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Examining Healthcare Workers' Willingness to Respond in Public Health Emergencies & Disasters: Current Research Considerations

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Part One

Challenges Old and New

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Twenty-First Century Public Health Preparedness Challenges (Partial List)

- Natural disasters
- Pandemics
- Technological disasters



Public Health Emergency Preparedness System

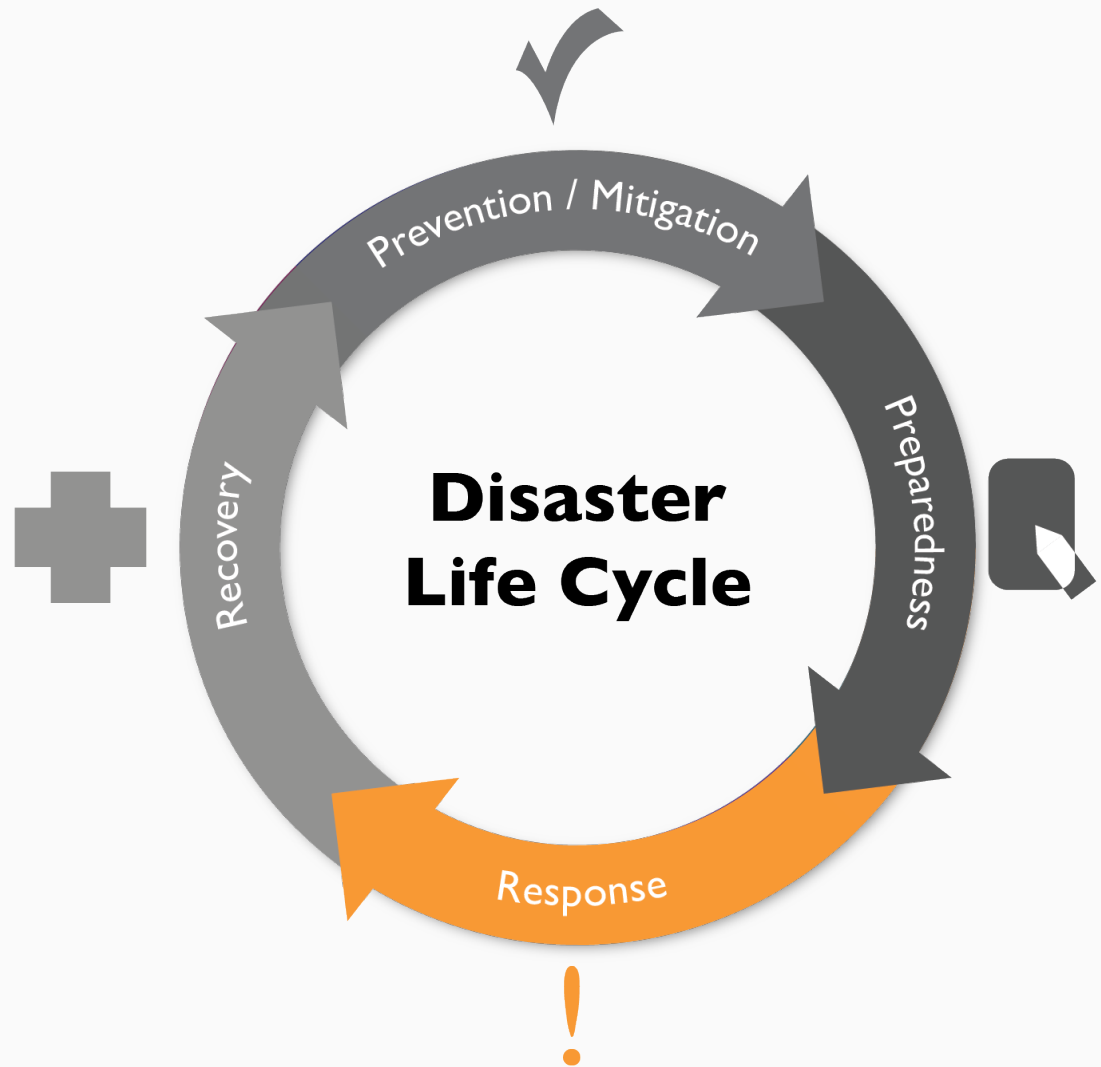


Continuing Challenges for Public Health Preparedness in the United States

- Impact of newly emphasized public health readiness/response initiatives on traditional public health activities
- Funding challenges
- Allocation of HD personnel and resources
- Disparity in preparedness levels and resources of urban vs. rural HDs

