Emergency Responder
Health Monitoring & Surveillance:
LESSONS (not yet?) LEARNED

World Trade Center…
& Exxon Valdez & Katrina & BP & …
NIOSH Emergency Responder Health Monitoring & Surveillance (ERHMS) document

- Targets “gaps & deficiencies” re rostering, monitoring, & surveillance within context of Incident Command System (ICS).
- Would benefit from additional attention to gaps & deficiencies re ID & control of risk factors that contribute to causing harm.
3-Stage ERHMS
Disaster Response Model

- Pre-deployment, deployment, post-deployment
- Anticipates rapidly implemented professionalized response force
- Would benefit from consideration of additional populations engaged in disaster response.
- “Non-traditional” responders operate outside ICS but encounter similar risk factors, exposure scenarios, & health impacts.
Exposure Assessment: WTC Experience

- Sampling results do not tell the whole story.
- Disconnect between reassuring assessments based on sampling results & persistent respiratory & other illnesses among tens of thousands of WTC responders, area workers, & residents.
- These exposures were largely avoidable & unnecessary.
Exposure Assessment: WTC Lessons

- Exposure assessments should be *narratives informed by data*, not just data.
- Sampling results must be supplemented by industrial hygiene assessments.
- Exposure assessments should ID:
  - substances of concern & their hazards
  - tasks performed & equipment & tools utilized
  - disturbance activities
  - typical & worst-case exposure scenarios
  - protective measures & hierarchy of controls.
WTC Exposure Assessment - Simplified

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Utilize the Precautionary Principle

• “When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause & effect relationships are not fully established scientifically…”

• Assume risk & take protective measures appropriate for worst case scenarios until evidence indicates protective measures may be scaled back.
Hierarchy of Controls of Hazards

- Goal of ERHMS document is to “raise the bar” re health monitoring & surveillance.
- Goal should also be to raise the bar re more rapid & effective use of the hierarchy of controls.
- Need to move up toward high end of hierarchy as quickly as possible, with emphasis on hazard elimination, where practical.
Respiratory Protection

- Weak link in disaster response worker protection.
- PPE, including respirators, is least effective component of hierarchy of controls because:
  - hazard remains in place
  - potential for human error is high; may compromise protection.
Work Shifts

• At Ground Zero, 12-hour shifts & 7-day work weeks were the norm.
• Respirator use unlikely to remain effective over such long work shifts & under such physically demanding conditions.
• Tours of duty should be limited in length & number to:
  minimize fatigue & stress
  promote safe work practices
  increase productivity, &
  facilitate effective utilization of respiratory protection.
Rostering, Monitoring, Surveillance (& Treatment?)

• Responders must be afforded access to expert and long-term medical care, if necessary.

• In catastrophic disasters, responder health issues may deplete the financial or medical resources of union- or employer-funded medical insurance plans or clinics.

• Many workers, especially immigrant day laborers, may be under-insured or uninsured, and have little or no effective access to the health care system.
Neither the existing market-based, fee-for-service health care model nor the workers compensation system has proved effective at providing adequate access, screening, or treatment for adverse health outcomes associated with 9/11-environmental exposures.

Health care providers in general do not possess the expertise to identify environmentally induced symptoms and illnesses, to associate them with disaster-related exposures, or to render effective treatment or appropriate referrals. They provide, at best, “fragmented treatment by non-experts.” (Dr. David Prezant, FDNY)

Catastrophic disasters may require clinic- or hospital-based “centers of excellence” to engage in targeted outreach & public health education, medical monitoring & treatment, ID of late-emerging disease, & collection & sharing of data to inform clinical & public health policy.
Enforcement

- OSHA disaster response policy:
  - **non-enforcement** consultation, guidance, technical assistance.

- At WTC, non-enforcement facilitated rapid debris removal at expense of protection of worker health.
Current Exposure Limits

• Major gaps in regulatory protection against inhalational hazards.

