

R U Ready or Just Playing Along?

Testimony of
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The Institute of Medicine Research Priorities In
Emergency Preparedness and Response for Public
Health Systems

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Public Health Preparedness Systems Research

- ◆ “a field of **inquiry** examining the organization, financing and delivery of public health services at local, state and national levels and the **impact** of these activities on population health....Studies needed by key **public health decision makers** to improve the **effectiveness and efficiency of public health systems.**”

- ◆ Mays, GP; Halverson, PK, and Scruthfield FD. Behind the Curve? JPHManagement Practice, 2003, 9(3), 179-182.

Beyond Inquiry to

Scholarship

- ◆ The scholarship of **discovery**: generation of new knowledge
- ◆ The scholarship of **translation**: education and training on KSA (competencies); seeks to find meaning in what's discovered by making connections across disciplines
- ◆ The scholarship of **application**: dynamic interaction of methods and expertise to facilitate practice and enhance the development of capacity
- ◆ The scholarship of **impact**: the efficient and effective use of resources that leads to improved disaster response and recovery

Literature Review

Education and Training

- ◆ Inclusion criteria
 - ◆ Published 2002-2007
 - ◆ Evidence for training and education
 - ◆ Public health emergency preparedness and response
 - ◆ Information management and response systems
 - ◆ Evidence for nurses as field staff

81 articles cited in the nursing literature on bioterrorism and emergency readiness education

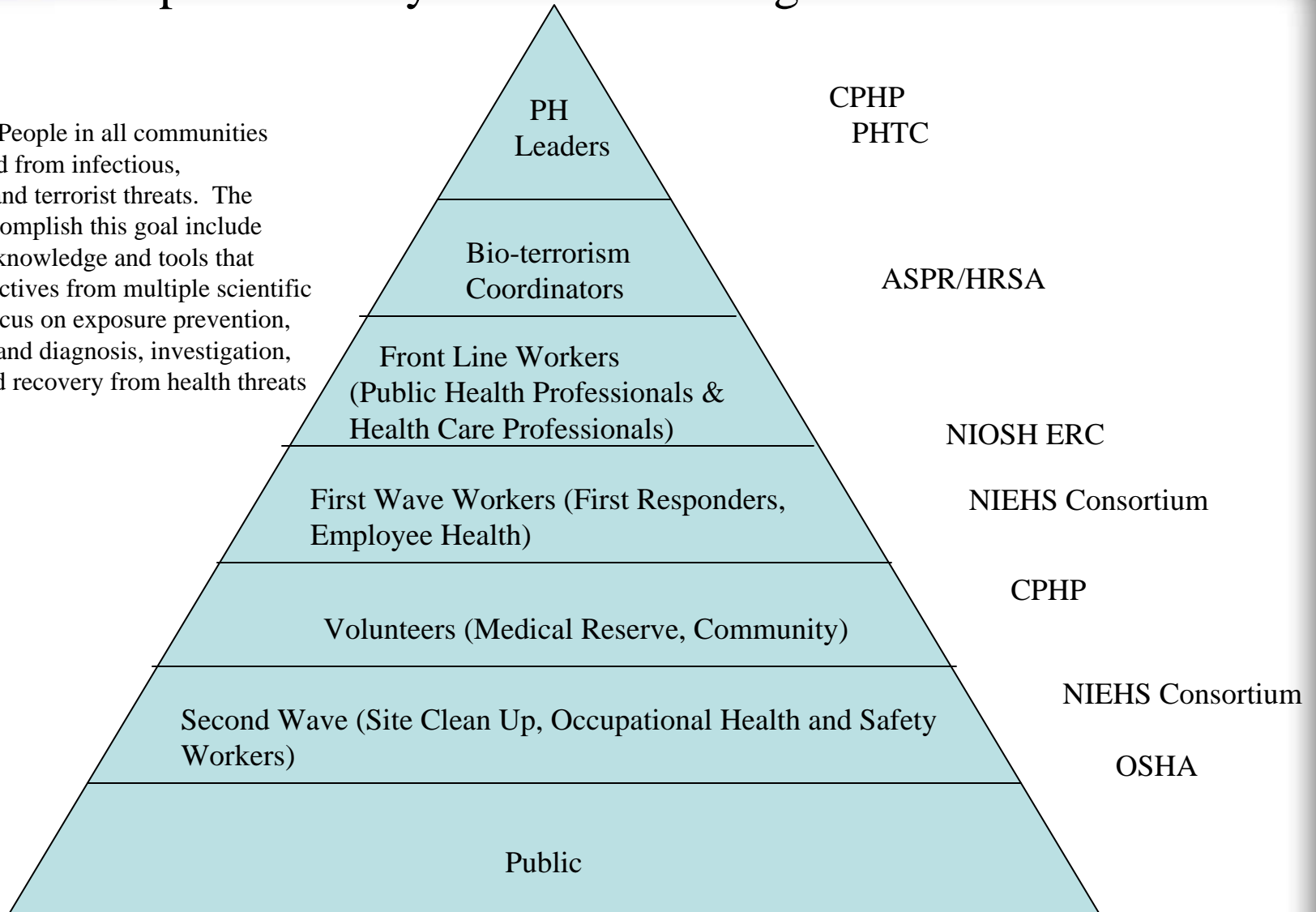
Literature Review

Education and Training

- ◆ **Systems Guidelines** across systems do not exist
- ◆ **Synopses of synthesis** The Johns Hopkins University Evidence-based Practice Center
- ◆ **Synthesis** Five citations
- ◆ **Synopses of single studies** None
- ◆ **Single studies** Limited

Preparedness Pyramid of Training Initiatives

Preparedness: People in all communities will be protected from infectious, environmental and terrorist threats. The strategies to accomplish this goal include developing the knowledge and tools that integrate perspectives from multiple scientific disciplines to focus on exposure prevention, rapid detection and diagnosis, investigation, containment and recovery from health threats (CDC 2004).



