

Found 54 Abstracts

CONTROL ID: 1057513

TITLE: Pesticide poisoning of hospital employees associated with attempted suicide - Orange County, Florida

CURRENT TOPIC: Acute pesticide poisoning surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Secondary contaminations of hospital employees caring for organophosphate (OP) poisoned patients have been reported in the past. OP poisonings may result in significant morbidity and mortality if not treated. This report describes poisonings which occurred among health care workers due to the delayed recognition of OP ingestion in a patient as a potentially hazardous incident. Several hospital employees were exposed to an OP pesticide and became ill. The patient was a 55 year-old male who attempted suicide by ingestion of malathion.

METHODS (study design and appropriate statistical analysis): Seventeen hospital employees were identified as patient exposures and six reported symptoms of pesticide poisoning. Medical records were requested and cholinesterase testing was recommended for the symptomatic employees. An interview was attempted with all symptomatic cases.

RESULTS (specific results in summary form): Five of the six symptomatic employees met the case definition for pesticide poisoning. Interviews were completed with four of the five employees who met the case definition; however, data on the patient who was not interviewed has been included where available.

The most frequently cited symptoms include eye irritation (80%) and nausea (80%). The average age for ill persons was 34.8 years with a range of 25 to 44 years of age. Females comprised 80% of the ill persons. One employee required hospitalization for seven days and another required supportive treatment in the ED. Symptoms in the other employees resolved without medical intervention. The average duration of illness for four of the five symptomatic was 2.75 days and ranged from one to seven days. Three of the five symptomatic were respiratory technicians, one was a nurse, and one worked in housekeeping. Four of the five interviewed employees reported wearing personal protective equipments (PPEs) such as gloves and mask.

CONCLUSIONS (description of the main outcome of the study): The poisoning incident described in this report is a result of health care workers not wearing appropriate respirators and PPE for proper protection of eyes and skin. Patients whose skin or clothing is contaminated with malathion can secondarily contaminate hospital personnel by direct contact or off-gassing of solvent vapor from clothing, skin, or vomitus. Patient decontamination and use of appropriate PPE by all persons handling the patient is critical to prevent further exposure and illness. The hospital required use of appropriate PPE once they became aware of the chemical; however, the information was not communicated to all staff who would potentially be interacting with the patient. This highlights the importance of proper hospital room signage and communication of potential hazards to hospital personnel including housekeeping.

AUTHORS (list collaborator name, degree and agency): Tania Harper, M.P.H.- Orange County Health Department, Florida Department of Health

Prakash Mulay, M.B.B.S., M.P.H.- Bureau of Environmental Public Health Medicine, Florida Department of Health

AUTHORS (FIRST NAME, LAST NAME): Prakash R. Mulay

CONTROL ID: 1061841

TITLE: Online access to U.S. employed labor force estimates

CURRENT TOPIC: The role of Information Technology - including electronic medical records - in occupational health surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The Bureau of Labor Statistics' (BLS) Current Population Survey (CPS) estimated that there were 140 million employed workers aged 15 years and older in the U.S in 2009. These workers represented 130 million full-time equivalent workers (FTE) based on their primary job hours and 133 million FTE based on all jobs worked. The CPS provides a wealth of detail about these workers including distributions by demographic characteristics, citizenship, education, number of jobs, and primary and secondary industry and occupation. CPS is a major source of information for describing the labor force and calculating occupational injury and illness rates, but the data can be challenging to use and understand.

METHODS (study design and appropriate statistical analysis): The National Institute for Occupational Safety and Health (NIOSH) has developed an online query system to facilitate access to the CPS microdata and to generate employed labor force (ELF) estimates by using a knowledge management based approach. The BLS-CPS microdata were imported in to an SQL server database. A web-based graphical user interface was developed to query the ELF data for labor characteristics. ELF estimates are displayed in cross-tabular format and exportable in several file formats.

RESULTS (specific results in summary form): The ELF query system provides rapid access to CPS data for 1980 through the present. Estimates based on time (year or month); region or state; demographics (age, sex, race, ethnicity); nativity, citizenship; number of jobs and hours worked; and industry and occupation are available. Since 1980 various aspects of the CPS data collection have changed such as industry coding schemes. To account for CPS modifications, the system automatically adjusts the query parameters available depending upon the time period and/or other parameters selected. Similarly, the most appropriate statistical weight for the nature of the query is selected automatically. By using these automatic query adjustment techniques, users are directed to the most appropriate data results based on the expert knowledge of BLS and the NIOSH query system developers.

CONCLUSIONS (description of the main outcome of the study): The ELF-CPS web-based query system provides easy access to denominator data for use in state and federal surveillance programs. By designing subject matter expertise into the system, the ELF-CPS system facilitates good data use practices. In addition, the system makes numerous aspects of the CPS data more readily accessible to data users and offers the potential to increase CPS data use among a broader audience. The ELF-CPS query system is currently in use by NIOSH researchers. Public release is expected.

AUTHORS (list collaborator name, degree and agency): Larry L. Jackson, Ph.D., NIOSH/CDC

Audrey A. Reichard, MPH, OTR – NIOSH/CDC

John R. Line, MA – SRA

Parmjit Singh, MS – SRA

AUTHORS (FIRST NAME, LAST NAME): Larry L. Jackson

CONTROL ID: 1062007

TITLE: Use of multiple data sources to enumerate work-related amputations in Massachusetts:Preliminary findings

CURRENT TOPIC: Successes, lessons learned, and challenges in occupational health surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Accurate information about the extent, nature and causes of work-related injuries and illnesses is essential to both prioritize and evaluate prevention efforts. No single data source captures all cases and innovative approaches that combine information from multiple sources are needed. Massachusetts is one of three states funded by the Bureau of Labor Statistics to pilot multisource surveillance of work-related amputations.

METHODS (study design and appropriate statistical analysis): Massachusetts collaborated with other funded states to establish a surveillance case definition, and, to the extent feasible, similar protocols. An amputation is defined as loss of a distal body part with bone loss or uncertain bone loss status. Eligible cases include those with injury event dates during 2007 and 2008 and the event occurred while working. Four administrative data sources in addition to the Massachusetts SOII sample are being used for case ascertainment: workers' compensation records (WC) of lost time cases and three statewide hospital data sets, collectively referred to as Case Mix (CM) data: inpatient discharge, outpatient observation, and emergency department data. Medical records for potential CM cases are being collected to obtain personal and employer identifiers needed to match with other data sets and assess work-relatedness.

RESULTS (specific results in summary form): Injury code and narrative text selection criteria identified 448 probable/possible WR amputations in the WC data base. Approximately 2,800 potential WR amputations were identified using diagnostic, procedure and payment codes in the CM file. Medical record review is underway. Anonymous linkage of potential CM and probable/possible WC cases based on injury and admission dates, birth date, gender and residence zip code identified few matched cases necessitating collection of medical records for more CM cases than anticipated. Findings based on linkages of the five data sets using personal and employer identifiers will be presented.

