

Appendix D

NIOSH Report to Congress: NIOSH Research on Occupational Injury and Illness Underreporting (FY 2009)

REPORT TO CONGRESS

NIOSH Research on Occupational Injury and Illness Underreporting

In its report on the Fiscal Year (FY) 2009 budget for the Department of Health and Human Services, the Committee on Appropriations stated the following:

The bill includes \$250,000 for NIOSH to undertake follow-up studies on the National Hospital Ambulatory Medical Care Survey on the underreporting of worker injury data, particularly focusing on the self-employed population. As NIOSH develops research agendas, NIOSH should consider the disproportionate attention paid to acute injuries and illnesses over chronic injuries and illnesses contracted at work places in America. NIOSH shall continue to work with the Bureau of Labor Statistics to improve the statistics that direct Federal enforcement and compliance efforts aimed at preventing illness and injury at our Nation's workplaces. NIOSH shall provide a letter report on activities in this area to the Committees on Appropriations of the House of Representatives and the Senate not later than 90 days after enactment of this Act. (House Appropriations Committee Omnibus Appropriations Act, 2009, H.R. 1105; Public Law 111-8, page 1402)

The following report has been prepared by the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, Department of Health and Human Services, in response to this request.

TABLE OF CONTENTS

Appropriation.....	1
Interpretation.....	1
NEISS-Work.....	2
Research Approach.....	3
Data collection evaluation—statement of work.....	3
Follow-up interviews—statement of work.....	3
Implementation of the underreporting research.....	4

Research on Occupational Injury and Illness Underreporting

Appropriation: The Division F—Labor, Health and Human Services, and Education, and Related Agencies Appropriations explanatory statements accompanying the H.R. 1105, FY 2009 Omnibus Appropriations Act included the following statement of work:

The bill includes \$250,000 for NIOSH to undertake follow-up studies on the National Hospital Ambulatory Medical Care Survey on the underreporting of worker injury data, particularly focusing on the self-employed population. As NIOSH develops research agendas, NIOSH should consider the disproportionate attention paid to acute injuries and illnesses over chronic injuries and illnesses contracted at work places in America. NIOSH shall continue to work with the Bureau of Labor Statistics to improve the statistics that direct Federal enforcement and compliance efforts aimed at preventing illness and injury at our Nation's workplaces. NIOSH shall provide a letter report on activities in this area to the Committees on Appropriations of the House of Representatives and the Senate not later than 90 days after enactment of this Act. (House Appropriations Committee Omnibus Appropriations Act, 2009, H.R. 1105; Public Law 111-8, page 1402)

Interpretation: The appropriation language specifies that NIOSH conduct follow-up studies using the National Center for Health Statistics (NCHS) National Hospital Ambulatory Medical Care Survey (NHAMCS). The NHAMCS is primarily designed to measure health care utilization of hospital emergency departments (ED) and outpatient departments (OPD). Annually, a randomly selected sample of approximately 500 nationally representative non-Federal general and short-stay hospitals, located in the 50 States and the District of Columbia, that have a 24-hour ED or an OPD with physician services clinics, provide data on a sample of patient visits over a 4-week reporting period. The data are collected under an assurance of privacy as specified in Sec. 308(d) of the Public Health Service Act (42 USC 242m). The NCHS does not collect any personally identifiable data and the data collected, once accepted by the NCHS, are not linked to individual records maintained by the participating hospitals. The privacy protections and the lack of contact information prohibit conducting follow-up studies. Thus, for this reason as well as other limitations of the ambulatory medical care surveys, the NHAMCS is not a suitable system for conducting research as specified in the appropriations language. We believe that a better approach (possibly the original intent) is to use occupational injury surveillance that NIOSH conducts through the occupational supplement to the National Electronic Injury Surveillance System (NEISS-Work). NIOSH collects data on occupational injuries and illnesses treated in an ED through NEISS-Work in collaboration with the U.S. Consumer Product Safety Commission (CPSC). NIOSH uses NEISS-Work data to report on an estimated 3.4 million ED-treated occupational injuries and illnesses.¹ The CPSC maintains an active process of conducting follow-up studies with injured individuals via telephone interviews. NIOSH has used the CPSC interview mechanism for special population research studies in the past.²

NEISS-Work: At the time of medical treatment workers may self-declare their injury/illness to be work-related, independent of employer confirmation or filing a workers' compensation claim.