Systems Approach

- ◆ Public health decision makers: What does collaborative leadership mean in times of threat with both a formal and informal public health workforce
- ◆ Guidelines across systems: studies that examine competencies and performance across systems
- ◆ Research focusing on performance based impact conducted in collaboration with community stakeholders and academic, private, and government researchers.
- ◆ Discovery to impact: Studies that evaluate both process and impact

New Models

A Prepared Public Health Workforce



Evidence -Based Gaps

Potter, M., Miner, K., Barnett, D., Cadigan, R., Lloyd, L., Olson, D., Parker, C., Rothney, E., & Savoia, E. (2007, October). Final report of the evidence-based collaboration group of the centers for public health preparedness. Unpublished. Available from the Associations of Schools of Public Health, Washington DC.

- ◆ Review of 79 publications selected for relevance to public health field response 2003-2007 mid year revealed 163 articles
- ◆ Sorted by topic, a high proportion of these articles address disaster response systems, while relatively few publications address the leadership/command structure and crisis information management
- ◆ Scored on bases of public health workforce relevance, novelty, reproducibility, evaluative rigor and data driven approach the overall utility of the articles was fair to good.
- ◆ These reported training experiences were typically not subjected to [performance based impact evaluations](#), a deficit attributable mostly to time ad resource constraints

R U Ready or Just Playing Along?

Evaluation of a Model Curriculum for Bioterrorism and Emergency Readiness using Gaming Simulation



Training is significantly associated with better performance in a simulated emergency using gaming technology.

Literature Review

Gaming Simulation

- ◆ Inclusion criteria included:
 - ◆ Publication 2000-2007
 - ◆ Evidence for training and education
 - ◆ Bioterrorism and emergency readiness
 - ◆ Gaming simulation in training and education
 - ◆ Evidence of evaluation

63 articles, 4 reviews, 1 report cited on gaming simulation

Literature Review

Gaming Simulation

- ◆ **Systems** Guidelines (ASPH/CDC Simulation-based and Interactive Training Collaboration Group, 2007)
- ◆ **Synopses of synthesis** The Johns Hopkins University Evidence-based Practice Center (EBPC); unpublished Cochrane Review on simulators & gaming (Akl et al., 2007); UCal San Fran EBPC on simulators and patient safety
- ◆ **Synthesis** None
- ◆ **Synopses of single studies** None
- ◆ **Single studies** Most studies pre-test post-test of knowledge and evaluation of satisfaction; 6 on use of games or simulations for increasing or reinforcing knowledge; 6 on satisfaction; 3 for training and group decision making; and, 2 reinforcing skill

New Models

Disaster in Franklin County

DAY 1 - 4:00 AM
THE STORM
FRANKLIN COUNTY

In this simulation, you will assume the perspective of various public health professionals responding to a natural disaster. You will be asked to make decisions on behalf of the county public health director, a public health nurse, an environmental health specialist, and other public health professionals. By approaching the emerging public health issues from a variety of perspectives, you will gain a deeper understanding of the issues at hand, the decisions that your colleagues in other disciplines face, and how those decisions impact your area of expertise.

BEGIN

MENU

VOLUME



CHAPTERS

RESOURCES

CREDITS

EXIT

Outcome

New Models for Demonstration of Performance

- ◆ Group was found to have a significant effect on Performance ($p=.0011$)
 - ◆ Group 1 Trained and Group 3 not trained were significantly different ($p=.0038$)
 - ◆ Group 2 Trained and Group 3 not trained were significantly different ($p=.0026$)



The Outcome

Impact

- ◆ Training is significantly associated with effective performance in a simulated emergency using gaming technology
- ◆ Education and training mission of the Center for Public Health Preparedness is supported
- ◆ Practice and performance is demonstrated in gaming simulation



The Impact

Return on Learning Investment

“The incident management system-focus of the certificate I received from the School proved to be the most critical component in the response to recent disasters,” says Petersen-Kroeber.

In Summary

- ◆ Support a continuum of scholarship (discovery to impact)
 - ◆ Develop a network of centers with a focus across the continuum of scholarship from discovery to impact.
- ◆ Performance-based impact evaluations cannot be done in isolation
 - ◆ Develop and analyze cross cutting interdisciplinary competency-based learning in public health
 - ◆ Research on the barriers to and facilitation of practice guidelines and competencies that cross systems
- ◆ New models for demonstration of performance are needed:
 - ◆ Conduct comparative analysis of traditional exercise approaches to new interactive online games and simulations
 - ◆ Analyze the effectiveness of reinforcement of knowledge and skill in virtual environments
 - ◆ Identify barriers to the use of distance based models for education, intervention and evaluation of impact

Thank You!



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