparedness exercises: a rapid review. BMC Public Health. 2025;25(1):2366-14. Available from: <https://doi.org/10.1186/s12889-025-23270-6>
2. Public Health Agency of Canada. A vision to transform Canada's public health system: Chief Public Health Officer's report on the state of public health in Canada 2021. Ottawa, ON: Her Majesty the Queen in Right of Canada, as represented by the Minister of Health; 2021. Available from: <https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/state-public-health-canada-2021.html>
3. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Strengthening workforce capacity in emergency management: a situational assessment. Toronto, ON: King's Printer for Ontario; 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/W/26/workforce-capacity-emergency-management.pdf?&sc_lang=en
4. European Centre for Disease Control and Prevention (ECDC). Simulation exercises in public health setting. Stockholm: ECDC; 2021. Available from: <https://doi.org/10.2900/18667>
5. Skryabina E, Reedy G, Amlôt R, Jaye P, Riley P. What is the value of health emergency preparedness exercises? A scoping review study. Int J Disaster Risk Reduct. 2017;21:274-83. Available from: <https://doi.org/10.1016/j.ijdrr.2016.12.010>
6. World Health Organization (WHO). WHO simulation exercise manual: a practical guide and tool for planning, conducting and evaluating simulation exercises for outbreaks and public health emergency preparedness and response [Internet]. Geneva: WHO; 2017 [cited 2025 Dec 16]. Available from: <https://iris.who.int/handle/10665/254741>
7. European Centre for Disease Prevention and Control (ECDC). Handbook on simulation exercises in EU public health settings. How to develop simulation exercises within the framework of public health response to communicable diseases. Stockholm: ECDC; 2014. Available from: <https://doi.org/10.2900/35657>
8. Straus SG, Lewis MW, Connor K, Eden R, Boyer ME, Marler T, et al. Collective simulation-based training in the U.S. Army: user interface fidelity, costs, and training effectiveness. Santa Monica, CA: RAND Corporation; 2019. Available from: <https://www.proquest.com/docview/2187015390>
9. World Health Organization (WHO). Handbook for developing public health emergency operations centre: part c: training and exercises. Geneva: WHO; 2018. Available from: <https://iris.who.int/handle/10665/311545>

10. World Organisation for Animal Health (WOAH). Guidelines for simulation exercises: a consistent set of good practices for preparing, delivering, and learning from animal health and welfare and veterinary public health simulation exercises for Veterinary Services [Internet]. Paris: OIE; 2024 [cited 2026 Jan 08]. Available from: <https://www.woah.org/app/uploads/2021/03/simulation-exercises-veng-revised-1st-edition.pdf>
11. Sarpy SA, Warren CR, Kaplan S, Bradley J, Howe R. Simulating public health response to a severe acute respiratory syndrome (SARS) event: a comprehensive and systematic approach to designing, implementing, and evaluating a tabletop exercise. J Public Health Manag Pract. 2005;Suppl:75. Available from: <https://doi.org/10.1097/00124784-200511001-00013>
12. Freimuth VS, Hilyard KM, Barge JK, Sokler LA. Action, not talk: a simulation of risk communication during the first hours of a pandemic. Health Promot Pract. 2008;9(4 Suppl):35S-44S. Available from: <https://doi.org/10.1177/1524839908322111>
13. Emergency Management Ontario (EMO). Emergency management training portal [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2026 Jan 08]. Available from: <https://training.emergencymanagementontario.ca/GTFlex/GTOnline.dll/Home/>
14. Emergency Management Ontario (EMO). EM 125 – Introduction to exercise programs (e-Learning) [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2026 Jan 08]. Available from: <https://training.emergencymanagementontario.ca/GTFlex/GTOnline.dll/PublicCourse/COURSENO=COUR2025081317240302370025>
15. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Emergency management learning resources: an inventory for public health capacity building. Toronto, ON: King's Printer for Ontario; 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/C/26/capacity-building-emergency-management-learning.pdf?&sc_lang=en
16. Department of Homeland Security, Federal Emergency Management Agency (FEMA). Homeland security exercise and evaluation program (HSEEP). Washington, DC: FEMA; 2020. Available from: <https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf>
17. World Health Organization (WHO). Simulation exercises [Internet]. Geneva: WHO; 2026 [cited 2026 Jan 27]. Available from: <https://www.who.int/emergencies/operations/simulation-exercises>
18. World Health Organization (WHO). Mass gathering practical guide for simulation exercises and after action reviews. Geneva: WHO; 2025. Available from: <https://iris.who.int/handle/10665/381870>
19. World Health Organization (WHO). National health simulation exercise programme: implementation guidance to strengthen emergency preparedness, readiness and response. Geneva: WHO; 2025. Available from: <https://www.who.int/publications/i/item/9789240119208>

