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Sent: Tuesday, April 05, 2011 4:45 PM
To: NIOSH Docket Office (CDC)
Subject: 223 - Emergency Responder Health Monitoring and Surveillance
Attachments: Clearinghouse Comments on ERHMS 1.2 Final comments.pdf

The National Clearinghouse for Worker Safety and Health Training (National Clearinghouse) appreciates the opportunity to comment on NIOSH's draft guidance document, Emergency Responder Health Monitoring and Surveillance (ERHMS), Draft 1.2, docket number NIOSH-223.

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**Comments on Emergency Responder Health Monitoring and Surveillance
Guidance Document Draft 1.2
Docket Number NIOSH-223**

Submitted by the National Clearinghouse for Worker Safety and Health Training

The National Clearinghouse for Worker Safety and Health Training (National Clearinghouse) appreciates the opportunity to comment on NIOSH's draft guidance document, Emergency Responder Health Monitoring and Surveillance (ERHMS), Draft 1.2, docket number NIOSH-223.

The NIEHS WETP was established by the Congress in provisions of the Superfund Amendment and Reauthorization Act of 1986 with the mandate to provide training grants to organizations for the primary purpose of providing a national cadre of workers trained in accordance with the requirements in 29 CFR 1910.120. The WETP program is national in scope, currently has 20 grant awardees representing dozens of organizations through consortia, has trained more than two million workers, has provided specific training support to the Department of Energy with respect to that department's clean-up mission, and has developed state-of-the-art training programs in areas supportive of 29 CFR 1910.120 activities, such as confined spaces and radiation.

This model program encourages innovation for training difficult-to-reach populations by addressing issues such as literacy, appropriate adult education techniques, training quality improvement, and other areas un-addressed directly by the private sector. The program enhances rather than replaces private sector training responsibility by demonstrating new and cost-effective training techniques and materials.

NIEHS maintains a National Clearinghouse for Worker Safety and Health Training for Hazardous Materials, Waste Operations and Emergency Response (National Clearinghouse) to assist its Worker Training cooperative agreement awardees by providing information and technical support services to the program directors of NIEHS funded hazardous materials, waste operations, and emergency response worker training programs. The Clearinghouse also functions as a national resource for the dissemination to the general public of program related information, technical reports and resource materials, and other material that have been developed by the awardees of the NIEHS WETP, as specified by Section 126 (g) of the Superfund Amendments and Reauthorization Act of 1986 (SARA).

The National Clearinghouse functions as a link between awardees of the NIEHS Worker Training cooperative agreements and other members of the general public concerned with quality worker safety and health training. Both NIEHS WETP and its Clearinghouse have a role under the National Response Framework's Worker Safety and Health Annex. Under the Worker Safety and Health Training Support Annex to the Worker Safety and Health Annex, the NIEHS WETP:

1. Provides training technical assistance such as instructional staff, curriculum-development experts, subject matter experts, training facilities and professional staff.
2. Provides safety training to worker target populations.
3. Provides assistance and support in the development and delivery of site-specific safety and health training.
4. Provides technical assistance such as respirator fit testing and distribution of PPE.
5. Provides technical information through the National Clearinghouse for Worker Safety and Health Training.

The following comments on the ERHMS document are based on our experience and involvement with 9/11-related response efforts and associated environmental health concerns, as well as our response to Hurricane Katrina and the Deepwater Horizon oil spill.

The draft ERHMS document offers a much needed and long overdue guidance tool for institutionalizing methods to facilitate rostering and medical monitoring and surveillance of workers engaged in disaster response efforts. As such, it represents a significant and welcome step forward. With our involvement and experience in several previous disasters we submit these comments as a way to further strengthen the document.

1. The Pre-Deployment, Deployment, Post-Deployment Phase Model

While we like the 3-stage ERHMS disaster response model, it may not adequately capture all response populations that warrant medical consideration.

The ERHMS document anticipates a rapidly implemented incident command system and a professionalized response force. While we share this scenario as a goal, we are concerned that it remains somewhat idealized in the context of response to catastrophic disasters.ⁱ Inadequate attention is devoted to the means by which these yet-to-be achieved goals are to be realized. Until they are realized, we must acknowledge that there have been and will continue to be additional populations engaged in disaster response. These “non-traditional” responders operate outside the ICS framework but may encounter many of the same risk factors, exposure scenarios, and health impacts as more traditional first responders and skilled support personnel.

