

Protecting Workers' Families

A Research Agenda

*Report of the Workers' Family
Protection Task Force*

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

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SUMMARY

AT the request of the U.S. Congress, the National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention (CDC) issued a report in 1995 entitled *Report to Congress on Workers' Home Contamination Study Conducted Under the Workers' Family Protection Act*. This report was prepared in response to the 1992 Workers' Family Protection Act (Public Law 102-522) [29 USC 671], which included a request to NIOSH to conduct a study to “evaluate the potential for, prevalence of, and issues related to the contamination of workers' homes with hazardous chemicals and substances . . . transported from the workplaces of such workers.”

The 1995 NIOSH report chronicled the history of “take-home” exposures (i.e., exposures to substances transported from the workplace) and their associated health risks worldwide, primarily during the 20th century. The approach of this report was to describe health hazards associated with readily identifiable agents that have clear routes of exposure such as intentional transport of workplace materials, contamination of workers' clothing or external body surfaces (skin, hair), visitors or family members at the workplace, improper storage of hazardous agents, or cottage industry production.

The Workers' Family Protection Task Force was chartered in 1994 to review the NIOSH report and to recommend to Congress a research strategy for Federal agencies to investigate (1) the nature and magnitude of take-home exposures, (2) their potential adverse consequences to workers' families, and (3) the effectiveness of prevention and remediation strategies. This document represents the Task Force's commentary

U.S. Code of Regulations.

on the NIOSH report, identifies gaps in the current knowledge about take-home exposures and related health effects, and provides a prioritized agenda for federally sponsored research. The agenda is intentionally broad in scope, leaving the details of study design and methods to be specified by research sponsors and investigators.

The NIOSH report on take-home exposures covered the available literature in a thorough manner, with information largely describing conditions that occurred from the 1930s to the 1960s. Prominent examples of take-home exposures include lead, beryllium, and asbestos. Many reports represent anecdotal accounts of hazardous take-home exposures and subsequent illness among workers' family members. Systematic research on the extent of the problem is conspicuously absent, and thus the burden of disease caused by these exposures is unlikely to be quantified now or in the future. In addition, no comprehensive studies have documented the effectiveness of current workplace control programs for preventing the transport of toxic substances into homes. The Task Force also noted that the published literature contains only limited citations of two categories of take-home exposure—infectious agents and radioactive substances.

From its review of the NIOSH report, the Task Force identified important gaps in knowledge that hinder a clear understanding of the magnitude of take-home exposures and their potential health consequences. Information is lacking about the types and concentrations of take-home exposures that are currently occurring in the United States, the size and demographic composition of the populations at risk for exposure, the types of illnesses associated with take-home exposures, and the adequacy of exposure control methods in the workplace and home. Among States that have reporting systems for recognized take-home exposures such

as lead, reporting suffers from incompleteness and lack of standardization. With these knowledge gaps, it is not possible to estimate the magnitude of the public health threat created by take-home exposures, nor is it possible to predict the future risks that will occur from transported toxic agents. Difficulties in determining hazards will likely persist in the future as new materials are introduced into the workplace.

To address deficiencies in knowledge about take-home exposures, the Task Force recommends the following prioritized research agenda, which could be funded by Federal and other government sources as well as by the private sector:

- Characterize the extent of home contamination with toxic workplace substances such as metals (e.g., lead and beryllium), pesticides, and dusts (e.g., asbestos).
- Identify populations at greatest risk of known and suspected take-home exposures.
- Assess the adverse health effects from take-home exposures, including both established and less well studied effects—such as the consequences of transmitting infectious agents and radioactive substances into the home.
- Identify previously unrecognized toxic exposures that place the health of workers' families at risk.
- For recognized hazards, assess the effectiveness of take-home exposure prevention and remediation methods (including decontamination procedures) and evaluate worker notification and training programs to reduce exposure.