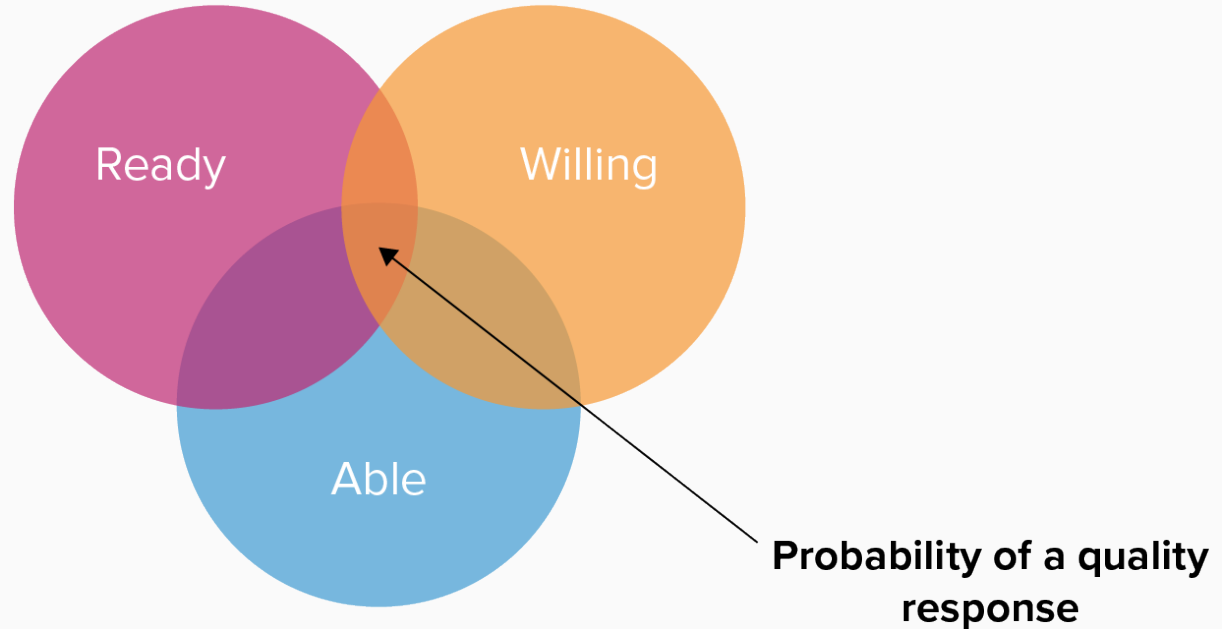
- Warning fatigue
- HD employee FAQ: *“Where do I fit into response?”*
- Mental health responses
- Willingness-to-respond

Disaster Life Cycle



Ready, Willing, and Able Framework

- Collectively comprises necessary/sufficient elements for public health disaster preparedness response systems





Coronavirus Live Updates

THE CORONAVIRUS CRISIS

Spanish Military Finds Dead Bodies And Seniors 'Completely Abandoned' In Care Homes

March 24, 2020 · 1:08 PM ET

Articles & Headlines (cont'd)

We're Failing Doctors - The Atlantic

CORONAVIRUS: COVID-19

What Happens If Health-Care Workers Stop Showing Up?

Unless the country does dramatically more to provide them with the equipment they need to do their job safely, it risks disaster.

MARCH 24, 2020

Thomas Kirsch

Emergency physician

Articles & Headlines (cont'd)

Delay in Dallas Ebola Cleanup as Workers Balk at Task

By KEVIN SACK and MANNY FERNANDEZ OCT. 2, 2014



Madrid hospital staff quit over Ebola fears [Ashifa Kassam](#) in Madrid

Articles & Headlines (cont'd)