The scope of ERHMS planning should be expanded to encompass, in addition to first responders and skilled support personnel, a more broadly defined disaster response population whose health may be at risk because of the tasks they perform, whether or not they operate under the ICS umbrella. WTC experience indicates that thousands of workers and volunteers may become involved in a spontaneous rescue effort that occurs prior to the establishment of a secure exclusion zone and effective implementation of the ICS. This population may include groups of workers assigned and dispatched by their employerⁱⁱ as well as individual workers and other volunteers. The Hurricane Katrina experience bears this out as well.

Additional workers will engage in restoration of essential services such as transportation, telecommunications, electricity, water, sanitation, etc.

During the 9/11 cleanup activities many of these highly-skilled workers engaged in work activities that regularly disturbed potentially harmful WTC-derived dust and debris in indoor and outdoor spaces which had not been tested or remediated. In general, they were not provided with health and safety training, respiratory protection, or other personal protective equipment (PPE). More workers engaged in secondary cleanup of debris and contaminants in impacted commercial, institutional, and residential buildings and in outdoor spaces such as parks and playgrounds. These workers included building maintenance and janitorial crews as well as contractors that utilized a largely immigrant day laborer work force. Neither of these groups received health and safety training or PPE. Similarly unprotected were hundreds of day laborers in the aftermath of Hurricane Katrina.

All of the above groups are well-documented as experiencing health impacts similar to those of WTC first responders and skilled support personnel. These response groups also warrant detailed inclusion in ERHMS planning.

2. Training

The ERHMS document appropriately places strong emphasis on training, including training as “critical for the preparedness of the responder,” “training regarding hazards to be anticipated and protective measures to mitigate them,” and training on “site-specific hazards, operating procedures, and available resources.”ⁱⁱⁱ

Comprehensive emergency preparedness and response training must be provided to *an expanded worker population* of designated and potential responders, along with periodic refresher training. Site-specific training delivered just prior to deployment, or upon deployment should serve to reinforce concepts already learned or to inform responders of a hazard not previously identified. Site specific training should NOT be the only health and safety training that a worker has before being sent out to work on a disaster site.

All workers involved in disaster response efforts, including those worker groups mentioned in Section 1, above, who may operate outside the ICS framework, must be trained about the hazards they may encounter. Training should provide workers with a basic understanding of job hazard analysis principles and process. It should equip workers with the ability to understand and evaluate site-specific assessments conducted by occupational safety and health or environmental professionals. It should emphasize their rights to access to such assessments. It should cover the hierarchy of controls of hazards. Training should emphasize precaution – i.e., assumption of and protection against worst case exposure scenarios, to be scaled back as data and assessments demonstrate the safety of doing so.

Workers must also be trained in specific standards applicable to their protection during disaster response. Training should include components of these and other standards: Hazard

Communication, Respiratory Protection, Personal Protective Equipment, Hazardous Waste Operations and Emergency Response, and Access to Employee Exposure and Medical Records, with emphasis on worker rights under these standards. Training should be in a language and at a literacy level understandable by the workers involved.

Our experience, however, is that employers tend to be resistant to advance training (or often to any training) due to various constraints, not the least of which are expense and lost work time. The call for more extensive training might benefit from an acknowledgment of these obstacles and a discussion of possible ways to overcome them.

While site specific training is discussed in the ERHMS document, without a broader understanding of safety and health hazards, how to recognize them and mitigate them, site specific training is not enough to properly prepare responders to enter a disaster site. While page 20 of the ERHMS document does stipulate that "SST does not negate the need for comprehensive preparedness training..." we believe that the comprehensive training that workers should have before being deployed should be more carefully spelled out in a final ERHMS document.

Following 9/11, the building trades, OSHA and NIEHS recognized the need to develop a training program for Disaster Site Workers who provide skilled support services (e.g. utility, demolition, debris removal, or heavy equipment operation) or site clean-up services in response to natural and man-made disasters. Specifically, it was recognized that all workers at disaster sites need to be aware of the differences between disaster sites and regular construction or demolition worksites. This is why OSHA and NIEHS created the Disaster Site Worker course (OSHA 7600). OSHA has identified three courses that workers need to take in order to be trained to respond safely to natural and man-made disasters. These courses are intended to be taken pre-incident: before work at any disaster.^{iv}

The three courses are:

- the OSHA Construction or General Industry Outreach Training Course (10-hour). Training considered to be acceptable as an equivalent to this course is the OSHA 30-hour Construction or General Industry Outreach Training Course;
- the Disaster Site Worker Course #7600 (16 hour); and
- HAZWOPER (40-hour minimum) training.