The Task Force recommends that this proposed research agenda be given full consideration by NIOSH under the Institute's National Occupational Research Agenda (NORA). The Task Force also noted that existing Federal statutes permit aggressive action but have been narrowly applied to take-home contamination. Moreover, the Workers' Family Protection Act did not anticipate revisions to the existing statutory authority of the Federal agencies that may be involved in take-home exposure issues. No revision would be needed if Federal and State agencies took advantage of their existing statutory authority to promulgate and enforce standards and regulations that are responsive to the hazardous conditions identified by the research agenda and developed by this Task Force. Revision of these statutes to authorize the prevention and remediation of take-home contamination (especially through revision of the prioritization schemes used by government agencies such as the U.S. Environmental Protection Agency [EPA]) should be considered by Congress only if the agencies find it difficult to respond effectively to the research agenda.

INTRODUCTION

AT the request of the U.S. Congress, the National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention (CDC) issued a report in 1995 entitled *Report to Congress on Workers' Home Contamination Study Conducted Under the Workers' Family Protection Act*. This report (henceforth referred to as the "NIOSH report") was prepared in response to the 1992 Workers' Family Protection Act (Public Law 102-522) [29 USC 671], which included a request to NIOSH to conduct a study to "evaluate the potential for, prevalence of, and issues related to the contamination of workers' homes with hazardous chemicals and substances . . . transported from the workplaces of such workers."

The 1995 NIOSH report chronicled the history of “take-home exposures” (i.e., exposures to substances transported from the workplace) and associated health risks worldwide, primarily during the 20th century. The approach of this report was to describe health hazards associated with readily identifiable agents that have clear routes of exposure such as intentional transport of workplace materials, contamination of workers' clothing or external body surfaces (skin, hair), visitors or family members at the workplace, improper storage of hazardous agents, or cottage industry production. Prominent toxic exposures include beryllium, asbestos, lead, and pesticides for which there is clear evidence of exposure-related sequelae. Reports of exposures and risks from other agents such as asthrogens, estrogenic substances, and infectious agents have been more sporadic in the literature and thus have received less study. The NIOSH report also summarized agent-specific methods to control exposures at the workplace and in the home.

The Workers' Family Protection Task Force was chartered in 1994 to review the NIOSH report and to recommend to Congress a research strategy for Federal agencies to investigate (1) the nature and magnitude of take-home exposures, (2) their potential adverse consequences to workers' families, and (3) the effectiveness of prevention and remediation strategies.

PURPOSE

THE document represents the Task Force's commentary on the NIOSH report, identifies gaps in the current knowledge about take-home exposures and related health effects, and provides a prioritized agenda for Federally sponsored research. The principal objective of the Task Force was to develop a research agenda to address the health hazards posed by take-home exposures. The final section of this report is

devoted to legal and policy considerations. This section was included to help the Secretary of Labor determine additional enforcement and regulatory needs resulting from the Workers' Family Protection Act.

COMMENTARY ON THE NIOSH REPORT

THE NIOSH report contains a substantial amount of information culled from the available literature—primarily published reports in medical and industrial hygiene journals. Additional reports of take-home exposure incidents were solicited from Federal and State health, labor, and environmental agencies. As the authors of the NIOSH report describe, the available literature on take-home exposures has substantial limitations. An important limitation is that U.S. reporting systems for sentinel exposures and health outcomes are limited to lead and pesticides. Moreover, the report notes that community clinicians may not recognize diseases that result from take-home exposures because they fail to obtain relevant information about family members' occupations. Systematically obtained data on exposure types and levels are lacking for most agents—even for lead and pesticides, which have been the subjects of considerable focus. In addition, the report notes that much of the available literature pertains to exposure conditions that occurred from the 1930s to the 1960s and thus may have limited relevance to contemporary home and work environments.

The Task Force found that the NIOSH report comprehensively reviewed episodes of toxicity for the agents that had a clearly recognizable exposure route. Congress required that the NIOSH report consider only agents that might be transmitted from workers to their family members by the presence of the agents on skin, clothing, or items removed from the workplace.

Thus this requirement excludes, for example, consideration of the risk of infectious diseases that are likely to result from other routes of exposure. Of particular concern is the possibility of transmitting infectious diseases to the family members of health care workers—diseases such as tuberculosis, acquired immune deficiency syndrome (AIDS), or hepatitis C. Adverse reproductive health outcomes and developmental disorders resulting from a parent's occupational exposures are generally thought to occur through effects on germ cells (e.g., sperm) or semen quality. However, the developing embryo may also be directly affected by the mother's exposure to take-home agents.

