
NIOSH Health Hazard Evaluation Program

Plan to Implement
the National
Academies Program
Evaluation
Recommendations

DRAFT 8.21.2009

Executive Summary

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 NIOSH HHE Program was 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. The NA gave the HHE Program a score of 4 for relevance and a score of 4 for impact. The NA identified several areas in which the HHE Program could be strengthened. It offered the following eight overarching recommendations, and more specific recommendations for items 2-8.

Recommendation 1: Conduct regular assessments of performance measures to determine whether available resources allow more ambitious goals.

Recommendation 2: 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.

Recommendation 3: Ensure that recommendations in HHEs are relevant, feasible, effective, and clearly explained.

Recommendation 4: Use the HHE Program to develop occupational health professional resources.

Recommendation 5: Develop a proactive, comprehensive information-transfer strategy for HHE Program outputs with better approaches to reaching wider audiences, including traditionally underserved populations.

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.

Recommendation 7: Initiate formal periodic assessment of new and emerging hazards.

Recommendation 8: Continue to provide guidance and recommendations during public health emergencies.

This implementation plan describes current and planned efforts to respond to these recommendations. The NIOSH HHE Program reports progress to date on some of the recommendations. 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.

Table of Contents

Executive Summary	ii
1 Introduction to the Health Hazard Evaluation (HHE) Program	1
1.1 Mission	1
1.2 Goals	1
2 Background on National Academies Review	2
3 Implementation Plan	3
3.1 Purpose	3
3.2 Development Process	3
3.3 External Factors	3
3.4 Vision	4
4 HHE Program Response to the NA Recommendations	4
4.1 Overview	4
4.2 Inputs	5
4.2.1 Improving the triage of HHE requests	5
4.2.2 Expanding the base from which HHE requests are received	6
4.2.3 Increasing opportunities to recognize emerging issues	9
4.2.4 Preserving program resources during emergencies	10
4.3 Outputs	11
4.3.1 Enhancing the quality and helpfulness of HHE reports	11
4.3.2 Expanding opportunities to train occupational health professionals	13
4.4 Transfers	14
4.4.1 Improving dissemination channels and developing partnerships to enhance dissemination	14
4.5 Intermediate Outcomes	16
4.5.1 Establishing partnerships with government programs that can use HHE- generated information	16
4.6 Program Evaluation	17
4.6.1 Evaluating various aspects of the program formally and regularly	17
Table 1. Strategic and Intermediate Goals of the HHE Program	19
Table 2. Overview of Recommendations	20
Figure 1. Health Hazard Evaluation Program Logic Model	27
Appendix A – Revised Criteria for Field Investigations	1

1 Introduction to the Health Hazard Evaluation (HHE) 2 Program

3 1.1 Mission

4 The National Institute for Occupational Safety and Health (NIOSH) is the federal agency
5 responsible for conducting research and making recommendations to prevent
6 occupational illness and injury. NIOSH is part of the Centers for Disease Control and
7 Prevention (CDC) in the Department of Health and Human Services (DHHS). The Health
8 Hazard Evaluation (HHE) Program carries out the NIOSH mandate to respond to requests
9 for investigations to learn whether exposures or conditions in specific workplaces pose a
10 health hazard to workers. These investigations are termed health hazard evaluations, or
11 HHEs. We use the term HHE to refer to our response including field investigations and
12 office-based technical assistance.

13 The HHE Program has a unique role in NIOSH as an external sensor for current and
14 emerging issues, helping the Institute stay relevant with regard to occupational health
15 issues in today's workplaces. The HHE Program can be likened to a hospital emergency
16 department, reflecting events happening in the community and serving as one of the first
17 places people go for assistance in solving workplace problems. The HHE Program was
18 designed to deal with problems whose causes, implications, and solutions are not well
19 understood.

20 The HHE Program contributes to the NIOSH mission through a diverse set of activities
21 and outputs. The Program's mission is to protect worker health through problem solving,
22 research, risk communication, and dissemination of findings and recommendations by
23 responding to external requests for hazard evaluations and technical assistance.

24 1.2 Goals

25 We formalized a strategic plan in response to a recommendation by the NIOSH Board of
26 Scientific Counselors (BSC) in 2006. The National Academies (NA) review committee
27 noted that the "goals are well targeted and relevant, and can be measured by the number
28 and types of HHE requests received, the number of reports and field investigations
29 conducted related to each of these goals, and their effects as determined through
30 followback surveys." The NA committee further stated that "Appropriate performance
31 measures for each intermediate goal have been chosen, given the limited resources of the
32 program." Because of the emphasis given by the NA to the occupational health
33 professional training role of the HHE Program, we added a new Strategic Goal
34 addressing this issue. We believe that the strategic and intermediate goals enumerated in
35 Table 1 (Page 19) will serve the program well over the next 5 years. The wording of
36 some goals has been revised from earlier versions of the strategic plan to follow current
37 NIOSH guidance for programs in the NIOSH Program Portfolio. That is, strategic goals
38 describe a specific desired change in the social system, intermediate goals describe the
39 desired activities that organizations or individuals undertake with the outputs created by

40 the program, and activity/output goals are statements of desired program activities,
41 including outputs and transfers to stakeholders. Performance measures are metrics
42 indicating progress toward the goals.

43 **2 Background on National Academies Review**

44
45 As part of a series of planned reviews of NIOSH research programs, NIOSH contracted
46 with the NA to evaluate the HHE Program. In requesting this review, NIOSH and the NA
47 recognized that the HHE Program, unlike most other programs evaluated by the NA for
48 NIOSH, is not a traditional research program but a program whose primary focus is to
49 carry out public health practice activities in response to requests for assistance. The NA
50 convened a committee of experts to evaluate the relevance of the HHE Program's work in
51 improving occupational safety and health and the impact of its work in reducing
52 workplace injuries and illnesses. NIOSH asked the NA to assign two numerical scores for
53 its assessment, one for relevance and one for impact. NIOSH also asked the NA to
54 examine future issues and provide recommendations for its vision for the HHE Program.
55

56 We prepared an evidence package documenting the activities, outputs, and outcomes of
57 the HHE Program, focusing on the most recent 10 years. Printed and electronic copies of
58 the evidence package were given to the NA. The electronic version can be found at
59 <http://www.cdc.gov/niosh/nas/hhe/>. The printed version is available upon request from
60 the HHE Program (<http://www.cdc.gov/niosh/programs/hhe/contacts.html>).
61

62 After completing its review, the NA Evaluation Committee presented its findings to
63 NIOSH and subsequently published the report titled *The Health Hazard Evaluation*
64 *Program at NIOSH*.
65

66 The NA assigned the HHE Program a score of 4 (out of 5) for both relevance and impact.
67 The report noted that "If the committee had not been restricted to the use of integers, both
68 scores would have been between 4 and 5." The NA found that the HHE Program is
69 "highly effective in investigating and advising workplaces when requested. The program
70 fills a special need in the occupational health community by investigating unexpected or
71 underestimated workplace hazards and relating them to worker exposures or
72 circumstances." Overall, the committee considered the HHE Program to be "highly
73 relevant and to have a major impact on improving occupational health."
74

75 The NA identified several areas in which the HHE Program could be strengthened. It
76 offered the following eight overarching recommendations, and more specific
77 recommendations for items 2-8.
78

79 *Recommendation 1:* Conduct regular assessments of performance measures to determine
80 whether available resources allow more ambitious goals.
81

