



Novel Exercise Technology to Improve Incident Response Readiness

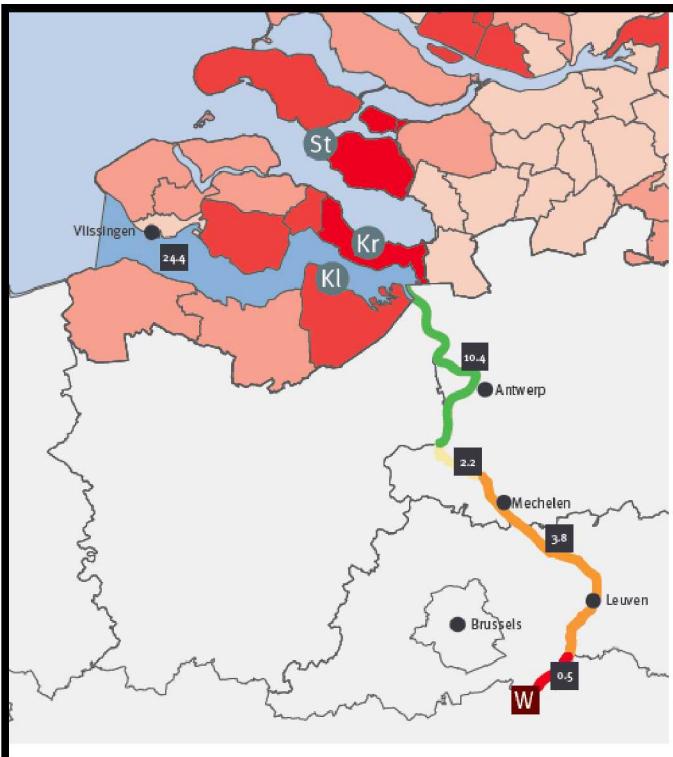
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Learning Objectives

- 1: Understand value of exercises in incident response
- 2: Learn how PREP platform allows for in-person, remote exercises
- 3: Review how role-based participant exercises improve simulation realism

Are you ready for?

45 L live wild poliovirus
accidental released



Production on hold at GSK vaccine plant after poliovirus enters water supply

By Dan Stanton 

22-Sep-2014 - Last updated on 24-Sep-2014 at 07:00 GMT



RESEARCH ARTICLE

Risk assessment, risk management and risk-based monitoring following a reported accidental release of poliovirus in Belgium, September to November 2014

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Risks and Challenges

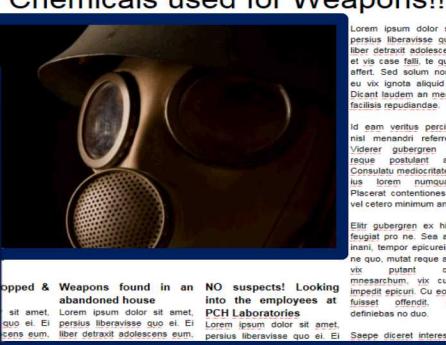
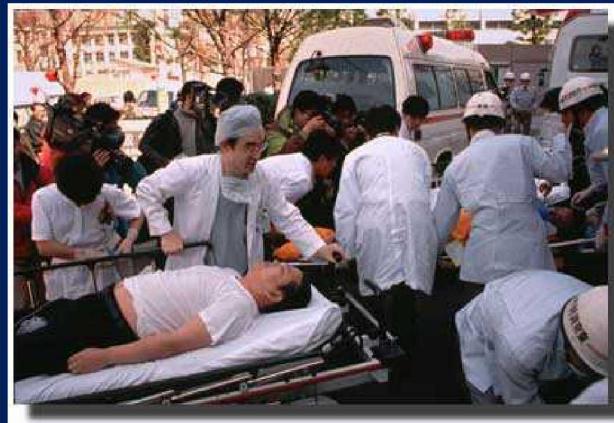
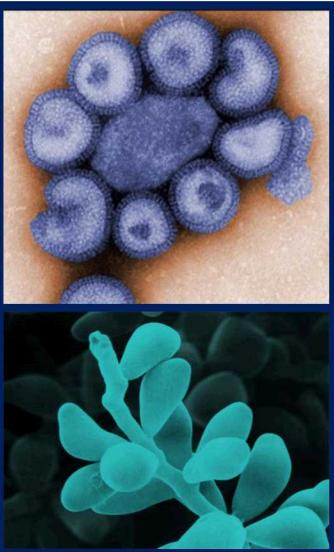
At Risk