CONCLUSIONS (description of the main outcome of the study): Preliminary findings suggest that use of multiple data sources will identify substantially more cases than any single source, and more than the 210 cases estimated by the SOII for 2007-08. Multisource methods of surveillance improve our ability to characterize the problem but also pose many challenges. Completion of approvals for this study were time consuming but could be institutionalized for ongoing surveillance. Some additional challenges include: differences in scope of the data source (e.g. population covered, injury severity), data timeliness, variation in coding systems used across data sets, and multi-employer establishments. Medical record collection and review is very resource intensive and added value of collecting these records for all potential CM cases remains to be seen.

AUTHORS (list collaborator name, degree and agency): Letitia Davis, ScD, EdM, MA Dept of Public Health
Kathleen Grattan, MPH, MA Dept of Public Health
Lucy Bullock,BA, MA Dept of Public Health
Leslie Boden, PhD, Boston University

AUTHORS (FIRST NAME, LAST NAME): Letitia Davis

CONTROL ID: 1055415

TITLE: Using real-time Poison Control Center data for occupational injury sentinel event surveillance in Connecticut

CURRENT TOPIC: Successes, lessons learned, and challenges in occupational health surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The Connecticut Poison Control Center (CPCC) operates a 24-hour call center to provide information about chemical exposures and toxicology. In September 2010, the Connecticut Department of Public Health's Occupational Health Program (DPH) began accessing case-based information from CPCC on a real-time basis to identify workplace injuries related to chemical exposures.

METHODS (study design and appropriate statistical analysis): The CPCC call center receives calls from medical professionals and the general public regarding potential toxicity secondary to unintentional or intentional chemical exposures. These calls are received by specially trained call center staff, who provide information to callers and enter information about each call into a database. DPH staff are able to access information in this database remotely and in real-time to extract information on cases that are either generated from a workplace or about an exposure that occurred in a workplace and/or to a worker. DPH staff have identified a number of chemical exposure types that are indicative of sentinel events of interest and require investigation.

RESULTS (specific results in summary form): In the last quarter of 2010, DPH identified 127 work-related calls received by CPCC. Of those, 11 represented sentinel event cases of interest that have led to investigations. These investigations have included such events as a hydrogen sulfide exposure in an asphalt road crew, pool maintenance workers exposed to chlorine gas, and workers exposed to cyanide at a manufacturing facility.

CONCLUSIONS (description of the main outcome of the study): The ability to utilize CPCC call center data for real-time case-based occupational injury surveillance has added a significant component to CT DPH's overall occupational illness and injury surveillance system, and specifically a methodology that has been notably absent in the past. We anticipate that our ability to more effectively and efficiently use CPCC data for real-time work-related sentinel event surveillance will continue to improve in the future, as it is utilized more frequently.

AUTHORS (list collaborator name, degree and agency): Brian Testut, MS, RS, Connecticut Department of Public Health

David Kallander, PhD, Connecticut Department of Public Health

Thomas St. Louis, MSPH, Connecticut Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Brian Testut

CONTROL ID: 1056110

TITLE: Improving respiratory protection programs in California acute care hospitals: Pilot test of a resource toolkit for program administrators

CURRENT TOPIC: Sector-specific topics in occupational health

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): During the 2009-2010 H1N1 influenza pandemic, the use of respiratory protection among hospital personnel increased dramatically, in accordance with public health guidelines and a new California occupational standard for aerosol transmissible diseases (ATD). The National Institute for Occupational Safety and Health (NIOSH) contracted with the California Department of Public Health (CDPH) to conduct an assessment in winter 2010 of respirator use policies in 16 acute care hospitals. This project found that hospitals had followed the California ATD standard and CDC and CDPH guidelines in place at the time, by implementing N95 filtering facepiece respirator use; however, some deficiencies in written respiratory protection programs suggested areas to improve their effectiveness. NIOSH then initiated the current partnership with CDPH to develop, implement, and evaluate an intervention to improve hospital respiratory protection programs.

METHODS (study design and appropriate statistical analysis): CDPH industrial hygienists developed a toolkit of resources aimed at helping program administrators who are not trained health and safety professionals to implement an OSHA-compliant respiratory protection program and respirator use in accordance with the requirements of the California ATD standard. A pre-intervention respirator program evaluation checklist was completed with the program administrator from each of 17 northern California hospitals including those recruited from the previous project and one additional health care organization. The toolkit consists of a user-friendly booklet covering all requirements of a respiratory protection program and a DVD with electronic resources including a template for a written program, training videos and presentations, and useful Web links. The toolkit was provided to hospital personnel who attended a webinar for training on the intended use of the materials and resources.

RESULTS (specific results in summary form): Respiratory protection program administrators agreed to pilot test CDPH-developed materials and resources during January-March 2011, with CDPH available for any technical assistance needed. Participating hospitals agreed to provide feedback on what they find most helpful to improve their respiratory protection programs and suggestions to improve the materials. Their evaluation feedback will be supplemented by completing a post-intervention program evaluation checklist during a site visit to each hospital in April 2011 and interviews with additional managers and employees who are respirator users.

CONCLUSIONS (description of the main outcome of the study): Evaluation feedback from this pilot test and additional peer review of the developed materials by other entities (health care union and trade association representatives, health and safety professionals) will be used to develop revised materials for statewide distribution to the health care industry. NIOSH intends to further develop these tools for nationwide distribution.

AUTHORS (list collaborator name, degree and agency): Kate Durand, MPH, California Department of Public Health / Public Health Institute, Occupational Health Branch; Barbara Materna, PhD, California Department of Public Health, Occupational Health Branch; Debra Novak, RN, DSN, Ed Fries, MS, Maryann D'Alessandro, PhD, National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory.

AUTHORS (FIRST NAME, LAST NAME): Barbara Materna

CONTROL ID: 1061374

TITLE: *Safe Jobs for Youth*: Tailored, user-friendly materials for cooperative placement coordinators assessing worksite health and safety

CURRENT TOPIC: Other occupational health issues (i.e. underreporting)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): In Massachusetts participation in a cooperative education placement (co-op) is a requirement to graduate from a high school vocational program. The co-op coordinator is responsible for placing students in the worksite and overseeing the student's learning experience. As part of the placement, the coordinator is required to visit each worksite. Addressing the safety and health of students in co-ops is critical to both protect students and help ensure that students develop safety and health knowledge and skills during their work-based learning experience. However, few resources exist to help the coordinators assess health and safety in co-ops; existing worksite safety assessment tools are long and difficult for those without health and safety expertise to use.

METHODS (study design and appropriate statistical analysis): The Massachusetts Department of Public Health's Occupational Health Surveillance Program worked with the Massachusetts Association of Cooperative Education and Placement Coordinators to develop, *Safe Jobs for Youth*, a guidance manual to help the co-op coordinators assess the health and safety of a worksite. Before writing this manual, existing worksite assessment tools were reviewed. In addition, information was solicited from experienced worksite health and safety inspectors. Health and safety experts were enlisted to review draft checklists. The co-op coordinators provided initial input and feedback on drafts of materials; fourteen coordinators piloted the materials during fall 2010.

