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# NIOSH Health Hazard Evaluation Program

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Monitoring Progress  
in Implementing the  
National Academies'  
Program Evaluation  
Recommendations:  
*A Report to the  
NIOSH Board of  
Scientific Counselors*

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October 2011

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## Introduction

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The National Institute for Occupational Safety and Health (NIOSH) Health Hazard Evaluation (HHE) Program underwent a systematic review for relevance and impact by the National Academies (NA) beginning in 2007. The NA concluded in their 2008 report that the HHE Program is highly effective in investigating and advising workplaces, fills a special need in the occupational health community, and has a major impact on improving occupational health. On the basis of a scale of 5 (high) to 1 (low), the NA assigned the HHE Program a score of 4 for relevance and a score of 4 for impact. For areas it thought could be strengthened, the NA offered eight overarching recommendations.

Subsequently, we developed an implementation plan and revised the HHE Program strategic plan. The implementation plan stated that “Over the next 3-5 years, primary emphasis will be given to increasing awareness of the HHE Program to ensure that 1) its services are available to meet the changing needs of the American workforce and 2) the information learned from its investigations reaches all those who have a role in ensuring safe and healthy workplaces.”

To assess our efforts, we are monitoring progress for five of the eight overarching recommendations and two sub-recommendations within each of these. The selected recommendations cover input, output, and transfer components of the HHE Program logic model. Many recommended activities have been accomplished; these are noted in this report. Other recommended activities are ongoing; these are the basis for the performance measures summarized below. Many ongoing activities reflect fundamental shifts in the nature of the HHE Program, which will take time to produce demonstrable impacts. Building on our strong foundation, we believe we are progressing towards the NA’s vision for a fully effective and relevant program. This report documents our progress in implementing selected recommendations we received in 2008.

## Monitoring Implementation of Selected Recommendations

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(Note: the recommendation numbers refer to those used in the NA report.)

### Recommendation 2

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Improve the mechanisms by which requests for HHEs are sought and prioritized to include a broader array of requests from a wider variety of requestors.

#### Background

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##### Status

In progress

##### External Factors

External factors influence whether stakeholders submit HHE requests and the issues that are of concern to them. Unions, whose representation in the workforce has shrunk, may not be in a position to submit requests. Not only do unions represent fewer workers, but they are less likely to represent minority workers and workers in small businesses. Without union support, particularly during difficult economic times, employees' fear of reprisal by their employers can be a disincentive to submitting HHE requests. Community groups advocating for underserved workers cannot submit HHE requests. Many underserved populations work in areas not subject to HHE Program authority, e.g., jobs with ergonomic hazards in the service sector or safety hazards in construction.

#### Implementation of Recommendation

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##### Activity 2E: Partnerships with Underserved Populations, Small Business Employers & Employees

##### Description

To move forward strategically in developing partnerships, we identify priority areas for outreach. We develop HHE Program strategic goals by considering priorities of the National Occupational Research Agenda (NORA) sector programs, interests and expertise of HHE Program staff, and stakeholder needs. Our efforts focus on networking with and gathering information from key informants, and leveraging ongoing efforts of other NIOSH programs.

##### Progress

In our FY10 and FY11 strategic plans, we identified specific outreach targets. We hired an industrial hygienist fluent in Spanish to lead our efforts related to underserved populations. The following items demonstrate our progress:

- Completed a literature review and outreach to occupational safety and health experts for the automotive repair industry that helped us connect with the Coordinating Committee for Automotive Repair, an industry, education, and government partnership. This partner is helping us set up observational walkthroughs at auto body shops to identify priorities and potential evaluation sites.
- Completed a literature review and outreach to occupational safety and health experts with knowledge of green jobs (e.g., in wind, solar, and geothermal energy, biofuels, recycling) led to the identification of three priority areas for future outreach, (1) construction,

infrastructure, and repurposing of materials; (2) manufacturing and emerging technologies; and (3) waste management and recycling.