- Public health:
 - Unvaccinated groups directly exposed -> potential silent carriers
 - Ingestion risk of contaminated water in Belgium (swimming)
 - Ingestion of contaminated seafood
- Policy: Europe's polio-free status (2002)
Polio Eradication campaign endpoint
- Economy: Impact to company, impact to Polio eradication budget

Additional challenges

- Risk assessment of release had not been done in advance
- Dutch communities potentially-exposed have <90% vaccine coverage
- Binational impact: Belgium, Netherlands
- IPV used in these countries does not prevent infection, just disease

Are you ready for?



What is Readiness?



What is Readiness?

Have you evaluated the worst-case scenario?

Do you have a written plan?

Have you exercised and revised the plan?

Are team members trained on roles in emergencies?

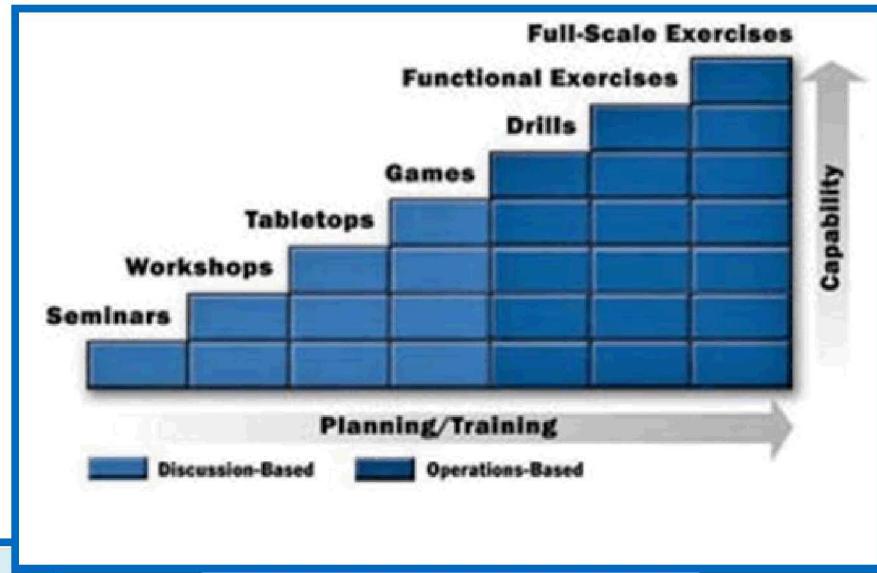
Do you review incidents & update plans based on lessons learned?

Do you have a strategy to provide for routine testing and exercising of your plans?



Ensuring BioChem Readiness (BCR)

- 1) Develop Readiness Leaders
- 2) Multiyear strategy
 - Progressive approach
 - Capability-based
 - Update strategy regularly
- 3) TTX & planning workshops



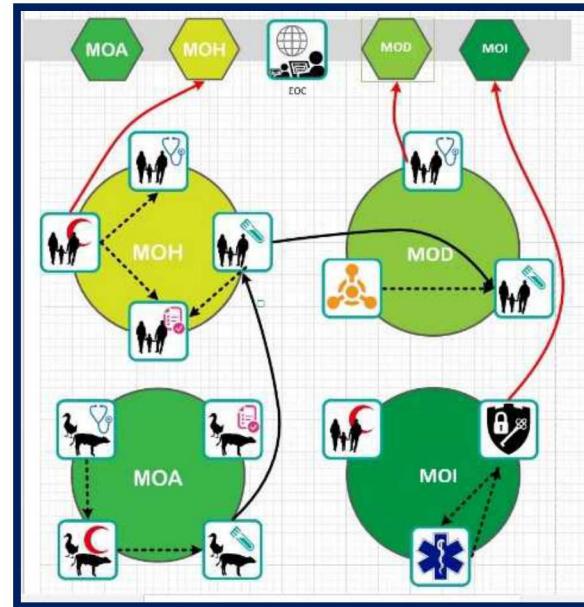
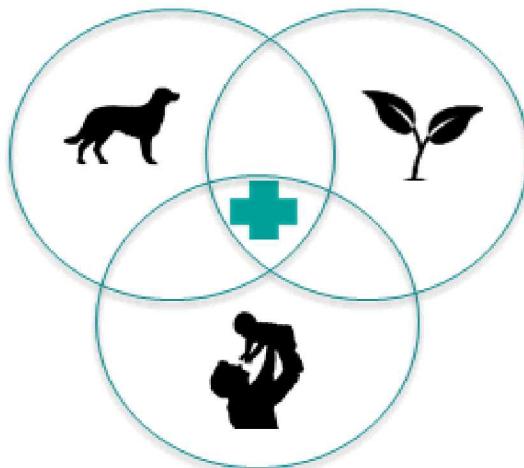
Capabilities	2018 Events		2019 Events		
	July-Sept	Oct-Dec	Jan-Mar	April-June	July-Sept
Capability 1 Communication	Planning Workshop <input type="button" value="edit"/>		Risk Assessment <input type="button" value="edit"/>	Tabletop <input type="button" value="edit"/>	Tabletop <input type="button" value="edit"/>
Capability 2 Risk Assessment	Tabletop <input type="button" value="edit"/>		Other <input type="button" value="edit"/>	Strategy Revision <input type="button" value="edit"/>	Training Exercise <input type="button" value="edit"/>
Capability 3 Lab Testing					Drill <input type="button" value="edit"/>



