

**Commenter:** Eileen Senn, Private Industrial Hygiene Consultant

**Comments:**

Qualitative Assessment Needed of  
Chemical Exposures to Gulf Cleanup Workers

Eileen Senn, MS

July 13, 2010

BP, OSHA, and NIOSH are all conducting **quantitative** air sampling in the ongoing Deepwater Horizon Response. As far as I have been able to determine, none have performed the prerequisite primary step of compiling a comprehensive and rigorous **qualitative** exposure assessment. This is alarming because air sampling cannot be rationally planned without such a qualitative exposure assessment, especially in the Gulf where the exposure situation is unprecedented and complex and not easily grasped without such an assessment. An estimated 45,000 cleanup workers are involved and potentially exposed <http://www.deepwaterhorizonresponse.com/go/doc/2931/774039/>. ... [Comments truncated.]

**Response:**

The National Institute for Occupational Safety and Health (NIOSH) appreciates the comments provided on the need for qualitative assessments associated with the Gulf Oil spill. However, the *Emergency Responder Health Monitoring and Surveillance* guidance is not intended to address issues specifically associated with the Gulf oil spill. Further, while some exposure assessment information (chapter 7 and appendix B) is included in the draft, the focus of the document is on health monitoring and surveillance, not on exposure assessment or risk assessment. The intent of these sections was not to provide an extensive or detailed risk assessment paradigm for emergency response. Other references provide more specific guidance in this area; we will make sure that section 7 of the document contains adequate references to consult for more information. We will also make it clear that the information in section 7 is intended to provide introductory material and should not be considered comprehensive.

**Commenter:** Anonymous

**Comments:**

The concepts of protecting responders from injury and providing monitoring for adverse effects related to deployment to an event are unarguably valuable and humane. However, the high expectations of the deploying entity to have the resources and skills to assess physical and mental fitness of their responders may be unrealistic, particularly in the case of volunteers such as many firefighters and emergency medical technicians, Medical Reserve Corps, ESAR-VHP, and perhaps state and local health departments. Those organizations do not have the funds or staff to accommodate the screenings, medical staff to perform fitness for duty determinations, vaccinations/inoculations, and responsibility to maintain and protect medical records. Perhaps there could be some alternative for these types of volunteer entities.

**Response:**

The *Emergency Responder Health Monitoring and Surveillance* guidance is intended to promote a baseline standard of practice for all responders, including those from volunteer organizations. Flexibility in implementation strategies should allow most organizations to at least begin addressing some of the most important aspects of the recommendations offered, even if these organizations are not able to implement all aspects of the guidance immediately.

**Commenter:** Barry Wante, Director, Emergency Management , Brigham and Women's Hospital

**Comments:** *[Responses will be embedded into the comments in italicized text]*

1. The document is very comprehensive and clear on pre-, during, and post deployment activities and surveillance. It also allows for SST which is a very realistic approach.

2. I do have a concern about the overall intent of the document. It is written at the level of a disaster response yet seems to have implications to employers in "routine" response operations. An example I could offer is a healthcare facility decontamination unit that regularly deploys to a single or two victim decontamination operation prior to admission to an Emergency Department. Another example is the law enforcement officer that responds to a highway crash involving a motor carrier carrying a hazardous material but only involved in perimeter control. It would appear that this document would influence those level of operations but have very expansive implications for "routine" operations.

**Response:** *Despite the wide variety of events for which responder health monitoring and surveillance is needed, the principles contained herein apply to both small and large scale events including local, state, and federal level responses. Our expectation is that improvements in the standard of practice as outlined in this guidance will have positive effects during all events. Some aspects of the guidance may not be applicable for all situations. While some responders, for example, those involved in perimeter control may not be directly involved in remediation of the situation, it is our experience that responses to incidents can be rapidly evolving, often involving workers unexpectedly being assigned tasks outside their normal duty. In response to this comment, we will look at the existing text and add additional context to address the situations that the commenter has described.*

3. The BSI as part of the pre-deployment screening could have resistance with any collective bargaining units or viewed as a barrier to recruit volunteers within an organization.

**Response:** *The basic concern is to ensure that only medically capable individuals are deployed, irrespective of collective bargaining concerns. Baseline health status should address not only the responder physical health status, but also emotional health status and immunization status. While this is a valid comment, collective bargaining unit issues are outside the scope of this document.*

4. Personal Information: I assume that employee ID number would suffice to avoid SSN or medical record numbers.

**Response:** *Our intent was not to mandate use of social security numbers but to give it as an example of a unique identifier. We will add employee ID number as an additional example of a unique identifier.*

5. HIPAA could use some clarity. Probably one of the most misunderstood regulations I have to deal with. So often faced with the response, "we cannot tell you that because of HIPAA."

**Response:** *While the intent of this guidance is not to interpret HIPAA, NIOSH will review the sections of the draft related to HIPAA and add additional clarifying references as necessary.*

6. I recognize that "fitness for duty" is somewhat beyond the scope of this document and references to CERFP may be relevant to many first responder communities. The consideration of the demographics of healthcare workers (and other groups covered in this document) is not an easy crosswalk from the typical 18-40 age group in the US military.

**Response:** *We agree that there is not clear guidance for fitness for duty evaluations for healthcare providers like there are for other occupations. However, it is beyond the scope of this document to provide clarity on this issue for healthcare providers. We will review the document and make changes as necessary to better separate the concept of fitness for duty evaluations at the time of employment vs. pre-deployment health screenings.*



**Commenter:** Alice Freund, CIH, Mount Sinai Irving J. Selikoff Center for Occupational and Environmental Medicine

**Comments:** *[responses will be embedded into these comments in italicized text]*

Thank you for the opportunity to input into this document. I have very limited experience in dealing with emergencies of the magnitude that this document is meant to address. For a short time I was involved with extracting data from exposure questionnaires completed by WTC responders. My comments, therefore, are limited to particular items in the document, rather than the broad scope of the recommendations.

Overall

It would be beneficial to have model databases for generic scenarios set up so that pieces could be pulled from it in the event of an emergency, instead of created from scratch in a rush.

**Response:** *NIOSH agrees with this comment, but the development of multiple model databases is beyond the scope of this document. In the future, we would like to explore the creation of a model database to help organizations implement this guidance; however, we feel that finalization of this document is the first step. Further, to ensure operability, such databases should optimally be pre-developed in cooperation with the organizations and subject matter experts that will be using the specific databases.*

Chapter 3 and Chapter 5

The requirements for emergency training under OSHA Hazwoper Standard, 1910.120 should be mentioned in these sections (currently it is only mentioned in the Executive Summary, not in the body of the report)

**Response:** *NIOSH agrees with this comment and will add an appendix regarding the OSHA HAZWOPER Standard.*

Chapter 6

6.2 Who needs to be monitored

We need to include workers who may be mentally traumatized by the types of situations they are handling, not just those exposed to pollutants.

**Response:** *NIOSH agrees with this comment and will make the necessary change.*

6.3 Timing of Injury and Illness Monitoring Activities

Information to collect, Response related information-

Include engineering controls

**Response:** *NIOSH agrees with this comment and will make the necessary change.*

Medical information-

PPE: When collecting information on what PPE was in use, we have found that there is confusion over "dust masks" versus N95's or filtering face piece respirators. It may be helpful to have a picture and description of both so they can be adequately described by the patient. Similarly "tyvek" suits is used almost generically but there are various levels of protection from these types of suits. Some have hoods, some do not. Perhaps pictures would help here as well. Engineering controls in place should be added to the list.

Patients should describe visual appearance and odors associated with exposure.

**Response:** *While we agree with the inclusion of engineering controls and reporting of visual observations and odors, the intent of this document is not to provide in-depth descriptions of personal protection equipment. We presume that occupational medical staff will have sufficient training to*

*discern types of personal protective equipment being used.*

#### 6.9 What Type of Worker-Related Data Should Be Obtained for Injury and Illness Surveillance?

This should include what engineering controls were in place when it happened, whether the exposure was visible or had odors associated with it (to get a sense of magnitude)

**Response:** *NIOSH agrees with the comment and will make the necessary change. See previous response on similar issue.*

#### 7.3 Acceptability of Exposures

Need to describe what steps to take in the event (very common) that there is no OEL.

**Response:** *NIOSH agrees with this response and will add additional guidance in this regard. This will include text on the precautionary principle.*

#### 9.1 Suggested Information to Gather During Out-Processing Assessment (if not already obtained)

##### Response related information

##### Known hazardous exposures or conditions

Add engineering controls.

**Response:** *NIOSH agrees with this change.*

#### Post Event Tracking of Emergency Responder Health and Safety Function

##### Evaluation of Control Strategies

Needs a description of engineering controls (ie dust suppression systems, ventilation, local exhaust on tools, sunscreen, etc)

**Response:** *NIOSH agrees with this comment and will make appropriate edits.*

#### Appendix B

##### Figure 8

In an emergency, if there is uncertainty about the exposure assessment, controls should be put in place until such time that it can be ascertained that exposures are acceptable.

**Response:** *NIOSH agrees with this comment as a general matter, but in many instances, engineering controls may not be available, and personal protective equipment may be necessary, particularly during early stages in an event. A statement with respect to the precautionary principle will be included.*

#### Exposure Assessment, pg 169

List types of engineering controls required (not just PPE).

Need to explain how to choose an OEL and what to do if no up-to-date OEL exists (quite common).