Another apparent gap in the literature concerns the nuclear industry, which has documented cases of various radionuclides that are carried home from the workplace on workers' clothing, shoes, or other items such as tools.

Assessing the extent of take-home exposures requires the identification and analysis of contamination pathways and methods for measuring the toxic chemicals of interest. A review of the published literature provided by the NIOSH report does not provide specific information describing these pathways or their analysis. Many of the reports are anecdotal, based on outdated industrial practices, or derived from reports from developing countries that may not be directly applicable to the United States.

GAPS IN KNOWLEDGE

AN understanding of the potential burden of impaired health experienced by workers' families as a result of take-home exposures has been limited by significant gaps in knowledge about (1) the types, sources, and magnitude of take-home exposures, (2) the size and characteristics of at-risk populations, (3) the types and severity of associated health effects, and (4) the adequacy of exposure

control methods. The following section summarizes the Task Force's conclusions about knowledge gaps and recommended approaches for reducing these gaps.

Types, Sources, and Magnitude of Take-Home Exposures

Little systematic research has permitted quantification of recognized and emerging take-home exposures. Moreover, identification of new, unanticipated hazards is impeded by the limitations of existing research methods. Documented episodes of take-home exposures suggest the importance of determining the extent of take-home exposures from recognized toxic agents such as lead or beryllium. No existing data indicate how many homes and families are potentially exposed to established toxicants and what exposure concentrations might exist.

Assessing the magnitude of exposures to previously unrecognized toxicants is even more daunting. It is virtually impossible to predict which workplace agents may pose future threats to workers' families. The problem of agent identification and quantification has been compounded as new materials have been introduced into the workplace. This trend is likely to continue for the foreseeable future. Another difficulty that must be addressed is identifying sources of exposure (i.e., workplace or ambient environment).

Clearly it will be impossible to institute a nationwide surveillance system for all known and suspected take-home toxicants. Instead, focused approaches can be devised to support health-related research or exposure remediation. One recommended approach is to institute regional and national sentinel monitoring systems for hazardous workplace agents that may be transported into the home and can be measured reliably. It may be useful to build on existing NIOSH programs such as the Sentinel

Event Notification Surveillance for Occupational Risks (SENSOR) programs for lead and pesticides. The Beryllium Disease Registry provides another precedent. Such systems would require (1) prioritizing agents on the basis of known toxicity and ease of recognition and (2) targeting surveillance in areas where workplace exposures are relatively common. Take-home pesticide exposures in rural areas may provide a useful prototype because of the existing methods for measurement of in-home exposures and analysis of exposure pathways in the agriculture industry.

Populations at Risk

Important knowledge gaps also exist in defining the populations at risk for take-home exposures. The potentially exposed population includes all members of households where workers may transport contaminants, all residents of farms, and all residents of homes that function as cottage industry workplaces. Exposed household members frequently include children, pregnant women, and elderly, ill, or disabled persons. Thus family members exposed to take-home agents may be more vulnerable than workers exposed in an occupational setting: they may differ from workers physiologically (e.g., age and health status), behaviorally (e.g., hand-to-mouth and pica behaviors of young children), and educationally (e.g., worker awareness and use of personal protective equipment). For example, children absorb, distribute, and metabolize some toxicants differently from adults. The elderly may also have altered susceptibility to toxic substances, or they may have accumulated substantial body burdens of a toxicant before take-home exposures occur.

In addition, the vulnerability of some household members may be affected by low socioeconomic status, which may in turn lead to problems with access to health care, preexist-

ing diseases, and compromised nutritional status. Because workers of low socioeconomic status are more likely to hold jobs in which they are exposed to high concentrations of toxic substances, limited access to health care is an important issue. Elevated exposures combined with inadequate health care increases the risk of adverse health effects among workers and their families.

To characterize exposed populations accurately, it will be necessary to estimate the number of workers exposed to specific hazardous substances on the job. Descriptions of household sizes, types, and locations will also be needed. Although these data are not currently available, they may be crudely estimated for some agents (e.g., asbestos, lead) from national databases and census reports. However, even these estimates are limited by a lack of quantitative information about workplace exposure concentrations and modes of transport from the workplace to home. An additional complication will be introduced as the age distribution and living conditions change for the exposed population. For example, as the U.S. population ages and health care costs escalate, extended families living in the same home may become more common, and the home may become an increasingly frequent site for health care delivery to chronically ill family members. These changes in the populations at risk make it difficult to predict the future magnitude of the take-home exposure problems.