Unique BCR Exercise Approach

Components

- HSEEP* Consistent
- Role-based, realistic scenarios
- Map communication
- Participant-led evaluation
- Real-time After Action Reporting



Applications:

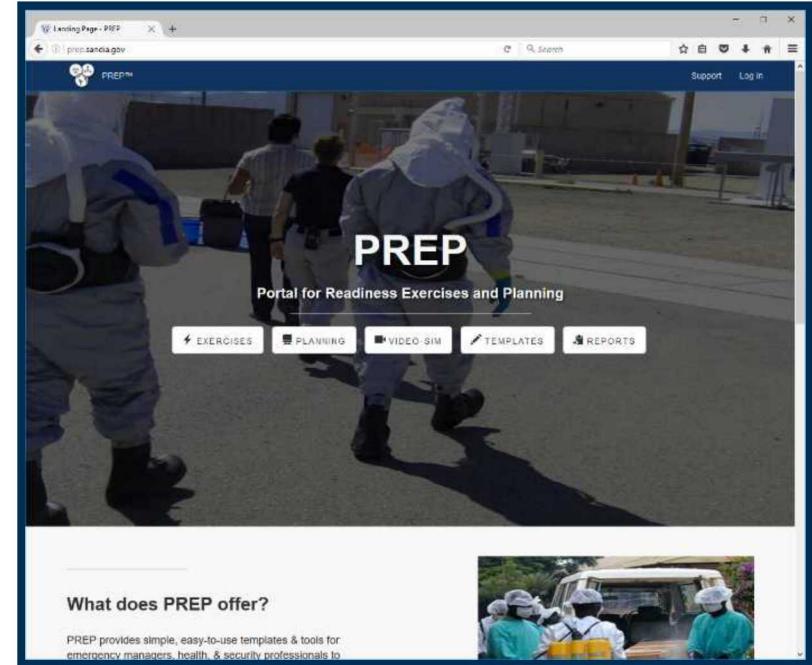
- Facility (SOP validation, drills)
- Institution
- Local government
- National
- Multi-national

*HSEEP: Homeland Security Exercise and Evaluation Program

Portal for Readiness Exercises & Planning (PREP™)

Verified, Validated TTX Recording Tool

- Role-based, multi-person
- Data driven
- Remote & in-person
- Secure data collection
- Communication mapping



Report Development

- Immediate After Action Report
- Multiyear Strategy
- Draft plans directly from scenario

Available at no cost online

<https://prep.sandia.gov>

Multi-year Strategy (MYTEP) in PREP

Capabilities	2018 Events		2019 Events			
	July-Sept	Oct-Dec	Jan-Mar	April-June	July-Sept	
						
Capability 1 Communication	Planning Workshop 		Risk Assessment 	Tabletop 	Tabletop 	
						
Capability 2 Risk Assessment	Tabletop 	Other 	Strategy Revision 		Training Exercise 	
						