Need to take precautions in the event of uncertainty.

Need to explain that various OEL's are based on different expected time periods of exposure.

For example TLV's are for 40 years of exposure, whereas some emergency guidelines could be based on exposures of days or weeks. Some may be established to prevent immediate danger to life or health, while others consider long term effects, like cancer.

**Response:** *NIOSH generally agrees with these recommendations; however, this section was intended to be introductory and not necessarily comprehensive of all issues related to exposure assessment and risk assessment. We will include some additional context and reference other sources, but we cannot include extensive additions of text.*

### Control Strategies in an Incident Response

More emphasis should be put on maintaining the hierarchy of controls during an emergency response, with emphasis on elimination, substitution, and engineering controls, where feasible. While some engineering controls may be readily available to protect responders, they may be reluctant to use them because they may do damage to the community and environment. For example, ventilating an enclosed space could be critical to the safety of a responder, but may result in contamination outside the space. Using water for dust suppression can result in environmental contamination. For this reason it is critical that ventilation equipment with filtering devices and containment equipment be available to response personnel. It must be clear what the priorities are.

**Response:** *NIOSH will review the text and include appropriate changes to address these concerns. However, this section cannot be significantly expanded as it was not intended to be comprehensive. We will include this context and sources of more comprehensive information.*

### Data quality management in incident response

Somewhere in this document it needs to be added that when data is reported and disseminated that includes "non-detects" the detection limits must be reported and disseminated, as well.

**Response:** *As a general matter, reporting of detection limits and the analytical method should be included in the reporting of any data sets. NIOSH agrees with this comment and will include applicable text.*

**Commenter:** Carol Rice, University of Cincinnati ERC

**Comments:** *[Responses will be embedded in the comments in italicized text]*

Comments

On behalf of James E. Lockey, MD, MS; Tina Reponen, PhD, CIAQP; Carol Rice, PhD, CIH:

We congratulate NIOSH for taking the lead in developing the Emergency Responder Health Monitoring and Surveillance guidance, draft 1.2. The involvement of multiple agencies (federal, state and local) and representatives of critical skilled support personnel helps assure that the contents are thorough and can be translated to practice in the event of a response action.

The excellent Figure 1 in the Executive Summary will likely become a guide to many. The text that accompanies the figure may be easier for the reader if each section follows the same order. For example, in the Pre-deployment Phase, the three bullets are Health Screening/Immunizations, Rostering and Credentialing and Training and Preparedness. In the text, the description of this phase begins with Rostering and Credentialing and is followed by Health Screening (omitting immunizations). Consistency in the terminology will strengthen the guidance.

**Response:** *NIOSH will make the necessary adjustments to ensure that the figure and text follow the same order.*

Section 7.3 Acceptability of Exposures may provide undue assurance of safe working conditions. As learned at the World Trade Center, exposures during a response may by one metric be deemed 'acceptable' but later be associated with health effects. This section on Exposures might be enhanced by adding a caution that PPE selection is guided not only by OELs, but also symptoms and lessons learned from other responses. The revision of OELs lags substantially in time behind new information, and may not be sufficient to assure worker protection.

**Response:** *NIOSH agrees with the comment and will add text in alignment with the recommended changes.*

Confirmation of implementation of protocols is essential for future studies and proper interpretation of any data from a registry. If possible, could language be strengthened in the document? As one example, on page 36, it is noted that the '...site safety officer may conduct site health and safety audits...'. Replacing 'may' with 'should' is stronger, without implying a mandatory action.

**Response:** *NIOSH agrees with the change on page 36 and will change "may" to "should."*

Monitoring complex exposures is a rapidly developing field; application of continuously evolving sensor technology will improve exposure assessment.

Comment regarding this might be added to the exposure assessment sections.

**Response:** *NIOSH agrees with this comment and will add text to highlight the difficulties and uncertainties associated with monitoring complex environments.*

We hope that these comments are useful, and look forward to using this document in classes with graduate students at the University of Cincinnati, many of whom will have responsibility for planning for an event that hopefully does not occur. It will also be used by the NIEHS-supported Midwest Consortium for Hazardous Waste Worker Training.

The comprehensive nature of the document makes it valuable workers and to the wide range of professionals on the safety and health team, including occupational health nurses, hygienists, ergonomists, physicians, and safety engineers and health physicists.

**Response:** *NIOSH appreciates the time and effort of staff at the University of Cincinnati to provide comments to this draft document.*

**Commenter:** Thomas Zink, Saint Louis University Institute for Biosecurity

**Comments:** *[Responses will be embedded in the comments in italicized text]*

These comments are in regards to pre-deployment immunization.

An effort to demarcate recommendations based on specific job titles or certifications is natural and logical. At the same time, in the moment of unspeakable disaster, emergency responders react in ways that defy these definitions. For example, every emergency responder could be [self] deployed as a search and rescue participant at any given moment and then encounter seriously degraded sanitary conditions involving surroundings contaminated by [contagious] body fluids. Therefore, it seems reasonable to include hepatitis A as a routine vaccination for all emergency responders (fire, law enforcement, EMT/Paramedic personnel) rather than give confining examples such as HAZMAT, Search and Rescue, SCUBA, etc.

Since universal childhood vaccination against hepatitis A became a standing recommendation in the U.S. for all 1 year olds in May 2006, it is worth considering adding hepatitis A vaccination as a job prerequisite for those born before 2005.

**Response:** *Any immunization recommendations will need to follow those of the ACIP, which does not include a recommendation for emergency response personnel to universally receive hepatitis A vaccination. NIOSH believes that the current wording in this document incorporates the ACIP guidance regarding hepatitis A vaccine.*



Another limitation in this Draft is the seemingly out-of-date recommendation for the anthrax vaccine. The language used in this Draft is consistent with very old CDC Advisory Committee on Immunization Practices (ACIP) advice from 2000. It is not in step with the recently updated recommendation from the CDC ACIP published in MMWR July 23, 2010.

In this 2010 guidance, people involved in emergency response activities (persons who work in police departments, fire departments, hazardous material units, and the National Guard, as well as other government responders) may be offered anthrax vaccination pre-exposure on a voluntary basis under the direction of a comprehensive occupational health and safety program.

**Response:** *Currently, the document provides a small amount of information on anthrax vaccination. NIOSH will adjust the text to ensure alignment with current ACIP recommendations.*

This is in keeping with what is now known about the anthrax weapon as follows: anthrax has been made to be resistant to ALL antibiotics designed to treat the disease; weaponized anthrax powder is microscopic in size and converts to the gaseous phase rapidly wherein it becomes invisible, odorless, tasteless and undetectable; the weaponized powder has been concocted to reduce electrostatic charge and thereby easily re-aerosolized about the attack zone and beyond; personal protective equipment (PPE) is not fool proof – 6 out of 9 HAZMAT specialists were exposed in the 2001 Hart Senate Office attack partly due to the difficulties discerning the safe versus hot zone. Understanding the weapon faced by emergency responders is the key to rational advice on pre-exposure vaccination.

Possibly more important is to understand that in the face of an anthrax attack matriculated with antibiotic resistant strains, the current plan of post-exposure antibiotics plus vaccine will fail. In this scenario, our current, post-exposure response plan fails our critical infrastructure personnel on whom we rely for civil order and continuity of operations and government. These courageous, selfless professionals are not adequately prepared for an attack with antibiotic-resistant anthrax! Pre-deployed courses of antibiotics (to which the strain could be resistant) will neither treat the infection nor stay the disease and the emergency responder will succumb long before any immunity can be conferred by vaccine administered post-exposure. This is not the fault of the anthrax vaccine – no immunization can bestow protection in less than 2-4 weeks and especially when the recipient is actively ravished by the infection and toxicity of disease. On the other hand, pre-exposure vaccine administration is expected to protect against all strains of anthrax, even those strains engineered to be antibiotic-resistant. And pre-exposure vaccination, if undertaken sooner rather than later, can be accomplished in an orderly, unrushed, consistent manner pursuant to the FDA-label and within the confines of an already-established clinician-patient relationship. Finally, the vaccine is in ample supply; so much so, that 500,000 doses per month are being discarded from the U.S. Strategic National Stockpile (SNS) due to shelf-life expiration dating.

**Response:** *This guidance document is not intended to provide comprehensive guidance for an anthrax attack. We will make reference of current ACIP recommendations, but specific recommendations for antibiotic use in the context of an anthrax attack are beyond the scope of this document.*

Two key complaints and legitimate criticisms about the U.S. government response to the anthrax letter attacks almost 10 years ago were the lack of forward-thinking leadership and Inter and Intra-Agency mixed messaging.

NIOSH has the opportunity to take an anticipatory leadership role and demonstrate it acknowledges the worst-case biologic threat scenario of antibiotic-resistant anthrax. And NIOSH would be well-advised to synchronize its recommendations for anthrax vaccination in emergency responders with the CDC ACIP.

**Response:** See previous comment above. NIOSH will adjust the text to reference current ACIP recommendations.

**Commenter:** National Association of State EMS Officials

The following are the **National Association of State EMS Officials** (NASEMSO) comments:

First we would like to thank you for giving us the opportunity to comment on this draft. We found that overall it is an excellent document especially the re-deployment health screening section. There maybe a concern by EMS providers/systems on how to meet these standards due to cost and lack of a dedicated EMS funding source

**Section 6.2: Who needs to be monitored:** This section just discusses providers in hazardous areas but it is important for all to be monitored since IC in a command post can also be very stressful. It should state that everyone needs to be monitored during an incident no matter what their role is within the event.

