

FOCUS ON

Response and Recovery from Public Health Emergencies: Assessment Activities



June 2022

Background

Pre-dating the Coronavirus Disease 2019 (COVID-19) pandemic, several global frameworks were developed that can be viewed as overlapping across issues of emergency and disaster risk, climate change, the social determinants of health and global health equity. These include the World Health Organization (WHO) Strategic Framework for Emergency Preparedness and the Sendai Framework for Disaster Risk Reduction.^{1,2} These frameworks aim to guide risk management, reduce risks and overall negative impacts of emergencies and disasters, including risks to population health.³ In the context of the global COVID-19 pandemic and other emerging infectious diseases and extreme weather, strategies for resilience-building can be a valuable addition to support preparedness and response to frequent or ongoing health risks. An emphasis on learning and evaluation is also important to support recovery from public health emergencies as an opportunity to build back better,⁴ and support enhanced preparedness and response for future disasters.⁵

Emergencies, Resilience and Public Health Systems

The WHO has previously called for all countries “to create resilient integrated systems that can be responsive and proactive to any future threat”.⁷ Resilience is “the ability to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner”.^{8,9} Resilient systems can be described as “those that rapidly acquire information about their environments, quickly adapt their behaviours and structures to changing circumstances, communicate easily and thoroughly with others, and broadly mobilize networks of expertise and material support”.⁵ More recently, in the context of the COVID-19 pandemic, the WHO has described the first of seven policy recommendations for building a resilient health system: “leverage the current response to strengthen both pandemic preparedness and health systems”.¹⁰

As mentioned, learning and evaluation has been identified as an essential element of public health emergency preparedness, and one that can be effective in providing feedback during the course of an emergency response, in order to ensure that response is dynamic and adapting to an evolving situation.⁵

Assessment Activities

To build a resilient health system, the WHO suggests using results from intra-action and after-action reviews (IAR/AAR) and other review activities to inform sustained investment in health system strengthening. Organizations can then identify and map existing strengths and weaknesses to determine priority needs, contribute to updating preparedness, response and recovery plans, and embed changes into emergency management within wider efforts to strengthen health systems. The WHO recommends:¹⁰

- Conduct during and post-event reviews (in-action after-action reviews [IAR, AAR]) with various stakeholders within the health system to capture all experiences and better inform future responses and actions;
- Take findings from emergency response reviews (IAR, AAR) to inform the strengthening of sustained health system investments, including emergency preparedness and risk management;
- Identify existing strengths and weaknesses to determine priority areas of need for improving capacity and ensuring more resilient services;
- Enhance preparedness and response plans and socioeconomic recovery plans;
- Consider incorporating emergency management planning and policies to strengthen health system efforts;

These WHO recommendations highlight the importance of coupling assessment activities with strategies for improvement. It has been acknowledged in relation to previous public health emergencies, that there is a gap in transferring the knowledge gained from learning during emergency response, into actions and longer-term change after the response period has ended.¹³ Improvement actions can promote learning and strengthen emergency preparedness and response capacities for future events, which can thus build resilience.¹⁰ Improvement can be actioned both at a project level and an organizational level;¹⁴ for the latter, organizations can build an environment that is supportive of learning and encourages improvement-oriented approaches.

Assessment can also be undertaken after a period of response, typically referred to as the recovery phase. Recovery from emergencies has been defined by the United Nations International Strategy on Disaster Reduction as “the restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors”.⁶

Consistent with the WHO framework, the Sendai Framework for Disaster Risk Reduction notes that, for disasters, “the recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better.”⁴ Recovery phase activities can therefore also provide an opportunity to learn from response performance and effectiveness, improve plans and processes for the future, and build system resilience.

Purpose

The purpose of this Focus On is to introduce the concept of post-emergency recovery assessment activities and highlight the importance of incorporating these activities into public health practice. Considerations around the application of specific assessment/ learning and evaluation activities to public health emergencies are described.

This Focus On also draws attention to Public Health Ontario (PHO) resources and other evidence-informed, practical assessment tools to support emergency preparedness, response and recovery relevant to the context of public health (see [‘Useful Resources’/ Appendix](#)).