• OSHA permissible exposure limits (PELs) for chronic inhalational exposure based on outdated 1960s data.

• Many of these substances are known or presumed carcinogens. PELs not adequately protective because based only on less hazardous, non-cancer effects.

• Many known carcinogens (dioxins, diesel exhaust, etc.), & other substances known to be hazardous, not regulated at all.
Alternative Exposure Limits?

- Need to update PELs.
- Need to develop acute & sub-chronic inhalational exposure guidelines.
- Consider use of alternative occupational exposure limits (OELs) such as RELS, TLVs, etc.
The Rescue Phase

- Ground Zero rescue phase artificially prolonged for 9 months.
- Obstacle to implementing safe work practices, compliance with regulatory requirements, & enforcement.
- Building-collapse victims not extricated within 12-48 hours have low survival rate, declining to virtually zero after 4 days.
- Duration of rescue phase must be informed by science - not politics or emotions. Must have realistic time limit, determined by site-specific conditions & nature of disaster event.
- *Rescue is no excuse not to protect health & safety of rescue workers.*
Training should cover:
- hazards & hierarchy of controls of hazards
- site characterization & job hazard analysis
- applicable OSHA standards, including:
  - HazCom
  - Respiratory Protection
  - PPE
  - Hazwoper
  - Access to Employee Exposure & Medical Records

Training should emphasize:
- worker rights
- Precautionary Principle

Training should be:
- in understandable language
- at appropriate literacy level
- hands-on.
Training Challenges

• Provide training in advance to *expanded population* of designated & potential responders.
• Provide periodic refresher training.
• Provide last-minute, site-specific training to reinforce concepts already learned.
• Overcome employer resistance.
• Finance costs, including lost work time.
Immigrant Workers

• Immigrant workers recruited for disaster cleanup require additional attention & protection.

• In 9/11 response efforts, immigrant workers were the least likely to receive proper training & respiratory protection or to have medical insurance.

• As result, incurred high rates of illness without early access to medical surveillance & treatment.

• In addition, were often victims of wage & hour crimes.
Risk Communication

• Trust cannot be achieved unless all data are made publicly available without restriction. Unfiltered data should be posted on the web in a timely manner.

• Workers & unions must retain legal right to access to all sampling data per 29 CFR 1910.1020.

From 7 Cardinal Risks of Risk Communication (EPA):

• Accept & involve public as a legitimate partner...

• People & communities have right to participate in decisions that affect their lives...

• Goal of risk communication in a democracy should be to produce an informed public that is involved, interested, reasonable, thoughtful, solution-oriented, & collaborative; it should not be to diffuse concerns or replace public action...

• Communication is a 2-way activity. If you do not listen to people you cannot expect them to listen to you.
Public Participation

- Impacted communities can rapidly build broad-based coalitions & develop high levels of technical expertise.
- Frank, timely, accessible risk communication & other information are essential but not sufficient.
- Response organizations & agencies must formalize a participatory, transparent process for active community involvement.
- Process should provide for open, meaningful participation by all impacted stakeholders, including labor, business, & community.
- May include regular, open, participatory public meetings, oversight panels, advisory boards, or task forces, with experts & representatives chosen by or from impacted communities, as well as public hearings hosted by government agencies or elected officials.

Photo: D. Newman
Goals in disaster response?

1. *Do no additional harm* - protect the health & safety of rescue, recovery, & cleanup workers.
2. Rescue of trapped, injured, & at risk live victims.
3. Site characterization & hazard assessment, with initial (but not exclusive) emphasis on known and potential IDLH hazards.
4. Protect worker health, public health, & the environment through hazard mitigation, including effective removal of environmental contaminants.
5. Retrieval of deceased victims.
6. Reorganization of essential services, debris removal, & return to normalcy.
REMEMBER

WORKERS ARE THE CANARIES
FOR THE COMMUNITY
& THE ENVIRONMENT