- Developed a process for translating summary portions of all HHE reports into Spanish
- Held a training session for our staff on communicating with non-English-speaking populations.
- Contacted organized labor to request links between their websites and the HHE Program website.
- Met with the Ohio Bureau of Workers Compensation, which assists small employers in the state. We are working together to help a small employer for whom we completed an HHE receive grant money from the Bureau to upgrade the ventilation system in his workplace.
- Participated in discussions with the National Healthy Nail and Beauty Salon Alliance and the National Asian Pacific American Women's Forum about hazards in salons. This networking increased awareness about the HHE Program.
- Participated in NIOSH-sponsored meetings and conferences regarding underserved populations, which helped us identify new groups and individuals for outreach.
- Completed focus groups and a website design research project with small business employers and employees. These efforts helped us plan for new HHE Program marketing brochures and website enhancements.
- Continued ongoing interactions with organized labor, specifically targeting unions representing many underserved workers, including the United Food and Commercial Workers Union and UNITE HERE.

### *Impact*

Our outreach efforts have generated HHE requests. In 2011 we received two requests for evaluations at workplaces employing Hispanic workers. Both concerned ergonomic hazards in the service sector.

Our website continues to be an important communication medium. Many labor organizations linked their websites to ours, including the AFL-CIO, International Association of Firefighters, United Steelworkers, and Ironworkers, among others, as did the U.S. Small Business Administration. We redesigned our HHE website home page, request form page, and report search page using the results of our focus groups and research. We added Frequently Asked Questions and Help Mailbox tools.

About 10% of HHE requests since 2008 were submitted by unions; this percentage has been fairly steady since the early 2000s. Since 2008, we conducted 15 field investigations (about 15% of the total) for workers represented by the United Food and Commercial Workers Union, UNITE HERE, International Brotherhood of Teamsters, United Mine Workers Association, American Federation of Government Employees, United Auto Workers, and two transit workers unions.

### *Future Plans*

We will annually review and revise our strategic plan to adjust for accomplishments and challenges and will continue the efforts described above. We plan to strengthen our relationship with the Center for Construction Research and Training, a nonprofit organization applying research, training, and service to the construction industry. We also plan to reach out to participants in the Manufacturing Extension Partnership program supported by the National Institute of Standards and Technology. This is a state-based program for small and mid-sized U.S. manufacturers. We will complete the redesign of our English language website and begin a redesign of the Spanish language pages.

## Activity 2F: Outreach to Federal, State, and Local Agencies

### *Description*

We focus on networking to increase awareness of the HHE Program and, when possible, formalize relationships. We are finding that prior collaborative work with other government agencies leads to new requests for assistance and referrals for HHEs.

### *Progress*

By working with other NIOSH programs that support and develop state-based capacity in occupational health, we increased awareness of the HHE Program. We named an HHE Program liaison to the state-based surveillance efforts and participated in meetings with the Council of State and Territorial Epidemiologists (CSTE), including a joint meeting with this organization and the Occupational Safety and Health Administration (OSHA).

We presented information about the HHE Program to (a) OSHA managers in Regions I and V, (b) the annual meeting of the OSHA consultation program, (b) the semiannual meeting of the Occupational Safety & Health State Plan Association, (c) the Western States Occupational Health Network, (d) the Ohio Public Health Association, and (d) the NIOSH-OSHA monthly issues exchange group.

To ensure awareness of HHE activities and products, in 2011 we began notifying local health departments of field investigations in their areas and sending them our final reports. We distributed our first annual HHE Program report to OSHA regional and area offices and local health departments, among others.

