NIOSH Disaster Responder Safety and Health: Emergency Responder Health Monitoring and Surveillance (ERHMS) and Disaster Science Research Initiative

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ERHMS Goal

Develop a health monitoring and surveillance framework for the prevention of illness and injury to emergency responders, which addresses all phases of a response, including pre-deployment, deployment and post-deployment phases.
Three – Phase System

- Deployment Phase
- Pre-Deployment Phase
- Post-Deployment Phase
In response to the health crisis suffered by 9/11 emergency responders, Dr. John Howard, Director of NIOSH and head of the World Trade Center Health Program, helped initiate a program addressing health monitoring and surveillance of emergency responders.
ERHMS Workgroup Members

- NIOSH (coordinating)
- National Response Team
- American Red Cross
- Army
- Center to Protect Workers’ Rights
- Coast Guard
- Dept of Homeland Security
- Env Protection Agency
- Fed Emerg Mngt Agency

- HHS, Asst Sec for Prep and Response
- InterAgency Board
- International Assoc of Firefighters
- Natl Inst for Env Health Sciences (NIEHS)
- Occupational Safety and Health Administration
- US Army Corps of Engineers
- State Health Depts: OR, CA
ERHMS Framework

• Approved by the National Response Team (17 Federal agencies)
• NRT Technical Assistance Document (TAD)
• Available at: ERHMS.nrt.org and www.cdc.gov/niosh/topics/erhms
ERHMS Key Components

- Medical screening that focuses on assessment of fitness and ability to safely and effectively deploy to a response
ERHMS Key Components

- Training regarding hazards to be anticipated and protective measures to mitigate them
• Approaches to centralized tracking and rostering of responders
ERHMS Key Components

- Surveillance and monitoring for exposures and adverse health effects, including supporting efforts in environmental monitoring and assessment
ERHMS Key Components

- Out-processing assessments on completion of response duties and deployments
• Long-term surveillance or monitoring for potential delayed or long-term adverse effects of the deployment experience
Past Activities

- Deepwater Horizon Response
  - Roster
  - Surveillance Reports
  - Health Hazard Evaluations
  - Worker safety and health guidance documents

- Federal Bioterror Exercise
  - BOTE (Bio-Response Operations and Training Exercise)
Current Activity: CDC Ebola Response

- Deployment Risk Mitigation Unit (ERHMS-like Unit) to coordinate CDC staff health and safety issues
- Pre-deployment
  - Added mental health screening, pre-deployment health and safety briefing, improved staffing process
- Deployment
  - Deployed in-country safety officers: personal safety and security, risk assessments, food and water safety, vector/rodent control, lodging assessments, and resiliency
- Post-deployment
  - Debriefs and active monitoring
Public Health Emergency Preparedness (PHEP) Capabilities

- Published March 2011
- For the first time, Responder Safety and Health is addressed as part of public health emergency preparedness (Capability 14)
Classroom Trainings

- Funded by OPHPR to conduct ERHMS classroom-style trainings for state and local health departments
- In collaboration with:
  - NCEH: Community Assessment for Public Health Emergency Response (CASPER)
  - ATSDR: Acute Chemical Exposures (ACE)
Online Training

- CDC Train: Online course (3 hour course)
- FEMA: Online decision makers course (1 one-hour module)
- ~2000 trained so far
- Spanish translation
Software Development

Emergency Responder Health Monitoring and Surveillance (ERHMS) System: Implementation Training

- Course Menu
- Pre-Deployment
- Deployment
- Post-Deployment
- Course Test
ERHMS Solution Architecture

Epi Info leveraged for core functionality

Integrated ERHMS + Epi Info Desktop Application

Emergency Responder Survey

Dashboards

Reports

Data Entry

Epi Info Web Surveys

Cloud Web Server, Multiple Integrated Databases

- Personnel
- Events
- Dashboards
- Reports
- Data Entry
- Surveys

Epi Info Modules

Form Designer

Data Entry

Dashboard

Maps

Classic Analysis

Epi Info Survey Recipients
DSRI to Enhance Responder Safety and Health

- NIOSH launched the initiative in January 2014

- Hosted by NIOSH Emergency Preparedness and Response Office (EPRO)

- Focus on developing a framework for an approach to timely, scalable, scientifically sound research

- Allows for research to be started quickly at the beginning, during and after the response to a large scale disaster.
ERHMS

- Emergency Responders
- Response focused
  - Immediate protection of responders during disaster
- Collect data pre-, during, and post-deployment for each responder
- Discusses confidentiality, HIPAA, and role of research
- ERHMS software will include research indicators dashboard

DSRI

- Emergency Responders
- Research focused
  - Protecting responders for the next disaster
- Use data from ERHMS system
  - Hypothesis generation
  - Baseline data
  - Identification of at-risk populations
- Building on ERHMS
NIOSH Experience with Disaster Science Research

- **Intramural**
  - Many reports, publications, and HHEs related to responder safety and health from WTC, Deepwater Horizon, other
  - Guidelines and strategy papers (e.g., Decker et al. 2013)

- **Extramural**
  - Over $100 million awarded
  - Investigator-initiated, Request for Applications
DSRI Accomplishments to Date

- Jan 2014: EPRO established an internal working group
- Mar/Apr 2014: DSRI topic page, eNews article
- May 2014: EPRO compiled published literature on responder safety and health research
- June 2014: Institute of Medicine Workshop: “Enabling Public Health Research During Disasters” (Dr. Howard gave keynote address)
DSRI Accomplishments to Date (cont.)

- July 2014: NIOSH-sponsored invited workshop to get input from academia, labor, and response organizations
  - Summary report of NIOSH workshop (RAND)

- March 2015: DSRI Roundtable at Center Directors meeting

- Ongoing: Coordination with other HHS disaster research efforts, e.g., Science Preparedness Research Interagency Team (SPiRIT)
Future Plans

- Internal Steering Committee
  - Co-chairs: Angie Weber and Beth Whelan
- External Interest Group
- Stay tuned
Disaster Science Research Initiative to Enhance Responder Safety and Health

NIOSH developed the Disaster Science Research Initiative (DSRI) to enhance the safety and health of emergency responders.

The DSRI will expand our understanding of how to conduct timely, scalable, scientifically sound research focused on the safety and health of responders. The goal is to develop a framework that allows for research to be started quickly in the time before, during, and after response to a large scale disaster.

Scientific study can provide better understanding and reduction of responder health effects from disasters and can lead to improvements in the effectiveness of emergency responses. NIOSH invites partner participation in DSRI by all those interested in ensuring the safety and health of responders in a disaster through research.

Background

Since establishing the Emergency Preparedness and Response Program in 2002, NIOSH has been a leader in the field of disaster science research especially with regard to finding new ways to ensure responder safety and health before, during, and after a disaster. In partnership with other Federal and state agencies, as well as private sector entities, NIOSH has made responder safety and health research an important part of its research portfolio. DSRI will concentrate on developing an approach to timely, scalable, scientifically sound responder-based research that can feasibly be implemented before, during, and after a large-scale disaster. NIOSH is the only Federal agency charged by Congress to conduct worker safety and health research.
Opportunities for Collaboration

- Disseminating and promoting ERHMS training materials
- Incorporating ERHMS into existing emergency preparedness and response materials
- DSRI External Interest Group
Contact Information

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