20. Oakland County Health Division. Department of Health and Human Services. Exercise toolkit. Lansing, MI: Department of Health and Human Services; n.d. Available from: https://www.naccho.org/uploads/resource-hub-images/Exercise_Toolkit_1-id1270.pdf
21. US. Department of Homeland Security, Federal Emergency Management Agency (FEMA). Virtual best practices [Internet]. Washington, DC: FEMA; 2021 [cited 2026 Jan 08]. Available from: https://drive.google.com/file/d/1I5f5ilgvXV3oqBTlIVvMMji2m7gb00o_/view
22. European Centre for Disease Prevention and Control (ECDC). Learning portal for infectious diseases [Internet]. Stockholm: ECDC; 2026 [cited 2026 Jun 30]. Available from: <https://learning.ecdc.europa.eu/>
23. Columbia University School of Nursing, Center for Health Policy. Public health emergency exercise toolkit; planning, designing, conducting, and evaluating local public health emergency exercises. New York, NY: Columbia University; 2006. Available from: https://www.cidrap.umn.edu/sites/default/files/php/339/339_toolkit.pdf
24. US. Homeland Security Digital Library (HSDL). Lessons learned, best practices, after action reports and more from Federal Emergency Management Agency's Lessons Learned Information Sharing (LLIS) program [Internet]. Monterey, CA: Naval Postgraduate School; 2021 [cited 2026 Jan 06]. Available from: <https://www.hsdl.org/c/lessons-learned-information-sharing-llis/>
25. Savoia E, Agboola F, Biddinger PD. Use of after-action-reports (AARs) to promote organizational and systems learning in emergency preparedness. *Int J Environ Res Public Health*. 2012;9(8):2949-63. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC3447598/>
26. Chandra A, Williams MV, Lopez C, Tang J, Eisenman D, Magana A. Developing a tabletop exercise to test community resilience: lessons from the Los Angeles County community disaster resilience project. *Disaster Med Public Health Prep*. 2015;9(5):484-8. Available from: <https://doi.org/10.1017/dmp.2015.99>
27. Savoia E, Agboola F, Biddinger PD. A conceptual framework to measure systems' performance during emergency preparedness exercises. *Int J Environ Res Public Health*. 2014;11(9):9712-22. Available from: <https://doi.org/10.3390/ijerph110909712>
28. Virginia Department of Health (VDH). Infectious disease self-administered tabletop exercises (exercise in a box) [Internet]. Richmond, VA: VDH; 2023 [cited 2025 Dec 16]. Available from: <https://www.vdh.virginia.gov/emergency-preparedness/training-education/infectious-disease-self-administered-tabletop-exercises-exercise-in-a-box/>
29. World Health Organization (WHO). Health systems resilience simulation exercises [Internet]. Geneva: WHO; 2026 [cited 2026 Jan 08]. Available from: <https://www.who.int/teams/primary-health-care/health-systems-resilience/integrated-health-system-strengthening/health-systems-resilience-simulation-exercises>