We are developing a relationship with OSHA headquarters staff regarding emerging issues. We have discussed areas of mutual interest and shared information on topics including formaldehyde in hair treatments and chemical exposures during hydraulic fracturing. We established a partnership with the OSHA office of Occupational Medicine to compile and disseminate information about disease clusters, such as hairy cell leukemia in miners, and other instances of health outcomes with suspected but unconfirmed links to exposures. With OSHA regional and area offices, we have discussed opportunities to evaluate styrene exposure in wind vane manufacturing and how our Hispanic outreach efforts can complement OSHA activities.

### *Impact*

Our participation in formative meetings with CSTE contributed to a plan to establish routine phone calls between NIOSH, OSHA, and CSTE. A priority area for these calls is how to involve the HHE Program in emerging issues and priority hazards identified through state-based surveillance.

Our efforts to increase awareness among state and local agencies led to HHE field investigations and technical consultations. We worked with the Puerto Rico Department of Health, OSHA, and the Environmental Protection Agency to ensure that workers at a battery recycling plant were protected from lead exposure. We contributed to an educational brochure which was distributed to these workers. We investigated the spread of campylobacter in poultry workers and legionnaire's disease at a metal shredding facility when employers requested an HHE at the prompting of public health agencies in Virginia and New York. In New York, we assisted the State during the H1N1 influenza pandemic and investigated flavoring ingredient hazards in the food service industry following technical assistance requests. We are working with an OSHA area office to assess exposures and workplace controls for perfluorooctanoic acid (a chemical of concern used to make nonstick cookware and all weather clothing) in a

manufacturing facility in West Virginia. We surveyed employees in more than 20 workplaces and recommended approaches to overcome barriers to influenza vaccination among day care center workers following a request from an Ohio county social services agency.

A successful record of assisting other federal agencies has continued to spur new requests. For example, partners in the Department of Interior requested our assistance in evaluating a cluster of rhabdomyolysis in wildland firefighters, exposure to insecticides in wildlife population control workers, and radon exposures during the closing of abandoned uranium mines.

### *Future Plans*

With available resources, we will nurture the relationships we have begun with OSHA and state agencies. We will identify the best options for new informational products for state health and labor agencies, including marketing brochures and a guidance document on when and how to request assistance from or make referrals to the HHE Program. We will look for opportunities to link the HHE Program to programs with common interests in the Small Business Administration and the Environmental Protection Agency.

## Recommendation 3

Ensure that recommendations in HHEs are relevant, feasible, effective, and clearly explained.

### Background

#### *Status*

In progress

#### *External Factors*

The best information about relevancy, feasibility, and effectiveness of HHE recommendations comes from employers, employees, and employee representatives at investigated facilities. Our ability to obtain this information can be hindered by the reluctance of employers to participate in follow back efforts once our investigation is complete and by downsizing and turnover in the workforce leading to the departure of key personnel involved in the investigation. We have learned that institutional memories can be short.

## Implementation of Recommendation

### *Activity 3C: Systematic evaluation of relevance and impact*

#### *Description*

We survey key contacts at all investigated facilities and a sample of HHE requestors for whom we provided consultative assistance. These surveys produce information about stakeholders' satisfaction with our work and the impact it had in addressing their concerns. We also encourage project officers to document informal feedback during an investigation. In selected instances, we do follow up investigations. These can happen as part of the original evaluation (when we know that changes will be made in the near term) or after we release our final report.

## *Progress*

We worked with cooperative employers to document the effectiveness of HHE recommendations to control legionella exposure in a metal shredding facility, upgrade ventilation in a homeless shelter to prevent tuberculosis transmission, and improve personal protective equipment use and upgrade ventilation in an animal sanctuary to prevent tuberculosis transmission. We visited a wood cabinet manufacturer and a parts distribution warehouse and found that most of our ergonomic recommendations were implemented.

We instituted a new procedure to call key employer and employee contacts shortly after the release of an HHE final report. In these calls we answer questions about our report, learn what actions have been taken or are planned, learn about intermediate outcomes (e.g., redistribution of our report), assess the need for an onsite briefing, and lay the groundwork for a return visit to assess implementation of recommendations.