82 *Recommendation 2:* Improve the mechanisms by which requests for HHEs are sought and
83 prioritized to include a broader array of requests from a wider variety of requestors.
84

HHE Program Draft Implementation Plan
Response to NA Evaluation

- 85 *Recommendation 3:* Ensure that recommendations in HHEs are relevant, feasible,
86 effective, and clearly explained.
87
88 *Recommendation 4:* Use the HHE Program to develop occupational health professional
89 resources.
90
91 *Recommendation 5:* Develop a proactive, comprehensive information-transfer strategy
92 for HHE Program outputs with better approaches to reaching wider audiences, including
93 traditionally underserved populations.
94
95 *Recommendation 6:* Develop more extensive formal linkages and mechanisms with other
96 parts of NIOSH, CDC, and HHS to enhance the capacity for involvement in policy-
97 relevant impacts.
98
99 *Recommendation 7:* Initiate formal periodic assessment of new and emerging hazards.
100
101 *Recommendation 8:* Continue to provide guidance and recommendations during public
102 health emergencies.
103
104 HHE Program staff disseminated the NA report within NIOSH and announced its
105 availability on the NIOSH website and through NIOSH e-News.

106 **3 Implementation Plan**

107 **3.1 Purpose**

108
109 The Implementation Plan summarizes actions taken, underway, or planned in response to
110 the NA recommendations. The Implementation Plan supports the HHE Program goals
111 identified above and is integrated with the HHE Program Strategic Plan.
112

113 **3.2 Development Process**

114
115 HHE Program staff held group meetings to discuss the NA recommendations, brainstorm
116 response options, and develop specific strategies and activities. It sought input from
117 others in NIOSH, including the HHE Cross-sector Steering Committee, a group
118 comprised of HHE Program partners and stakeholders from other NIOSH programs. We
119 will seek scientific input on the Implementation Plan from the NIOSH BSC at a meeting
120 in August 2009. We also will post the Implementation Plan on the NIOSH website and
121 invite feedback through a public comment period.

122 **3.3 External Factors**

123
124 External factors contribute to the dynamic environment in which the HHE Program
125 operates. Untold factors influence whether the Program receives requests for HHEs when

HHE Program Draft Implementation Plan
Response to NA Evaluation

126 health hazards are present in a workplace. These factors relate to awareness of the HHE
127 Program, incentives for submitting requests (e.g., free services available to small business
128 owners), disincentives to submitting requests (e.g., employees' fear of reprisals by their
129 employers), acknowledgement in the workplace that a problem might exist, and legal
130 limits on the authority of the Program. Numerous factors also influence whether
131 workplace changes are made in accordance with HHE Program recommendations. These
132 factors relate to economic realities in individual workplaces, attitudes about health and
133 safety in the workplace, labor-management relations, and regulatory requirements, among
134 others. In all, these factors require that Program enhancements and new initiatives remain
135 in balance with available resources. Integrating the Implementation Plan into the annual
136 strategic planning process provides opportunities to adjust annual goals and performance
137 measures, as needed, to meet shifting needs and priorities.

138 **3.4 Vision**

139
140 In addition to being responsive to the specific recommendations of the NA, the
141 Implementation Plan reflects the NA's vision for the HHE Program of the future.
142 According to the NA vision, the HHE Program "would serve to identify heretofore
143 unrecognized workplace hazards, as well as known hazards for which permissible
144 exposure limits or other control measures appear inadequate." In keeping with this vision,
145 among other efforts, the HHE Program of the future would:

- 146 • Continue to emphasize activities unique to NIOSH, e.g., combining medical,
147 industrial hygiene, epidemiologic, and toxicologic techniques
- 148 • Expand its role in training occupational health professionals
- 149 • Be more well known in the workplace and in the occupational health community
- 150 • Be recognized by local, state, and national agencies and organizations as a
151 primary resource when health problems arise in the workplace

152 To fully attain this vision, the HHE Program will require additional resources and active
153 engagement of its partners and stakeholders.

154

155 **4 HHE Program Response to the NA Recommendations**

156 **4.1 Overview**

157
158 We discuss the 34 specific NA recommendations according to their role in the HHE logic
159 model (Figure 1, Page 27). Because many recommendations are interrelated, with
160 separate recommendations sharing common concepts, this approach allows for common
161 themes to emerge and shows how HHE Program enhancements will ultimately affect the
162 impact of the HHE Program on occupational health.

163
164 Table 2 (Page 20) lists the recommendations according to the logic model structure and
165 notes the following additional information:

- 166 • status of NIOSH efforts to implement the recommendation
- 167 • parties who need to be involved in implementation

- 168 • a relative sense of the need for additional resources to implement the
169 recommendation. Absolute numbers are not provided because further input and
170 discussion are needed to identify options, evaluate their relative merits, and
171 characterize their feasibility. The resource designation considers both personnel
172 costs and discretionary funding.

173
174 Based on this information, we developed the following scheme to classify the activities
175 described in the Implementation Plan:

- 176 • Group A: Activities the HHE Program can do alone, or with limited partner
177 involvement, with few new resources
178 • Group B: Activities needing partners and moderate new resources
179 • Group C: Activities needing partners and significant new resources
180

181 **4.2 Inputs**

182 **4.2.1 Improving the triage of HHE requests**

183 *(See Table 2, Page 20)*

184 **4.2.1.1 NA Recommendations**

185 The NA noted that the triage process, while generally efficient, needs more structure and
186 explicit criteria.

187
188 Recommendation 2b: Implementing, as part of the triage process, a formal technical
189 assistance mechanism to help requestors to formulate valid HHE requests. In cases where
190 an HHE is not appropriate or where resource limitations prohibit an investigation,
191 technical assistance should include referral to more appropriate NIOSH divisions or
192 government agencies.

193
194 Recommendation 2c: Development of an explicit, written process for classifying and
195 prioritizing HHE requests. Priority should be based on the gravity of the potential harm,
196 the number of employees potentially at risk at similar workplaces or using similar work
197 processes, the urgency of the problem, the potential to assess health outcomes, and the
198 possibility of identifying emerging issues. Potential impact on standards and policy
199 should also enhance the priority of an HHE request in the triage process. Relationship of
200 the HHE to current research may be considered, but should not be the only or primary
201 factor. The process should provide guidance on weighting these varying factors.

202
203 Recommendation 2d: Better formalizing of the triage process, including the identification
204 of needed expertise, and improving the transparency of the process to HHE requestors,
205 while maintaining flexibility and speed.
206

207 **4.2.1.2 NIOSH Response**

208 We recognize that the decisions we make about how we respond to HHE requests can
209 influence the HHE Program's relevance and impact. Based on the definitions given
210 above, we classify activities in this area as Group A (HHE program alone, or with limited
211 partners, with few new resources). In response to the NA recommendations, we have
212 refined our triage criteria based on need, authority, and mitigating factors (Appendix A)
213 and will incorporate this information into the HHE Program Procedures Manual. Guided
214 by these criteria, HHE Program staff will continue to use professional judgment (with
215 input, as needed from others in NIOSH) to make the best decision for each specific
216 situation. Often it is not possible to predict the outcome of a field investigation in terms
217 of the balance between resources expended, information gained, and public health actions
218 taken. Additionally, unlike programs whose priorities and planned projects may be set for
219 one or multiple years, the HHE Program works in a more fluid manner over a shorter-
220 term planning horizon. We adjust our decisions based on the nature of incoming HHE
221 requests and available resources. A request for a specific issue might receive a low
222 priority one year, but at a later time a similar request might receive a higher priority
223 based on external factors and internal conditions and priorities.