Page 62 under credentialing information-Professional Education: Should read list of **successful completion** of educational courses...

Page 63 under added elements for "enhanced" Rostering-Correct Information Pledged: Should read-Did applicant give **written consent** to submit only....

Page 66 add new # 4: Are you on any medications Yes/No. If yes, list them\_\_\_\_\_

Page 67 # 5: add 5a: Do you exercise on a regular basis.

If you have any questions, please do not hesitate to contact:

Leslee Stein-Spencer R.N., M.S.  
Program Advisor  
NASEMSO  
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**Response:**

**First Paragraph:** The *Emergency Responder Health Monitoring and Surveillance* guidance is intended to promote a baseline standard of practice for all responders. Flexibility in implementation strategies should allow most organizations to at least begin addressing some of the most important aspects of the recommendations offered, even if these organizations are not able to implement all aspects of the guidance immediately. Context around the concept of flexibility during implementation of this guidance will be added to the document.

**Section 6.2:** NIOSH agrees with the comment and will make edits to ensure provision for health monitoring, including stress and psychological toxins are included for all responders.

**Pages 62, 63, 66, 67:** NIOSH agrees and will incorporate these comments.

**Commenter:** American Ambulance Association

**Comments:**

March 4, 2011

NIOSH Docket Office  
Robert A. Taft Laboratories  
MS – C34  
4676 Columbia Parkway  
Cincinnati, OH 45226

Docket Number: NIOSH – 223

To Whom It May Concern:

This letter is written on behalf of the members of the American Ambulance Association (AAA) in response to the request for public comment on Docket Number NIOSH – 223 regarding Emergency Responder Health Monitoring and Surveillance (ERHMS).

Founded in 1979, the American Ambulance Association's Mission is: "To promote health care policies that ensure excellence in the ambulance services industry and provide research, education and communications programs to enable its members to effectively address the needs of the communities they serve." The AAA represents ambulance services across the United States that participate in serving more than 75% of the U.S. population with emergency and nonemergency care and medical transportation services. The AAA was formed in response to the need for improvements in medical transportation and emergency medical services. The Association services as a voice and clearinghouse for ambulance services across the nation and views pre-hospital care not only as a public service, but also as an essential part of the total public health care system.

In reviewing NIOSH's proposed framework on ERHMS, the AAA and its membership have the following comments, input and concerns:

- *Lack of EMS representation in the authoring of this framework* – In reviewing the author list presented in the Draft ERHMS framework document, the lack of representation and involvement from the EMS community in the creation of this framework is noted. Given that EMS plays an integral role throughout the framework, we believe appropriate levels of EMS industry input should be part of the development of such frameworks and would ask for additional EMS representation as this framework further develops.

- *Clarification of regulatory oversight* – We seek clarification on which federal agency will ultimately have direct regulatory oversight of the ERHMS framework, once implemented.
- *Clarification on when it is appropriate to activate ERHMS and for what level of disaster provider* – There seems to be some confusion from our membership on what scale of an incident is it appropriate to activate the ERHMS on-scene and post incident follow up portions of the framework. Additionally, we seek clarification on which levels of responder this framework applies to. For example, is it necessary to monitor the health of Paramedics and EMT's not directly involved in rescue operations, but could be transporting evacuees needing non-incident related medical care to a distant evacuation facility (like a nursing home patient).
- *Concerns over potential increased response time to disasters* – Due to the significant levels of effort needed to manage and operate under such a framework, concerns have arisen that following such a framework could potentially delay responders during the initial response and mitigation phases of a disaster.
- *Funding for Public and Private EMS agencies alike* – The private EMS industry plays an integral role in the provision of Emergency Medical Services for communities throughout our nation, yet funding for such initiatives is often times over-looked for private providers, thus causing undue financial harm on these agencies. We request that any ERHMS framework also include the recognition of such financial needs both for public and private entities alike.

On behalf of the AAA and its members, we appreciate the opportunity for input and feedback on this important issue and welcome any additional interaction necessary to facilitate understanding of our Association's position and concerns on this issue.

Respectfully submitted,



Steve Williamson  
President

**Responses:**

**Lack of EMS representation.** The commenter is incorrect to state that the work group and authors did not have EMS expertise. Several authors and participants indeed have experience in this topic area.



**Clarification of regulatory oversight.** As stated in the draft, the document will be guidance and not a regulatory mandate. Further, as stated in the draft, this document will be provided to the National Response Team for review, vetting, and ultimate publication.

**Clarification when it is appropriate to activate ERHMS.** Flexibility in implementation strategies should allow most organizations to address and implement those sections of ERHMS that are most applicable to their work setting. As stated in the document, ERHMS is intended to be scalable, so organizations can incrementally implement those sections that have the greatest relevance to their mission. EHRMS is not intended to be implemented for those functions that are only tangentially related to a disaster. NIOSH will include some additional text in an attempt to further clarify this concern.

**Concerns over potentially increased response time to disasters.** Because most of the work in the ERHMS framework involves pre-event planning, it is unclear why response times would be increased by implementing elements of EHRMS.

**Funding for Public and Private EMS agencies alike.** The EHRMS framework is not intended to be a funding advocacy document.

**Commenter:** Penny Wolf-McCormick, Oregon OSHA

**Comments:**

Tools section was very useful.

The one area I would have liked to see a little more: safety officer and onsite audits. There was one sentence saying that the safety officer or contractor could do onsite safety audits, and that a review of those audits, if available in writing, could be helpful. From our experience, prevention often occurs in the field; if you want to make sure emergency workers are going to be safe and healthy, make sure you're got a safety officer doing effective audits. Write up the results, and share them broadly. A chart or simple flow chart would make finding the parts you're interested in, easier and faster. Regardless of how good information is, most people won't wade through too much to look for what they need...

**Response:** NIOSH agrees with the commenter's recommendation and will add text to bolster the discussion on the conduct of on-site audits by the safety officer. NIOSH agrees with the need to make the information in this guidance more accessible, without having to wade through large amounts of material to find the relevant section. For that reason, we intend to develop an electronic version that is more user-friendly and will allow quick identification of the information needed, as well as linking the guidance to the tools.

**Commenter:** Earl Hall, Avon Fire Department

**Comments:**

P.31, Paragraph 4, fix spelling, change "feelins" to feelings.

P. 40 describes how the Communications Unit will help disseminate information internally within the ICS system but does not describe how the Comm Unit and the PIO will collaborate on the release of public information.

The tools section is valuable but a little confusing. Suggest creating model forms and only citing links to the other examples.

**Responses:**

**P. 31.** The typographical error will be corrected.

**P. 40.** NIOSH agrees with this comment and will add text about the need for the communications unit to interface with the PIO with respect to release of public information.

**Tools Section:** NIOSH agrees that the Tools section is a bit ungainly to navigate. For that reason, we intend to develop an electronic version that uses links, including links embedded in the Guidance

section, to make the material easier to find and use.
<b>Commenter:</b> Antonio Hernandez, State Health Volunteer Response Coordinator, Arizona Dept of Health Services
<p><b>Comments:</b>  Due to the continually evolving legal landscape during an emergency/disaster event – risk-management, policy and legal consideration may require real-time public health law support. “Consider the additional recommendation encouraging the coordination and establishing of legal triage support mechanisms during a response.”  <i>Note: *Legal triage refers to the efforts of legal actors and others to construct a favorable legal environment during emergencies through a prioritization of issues and solutions that facilitate legitimate public health responses [*Hodge, JG, Anderson, ED. Principles and practice of legal triage during public health emergencies. NYU Ann. Surv. Am. L. 2008; 64(2): 249-291.].</i></p>
<b>Response:</b> The commenter presents a valid concern. NIOSH will attempt to introduce this topic and refer to other resources for more comprehensive information.
<b>Commenter:</b> Carol Cunningham, Ohio Department of Public Safety, Division of EMS
<p><b>Comments:</b>  Thank you for the opportunity to review and comment on this document.  The draft meets all of the extensive needs that are needed before, during, and after a deployment.  The only suggestion that I have is that "food allergies" should be added to question #4 on page 67. This pre-deployment information may affect the selection of personnel to deploy to an altered environment. In a pandemic due to mad cow disease, one may elect not to deploy a responder with a seafood allergy as fish may be the primary edible food available.  Likewise, there are cross-reactivity of allergies with some medications.  For example, a person with a peanut allergy may experience an severe allergic reaction when given ipratropium (Atrovent). If only medication allergies are requested, this person would not report this medication if they had never received it or had been cautioned about the potential allergic cross-reactivity.  Thanks again for the opportunity to review this document.</p>
<b>Response:</b> We will ensure that food allergies are adequately captured throughout.
<b>Commenter:</b> Steven Kipp, Tip Top Search and Rescue
<p><b>Comments:</b>  The "Emergency Responder Health Monitoring and Surveillance", as well intentioned as it may be, are far overbearing to be anything more than a hindrance to emergency workers. Regulations such as these will only take away precious time for training, preparing and responding to emergencies.  While it would be helpful to have more protection and safety for emergency workers, this is not the way to accomplish that.</p>
<b>Response:</b> The draft Emergency Responder Health Monitoring and Surveillance is intended to be a guidance document, not a regulation. Failure to address responder health during disasters can result in high long-term impact to society, both in terms of health and financial costs. The experience of the World Trade Center is a clear example where the country has paid such high costs.