## *Impact*

Our follow back efforts provide data for monitoring progress on our strategic plan and making program adjustments. For HHEs started in 2007-2009 and completed by 2010, 93 percent of respondents reported that recommendations made during the closing conference or in the final report had been implemented, 97 percent reported that the recommendations were useful, and 89 percent reported that the recommendations were practical. When asked whether the NIOSH evaluation made things better at the workplace, 82 percent answered positively. These data are used by HHE Program managers and by the NIOSH Office of the Director for monitoring progress towards meeting the CDC Director's goals and the Institute's goals under the Government Performance and Results Act.

## *Future Plans*

We will continue our data collection efforts, placing greater emphasis on finding opportunities for follow back site visits. To complement our ongoing work, we will continue a newly established dialogue with the NIOSH Economics Cross Sector program to help us gather information about the economics of implementing HHE recommendations and the financial barriers and motivators to making recommended workplace changes.

We will develop new products based on our follow back efforts so that others may benefit from our findings. We are considering peer-reviewed publications describing the mailed follow back surveys as a program evaluation tool. We plan to develop case studies from our onsite follow back site visits and post these on our website and our Facebook page to share the lessons learned. We hope to use a variety of formats (e.g., text, video).

## *Activity 3E: Quality assurance for HHE reports*

### *Description*

We maintain procedures for consistent, thorough, ongoing internal review of all reports and correspondence. These procedures involve multiple levels of supervisory and management review and, in selected cases, internal and external peer review.

## *Progress*

We developed a formal, written quality assurance plan for HHE final reports. This plan is being incorporated into the HHE Procedures Manual and shared with HHE investigators in periodic HHE Refresher Training.

We developed a program for obtaining retrospective, external peer and stakeholder review of HHE reports (including consultative assistance and field investigation reports). From participants in our newly formed HHE Alumni Network, we solicited the first round of volunteer reviewers, developed a review form, selected a random sample of reports and letters completed in the past year, and distributed these documents to the reviewers. We expect reviewers to submit comments by the end of November 2011.

Ongoing maintenance and revisions to our HHE Report Style Guide and HHE Procedures Manual contribute to the quality of our products by ensuring consistency and facilitating report preparation and review.

## *Impact*

As a result of these efforts, project officers have a better understanding of what reviewers expect in a final HHE report. This makes the report preparation process more efficient and reinforces the emphasis on report quality. Internally, our reviewers have noted steady improvements, cutting down on the time needed for review and resulting in improved products.

## *Future Plans*

We will continue the external peer review program and share the findings with HHE investigators. After several rounds, we will assess its ongoing utility to the HHE Program, seeking feedback from participating reviewers. Although not solely a quality assurance initiative, we plan to roll out a revised version of our standard HHE report. The new version will streamline the report contents, target the report contents to the primary customers (employers and employees), and enhance the visual appeal of the product.

## Recommendation 5

Develop a proactive, comprehensive information-transfer strategy for HHE Program outputs with better approaches to reaching wider audiences, including traditionally underserved populations.

## Background

### *Status*

In progress

### *External Factors*

Lack of awareness of the HHE Program limits the transfer of HHE Program outputs. Travel budget reductions impede our ability to carry out face-to-face interactions with stakeholders who can be avenues for transfer. Use of social media brings new opportunities. But, as we are learning with the launch of our Facebook page, significant resources are needed to initiate and maintain these efforts and the impact is slow to be realized.

## Implementation of Recommendation

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### Activity 5: Innovative techniques for reaching small businesses and underserved populations, including using community and small-business groups to translate HHE results and findings

#### *Description*

Our efforts focus on identifying dissemination venues to reach new audiences, enhancing our website, and translating HHE materials for non-English speaking populations.