RESULTS (specific results in summary form): The completed *Safe Jobs for Youth* manual provides guidance to coordinators about communicating with employers, students, and parents prior to and during the co-op experience. The manual includes short checklists to be used during worksite visits for each Massachusetts vocational cluster (area of study), key questions to ask employers, laws and regulations, and tips for talking with students and parents. Results of the fall 2010 pilot will be presented.

CONCLUSIONS (description of the main outcome of the study): Experience to date underscores the challenges cooperative placement coordinators face in making health and safety assessments, the need for tailored, user-friendly, materials to help them in the process and their appreciation of our attention to this long-standing need. While this manual has been designed specifically for co-op coordinators placing youth in vocational education programs, there has been interest in adapting these materials for use by other professionals who place teens in jobs such as those responsible for summer jobs programs and school to career initiatives in comprehensive high schools.

AUTHORS (list collaborator name, degree and agency): Beatriz P. Vautin, MPH, Massachusetts Department of Public Health; Sara Rattigan, MS, Massachusetts Department of Public Health; Letitia Davis, ScD, Massachusetts Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Beatriz Vautin

CONTROL ID: 1061959

TITLE: Use of proxy variables to identify work-relatedness in hospitalization data

CURRENT TOPIC: Other occupational health issues (i.e. underreporting)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The NYS Hospital Discharge data set does not record whether injuries are work-related; therefore, a proxy variable must be utilized to conduct surveillance for work-related hospitalizations. The CSTE Occupational Health Indicators how-to manual uses the variable 'expected primary payer' equal to workers' compensation as the specified proxy. This study examined the ability to correctly measure the work-relatedness of a hospitalization using proxy variables.

METHODS (study design and appropriate statistical analysis): Medical records were requested from hospitals based on a random sample from the 2007 hospital discharge data where principle diagnosis was carpal tunnel syndrome or amputation. A total of 340 records were used for the analysis (188 carpal tunnel syndrome, 152 amputation). Work-relatedness from the medical records was compared to two hospital discharge database payment variables, and the sensitivity, specificity, positive and negative predictive values were assessed. Differences in the validity of the variables was also analyzed.

RESULTS (specific results in summary form): Based on the medical records, 22% of the hospitalizations in this sample were work-related, and the hospitalization database variables identified 16% as work related. Overall, using the expected principle reimbursement variable correctly identified 50% of work-related hospitalizations (95% CI: 38%, 62%), and use of the source of payment variable correctly identified 47% of work-related hospitalizations (95% CI: 36%, 59%). Results based on the stratification will also be discussed.

CONCLUSIONS (description of the main outcome of the study): The results of this study indicate that a large percentage of hospitalizations that are work-related are being missed by these proxy variables.

AUTHORS (list collaborator name, degree and agency): Kitty Gelberg, PhD, MPH, NYS Department of Health;
Sybil Wojcio, NYS Department of Health

AUTHORS (FIRST NAME, LAST NAME): Sybil Wojcio

CONTROL ID: 1062462

TITLE: Surveillance of work-related hospitalized amputations through pooled data sources

CURRENT TOPIC: Other occupational health issues (i.e. underreporting)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Work-related injuries are often estimated from a single data source. There are numerous reasons any one data source potentially fails to capture all work-related injuries: certain populations fall outside the scope of any one system; not all injuries meet a system's case definition; and cases may not be disclosed to the system by reporting parties. Recent efforts to improve surveillance of workplace injuries and illnesses have focused on utilizing multiple data sources for the estimation or enumeration of cases. In a pilot study of this multi-data source approach, we attempt to identify work-related hospitalized amputations from two Washington State-based data sources: the workers' compensation database and hospital discharge data.

METHODS (study design and appropriate statistical analysis): The Washington State Department of Labor and Industries state funded workers' compensation data and the Washington State Department of Health's Comprehensive Hospital Abstract Reporting System (hospital discharge data) were linked using common worker and injury characteristics. Amputations were identified within the workers' compensation data from injury classification codes, key words in injury descriptions, diagnosis, and medical procedure codes. Amputation-related ICD-9 codes entered in the primary diagnosis or primary procedure fields were used to identify cases within the hospital discharge data. For cases identified from the hospital discharge dataset, work-relatedness was ascertained from the primary payer field. Unique cases of work-related amputations with hospitalizations in 2006 through 2008 were identified from the combined dataset which was then analyzed for total number of hospitalized work-related amputations and case ascertainment by data source.

RESULTS (specific results in summary form): Approximately 80% of hospitalized amputations were captured by the workers' compensation system; half were captured by the hospital discharge data. The workers' compensation data uniquely contributed approximately 10% of all cases while over 15% of the total was identified solely in the hospital discharge data. Based on primary diagnosis and procedure codes, approximately half of the matched cases were classified as something other than amputations in the hospital discharge data.

CONCLUSIONS (description of the main outcome of the study): Hospital discharge data contributed unique cases to amputations identified from the workers' compensation data. These are likely amputations among workers not covered by the Washington State state funded workers' compensation system including workers whose employers self insure, the self-employed, and federal and military employees. However, the contribution is limited to injuries requiring hospitalization, which was observed to be approximately 10% of all amputations identified from the workers' compensation system.

AUTHORS (list collaborator name, degree and agency): Sara Wuellner, MPH

Darrin Adams, BS

David Bonauto, MD MPH

Washington State Dept. Labor & Industries, SHARP Program

AUTHORS (FIRST NAME, LAST NAME): Sara Wuellner

CONTROL ID: 1062562

TITLE: Current Population Survey (CPS)'s Utility for Occupational Health Surveillance

CURRENT TOPIC: Other occupational health issues (i.e. underreporting)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The CPS has been the primary source of labor force statistics for the United States since 1947. The Census Bureau and Bureau of Labor Statistics jointly conduct the CPS as a population-based, in-person survey of ~57,000 households, representative of the U.S. civilian non-institutionalized population. Monthly, a core set of survey questions is administered to each household including variables on economic well-being, employment, multiple job-holders, absences, employment status (full-time, part-time), and wages. The strengths of the CPS include these labor force data, as well as demographic data.

Supplemental questions on selected topics are administered intermittently. Because the survey is repeated 8 times, CPS interviewers build a relationship with households and obtain a high response rate (94%). Previous and current supplements include: contingent and alternative work arrangements, computer and internet use, and displaced workers. As part of this project, we will be exploring the feasibility of including a supplement on Occupational Safety and Health.

METHODS (study design and appropriate statistical analysis): January 2008 CPS Public use data, including a Displaced Worker, Employee Tenure, and Occupational Mobility supplement were downloaded from the National Bureau of Economic Research(NBER). SAS was used to compute frequencies for basic monthly CPS variables, as well as supplement variables including number of workers displaced, job-changers and mobile workers, stratified by industry sector. Data are currently unweighted to explore whether sufficient numbers exist for more extensive analysis.

