The National Center for Medical Readiness (NCMR)  
Center of Excellence at Wright State University

Central Research Forum  
James E Brown MD MMM  
Chair and Program Director  
BSOM  
26 October 2010

“Providing Readiness and Resiliency for America’s Healthcare System”
The National Center for Medical Readiness

Boonshoft School of Medicine/Department of Emergency Medicine

• **Goal 1** - To establish Disaster Resilient Healthcare Communities
• **Goal 2** - To apply Disaster Readiness Principles to Healthcare
• **Goal 3** – To develop the civilian-military linkages in complex catastrophes, crisis events and emergencies

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Department of Emergency Medicine

The National Center for Medical Readiness

Human Population Risk Assessment
Human Survivability Systems
Calamityville™ Tactical Lab
Dynamic Medical Systems
MEMS • ACC • NEHC
Health Care System Recovery

Research and Development
Commercialization
Education and Training
Creative Management and Leadership

“Providing Readiness and Resiliency for America’s Healthcare System”
Human Survivability Systems

Detect/Locate/Extricate/Triage

Stabilize

Evacuate to definitive care
NCMR Tactical Laboratory ("Calamityville")

- State-of-the-art, innovative, collaborative all-hazards and actual conditions training and research facility
- Bridge the identified recurrent gaps between medical providers and traditional disaster response, e.g. Logistics, Communications, Situational Awareness
- The first site in the United States to fully integrate civilian and military relationships, focused on the medical and human support responses occurring during and after a disaster
- Benchmarking sites have overlap, but none have our unique medical orientation

“Providing Readiness and Resiliency for America’s Healthcare System”
NCMR Tactical Laboratory
“Calamityville”

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Urban Destruction Zone
NCMR Tactical Laboratory
“Calamityville”
NCMR Tactical Laboratory
“Calamityville”
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NCMR Tactical Laboratory
“Calamityville”

Transportation Mishaps
Integrating Medical Simulation at Calamityville

- The entire site is a simulation setting
- High fidelity medical trainers integral to training
- Clinical situations fully integrated with props, e.g., *hospital collapse*
- Haz-Mat Center – recovery, transport, decon
- Simulation medical center with various hospital/medical venues
- Layered Simulation approach to training
NCMR Tactical Laboratory

Funding to Date:

- ODOD via DDC - through Nov 2009 ($1.2M)
- BSOM - (Boonshoft Innovation Fund) ($485K)
- WSU/BSOM - Phase I&II VAP Funding ($200K)
- Ohio Legislative Capital Funding ($3M)
- Federal Legislative Capital Funding ($3M)
- Federal EPA Grant ($200K)
- Clean Ohio Revitalization Fund ($2.8M)

“Providing Readiness and Resiliency for America’s Healthcare System”
NCMR Tactical Laboratory
Building Phases

Phase I (2008-10) - Establish Initial Environment ($9M)
  • Obtain site, EPA clean-up, Building renovation, Remediation, Early prop development, New hires
  • Begin offering classes in late 2010

Phase II (2011-12) - Maturing the Site ($6M)
  • Maximize potential for site (additional props, water feature, logistics warehouse)
  • Medical Simulation Center

Phase III (2013-14) - A Sophisticated Setting ($6M+)
  • Reassess programs/products, Build on strengths

“Providing Readiness and Resiliency for America’s Healthcare System”
Mission: The Modular Emergency Medical System (MEMS) was established to expand a healthcare community’s surge capacity of patient care during a disaster based event.

Assets: Acute Care Center (250 beds) – pain/hydration/antibiotics/respiratory care
Neighborhood Emergency Help Center (1000 pts/day) – triage/outpatient
Trained cadre of providers and support in each Homeland Security Region
Identified sites and services in each Region

"Providing Readiness and Resiliency for America’s Healthcare System"
Ohio Modular Emergency Medical System (MEMS)

Neighborhood Emergency Help Center (NEHC)
- Platform: 53’ Trailer, Pre-Deployed, In Region
- 4 Swim Lanes of “Urgent Care” Level of Treatment, 5 Bed Critical Care Area
- Self Sufficiency - 72 hours
- Treatment Goals – “Treat and Street”

Acute Care Center (ACC)
- Platform: 53’ Trailer, Pre-Deployed, In Region
- 250 Beds, Scalable, Interchangeable
- Self Sufficiency - 72 hours
- Treatment Goals
  - Hydration Therapy / Respiratory Therapy / Antibiotics Therapy / Pain Control

“Providing Readiness and Resiliency for America’s Healthcare System”
MEMS - Manufacturing and Logistics Center

Completed ACC ready for loading and pre-deployment
ACC Mini-Mobilization Exercise
“Timed Event Research”
Research Opportunities

• Triage
• Simulation
• Populations at risk
  – Special Needs
  – Geriatrics
  – Pediatrics
• Sensors
  – Patient
  – Provider
• Medical decision making under stress
• Resiliency
CB Suit

- **Objective:**
  - Develop a membrane with controllable porosity that can be used to allow breathability in absence of threat
- **Customer:** DTRA
- **Accomplishments:**
  - Demonstrated viability of underlying concept
  - Developed novel approaches to meet performance demands
- **Status:** Yr 1 of 3
For Further Information:

www.medicalreadiness.org
www.calamityville.org

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