30. World Health Organization (WHO). Off-the-shelf exercise handbook: health systems resilience simulation exercises. Geneva: WHO; 2021. Available from: <https://iris.who.int/server/api/core/bitstreams/58371091-64da-4766-beb6-efb671b0c7c5/content>
31. Commonwealth of Massachusetts Health and Human Services. Emergency dispensing site (EDS) tabletop exercises (TTX) [Internet]. Boston, MA: Commonwealth of Massachusetts Health and Human Services; 2026 [cited 2026 Jan 05]. Available from: [https://www.mass.gov/lists/emergency-dispensing-site-eds-tabletop-exercises-ttx#incident-command-system-\(ics\)-](https://www.mass.gov/lists/emergency-dispensing-site-eds-tabletop-exercises-ttx#incident-command-system-(ics)-)
32. RAND Corporation. Bioterrorism preparedness training and assessment exercises for local public health agencies [Internet]. Santa Monica, CA: RAND Corporation; 2005 [cited 2026 Jan 08]. Available from: https://www.rand.org/pubs/technical_reports/TR261.html
33. US. National Association of County and City Health Officials (NACCHO). Drinking water emergency: public health table top exercise. Washington, DC: NACCHO; n.d. Available from: https://www.naccho.org/uploads/downloadable-resources/Drinking-Water-Emergency_Table-Top-Exercise-4.pdf
34. US. Environmental Protection Agency (EPA). Tabletop exercise tool for drinking water and wastewater utilities [Internet]. Arlington, VA: EPA; [cited 2026 Jan 27]. Available from: <https://ttx.epa.gov/>
35. United Nations (UN), Department of Operational Support. COVID-19 pandemic tabletop exercise [Internet]. New York, NY: UN; 2020 [cited 2026 Jan 05]. Available from: https://www.un.org/sites/un2.un.org/files/2020/08/coronavirus_ttxscenario_2020-03-11.pdf
36. World Health Organization (WHO). COVID-19 simulation exercises packages [Internet]. Geneva: WHO; 2026 [cited 2026 Jan 27]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training/simulation-exercise>
37. University of Washington School of Public Health. Tabletop exercise pandemic influenza incorporating evidence-based communications best practices into your agency's PHEP protocols [Internet]. Seattle, WA: University of Washington; n.d. [cited 2025 Dec 16]. Available from: <https://www.nwcphp.org/docs/perrcolate/flu/files/slides.pdf>
38. RAND Corporation. Tabletop exercise for pandemic influenza preparedness in local public health agencies [Internet]. Santa Monica, CA: RAND Corporation; 2006 [cited 2025 Dec 16]. Available from: https://www.rand.org/pubs/technical_reports/TR319.html
39. Oregon Health Authority (OHA). Communicating during emergencies: tabletop guide for facilitators. Portland, OR: OHA; 2020. Available from: <https://www.nwcphp.org/docs/perrcolate/flu/files/Facilitator-Guide.pdf>
40. Oregon Health Authority (OHA). Oregon COVID-19 tabletop exercise resource packet for local public health. Portland, OR: OHA; 2020. Available from:

<https://www.oregon.gov/oha/PH/PREPAREDNESS/PARTNERS/Documents/COVID-19TTX%20resourcepacketAugust2020.pdf>

41. Centers for Disease Control and Prevention (CDC). This is a TEST [Internet]. Atlanta, GA: CDC; 2024 [cited 2025 Dec 16]. Available from: <https://www.cdc.gov/readiness/php/testgame/index.html>
42. Virginia Department of Health (VDH). Chemical incident tabletop exercise [Internet]. Richmond, VA: VDH; 2025 [cited 2026 Jan 05]. Available from: <https://www.vdh.virginia.gov/emergency-preparedness/emergency-preparedness/cbers-2025-chemical-mass-casualty-with-water-impact/>
43. Centers for Disease Control and Prevention (CDC). Outbreak preparedness, detection, & response [Internet]. Atlanta, GA: CDC; 2024 [cited 2026 Jan 05]. Available from: <https://www.cdc.gov/sti/php/sti-program-resources/outbreak-preparedness-detection-and-response.html>
44. Administration for Strategic Preparedness and Response (ASPR), Technical Resources, Assistance Center, and Information Exchange (TRACIE). Technical resources [Internet]. Washington, DC: U.S. Department of Health and Human Services; 2026 [cited 2025 Dec 16]. Available from: <https://asprtracie.hhs.gov/technical-resources>
45. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Robert Koch Institute (RKI), World Health Organization (WHO). The 5C health emergency simulation exercise package manual [Internet]. Berlin: German Federal Ministry of Health; 2017 [cited 2026 Jan 05]. Available from: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/G/G20-Gesundheitsministertreffen/5C_Health_Emergency_Simulation_Exercise_Manual.pdf
46. Johns Hopkins Bloomberg School of Public Health, Center for Health Security. Tabletop exercises [Internet]. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health; 2022 [cited 2025 Dec 16]. Available from: <https://centerforhealthsecurity.org/our-work/tabletop-exercises>
47. Toronto Public Health (TPH). Outbreak preparedness table top exercise: enteric outbreak scenario facilitator's guide. Toronto, ON: TPH; n.d. Available from: <https://www.scribd.com/document/938008892/90a3-Outbreak-Preparedness-Table-Top-ActivityEntericFacilitators-Guide-AODA>