Capability 3 Lab Testing	Planning Workshop 	Seminar 		Drill 		

Multi-year Strategy (MYTEP) in PREP

Add Event

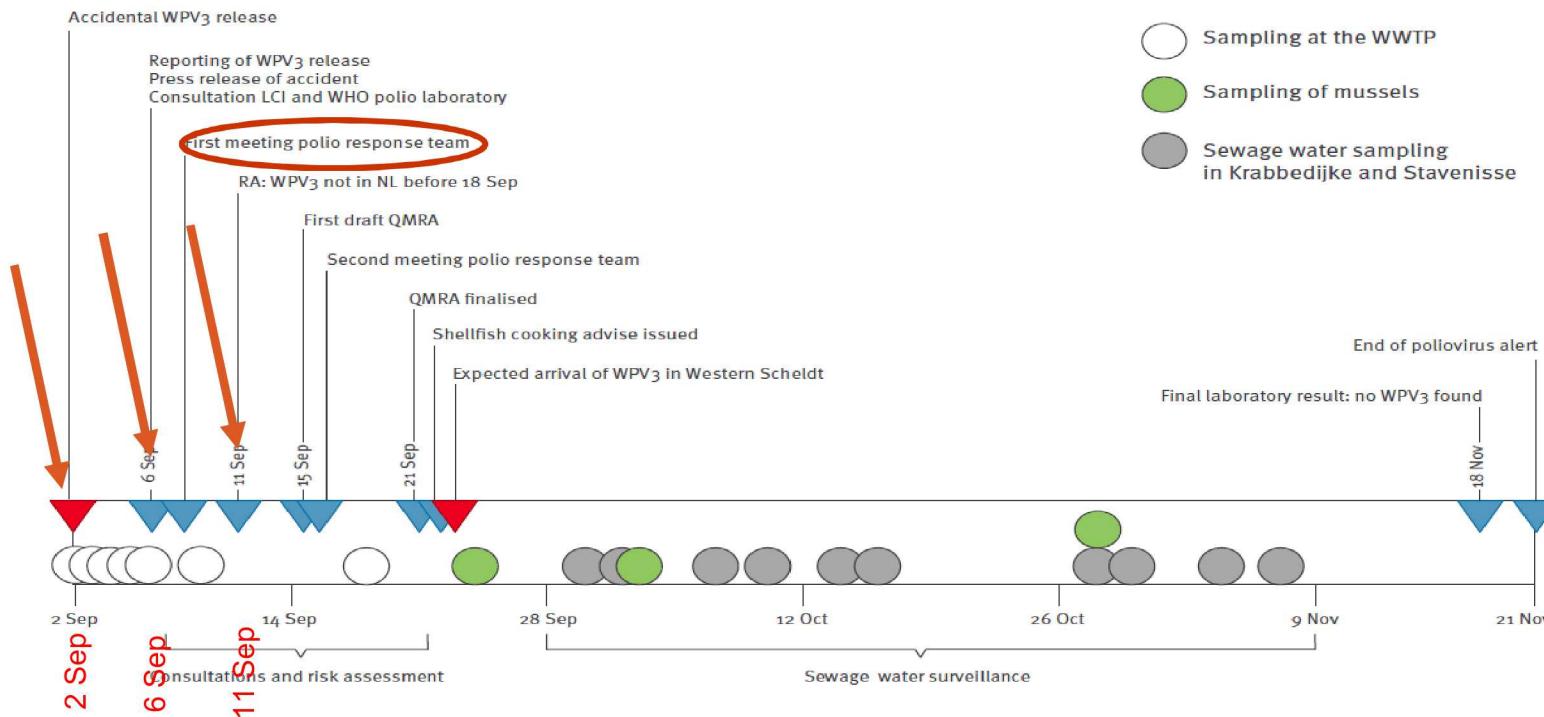
Event Type	Planning Workshop
Event Name	Planning workshop for Pandemic Influenza
Objectives	<p>(1) Identify roles and responsibilities for partner agencies and departments during a large scale outbreak (2) Develop concept of operations, communication/coordination plans across agencies (3) Revise this multiyear strategy for plan revisions and</p>
Completion Date	2018/07/01
Email Notifications	+

Delete Cancel Save changes

So, how would this have helped in Belgium?

FIGURE 1

Timeline showing sampling dates and the risk assessment and risk management process performed in the Netherlands following an accidental release of poliovirus in Belgium, September–November 2014



Addressing conclusion from the paper:

“National Polio outbreak preparedness plans need strengthening within the European region.