224
225 To better communicate this information to potential HHE requestors, we are planning
226 improvements to the HHE Program website, including posting a plain language summary
227 of the decision criteria. We believe this addition will promote accountability and provide
228 information for citizens about what their Government is doing. Improved communication
229 with the public will also be accomplished by other website enhancements, such as adding
230 a frequently asked questions section, a means to provide input to the HHE Program, and a
231 means to request assistance in formulating and submitting HHE requests. The concept of
232 an interactive website has been discussed by HHE Program staff and continues to be an
233 area of interest. We have committed resources to website enhancement, with work
234 expected to be completed by mid-2010.

235 **4.2.2 Expanding the base from which HHE requests are received**

236 *(See Table 2, Page 20)*

237

238 While acknowledging a lack of information about whether the needs of underserved
239 populations and small businesses are being met by the HHE Program, the NA noted the
240 need for the Program to elicit a broader array of HHE requests.

241 **4.2.2.1 NA Recommendations**

242 Recommendation 2e: Establishment of formal relationships with organizations
243 representing underserved populations, small businesses, and their employees.

244

245 Recommendation 2f: Enhancing HHE Program outreach to OSHA national and regional
246 offices and to state health and labor departments to better communicate the functions and
247 activities of the HHE Program, increase cooperation with these agencies, and provide
248 more complete and timely feedback.

249

HHE Program Draft Implementation Plan
Response to NA Evaluation

250 Recommendation 6d: Pursuit of a change in the HHE Program's legislative and
251 regulatory authority to improve the capacity to identify hazards in need of HHEs,
252 improve the ability to gain entrance to facilities when requested by treating physicians or
253 community representatives, and address exposure other than chemical agents.

254

255 Recommendation 7a: Evolve from a program that passively receives requests to a
256 proactive program that seeks opportunities for field investigations.

257 **4.2.2.2 NIOSH Response**

258 The changing economic, social, cultural, and political landscape in the United States
259 means that we must reach out to new populations. To remain relevant and address high
260 priority needs, the HHE Program relies on a steady volume of HHE requests from a broad
261 base that is representative of our Nation's working population. Historically, the Program
262 has been mostly passive with regard to seeking HHE opportunities. We envision
263 becoming more active in creating opportunities to increase awareness of the HHE
264 Program and strategically encouraging submission of HHE requests. A significant
265 increase in the number of HHE requests, however, could strain resources and impair our
266 ability to respond in a timely manner. HHE Program managers will evaluate the
267 effectiveness of proactive efforts and monitor their impact on staff workload and
268 timeliness.

269

270 The following three groups are mentioned throughout the NA report and arise in several
271 places in the HHE Program's logic model:

272

- Underserved populations

273

- Small businesses

274

- Other government agencies (e.g., the Occupational Safety and Health

275

Administration (OSHA), state labor departments, state health departments)

276

The approach to working with these groups varies, as does the need for resources and
277 partnerships. The likelihood of significant success, particularly in the next 5 years also
278 varies.

279

280 We have increased outreach to other government agencies. We classify activities in this
281 area as Group B (HHE Program and partners with moderate new resources). Two new
282 activities are now underway. We initiated a partnership with OSHA Region I to increase
283 awareness of the HHE Program among its field staff and help them identify appropriate
284 opportunities to make referrals and encourage the submission of HHE requests. This
285 effort, in its infancy, may provide a model that can be expanded. We also began a
286 collaborative effort with the NIOSH Adult Blood Lead Epidemiology and Surveillance
287 (ABLES) Program to increase awareness of HHE services among the 40 ABLES
288 Program state-based partners. The early concept for this effort is to identify a subset of
289 state partners who have active lead surveillance programs with limited internal resources,
290 particularly in the area of industrial hygiene. These states will be assigned an HHE
291 Program liaison for technical support and to encourage the submission of appropriate
292 HHE requests to evaluate workplaces from which elevated blood levels were reported.
293 This effort is particularly timely given the recent decision of the Council of State and
294 Territorial Epidemiologists to change the case definition for reporting elevated adult

HHE Program Draft Implementation Plan
Response to NA Evaluation

295 blood lead levels from 25 micrograms per deciliter or greater to 10 micrograms per
296 deciliter or greater. This new requirement will likely bring many more facilities to the
297 attention of public health agencies. Other activities that will be considered include direct
298 outreach to state labor departments operating OSHA-approved occupational safety and
299 health programs and geographically targeted outreach to local health departments.

300
301 We are exploring ways to reach out to small businesses, and classify activities in this area
302 as Group C (HHE Program and partners with significant new resources). We are
303 establishing a working relationship with the NIOSH Small Business Assistance and
304 Outreach Program. The two Programs have taken steps to explore opportunities with
305 Chambers of Commerce in the Cincinnati metropolitan area. Because this is likely to be a
306 long-term effort, however, we see our ongoing customer survey as the HHE Program's
307 most significant activity focused on small businesses in the next 3 to 5 years. We are
308 surveying a national sample of businesses with fewer than 250 employees in the food
309 manufacturing sector and the building services sector. Survey results, expected at the end
310 of Fiscal Year 2009, will be followed by focus groups to provide more in-depth
311 information about concerns, needs, and issues affecting small businesses and their
312 involvement with the HHE Program. We will combine this information with other inputs
313 to develop a targeted marketing campaign to increase awareness of the HHE Program.
314 Our success in the two sectors initially selected will provide lessons that can be applied
315 more broadly.

316
317 Since a pilot project in 2002-2004 to develop partnerships with Hispanic community
318 organizations in the Cincinnati, Ohio, area, we have not begun new efforts to reach out to
319 underserved populations. We classify activities in this area as Group C (HHE Program
320 and partners with significant new resources) and, likely, the most challenging new
321 undertaking. Our previous efforts have given us insights into issues affecting underserved
322 populations and have demonstrated the low likelihood that increased awareness alone
323 will lead to a meaningful increase in requests for HHE services. Legal, cultural, and
324 economic barriers are significant impediments to meeting the needs of underserved
325 populations, particularly low wage, immigrant, temporary, and contract workers. We will
326 maintain a dialogue with the NIOSH Occupational Health Disparities Cross-sector
327 Program, to help us understand and evaluate possible approaches to working with
328 underserved populations.

329
330 To some extent, changing the HHE Program's legislative and regulatory mandate would
331 contribute to the goal of increased access to the HHE Program for the groups discussed
332 above. By giving NIOSH authority to conduct investigations based on requests from
333 individuals or organizations other than employees and employers, underserved
334 populations would have more voices speaking on their behalf and requesting HHE
335 Program assistance. Additionally, expanding NIOSH authority to address a broader range
336 of hazards, including physical hazards in general industry, would also allow us to reach
337 some sectors of the population currently outside the scope of the Program. We welcome
338 the opportunity to begin a dialogue about this issue within NIOSH. We have begun to
339 compile a list of issues and options and, with guidance from the NIOSH Director, will
340 evaluate the impact of this recommendation. We classify this activity as Group C.

341 **4.2.3 Increasing opportunities to recognize emerging issues**

342 (See Table 2, Page 21)

343 **4.2.3.1 NA Recommendations**

344 Recommendation 2a: Systematic use of professional meetings, scientific conferences,
345 scientific literature, and surveillance data, including those generated by NIOSH, to assist
346 in prioritizing field investigations and recognizing emerging issues.

