

NIOSH Emergency Preparedness and Response (EPR) Program:

Response to EPR Program Expert Review Panel's Report

October 2019



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Introduction

The National Institute for Occupational Safety and Health (NIOSH) Emergency Preparedness and Response (EPR) Program addresses the health and safety of emergency response and recovery workers. The EPR Program is managed by the Emergency Preparedness and Response Office (EPRO) and focuses on two areas: preparedness and response. Preparedness efforts such as developing response plans and communication materials, participating in exercises and trainings, and coordinating interagency efforts via committees and work groups ensure that the Institute can successfully respond to a wide range of emergency types and sizes. NIOSH staff are also on-call year-round to respond to emergencies by providing remote or on-site technical assistance and developing incident-specific guidance and communication materials.

NIOSH convened an expert panel in 2018 to review the relevance and impact of the EPR Program, specifically work related to non-routine emergency preparedness and response activities that occurred between 2007 and 2017. The panel was led by Chair Mr. Mark Caitlin, who recruited four other panel members with expertise in the areas of emergency preparedness and response, translation science, and program evaluation. The Program provided the panel with a detailed [evidence package](#) that contains information about the EPR Program's activities, products, and examples of how others have used those products to improve occupational safety and health during the period of review. The following areas were described in the evidence package as well as during an in-person meeting with the panel: 1) Emergency Responder Health Monitoring and Surveillance™ (ERHMS™) framework; 2) anthrax preparedness and response capabilities; and 3) chemical, radiation, hurricane, and infectious diseases preparedness and response. The review did not include NIOSH work in routine firefighting and other traditional first responder research and investigations or the administration of the World Trade Center Health Program. Additionally, the review focused narrowly on the personal protective technology work that originated from preparedness and response activities.

After considering all the information presented to them by the Program, panel members provided individual scores, using a five-point scale, for the categories of relevance and impact. These scores were then averaged within category, resulting in a single program score for each category. The panel assigned the EPR Program a relevance score of 5, stating that “the priorities set by the EPR Program to be based on burden and need, and the rationale for the Program's activities highly justified.” They noted that after the establishment of the EPR Program, NIOSH has been able to play a more valuable role in responses and highlighted the improved response from the 1989 Exxon Valdez oil spill compared to the 2010 Deepwater Horizon oil spill. Additionally, the panel assigned an impact score of 5 resulting in a total program score of 10. The panel found that the EPR Program's “[...] activities and outputs have directly or indirectly led to improvements in, and major contributions to, workplace safety and health.”

The panel developed [a report](#), which includes the scores, rationale for the scores, and five specific recommendations to help strengthen the Program. NIOSH greatly appreciates the careful review and thoughtful recommendations provided to the EPR Program. The following sections provide the EPR Program's responses, which address how the expert panel's recommendations will inform the future directions of the Program.

EPR Program Responses to Panel's Recommendations

Recommendation 1: Continue to sharpen the focus of activities and outputs to create deep and strong bodies of knowledge and tools built on prior work that can be useful across many types of events.

Recommendation 1a: Additional tools for ERHMS™

The ERHMS Program is currently the best example of this—an impressive body of tools proven useful across several different types of emergency responses. Continue to develop additional tools for the ERHMS Program based on input by users and potential users, including the integration of technologies, such as the cell phone app piloted by Queens College, and the exploration of newer technologies appearing in the next decade. With rapid advances in technology, such as deployed, wearable, sampling devices and rapid analysis and interactive communication with individual emergency responders during and after these events, NIOSH and the EPR Program should be a key contributor and developer in this space. If possible, add protections for human subjects and informed consent into the ERHMS Program to allow for follow-up studies by academia to evaluate the long-term health impacts to responders.

NIOSH addressing at this time: Yes

Rationale:

We appreciate this comment and are interested in developing additional tools and exploring innovative technologies that support response and recovery operations in the area of occupational safety and health. NIOSH is currently working to develop standardized template forms to aid organizations in implementing ERHMS™. Once completed, these forms will be incorporated into ERHMS Info Manager™ software. NIOSH plans to work through the National Response Team to update the ERHMS™ Technical Assistance Document; this will include a section on disaster research and how ERHMS™ activities can help support future research.

The EPR Program also recognizes the important role exposure assessment plays in a response and works closely with researchers across NIOSH, including the NIOSH [Center for Direct Reading and Sensor Technologies](#), to coordinate and discuss disaster and emergency response sampling needs. The NIOSH [Disaster Science Responder Research Program](#) (DSRR) works to implement a framework that allows for occupational safety and health research to be started quickly when a disaster or emergency occurs, without interfering with the response itself. The Program is developing exposure assessment plans for the first 72 hours following a disaster. Exposures that occur in the immediate response period often go uncharacterized but are important to understand health impacts to responders. Currently available and new technologies needed to help characterize responders' exposures, including biomonitoring, will be identified and incorporated into guidance that can be followed immediately after a disaster to help collect data that can support future research, as well as the ongoing response.