¹ Derk SJ, Marsh SM, Jackson LL. Nonfatal Occupational Injuries and Illnesses—United States, 2004. MMWR April 27, 2007 / 56(16);393-397. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5616a3.htm>.

² Chen G-X, Jenkins EL. Potential Work-Related Bloodborne Pathogen Exposures by Industry and Occupation in the United States Part II: A Telephone Interview Study. *Am J Ind Med* 2007; 50: 285-292.

It is this self-declaration and/or potential work-related recognition by the attending physician at the time of ED treatment on which NEISS-Work is based. NEISS-Work uses a national stratified probability sample of 67 U.S. hospitals with 24-hour EDs.³ In NEISS-Work, work-related injuries/illnesses are identified from ED chart review (an indirect form of worker-based reporting). A case is defined as work related if the injury or illness was sustained by a civilian non-institutionalized worker while working for pay or other compensation, working on a farm, or volunteering for an organization (e.g., volunteer fire department), without limitation by self-employment and full- or part-time work. NIOSH uses the Occupational Safety and Health Administration (OSHA) recordkeeping rules as general guidelines for identifying specific injuries and illnesses for inclusion (e.g., per the guidelines, common illnesses such as colds and influenza are excluded). The data collection mechanism and the case definition do not inherently restrict NEISS-Work by type of worker such as private industry workers or having workers' compensation coverage. However, NEISS-Work is only able to produce estimates for injuries/illnesses that were treated in an emergency department; and only for those cases where there was sufficient information in the medical record to identify a work relationship. Current national estimates of ED usage by workers versus other medical venues are not available, but prior research has indicated that about one third of all medically treated occupational injuries and illnesses are treated in an ED.

In contrast to NEISS-Work, the Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses is an establishment survey with employer reporting of workplace injuries and illnesses based on OSHA recordkeeping rules. Each of the selected employers in the sample (~230,000 establishments) reports information from their OSHA injury and illness logs and their labor force characteristics. The survey previously focused on private industry employers, but now includes State and Local government workers on a national basis. The survey excludes Federal government workers, self-employed, private household workers, and workers on farms with fewer than 11 employees. Along with excluding various worker groups, underreporting by employers has been noted as causing the Survey of Occupational Injuries and Illnesses to significantly underestimate the nonfatal injuries and illnesses burden.

NEISS-Work has few population exclusivity issues. NEISS-Work has no worker restrictions other than being a civilian non-institutionalized worker; has no industry or employer size restrictions; and captures injuries and illnesses without regard to employment compensation such as among unpaid family members and volunteers; or source of medical payment such as self-pay or workers' compensation. NEISS-Work provides data on a broader population of U.S. workers than is currently available from the BLS survey. Additionally, demographic, nature of injury, and incident characteristics are available for all NEISS-Work cases, not just the more serious cases such as those involving a day away from work. Limited worker industry and occupation information are collected through NEISS-Work. However, these classification data tend to lack the specificity and accuracy that employer provided industry and occupation information has such as through the BLS survey. NEISS-Work and the BLS survey each have strengths and limitations, but both provide important complementary surveillance data on nonfatal

³ Because of hospital closures and other non-participation/non-response factors, the number of reporting hospitals varies year to year and is now less than the original 67 hospitals.

occupational injuries and illnesses. In particular, NEISS-Work has a mechanism by which injured/ill workers can be contacted for follow-up research studies.

Research Approach: To meet the intent of the appropriation, NIOSH proposes to examine underreporting of occupational injuries and illnesses through NEISS-Work by focusing on:

- An evaluation of NEISS-Work to attain information through routine ED medical chart abstraction on the injured/ill worker's economic relationship to their job and type of employer and the expected payer for medical services; and
- Development of the statistical basis, primary research issues, and a model telephone interview for injured/ill workers. The interview questionnaire will focus on identifying the employee status, prior injury/illness experience, and injury/illness reporting practices of ED-treated workers. There will be a special emphasis on questions directed to non-governmental workers who are self-employed or otherwise excluded from the BLS survey; and various forms of contingent workers where ambiguity about injury/illness reporting mechanisms exist along with significant reporting disincentives.