Types and Severity of Health Effects from Take-Home Exposures

Distinguishing between Health Effects from Occupational and Take-Home Exposures

Workers' family members may exhibit different health effects from those seen in workers, thus making detection difficult and potentially obscuring the link to the workplace. Lead, for

example, can impair child development even when body burdens are low, and exposure to estrogenic compounds has been reported to cause effects such as abnormal breast enlargement in children. Other chemicals brought home from the workplace may cause similar toxic effects. Although instances of these effects are documented following take-home exposures, the extent of the problem remains unknown. In addition, adverse reproductive effects have been associated with worker exposures to several toxic substances, but effects experienced by family members (including pregnant wives of workers) have not been well characterized. Epidemiologic studies of workers' families might be useful in this regard. Improved data sources (such as the inclusion of both parents' occupations on birth certificates) should be considered. Currently, only 12 States collect any information about parental occupation on the birth record; and in most States, the data are not coded and thus are not easily accessible for analysis.

Government-mandated standards for workplace exposures are based on protection of adult workers. Guidelines for worker exposures are not intended to protect persons who may be more vulnerable because of compromised health or age factors. Thus workers who may not be affected adversely by work exposures may still take home agents that can affect others in their households. The characteristics of the home environment may cause some family members to be exposed to take-home substances throughout the day, especially in the case of persistent agents that can be readily dispersed throughout the home environment (e.g., lead and pesticides). Continuous exposures to these substances, even at low concentrations, may pose health risks to family members. As part of its implementation of the Food Quality Protection Act of 1996, the U.S. Environmental Protection Agency (EPA) is revising the way it assesses residential pesticide exposures to account

better for the exposures of farm children. When setting tolerances, the agency will now consider pesticides that are tracked into the home.

Identifying Current Health Effects from Take-Home Exposures

The literature summarized in the NIOSH report to Congress indicates that the clearest instances of health hazards related to take-home exposures are those in which the exposure pathways are established and the health effects are both severe and specific to the exposure. The most obvious examples are asbestos- and beryllium-associated lung diseases and lead poisoning. Knowledge about health effects is based largely on case reports rather than population-based studies. Consequently, the true spectrum of health outcomes is essentially unknown. The limitations of prevalence studies for certain diseases must also be acknowledged. Most of the research literature does not address how take-home exposures contribute to diseases with complex or multi-factorial origins (e.g., cancers or birth defects). Other conditions such as asthma, skin diseases, and neurological dysfunction are difficult to relate to take-home exposures because of their generally nonspecific etiologies.

Determining a link between health outcomes and exposures to agents that are not obvious take-home hazards might require input from community health practitioners, who should be encouraged to obtain more and better information about the occupational history of the family members of workers, at least for current employment. Periodic collection and analysis of data relating potential take-home exposures or disease among family members to the worker's occupation might reveal previously unrecognized associations that warrant further examination. For example, a general health screen that includes blood or urine testing could be used to

screen for possible chemical exposures in children of parents with hazardous occupations. An additional recommendation is to expand the number of pediatric environmental health clinics to help identify take-home exposures.

The health effects of historically important take-home toxicants such as lead pose continuing threats, but they remain difficult to monitor because no system exists for evaluating the extent of the problem. For example, it would be expected that as workplace lead standards are lowered, take-home exposure concentrations would diminish. However, data on blood lead levels from population surveys (e.g., NHANES) cannot reveal the past contribution of take-home occupational exposures to current health effects because of the overwhelming influence of ambient exposures on body burden.

Identifying Future Health Threats from Take-Home Exposures

Severe episodes of toxicity from known hazards such as lead or pesticide poisoning will undoubtedly persist and should continue to be addressed. The contributions of less well established take-home exposures are much less predictable but also deserve scrutiny. Diseases that are clearly increasing in incidence and prevalence (such as childhood asthma) are logical candidates for future study of potential links with take-home exposures. Effects on reproductive health also require further examination, especially given the established association between certain occupational exposures and altered endocrine function.