RESULTS (specific results in summary form): The January CPS included 151,937 total records with 134,163 interviews. This included 106,549 civilians age 15 or older and 62,569 employed individuals. As expected the largest number of respondents' primary job was in the Services sector with approximately 32,733 interviews followed by wholesale and retail trade with 10,122 and 8,561 individuals in the healthcare and social assistance sector. 88,894 individuals met the requirements to complete the Displaced Worker supplement and 57,444 to complete the Employee Tenure and Occupational Mobility Supplement.

CONCLUSIONS (description of the main outcome of the study): Data on economic well-being during the current recession and economic recovery is very important as is utilizing all data that are available to understand American workers' experience. The CPS is a rich source of information on workers and their job experiences and economic well-being is important to health. The CPS as a National population-based survey merits further exploration, especially for looking at population differences by race and ethnicity and work organization factors that may not be captured in nonpopulation-based surveys.

AUTHORS (list collaborator name, degree and agency): Rui Shen, PhD SRA International, Inc.
Marie Haring Sweeney, PhD, NIOSH/DSHEFS

AUTHORS (FIRST NAME, LAST NAME): Andrea L. Steege

CONTROL ID: 1065429

TITLE: Return to Work --Physician's Perspective

CURRENT TOPIC: Other occupational health issues (i.e. underreporting)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): There is general consensus regarding proper "return to work" processes, minimizing temporary and long term disability in injured workers. A consequence of being away from work increases the risk of delayed recovery, loss of financial security, loss of emotional and psychological support from co-workers, depression, anxiety and other psychiatric sequelae, deconditioning and weight gain, as well as family dysfunction as shown by studies.

METHODS (study design and appropriate statistical analysis): Effective and safe return to work requires all parties in the Worker's Comp system working together as a team. This includes employee's motivation, employers' "return to work" program, physician's orders, and adjusters supporting management. Employee motivation is closely related to the treating physician. Patient education starts during the first visit. It is also important for physicians to write effective modified duty orders, and to closely follow up the injured worker and to incrementally progress the work capacity to full duty. Communications among the team often helps.

RESULTS (specific results in summary form): This presentation discusses the importance of being physically and mentally at work, and from physician's perspective, to support the return to work process. Using actual clinical cases, this discussion supports current study findings that proper return to work benefits injured workers and employers alike. The Physician is a key team leader in this effort.

CONCLUSIONS (description of the main outcome of the study): There are physician's roadblocks in considering patient safety and satisfaction, and patient's roadblocks in fear of being more injured, coworkers' and management's attitude. Patient education should focus on "activity" rather than "work", on ability rather than disability. Practice of "evidence based medicine" helps the injured worker understand the nature of their injury and/or illness. Engaging patients in their clinical decision making helps to break down the roadblocks.

AUTHORS (list collaborator name, degree and agency): Dr. Hong Zhang, MD
Director, Concentra Medical Center

AUTHORS (FIRST NAME, LAST NAME): Hong Zhang

CONTROL ID: 1059294

TITLE: Rabies vaccination coverage among wildlife workers—National Park Service, 2009

CURRENT TOPIC: Other occupational health issues (i.e. underreporting)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Human rabies is a preventable zoonotic disease that is invariably fatal after symptom-onset. Although the Advisory Committee on Immunization Practices (ACIP) recommends rabies pre-exposure prophylaxis for persons who handle wildlife and other high-risk occupations, adherence to these recommendations is not well described.

METHODS (study design and appropriate statistical analysis): In 2009, we surveyed National Park Service biologists and other wildlife workers about lifetime receipt of rabies vaccine, titer history, exposures to wildlife, and basic demographics. We grouped respondents into 3 exposure categories based on Centers for Disease Control and Prevention (CDC) definitions and the 2008 rabies reservoir map. 1) Frequent exposure included all respondents who handled bats and those who worked with rabies-susceptible animals in enzootic areas. 2) Infrequent exposure included respondents who worked with rabies-susceptible animals in non-enzootic areas. 3) Rare exposure included all others. We assessed characteristics associated with receipt of rabies vaccine and/or titer checks.

RESULTS (specific results in summary form): Among 238 respondents, the median age was 40 years (range 19-65), 58% were male, 57% had >10 years of experience working with wildlife, and 64% were wildlife biologists or technicians. Lifetime rabies vaccination coverage was 29% for all respondents, 35% for frequent exposure (n=118), 25% for infrequent exposure (n=97), and 22% for rare exposure (n=23). Overall, compared to non-vaccinated respondents, employees who were vaccinated were more likely to have reported having a zoonotic disease in their lifetime (17% vs. 7%, p=0.04) or to have been bitten by a wild animal (16% vs. 7%, p=0.02). Most vaccines were given as pre-exposure prophylaxis. Of frequent-exposure respondents who were vaccinated and reported titer history, only 15 of 37 (40%) had their titers checked in the past 2 years, as recommended by ACIP.

CONCLUSIONS (description of the main outcome of the study): Rabies vaccination coverage among wildlife workers is low, even for those with frequent exposure who handle rabies-susceptible animals in enzootic areas. Further research is needed to identify barriers contributing to low vaccination rates and to develop appropriate interventions at the policy, management, and individual levels.

AUTHORS (list collaborator name, degree and agency): Amy Chanlongbutra, MPH, National Park Service

Adam Kramer, MPH, National Park Service

Stacey Anderson Bosch, DVM, MPH, Dipl ACVPM, Centers for Disease Control and Prevention

Karl Musgrave, DVM, MPH, Wyoming Department of Health

David Wong, MD, National Park Service

AUTHORS (FIRST NAME, LAST NAME): Amy Chanlongbutra

CONTROL ID: 1054850

TITLE: Possible work-related asthma: Should they be diagnosed with work-related asthma? Evidence from the Asthma Call-Back Survey, 33 states and District of Columbia, 2006 and 2007

CURRENT TOPIC: Occupational lung diseases

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): A discrepancy exists between patients' perception and physician recognition of the association of asthma with work. The proper diagnosis of work-related asthma (WRA) requires careful clinical assessment for a possible role of workplace exposures in asthma onset or exacerbation. The objective of this study was to identify factors associated with health professional diagnosis of WRA among adults who have possible WRA.

METHODS (study design and appropriate statistical analysis): We analyzed data from the 2006 and 2007 Behavioral Risk Factor Surveillance System (BRFSS) Asthma Call-back Survey (ACBS) from 33 states and District of Columbia for ever-employed adults (aged ≥ 18 years) with current asthma who had possible WRA. Possible WRA cases were those who reported that their asthma was caused or made worse by chemicals, smoke, fumes or dust in a current or any previous job. WRA cases were individuals with a lifetime health professional diagnosis of WRA. We developed separate logistic regression models examining the associations of WRA diagnosis with various outcomes adjusted for age and sex.