<b>Commenter:</b> William Lenczuk, Tutor-Perini Civil
<p><b>Comments:</b> Section 7.0 Please include/discuss in 7.0 and/or appendix B, information, which will include assessment of extended work shifts and work week as related to and/or comparison to PEL's, OEL etc, which will be used for respiratory protection and PPE use. The assessment strategy also needs to include worker observations regarding respiratory use and communication, should masks be lifted for communication purposes, this time segment needs to be evaluated and entered in overall exposure assessment and training regarding this behavior.</p>
<p><b>Response:</b> Text will be added to address the need to adjust exposure criteria for extended shifts. Additionally, we will review the document to ensure that the need for managers and safety officers to monitor compliance with the use of personal protective equipment is addressed. Note, the document is not meant to provide comprehensive guidance on exposure assessment and risk assessment.</p>
<b>Commenter:</b> Maggie K. Elestwani, Collaborative for People with Disabilities
<p><b>Comments:</b> <i>[Responses will be embedded in the comments in italicized text]</i></p> <ol style="list-style-type: none"> <li>1. The ERHMS is very relevant to private sector and VOAD Medical Emergency Response Teams (MERTs)</li> <li>2. Emergency Responder Health Monitoring and Surveillance (ERHMS) system is a complex adaptive system (CAS). The following description in the draft document Executive Summary is on target: “(The ERHMS) includes specific recommendations and tools for all phases of a response, including the pre-deployment, during-deployment, and post-deployment phases (see Figure 1 below). The intent of medical monitoring and surveillance is to identify exposures and/or signs and symptoms early in the course of an emergency response in order to prevent or mitigate adverse physical and psychological outcomes and ensure workers maintain their ability to respond effectively and are not harmed in the course of this response work.”</li> <li>3. Recommend alignment with USDHS FEMA Integrated Emergency Management approach in CPG 101 2010 to seamlessly integrate functional &amp; access needs of individual responders (as well as community members) <b>Response:</b> <i>The CPG 101 2010 focuses on the fundamentals of planning and developing emergency operations plans. The ERHMS document is consistent with this guidance.</i></li> </ol> <ol style="list-style-type: none"> <li>a. Pre-deployment       <ol style="list-style-type: none"> <li>i. Section 2.3 Key Components of a Baseline Health Screening Exam, p.7 (20 of 96)           <ol style="list-style-type: none"> <li>1. Change section name from Special Needs to Functional &amp; Access Needs; <b>Response:</b> <i>Text will be changed as recommended.</i></li> </ol> <p>Move allergy &amp; severity (e.g., allergies to food, medication, airborne allergens) to Pre-existing medical or behavioral health (renamed) conditions <b>Response:</b> <i>The text on allergies to food, etc. will be moved as recommended to the pre-existing medical section.</i></p> </li> </ol> </li> <li>b. During Deployment       <ol style="list-style-type: none"> <li>i. Rework of section Information to Be Obtained for Injury and Illness Monitoring under 1. Personal Information on p. 25( 38-96)</li> </ol> </li> </ol>

1. Substitute Functional & Access Needs for Special Needs

**Response:** *Change in title will be made.*

2. Include in this section: Care, maintenance, and mobility requirements for durable medical equipment or assistance animals; ability to evacuate

**Response:** *This section is about workers responding to an event not evacuating the general public. Section will be made consistent with information provided in the pre-deployment section.*

3. Place separately in Current Health Status: Pregnancy status (female workers)

**Response:** *Pregnancy status is already listed as a separate bullet on page 26.*

4. Include a separate section on Immunizations (including Immunization status: routine adult and any special risk (e.g., healthcare worker); See table below for recommended immunizations for emergency responders). Note:

Beyond prophylaxis this can also include exposure & illness with these infectious diseases.

**Response:** *Immunizations are covered in the pre-deployment section.*

5. Include a separate section on Family or dependent care issues that may interfere with concentration and performance at work

**Response:** *This is a valid concern. We will add some text on this topic to the document.*

c. Post Deployment

i. Include a section on any feedback on functional and access needs, in addition to health complaints p. 44 (57 of 96).

**Response:** *This is only one of a multitude of issues that can arise during a lessons-learned assessment. We are not able to provide a comprehensive checklist of items.*

4. Functional & Access Needs, in general is a specific category for medical screening, monitoring, surveillance, and follow-up in AAR.

**Response:** *See previous response. This section of the ERHMS guidance is not providing this level of detail on specific lessons-learned issues.*

5. Any feedback during all three stages can be addressed immediately and be included in the proactive Health & Safety Plan. Those functioning in medical monitoring and surveillance on shift during a deployment should be aware on an on-going basis for the whole health, and functional need status of team members.

**Response:** *NIOSH agrees with this comment; additional text to reflect this information will be made.*

6. P59 (72 of 96) Tools for health screening, monitoring & surveillance should include a question about any accommodations for functional & access needs. P59 & 67 (72 of 96)

**Response:** *We will add this to the Enhanced Medical Screening Questionnaire that begins on pg. 68.*

7. Lessons Learned and After-Action Assessments should include how functional & access needs were accommodated. P. 161 (174 of 196)

**Response:** *This is only one of a multitude of issues that can arise as part of a lessons-learned assessment. Because we are not providing a comprehensive checklist of items for lessons-learned, no edits will be made in response to this comment.*



8. Functional and Access needs should be included in the Glossary. p. 177 (190 of 196)

**Response:** *This term will be added to the Glossary.*

9. References should include appropriate resources on disability law, i.e., USDOJ ADA Toolkit. p. 181 (194 of 196), FEMA CPG 101 2010. Also see USDHS FEMA Office on Disability Integration.

**Response:** *The EHRMS document is not providing comprehensive or authoritative guidance in this area.*

**Commenter:** Stella J. Guarna, Deputy Commissioner for Legal Affairs, NYC Office of Emergency Management

**Comments:** *[Responses will be embedded in the comments in italicized text]*

NIOSH Emergency Responder Health Monitoring and Surveillance:

NIOSH and other officials have established a proposed guide to monitor the health and safety of responder's pre/post and during large scale events, where the possibility of exposure to a wide variety of toxins and dangers could potentially affect a large number of first responders for an extended period of time. This is both the physical and psychological impacts that may become present over a period of time. After reading this document, pre-deployment rostering, deployment monitoring (both medical and psych) and post deployment tracking is the most essential part of their overall goal.

**Response:** *Commenter incorrectly implies that this is a draft NIOSH document. While the workgroup that developed this document was convened and led by the NIOSH, this draft manuscript is intended as a future submission to the National Response Team (NRT), Worker Safety and Health sub-committee for consideration as an interagency resource document. As a consequence, the final version of this document will not be an official NIOSH document.*

- 1) This document seems to be based solely on the events of 9/11 & Katrina and their after effects on response personnel. After looking at that, it seems as though some of the ideas put in place are well intentioned, but not completely feasible in the first hours of any response to a large scale event in NYC. I can certainly see setting up health monitoring stations and registering departments and unit's on the scene & also individuals from small agencies that have an important role, but not in the beginning of an event like the document implies. This would be an overwhelming task.

**Response:** *Despite the wide variety of events for which responder health monitoring and surveillance is needed, the principles contained herein apply to both small and large scale events including local, state, and federal level responses. Our expectation is that improvements in the standard of practice as outlined in this guidance will have positive effects during all events. Some aspects of the guidance may not be applicable for all situations, and it is envisioned that individual response organizations will implement the guidance in a way that best fits the response situation and their organizational framework.*

- 2) NIOSH insists all first responders register upon arrival at a scene with a resource unit and then have the individual be given a task based on qualification. This model does not really fit the frame work in place in a large metropolitan area, such as NYC where an overwhelming amount of responders will be assigned to the event based on agency response. These individuals will obviously become engaged in the response based on their normal assignments within their department. It did not say this and seemed to be based more on smaller municipalities who rely

on volunteers and outside jurisdiction personnel to assist in any large scale emergency. If it is based on spontaneous volunteers', it should say that more specifically.

**Response:** *Commenter incorrectly implies that this is a draft NIOSH document; NIOSH is not insisting on any specific stepwise implementation approach for credentialing or rostering. Some aspects of the guidance may not be applicable for all situations, and it is envisioned that individual response organizations will implement the guidance in a way that best fits the response situation. We will reiterate this in the guidance.*

- 3) NIOSH states all responders should be given a physical and psychological exam pre deployment to any incident, thus allowing individuals who should not be front line personnel to be disqualified from responding to any event. This is obviously done prior to hiring municipal police/fire EMS personnel (full time) first responders who work in these assignments on a daily basis. It seems again that this piece of the plan is based more towards small towns and volunteer departments that do not have the same standards NYC uses.

**Response:** *The document is intended to apply to both small and large scale events including local, state, and federal level responses. Therefore, the draft cannot be designed for any specific locality.*

- 4) During an event, NIOSH states monitoring of individuals and their health be based on their initial health assessment and that it should be on an individual level. It states an "appropriate" authority monitor these personnel during the event. Who is the appropriate authority and again, this cannot be based on an individual's health screening prior to any event here in NYC, but needs to be based at a minimum on an agencies response to a scene and at the maximum by which unit was assigned to what task and for how long. This takes the entire group as a "health risk" for monitoring.