347
348 Recommendation 3c: Debriefing in NIOSH after site visits and report dissemination for
349 determination of relevance and impact on a systematic basis (potentially missed
350 opportunities to identify emerging health hazards could also be identified).

351
352 Recommendation 7b: Develop systematic approaches to identify hazards where OSHA
353 permissible exposure limits are inadequate or nonexistent, to identify unknown hazards,
354 and to identify known hazards encountered under new circumstances.

355
356 Recommendation 7c: Establish and periodically review a tickler file of inconclusive or
357 unexpected evaluation results to determine whether new trends or problems may be
358 emerging.

359
360 Recommendation 7d: Periodically meet with intramural and extramural research
361 scientists and stakeholders in government, academe, labor, and industry to discuss
362 specific unresolved evaluations, to review aggregate findings, and to solicit input about
363 new or emerging hazards or interventions.

364 **4.2.3.2 NIOSH Response**

365 Our activities with respect to emerging issues can be viewed from two perspectives: (1)
366 HHEs uncovering emerging issues and (2) HHEs providing descriptive data about
367 emerging issues identified by others. We classify activities in this area as either Group A
368 (HHE program alone, or with limited partners, with few new resources) or Group B
369 (HHE Program and partners with moderate new resources).

370
371 *HHEs uncovering emerging issues.* This can occur when the HHE Program receives an
372 request and, in the course of responding, documents a newly discovered hazard or a
373 known hazard in a new or previously overlooked population. Generally, such issues are
374 readily apparent at the completion of an evaluation. A recent example is the recognition
375 of bronchiolitis obliterans related to flavoring chemicals used in the manufacturing of
376 popcorn. For these situations, timely dissemination of HHE findings is essential. In some
377 HHEs, however, emerging issues may not be immediately apparent due to the small size
378 of the investigated work force or the lack of scientific tools to fully evaluate the situation.
379 Periodically reviewing the findings from investigations with unresolved problems is one
380 activity that may help bring unrecognized hazards to light. We are working with the
381 OSHA Office of Occupational Medicine to establish a tickler file of unresolved cases
382 from both agencies. These cases will be reviewed by staff from the agencies, who will
383 share information internally and with professional colleagues at scientific meetings and
384 through electronic discussion groups.

385

386 Field staff from federal OSHA, state agencies with OSHA-approved programs, and state
387 and local health departments can also be a source of leads to uncover previously
388 unrecognized emerging issues. Since the numbers of these staff far outweigh the number
389 of HHE investigators, their presence in the workplace can help identify emerging
390 hazards. This will require that the OSHA and state field personnel are aware of the HHE
391 Program and know when it is appropriate to make a referral or encourage the submission
392 of an HHE request. The new collaboration with OSHA Region I to increase awareness of
393 the HHE program among its field staff is one step in this direction. To ensure that the
394 state programs are engaged, we will seek new opportunities to work with the
395 Occupational Safety and Health State Plan Association. We also will explore
396 opportunities with public health organizations such as the Council of State and Territorial
397 Epidemiologists and the National Association of County and City Health Officials.

398

399 *HHEs providing descriptive data about emerging issues already identified.* This can
400 occur when we actively seek opportunities to explore such issues or when we receive
401 unanticipated requests. A recent example is the collaboration between the HHE Program
402 and other NIOSH researchers to evaluate the potential hazards related to the increasing
403 use of orthophthalaldehyde to sterilize certain equipment in healthcare settings. As more
404 focus is put on surveillance data across NIOSH, and data about occupational illnesses and
405 health hazards becomes more comprehensive and accessible, it will be possible to see if
406 this new information is helpful in targeting HHE Program resources.

407

4.2.4 Preserving program resources during emergencies

408

(See Table 2, Page 22)

409

4.2.4.1 NA Recommendations

410

Recommendation 8a: Remain diligent by working with NIOSH management to avoid
411 negative impact on routine activities of the HHE Program as a result of emergency
412 response activities.

413

414

Recommendation 8b: Develop a mechanism, such as the enlistment of help from training
415 program participants and alumni, to ensure continuation of routine operations in the
416 absence of staff involved in emergency response.

417

4.2.4.2 NIOSH Response

418

In the nearly 2 years since we prepared the documentation for the NA review, the
419 situation with regard to emergency response activities in the HHE Program has continued
420 to evolve. Presently, we do not believe that new activities are needed in this area. We
421 will, however, remain vigilant to ensure that HHE Program resources are appropriately
422 protected and the integrity of the traditional mission of the HHE Program is maintained.
423 We classify activities in this area as Group A (HHE program alone, or with limited
424 partners, with few new resources).

425

426

In the immediate aftermath of the World Trade Center and anthrax responses, CDC and
427 NIOSH began to more formally structure programs to better support responses to terrorist

HHE Program Draft Implementation Plan
Response to NA Evaluation

428 activities, natural disasters, and emerging infectious diseases. Leadership for and
429 coordination of emergency response and preparedness, a task that in the past fell in large
430 part to the HHE Program, now resides in the NIOSH Emergency Preparedness and
431 Response Office. Over time, this has resulted in less frequent and less intense reliance on
432 the HHE Program to support field activities, provide subject matter experts, and staff the
433 emergency operations center. Because of training coordinated by HHE Program staff,
434 other NIOSH field staff now can be called on for emergency response activities. As a
435 result of these efforts, we believe we can better manage resources internally to ensure that
436 critical, routine HHE functions are not affected significantly. In the event, however, of a
437 large-scale national emergency, it is possible that we would be asked to become more
438 involved. In this situation, shifting a portion of personnel resources away from routine
439 HHEs may become necessary; we view this as an appropriate public health action. HHE
440 Program management would continue to provide a timely assessment of incoming
441 requests to ensure that urgent situations receive an appropriate response. In addition,
442 information about temporary shifts in Program resources would be communicated to
443 stakeholders to maintain transparency in HHE Program operations. Former HHE
444 Program staff now working in other parts of NIOSH, of which there are many, could
445 assist in meeting urgent needs. Compared to bringing in HHE alumni now working in the
446 private sector, this approach would be simpler to implement due to legal limitations when
447 using non-NIOSH employees in field investigations.

448 **4.3 Outputs**

449 **4.3.1 Enhancing the quality and helpfulness of HHE reports**

450 *(See Table 2, Page 23)*

451 **4.3.1.1 NA Recommendations**

452 Recommendation 3a: Explanation of the relevance, feasibility, and impact of each
453 recommendation in the text of HHE reports.

454

455 Recommendation 3b: Priority-setting among recommendations in all reports to indicate
456 those requiring immediate action in the targeted workplace.

457

458 Recommendation 3c: Enhancement of internal quality assurance by development of a
459 formal program. Consider external review of a sampling of recent reports and technical
460 assistance letters for scientific content, report completeness, and appropriateness of
461 recommendations.

462

463 Recommendation 4b: Tracking and mobilizing the extensive talent and commitment
464 represented in the HHE Program-trained occupational health workforce. A network of
465 HHE Program alumni could be fostered to help to develop HHE opportunities. A
466 program-level advisory board could assist the Program in leveraging resources, serve a
467 recruiting and retention function, assist in identifying emerging issues, and provide expert
468 advice.

469 **4.3.1.2 NIOSH Response**

470 HHE reports are the primary output of the HHE Program and provide a basis for most
471 other Program outputs. As such, we are committed to ensuring that the reports are of the
472 highest quality and meet the needs of our stakeholders. Although HHE reports are used
473 by a diverse group of stakeholders, the primary audience remains employers and
474 employees at investigated facilities. Activities related to the HHE report quality are
475 considered Group A (HHE program alone, or with limited partners, with few new
476 resources).