RESULTS (specific results in summary form): An estimated 47.5% of ever-employed adults with current asthma had possible WRA. Of these, 19.2% had health professional diagnosis of WRA. Those who were diagnosed by a health professional with WRA were significantly more likely than those who were not diagnosed to be 45–64 years old (prevalence ratio [PR]=1.4, 95% confidence interval [CI]=1.2–1.6), have an annual household income $\leq \$15,000$ (PR=1.4, 95% CI=1.1–1.8), be currently not employed (PR=1.2, 95% CI=1.1–1.4), have very poorly controlled asthma (PR=1.3, 95% CI=1.1–1.5), have an asthma attack (PR=1.2, 95% CI=1.0–1.3), emergency room visit (PR=1.4, 95% CI=1.1–1.8), hospitalization (PR=1.7, 95% CI=1.2–2.6), or urgent treatment for asthma (PR=1.5, 95% CI=1.3–1.8) in the past year, and change or quit a job due to asthma related to work (PR=2.5, 95% CI=2.1–2.9). There were no differences in prevalence of health professional diagnosis of WRA by sex, race/ethnicity, education, insurance status, or smoking status.

CONCLUSIONS (description of the main outcome of the study): Individuals with possible WRA who have health professional-diagnosed WRA have similar demographic characteristics as those without health professional-diagnosed WRA. However, health professional-diagnosis of WRA is associated with poorer asthma control and adverse asthma health outcomes. These results suggest that in some patients the increased severity of asthma symptoms and the increased need for medical attention play a role in physician diagnosis of WRA.

AUTHORS (list collaborator name, degree and agency): Gretchen E. Knoeller,^{1,2} MPH, Jacek M. Mazurek,² MD, MS, PhD, Jeanne E. Moorman,³ MS

¹ Association of Schools of Public Health/Centers for Disease Control and Prevention (CDC) Public Health Fellow

² National Institute for Occupational Safety and Health, CDC

³ National Center for Environmental Health, CDC

AUTHORS (FIRST NAME, LAST NAME): Gretchen Knoeller

CONTROL ID: 1055715

TITLE: Work-related asthma in women: Surveillance data from California, Massachusetts, Michigan, and New Jersey, 1993–2006

CURRENT TOPIC: Occupational lung diseases

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Over 17.5 million U.S. adults aged ≥ 18 years are estimated to have current asthma. Compared with adult men, adult women have a greater prevalence of current asthma (8.4% vs. 4.9%) and asthma attacks (4.8% vs. 3.5%). An estimated 15%–25% of adult asthma is attributable to workplace exposures (i.e., work-related asthma, WRA). Information about WRA in women is limited. The objective of this study was to identify industries, occupations, and agents most frequently associated with WRA in women.

METHODS (study design and appropriate statistical analysis): We used state-based sentinel surveillance data on confirmed WRA cases collected from California, Massachusetts, Michigan, and New Jersey during 1993–2006. Information on industry and occupation was coded using the 2002 North American Industry Classification System and the 2000 U.S. Bureau of the Census Occupation Codes, respectively. Up to three putative agents may be reported for a single case of WRA. Agents were coded and grouped using the Association of Occupational and Environmental Clinics exposure coding scheme.

RESULTS (specific results in summary form): Of the 6,762 reported WRA cases, 4,000 (60%) were women. Of these, 2,125 (53%) were classified as asthma caused by workplace exposure to sensitizers or irritants (new-onset asthma), 949 (24%) as preexisting asthma exacerbated by workplace exposures (work-aggravated asthma), and 926 (23%) had insufficient data to classify asthma type. Of 20 industries reported by women with WRA, the top three industries were health care and social assistance (1,139; 29%), manufacturing (870; 22%), and educational services (475; 12%). Of 22 occupations reported by women with WRA, the top three occupations were office and administrative support (811; 20%), production workers (647; 16%), and health care practitioners (550; 14%). Overall, women WRA cases reported exposure to 110 different agents. Most frequently reported agent groups were miscellaneous chemicals (888 cases; 22%), cleaning materials (703 cases; 18%), and indoor air pollutants (608 cases, 15%).

CONCLUSIONS (description of the main outcome of the study): Over half of WRA cases in women are new-onset asthma indicating that workplace exposure plays an important role in the development of asthma. The identification of exposures associated with asthma in the workplace improves the ability to eliminate and/or control these exposures and, consequently, improve worker prognoses and prevent asthma in coworkers. The results presented here can be used to inform public health interventions to reduce workplace risks of asthma in women.

AUTHORS (list collaborator name, degree and agency): Christen Seaman,¹ MS, MPH, Margaret S. Filios,¹ SM, RN, Jacek M. Mazurek,¹ MD, MS, PhD, Jennifer Flattery,² MPH, Robert J. Harrison,² MD, MPH, Mary Jo Reilly,³ MS, Kenneth D. Rosenman,³ MD, Daniel Lefkowitz,⁴ PhD, Elise Pechter,⁵ MPH, CIH, Kathleen Fitzsimmons,⁵ MPH, Letitia K. Davis,⁵ EdM, ScD

¹ National Institute for Occupational Safety and Health (NIOSH), ² California Department of Public Health, ³ Michigan State University, ⁴ New Jersey Department of Health and Senior Services, ⁵ Massachusetts Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Christen Seaman

CONTROL ID: 1019153

TITLE: Asbestosis: Summary of the condition and review of hospitalization data in Louisiana, 1999-2009

CURRENT TOPIC: Occupational lung diseases

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Asbestosis is a debilitating, chronic lung disease with no known treatment that most commonly occurs among workers in certain occupational settings. As a condition highly associated with occupational exposure, its incidence has been affected by changes in industry standards; in particular, the ban on new uses of asbestos, both production and use of asbestos fibers put in place during the past 20 to 30 years, have significantly reduced occupational exposures. Despite these restrictions, asbestos products can currently be found in the construction, automotive, railroad, textile and shipbuilding industries due to its favorable chemical properties, particularly in Louisiana. Various health outcomes are associated with asbestos exposure including asbestosis, pleural plaques and effusions, carcinomas, and mesothelioma. The objective of this paper is to understand the impact of asbestosis in Louisiana and to encourage physicians to obtain a comprehensive occupational and environmental history for identifying people at risk from previous exposures.

METHODS (study design and appropriate statistical analysis): A retrospective review of asbestosis hospitalizations using Louisiana Hospital Inpatient Discharge Data (LAHIDD) from 1999-2009 was conducted. Records were selected if they had an ICD-9 diagnostic code of 501 (asbestosis) as either a primary or secondary diagnosis and were at least 16 years of age. Repeat admissions and patients who were not residents of Louisiana were excluded. Annual, age standardized rates were calculated by dividing the total number of identified asbestosis hospitalizations by Louisiana's population age 16 years and older for the same calendar year and standardized using the U.S. 2000 population. Population data were obtained from the U.S. Census Bureau of Population Estimates of the years 2000-2009 and the Current Population Survey for year 1999. SAS 9.1 software was used to perform linear regression to determine trends of age-standardized rates of asbestosis hospitalizations, ANOVA and independent T-test were used to compare sex, age, race and geographical differences. A $p < 0.05$ for a two sided hypothesis testing was considered statistically significant.