Methods

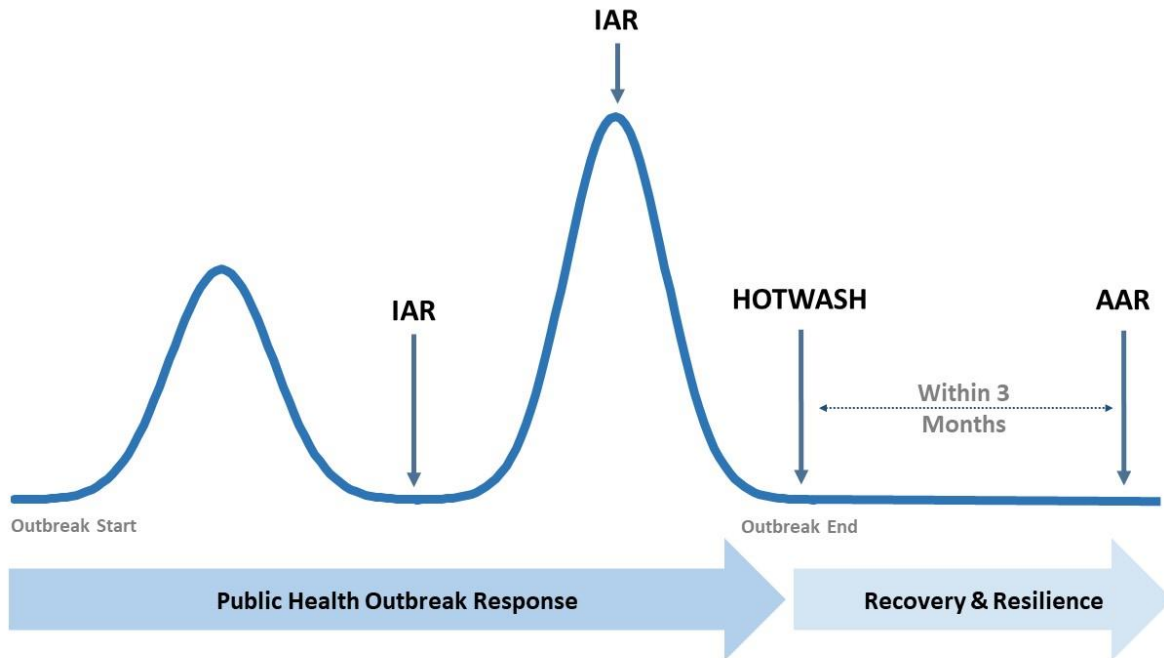
Information for this Focus On was derived from the grey literature, targeted searches of public health organizations and agencies (e.g., WHO, European Centre for Disease Prevention and Control), as well as existing PHO products, on recovery-related assessment activities.

Findings

Different types of activities and reviews can help to assess the capacities and performance of organizations to respond to health emergencies. The types of assessment activities typically described in the PHEP literature as part of a response and recovery process include (but are not limited to) In-Action Reviews (IARs), hot washes, debriefs, and After-Action Reviews (AARs). Conducting these activities are opportunities for organizations to reflect, assess, learn, and improve during and after a public health response. Some activities are carried out during an emergency to support and improve an ongoing response.

There may be different names used for different assessment activities; for example, an assessment activity previously used by the WHO for mid-outbreak response was a Joint Operational Review (JOR). A JOR is a process that focuses on international efforts by the WHO and partners to support governments and/ or health system stakeholders in responding to public health events,¹⁵ intending to ensure efforts and resources are aligned with the health emergency response plan. A JOR can be conducted *during* the response to public health events or at the end, while an AAR is conducted relatively soon after a public health event is declared over (more on AARs below). To help understand roughly when assessment activities may be carried out, [Figure 1](#) shows an example timeline for conducting the assessment activities described in this Focus On such as IAR.

Figure 1: Timeline for conducting response and recovery assessment activities in relation to an epidemic curve



In-Action Reviews

IAR are conducted when the goal is to quickly identify readily-implementable actions to immediate and pressing issues to improve an ongoing response. An IAR follows a collective learning approach, where participants share and identify ongoing challenges and bottlenecks, as well as what is working in the current response. IARs require resources and capacity to conduct the review during a public health emergency.