**Response:** *The term "appropriate authority" is only used in this document in the pre-deployment emergency credentialing section and refers to the employer or volunteer organization that conducts the credentialing for their workers/volunteers. In terms of who should conduct monitoring during the event, this is stated in the practical summary for Section 6 as the medical and safety sections within the ICS structure.*

- 5) NIOSH is pushing post deployment tracking as one of their major factors and it bases its tracking module on individuals. This again should be based on agency response and the tracking of units and their assigned personnel. It seems fairly difficult to register a responder at a large scale scene upon arrival, track that specific individuals health throughout the event, based on an initial health assessment and then track that individual post event for health related issues. It would seem that NYC would track their own responders based on unit specific response and agency participation rather than on an individual basis. It does not seem to say that in the document, although it provides many examples of questionnaires individual responders can fill out and file with the appropriate agency responsible for their health and well being.

**Response:** *The draft document recommends that through the Incident Command, or Unified Command, that responders be tracked in some manner so that follow-up post-deployment tracking can occur if needed. If the individual organizations responding to the scene have their individual responder tracking systems, and the Incident command is aware of this arrangement, then this should be sufficient. While we have tried to provide general guidance, some aspects of the guidance may not be strictly applicable*

*for all situations, and it is envisioned that individual response organizations will implement the guidance in a way that best fits the response situation. We will reiterate this in the guidance.*

- 6) Other than the above comments, the NIOSH document is "heavy" on the equipment and training aspect of preparedness. They look at everything on the national level, but obviously NYC has its own unique issues regarding emergency response.

**Response:** *The document should be applicable to both small and large scale events including local, state, and federal level responses. Therefore, the draft cannot be designed specifically to address the needs of any particular locality.*

**Commenter:** David M. Newman, New York Committee for Occupational Safety and Health

**Comments:**

The New York Committee for Occupational Safety and Health (NYCOSH) appreciates this opportunity to comment on NIOSH's draft guidance document *Emergency Responder Health Monitoring and Surveillance, Draft 1.2*, docket number NIOSH-223.

NYCOSH is an independent non-profit organization that has provided technical assistance and comprehensive training in occupational safety and health to unions, employers, government agencies, and community organizations for over 30 years.

Beginning with the tragic events of September 11, 2001 and continuing until the present, NYCOSH has worked extensively on World Trade Center-related occupational and environmental health issues. We have collaborated closely on these issues with unions and employers and with non-profit, immigrant, community, and tenant organizations at Ground Zero and throughout Lower Manhattan. In partnership with the United Church of Christ, Disaster Response Ministries, our work has included outdoor and indoor environmental sampling, identification and assessment of exposure scenarios, risk assessment of mass transit facilities under and around Ground Zero, evaluation of the safety and healthfulness of affected workplaces and residences, and technical assistance with the design and assessment of sampling, cleanup, and re-occupancy protocols and with building ventilation and filtration issues. NYCOSH, in collaboration with the Queens College Center for the Biology of Natural Systems and the Latin American Workers Project, operated a mobile medical unit near Ground Zero which provided medical screenings to hundreds of immigrant day laborers engaged in the cleanup of contaminated offices and residences. We also provided respirators to these cleanup workers, along with change-out filter cartridges, fit-testing, and training in proper respirator use. NYCOSH trained additional hundreds of Lower Manhattan workers about 9/11-related occupational and environmental health issues. NYCOSH has worked closely with health care providers and with unions, employers, tenant and community organizations, and elected representatives to ensure that their constituents are informed about and have access to appropriate medical care for 9/11 health conditions. NYCOSH's executive director, Joel Shufro, serves on the board of the World Trade Center (WTC) Medical Monitoring and Treatment Program.

As NYCOSH's industrial hygienist, I had the privilege of serving on the EPA World Trade Center Expert Technical Review Panel. I also served on the Exposure Assessment Working Group of the World Trade Center Worker and Volunteer Medical Screening

Program and on the Advisory Board of Columbia University's Mailman School of Public Health World Trade Center Evacuation Study. Additionally I served on the Community Advisory Committee of the New York City Health and Hospital Corporation's World Trade Center Environmental Health Center and on the Labor Advisory Committee of the New York City Department of Health and Mental Hygiene's World Trade Center Health Registry. I also served on the Community Advisory Committees for the Deutschebank and Fiterman Hall demolitions.

NYCOSH offers the following comments on the ERHMS document, based largely on our nine and a half years of experience with 9/11-related response efforts and associated environmental health concerns, but also based on our (long-distance) interaction with organizations and individuals active in Katrina and BP response efforts.

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, even absent any revision prior to finalization of the document.

It is clear that the intent of the ERHMS document is to address "gaps and deficiencies"<sup>1</sup> regarding rostering, monitoring, and surveillance within the context of the Incident Command System (ICS), and not necessarily to examine broader issues pertaining to disaster response. ICS aims to provide an effective generic structure, chain of command, and division of labor applicable across diverse disaster response scenarios. We believe, however, that efforts to better address worker medical issues within the ICS rubric are likely to be most effective when informed by the broader policies and conditions which can impact both ICS operations and worker health.

We believe that the ERHMS document is too narrowly targeted. It misses an opportunity to jump-start consideration of the risk factors that contribute to the necessity for medical monitoring and surveillance. Stated differently, the document focuses on the very real need for improving mechanisms for identifying, tracking, and presumably ameliorating health harm that results from disaster response operations. At the same time, it does not adequately consider the "gaps and deficiencies" in identification and control of the risk factors that contribute to causing harm. The document would benefit from expanded attention to how and why harm occurs and to its prevention.

**Response:** *The draft ERHMS document was intended to focus on health monitoring and surveillance issues; the intent was not to provide guidance on broader issues pertaining to emergency response (for example, an extensive or detailed risk assessment paradigm). Other references provide more specific guidance in this area; we will make sure that section 7 of the document contains adequate references to consult for more information. We will ensure that the reader understands that the information provided on exposure assessment and risk assessment is not comprehensive, and other sources of information need to be consulted to conduct detailed exposure assessments.*

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

The 3-stage ERHMS disaster response model 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. 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.

**Response:** *The guidance is intended to promote a baseline standard of practice for all responders, including those from volunteer organizations. Flexibility in implementation strategies should allow most organizations to at least begin addressing some of the most important aspects of the recommendations, even if these organizations are not able to implement all aspects of the guidance immediately. Issues related to implementation of the guidance will be discussed and vetted following submission to the National Response Team. Spontaneous volunteers who are not affiliated with a volunteer organization should still be rostered through the on-site rostering process.*

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.

Our 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 employer<sup>3</sup> as well as individual workers and other volunteers.

Additional hundreds or thousands of workers will engage in restoration of essential services such as transportation, telecommunications, electricity, water, sanitation, etc. After 9/11, these highly-skilled unionized 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). Additional hundreds of workers will engage in secondary cleanup of debris and contaminants in impacted commercial, institutional, and residential buildings and in outdoor spaces such as parks and playgrounds. After 9/11, these workers included unionized 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.

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.

**Response:** *For the purposes of this document, we have attempted to define "responder" broadly. "Responder" includes paid affiliated personnel, contractors, and subcontractors, and volunteer workers*

*involved in incident operations. Responders include police, fire, and emergency medical personnel, as well as other responder groups such as public health personnel, cleanup, and repair/restoration workers. We will reiterate this definition early in the document and within the executive summary.*

## 2. Exposure Assessment

If we learned just one thing from our WTC response experience, it would be that an 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 largely unnecessary & avoidable. NYCOSH 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...<sup>4</sup> This vitally important concept deserves additional emphasis and development in the ERHMS document.

**Response:** *We agree with the sentiment of the commenter; however, the draft ERHMS document was intended to focus on health monitoring and surveillance issues. We will include a statement cautioning against overreliance on environmental sampling data. However, the intent of this section was not to provide an extensive or detailed risk assessment paradigm for emergency response. Other references provide more specific guidance in this area; we will make sure that section 7 of the document contains adequate references to consult for more information. We will also make it clear that the information in section 7 is intended to provide introductory material and should not be considered comprehensive.*

NYCOSH believes that sampling data are best evaluated in the context of comprehensive qualitative exposure & hazard assessments. Even prior to initial physical access to the site for purposes of environmental sampling and site characterization, information about the potential presence of toxic substances may be rapidly available from federal databases covering Toxic Release Inventories and the hazardous chemical storage reporting Targeted bulk, wipe, and air sampling should be conducted for harmful substances known or presumed to be present, regardless of regulatory status, so that decisions concerning worker safety and health can be made with the best available information.

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.

**Response:** *Again, we agree with the statements of the commenter, but the focus of the draft document is not on exposure assessment or risk assessment. We will clearly convey that the information provide d*

*in this section is intended to provide an overview only.*

### 3. 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..."

**Response:** *While the focus of the document is not on risk assessment/ management, we will add some text with respect to the precautionary principle as recommended above.*

### 4. 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.*"<sup>7</sup> (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.

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. In this regard, the document would benefit from detailed discussion and examples. See, for example, Eileen Senn's proposals,<sup>8</sup> below, for integration of the entire hierarchy into the BP response effort:

Elimination: Minimize:

- Use of dispersants and cleaning agents
- Burning of oil
- Engine idling
- Tasks with high exposures and questionable usefulness like cleaning of wildlife. (Experts say only 1 percent of cleaned and released wildlife survives.)