477
478 We already have changed the recommendations section of the standard HHE report in
479 response to the NA recommendation. We developed standard structure and content for
480 the recommendations that focuses on the well-accepted concept of a hierarchy of
481 controls. The new information included in HHE reports clearly addresses situations
482 where short-term actions (such as use of respiratory protection) are needed while longer
483 term solutions (such as installation of engineering controls) are evaluated and
484 implemented. The new information also gives a brief explanation of each class of actions
485 in the hierarchy and offers a rationale for these actions. Although it is essential that HHE
486 investigators become familiar with the facilities they investigate and understand the
487 implications of their recommendations, a thorough evaluation of feasibility is outside the
488 scope and expertise of the HHE Program. Financial considerations and cost-benefit
489 calculations specific to each investigated facility play a large role in a feasibility
490 assessment; we consider these to be factors external to the HHE Program. Recently, we
491 modified the standard cover letter we send with a field investigation final report to
492 recommend that a health and safety committee with management and labor
493 representatives form a working group to discuss the HHE report findings and
494 recommendations, including their feasibility.

495
496 We will continue to maintain a rigorous internal review process and explore efficient
497 ways of incorporating interactions with other NIOSH programs as part of the process.
498 Our review process is designed to ensure scientific quality, consistency with NIOSH
499 policy, and responsiveness to the needs of the HHE requestor. The review process also is
500 intended to ensure that recommendations made by HHE investigators are supported by
501 their findings. To augment this process, as recommended by the NA, we will begin a pilot
502 effort to assess the feasibility and value of having an external quality assurance process
503 that involves evaluating a sample of HHE reports after they are issued. We will provide
504 evaluation guidelines much like is done for manuscripts submitted to peer-reviewed
505 journals. Potential reviewers will be chosen to represent the scientific disciplines
506 appropriate for each report and the perspectives of different types of stakeholders
507 (including the business and labor communities). These reviewers will be drawn from a
508 newly developed network of HHE Program alumni (as described below). This new
509 quality assurance process will be evaluated at the end of 2 years by HHE Program staff
510 with input from participating reviewers. The evaluation will consider the following
511 program attributes:

- 512 • Ability to obtain volunteer reviewers
- 513 • Timeliness of the reviews
- 514 • Reviewers' assessment of the HHE Program's guidance

HHE Program Draft Implementation Plan
Response to NA Evaluation

- 515 • Extent of program resources used to maintain the program
516 • Value of the information derived from the reviews

517

518 Within the next 6 months, we will implement the recommendation regarding creation of
519 an alumni network. We are compiling a list of former HHE Program staff, EIS officers,
520 other fellows, guest researchers, and short-term domestic and international visitors.
521 Information is being entered into a database that will contain information about their
522 professional area(s) of expertise, former role in the HHE Program, current affiliation, and
523 contact information. Once contact information is obtained, we will invite these
524 individuals to participate in the alumni network by signing up for an online community.
525 Participants in the network may be asked to assist and provide input in various ways,
526 including the following:

- 527 • Offering opinions about HHE Program policies and procedures
528 • Providing technical review of investigation protocols
529 • Providing quality assurance evaluation of HHE reports and other documents
530 • Acting as an ambassador to increase awareness of the HHE Program among
531 potential program requestors
532 • Helping to disseminate HHE program products
533 • Identifying emerging issues for which HHEs would be useful

534 We hope that participants find benefit from the alumni network as a way of connecting
535 with other occupational health professionals and by enhancing their contributions to
536 occupational safety and health through participation in a national program.

537 **4.3.2 Expanding opportunities to train occupational health**
538 **professionals**

539 *(See Table 2, Page 23)*

540 **4.3.2.1 NA Recommendations**

541 Recommendation 4a: Increased recruitment of new investigators from universities, the
542 Epidemic Intelligence Service, the Commissioned Officer Student Training Extern
543 Program, occupational medicine residencies, Education and Research Centers (ERCs) for
544 Occupational Safety and Health, and state and local health departments into HHE
545 Program training rotations. This will require ongoing development of more attractive
546 training, mentoring, and rotations.

547

548 Recommendation 4c: Engagement and use of ERCs and other university-based training
549 programs to involve trainees in HHE field investigations.

550

551 Recommendation 4d: More formal collaboration with ERC faculty and other extramural
552 researchers to assist in field investigation, dissemination, and training opportunities.

553 **4.3.2.2 NIOSH Response**

554 We are cognizant of the role the HHE Program plays in the training of occupational
555 health professionals. Based on the response of the NA review committee, we have added
556 a new strategic goal in this area. Because expansion of these efforts is not feasible

557 without significant new resources, however, we consider most activities related to
558 training as Group C (HHE Program and partners with significant new resources).

559
560 With current resources, we are taking some new steps to strengthen training activities.
561 These include:

- 562 • Developing a more formal curriculum for trainee rotations
- 563 • Exploring opportunities for cross-training with other agencies
- 564 • Opening up training opportunities beyond our traditional partners to include
565 others with applicable training programs such as the Veterinary Public Health
566 Program at The Ohio State University.
- 567 • Reaching out to the NIOSH ERCs to increase awareness of the HHE Program. In
568 particular, the NIOSH Denver Office is working closely with the new Colorado
569 ERC to identify opportunities for trainees to participate in HHE field
570 investigations.

571 **4.4 Transfers**

572 **4.4.1 Improving dissemination channels and developing partnerships** 573 **to enhance dissemination**

574 *(See Table 2, Page 24)*

575 **4.4.1.1 National Academies Recommendations**

576 Recommendation 5a: Use innovative techniques to reach small businesses and
577 underserved populations, creating a broad array of mechanisms for communicating with
578 diverse constituencies and attending to issues of literacy, language, and national-origin
579 barriers. The effectiveness of applied outreach should be evaluated in a formal manner.

580
581 Recommendation 5b: Improve the searchability of the online HHE search engine by
582 developing a list of standardized key words (an alphabetized list of hazards and diseases
583 would be beneficial).

584
585 Recommendation 5c: Develop distribution mechanisms that are not internet-dependent to
586 complement internet distributions.

587
588 Recommendation 5d: Disseminate HHE results more broadly to groups likely to be
589 affected, including distribution of HHE reports in the geographic regions where
590 investigations are conducted.

591
592 Recommendation 5e: Increase efforts to compile compendia of findings (such as those
593 developed for isocyanates, noise, tuberculosis, and lead) when generalized process-
594 oriented findings can be gleaned from the experience of the HHE Program in a variety of
595 settings.

596
597 Recommendation 5f: Develop improved methods of outreach to stakeholders so that
598 workers and workplaces affected by new and emerging occupational health problems will
599 be alerted quickly.

600

601 Recommendation 5g: Supplement program outreach efforts by using community and
602 small business groups to translate HHE results and findings for their constituencies.

603

604 Recommendation 6c: Continued regular use of the NORA sector councils and the NIOSH
605 Board of Scientific Counselors to disseminate information about the HHE Program.

606

607 Recommendation 5h: Leverage existing NIOSH, Centers for Disease Control and
608 Prevention, and Department of Health and Human Services resources to enhance
609 technology transfer.

