NIH Disaster Research Response Project

Subcommittee on Disaster Reduction Briefing

March 6, 2014
Disaster Research Can Improve Response & Recovery

• Characterization of hazardous environmental exposures

• Assessment and care of vulnerable populations

• Protection for disaster responders

• Effectiveness of public health interventions & clean-ups

• Health consequences of exposure (Short term & Long term)
NIEHS Role in Disasters
Recent Research and Response Experience

• Hurricane Katrina
  • Trained nearly 30,000 workers
    • Created and Distributed 53,000+ booklets

• Gulf Oil Spill: Deep Water Horizon (DWH)
  • Responded with ESF 8 Activation
    • WETP training >130,000 workers
    • GuLF Study
    • NIH sponsored Academic-Community Research Consortia
    • NTP information & research on spill-related exposures

• Hurricane Sandy
  • WETP Site assessments, site specific training for ~2,000 workers
  • 6 Grantees awarded additional $1.8 Million for just-in-time training
Intra-NIH Disaster Interest Group

I-DIG

• Partnership between 13 NIH Institutes and Centers

• ~50 participants and subject matter experts representing 23 intramural & extramural programs

• Goals
  – Share timely information
  – Build relationships and processes
  – Improve opportunities for collaborations
  – Serve as a discussion platform for actions

• Informal coordination of activities
Current Disaster Research Response = Missed Opportunities

• Well identified need for disaster research

  – Need for Rapid Health Research in Disasters (e.g., H1N1)

  – Public Health Emergency Research Review Board (PHERRB)


  – ASPR/NIH Disaster Research Preparedness Conf. (Sep. 2012)
“The knowledge that is generated through well-designed, effectively executed research in anticipation of, in the midst of, and after an emergency is critical to our future capacity to better achieve the overarching goals of preparedness and response: preventing injury, illness, disability, and death and supporting recovery.”

Lurie, Manolio, Patterson, Collins, & Frieden. New England Journal of Medicine. 368; Mar 2013
Disaster Environmental Health Research Issues

- Ad-hoc, convenience based sampling
- Non-systematic collection of health information
- Late Data: Missing baseline & longitudinal health data
- Exposure data not measured to understand effects
- High risk groups: pregnancy, elderly, pre-existing illness
- Lack of community input
Disaster Research Response (DR2) Project Genesis

Deployment of research too slow & Data is perishable!

- DWH Oils spill - 9 months to start GuLF Study
- Hurricane Sandy - 11 months to fund extramural efforts

• Identified Areas of Concern:
  - Rapid funding for intramural & extramural investigations
  - IRB and OMB issues
  - Data collection tools (surveys, questionnaires, medical tests)
  - Workforce of trained researchers to respond
  - National infrastructure support for research implementation
DR2 Project Goals to Expedite Disaster Research

- Create a central **repository of data collection tools and research protocols** to be used by researchers to get to the field quickly

- New **capability to rapidly collect baseline/early epidemiologic & clinical data and biospecimens** for the research community

- Develop a **“Disaster Research Responder” website** for research community

- **Identify & prioritize health data** needed for disasters

- Create a new **environmental health disaster research response “Network”** that can do research regardless of federal declarations

- **Identify and train** intra/extramural disaster **research responders**

- **Share this model** with others & integrate into HHS and federal response/recovery frameworks
Repository of Data Collection Tools

Literature Review

- Search **peer-reviewed** literature to identify **post-disaster** research studies in which research “tools” have been used
  - To identify common research tools used in disaster research
  - To determine which research tools are most widely used in disasters and among disaster types
  - To collect metadata on widely used tools to assist in the selection of tools for new disaster research
  - To create a resource for additional collaborative research
  - To identify gaps in disaster research studies
    - **Over 11,000 articles identified**
    - **~ 450 being evaluated for tools to be included**
Proposed Disaster Responder Data Collection at Baseline

Demographic (from ATSDR RRR)
- Unique ID
- Name
- Address
- Contact Info
- Employer & Employer Contact
- Age (DOB)
- Gender
- Languages
- Friend/Relative Contact Info
- Ethnicity

Biospecimen Collection
- Blood
- Urine
- Hair
- Toenails

Mental Health
- IES-R
- K6
- BDI

Respiratory
- Spirometry
- ATS-DLD-78
- St. George Respiratory Questionnaire

Epi/Env Exposure History
- Pre-Existing Med/Psych Conditions
- Occupational History
- Social/Lifestyle
- Rx and OTC Use
- Immunizations

Sources of Health Assessment Pre-Deployment Screening Tools
- ERHMS
- CDC Responder Readiness Medical Clearance
- DD2795
- Red Cross Pre-Assignment Qx
- Center for Domestic Preparedness
Possible Convenience Specimens

Primary Specimens

- Hair
- Saliva
- Blood
- Urine
- Toenails

Aliquots and possible assays

- Metabolic, endocrine, stress, TM
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- Serum and clot
- Plasma and PCV
- Whole blood or Lymphs
- Trace metals
- RNA, DNA studies
- Metabolic, endocrine, stress, TM
- Endocrine, TM
Disaster Research Response Website
National Library of Medicine (NLM)

- Website to host the data collection tools repository
- Addition to Disaster Information Management Research Center
- Publically available information to support research response
- Facilitates State and Local research responses in the absence of Federal disaster declarations or other
Environmental Health Research Response Network

- **NIEHS intramural/extramural researchers & stakeholders**
  - Centers, grantees, and academic partners
- **Help develop & prioritize** the tools, website, training materials, & network system for their use.
- **Continuous feedback loop with** the research community to create the products for the research community
- **Platform to evaluate & promote** other efforts to improve “research response” infrastructure & processes
- **Platform to engage community involvement** into “research response” planning & efforts to facilitate “citizen science”
Research Responder Training & Integration

- **Training** on national response plans & HHS mechanisms
- **Health & Safety training** on issues relevant to the disaster
- **Training exercises** on identified scenarios & issues
  - Los Angeles table top exercise (April 2014)
    - Utilizes USGS Tsunami Scenario
- **Integration** into nation & HHS response plans
  - Platforms to facilitate response regardless of federal declarations
- **Research Response Workshop**
  - NIH: June 13, 2014
Disaster Research Depends on Integration Into the Existing Response Structure

- Timing of Research Response
  - Earlier the better without interfering with life saving activity
- Researchers must understand disaster environment
- Researchers must work within the HHS response structure
  - Accountability
  - Health and Safety
  - Reporting/Communications
  - Interactions with State/local colleagues

- New efforts for integration of the DRR into HHS plans
Next Steps: Timeline and Upcoming Events

DR2 Project runs through Sep. 2014
• Project Website hosted by NLM: Under Construction

• Table Top Exercise for Research Responders
  • April 2014: Los Angeles

• Disaster Research Response Workshop:
  • June 13, 2014: NIH Bethesda

• Publications & Presentations of DR2 process & results: Ongoing
THANK YOU!

QUESTIONS?

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Project Webpage