The 10-hour outreach courses provide information and awareness of safety and health hazards that occur on a daily basis on a normal work site. The 40-hour HAZWOPER training is the minimum level of training for workers engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances, including chemicals, biological agents, radioactive materials, and explosives. Both of these courses are typically used to teach workers on day-to-day hazards associated with normal working conditions. OSHA, in conjunction with NIEHS, developed the Disaster Site Worker Course #7600

to provide instruction relevant to emergency situations, where working conditions may be drastically different (thus the hazards as well) from day-to-day operations.

Site-specific information and training will continue to be needed at every disaster but cannot be addressed in pre-incident training.

OSHA recognizes that not all workers will be able to, or have the need to take HAZWOPER training. It is essential, however, that all workers who may be involved at a disaster site have a basic understanding of:

- the safety and health hazards that may occur at any construction site,
- the differences in hazards between a disaster site and a regular construction site, and
- be able to inspect, don, and doff an air-purifying respirator for their own protection.^v

It would be useful for the ERHMS document to specify this information in Section 3. Health and Safety Training (during the Pre-deployment phase) of the document so that there is a clear understanding as to what level of training responders and cleanup workers should have prior to being deployed to a disaster site.

3. Exposure Assessment

Overreliance on environmental sampling data can be misleading and dangerous. There has been a fundamental disconnect between what the majority of the data would seem to indicate and the breadth of health issues that have arisen. WTC-related illnesses manifested in the absence of, or contrary to, traditional methods of data collection and assessment. Despite reassuring characterizations of sampling results, tens of thousands of WTC responders, area workers, and residents incurred significant and persistent respiratory and other illnesses. Their exposures were unnecessary & avoidable. The NIEHS National Clearinghouse agrees with the authors of Chapter 7 of the ERHMS document, who write:

A holistic approach to investigating and understanding the impact of exposures on responder health should be adopted—one that does not rely on environmental results alone to determine risk. Information must be gathered from a variety of sources ... to determine if exposures occurred, who may have been exposed, and who needs medical treatment...⁴

This vitally important concept deserves additional emphasis and development in the ERHMS document.

Sampling results must be supplemented by industrial hygiene assessments which consider work conditions, work activities, and exposure scenarios, including both typical and worst-case

scenarios for response tasks. Exposure assessments should be *narratives informed by data*, not just data. These narratives should identify substances of concern and their hazards, tasks performed and equipment and tools utilized, disturbance activities and exposure scenarios, and protective measures to be utilized through the entire hierarchy of controls of hazards, as feasible.

4. Utilize the Precautionary Principle

Disaster response workers may be exposed to an unknown, unquantifiable, or changing array of toxic substances. Imperfect information or lack of full scientific certainty should not be used to justify avoidance or delay of measures aimed at protecting workers or preventing environmental degradation. We should assume risk and take protective measures appropriate for worst case scenarios unless and until evidence indicates that protective measures may be scaled back.

The ERHMS document should reference 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 and effect relationships are not fully established scientifically..."^{vi}

5. The Hierarchy of Controls of Hazards

The authors of Appendix B accurately observe that "the control strategy hierarchy is identical to any general industry or construction hierarchy of controls. *However, because of the nature of an emergency incident, the predicted use is reversed.*"⁷ (emphasis added) However, just as the goal of the ERHMS document is to "raise the bar" with regard to health monitoring and surveillance, we should also endeavor to raise the bar with regard to more rapid and effective use of the hierarchy of controls paradigm.^{vii}

The ERHMS document should stress the desirability of moving up toward the high end of the hierarchy as quickly as possible, with emphasis on hazard elimination, where practical.

6. Rostering, Medical Monitoring, and Surveillance

The ERHMS document could be strengthened by additional attention to how monitoring is to be conducted during and post deployment as well as how surveillance is to be conducted. In addition, clarification is needed of the mechanism or process for coordination of post-deployment health monitoring and surveillance.

A union membership category should be added to rostering and other forms to document union name and local union number.