#### *Progress*

We successfully used trade publications to target HHE information to specific stakeholder audiences. From January through September 2011 alone, we published 10 articles in trade publications, including *Wildlife Rehabilitation Bulletin*, *American Drycleaner*, *Ceramics Monthly*, *Countertops and Surfaces*, *Evidence Technology*, and *Screen Printing Magazine*, to name a few.

NIOSH continues to emphasize its website as an important path for information transfer. To contribute to this effort, we modified the NIOSH Indoor Environmental Quality website (which was developed and is maintained by HHE Program staff) to add information about common issues and solutions identified in HHEs. We also modified the HHE Program website as described above (*see Activity 2E: Partnerships with Underserved Populations, Small Business Employers & Employees*).

In 2011 we launched the HHE Program Facebook page. Four days per week, we post notes about recent investigations, questions about our readers' interests and concerns, photos from our investigations, profiles of our staff, and facts about our program.

When possible, we distribute HHE materials at conferences through the NIOSH booth or a specific HHE Program display. We provide copies of HHE reports relevant to the specific event.

In several instances, we took steps to ensure that workers received information in their native language. We assisted the California Department of Public Health in translating materials for flavoring workers, which then were posted on their website. We developed survey and other field investigations tools in Spanish for flavoring workers and poultry workers. We also partnered with a local health department to ensure that we communicated effectively with workers from the Marshall Islands.

We have two NIOSH numbered documents in progress. One is an alert concerning indoor environmental quality, highlighting common problems and solutions. The other is a compilation of HHEs addressing noise exposure and hearing loss in the past 10 years.

#### *Impact*

In nearly all instances we have identified an appropriate trade publication for HHE findings. Magazine editors gladly received our information and worked with us to move from submission to publication in a timely manner. The editor of *EndoNurse Magazine* reported that our article on sterilization chemicals was viewed online over 3,000 times, well above average for the time posted.

Since the 2010 addition of the HHE Request Help Mailbox to our website, we have responded to nearly 200 inquiries. Several led to HHE requests. Many others have been requests for older HHE reports unavailable on our website. We used this opportunity to update the website to make the reports more accessible to others.

The Facebook page ([www.facebook.com/health.hazard.evaluation.program](http://www.facebook.com/health.hazard.evaluation.program)) has slowly increased its readership. It is, however, too early to assess its impact.

### *Future Plans*

We believe that publishing HHE findings in trade publications will have a long-term payoff in terms of program visibility and information transfer, and we will continue these efforts. We will explore options and place new types of content on our website, e.g., short video clips based on HHE findings.

## Recommendation 6

Develop more extensive formal linkages and mechanisms with other parts of NIOSH, CDC, and HHS to enhance the capacity for involvement in policy-relevant impacts.

## Background

### Status

In progress

### External Factors

In the current economic climate, participation in conferences by public and private sector individuals and organizations appears to be declining. This results in fewer opportunities for developing the personal relationships that facilitate organizational partnerships and linkages.

## Implementation of Recommendation

### *Activity 6A: Communication with federal and state occupational safety and health agencies*

#### *Description, Progress, Impact, and Future Plans*

In addition to the work summarized above in *Activity 2F: Outreach to Federal, State, and Local Agencies*, we hold annual 2-3 day training meetings for state- and local-assigned Epidemic Intelligence Service officers. Collaborative projects and consultations arise from information exchanged at these meetings. The benefits extend beyond the HHE Program and lead to HHE activities, including investigations of indoor environmental quality in a damp county office building in Wisconsin and a sarcoidosis cluster in a Vermont office building. These meetings will continue, as will new efforts to build relationships with other parts of CDC, such as ongoing work on zoonotic diseases.

### *Activity 6C: Interaction with the National Occupational Research Agenda sector councils and the NIOSH Board of Scientific Counselors*

#### *Description*

The activities of NIOSH and its partners through NORA are an input to the HHE Program and a means of information transfer. We provide selected sector programs with annual summaries of HHE requests and completed HHE reports. HHE Program staff participates on the councils for the manufacturing, service, and public safety sector programs. HHE Program staff also participate in the hearing loss, small business, communications, respiratory disease, emergency

preparedness and response, exposure assessment, personal protective technology, and dermal diseases cross-sector program steering committees. Connections made through their participation foster collaborative efforts across programs and contribute to intermediate outcomes of the HHE Program.

