

# The Preparedness Cycle in Action: Planning, Responding, and Evaluating at the

# Centers for Disease Control and Prevention



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## Poster Showcase

#iaem24

### Background

**Purpose:** Demonstrate how CDC has used the preparedness cycle to prepare for a polio outbreak response.

- **Polio (Poliomyelitis):** Life-threatening disease caused by the poliovirus. It is highly contagious; spreads through person-to-person contact; and can infect a person's spinal cord, causing paralysis.<sup>1</sup>

### Preparedness Cycle

The Preparedness Cycle is the continuous process of planning, organizing/equipping, training, exercising, and evaluating/improving emergency preparedness activities.

- **November 2019:** In accordance with WHO Global Action Plan for Poliovirus Containment (GAPIV)\*, CDC planners begin working with poliovirus subject matter experts to develop a draft of the *CDC National Poliovirus Response Appendix*. Purpose of the plan was to supplement the CDC Biological Incident Annex; support the WHO GAPIV; and provide a framework of CDC's anticipated tasks, responsibilities, and necessary actions for any polio outbreak response, regardless of the event type (breach, containment, unknown source).

### Plan

#### CDC National Poliovirus Response Appendix

- Convened planning committee comprised of SMEs and other stakeholders to revise and complete the CDC National Poliovirus Response Draft based on lessons learned and best practices available.
- **November 20, 2023:** Completed the *CDC National Poliovirus Response Appendix*.

#### Planning Requirements

- Consistent with Presidential Policy Directive #8 (PPD #8)\*.
- Incorporate federal guidance, including the National Incident Management System, National Frameworks, Comprehensive Planning Guide (CPG) 101\*, CDC Plans Policy, and WHO GAPIV.
- Incorporate best practices and lessons learned from recent responses and exercises.

### Exercise

#### 2022 Polio Outbreak Simulation Exercise (POSE)

**April 27 and 28, 2022:** Tabletop exercise to identify roles and responsibilities for CDC staff and intergovernmental response partners (e.g., state and local emergency managers, private industry partners, and federal and local public health staff), and assess preparedness, response, and recovery protocols; plans; and capabilities. Used Homeland Security Exercise and Evaluation Program (HSEEP)\* methodology.

- **Recommendations Implemented into the Appendix:**
  - » Define relationships among partners.
  - » Develop specimen shipping recommendations.

### Response (Organize/Equip)

#### 2022 New York State (NYS) Polio Outbreak

- July 18, 2022: NYS Department of Health notified CDC of a detection of poliovirus type 2 in specimens from an individual from NYS who was experiencing acute flaccid weakness.<sup>2</sup>
  - The CDC National Poliovirus Response Appendix was still in draft but was put into action and referenced during the response.
  - CDC's Incident Management System (IMS) activated; CDC and NYS SMEs worked to increase case surveillance and implement mitigation efforts in the affected area.
  - NYS Polio Outbreak Response Period: July 21, 2022, through April 30, 2023.
  - In collaboration with the state and local public health departments, CDC was able to determine the extent of poliovirus circulation and support implementation of enhanced case surveillance (e.g., wastewater testing), poliovirus containment, and immunization strengthening activities (e.g., access to vaccinations and information regarding polio effects and the need for vaccinations) to increase polio vaccine coverage.