Please also see PHO's, *Best practices for conducting in- and after-action reviews as part of public health emergency management*, for more details.¹⁶

Hot Wash and Debriefs

A hot wash is an assessment that typically occurs immediately after a public health emergency or incident to capture initial comments, identify successes and challenges, as well as reflect on learnings that may be used to address ongoing and future response. A hot wash can explore process challenges, inform the direction of a recovery assessment and also guide future responses.

Similarly, debriefs are a short qualitative assessment that can be completed soon after a public health emergency response has ended and after the hot wash is conducted (if a hot wash was conducted). The debrief process helps to identify, at a high-level, some of the strengths, weaknesses, and lessons from a public health emergency response. The information collected through debriefs can also be used to inform further in-depth reviews or reports on the emergency response (e.g., if conducting an After-Action Review), or to help improve ongoing response activities and future emergency preparedness work.

Please also see PHO's, *Conducting a hot wash or debrief: common components for public health*, for more details.¹⁷

After-Action Reviews

AAR are conducted to collect more detailed data after an event (usually within three months) and after a debrief (if conducted). An AAR can build off of information collected from a debrief or from an earlier IAR. Mixed methods approaches to data collection can be used, and may be tailored to the audience and influenced by feasibility. Surveys or focus groups are common ways that data may be collected for AARs. Information gathered through an AAR can help identify good practices and areas for improvement, and can be used to improve future emergency preparedness response and recovery through the documentation of effective practices, lessons, and actionable items.

Please also see PHO's *Best practices for conducting in- and after-action reviews as part of public health emergency management* for more details.¹⁶

Conclusion and Implications for Practice

This Focus On summarizes and points readers to resources and assessment activities that can support emergency response and recovery after public health emergencies. To better understand assessment activities, exploring their effectiveness within the public health setting when there is an emergency response or recovery is essential to advancing PHEP evidence based practice. Applying learning and evaluation assessment activities as part of both the emergency response and recovery could allow for more enhanced emergency preparedness, building a more resilient emergency response and health system.

Using post-event assessment activities can promote organizational and systems learning by identifying and disseminating the experiences gained post-event. Building these formal assessment activities into the organizational workflow can help identify, document and disseminate learnings that can help prepare for future emergencies. They can also contribute to an organizational culture that supports and sees the benefits of these activities. This is of particular importance, because these activities require dedicated time and resources to planning, conducting and evaluating intra and post-assessment activities. Staff and other stakeholders needed to participate in these assessment activities are also those most informed of ongoing response activities and would benefit the most from any learnings and implementation of the results of the assessment activity. The challenge is to dedicate resources to learning and programming to support enhancement of preparedness and response activities during times when stakeholders are also at their busiest.

Management of public health emergencies requires coordination and collaboration across a complex system that includes community partners, health and non-health organizations. The process of learning can support adaptive change during emergencies and resilience to future threats, and a resilient health system is important for building response to future public health threats. Public health agencies are encouraged to consider the assessment activities and key recovery related products during their emergency response and recovery processes, and also consider carrying out some of these activities with the support and resources shared in this Focus On. In sequence, mapping of assessment findings with action and improvement strategies can support adaptive capacity. Exploring the application of these assessments in the context of COVID-19 could support more practical-evidence based knowledge and help advance PHEP knowledge and practice in this context.

Useful Resources:

European Centre for Disease Prevention and Control (ECDC)

- [Best Practice Recommendations for Conducting After-Action Reviews To Enhance Public Health Preparedness \(2018\)](#)
 - Technical report outlining the common features of AARs, a validity assessment tool for appraising AARs, and proposes a set of best practice recommendations.
- [Conducting In-Action and After-Action Reviews of the Public Health Response to Covid-19 \(June 2020\)](#)
 - Technical report covering both after-action, and the less researched in-action reviews.
- [One-day In-action Review \(IAR\) Protocol in the context of COVID-19 \(2021\)](#)
 - Technical report covering how to conduct a one-day in-action review.
- [Protocol for a Focused After-action Review on Evidence-based Decision-making for Selected COVID-19 Response Measures \(2021\)](#)
 - Technical report on guidance for conducting an after-action review.
- [E-learning Course on Introduction to Designing In- and After-action Reviews](#)
 - A non-moderated, self-paced course divided into eight modules (approximately 90-120 minutes). Offers methodological understanding of AAR, for those not familiar with AARs.