### *Progress*

The HHE Program 2011 strategic plan incorporates NORA sector program priorities. For example, the Service Sector Program fostered our work with the Coordinating Committee for Automotive Repair. In addition, HHE Program staff gave presentations at the 2011 NIOSH Symposium and the 2011 NORA Manufacturing Sector Conference; because these conferences were in Cincinnati, we were able to have several participants. An HHE investigator was selected by the NORA Manufacturing Sector for its New Investigator Award on the basis of his evaluation of manganese exposures at a manganese dioxide processing plant.

### *Impact*

Involvement with NORA activities has helped us network with stakeholders and indirectly led to one or two HHE requests. Other impacts have yet to be determined.

### *Future Plans*

We will ask sector program managers and council members for feedback on the HHE information we provide and modify it, as needed. We also will continue monitoring sector goals to identify opportunities for aligning them with goals in the HHE Program strategic plan.

## Recommendation 7

Initiate formal periodic assessment of new and emerging hazards.

## Background

### *Status*

In progress

### *External Factors*

The changing economic, social, cultural, and political landscape in the U.S. means that the HHE Program must reach out to new populations to remain relevant and address high priority needs. We continuously balance our resources to meet the expectations of stakeholders for us to respond promptly to unsolicited HHE requests, yet move towards being proactive and generating HHE requests. We are, however, subject to the legal limitations on our authority and have encountered employer resistance in some instances. As the HHE Program becomes more proactive in generating requests it seeks to remain a unique resource for employers and employees to get help in identifying and solving problems.

[Activity 7A: Evolution from a passive to a proactive program seeking opportunities for field investigations](#)

### *Description*

We use the networks and partnerships described throughout this report to identify new investigative opportunities.

### *Progress*

We have increased outreach to other government agencies, employers, labor, and other key stakeholders, resulting in new investigative opportunities. In addition, in 2011 we drafted issues and options for expanding the statutory language establishing the HHE Program. We continue to explore options for addressing this issue.

### *Impact*

- Through contacts with physicians, we received two employee and one employer request regarding exposure to flavorings chemicals. Both led to HHE field investigations that have prompted new research areas (i.e., restrictive lung disease and flavoring chemicals)
- We contacted two companies to offer consultation and they submitted HHE requests, one to evaluate exposures and effects related to substitute flavorings and one to evaluate respiratory disease and indium exposure. The first investigation is complete and its findings disseminated. The second is in progress.
- We reached out to industry, government, and labor groups to find workplaces where we could evaluate pharmacy employees' exposures to dusts generated by automated pill dispensers. We distributed a report of our investigation at a large mail order processing facility.
- Following a referral from partners in the CDC's National Center for Emerging and Zoonotic Infectious Diseases, an employer submitted an HHE request to assess brucellosis, coxiella, and leptospira exposures at a marine mammal sanctuary. We completed a field investigation and are preparing the report.
- We worked with union health and safety leaders who were concerned about exposure of retail clerks to Bisphenol-A used in printing inks. As a result, local union officials for three employers submitted HHE requests. Subsequently, the employers phased out the chemical of concern; we are now gathering information about the substituted chemicals.

### *Future Plans*

We will continue these efforts and document their impact on the HHE Program's mission.

### *Activity 7C: Gathering of information about emerging issues*

#### *Description*

We monitor various sources to identify and prioritize emerging issues. These include the priorities of the National Toxicology Program, EPA, and OSHA, and reports of the European Agency for Safety and Health at Work and the European Chemical agency (REACH). Information from these and other sources is shared with staff and is discussed at management meetings for consideration when triaging HHE requests. By participating in professional activities, including conferences and ListServes, and responding to inquiries from the general public, we are informed about new issues.