Ebola Health Workers in Liberia: Give Us More Danger Money or We Strike

By *Javalakshmi K* October 13, 2014 07:59 BST

Bellevue staffers call in 'sick' after Ebola arrives

By *Jamie Schram* and *Larry Celona*

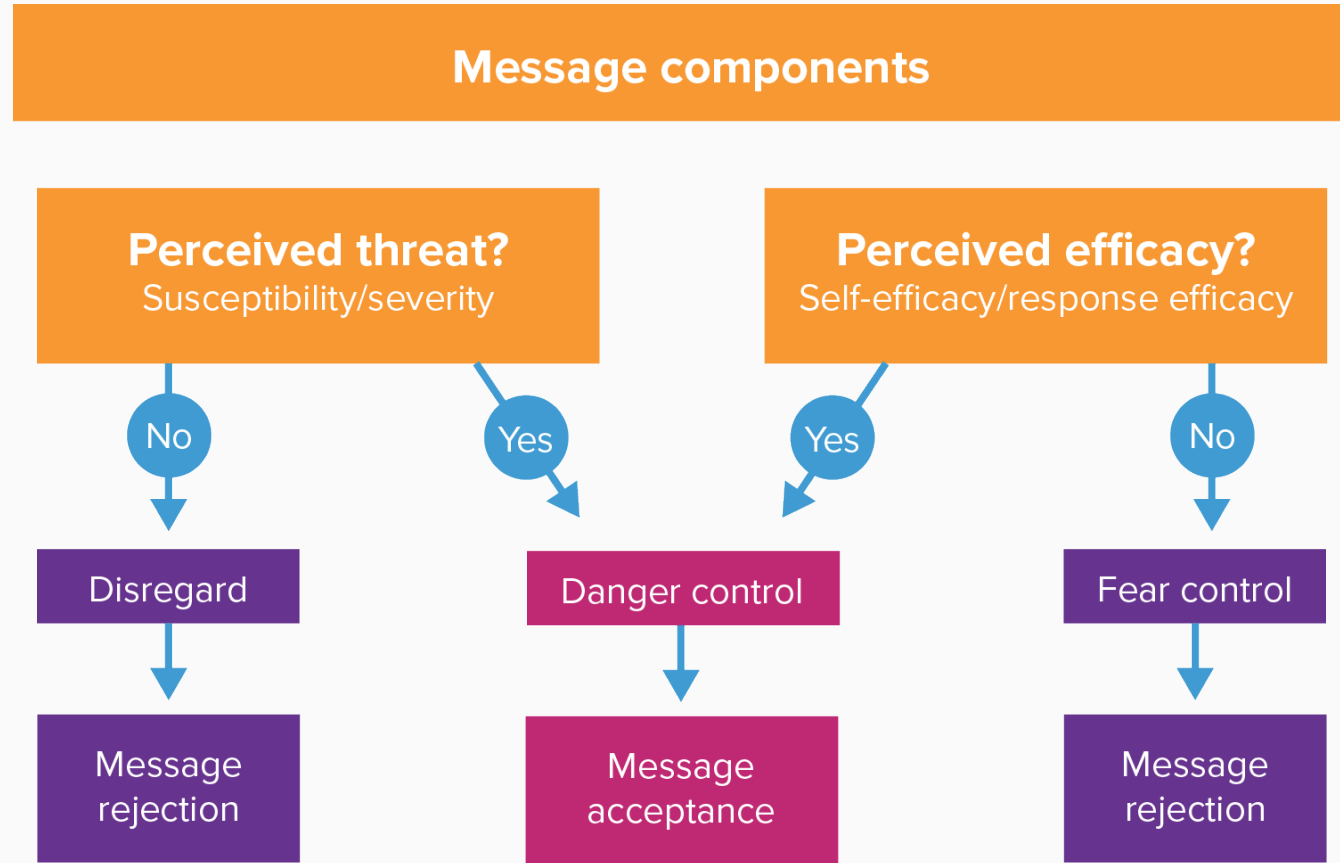
October 25, 2014 | 1:03am



JH~PHIRST: Design and Concept

- Johns Hopkins ~ Public Health Infrastructure Response Survey Tool (JH~PHIRST)
- Adopt Extended Parallel Processing model (EPPM)
 - ▶ Evaluates impact of threat and efficacy on human behavior
- Online survey instrument
- All-hazards scenarios
 - ▶ Weather-related
 - ▶ Pandemic influenza
 - ▶ Dirty bomb
 - ▶ Inhalational anthrax

The Extended Parallel Process Model (EPPM)



“Concerned and Confident” ... Four Broad Categories Identified in the JH ~ PHIRST Assessment Tool

1. Low concern / low confidence (low threat / low efficacy)
2. Low concern / high confidence (low threat / high efficacy)
3. High concern / low confidence (high threat / low efficacy)
4. **High concern / high confidence (high threat / high efficacy)**

Cohorts Examined to Date via EPPM-based Surveys

- **Hospital Workers**
- **Local Health Department Workers**
- **EMS Workers**
- **Medical Reserve Corps Volunteers**

Overarching Findings

- “Concerned and confident” (HT/HE) profile is, in general, most strongly associated with WTR across all hazards
- **Perceived efficacy outweighs perceived threat**
- Compared to the other three scenarios, the **dirty bomb scenario has consistently lower rates of agreement for willingness to respond and related constructs**