Recommendation 1b: Periodically assess gaps and adapt existing tools to fill them

As part of a systematic management strategy for Program improvement, periodically assess gaps in the bodies of knowledge and tools, and then seek opportunities to fill these gaps, if possible, and explore the adaptation of knowledge and tools from one response type to another. For example, can the successful sampling tools and decontamination knowledge for anthrax be adapted for use with other biological agents?

NIOSH addressing at this time: Yes

Rationale:

We concur with this recommendation and believe that leveraging existing knowledge and tools is imperative. Currently, the EPR Program uses lessons learned from actual responses and through participation in exercises to identify capability gaps and areas for improvement, and test and validate our plans and capabilities. For example, CDC's exercise calendar is developed to refine and support the agency's ability to respond to scenario-specific threats and hazards, including those related to occupational safety and health. Exercise strengths, areas for improvement, core capability performance, and knowledge gaps are documented during CDC's after-action review (AAR). Subsequently, in response to the AAR, CDC develops an improvement plan (IP) with input from across the agency, to identify corrective actions to address identified gaps and improve performance. The AARs and IPs are developed at the conclusion of actual responses, as well; not merely exercises. EPRO then uses the IP to help inform annual goals and milestones for the coming year. Progress on implementation is reported to and tracked by NIOSH and CDC's Center for Preparedness and Response leadership.

Within NIOSH, EPRO has occasionally utilized a similar AAR/IP approach, focusing solely on NIOSH's capabilities and stakeholder needs. However, moving forward, EPRO hopes to formalize this practice in coordination with the EPR Program.

In addition to AARs and IPs, which are developed at the end of an exercise or response, NIOSH leverages existing expertise prior to the onset of a significant response by convening an internal workgroup of subject matter experts. This workgroup is charged with anticipating guidance and knowledge necessary to protect the health and safety of response and recovery workers. The workgroup identifies existing guidance and knowledge that can be used to support new or repackaged recommendations and identifies knowledge gaps that could impede NIOSH's ability to support the response. EPRO then works within the CDC incident management structure to ensure existing guidance and tools are provided to response and recovery workers. When necessary, EPRO collaborates with those internal and external to the Institute to develop new recommendations based on existing knowledge. When knowledge gaps exist, the EPR Program works with the NIOSH DSRR Program to foster research to fill the gaps, including modifying goals in the NIOSH Strategic Plan.

Recommendation 2: Maintain and strengthen engagement and collaboration with organizations outside of NIOSH.

Recommendation 2a: Build partnerships

Build partnerships with NIOSH-funded Education and Research Centers by creating opportunities for collaboration with their faculty and students in local or regional emergencies or preparedness activities, including developing novel technology and tools (the Queens College work with Latino day laborers is one example). Explore extramural opportunities and other mechanisms to permit their rapid involvement in research and interventions. Similar collaborations might also be possible with other federally funded centers, such as the Centers of Excellence for Infection Prevention and Control.

NIOSH addressing at this time: Yes

Rationale:

We concur that maintaining and strengthening engagement and collaboration with organizations outside of NIOSH is critical. In December 2018, EPRO staff gave a presentation about the EPR Program at the NIOSH State Partners meeting with the hope to identify opportunities to collaborate on disaster research. We participated in the 2019 Regional ERC Symposium to discuss opportunities for collaboration with ERCs. This year's theme was

Occupational Safety and Health in Disaster Response. EPR Program staff were part of a panel discussing occupational safety and health in disaster response and gave presentations providing an overview of the NIOSH DSRR Program and how NIOSH responds to disasters. The EPR Program will continue to explore opportunities for rapid research by external partners and other mechanisms to engage existing NIOSH grantees including ERCs.

EPRO is also working to build relationships with other partners. The Office has strengthened its relationship with the National Environmental Health Association by presenting at their national conference and publishing articles in their national newsletter. In response to flooding in North Carolina due to Hurricane Florence, NIOSH collaborated with the U.S. Department of Agriculture to develop co-branded [guidance](#) to protect workers from illnesses and injuries associated with livestock and poultry wastewater and sludge. As the first co-branded guidance with the USDA, this collaboration has provided a new route for increasing the reach and impact of NIOSH recommendations.

Recommendation 2b: Clarify role and raise visibility

More clearly define/identify the role of the EPRO and EPR Program for organizations outside of NIOSH. Raise the visibility of the EPR Program, if possible, to ensure its good work is recognized broadly by federal, state, and private emergency response organizations, including the Federal Emergency Management Agency (FEMA) and state and local agencies. Continue branding and publication of research in peer-reviewed literature. Explore ways to formally integrate with FEMA and OSHA during a response to fill scientific advisement role for worker safety and health.