World Health Organization (WHO)

- [Guidance for After Action Review \(AAR\) \(2019\) \(or the \[automatic download\]\(#\)\)](#)
 - Presents methodology for planning and implementing an AAR to review actions taken in response to public health events, and as a routine management tool for continuous learning and improvements.
- [After Action Review \(AAR\) | Strategic Partnership for Health Security and Emergency Preparedness \(SPH\) Portal \(2022\)](#)
 - Link to dashboard with information on AAR activities, a 3 minute video about AAR practice, e-learning courses, guidance, toolkits
- [Country Implementation Guidance: After Action Reviews and Simulation Exercises Under the International Health Regulations 2005 Monitoring and Evaluation Framework \(IHR MEF\) \(2018\)](#)
 - Lists tools from other organizations on page 18 [Direct link to PDF download](#)
 - This document provides strategic guidance to countries implementing AARs, along with relevant information on planning, executing, and reporting criteria

- [Guidance for Conducting a Country COVID-19 Intra-action Review \(IAR\) \(2020\)](#)
 - This document was developed to guide countries to conduct periodic review(s) of their national and subnational COVID-19 response, so as to not miss critical opportunities for learning and improvement to better respond to the COVID-19 outbreak in their countries.
 - Provides many supplementary tools and downloadable resources
 - An addendum was later published – as a supplement to (rather than replacement of) the Guidance document linked above:
 - [Guidance for Conducting a Country COVID-19 Intra-action Review \(IAR\): Addendum 1 - 28 April 2021 \(2021\)](#)
 - Included two additional tools:
 - [Conducting Safe Onsite COVID-19 Intra-action Reviews During the Pandemic \(2021\)](#)
 - [Conducting Effective Online COVID-19 Intra-action reviews During the Pandemic \(2021\)](#)

United States Agency International Development (USAID)

- [After Action Review Guidance \(2013\)](#)
 - A guidance document that provides information on conducting an AAR, including goals, assumptions/requirements, how-tos, lessons learned/best practice, and resources.

Federal Emergency Management Agency (FEMA)

- [Homeland Security Exercise and Evaluation Program \(HSEEP\) \(2020\)](#)
 - Pages 62-64: AAR/Improvement Plan and root cause analysis are described, with some examples provided
- [After Action Review Guidance \(2013\)](#)
 - Homeland Security After-Action Report/Improvement Plan fillable template (Word document) – link downloads directly: https://preptoolkit.fema.gov/documents/1269813/1269865/After+Action+Meeting+Presentation+Improvement+Planning_HSEEP+Template_2020_508.pptx/73aa464c-328c-923e-4325-367733567f9d?t=1608650335975&download=true
 - Homeland Security After-Action Meeting Template (PowerPoint file) – link downloads directly
- [HSEEP AAR-IP Template \(2007\)](#)
 - Homeland Security Exercise and Evaluation Program – fillable template for AAR and Improvement Plan