610 **4.4.1.2 NIOSH Response**

611 Many of these recommendations focus on the same groups discussed above in terms of
612 increasing outreach to enhance awareness of the HHE Program:

613

- Underserved populations

614

- Small businesses

615

- Other government agencies (e.g., OSHA, state labor departments, state health
616 departments)

617

618 Thus, the efforts previously described will not only lead to better recognition of the
619 Program and the services it can provide but these efforts also will open up new channels
620 for disseminating HHE Program findings. Because the efforts in these areas are varied,
621 we classify them individually and they fall into Groups A, B, and C.

621

622 In the short-term, we plan to give priority to the following areas in which we are involved
623 directly and have available expertise:

624

- Improving access to HHE reports on the HHE Program website. The ability to
625 retrieve HHE reports by industry sector will soon be made available on the
626 NIOSH website. Our next steps will be to expand this concept for other
627 commonly used criteria such as state, health outcome, or nature of the exposure.
628 As part of this effort, we have begun the process of making all numbered HHE
629 reports available electronically; many reports before about 1985 are now available
630 at no cost from the HHE Program upon request. In another effort, we have
631 established a partnership with the International Journal of Occupational and
632 Environmental Health. The Journal is now publishing selected HHE investigation
633 summaries, which are included in PubMed.

634

- Increasing production of written materials for dissemination through on-line and
635 print trade publications.

636

- Developing HHE summary documents on priority topics as identified in the
637 NIOSH Program Portfolio. Planning has begun for updating the document
638 summarizing HHEs related to noise exposure and hearing loss, which was
639 published in 1999. Since that time nearly 60 new HHE reports on this topic have
640 been released.

641

- Using the findings from our customer survey to begin to develop new
642 communication channels for reaching small businesses.

643

644 Other efforts addressing new dissemination channels and methods of outreach and
leveraging resources will rely on efforts of others in NIOSH. Similarly, efforts by the

HHE Program Draft Implementation Plan
Response to NA Evaluation

645 NIOSH Office of the Director to streamline processes for creating and disseminating
646 NIOSH documents will benefit the HHE Program. Improved communication internally
647 through the NIOSH Program Portfolio may prove beneficial to the HHE Program in this
648 regard.

649 **4.5 Intermediate Outcomes**

650 **4.5.1 Establishing partnerships with government programs that can**
651 **use HHE-generated information**

652 *(See Table 2, Page 25)*

653 **4.5.1.1 National Academies Recommendations**

654 Recommendation 6a: Promotion and increase in direct communication, especially with
655 OSHA and state occupational safety and health agencies.

656

657 Recommendation 6b: Alerts to NIOSH and CDC about HHEs that are relevant to policy-
658 making outside the CDC system.

659 **4.5.1.2 NIOSH Response**

660 HHE Program partnerships to increase awareness of the HHE Program for the purposes
661 of facilitating new HHE requests will also serve to enhance transfer of HHE-generated
662 information. We classify our activities in these areas as Group A (HHE program alone, or
663 with limited partners, with few new resources). In addition to the activities discussed
664 previously, HHE Program staff participates in an ongoing, regularly scheduled NIOSH-
665 OSHA issues exchange meeting.

666

667 NIOSH continues to look for and take advantage of opportunities to share information
668 about the HHE Program with others throughout CDC and outside the CDC system, when
669 warranted. For example, we recently released a report on exposure to environmental
670 tobacco smoke among casino dealers in Las Vegas; we communicated with the CDC
671 Office of Smoking and Health about this report; they were keenly interested in
672 disseminating it to their stakeholders. We also included information about this report in a
673 briefing for the CDC Director. In another example, NIOSH issued a press release about
674 the release of an HHE report on occupational radiation exposure to airport baggage
675 screeners.

676

677 The DHHS Secretary is informed regularly of NIOSH activities determined to have
678 significant visibility and, or, impact. HHE reports are routinely provided to OSHA and
679 state health agencies.

680

681 **4.6 Program Evaluation**

682 **4.6.1 Evaluating various aspects of the program formally and**
683 **regularly**

684 *(See Table 2, Page 25)*

685 **4.6.1.1 National Academies Recommendations**

686 Recommendation 1: Conduct regular assessments of performance measures to determine
687 whether available resources allow more ambitious goals.

688
689 Recommendation 3d: Modification of the followback surveys for use in assessing the
690 relevance, feasibility, and impact of recommendations.

691
692 Recommendation 5i: Evaluate, in a formal manner, the effectiveness of information
693 transfer programs, including knowledge transfer to employers and employees not
694 investigated.

695 **4.6.1.2 NIOSH Response**

696 We are committed to an annual review of the HHE Program strategic plan. We classify
697 activities in this area as Group A (HHE program alone, or with limited partners, with few
698 new resources). As resources expand or contract, and external demands change, the
699 annual goals and performance measures will be adjusted. HHE Program supervisors have
700 begun to more effectively use milestones and project tracking management tools that can
701 provide information useful for adjusting the strategic plan. We are mindful of the NA
702 recommendation to develop more ambitious goals and continue to look for opportunities
703 to use our resources more efficiently. For example, producing an HHE compendium
704 document on a specific topic (Recommendation 5e) may allow us to respond without a
705 field investigation to a greater number of requests concerning that topic. This may also be
706 the case as better information is obtained from the HHE followback program about the
707 effectiveness of specific recommendations (Recommendation 3d).

708
709 Over the next 3-5 years, we will increase the number of onsite followback evaluations.
710 We believe that this offers the best approach to gathering valid and comprehensive
711 information about our recommendations. We classify this activity as Group B (HHE
712 Program and partners with moderate new resources). Recently, we identified a senior
713 staff member to lead this effort and have involved our health communications specialist.
714 They are trying a variety of approaches to garnering cooperation from employers in the
715 followback efforts; this effort presents many challenges for which new approaches will
716 be needed. They have had preliminary discussions with staff involved in the NIOSH
717 Economics Cross-sector Program to share information that may help identify
718 opportunities for research related to economic aspects of feasibility. We plan to use the
719 followback information to make improvements to the HHE Program. We also plan to use
720 the information to develop and disseminate case studies describing 1) approaches that
721 work and do not work in protecting worker health when hazards have been identified and
722 2) ways of overcoming barriers to implementing HHE Program recommendations.
723

HHE Program Draft Implementation Plan
Response to NA Evaluation

724 Evaluating the effectiveness of information transfer programs, particularly for facilities
725 not investigated by the HHE Program, reaches beyond the scope and resources of the
726 HHE Program. We classify this activity as Group C (HHE Program and partners with
727 moderate new resources). Other NIOSH efforts, however, can contribute valuable
728 information. For example, questions about familiarity with the HHE Program were part
729 of a recent survey of labor and trade associations and the results will be shared with us.
730 The NIOSH Research to Practice (r2p) initiative focuses on the transfer and translation of
731 research findings, technologies, and information into effective prevention practices and
732 products that are adopted in the workplace. When resources become available through
733 this effort and other Institute-wide dissemination and evaluation efforts, we will seek
734 opportunities for partnership to explore this aspect of HHE information transfer.

Table 1. Strategic and Intermediate Goals of the HHE Program¹

Strategic Goal 1: Prevent occupational illnesses through reduced exposure to workplace hazards

Intermediate Goals

- 1.1 Employers and employees increase the number of HHE requests submitted for important occupational health problems.
- 1.2 Facilities investigated by the HHE Program implement recommendations made by HHE Program investigators.
- 1.3 Persons submitting requests for which NIOSH does not do a field investigation receive appropriate and helpful technical assistance addressing their concerns.
- 1.4 Employees and employers at facilities not investigated by the HHE Program are aware of hazards identified and controls recommended by HHE Program investigators at investigated facilities.
- 1.5 Professional practices, guidelines, policies, standards, and regulations are influenced by information generated from the HHE Program

Strategic Goal 2: Promote occupational safety and health research on emerging issues

Intermediate Goal

- 2.1 Stakeholders have information about emerging issues.