### *Progress*

We created a list of new and emerging issues and used it to help target specific goals in the 2011 strategic plan, including the goals for green jobs.

### *Impact*

It is too soon in the process for impact to be assessed for these activities. We will periodically assess whether these activities generate new HHE requests or help stimulate new research initiatives.

### *Future Plans*

This is an ongoing effort that we are integrating into the fabric of the HHE Program.

## Appendix

### Comments about recommendations not selected for ongoing review (following the organizational approach used in the March 2010 HHE Program Implementation Plan)

Recommendation	Comments
<p>2b Implement a formal mechanism to help requestors to formulate valid HHE requests or to make appropriate referrals.</p>	<p>Completed. In June 2010, we created a help mailbox on our website. We typically get a few requests each week. Many are for HHE reports not available on the website, but a few have led to HHE requests. We also have proposed revisions to the HHE request form to simplify it. We are awaiting OMB approval.</p>
<p>2c Develop an explicit process for classifying and prioritizing HHE requests.</p>	<p>Nearly completed. The process is final and documentation developed. We will post it on our website as we move forward with other revisions.</p>
<p>2d Better formalize the triage process and improve its transparency to HHE requestors.</p>	<p>Same as 2c</p>
<p>6d Pursue a change in the HHE Program's legislative and regulatory authority to improve capacity to identify hazards in need of HHEs, ability to gain entrance to facilities, and ability to address exposures other than chemical agents.</p>	<p>We drafted issues and options for expanding the statutory authority. Discussions are ongoing.</p>
<p>2a Use professional meetings, surveillance data, etc. to assist in prioritizing field investigations and recognizing emerging issues.</p>	<p>This is interrelated with other objectives and will be accomplished through the other outreach efforts selected for monitoring (see <a href="#">Activity 7C: Gathering of information about emerging issues</a>)</p>
<p>3c Conduct internal debriefings after site visits and report dissemination to systematically assess relevance and impact, and identify emerging hazards.</p>	<p>This is an ongoing, management priority.</p>
<p>7b Develop systematic approaches to identify hazards where OSHA permissible exposure limits are inadequate or nonexistent, unknown hazards, and known hazards in new circumstances.</p>	<p>This is a broad NIOSH recommendation extending beyond the HHE Program. The HHE program engages with other NIOSH programs and OSHA colleagues when opportunities arise. In addition, this is related to 7C, described below.</p>
<p>7c Establish and periodically review a tickler file of inconclusive or unexpected evaluation results to determine whether new trends or problems may be emerging.</p>	<p>This was started and it is too soon to evaluate impact. It is a component of our larger effort to network with OSHA on emerging issues (see <a href="#">Activity 2F: Outreach to Federal, State, and Local Agencies</a>). A letter to the editor of a professional journal is the first output from this effort.</p>