Exercise Design in PREP™

PREP™

Exercises ▾ Planning ▾ Design Reports Admin ▾ Tutorials csmcnei@

Overview

Event Name 

B	I	U	█	≡	≡	A	▼
---	---	---	---	---	---	---	---

Vaccine Production Laboratory Accidental Spill Exercise

Purpose and Scope 

B	I	U	█	≡	≡	A	▼
---	---	---	---	---	---	---	---

Evaluate roles & responsibilities, cross-agency coordination during an environmental release of wildtype poliovirus

Time and Location 

B	I	U	█	≡	≡	A	▼
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Polio vaccine production facility

Region 

B	I	U	█	≡	≡	A	▼
---	---	---	---	---	---	---	---

Belgium, near waterways shared with Netherlands

Current Activity 

B	I	U	█	≡	≡	A	▼
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Regular day, producing vaccines

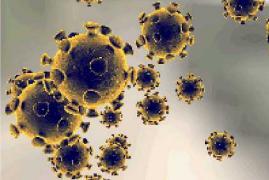
Continue

Role Based Scenarios: Public Health

Public Health

Role Objectives 

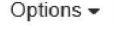
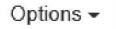
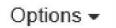
Current Situation 

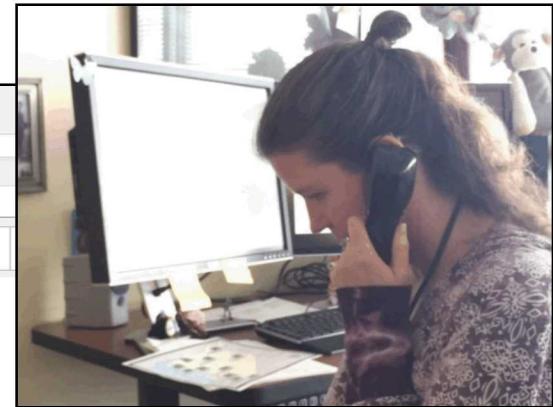


You have been notified by a local vaccine manufacturer that 45L of concentrated wild type poliovirus was accidentally released into the sewage system earlier today. The waterways impacted are frequently used by the community for swimming, boating and fishing.

Questions 

 Add

1. What is your role in this situation? 
2. At what point in time would you make a statement to the public? 
3. Is there a protocol to handle situations like this? 
4. Who would you contact at this time? Would you contact any international organizations? 



Role Based Scenarios: Plant Manager

Vaccine Production Plant Manager

Role Objectives 



Current Situation 



One of your employees calls you and says: "Some infectious wild type poliovirus particles were accidentally released into the sewage system while cleaning some used vials. Could you please come to the laboratory?"

Questions 

 Add

1. What actions do you take upon receiving this information?

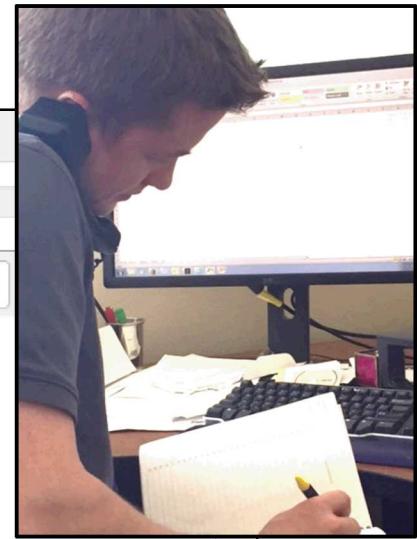
Options 

2. Is there a protocol to handle accidental viral releases?

Options 

3. Would you contact any government agencies at this point in time?

Options 



TR

Role Based Scenarios: WHO

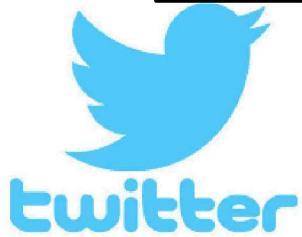
WHO

Role Objectives 

Current Situation 



You see a tweet from an environmental health watchdog group that there are cases of polio in Belgium after an accidental release from a vaccine manufacturing plant.