RESULTS (specific results in summary form): Results indicate that rates of asbestosis hospitalizations have remained high, but steady over the 11-year period with approximately 295 cases per year. Louisiana's rate is two times higher than the US rate ($p < 0.0001$). White males had consistently higher rates of hospitalizations than blacks and females ($t = 9.2$ $p < 0.00001$, $t = 23.5$ $p < 0.00001$), respectively. Adults aged 75-84 years had the highest rates of asbestosis hospitalizations (62.5 residents per 100,000 residents) compared to all age groups while adults aged 35-44 years had the lowest rate (0.15 hospitalizations per 100,000 residents) and cases are clustered geographically.

CONCLUSIONS (description of the main outcome of the study): Historic asbestos uses in Louisiana, such as shipbuilding, may have resulted in an increase asbestos exposure to Louisiana residents in comparison with other states as reflected in Louisiana's significantly elevated rate. Although it is expected that hospitalization rates increase with age, the racial and geographical differences are surprising. It is expected that the hospitalization rate will remain high due to asbestosis long latency period and relatively recent ban on new uses. However, current risk of exposure is still a concern due to many asbestos containing products still being used which does not fall underneath the ban.

Improved reporting of patients' occupational history by healthcare providers will allow public health officials to identify and monitor high risk occupations and exposures associated with asbestosis.

AUTHORS (list collaborator name, degree and agency): Cassandra Davis, MPH, Louisiana Department of Health and Hospitals, Office of Public Health

AUTHORS (FIRST NAME, LAST NAME): Cassandra Davis

CONTROL ID: 1061995

TITLE: Piloting use of workers' compensation data for case-based surveillance and prevention of work-related amputations in Massachusetts

CURRENT TOPIC: Occupational health surveillance and OSHA priorities

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Work-related amputations are serious injuries that warrant worksite follow-up to assure that hazards are abated and risks eliminated. Health departments that have access to amputation reports can engage with intervention partners so that hazards are investigated and corrected. The Massachusetts Department of Public Health (MDPH) is collaborating with OSHA to pilot use of workers' compensation (WC) data for case-based surveillance and worksite follow-up of work-related amputations in Massachusetts.

METHODS (study design and appropriate statistical analysis): Lists of lost time claims filed with the state WC agency are provided weekly to MDPH. These reports include personal and employer identifiers, dates of injury and nature of injury and body part codes, but no narrative descriptions of the events. Amputations are identified using ANSI code 100 for amputation. Initial MDPH telephone follow-up with a small sample of employers found that many were miscoded and not amputations, raising concerns about referrals. OSHA, however, agreed to proceed with the pilot. Cases are reviewed weekly by MDPH and eliminated if the body part associated with the amputation is implausible e.g. head, torso, etc. Remaining cases are reviewed to determine if there is sufficient information to locate the workplace and assess if the employer is covered under OSHA jurisdiction. If so, referrals identifying the amputation injury and employer name and address are made to OSHA. Feedback is obtained from OSHA to assess: occurrence of amputation injury, hazards associated with the injury, and the usefulness of the referral to OSHA in targeting their enforcement resources.

RESULTS (specific results in summary form): To date, 20 of 59 amputations have been referred for investigation. Only one of these injuries was known to the OSHA area offices prior to the referrals. Some referrals were unproductive because they identified workplaces outside of OSHA jurisdiction, or OSHA could not locate the workplace. Referrals that resulted in inspections were deemed very useful to OSHA, regardless of whether the injury was an amputation. Additional findings based on 6 months pilot will be presented.

CONCLUSIONS (description of the main outcome of the study): Referrals of amputation injuries identified through WC to OSHA have led to targeted visits to employers, resulting in identification and abatement of safety hazards. Findings underscore that serious injuries are sentinels that other workers may be at risk and health department can engage with enforcement partners to reduce hazards in workplaces. These preliminary findings also reveal problems with injury coding in the Massachusetts WC database. More complete narrative information in the WC records available to MDPH quarterly, while less timely, should be used for population-based surveillance.

AUTHORS (list collaborator name, degree and agency): Elise Pechter MPH, CIH

Letitia K. Davis ScD, EdM

Occupational Health Surveillance Program

Massachusetts Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Elise Pechter

CONTROL ID: 1060425

TITLE: Tracking 2009 Work-Related Burns in Michigan

CURRENT TOPIC: Occupational health surveillance and OSHA priorities

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Occupational burns are serious but potentially preventable injuries. For 2009, the BLS Survey of Occupational Injuries and Illnesses (SOII) estimated there were 19,450 burns (14,710 thermal and 4,740 chemical) in the US. In 2009, Michigan initiated multi data source surveillance of work-related burns in 2009.

METHODS (study design and appropriate statistical analysis): Records from Michigan's hospitals/emergency departments(EDs), Worker Compensation Bureau and the state's sole Poison Control Center (PCC) were used to identify occupational burns. All hospitals/EDs received a letter in February 2010 notifying them they were required to report all individuals treated for burns in 2009. Discharge summaries and ED evaluations were reviewed to differentiate the work and non work-related burns. Companies where individuals were hospitalized or had 2nd or 3rd degree burns that occurred within six months of identification were scheduled for an OSHA enforcement inspection. Individuals whose workplace could not be identified in the records received were contacted to obtain the employer information.

RESULTS (specific results in summary form): There were 122 individuals from the PCC, 280 individuals from the Michigan's Worker Compensation Bureau, and 1,134 individuals from hospitals/EDs with occupational burns. There were another 904 individuals with non work-related burns, and 116 individuals where the cause of the burn was not identified in the hospital/ED records. Four of the 134 hospitals have yet to report and we estimate that there will be another 90 work-related burns. Among the individuals identified with work-related burns from hospitals/EDs, the demographics were: men (59.1%); age range 15-68; Caucasians (88.2%) and African American (6.2%); thermal (66.8%), chemical (25.3%), electrical (4.8%), radiation (1.9%), and other (1.2%); first degree (40.0%), second degree (54.8%), third degree (5.1%), and fourth degree (0.1%); wrist(s) and hand(s) (35.1%), upper limb (22.6%) and head, face, and neck (12.5%); Accommodation and Food Services (NAICS 72) (37%), Health Care and Social Assistance (NAICS 62) (16%), Metal Manufacturing (NAICS 33) (7%), Retail Trade (NAICS 44) (5%); ED visits (90.3%), outpatient visits (6.4%) and hospitalizations (3.3%). To date, MIOSHA has investigated three companies whose employees sustained a burn on the job.

CONCLUSIONS (description of the main outcome of the study): We identified work-related burns in 2009 in Michigan from the PCC, Worker's Compensation and hospital/ED data in comparison to the 380 burns in the BLS SOII system. We identified 1,134 – 1,536 work-related burns. The Michigan multidata source surveillance system identified 3 to 4 fold more burns than in the BLS employer based system and is being used to identify individual employers for inspections.

AUTHORS (list collaborator name, degree and agency): Joanna Kica, MPA

Kenneth D Rosenman, MD

Michigan State University

Department of Medicine

Occupational and Environmental Medicine

AUTHORS (FIRST NAME, LAST NAME): Joanna Kica

CONTROL ID: 1058219

TITLE: Musculoskeletal Pain Reported by Crop Workers in the United States, 1999-2004

CURRENT TOPIC: Occupational health disparities

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Musculoskeletal pain is a major concern for hired crop workers in the United States (US), although national data on the extent of the problem is limited. This study analyzed farm work-related musculoskeletal pain reported by these workers from the National Agricultural Workers Survey (NAWS).