Strategic Goal 3: Protect the health and safety of workers during public health emergencies

Intermediate Goals

- 3.1 Stakeholders have the information they need regarding high priority occupational health issues likely to arise during public health emergencies.
- 3.2 HHE Program personnel respond appropriately to requests for assistance.
- 3.3 The HHE Program is ready to respond to requests for assistance.

Strategic Goal 4: Train physicians, nurses, industrial hygienists, and other professionals to address workplace health hazards from a practical, public health perspective through HHE field experiences

Intermediate Goals:

- 4.1 Education and Research Centers provide information to new occupational health and safety trainees about HHE Program opportunities, including the EIS Program and NIOSH rotations
- 4.2 Academic training centers request training for occupational health professionals.
- 4.3 Occupational safety and health professionals with HHE training are present in the workforce
- 4.4 Occupational safety and health professionals with HHE training are engaged in NORA and other NIOSH programs as partners and stakeholders

□

Table 2. Overview of Recommendations

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
Improving the triage of HHE requests (4.2.1)										
2b Implement a formal mechanism to help requestors to formulate valid HHE requests or to make appropriate referrals.	✓			✓			✓			A
2c Develop an explicit process for classifying and prioritizing HHE requests.	✓			✓			✓			A
2d Better formalize the triage process and improve its transparency to HHE requestors.	✓			✓			✓			A
Expanding the base from which HHE requests are received (4.2.2)										
2e Establish formal relationships with organizations representing underserved populations, small businesses, and their employees.		✓			✓				✓	C

¹ A: HHE program alone, or with limited partners, with few new resources; B: HHE + partners, moderate new resources; C: HHE + partners, significant new resources

HHE Program Draft Implementation Plan
Response to NA Evaluation

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
2f Enhance outreach to OSHA and to state health and labor departments to better communicate HHE functions and activities and to increase collaboration.	✓					✓		✓		B
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.				✓		✓	✓			✓
7a Evolve from a program that passively receives requests to a proactive program that seeks opportunities for field investigations			✓				✓			✓
Increasing opportunities to recognize emerging issues (4.2.3)										
2a Use professional meetings, surveillance data, etc. to assist in prioritizing field investigations and recognizing emerging issues.		✓						✓		
3c Conduct internal debriefings after site visits and report dissemination to systematically assess relevance and impact, and identify emerging hazards.		✓						✓		

HHE Program Draft Implementation Plan
Response to NA Evaluation

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
7b Develop systematic approaches to identify hazards where OSHA permissible exposure limits are inadequate or nonexistent, unknown hazards, and known hazards in new circumstances.			✓			✓	✓		✓	
7c Establish and periodically review a tickler file of inconclusive or unexpected evaluation results to determine whether new trends or problems may be emerging.		✓					✓		✓	
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.		✓				✓	✓		✓	
Preserving program resources during emergencies (4.2.4)										
8a Work with NIOSH management to avoid negative impact on routine activities as a result of emergency response activities.		✓				✓		✓		
8b Develop a mechanism to ensure continuation of routine operations in the absence of staff involved in emergency response.			✓			✓			✓	

HHE Program Draft Implementation Plan
Response to NA Evaluation

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
Enhancing the quality and helpfulness of HHE reports (4.3.1)										
3a Explain the relevance, feasibility, and impact of each recommendation in HHE reports.			✓		✓	✓	✓	✓		
3b Set priorities among report recommendations to indicate those requiring immediate action in the targeted workplace.		✓			✓			✓		
3c Enhance quality assurance by developing a formal external review program for a sampled of recent reports and letters.			✓				✓	✓		
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.			✓				✓	✓		
Expanding opportunities to train occupational health professionals (4.3.2)										
4a Increase recruitment for training rotations; develop more attractive training, mentoring, and rotations.			✓			✓	✓			✓
4c Use ERCs and other university-based training programs to involve trainees in HHE field investigations.				✓		✓	✓			✓

HHE Program Draft Implementation Plan
Response to NA Evaluation

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
4d Collaborate more formally with ERC faculty and other extramural researchers to assist in field investigation, dissemination, and training.				✓		✓	✓		✓	
Improving dissemination channels and developing partnerships to enhance dissemination (4.4.1)										
5a Use innovative techniques to reach small businesses and underserved populations; formally evaluate outreach efforts.				✓		✓	✓			✓
5b Improve the searchability of HHE reports online.			✓			✓	✓		✓	
5c Develop distribution mechanisms that are not internet-dependent.				✓		✓	✓			✓
5d Disseminate HHE results more broadly to affected groups, including distribution in the geographic regions where investigations are conducted.				✓			✓		✓	
5e Increase efforts to compile compendia of findings.			✓			✓	✓		✓	
5f Develop improved outreach methods to alert affected workers and workplaces quickly of new occupational health problems.				✓			✓			✓

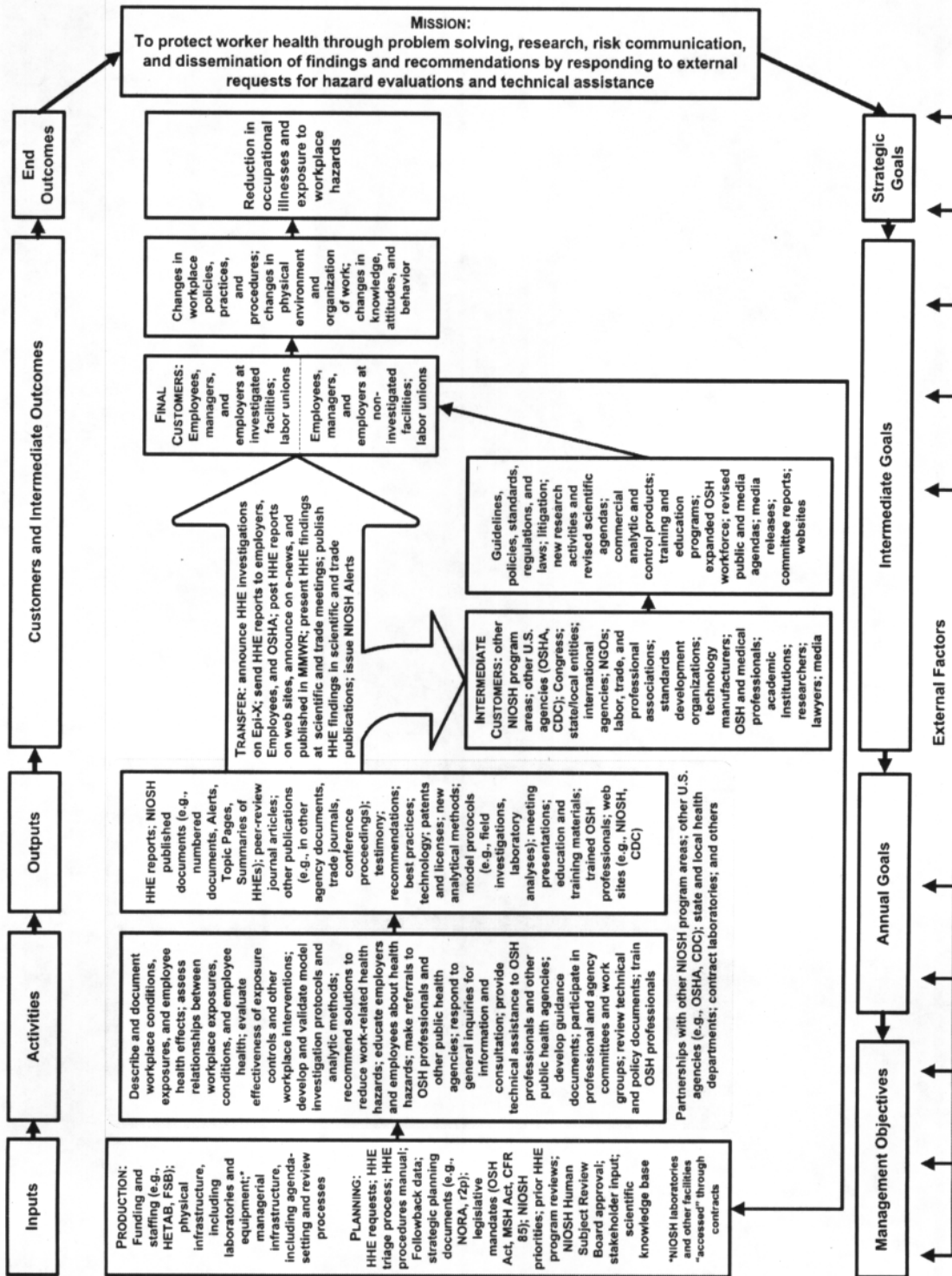
HHE Program Draft Implementation Plan
Response to NA Evaluation