Anesthesiology & Critical Care Medicine: Self-Reported Willingness to Respond by Professional Category

	Pandemic Influenza		Radiological ('dirty') Bomb	
	Physicians	Nurses	Physicians	Nurses
If required	95.7%	78.3%	85.0%	70.6%
If asked	84.5%	56.5%	82.4%	62.5%
Regardless of Severity	83.0%	50.0%	76.9%	43.8%

Hospital Workers: Key Findings

- Concerned and confident profile (HT/HE) vs LT/HE profile
- Perceived need for training high
- Nurses less likely to respond than physicians [OR(95%CI): 0.61 (0.45, 0.84)] in a pandemic influenza emergency
- Perceived threat had little impact on willingness in the radiological ‘dirty bomb’ emergency scenario



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Part Two

Health Department Workers

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Survey Administration

- Four rural health department clusters
 - ▶ Idaho
 - ▶ SW Minnesota
 - ▶ SE Missouri
 - ▶ Loud Fairfax District, VA

- Four urban health department clusters
 - ▶ Florida
 - ▶ Indiana (Greater Indianapolis Metro Area)
 - ▶ Wisconsin (Milwaukee/Waukesha Consortium)
 - ▶ Oregon (Portland metro)/Washington State

- N = 2,997 HD employees in nine US states

JH~PHIRST Baseline Findings: Willingness-to-Respond (all Eight Clusters)

	Weather-related	Pandemic influenza	Radiological dirty bomb	Anthrax bioterrorism
If required	93%	91%	74%	80%
If asked	83%	80%	62%	69%
Regardless of severity	77%	79%	53%	65%

Curricular Intervention: Public Health Infrastructure Training (PHIT)

- Designed to address the attitudinal and behavioral gaps in willingness-to-respond
 - Objective: extend levels of threat awareness, self- and response-efficacy
 - Goal: increased system capacity with higher numbers of workers who are willing to respond to all hazards
 - Train-the-trainer format
- Seven hours of content delivered over a six-month period
 - Combines a variety of learning modalities in three phases of training
 - ▶ Face-to-face lecture and discussion
 - ▶ Online learning
 - ▶ Independent activities
 - ▶ Case scenarios
 - ▶ Tabletop exercises
 - ▶ Role-playing
 - ▶ Knowledge assessments
 - ▶ Peer critiques

PHIT Curriculum: Table of Contents

- Phase 1: facilitator-led discussion (two hours)
 - ▶ Part 1: overview of scenarios and public health's role
 - ▶ Part 2: emergency scenario contingency planning
- Phase 2: independent learning activities (three hours)
- Phase 3: group experiential learning (two hours)
 - ▶ Part 1: tabletop Exercise
 - ▶ Part 2: role-playing exercise
 - ▶ Part 3: debriefing

While the content and phases are mostly fixed, local contextual examples are encouraged and formats for training delivery are flexible and scalable to meet the unique needs of health departments

JH~PHIRST Baseline Comparisons to Resurvey: WTR (Severity)

Willingness-to-Respond: Regardless of Severity
Baseline—Resurvey 1—Resurvey 2

	Weather-related	Pandemic influenza	Radiological dirty bomb	Anthrax bioterrorism
Control	82%↓78%↓75%	85%↓84%↓78%	60%↓58%↓55%	78%↓67%↓66%
Intervention	79%↑80%↓79%	83%↑85%↓82%	57%↑73%↓71%	69%↑77%↓73%

JH~PHIRST Baseline Comparisons to Resurvey Findings: Efficacy

Self-Efficacy
Baseline—Resurvey 1—Resurvey 2

Self-efficacy	Weather-related	Pandemic influenza	Radiological dirty bomb	Anthrax bioterrorism
Control	84%↓80%↑81%	87%↓85%↓82%	50%↑52%→52%	71%↓68%↓66%
Intervention	83%↑87%→87%	85%↑90%↓87%	50%↑79%↓75%	66%↑80%↓79%



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Part Three

Current Research Considerations / Next Steps

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Current Research Considerations / Next Steps

- Need for closer examination of response willingness of healthcare personnel to public health emergencies & disasters in LMICs
- Current research / next steps:
 - Mixed-methods research to assess gaps in disaster response willingness among emergency department-based clinical personnel (Pakistan)
 - Application of mixed-methods findings to develop, pilot and assess effectiveness of a novel mHealth app for enhancing response willingness

References

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Thank you

Questions?

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