METHODS (study design and appropriate statistical analysis): Data were collected through the NAWS for the federal fiscal years 1999 through 2004. Farm workers were asked to report the number of episodes of farm work musculoskeletal pain resulting in restricted work activity in the last calendar year. Demographic characteristics and rate estimates (both prevalence and incidence) of farm work-related musculoskeletal pain were derived from a sample of 20,301 crop farm workers. SAS survey software was used to conduct the analyses to account for the complex NAWS sampling design.

RESULTS (specific results in summary form): The annual average prevalence of farm work-related musculoskeletal pain was 18.3%. Crop workers with farm work-related musculoskeletal pain reported an average of 1.45 complaints per year, resulting in an annual average incidence rate of 43.3 complaints per 100 FTEs. Males accounted for the greatest number of musculoskeletal complaints (70%) while females had the highest prevalence (22.9% of female workers) and incidence rate (67.9 complaints per 100 FTEs). By age, crop workers 20-39 years of age accounted for the majority of the musculoskeletal complaints (55%) although the prevalence was highest for workers over 59 years old (27% of worker over 59). The highest incidence rate for musculoskeletal pain was found for workers less than 20 years old (61.6 complaints per 100 FTE), followed by workers over 49 years old (54.1 per 100 FTE). The most common part of the body with pain was the back (45%), followed by the lower extremities (19%), and the neck/shoulders (14%). Musculoskeletal pain to the back accounted for an estimated 217 restricted work days per 100 workers.

CONCLUSIONS (description of the main outcome of the study): Musculoskeletal pain is a major occupational health problem for hired crop workers in the United States, impacting 18% of this workforce annually, and resulting in an estimated 19 days of restricted work activity for each complaint. Increased risk was seen for female crop workers, workers less than 20 years old, and workers over 49 years old. The results of this study are useful for targeting intervention efforts and future research needs for this unique worker population.

AUTHORS (list collaborator name, degree and agency): John Myers, MS, NIOSH, Division of Safety Research
Larry Layne, MA, NIOSH, Division of Safety Research
Shuhui Wang, MS, AdvanceMed Corporation

AUTHORS (FIRST NAME, LAST NAME): John Myers

CONTROL ID: 1060642

TITLE: Young worker health and safety: In their own words

CURRENT TOPIC: Occupational health disparities

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Young workers, including adolescents (age 15-19 years) and young adults (age 20-24 years) are at higher risk for experiencing workplace injuries. Some explanations for this disparity have been documented, but many analyses omit the perspectives and experiences of young workers themselves.

METHODS (study design and appropriate statistical analysis): We conducted four focus groups with young workers aged 15-24 years old in Oregon in 2011 (total n=40). Young workers were recruited through collaboration with Oregon Young Employee Safety coalition members, including a charter high school focusing on architecture, construction and engineering, and a local chapter of a national labor union. We organized the focus groups as a pilot project to explore the feasibility of qualitative work with these partners, and to learn more about young worker perspectives on injury risk, workplace safety, and effectiveness of coalition activities. Each participant completed a demographic and work experience survey before the focus group discussion. The groups were recorded and transcribed, and coded for emergent themes by two independent reviewers. The themes were summarized and representative statements were chosen to illustrate each theme.

RESULTS (specific results in summary form): The young worker participants discussed their views on typical places of employment for themselves and peers, the main dangers and issues they face at work, the utility of safety and health information provided in the workplace and online, and potential actions they could take to stay safe while working. They also provided feedback on Oregon Young Employee Safety coalition current and proposed activities, such as an annual video contest, social media posts, a youth advisory board, internships, and event planning and participation.

CONCLUSIONS (description of the main outcome of the study): Young workers continue to be at higher risk for occupational injuries. Our results show that specific interventions may be needed for older teen and young adult workers to reduce the rate of injury for these age groups. Qualitative practices, such as focus groups, are feasible and add valuable information to our understanding of why specific disparities persist and suggest possible interventions to reduce young worker injury rates in Oregon.

AUTHORS (list collaborator name, degree and agency): Jae P. Douglas, MSW, PhD, Oregon Health Authority
Mandy K. Green, MPH, Oregon Health Authority

Erika Zoller, MPH, Oregon Health & Science University

AUTHORS (FIRST NAME, LAST NAME): Mandy Green

CONTROL ID: 1058214

TITLE: Injuries to Hired Crop Workers in the United States

CURRENT TOPIC: Occupational health disparities

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Little empirical data are available examining the injury experience of hired crop workers in the United States (US). This study analyzed work-related injury data collected on these workers from the National Agricultural Workers Survey (NAWS).

METHODS (study design and appropriate statistical analysis): Data were collected through the NAWS for the federal fiscal years 1999, 2002, 2003 and 2004. These data provided descriptive injury characteristics and rate estimates from a sample of 13,604 crop farm workers. SAS survey software was used to conduct the analyses to account for the complex NAWS sampling design

RESULTS (specific results in summary form): The worker-based injury rate was 2.6 injuries per 100 workers. When accounting for the number of weeks of farm work, the injury rate was 4.3 injuries per 100 full-time equivalents (FTEs). Injury rates per 100 FTEs did not vary significantly by age of the crop worker. The majority of the injuries occurred to male (84%) and Mexico-born (72%) workers. Settled farm workers accounted for the most injuries reported in the NAWS (60%), while shuttle migrants (those who travel more than 75 miles to find work, but do not migrate further once they have found work) had the highest injury rate at 7.2 injuries/100 FTEs. Workers reporting one or more health condition and workers reporting one or more musculoskeletal complaint had significantly higher injury rates compared to those with no health conditions or musculoskeletal complaints, respectively. Common injury events were overexertion from lifting (20%), being struck by hand held objects (13%), and falls to a lower level (10%). Injuries due to falls to a lower level accounted for the highest average number of restricted workdays (45 days).

CONCLUSIONS (description of the main outcome of the study): The use of hand tools, falls, and lifting overexertion injuries were identified as significant causes of injury among hired crop workers. Increased injury risk was also seen for crop workers with existing health or musculoskeletal complaints. FTE-based injury rates differed significantly from worker population-based rates and were more meaningful in assessing injury risks for hired crop workers. These results are useful for targeting injury prevention efforts and future research needs for this unique worker population.

AUTHORS (list collaborator name, degree and agency): Shuhui Wang, MS, AdvanceMed Corporation

John Myers, MS, NIOSH, Division of Safety Research

Larry Layne, MA, NIOSH, Division of Safety Research

AUTHORS (FIRST NAME, LAST NAME): John Myers

CONTROL ID: 1061831

TITLE: Business Practices During the 2009 Influenza A (H1N1) Pandemic -- Wisconsin, 2009

CURRENT TOPIC: Local/Regional occupational health issues

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Because knowledge is limited regarding use and effectiveness of workplace-based influenza prevention strategies, we surveyed Wisconsin businesses to assess preventive measures used and impact from employee absenteeism during the 2009 pandemic influenza A (H1N1) outbreak.