References

1. United Nations. Sendai framework for disaster risk reduction 2015 - 2030 [Internet]. New York, NY: United Nations; 2015 [cited 2022 Feb 18]. Available from: https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf
2. United Nations. Paris agreement [Internet]. New York. NY: United Nations; 2015 [cited 2022 Feb 18]. Available from: https://unfccc.int/sites/default/files/english_paris_agreement.pdf
3. World Health Organization. Health emergency and disaster risk management framework [Internet]. Geneva: World Health Organization; 2019 [cited 2022 May 30]. Available from: <https://apps.who.int/iris/handle/10665/326106>
4. United Nations. Office for Disaster Risk Reduction. Resolution A/RES/69/283 'Sendai framework for disaster risk reduction 2015-2030; 2015 [Internet]. Geneva: United Nations; 2015 [cited 2022 May 30]. Available from: <https://www.preventionweb.net/files/resolutions/N1516716.pdf>
5. Khan Y, O'Sullivan T, Brown A, Tracey S, Gibson J, Génereux 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>
6. World Health Organization. Recovery [Internet]. Geneva: World Health Organization; 2022 [cited 2022 Feb 17]. Available from: <https://www.euro.who.int/en/health-topics/health-emergencies/from-disaster-preparedness-and-response/policy/recovery>
7. World Health Organization. Ebola and health systems: now is the time for change [Internet]. Geneva: World Health Organization; 2014 [cited 2022 Feb 17]. Available from: <https://apps.who.int/mediacentre/commentaries/health-systems-ebola/en/index.html>
8. Ontario. Ministry of Health and Long-Term Care. Emergency management guideline, 2018 [Internet]. Toronto, ON: Queen's Printer of Ontario; 2018 [cited 2022 Feb 17]. Available from: https://health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Emergency_Management_Guideline_2018_en.pdf
9. Government of Ontario. Emergency management glossary of terms [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [updated 2022 Feb 1; cited 2022 Feb 17]. Available from: <https://www.ontario.ca/page/emergency-management-glossary-terms>
10. World Health Organization. Building health systems resilience for universal health coverage and health security during the COVID-19 pandemic and beyond: WHO position paper [Internet]. Geneva: World Health Organization; 2021 [cited 2022 May 30]. Available from: <https://www.who.int/publications/i/item/WHO-UHL-PHC-SP-2021.01>
11. World Health Organization. A strategic framework for emergency preparedness [Internet]. Geneva: World Health Organization; 2016 [cited 2022 May 30]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/254883/9789241511827-eng.pdf;jsessionid=9888D58B7589A1D2A56D50F84E17C012?sequence=1>

12. Rebmann T, Carrico R, English JF. Lessons public health professionals learned from past disasters. *Public Health Nurs.* 2008;25(4):344-52. Available from: <https://doi.org/10.1111/j.1525-1446.2008.00715.x>
13. Koenig K, Schultz C, Gould Runnerstrom M, Ogunseitn O. Public health and disasters: an emerging translational and implementation science, not “lessons learned”. *Disaster Med Public Health Prep.* 2017;11(5):610-1. Available from: : <https://doi.org/10.1017/dmp.2017.11>
14. Yin XC, Pang M, Law MP, Guerra F, O’Sullivan T, Laxer RE, et al. Rising through the pandemic: a scoping review of quality improvement in public health during the COVID-19 pandemic. *BMC Public Health.* 2022;22(1):248. Available from: <https://doi.org/10.1186/s12889-022-12631-0>
15. World Health Organization. Guidance for after action review (AAR) [Internet]. Geneva: World Health Organization; 2019 [cited 2022 May 30]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/311537/WHO-WHE-CPI-2019.4-eng.pdf>
16. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Best practices for conducting in- and after-action reviews as part of public health emergency management [Internet]. Toronto, ON: Queen’s Printer for Ontario; 2022 [cited 2022 May 30]. Available from: https://www.publichealthontario.ca/-/media/Documents/B/2022/best-practices-after-action-review-phem.pdf?sc_lang=en
17. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Conducting a hot wash or debrief: common components for public health [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [cited 2022 May 30]. Available from: https://www.publichealthontario.ca/-/media/Documents/C/2022/conducting-hot-wash-debrief-public-health.pdf?sc_lang=en

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Response and recovery from public health emergencies: assessment activities. Toronto, ON: Queen's Printer for Ontario; 2022.

Disclaimer

This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication. The application and use of this document is the responsibility of the user. PHO assumes no liability resulting from any such application or use. This document may be reproduced without permission for non-commercial purposes only and provided that appropriate credit is given to PHO. No changes and/or modifications may be made to this document without express written permission from PHO.

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, front-line health workers and researchers to the best scientific intelligence and knowledge from around the world.

For more information about PHO, visit: publichealthontario.ca.

©Queen's Printer for Ontario, 2022

Ontario 