Data collection evaluation—statement of work: NIOSH will implement through NEISS-Work the routine data collection of two new occupational-related variables: employee status (i.e., wage & salary—private industry, wage & salary—government; self-employed (non-agricultural), farm owner/operator, volunteer, and other) and expected payer (i.e., self-pay, private insurance, workers' compensation, and other) beginning approximately May 1, 2009. In conjunction with the new variables, NIOSH will prepare new training materials for hospital medical record abstractors and provide in-person training to a large contingent of the hospital abstractors. Additionally, NIOSH in collaboration with the CPSC and the participating hospitals will review the prevalence, nature, extent, and location of occupationally relevant data including employment information in the hospital medical records. The review will also examine the presence and impact of electronic health record systems on the availability of the employment information. Following the completion of data collection in FY2010, NIOSH will assess the utility of routinely collecting employment status information through NEISS-Work and the number of ED-treated injuries/illnesses for various employee groups.

Follow-up interviews—statement of work: NIOSH will work with the BLS and the Council of State and Territorial Epidemiologists (CSTE) to identify critical underreporting research issues that could be addressed through injured/ill worker interviews. NIOSH will work with a CDC support contractor to develop a nationally representative sample design for conducting follow-up telephone interviews by using NEISS-Work to identify injured/ill workers treated in an ED. The contractor will conduct a literature survey on incentives and disincentives to occupational injury/illness reporting and data sources for defining and estimating the number of self-employed, contingent, small farm, and household workers. This effort will be followed up with development of a model injured/ill worker interview questionnaire. The interview questions will focus on determining self-declared employee status and the work-relationship of the ED treated injury/illness; injury/illness reporting behavior; perceived incentives and disincentives to

identifying an injury or illness as work-related at the time of treatment or to their employer; and their prior experiences with occupational injuries/illnesses that may have resulted in chronic conditions or disability, and that may have been treated in other medical venues (e.g., physician's outpatient office). The model questionnaire will provide standardized questions that NIOSH and/or other researchers may implement in various studies to better quantify injuries/illnesses among various worker groups, such as the self-employed, that are not represented in the BLS survey or that are not as accurately captured in the routine NEISS-Work data collection. Additionally, the follow-up studies will provide some information on chronic and/or disabling injuries/illnesses that is not currently collected through either NEISS-Work or the BLS survey.

In addition to the research using NEISS-Work, NIOSH is working with the NCHS to conduct an occupational health supplement to the 2010 National Health Interview Study (NHIS). The supplement to this annual, population-based health survey will collect information on health status and injuries and illnesses on the job as well as employer and employee status. The occupational health supplement will provide valuable information on workers who are self-employed, as well as employed by others. NIOSH will use the questions and results from the NHIS special study to inform its development of the NEISS-Work model questionnaire and NIOSH's interpretation of subsequent surveillance and follow-up research results.

Implementation of the underreporting research: NIOSH will begin routine data collection of employee status and expected payer through NEISS-Work in approximately May 2009. NIOSH will conduct a NEISS-Work hospital survey in the summer 2009 and provide additional training materials and in-person training to hospital record abstractors in August 2009. NIOSH will also initiate a support contract for statistical design and questionnaire development in FY2009. The data evaluations, statistical design, and questionnaire development efforts will be completed in FY2010. NIOSH will share interim results with the CSTE and the BLS on an ongoing basis.

The FY2009 funding provides for critical initial work addressing underreporting of injuries and illnesses, particularly among selected groups of workers. This effort will help NIOSH improve its existing occupational injury and illness surveillance to better estimate ED-treated injuries and illnesses among worker groups that are not well characterized currently or through other surveys.

The funding will also provide a solid foundation for underreporting follow-up interview studies utilizing NEISS-Work. However, the FY2009 funding does not provide for questionnaire testing, approval, or interviewing of injured/ill workers because of the additional implementation costs and the extended timeframe needed to conduct interviews. If additional funding is available in FY2010 and subsequent years, NIOSH will submit the model interview survey for testing and approval. Completion of questionnaire testing; and approval by the NIOSH human subjects review board and the Office of Management and Budget (OMB) paper work reduction review requires an additional 12-18 months prior to implementing actual telephone interviews. Pending funding, interviews will be completed in approximately 12 months following OMB

approval with an additional 12 months required for data analysis, interpretation, and dissemination to the CSTE, BLS, OSHA, and other interested parties.