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BLOOMBERG SCHOOL  
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# Psychological Factors of Health Care Workers in Emergency Situations

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# Learning Objectives

- 1. Describe psychologically-relevant barriers and facilitators to response willingness among health workers regarding public health emergencies and disasters.
- 2. Describe the relevance of self-efficacy to health workers' willingness to respond to public health emergencies and disasters.
- 3. Characterize scenario-specific and contextual variations in disaster response willingness among health workers.



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## *Part One*

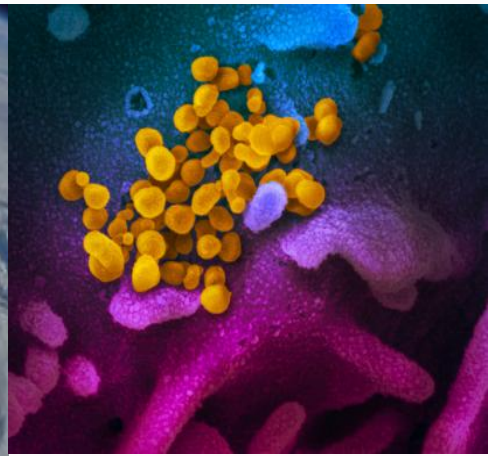
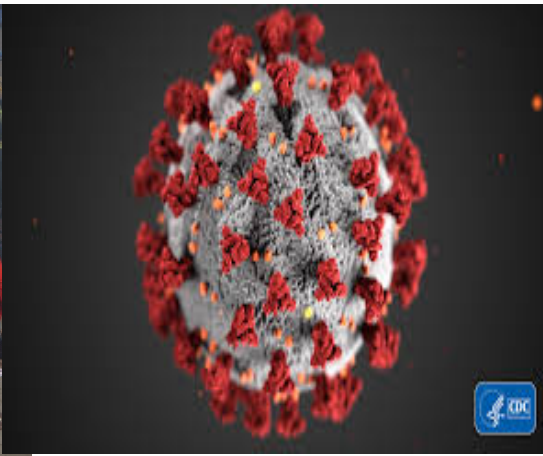
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## Challenges Old and New

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# Twenty-First Century Public Health Preparedness Challenges