Questions 

 Add

1. Whom would you contact to verify this rumor? (please use the communication tool if contacting another player)

Options 

2. What actions would you take based on this information?

Options 

3. Do you have a standard protocol for addressing polio releases? for addressing social media postings?

Options 

Hotwash: Participant-Led Evaluation, Data Collection At Each Step

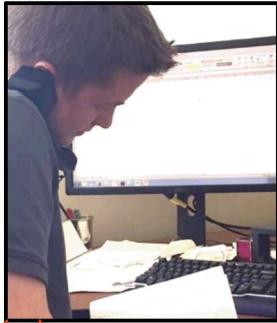
Example: Plant Manager Hotwash after first phase

Question	Response
What were your major strengths for this phase?	<ol style="list-style-type: none"> 1. Laboratory staff immediately notified management regarding the accident 2. Laboratory manager immediately reported incident to public health 3. Laboratory management met with risk communications team
What were your major areas for improvement?	<ol style="list-style-type: none"> 1. Social media tweet- information leaked prior to risk comm messaging 2. Lack of written policy for addressing accidental environmental release 3. No prior modeling on potential impact from such a spill

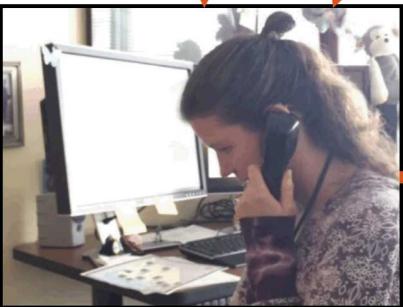
Tracking Communication



WHO



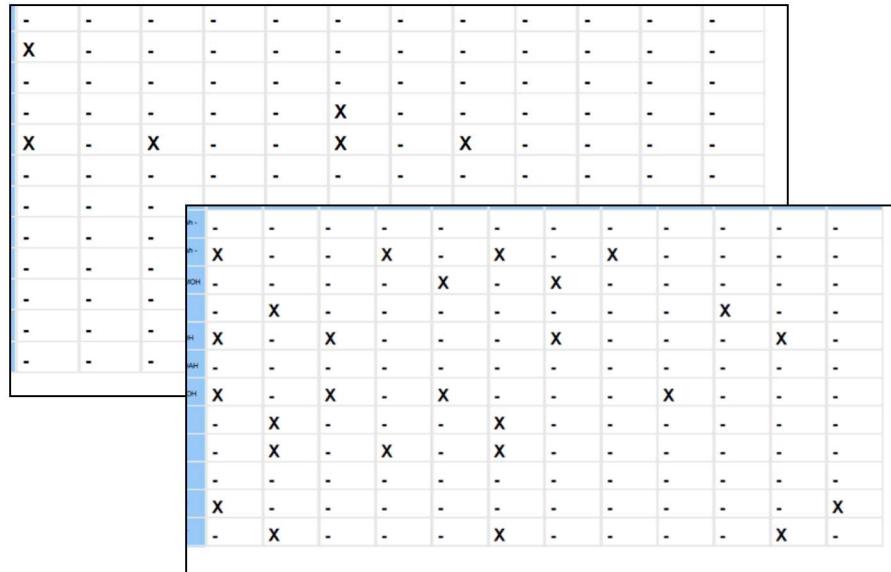
**Plant
Manager**



Public Health



**Environmental
Lab**



Talked To

Plant manager

Talked About

EL contacted the plant manager to determine specific coordinates for location of release, map of property and to get permission to gain access to the sewer system for testing

Reporting Features



AFTER ACTION REPORT

Accidental Release from Poliovirus Vaccine Manufacturing Facility: Scenario-based Planning Workshop

Concept of Operations

Vaccine Manufacturing Facility: Accidental Environmental Release Response Plan

Introduction

The X facility produces thousands of liters of live poliovirus on a weekly basis. The facility is located in a highly urban area; effluent from the facility is released into publicly-accessible waterway used for fishing, recreation and boating. The nearby community has a 90-100% vaccine coverage; however, the IPV vaccine used would not prevent transmission, but would prevent disease. To date, no spills have been reported.

Purpose and Scope

Standard protocols exist for decontamination of effluent prior to release; however, due to the high impact of an accidental release and the multiagency response required, this concept of operations will outline such operational response and multisector coordination.

Objectives

- 1) Identify roles and responsibilities for facility, local and national public health agencies, the environmental laboratory conducting water quality testing, WHO focal point.