Substitution: Least toxic

- Dispersants
- Diesel fuel (low sulfur)
- Cleaning agents
- Insect repellants
- Pesticides

Engineering

- Mechanize work
- Remove oil by vacuum rather than water spray
- Long-handled hand tools to keep workers' noses further from contamination
- Catalytic converters on gasoline engines

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- Crankcase controls on diesel engines

- Engine maintenance and tune-up

Ventilation:

- Keeping workers downwind of sources
- Air conditioned and HEPA and carbon filtered air for living and sleeping quarters, control rooms, equipment cabs, break rooms
- Fans for cooling (effective only under 95 F) and to dilute air contaminants, for example, on the decks of ships

Administrative:

- Perform work when there is minimal heat and solar load – sunrise until 11 AM, 7 PM to 11 PM and even overnight. Reduces both heat stress and evaporation of chemicals.

**Response:** *The intent of Appendix B is to provide awareness of the basic principles related to the hierarchy of controls; however, the intent is not to provide an exhaustive review of the hierarchy, exposure assessment, or risk assessment. We will ensure that the readers are aware of more comprehensive references within this topic area. We will note that the information provided is intended to provide an overview, not a comprehensive discussion.*

## 5. Respiratory Protection and Length of Work Shift

Reliance on respirators is the weak link in disaster response worker protection. PPE, including respirators, is the least effective component of the hierarchy of controls because the hazard remains in place and because the potential for human error, which could compromise protection, is high.

Poor respirator design can cause communication difficulties as well as discomfort and sweating. These latter conditions may result in respirator slippage, compromising the seal and endangering the wearer. These disincentives to respirator use can also provoke deliberate removal of the respirator by the user.

In addition, the conditions under which respirators are typically used during disaster response often include heavy exertion and extended work shifts. At Ground Zero, 12-hour shifts and 7-day work weeks were the norm. Respirator use is unlikely to remain effective over such long work shifts and under such physically demanding conditions.

Consequently, there is a pressing need for the redesign of respirators to enhance comfort and communication capability. Until that happens, tours of duty should be limited in length and number to minimize fatigue and stress, to promote safe work practices, and to facilitate effective utilization of respiratory protection. It may not be significantly more difficult in terms of logistics to field 3 eight hour tours of duty rather than 2 twelve hour

[www.osha.gov/oilspills/oil\\_ppematrix.html](http://www.osha.gov/oilspills/oil_ppematrix.html) tours, while the benefits in terms of productivity, respiratory protection, and injury, illness, and stress reduction are likely to be substantial.

The ERHMS document should note the shortcomings of respirators and should advocate for proper respirator training and usage, rapid movement up the hierarchy of controls, where feasible, redesign of respirators for comfort and communication, and limits on the length of work shifts.

**Response:** *We will ensure that information is included with respect to the shortcomings of using respirators during responses and limiting work shifts. Comprehensive information, however, will not be*

*included. This draft document is intended to focus on health monitoring and surveillance, not exposure assessment, risk assessment, risk management, nor respiratory protection.*

The document should reference the OSHA General Personal Protective Equipment Sampling Matrix<sup>9</sup> developed for use in the Gulf BP cleanup and recommend that this approach be utilized for application to respiratory protection in disaster response efforts generally.

**Response:** *The OSHA PPE Matrix for the Deepwater Horizon Event is already included in the 7T Tools section as a web link.*

In addition, the document should promote the establishment of rapidly accessible regional caches of respirators and other PPE.

**Response:** *This type of information is outside the intended scope of this document.*

#### 6. Rostering, Medical Monitoring, Surveillance, and Treatment

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.

**Response:** *Issues related to implementation of the guidance will be discussed and vetted following submission to the National Response Team.*

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

**Response:** *We agree; the change will be made.*

The centralized roster database should be maintained by government or independent medical agencies rather than by employers or corporate entities.

**Response:** *As a general matter, the development of the pre-deployment roster is conducted through the employer; the subsequent on-site roster would be managed by the Incident Command. We will review the document to see if this issue can be clarified.*

The targeted attention in the document to medical monitoring and surveillance, entirely appropriate and long overdue, begs the question of access to treatment.

**Response:** *The question of treatment, more specifically how it should be implemented, is generally outside of the scope of what can be covered in this document. Access to treatment typically should be the responsibility of the employer, worker compensation programs, and employer/private health insurance. We will not be adding additional information on this topic to the draft.*

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 may effectively have little or no access to the health care system.

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

**Response:** *The issue of implementation strategies for long-term treatment is outside the scope of this document.*

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 the 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."<sup>10</sup> There is a need, in catastrophic disaster situations, for clinic or hospital-based "centers of excellence" to engage in targeted outreach and public health education, appropriate medical monitoring and treatment, identification of late-emerging disease, and collection and sharing of data to inform clinical practice and public health policy.

**Response:** *The issue of implementation strategies for long-term treatment is outside the scope of this document.*

Our experience post-9/11 is that impacted populations, including disaster responders, will not have confidence in government or responder agencies unless there is a clear commitment to medical treatment, where warranted.<sup>11</sup> It is impossible to overstate this issue. The ERHMS document must substantively address the issue of access to expert medical care. While there can be no expectation that the document can solve this nation's health care problems, the document cannot be credible unless it confirms the problem of access to medical care for responders (broadly defined), acknowledges the challenges, and proposes solutions. Although rostering, monitoring, and surveillance are each essential, neither separately nor together do they address the fundamental issue of access to medical care.

**Response:** *The issue of implementation strategies for long-term treatment is outside the scope of this document.*

#### 7. Enforcement

The ERHMS document contains approximately 60 references to OSHA.<sup>12</sup> Not a single one addresses the agency's actual role in disaster response. While the document's authors may assume, and responders may expect, that the strong worker protections and employer responsibilities required by applicable OSHA standards will be in place to safeguard disaster responders, in fact OSHA's role in disaster response has been fairly circumscribed.

OSHA has asserted that the Federal Response Plan in place in 2001 required it to emphasize consultation, guidance, and technical assistance. Consequently the agency declined to enforce applicable standards at Ground Zero. However, the FRP did not exclude enforcement. The problem with the consultation approach was not that it was inappropriate but rather that it was ineffective. OSHA chose to operate under a zero

enforcement policy which ultimately facilitated rapid debris removal at the expense of protection of worker health. At no time did a collaborative approach preclude enforcement, apart from the initial hours and days when rescue of live victims was theoretically possible. This policy of reliance on voluntary compliance to the exclusion of enforcement was instituted after the Exxon Valdez oil spill and formalized after 9/11.<sup>13</sup> It remains in place today.

The consequences of this policy were that applicable protective standards were not enforced at Ground Zero. More importantly, the worker protection requirements of these standards often were not implemented, arguably putting workers at unnecessary and avoidable risk. Applicable standards included the Respiratory Protection Standard,<sup>14</sup> the

15 29 CFR 1910.120, 29 CFR 1926.65.

16 29 CFR 1910.1200, 29 CFR 1926.59.

17 29 CFR 1910.1020.

18 29 CFR 1926.32 (f).

Hazardous Waste Operations and Emergency Response Standard,<sup>15</sup> the Hazard Communication Standard,<sup>16</sup> and the Access to Employee Exposure and Medical Records Standard.<sup>17</sup> (Similarly, EPA declined to consider the WTC site as either a hazardous waste site under the Resource Conservation and Recovery Act [RCRA] or a Superfund site under the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA].)

The enforcement/non-enforcement issue has been controversial, with most attention focused on either end of the continuum (i.e., consultation only with no enforcement or enforcement only with no consultation). In the emergency context of disaster response, neither extreme is likely to be adequately effective. A more useful approach would be to have the agency replicate the role of the "competent person" in construction: one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.<sup>18</sup> Authorization is generally interpreted as the *ability, responsibility, and will* to stop work when necessary to protect workers. In this analogy, for OSHA this would mean consultation when effective and enforcement of applicable standards when necessary. The ERHMS document should acknowledge current limitations on OSHA's role in disaster response and should call for an expanded and proactive role for the agency, up to and including enforcement.

**Response:** *The EHRMS document is focused on health monitoring and surveillance, and OSHA representatives contributed to the development of this document. We will be adding a section on the HAZWOPER Standard. However, the role of OSHA enforcement is beyond the scope of this document.*

#### 8. 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

[www.osha-slc/pel/index.html](http://www.osha-slc/pel/index.html)

<sup>20</sup> [www.cdc.gov/NIOSH/92-100.html](http://www.cdc.gov/NIOSH/92-100.html).

<sup>21</sup> [www.acgih.org/TLV/](http://www.acgih.org/TLV/).

<sup>22</sup> [www.aiha.org/foundations/guidelinedevelopment/weel/Pages/default.aspx](http://www.aiha.org/foundations/guidelinedevelopment/weel/Pages/default.aspx).

23 [www.epa.gov/oppt/aegl/](http://www.epa.gov/oppt/aegl/).