- Natural disasters
- Pandemics
- Technological disasters



## 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

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

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

## Bellevue staffers call in 'sick' after Ebola arrives

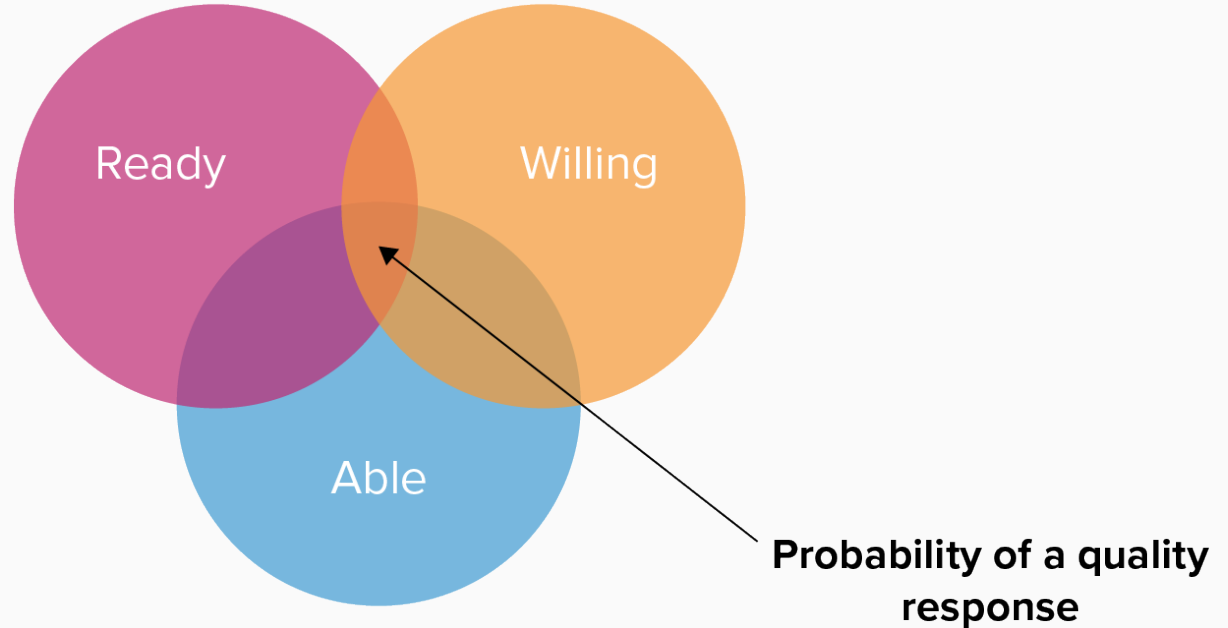
By *Jamie Schram* and *Larry Celona*

October 25, 2014 | 1:03am



# Ready, Willing, and Able Framework

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



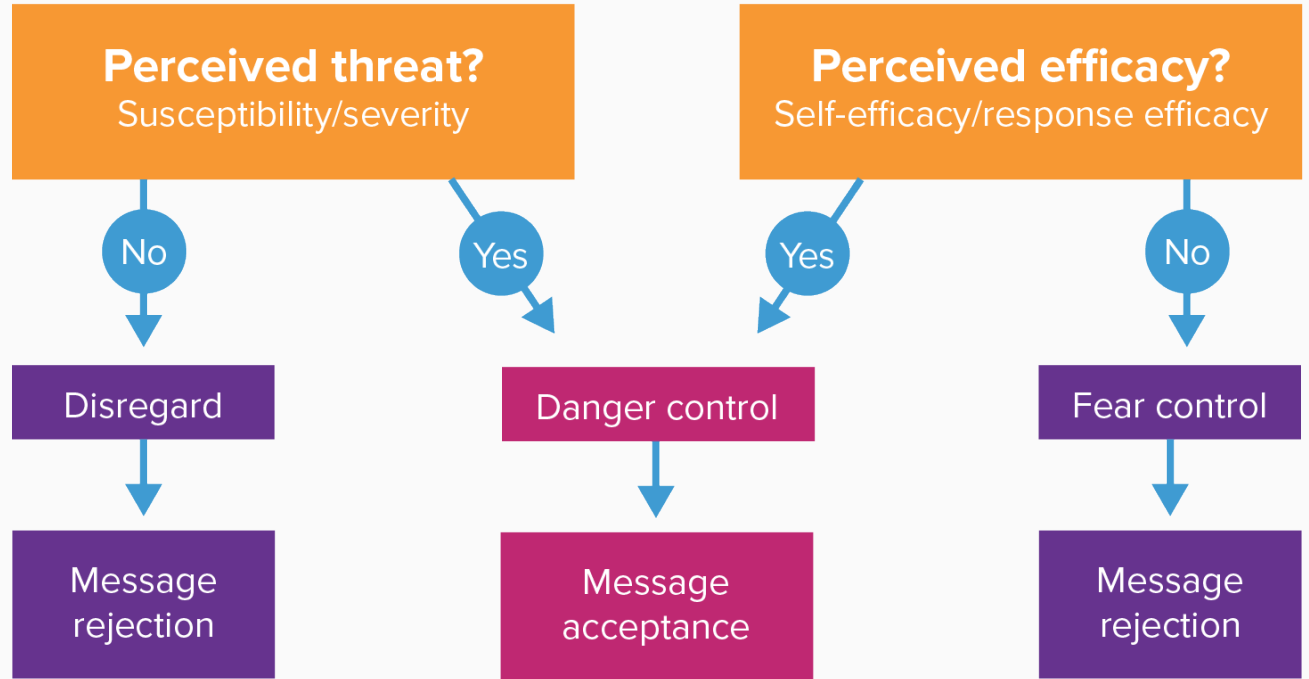
# JH~PHIRST: Design and Concept

- 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)

## Message components



# “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
- EMS Personnel
- Local Health Department Workers

# 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
<b>If required</b>	95.7%	78.3%	85.0%	70.6%
<b>If asked</b>	84.5%	56.5%	82.4%	62.5%
<b>Regardless of Severity</b>	83.0%	50.0%	76.9%	43.8%

# Hospital Workers Overall: 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*

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## Health Department Workers

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## Recent Research: Specific Aims

- Characterize scenario-based differences in emergency response willingness using EPPM, to identify common and differentiating patterns
  - ▶ Baseline JH~PHIRST administration to HD “clusters”
  - ▶ Multiple FEMA regions
  - ▶ Urban and rural



## Recent Research: Specific Aims

- Apply EPPM to inform programmatic efforts for enhancing emergency response willingness in public health system
  - ▶ Administer EPPM-centered curriculum to HDs
  - ▶ Tailored to address baseline JH~PHIRST-identified gaps in willingness to respond
  - ▶ Train-the-trainer model
  - ▶ Training vs. control HDs
  - ▶ Three re-surveys of LHDs with JH~PHIRST to measure short- (one week), medium- (six months), and long-term (two years) impacts of training
    - Focus groups with all re-surveys

# 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%

# Key Focus Group Findings

- Participants reported:
  - ▶ *Increased understanding of the importance of their roles in the context of a public health emergency response*
  - ▶ The potential impacts on the health department and the community if they chose not to respond



# Key Focus Group Findings

- *The importance of being confident in the safety of one's family* was discussed by participants in multiple clusters as particularly important related to response willingness
- Some clusters reported that their *health departments still have work to do in:*
  - ▶ *Defining health department and employee roles and responsibilities*
  - ▶ Developing policies surrounding expectations of all parties

# Key Overall Conclusions

- Few anesthesiologists report receiving sufficient training in disaster medicine and public health preparedness.
- Providing education and training and enhancing related employee services may further bolster willingness to respond and help build a more capable and effective health workforce for disaster response.
- Willingness to respond is a scenario-specific phenomenon.
- Efficacy is a critical element to consider in the context of willingness to respond.

# References

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*Thank you*

# Questions?

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