NIOSH addressing at this time: Yes

Rationale:

EPR Program values this feedback and is taking action to raise visibility of the EPR Program outside of NIOSH. Since its inception, EPRO has worked to improve response and recovery worker safety and health through participation in relevant committees, publishing guidance, and sharing our outputs through mechanisms such as conferences, workshops, publications, and webinars. In August 2019, EPRO staff presented on responder safety and health during disasters via webinar hosted by CDC's Emergency Partners Information Connection (EPIC). Over 950 unique viewers participated in the webinar. To date the Program has implemented one coordinated communications effort to raise awareness of ERHMS™, which contributed to an increase in awareness and number of registrations to online trainings on ERHMS™ among the response community. Moving forward, EPRO would like to build upon this success and work with NIOSH communications experts to develop a plan to increase the visibility of the EPR Program with external stakeholders.

Moreover, it is worth noting that NIOSH and OSHA collaboration during incidents requiring a coordinated Federal response are formalized in the Worker Safety and Health Support Annex of the National Response Framework. Through the Annex, supplemental assistance is provided to support and facilitate the protection of response and recovery worker safety and health. This annex describes the technical assistance recourses, capabilities, and other support to ensure that response and recovery worker safety and health risks are anticipated, recognized, evaluated, communicated, and consistently controlled. NIOSH and OSHA collaborate in all areas and ensure that their collective safety and industrial hygiene assets are aligned to produce consistent, vetted advice to the incident command structure. NIOSH is responsible for providing technical support and expertise in the characterization of complex, unknown, and multiple-contaminant worker exposures. NIOSH also provides technical assistance to FEMA through the Annex; however, FEMA's Office of Occupational Safety and Health remains responsible for the health and safety of their employees and any employee working at a FEMA-managed facility [FEMA 2013].

Recommendation 3: Strengthen efforts to have EPR Program outputs and tools adopted into federal, state, and other emergency plans. Increase, as possible, the integration of EPRO and other NIOSH staff to leadership positions within emergency response systems.

Recommendation 3a: Demonstration of ERHMS

Panel members strongly support efforts to promote the adoption/integration of the ERHMS Program into the emergency management system for national, state, and local emergency responses. Consider a demonstration project with FEMA to show the value of incorporating ERHMS.

NIOSH addressing at this time: No

Rationale:

We appreciate this feedback and will continue to seek opportunities to promote the adoption of ERHMS™ into federal, state, and local emergency plans. Since writing our evidence package, NIOSH staff has presented on ERHMS™ at the California Department of Public Health Emergency Preparedness Training Workshop attended by local, regional, state, and federal preparedness grantees from across California in June 2019. We also provided in-person ERHMS™ and ERHMS Info Manager™ training to Oregon and New Jersey Medical Reserve Corps (MRCs) in 2017 and 2018, respectively. Moreover, we are currently collaborating with two state MRCs, a national network of volunteers to improve health and safety of their communities, on incorporating aspects of ERHMS™ in their programs.

As we continue to be engaged in efforts to promote the adoption of EPR Program outputs and tools such as ERHMS™, it is important to remember that NIOSH’s mission is one of research and moving that research into practice. NIOSH experts have and will continue to serve as technical liaisons during responses and hold leadership positions within CDC’s response structure, but after careful consideration, given current EPR Program resources and a lack of clear alignment with NIOSH’s core mission, the Program will not seek out a decision-making role within the broader emergency response system at this time.

Recommendation 4: NIOSH should continue work on developing “next-generation” PPEs that are more appropriate for use in emergency responses, including use in difficult field conditions.

NIOSH addressing at this time: No

Rationale:

We appreciate this feedback, but NIOSH does not currently have plans for developing “next-generation” PPE. However, we will remain open to pursuing this specific topic in the future should there be an appropriate opportunity. NIOSH’s National Personal Protective Technology Laboratory (NPPTL) will continue to work closely with stakeholders to define PPE performance criteria for the emergency response community. NPPTL will continue its participation on technical committees within standards development organizations—such as the National Fire Protection Association (NFPA) and the American Standard Test Method International (ASTM)—that support standards for PPE used by emergency responders. NPPTL will design and conduct research to inform these standards as needed and encourage technology innovations.

Recommendation 5: The NIOSH EPR Program should explore effective strategies for integrating organized labor and other stakeholders often left out of national-, state-, and local level emergency planning and response and recovery planning and implementation.

NIOSH addressing at this time: No

Rationale:

We concur with the recommendation for integrating organized labor and other stakeholders into emergency planning and response; however, our ability to implement this is limited beyond NIOSH. Our experience working with labor unions has demonstrated the value added in having their diverse perspectives included in our preparedness and response activities. NIOSH routinely includes labor unions and other relevant stakeholders when we develop guidance and conduct activities in the field. Involvement may be through a formal request for guidance review or through a call with labor unions during large responses to update them on activities and work products in development and to solicit feedback. NIOSH has, and will continue, to advocate for other organizations to include labor unions and other stakeholders when conducting emergency planning and response and recovery planning and implementation.

References

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