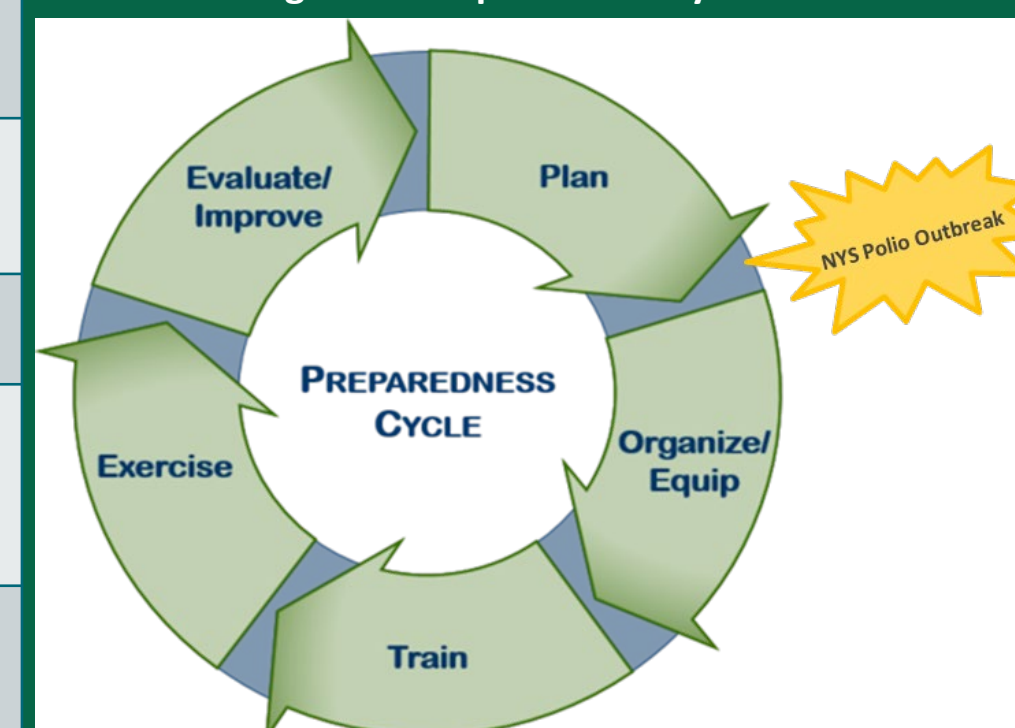
Definitions*	
PEF	Facility registered with the U.S. federal government and certified to work with or store poliovirus.
HSEEP	Provides a common approach to exercise program management, design and development, conduct, evaluation, and improvement planning.
CPG 101	Provides guidance from FEMA on the fundamentals of planning and developing emergency operations plans.
WHO GAPIV	Aligns the safe handling and containment of poliovirus materials (e.g., biosecurity, facility risk management) with the Polio Eradication Strategy 2022-2026. <sup>3</sup>
Polio Eradication Strategy 2022-2026	Comprehensive set of actions to achieve the goals of permanently interrupting all poliovirus transmission in endemic countries and stopping polio transmission and preventing outbreaks in non-endemic countries. <sup>4</sup>
PPD #8	Aimed at strengthening the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the nation. <sup>5</sup>

### Evaluate/Improve

#### 2022 NYS Polio Outbreak Response After-Action Report (AAR)

- **April 28, 2023:** Final AAR completed to evaluate response processes.
- IMS staff provided feedback on areas of improvement for CDC's 2022 NYS Polio Response and the draft *CDC National Poliovirus Response Appendix*.
- Implemented actionable recommendations that identified needed revisions to the draft *CDC National Poliovirus Response Appendix*.
- Provided actionable recommendations to improve future response work.
- **Recommendations Implemented into Appendix:**
  - » Conduct continual assessments to ensure processes meet the needs of the response as changes occur.
  - » Incorporate early, continuous coordination among participating organizations.
  - » Review communication requirements across all levels of partnerships.
  - » Incorporate expansion of wastewater testing in the draft *CDC National Poliovirus Response Appendix*.

Figure 1. Preparedness Cycle



### Conclusions

- The continuous nature of the Preparedness Cycle can be seen with the emergency preparedness activities associated with polio.
  - To plan for a polio outbreak, stakeholders collaborated to develop the CDC National Poliovirus Response Appendix. Before completion, the Appendix Draft was further validated and improved with the 2022 POSE tabletop.
  - The 2022 NYS Poliovirus Outbreak Response used the draft CDC National Poliovirus Response Appendix.
  - The response was evaluated through an AAR and recommendations were developed. As a result, the AAR recommendations were implemented in the appendix, and the planning process was then reinitiated.
- Even though the cycle was interrupted, the real-world response provided invaluable insight irreplicable through simulations and further improved the appendix.
- Like any plan, CDC's National Poliovirus Response Appendix is a living document and a culmination of the Preparedness Cycle in action at CDC. Emergency preparedness documents like this will undergo further continuous improvement as they move through the cycle.

### References

- <sup>1</sup>NCIRD. (2022). What is polio?. Centers for Disease Control and Prevention. <https://www.cdc.gov/polio/what-is-polio/index.htm>
- <sup>2</sup>Link-Gelles R, et al. (2022). Public Health Response to a Case of Paralytic Poliomyelitis in an Unvaccinated Person and Detection of Poliovirus in Wastewater—New York, June–August 2022. *MMWR Morb Mortal Wkly Rep* 2022; 71: 1065–1068. <https://www.cdc.gov/mmwr/volumes/71/wr/mm7133e2.htm>
- <sup>3</sup>WHO. (2022). WHO Global Action Plan for Poliovirus Containment, 4th edition. World Health Organization.
- <sup>4</sup>WHO. (2021). Polio Eradication Strategy 2022–2026. <https://polio-eradication-new-strategy-2022-26-Executive-Summary.pdf>.
- <sup>5</sup>DHS. (2022). Presidential Policy Directive / PPD-8: National Preparedness. Department of Homeland Security. <https://www.dhs.gov/presidential-policy-directive-8-national-preparedness>

Figure 1: <https://preptoolkit.fema.gov/web/identify-assess-risk>

### Acknowledgements

#### Planning Partners

CDC National Center for Immunization and Respiratory Diseases  
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