24 [www.aiha.org/foundations/guidelinedevelopment/erpg/Pages/default.aspx](http://www.aiha.org/foundations/guidelinedevelopment/erpg/Pages/default.aspx)

25 [www.atlintl.com/DOE/teels/teel.html](http://www.atlintl.com/DOE/teels/teel.html).

these substances are known or presumed carcinogens. However, their PELs are inappropriately low because the exposure limits are based only on less hazardous, noncancer 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. It would be helpful if the document could also explicitly address the need to update the PELs and indicate as well the need to develop acute and sub-chronic inhalational exposure guidelines.

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)<sup>19</sup>
- NIOSH Recommended Exposure Limits (RELs)<sup>20</sup>
- ACGIH Threshold Limit Values (TLVs)<sup>21</sup>
- AIHA Workplace Environmental Exposure Levels (WEELs)<sup>22</sup>
- EPA Acute Exposure Guideline Levels (AEGl)<sup>23</sup>
- AIHA Emergency Response Planning Guidelines (ERPGs)<sup>24</sup>
- US DOE Temporary Emergency Exposure Limits (TEELs).<sup>25</sup>

**Response:** *A detailed discussion on exposure criteria is beyond the scope of this document. We will ensure that the reader is made aware that this guidance contains only an overview, and other sources of information should be consulted for more detailed information.*

#### 9. The Rescue Phase

OSHA and other agencies allowed the rescue phase at Ground Zero to be artificially prolonged for 9 months. This extended rescue phase was an impediment to implementation of safe work practices, compliance with regulatory requirements, and enforcement.

D. Guha-Sapir, M. Carballo. Medical Relief i 26 n Earthquakes. *Journal of the Royal Society of Medicine*. Vol. 93, February 2000.

27 M. Bruycker, D. Greco, et al. The 1980 Earthquake in Southern Italy: Rescue of Trapped Victims and Mortality. *Bulletin of World Health Organization*. Vol. 61, No. 6, 1983.

28 ERHMS document, pages 11, I, and iii.

The literature indicates that building-collapse victims who are not extricated within 12 to 48 hours have a fairly low survival rate, which declines to virtually zero after 4 days.<sup>26,27</sup>

Thus survival times of trapped building-collapse victims are measured in days, not weeks or months.

While efforts to protect environmental and occupational health during disaster response must never come at the expense of immediate rescue efforts, the duration of the rescue phase itself must be informed by science rather than by politics or emotion. The rescue phase must have a realistic time limit, determined by site-specific conditions and the nature of the disaster event. The ERHMS document would benefit from inclusion of a discussion of this issue.

**Response:** *Given the changing nature of responses, as well as the large variations in potential scenarios, a discussion on the appropriate timing for the rescue phase of a response is beyond the scope of this document. We will give more context in the introduction that this document is an overview not*

*comprehensive.*

#### 10. 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.”<sup>28</sup>

NYCOSH believes that comprehensive emergency preparedness and response training Graphic developed by Dr. Bruce Lippy must be provided to *an expanded worker population* of designated and potential responders, along with periodic refresher training. Last-minute, site-specific training should serve to reinforce concepts already learned.

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.

**Response:** *The comments are acknowledged; however, the focus of this document is health monitoring and surveillance, and we cannot provide a comprehensive discussion of implementation of training.*

#### 11. Immigrant Workers

Immigrant and other temporary workers recruited for disaster cleanup require additional attention and protection. In 9/11 response efforts, immigrant and temporary workers were the least likely to receive proper training and respiratory protection or to have medical EPA. As a result, they incurred high rates of illness without early access to medical surveillance & 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.

**Response:** *The draft currently recommends that training materials be provided to meet the language and comprehension levels of the response workers. We will review this section to see if we can provide more clarity on this issue.*

## 12. 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.

The ERHMS document implicitly fails to adequately characterize or acknowledge the concerns and capabilities of disaster-impacted populations, including but not limited to responders and cleanup workers. Our 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.

**Response:** *Section 8 focuses specifically on communications of exposure, health monitoring, and surveillance data during an emergency response. It is not intended to comprehensively cover all areas and techniques associated with communicating with the public. We will reiterate to the reader that additional resources on communications strategies are available to provide such detail and perspective.*

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."<sup>30</sup> 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.

**Response:** *Health monitoring and surveillance activities are not considered research; although, the results from such activities could lead to hypothesis generation and subsequent research projects.*

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.



**Response:** *We agree with the comment that transparency and sharing results in a timely manner are important in communications to the public; however, it is unclear whether the commenter is requesting any specific change to the draft document.*

### 13. Goals in disaster response

Perhaps one reason why it continues to be difficult to assess and learn from the challenges of WTC response efforts and from subsequent response efforts is that there appears to exist no clear, explicit, and succinct delineation of goals in disaster response. Lacking consensus on such a yardstick, how are we to plan, implement, and evaluate response efforts, protect workers, design effective medical monitoring and surveillance, or determine the proper role of the Incident Command System in various aspects of disaster response? NYCOSH suggests the following as a starting point for consideration of a short but comprehensive list of disaster response goals:

- A. *Rescue of trapped, injured, and at risk live victims.*
- B. *Site characterization and hazard assessment, with initial (but not exclusive) emphasis on known and potential IDLH hazards.*<sup>33</sup>
- C. *Do no additional harm - protection of worker health, public health, and the environment through hazard mitigation, including effective removal of environmental contaminants.*
- D. *Retrieval of deceased victims.*
- E. *Reorganization of essential services, debris removal, and return to normalcy.*

The above list is not intended to be all-inclusive but rather to serve as a starting point for building a consensus list. Depending upon site-specific circumstances, some or all of the above goals may be addressed in the order listed, in another order, or concurrently. Discussion of disaster response goals should introduce and inform the ERHMS document. Reference to response goals should motivate discussion of ICS operations in all phases and aspects of the response effort.

**Response:** *The goal of the ERHMS system is to improve health monitoring and surveillance of responders and get it added to the list of disaster response goals the commenter mentions.*

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

**Response:** *Thank you for your extensive and thoughtful comments.*

**Commenter:** Dario Gonzalez MD, FDNY Office of Medical Affairs

**Comments:** *[Responses will be embedded in the comments in italicized text]*

1. Page iii:

- a. ...As a last resort, all individuals who unexpectedly participate in response activities that have a high probability of post-incident aftereffects should be afforded the same benefits as described above.
  - i. Does this include all spontaneous volunteers; self dispatched responders, local inhabitants, etc.?

**Response:** *This is meant to include spontaneous volunteers and self-dispatched responders. We will change the word individual to worker to help clarify that we are not including local inhabitants.*

2. Page iv:

- a. ...designated disaster control zone and is required under 29 CFR 1910.120...
  - i. Does this mean that "all" responding personnel must meet all the components of 29 CFR 1910.120 prior to being allowed into the access into the disaster site?

**Response:** *The draft states that Site-specific training should be performed prior to responders entering a designated disaster control zone. We will be adding a section about the HAZWOPER Standard to the document. However, further Interpretation of OSHA's regulations is outside the scope of this document.*

3. Page v:

- a. ...all incident personnel should receive an out-processing assessment as part of the demobilization process or as soon as possible after demobilization.
  - i. Shouldn't this be done as part of the Demob procedure (trying to capture data or responses is always difficult post event)?

**Response:** *Yes, but it is not always possible.*

- b. ...The ICS safety officer should work in coordination with the medical unit leader to accomplish these tasks.
  - i. This s an excellent point and should be emphasized more!

**Response:** *We will review the document and emphasize this elsewhere where appropriate.*

4. Page 3:

- a. ...recovery workers in order to perform the additional required functions of emergency credentialing and re-verification.
  - i. What do you mean by re-verification? Is this pre or post access or routine during an event; recommended time frame for this function?

**Response:** *When an emergency response or recovery worker checks-in at a staging area, the receiving entity must be able to verify information about the responder, such as identity, credential information, and emergency credential level. The re-verification process is described in more detail in 1.3.*

5. Page 5:

- a. **Pre-deployment Health Screening for Emergency Responders: Practical Summary**
  - i. Any recommendations on who should access to this data?

**Response:** *The screening information should be maintained and accessed only by the medical staff responsible for the screening activity. In the practical summary for this section, we identify who should have access to this data and how it should be stored.*

6. Page 6:

- a. ...may make it *difficult* to wear and use appropriate personal protective gear.
  - i. Need stronger statement: ie. Does not allow for the continuous use of PPE during operational periods...

**Response:** *Will change text to reflect this comment.*

- b. ...Emotionally traumatic events during an emergency response can serve as a "trigger" for severe emotional reactions among people who are vulnerable because of previous exposures or other predisposing factors.

- i. The volunteer or professional provider may have multiple instances vs. the spontaneous volunteer that may have no exposure. Does this issue require more information and/or guidelines?

**Response:** *This may be a valid viewpoint, but we do not have information to provide such specific guidance.*

7. Page 7:

- a. Identifying and Contact Information... • Age, date of birth, birthplace, sex
  - i. Why birthplace?

**Response:** *Birthplace will be deleted.*

- b. Unique identifier (e.g., Social Security Number or uniquely assigned number)
  - i. Would disagree with use of SS numbers

**Response:** *Our intent was not to mandate use of social security numbers but to give it as an example of a unique identifier.*

- c. Determine if the worker could likely obtain enough prescription medications to last the expected duration of a deployment...
  - i. Recommend responder access to personal medications for at least a two (2) week supply

**Response:** *We will edit the recommendation to state "at least a two week supply and optimally enough to last the expected duration...."*

- ii. Special Needs:

- 1. Add anaphylactic reaction requiring the use of Epinephrine or the Epi Pen
- 2. If yes, then do you carry (in your possession) an Epi Pen?