7. Exposure Limits and Benchmarks

OSHA's permissible exposure limits (PELs) for chronic inhalational exposure to approximately 470 substances are largely based on outdated 1960s data. A number of these substances are known or presumed carcinogens. However, their PELs are inappropriately low because the exposure limits are based only on less hazardous, non-cancer effects. Many known carcinogens, such as dioxins and diesel exhaust, as well as other substances known to be hazardous, are not regulated at all.

The ERHMS document acknowledges the existence of significant gaps in the regulatory framework for worker protection against inhalational hazards. The document would benefit from discussion of the strengths, limitations, and potential uses of diverse occupational exposure limits (OELs), including but not limited to:

- OSHA Permissible Exposure Limits (PELs)
- NIOSH Recommended Exposure Limits (RELs)
- ACGIH Threshold Limit Values (TLVs)
- AIHA Workplace Environmental Exposure Levels (WEELs)
- EPA Acute Exposure Guideline Levels (AEGL)
- AIHA Emergency Response Planning Guidelines (ERPGs)
- US DOE Temporary Emergency Exposure Limits (TEELs).

8. Immigrant Workers

Immigrant and other temporary workers recruited for disaster cleanup require additional attention and protection. In every disaster that NIEHS has been involved in, immigrant and temporary workers were the **least** likely to receive proper training and respiratory protection or to have medical insurance. As a result, they incurred high rates of illness without early access to medical surveillance and treatment. In addition, they were often the victims of wage and hour crimes. The ERHMS document should include increased focus on the issue of immigrant workers in disaster response.

9. Risk Communication and Public Participation

Additional discussion of risk communication would serve to strengthen the ERHMS document. Risk communication should follow the precepts delineated in EPA's *Seven Cardinal Risks of Risk Communication*, including:

- Accept and involve the public as a legitimate partner...
- People and communities have a right to participate in decisions that affect their lives...
- The goal of risk communication in a democracy should be to produce an informed public that is involved, interested, reasonable, thoughtful, solution-oriented, and collaborative; it should not be to diffuse concerns or replace public action...

- If you do not listen to people you cannot expect them to listen to you. Communication is a two-way activity.^{viii}

The ERHMS document neglects to acknowledge the concerns and capabilities of disaster-impacted populations, including but not limited to responders and cleanup workers. World Trade Center experience showed that impacted communities can rapidly build broad-based coalitions and develop remarkably high levels of technical expertise. Frank, timely, and accessible risk communication and other information are essential but are not sufficient. Response organizations and agencies must acknowledge the need for two-way communication with impacted communities and populations. They must formalize a participatory, transparent process for active community involvement. This process should be informed by the principle of community-based participatory research (CBPR) - "an approach that promotes active community involvement in the processes that shape research and intervention strategies, as well as in the conduct of research studies."^{ix} Such a process should provide for open and meaningful participation by all impacted stakeholders, including labor, business, and community. It may include regular, open, participatory public meetings, oversight panels, advisory boards, or task forces, with experts and representatives chosen by or from impacted communities, as well as public hearings hosted by government agencies or elected officials.

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 and unions must explicitly retain their legal right to access to all sampling data per 29 CFR 1910.1020, regardless of partnership agreements or off-shore jurisdictional issues.

10. Contract language needs to include rostering, credentialing and safety and health training requirements

Prime contracts let by the Army Corps of Engineers, FEMA, or other organizations to do the response and cleanup work at disaster sites must include the requirements recommended in the ERHMS document. Unless these activities are required by the agencies holding the contracts, there is no guarantee the rostering or credentialing will get done. Safety and health training requirements must also be included in these contracts. All of these provisions must flow down to all of the subcontractors involved in the disaster response and cleanup.

11. Central databases

The ERHMS document recommends that "A database that contains this type of information can later be utilized for accountability on scene. It could potentially serve as the basis for establishing an on-site roster of deployed responders and to help account for their whereabouts and condition throughout the response."^x ERHMS should collaborate with organizations that have developed large central databases (like the U.S. Army) to draw upon lessons learned on the deployment and administration of these databases. For example, the

ERHMS document should recommend organizations that use paper records scan and code these paper records into a central electronic database so the records can be searched and retrieved. Further, ERHMS should learn from organizations that provide follow-up health care (like the U.S. Army) to take away any lessons learned with respect to most effective avenues for contact, difficulties encountered, success stories, etc.

12. Mutual aid agreements

Mutual aid agreements (MAAs) are written agreements between agencies or jurisdictions in which they agree to assist each other on request by furnishing personnel and equipment with the goal of increasing access to and fast delivery of critical resources during an emergency.

