

MWPERLC Community Resilience Toolkit Resources: Theme 4

Theme 4: Cost reduction and containment occur in areas separate from direct patient care.

Root Causes:

1. Resources haven't been prioritized for mitigation
2. Mitigation isn't a priority for the government

Resource 1:

Source: Barnett, D. J., Balicer, R. D., Blodgett, D., Fews, A. L., Parker, C. L., & Links, J. M. (2005). The application of the Haddon matrix to public health readiness and response planning. [*Environmental health perspectives*](#), 561-566.

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

The article presents how to use the Haddon Matrix to assist decision-makers to improve and prioritize readiness efforts to reduce morbidity and mortality by determining strategies based on different phases and variables.

Suggested Use:

The authors present different scenarios how the Haddon matrix can be adapted and utilized to plan and brainstorm how best to channel resources and what mitigation strategies to utilize. This strategy can be used to make large problems more manageable.

Resource 2:

Source: Albanese, J., Birnbaum, M., Cannon, C., Cappiello, J., Chapman, E., Paturas, J., & Smith, S. (2008). Fostering disaster resilient communities across the globe through the incorporation of safe and resilient hospitals for community-integrated disaster responses. [*Prehospital and Disaster Medicine*](#), 23(05), 385-390.

Root Cause Addressed: All of Theme 4 and Root Cause 1

Resource and/or Tool Description:

The article discusses hospital preparedness and the notion of "safe and resilient" hospitals and the role of hospitals in a community. It directly illustrates how mitigation and patient care are related and cannot be separated.

Suggested Use:

The authors provide "safe and resilient" hospital benchmarks. They also discuss the role of hospital preparedness in a community's overall resiliency.

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Resource 3:

Source: Fawcett, W., & Oliveira, C. S. (2000). Casualty treatment after earthquake disasters: development of a regional simulation model. *Disasters*, 24(3), 271-287.

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

The article discusses a mathematical simulation model utilizing a systems approach for estimating the behavior of a system and/or region to assist policymakers. The data gathered can be used to evaluate regional plans and develop disaster scenarios.

Suggested Use:

The authors argue that their model can be utilized for disaster training and management decisions to mitigate disasters and assist decision-makers.

Resource 4:

Source: Hick, J. L., Hanfling, D., & Cantrill, S. V. (2012). Allocating scarce resources in disasters: emergency department principles. [*Annals of emergency medicine*](#), 59(3), 177-187.

Root Cause Addressed: All of Theme 4 and Root Cause 1

Resource and/or Tool Description:

An article that presents a review of the continuum of medical care and what categories of resources must be considered for each phase.

Suggested Use:

The authors provide six strategies for resource utilization and the allocation of scarce resources during surge capacity situations to enhance patient care during disasters. Additionally, the authors discuss how prioritization changes during times of emergencies.

Resource 5:

Source: Auf der Heide, E. (2006). The importance of evidence-based disaster planning. [*Annals of emergency medicine*](#), 47(1), 34-49.

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

The article presents common disaster planning assumptions versus actual research observations and their planning implications.

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Suggested Use:

Examine the author's suggested interventions to address the gaps between assumptions and realities. The interventions can be utilized as strategies to address barriers.

Resource 6:

Source: Paul, J. A., & Hariharan, G. (2012). Location-allocation planning of stockpiles for effective disaster mitigation. [*Annals of operations research*, 196\(1\)](#), 469-490.

Root Cause Addressed: All of Theme 4 and Root Cause 1

Resource and/or Tool Description: The article discusses challenges with the Strategic National Stockpile (SNS) program.

Suggested Use:

The authors discuss modifications to the SNS framework in order to prevent three delays that are inherent in the current model.

Resource 7:

Source: Hoard, M., Homer, J., Manley, W., Furbee, P., Haque, A., & Helmkamp, J. (2005). Systems modeling in support of evidence-based disaster planning for rural areas. [*International journal of hygiene and environmental health*, 208\(1\)](#), 117-125.

Root Cause Addressed: All of Theme 4 and Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

The article argues that computer-based simulations are more pragmatic in assisting mitigation planning and help various entities prioritize resources as they allow for different scenarios and plans of action for complex systems like health care facilities.

Suggested Use:

The authors present their case for computer-based simulations and illustrate how such simulations can be utilized to prioritize mitigation efforts and scarce resources for enhancing readiness.

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Resource 8:

Source: Arboleda, C. A., Abraham, D. M., & Lubitz, R. (2007). Simulation as a tool to assess the vulnerability of the operation of a health care facility. *Journal of performance of constructed facilities*, 21(4), 302-312.