Strategic Plan/Commitment

Assumptions

Description of Attributes

Roles and Responsibilities

Role 1

Role 2

Considerations

Plan Review and Access Control

How unique approach would improve readiness for this scenario

Participant Driven Evaluation

- Problems identified & Solutions would be geographically, culturally appropriate and work within the restrictions of the facility, locale

Data Based

- Assessment based on qualitative Data collection throughout event
- Systems-level mapping tool will help improve coordination planning

Reporting Features

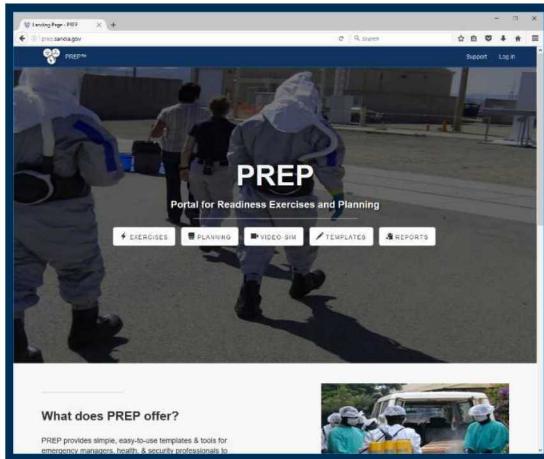
- Could be done remotely or in-person
- If TTX, After Action available for all to take back to agencies/facility for immediate follow-up on gaps identified
- If Scenario-Based planning workshop, would have draft CONOPs ready

Take home

Not a matter of if...it is a matter of when.

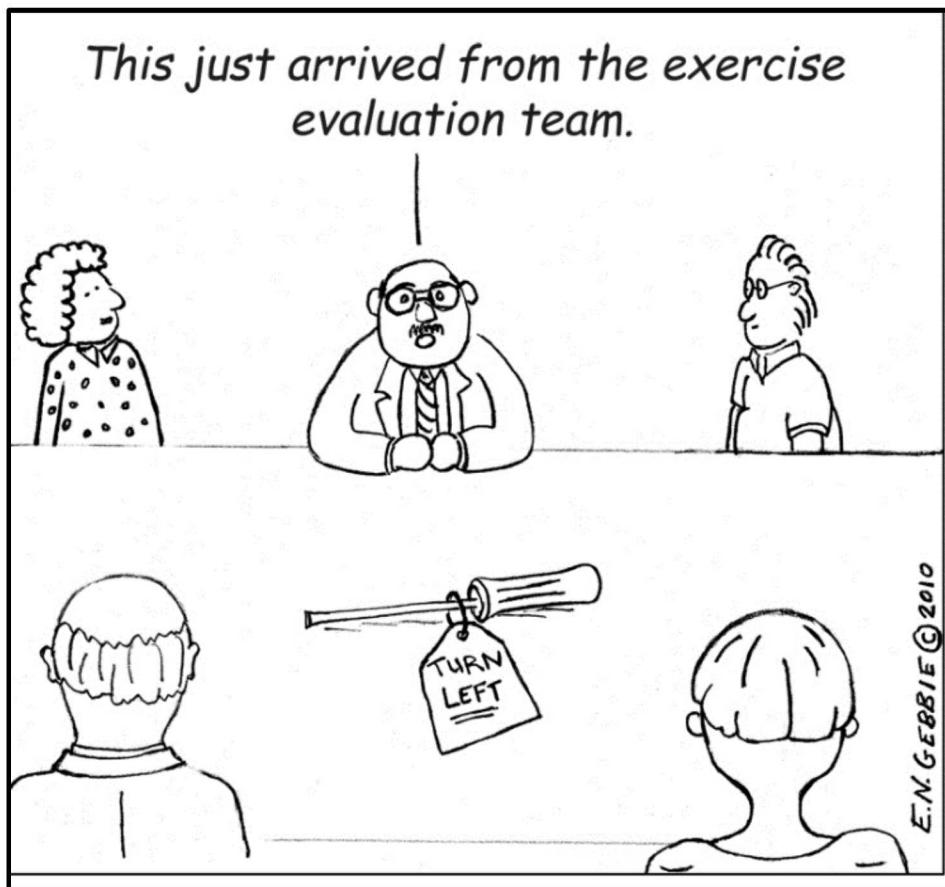
Drills, plans and exercises are not about checking boxes on what is required or expected; they are about saving lives.

BCR approach and PREP™ provide a structured, easy-to-use and scalable method for developing a systematic readiness program.



<https://prep.sandia.gov>

Questions and Comments



<https://engebbie.files.wordpress.com/2010/08/screwed3.jpg>

Portal for Readiness Exercises & Planning (PREP™)
Sign up free at
<https://prep.sandia.gov>

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