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
5g Supplement outreach efforts by using community and small business groups to translate HHE results and finding for their constituencies.				✓			✓			✓
5h Leverage NIOSH, CDC, and DHHS resources to enhance technology transfer.				✓		✓	✓	✓		
6c Regularly use NORA sector councils and the NIOSH Board of Scientific Counselors to disseminate information.		✓				✓	✓	✓		
Establishing partnerships with government programs that can use HHE-generated information (4.5.1)										
6a Increase direct communication with OSHA and state occupational safety and health agencies.			✓				✓	✓		
6b Alert NIOSH and CDC about HHEs that are relevant to policy-making outside the CDC system.			✓			✓	✓	✓		
Evaluating various aspects of the program formally and regularly (4.6.1)										
1 Conduct regular assessments of performance measures to determine whether available resources allow more ambitious goals.			✓					✓		

HHE Program Draft Implementation Plan
 Response to NA Evaluation

Recommendation (as numbered in the NA report)	Status Well underway	Status Just begun	Status Not yet begun	Who? HHE	Who? HHE + Internal Partners	Who HHE + External Partners	Few Resources	Moderate Resources	Significant Resources	Group ¹
3d Modify the followback surveys to assess the relevance, feasibility, and impact of recommendations.				✓	✓		✓		✓	
5i Formally evaluate the effectiveness of information transfer programs.				✓			✓			✓

Figure 1. Health Hazard Evaluation Program Logic Model



Appendix A – Revised Criteria for Field Investigations

(July 2009)

Need

NIOSH gives highest priority for field investigations regarding serious health effects that are plausibly related to current workplace exposures or conditions. Priority decreases with decreasing severity of the health effects and/or plausibility of the relationship to workplace exposures or conditions.

NIOSH gives higher priority for field investigations to new and emerging issues and lower priority to well known problems for which appropriate guidance information is readily available. The latter includes most concerns relating to indoor environmental quality and mold in nonindustrial buildings. For the majority of these requests, our extensive experience enables us to provide assistance by telephone and correspondence.

1. What is the gravity of the potential workplace health hazard? (listed in order of decreasing priority)
 - a. Potentially life-threatening hazard
 - b. Medical conditions diagnosed by a health care provider
 - c. Symptoms suggestive of a recognized medical condition
 - d. Nonspecific symptoms that are not common in the general population
 - e. Nonspecific symptoms that are common in the general population
2. How likely is it that current exposures or conditions are causing, or could cause, a serious health problem?
 - a. Are exposures or conditions known to cause serious adverse health effects?
 - b. Are exposures or conditions not known to cause serious adverse health effects but could plausibly do so, based on established principles of occupational medicine, industrial hygiene, toxicology, and other relevant disciplines?

Authority

NIOSH gives highest priority to situations in which it has clear authority to initiate a workplace investigation.

1. Does the request meet the statutory and regulatory requirements? A request that does meets all of the following requirements:
 - a. Is submitted in writing; and
 - i. Is signed by the employer, three current employees (unless three or fewer are exposed to the potential health hazard), or an employee representative (as defined in 42 CFR 85)
 - ii. Identifies a specific workplace(s) where the potential hazard exists
 - iii. Concerns a workplace covered by the Occupational Safety and Health Act or Executive Order 12196 of February 26, 1980, "Occupational Safety Programs for Federal Employees"

- iv. Concerns a workplace covered by the OSHAct and the hazard is a substance *or* concerns a workplace covered by the MSHAct and the hazard is a substance or physical agent

When a request does not fall within the parameters of the Occupational Safety and Health Act or Mine Safety and Health Act, and NIOSH determines that there is a need for a field investigation, it proceeds as follows:

- When the request is from another government agency and that agency has the legal authority to enter the workplace, NIOSH will proceed with an investigation by providing technical assistance to the requesting government agency and entry will be under that agency's authority.
- In the following circumstances, NIOSH will proceed with an investigation with the consent of all parties involved
 - i. When (i) and (ii) are met, but (iii) or (iv) are not
 - ii. When the request is from another government agency and that agency does not have legal authority

Mitigating Factors

NIOSH gives higher priority when 1) no other resources are available to address the concerns, 2) it has the tools and approaches to address the concerns, or could acquire or develop the tools and approaches in a timely manner, and 3) the concerns relate to ongoing government priorities and activities

1. Is other, more appropriate, assistance available?
2. Does NIOSH have the tools and approaches to assess the concerns, or could they be acquired or developed in a timely manner?
3. Are the concerns of current high national interest or related to ongoing national or international priorities and activities? NIOSH is more likely to proceed with a field investigation if any of the following apply:
 - b. The concerns are in an industry or occupational group, or relate to a health outcome or exposure, identified as a priority in the National Occupational Research Agenda
 - c. The concerns are in an industry or occupational group, or relate to a health outcome or exposure, identified as a priority by the Occupational Safety and Health Administration

NIOSH generally will defer a field investigation if the workplace is the subject of an ongoing inspection by OSHA or state OSH agency for similar issues to those raised in the HHE request.

4. When the above considerations have been addressed, NIOSH *may* consider other factors. NIOSH is more likely to conduct a field investigation when the following circumstances apply.

HHE Program Draft Implementation Plan
Response to NA Evaluation

- a. The task producing the hazard is present continuously or most days, rather than intermittently or sporadically.
- b. A problem has been documented, but efforts to address it have not been successful.
- c. The number of workers exposed to the hazard at this facility or at other facilities is large. However, when other criteria are met (specifically need and legal authority), NIOSH *may* initiate a field investigation even when the number of workers is small.
- d. Action has been requested by a member of Congress or the Executive Branch.
- e. A field investigation would provide training opportunities for NIOSH staff, staff of other government agencies, or students involved in occupational health training programs.