**Response:** *We will add these items.*

8. Page 9:

- a. 2.7 Recommended Immunizations for All Emergency Responders
  - i. Hepatitis B: should vs. shall

**Response:** *This is a guidance document so no change will be made.*

- ii. Anthrax vaccine: How will this work in an acute event? May be offered but not required.

**Response:** *The anthrax vaccination section will be re-written to ensure consistency with the new ACIP recommendations.*

- iii. Smallpox vaccine: Should be done pre-deployment. Issues with contagiousness with active vaccine reaction from inoculation site. Assessment for immunocompromised or other conditions that would exclude deployment and/or vaccination.

**Response:** *We will refer readers to ACIP recommendations regarding these issues.*

9. Page 13:

- a. ...However, this information includes private and personally identifiable information that may be collected and reported in a variety of formats. In order to maintain privacy required by law
  - i. Add a method for sharing information as clinically or situational demands are established. Should not be constrained by conditions that are intended for "normal" daily operations.

**Response:** *We will add information to introduce the concept of how HIPAA allows for public health uses of health data.*

10. Page 19:

- a. Operation section:
  - i. Document and ensure PPE (especially respiratory) compliance.

**Response:** *PPE compliance monitoring is not a roster function. It occurs during the exposure assessment and controls function described in Sect. 7.*

11. Page 24:

- a. ... If not completed before deployment, baseline fitness for duty examination should be conducted upon entry to field operations.
  - i. Disagree: baseline fitness for duty must be conducted prior to deployment to field operations.

**Response:** *We agree that a pre-deployment examination is best. If, however, this has not been completed and the worker has arrived on scene without this assessment, ERHMS recommends that it should be done at that time rather than skipped or sending the worker home.*

12. Page 27:

- a. The Health Insurance Portability and Accountability Act (HIPAA) may come into play in these investigations...
  - i. Compliance with HIPAA will be a function of the event, and need to disseminate and evaluate acutely evolving situations. The intent is what is important. This federal guideline has evolved into an obstacle that individuals fear to tread.

**Response:** *We will add information to introduce the concept of how HIPAA allows for public health uses of health data.*

13. Page 28:

- a. What Type of Worker-Related Data Should Be Obtained for Injury and Illness Surveillance?
  - i. "Race/ethnicity; Primary language": Why?

**Response:** *Some groups may be at higher risk due to cultural or other factors.*

14. Page 35

- a. ...First, PPE recommendations must be determined.
  - i. There should be a site standardized PPE Requirement, for all responding agencies.

**Response:** *Recommendation is accepted; language will be added to recommend site standardized PPE.*

15. Page 54:

- a. 10.8 Implementation of the Post-Event Monitoring and Surveillance Protocol
  - i. Need for a centralized repository per event not individually separate and isolated information sources.

**Response:** *The logistics (financial support, organizational location, etc.) of a centralized repository are unclear, but we will add information stating that this is an optimal approach.*

16. Page 57:

- a. Functions for After Action Report in Regard to ERHMS:
  - i. Not only to assess what was wrong but to identify safe and good practices. To be able to identify standards to be continued and copied.

**Response:** *A section to address safe and good practices will be added.*

17. Page 68:

- a. **Enhanced Pre-deployment Evaluation (to be completed by the Emergency Responder)**

- i. H/O Seizure Disorder
- ii. H/O Low Back Pain (if yes: how debilitating?)

**Response:** *We will add seizure disorder under Q10. Low Back Pain can be captured under Q1a.*

18. CDC Responder Readiness Medical Clearance

- a. Why use SS number?

**Response:** *The Tools section contains examples of existing documents from various organizations. We will ensure that the source of the document is clearly described, but we feel it is inappropriate to edit other's documents. The example documents may be edited as necessary by organizations who may want to utilize them.*

**Commenter:** National Clearinghouse for Worker Safety and Health Training

**Comments:** : *[Responses will be embedded in the comments in italicized text]*

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. 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.

**Response:** *With respect to the comment on yet-to-be achieved goals, we are unable to address all issues of implementation within this guidance; such issues likely will be vetted following submission of the draft to the National Response Team. In the interim, we hope that flexibility in implementation strategies will allow organizations to at least begin addressing some of the most important aspects of the recommendations offered, even if these organizations are not able to implement all aspects of the guidance immediately. Note that for the purposes of this document, we have attempted to define “responder” broadly. “Responder” includes paid affiliated personnel, contractors, and subcontractors, and volunteer workers involved in incident operations. Responders include police, fire, and emergency medical personnel, as well as other responder groups such as public health personnel, cleanup, and repair/restoration workers. We will reiterate this definition early in the document and within the executive summary. We will include acknowledgement that some responders may operate outside the ICS framework. We intend to capture them both in the on-site roster and injury and illness surveillance.*

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.

**Response:** *For the purposes of this document, we have attempted to define "responder" broadly. "Responder" includes paid affiliated personnel, contractors, and subcontractors, and volunteer workers involved in incident operations. Responders include police, fire, and emergency medical personnel, as well as other responder groups such as public health personnel, cleanup, and repair/restoration workers. We will reiterate this definition early in the document and within the executive summary.*

## **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.

**Response:** *We agree with this statement and will review the draft to ensure that these concepts are adequately addressed.*

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.

**Response:** *We agree with these comments and will review the draft to ensure that these concepts are adequately addressed.*

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.

**Response:** *Any recommended strategies for overcoming these obstacles would be welcomed.*

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.

**Response:** *We will reiterate the need for comprehensive training prior to an event; however, the focus of this draft is not to provide a comprehensive training resource. Rather, the focus is on health monitoring and surveillance. We will ensure that the reader is aware that the training section is introductory and not comprehensive—other more in-depth references should be consulted.*

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.

**Response:** *We decided not to prescribe specific courses that must be completed but rather categories of knowledge that are recommended for pre-deployment training, realizing that multiple courses might satisfy the requirements for each of these categories.*

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.

**Response:** *We will review the draft to ensure that these topics are adequately addressed.*

### **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.

**Response:** *We agree with the sentiment of the commenter; however, the draft ERHMS document was intended to focus on health monitoring and surveillance issues. We will include a statement cautioning*



*against overreliance on environmental sampling data. However, the intent of this section was not to provide an extensive or detailed risk assessment paradigm for emergency response. Other references provide more specific guidance in this area; we will make sure that section 7 of the document contains adequate references to consult for more information. We will also make it clear that the information in section 7 is intended to provide introductory material and should not be considered comprehensive.*

#### **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..."<sup>vi</sup>

**Response:** *While the focus of the document is not on risk assessment/ management, we will add some text with respect to the precautionary principle as recommended.*

#### **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.*"<sup>7</sup> (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.<sup>vii</sup>

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.

**Response:** *We will include additional emphasis as recommended. However, As a general matter, elimination and substitution are often not practical options in a disaster. For instance, dust could not be eliminated during the World Trade Center response. Further, oftentimes engineering controls are not readily available during the initial stages of a response, but may become available in the remediation phase. NIOSH will review the text and include appropriate changes to address these concerns. However, this section cannot be significantly expanded as this topic was not intended to be comprehensive. We will include this context and sources of more comprehensive information.*

#### **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.

**Response:** *Issues related to implementation of the guidance will be discussed and vetted following submission to the National Response Team.*

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

**Response:** *We agree; the change will be made.*



## 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).

**Response:** *A detailed discussion on exposure criteria is beyond the scope of this document. We will ensure that the reader is made aware that this guidance contains only an overview, and other sources of information should be consulted for more detailed information.*

## 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.

**Response:** *The draft currently recommends that training materials be provided to meet the language and comprehension levels of the response workers. We will review the training section and add additional text as necessary to further highlight training needs for immigrant workers. Issues of wage and hour violations are beyond the scope of this document.*

## 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."<sup>ix</sup> 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.

**Response:** *Section 8 focuses specifically on communications of exposure, health monitoring, and surveillance data during an emergency response. It is not intended to comprehensively cover all areas and techniques associated with communicating with the public. We will reiterate to the reader that additional resources on communications strategies are available to provide such detail and perspective.*

#### **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.

**Response:** *We generally agree with the recommendation; however, implementation strategies likely will be discussed and vetted following submission to the National Response Team. A well considered and comprehensive strategy will be needed, and this probably would be best carried out separately from this document.*

#### **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."<sup>x</sup> 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.

**Response:** *The EHRMS draft provides examples of various databases in the Tools section. However, the development or recommendation of specific model databases is beyond the scope of this document. Further, to ensure operability, such databases should optimally be pre-developed by the organizations*

and subject matter experts that will be using the specific databases.

## 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 MAAs with state, tribal and local governments and private nonprofit organizations to provide emergency assistance to each other when disasters or emergencies occur.<sup>xi</sup>

**Response:** *We will include discussion on mutual aid agreements. However, we will not be providing an in-depth detail on various lessons-learned because it would be beyond the scope of this document--the focus of this draft is on health monitoring and surveillance.*

## 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.<sup>xii</sup>

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.<sup>xiii</sup> WETP has developed a whitepaper on this topic.<sup>xiv</sup>

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.<sup>xv</sup>

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.

**Response:** *We will include some of the text you provided into the communications section of the document.*

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](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 11

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.