The ERHMS document should promote mutual aid agreements and tie standard operating procedures (SOPs) across multiple response organizations. MAAs tie together the good SOPs of multiple response organizations on a sizable emergency scene. The incident management system (IMS) governs the safety structure, assuring that on-scene organization reinforces both good SOPs and well-written MAAs. The symbiotic functioning of these three elements results in efficient use of resources and maximum safety for responders and the public.

ERHMS should also consult with Federal Emergency Management Agency (FEMA) to discover 'lessons learned' with developing MAAs. FEMA is experienced in developing MMAAs with state, tribal and local governments and private nonprofit organizations to provide emergency assistance to each other when disasters or emergencies occur.^{xi}

13. Social Media and Web 2.0 tools

The ERHMS document would benefit from incorporating social media into an overall communications strategy as an inexpensive and effective way to follow up with emergency responders and recovery workers. While phone, email and text messaging are standard modes of communication, people use social media because it is easy, free and accessible. And the number of social media users in the U.S. and worldwide is growing. There are more than 500 million active users on Facebook.^{xii}

Further, social media is currently being incorporated into all aspects of emergency response, including first responder communications and training, affected citizens communication with authorities and each other, and both responder and citizen communications with others. When used properly, social media applications can allow federal agencies and non-federal organizations involved in emergency response to improve responder and public communication, increase the efficiency of responder activities, and contribute to the overall responder safety and health at the disaster site.^{xiii} WETP has developed a whitepaper on this topic.^{xiv}

The Federal Emergency Management Agency (FEMA) has developed multiple Web 2.0 tools and on social media sites nationwide as part of its mission to prepare the nation for disasters. FEMA's goals with social media are: to provide timely and accurate information related to disaster preparedness response and recovery; provide the public with another avenue for insight into the agency's operations; and engage in what has already become a critical medium in today's world of communications. FEMA's social media ventures function as supplemental outreach, and as appropriate channels for unofficial input.^{xv}

Collaboration with agencies like FEMA that have substantial experience in using Web 2.0 tools and social media sites to develop dialogue with target audiences would be beneficial. For example, FEMA has set up a blog to communicate updates on the March 2011 Japanese earthquake response. Development of a blog as part of an overall communications strategy may be useful.

Thank you for this opportunity to comment on the draft ERHMS document.

ⁱ For example, health and safety training was not implemented at Ground Zero until several weeks after September 11, 2001. A Health and Safety Plan (HASP) was not implemented until October 29, 2001.

ⁱⁱ For example, it has been reported that on the afternoon of September 11, 2001, New York City Transit mobilized 3,000 to 4,000 welders, heavy equipment operators, track workers, and others, provided them with heavy equipment and marine transportation, and deployed them to Ground Zero for days or weeks. (There exists no roster of these workers.)

ⁱⁱⁱ ERHMS document, pages 11, 12, and iii.

^{iv} OSHA web site accessed on 4/4/11, http://www.osha.gov/dte/outreach/disaster/disaster_training.html#3

^v Ibid.

^{vi} Wingspread Statement on Precautionary Principle, January 1998.

^{vii} ERHMS document, page 171.

^{viii} EPA, Seven Cardinal Risks of Risk Communication, OPA-87-020, April 1988.

^{ix} National Institute of Environmental Health Sciences, *Environmental Justice and Community-Based Participatory Research*, <http://www.niehs.nih.gov/research/supported/programs/justice/>.

^x ERHMS document, page 2.

^{xi} FEMA Mutual Aid Agreements for Public Assistance and Fire Management Assistance, Disaster Assistance Policy 9523.6.

^{xii} Taken together, it constitutes the 3rd largest country in the world. Fifty percent of active users log on to Facebook in any given day. There are more than 175 million registered Twitter accounts and 87% of Americans

were aware of Twitter. There are more than 150 million active users accessing Facebook through their mobile devices. There are 44 federal-compatible terms of service (TOS) agreements available for social media applications.

^{xiii} Social Media's Role in Crisis Communications, Booz Allen Hamilton, Washington, DC, March 2009.

^{xiv} NIEHS WETP Whitepaper, "Social Media in Emergency Response: A Study in Facebook and Twitter, 2010."

^{xv} Press Release: Use Of Social Media Tools At FEMA, Release Date: November 2, 2009, Release Number: FNF-09-040.