Root Cause Addressed: All of Theme 4 and Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

The article presents a system dynamics simulation model to look at health care facilities and their vulnerabilities.

Suggested Use:

The authors argue that their model can assist operational capacity of hospitals during disasters and pinpoint where resources are needed and how much/many. They discuss mitigation strategies to improve operations during disasters.

Resource 9:

Source: Brandeau, M. L., McCoy, J. H., Hupert, N., Holty, J.-E., & Bravata, D. M. (2009). Recommendations for modeling disaster responses in public health and medicine: a position paper of the Society for Medical Decision Making. [*Medical Decision Making*](#), 29(4), 438-460.

Root Cause Addressed: All of Theme 4 and Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

This article provides a thorough discussion of best practices for modeling to lead to informed decision-making.

Suggested Use:

If considering using models, this article can be used to ensure that their recommendations for effective response models are incorporated.

Resource 10:

Source: Armenakis, C., & Nirupama, N. (2013). Prioritization of disaster risk in a community using GIS. [*Natural hazards*](#), 66(1), 15-29.

Root Cause Addressed: Root Cause 2

Resource and/or Tool Description:

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The article presents an argument for the use of geographic information systems (GIS) in the assessment of community risk for disasters in order to help plan and mitigate overall risk.

Suggested Use:

Examine the argument made for incorporating GIS into risk assessment and mitigation efforts by reviewing their presentation of real data, which can be given to decision makers to illustrate specific tangible information and reduce risk by leading to informed decision-making.

Resource 11:

Source: Benefit Cost Toolkit (Version 5.2.1) [Computer software]. (2015, September 18). Retrieved June 29, 2016, from <http://www.fema.gov/media-library/assets/documents/92923>

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

The Benefit Cost Toolkit is used to perform benefit cost analysis for applications submitted under FEMA's Hazard Mitigation Assistance Grant Programs. The toolkit helps users to determine and prioritize mitigation strategies and cost effectiveness. In order to use this resource if first must be downloaded and installed on a computer. Previous toolkit versions, reference guides, hazard data, and enhanced features are also available for use.

Suggested Use:

Designed and shared by the Department of Homeland Security, this FEMA resource is best utilized as users download and install the convenient computer-based software as they aim to determine the cost effectiveness of proposed mitigation.

Resource 12:

Source: Mutual Aid Agreements: Resource Typing/Database. Lessons Learned Information Sharing (LLIS). (2004, May 21). Retrieved June 29, 2016, from <https://www.hSDL.org/?abstract&did=765421>

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

This resource is a Lessons Learned Information Sharing (LLIS) document. The Best Practice outlined here describes the process of categorizing and cataloging resources for use in mutual aid agreements.

Suggested Use:

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This resource is meant to be used to enhance “Resource typing” which is the categorization and description of resources commonly shared during mutual aid events. Apply this resource and information to make mutual aid more effective by clearly describing the function and capability of resources in universal terms and levels as part of this process.

Resource 13:

Source: Public-Private Partnerships for Emergency Preparedness: Resource Management and Sharing. Lessons Learned Information Sharing (LLIS). (2006, February 24). Retrieved June 29, 2016, from <https://www.hsdl.org/?abstract&did=765525>

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

This Lessons Learned Information Sharing (LLIS) document outlines the best practices surrounding how public-private partnerships develop plans and procedures to manage resources shared between the public and private sectors during emergency mitigation, response, and recovery operations.

Suggested Use:

This resource is best utilized to help enhance both the public and private sectors’ response and recovery capabilities with regards to sharing resources. Guidance and answers to questions surrounding liability, cost, and availability of resources often prevent public and private sector partners from developing procedures for resource sharing are provided. Use this tool to help ensure adequate resources when responding to or recovering from emergencies.

Resource 14:

Source: LLIS.gov Intelligence and Information Sharing Resources Info Sheet. Lessons Learned Information Sharing (LLIS). (2011, December 16). Retrieved June 29, 2016, from <https://www.hsdl.org/?abstract&did=777885>

Root Cause Addressed: Root Cause 1 and Root Cause 2

Resource and/or Tool Description:

Lessons Learned Information Sharing (LLIS.gov) is a U.S. Department of Homeland Security/Federal Emergency Management Agency program. LLIS.gov serves as the national, online network of lessons learned, best practices, and innovative ideas for the emergency management and homeland security communities.

Suggested Use:

This resource is best utilized to provide information and collaboration in helping first responders, emergency managers, and homeland security officials prepare for, protect against,

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respond to, recover from, and mitigate terrorist attacks, natural disasters, and other emergencies. Additional resources found on LLIS.gov provide Federal, State, and local officials from all disciplines with a wealth of information on effective planning, training, and operational practices.