The wording of the Workers' Family Protection Act limits take-home exposures to agents that are transmitted either from the workers' clothing or external body surfaces. Thus chemicals or infectious agents harbored in blood or other internal body compartments were outside the purview of the NIOSH review. Although this restriction simplifies the scope of strategies for

exposure control and remediation, possible health risks of considerable public health importance should not be excluded from consideration. Bloodborne infections such as hepatitis C or HIV may be occupationally acquired by health care workers and subsequently transmitted to family members. These are clear examples of such take-home transmissions.

Adequacy of Control Measures

Measures to protect workers' families should focus primarily on identifying and preventing the transport of hazardous substances from the workplace. Existing standards that require employers to reduce risks to workers will inherently protect the workers' families as well. Worker protection practices include the use of engineering controls, hygienic work practices, and shower and change facilities. The NIOSH NORA (April 1996) lists control technology and personal protective equipment as one of 21 research priorities that can lead to improved worker safety and health. This agenda states that "recognized safety and health hazards can be managed by a variety of engineering, administrative, and worker protection techniques." These same techniques can be used to prevent contamination of workers' homes with hazardous take-home substances. Decontamination procedures should be needed only when preventive measures are not taken or are inadequate.

Little research documents the overall degree of exposure and the extent to which health effects occur because workers inadvertently carry home hazardous substances on their clothes, bodies, or tools. However, health effects related to some substances are well recognized because of their uniqueness and clear associations with workplace exposures. For these hazardous substances, a modest investment of resources could prevent transport into workers' homes. Training efforts should be emphasized to increase

employee and employer awareness of hazards and acceptance of safe work and material-handling procedures (e.g., changing clothes and showering before going home, separating work areas from living or eating areas, and using personal protective equipment). Equally important are the development and distribution of information and education programs aimed at family members and health care professionals.

Take-home exposures can also be managed by instituting and adhering to engineering controls such as the proper use of equipment, substitution of safer materials, use of equipment with improved engineering designs when available, and habitual use of personal protective equipment. Although various control measures are available for preventing the adverse health effects of known take-home exposures in workers' families, limited information exists to assess or predict their effectiveness. The Task Force recommends that an investigative strategy for known hazards include the following, at a minimum:

- Development of surveillance programs to document the effectiveness of control measures being used, including an assessment of the feasibility and effectiveness of alternative measures
- An assessment of the performance of existing protective clothing (e.g., single-use disposable clothing and clothing that can be laundered) as barriers for chemical, biological, thermal, and physical hazards
- An assessment of the use and acceptance of protective clothing by workers
- Research on and development of new types of materials for protective clothing and gloves, including evaluation of their performance characteristics

- Measures to ensure that protective clothing is made available and designed to fit the growing numbers of minority and female workers

For many occupations, control measures have not been developed because there is a lack of awareness of the potential health effects of take-home exposures and the extent to which they occur. As these hazards become apparent, the Task Force recommends that sufficient technical and financial resources be applied to evaluate the effectiveness of proposed control measures.

The effectiveness of most decontamination procedures has not been adequately assessed and depends on the hazardous substance(s) involved, the manner in which remediation procedures are followed, and the entity that requires decontamination (e.g., person, clothing, or surface). Because the primary source of home contamination is the workers' clothing, items that come in contact with the workers' garments (such as automobile seats, carpeting, furniture, and other porous materials) are most likely to require decontamination. The Task Force does not universally recommend a particular type of protective clothing (e.g., single-use disposable clothing versus laundered reusable clothing). This decision must be based on the situation and the characteristics of each clothing type. For example, single-use disposables reduce the possibility that contaminated clothing will be laundered at home; yet disposables may expose other workers such as landfill or incinerator operators.

PROPOSED RESEARCH AGENDA

IN proposing a research agenda to address health hazards resulting from take-home exposures, the Task Force formulated the following questions:

- What evidence shows that historically recognized toxic exposures continue to pose health threats to workers' family members?
- What are the previously unrecognized hazardous exposures?
- What adverse health effects among workers' family members can be attributed to take-home exposures?
- Are exposure control methods effective?
- Identify populations at greatest risk of known and suspected take-home exposures.
- Assess adverse health effects potentially related to take-home exposures, including previously established adverse effects and newer or less-well-studied associations (such as the consequences of transmitting infectious agents and radioactive substances into the home).
- Identify previously unrecognized toxic exposures that potentially place workers' family members at risk for health impairment.
- Assess the effectiveness of take-home exposure prevention and remediation methods for recognized hazards, including decontamination procedures and worker training.