Appendix A: Methods

A library assisted grey literature search was conducted to identify existing resources that could be used to plan, design, develop, conduct and/or evaluate emergency preparedness exercises. Resources were included if they were published from January 2013 to November 2025, the context was relevant to public health emergency preparedness, and the resources described approaches or provided tools or exercise scenarios that could be adapted (i.e., off-the-shelf exercises). Reports summarizing the results of exercises (e.g., after-action reports, evaluation reports) and off-the-shelf exercises conducted in a healthcare setting were not included.

Resources, including weblinks, are current to November 2025.

Appendix B: Additional Emergency Preparedness Exercise Resources

This section includes other off-the-shelf exercises and guides that are not fully tailored to the public health context but contain useful elements and examples that may be of interest.

1. Guidelines for Simulation Exercises

Description: This guidance document aims to help with planning, conducting and evaluating simulation exercises, to strengthen the capacity of global Veterinary Services. This document provides information detailing the benefits of simulation exercises as well as a list of the advantages and disadvantages of discussion-based exercises versus operations-based exercises. It describes the exercise planning steps including assessing the need for an exercise, establishing a team, determining the purpose, objectives and scope. It also provides guidance about developing the scenario, selecting participants, exercise documentation, delivering the exercise and the evaluation. Also included are details around using the lessons learned to plan an exercise cycle to improve preparedness.

How to access: [Guidelines for Simulation Exercises – A consistent set of good practices for preparing, delivering, and learning from animal health and welfare and veterinary public health simulation exercises for Veterinary Services](#)¹⁰

2. Health Emergency Preparedness Information Gateway: Technical Resources

Description: The U.S. Department of HHS created a repository of disaster medical, healthcare, and public health preparedness materials which are searchable by keywords and functional areas. The technical resources include information relevant to both discussion- and operations-based exercises for various topics (e.g., infectious diseases, natural disasters and mass casualty incidents). The document appendices share materials, including a list of probing questions to assess the need for an exercise and considerations to help prioritize hazards for scenario selection.

Hazard topic(s): Various infectious disease, natural disasters, mass casualty incidents

How to access: [Health Emergency Preparedness Information Gateway: Technical Resources](#)⁴⁴

3. The 5C Health Emergency Simulation Package

Description: This simulation exercise was run during the G20 Health Minister’s Meeting in Berlin in May 2017 and can provide insight into the components of a successful TTX. The name ‘5C Health Emergency Simulation Exercise’ refers to the five topics the exercise revolves around: communication, collaboration, contributions, coordination and compliance. The resource contains adaptable content based on a progressing infectious disease outbreak scenario. The package outlines considerations for planning the exercise, developing the scenario, injects in the form of films and artefacts, discussion questions, and practical steps to implement the exercise.

Hazard topic(s): Infectious disease outbreak

How to access: [The 5C Health Emergency Simulation Package](#)⁴⁵

4. Tabletop Exercises

Description: These exercises draw from actual events and fictional scenarios, including environmental disasters, pandemic events and other hazards, in partnership with different organizations/agencies. The TTXs include fictional pre-recorded news broadcasts, live “staff briefings”, lessons learned, YouTube videos of the fictional TTXs being conducted with players, slide deck materials, as well as a factsheet on communication in a pandemic.

Hazard topic(s): All hazards

How to access: [Tabletop exercises](#)⁴⁶

5. Outbreak Preparedness Tabletop Exercise: Enteric Outbreak Scenario Facilitator's Guide

Description: This guide is tailored for facilitators of a tabletop exercise for an enteric outbreak in a long-term care facility or retirement home. It is not adaptable but is a working example of supporting materials during an exercise. This guide outlines all the relevant information needed by an exercise facilitator including the scenario, objectives, instructions, injects and discussions questions, responses and a specific question for the debriefing.

Hazard topic(s): Enteric outbreak

How to access: [Outbreak Preparedness Tabletop Exercise: Enteric Outbreak Scenario Facilitator's Guide](#)⁴⁷

Public Health Ontario
661 University Avenue, Suite 1701
Toronto, Ontario
M5G 1M1
1-877-543-8931
communications@oahpp.ca
publichealthontario.ca