Recommendation	Comments
<p>7d Periodically meet with intramural and extramural research scientists and stakeholders to discuss unresolved evaluations, review aggregate findings, and solicit input about emerging hazards or interventions.</p>	<p>This is related to 7c and other networking measures.</p>
<p>8a Work with NIOSH management to avoid negative impact on routine activities as a result of emergency response activities.</p>	<p>This issue is influenced strongly by external factors (e.g., the Deepwater Horizon response in 2010). Emergency response is an important area of responsibility for the HHE Program. We are working with CDC partners to clarify our role in responses (e.g., anthrax, radiation) and working closely with the NIOSH Emergency Preparedness and Response Office to engage HHE program staff appropriately.</p>
<p>8b Develop a mechanism to ensure continuation of routine operations in the absence of staff involved in emergency response.</p>	<p>Same as 8a</p>
<p>3a Explain the relevance, feasibility, and impact of each recommendation in HHE reports.</p>	<p>This was completed at the time of the Implementation plan. We modified the HHE report to provide a rationale for recommendations in the context of a hierarchy of controls approach.</p>
<p>3b Set priorities among report recommendations to indicate those requiring immediate action in the targeted workplace.</p>	<p>We considered this to be addressed as part of the changes made for 3a.</p>
<p>4b Track and mobilize HHE Program alumni to assist in leveraging resources, help with recruitment and retention, assist in identifying emerging issues, and provide expert advice.</p>	<p>We created an Alumni Network and have 67 participants. We will continue to explore how to use this to benefit the program but do not consider it a high priority for monitoring.</p>
<p>4a Increase recruitment for training rotations; develop more attractive training, mentoring, and rotations.</p>	<p>Without significant new resources, we are unable to do this to any great extent. Nonetheless, we developed and implemented a standard curriculum to enhance the quality of the rotation experience for occupational medicine trainees and have agreed to host a Korean industrial hygienist for 1 year.</p>
<p>4c Use ERCs and other university-based training programs to involve trainees in HHE field investigations.</p>	<p>We were already doing this and have continued as is feasible. Scheduling conflicts can be a problem.</p>
<p>4d Collaborate more formally with ERC faculty and other extramural researchers to assist in field investigation, dissemination, and training.</p>	<p>When feasible (e.g., considering scheduling, budget, expertise), we do this to a small degree.</p>
<p>5b Improve the searchability of HHE reports online.</p>	<p>Nearly complete. We are planning on adding pull down menus for exposure classes.</p>

Recommendation	Comments
<p>5c Develop distribution mechanisms that are not internet-dependent.</p>	<p>This overlaps significantly with other recommendations selected for monitoring (see <i>Activity 5: Innovative techniques for reaching small businesses and underserved populations, including using community and small-business groups to translate HHE results and findings</i>)</p>
<p>5d Disseminate HHE results more broadly to affected groups, including distribution in the geographic regions where investigations are conducted.</p>	<p>Other than our outreach to local health departments (see <i>Activity 2F: Outreach to Federal, State, and Local Agencies</i>), geographic distribution is not a high priority.</p>
<p>5e Increase efforts to compile compendia of findings.</p>	<p>We have one document underway (on noise and hearing loss) but do not have the resources to undertake a large effort.</p>
<p>5f Develop improved outreach methods to alert affected workers and workplaces quickly of new occupational health problems.</p>	<p>This overlaps with <i>Activity 5: Innovative techniques for reaching small businesses and underserved populations, including using community and small-business groups to translate HHE results and findings</i></p>
<p>5h Leverage NIOSH, CDC, and DHHS resources to enhance technology transfer.</p>	<p>This overlaps with <i>Activity 6A: Communication with federal and state occupational safety and health agencies</i>.</p>
<p>6b Alert NIOSH and CDC about HHEs that are relevant to policy-making outside the CDC system.</p>	<p>We regularly bring these to the attention of the NIOSH Office of the Director. All HHE field investigation reports are announced in NIOSH eNews and posted on Epi-X, the CDC secure communications network.</p>
<p>1 Conduct regular assessments of performance measures to determine whether available resources allow more ambitious goals.</p>	<p>We use our strategic plan for this purpose. Annually, we assess our progress toward each goal and adjust the plan for the coming year.</p>
<p>3d Modify the followback surveys to assess the relevance, feasibility, and impact of recommendations.</p>	<p>This overlaps with <i>Activity 3C: Systematic evaluation of relevance and impact</i>.</p>
<p>5i Formally evaluate the effectiveness of information transfer programs.</p>	<p>We are gathering information about the use of our website and the impact of our expanded use of trade publications. Further efforts are beyond the scope and resources of the HHE Program. See <i>Activity 5: Innovative techniques for reaching small businesses and underserved populations, including using community and small-business groups to translate HHE results and findings</i></p>