The Task Force commented that any scientific determination of impaired health from take-home exposures requires coordinated research among professionals with expertise in occupational and environmental exposure assessment, epidemiology, biostatistics, pediatrics, toxicology, and clinical, occupational, and environmental medicine.

The Task Force recommends that Federal and other government agencies sponsor research into the types, levels, and determinants (i.e., sources) of take-home exposures; potential adverse consequences experienced by workers' family members; exposure remediation; and control technology. The Task Force notes that the research agenda is not intended to be a mutually exclusive list of individual research programs; rather, the agenda items are interdependent and should engender research efforts that address more than one of these programs concurrently. The research priorities are listed below:

- Characterize the extent of home contamination with recognized workplace toxicants, including but not restricted to toxic metals (e.g., lead, beryllium), pesticides, and dusts (e.g., asbestos).

In proposing this research agenda, the Task Force intentionally avoided prescribing specific topics for and methods of investigation—largely because of the absence of adequate contemporary information about the exposures that currently present the greatest hazards to family members. This dearth of information is what motivated the research agenda recommendations for characterizing exposure conditions. The Task Force felt that responsibility for defining topics and scope-of-research protocols should reside with Federal and other government agencies and with private-sector research sponsors who issue requests for research proposals and award research grants. In addition, the Task Force concluded that research on exposure and health assessments related to take-home exposures deserves full consideration by NIOSH under NORA.

LEGAL AND POLICY CONSIDERATIONS

THE Workers' Family Protection Act of 1992 is a broad law directing the development of a strategy for investigating take-home contamination. This strategy is to be implemented by NIOSH and other Federal agencies. The Workers' Family Protection Act did not necessarily anticipate revisions to the existing statutory authority of the Federal agencies involved in take-home contamination issues. The law requires that the Secretary of Labor review the research that results from this strategy and determine (1) the need for additional education about, emphasis on, or enforcement of existing regulations or standards, and (2) the need for additional regulations or standards regarding take-home contamination. Among Federal statutes other than the Workers' Family Protection Act, only the Asbestos Hazard Emergency Response Act of 1986 [15 USC 2461 et seq.] explicitly addresses take-home contamination. However, it is the Task Force's view that other Federal statutes, if applied broadly, allow agencies to conduct research and promulgate regulations pertaining to this issue. In particular, OSHA requirements for protective clothing and changing rooms are at the core of protections for family members. OSHA should be encouraged to consider take-home exposure issues when enforcing or developing health standards. Agency responsiveness to the research agenda developed by this Task Force depends largely on the means by which participation, coordination, and accountability are implemented among the agencies. Congress should consider revising agency authority to address take-home exposures only if the agencies find it difficult to respond effectively to the research agenda. Other

agencies that should address take-home issues include the Department of Energy/Nuclear Regulatory Commission, the Department of Transportation, and the Coast Guard, who have regulatory authority over specialized industries. The involvement of these agencies in implementing the research agenda is critical to protecting the families of workers regulated by these agencies.

RESPONSE FROM NIOSH

NIOSH fully agrees with the research agenda proposed by the Workers' Family Protection Task Force in this report and plans to continue support of intramural and extramural research studies of take-home exposures. The recommended research priorities fit within the NORA framework—and particularly within its priority area *Special Populations at Risk*. NORA was developed by NIOSH and more than 500 public and private partners and stakeholders; it includes priorities for addressing allergic and irritant dermatitis, asthma and chronic obstructive pulmonary disease, fertility and pregnancy abnormalities, infectious diseases, control technology and personal protective equipment, and many other areas highlighted for consideration by the Task Force. Extramural NORA projects are funded primarily through Requests for Applications (RFAs). A number of Federal agencies (including the Agency for Toxic Substances and Disease Registry [ATSDR], EPA, the Department of Housing and Urban Development [HUD], and CDC) are currently addressing environmental hazards that affect children. NIOSH encourages partnerships with these and other organizations in the implementation of this research agenda.

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For more information about NORA, visit the NIOSH Web site at www.cdc.gov/niosh

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