METHODS (study design and appropriate statistical analysis): We partnered with Wisconsin Manufacturers and Commerce to survey businesses and local Chambers of Commerce (CCs), representing all industry sectors and business sizes. We evaluated employee absenteeism impact on business operations during April–December 2009 by industry sector, business size, and pH1N1 prevention strategy implementation. We assessed prevalence of the use of pH1N1 planning information sources (e.g., Internet sites, local health departments, healthcare providers, and mass-media).

RESULTS (specific results in summary form): Thirty-two CCs forwarded the survey to 23,196 businesses; 458 respondents (2%) reported a range of 1–15,000 employees. Impact from employee absenteeism was evaluated by 389 (85%) respondents who reported none (46%), minimal (48%), and moderate/severe impact (6%). Those reporting any impact from absenteeism differed by major industry, including 21% construction, 66% healthcare, and 94% educational services. Compared with small businesses (<20 employees), larger businesses had greater odds of having a pH1N1 plan (odds ratio [OR]: 9.1; 95% confidence interval [CI]: 5.5–14.8) and a paid sick-leave policy (OR: 5.5; 95% CI: 3.5–8.7), but also had greater odds of reporting an impact from absenteeism (OR: 3.8; 95% CI: 2.4–6.0). pH1N1 planning information sources used by the majority of businesses included mass-media (90%), healthcare providers (74%), and local health departments (74%); state/federal government sources were used less.

CONCLUSIONS (description of the main outcome of the study): Although the majority of businesses reported some impact from employee absenteeism, it was usually minimal. Lack of pandemic planning might make small businesses vulnerable during future pandemics. Pandemic guidelines should target information by business size and industry sector.

AUTHORS (list collaborator name, degree and agency): Jevon McFadden, MD, MPH, Centers for Disease Control and Prevention, Epidemic Intelligence Service;

Pamela Rogers, MPH, Wisconsin Division of Public Health;

Henry Anderson, MD, Wisconsin Division of Public Health;

Betsy Cadwell, MSPH, Centers for Disease Control and Prevention

AUTHORS (FIRST NAME, LAST NAME): Jevon D. McFadden

CONTROL ID: 1055917

TITLE: Mycobacterium avium complex Respiratory Disease from Aerosolized Water Exposure in Spa Workers in New Mexico

CURRENT TOPIC: Local/Regional occupational health issues

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Two cases of lab-confirmed Mycobacterium avium complex (MAC) infection were reported to the New Mexico Department of Health. The two cases worked for the same employer, a spa with several outdoor tubs. Because of the suspected work-related nature of the illnesses, the cases were reported to the New Mexico Occupational Health Surveillance Program (NMOHSP), Epidemiology and Response Division (ERD) in February, 2010. The symptoms, exposures, and presence of MAC in the two workers were indicative of hot tub lung, a hypersensitivity pneumonitis (HP) – like granulomatous lung disease with non-tuberculous mycobacteria (NTM), that can occur from exposure to water aerosols from hot tubs and spas, therapy pools, showers, and indoor swimming pools.

METHODS (study design and appropriate statistical analysis): The NMOHSP contacted both the state OSHA and the NM Environment Department (NMED) Swimming Pool Program to collaborate on the investigation. The NMOHSP then 1) obtained medical records on the two MAC-positive patients 2) conducted in-person and telephone interviews with current and former employees to determine if there were further cases, and 3) conducted an observational investigation of the spa. From job tasks described by the participants, workers were categorized into three exposure level categories. A one-way analysis of variance (ANOVA) comparing the mean number of symptoms by exposure category was performed to assess if there was a significant difference among the three categories. In addition, water and biofilm swab samples were analyzed for MAC, then compared to sputum cultures from the two reported cases.

RESULTS (specific results in summary form): The ANOVA comparing the mean number of symptoms by exposure category resulted in a p-value of 0.008, with mean symptoms increasing with exposure. All current workers with water exposure were interviewed and no other confirmed cases were found. Pulsed-field gel electrophoresis (PFGE) of the tested patient isolates revealed diverse band patterns. Two environmental isolates, one from a cartridge filter in the cleaning process and another from a cold-water tub, were closely related to one of the patients.

CONCLUSIONS (description of the main outcome of the study): The cases of MAC in the two workers were found to be associated with spray cleaning of dirty spa cartridge filters. Extensive collaboration with NMED Pools Program, NM-OSHA, internal DOH, CDC Environmental Microbiology Lab and NIOSH resulted in primary work practice recommendations, prevention recommendations, as well as lessons learned about interagency communication in response to occupational health issues.

AUTHORS (list collaborator name, degree and agency): Stephanie Moraga-McHaley, MS., NM Department of Health
Janice Frustaglia, RN,BS,CCM,COHN-S, NM Department of Health

AUTHORS (FIRST NAME, LAST NAME): Jan Frustaglia

CONTROL ID: 1061814

TITLE: Nonfatal occupational injuries—a comparison of two national surveillance systems, 1998-2009

CURRENT TOPIC: Linking surveillance to action: Interventions and policy change at the local, state, and national level

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The U.S. Bureau of Labor Statistics (BLS) annually conducts the Survey of Occupational Injuries and Illnesses (SOII) based on employer records. For 2009, the SOII estimated 3.3 million cases in U.S. private industry. The SOII omits selected categories of workers such as the self employed and workers on small farms. One concern about the SOII has been the suspected underreporting of injuries and illnesses by employers.

The National Institute for Occupational Safety and Health (NIOSH) conducts complementary national surveillance for nonfatal injuries and illnesses treated in U.S. hospital emergency departments (EDs) through the National Electronic Injury Surveillance System occupational supplement (NEISS-Work). For 2009, the NEISS-Work estimated 2.6 million nonfatal injuries and illnesses treated in EDs (preliminary data).

METHODS (study design and appropriate statistical analysis): NIOSH conducts surveillance for nonfatal injuries and illnesses through a national probability based hospital ED sample. Work-related cases are identified by records abstractors in each hospital at the time of treatment. Cases include injuries/illnesses that occurred while working for pay or other compensation, during agricultural production, and while working as a volunteer for an organized group. Cases are collected without restriction by type of employer, employment status, or expected payer. Rates are estimated for workers age 15 yrs and older by using employed labor force estimates from the BLS Current Population Survey. SOII data were obtained from data publicly released by the BLS.

RESULTS (specific results in summary form): The SOII nonfatal injury/illness rate steadily declined from a high of 6.7 cases per 100 FTE in 1998 to a low of 3.6 in 2009. The break in series that occurred in 2002 with the change in recordkeeping rules did not have an obvious influence on the rate of decline. For ED-treated injuries/illnesses, the rate was 2.8 cases per 100 FTE in 1998, with a high of 3.1 in 2000, followed by a relatively stable rate of 2.5 in the mid-2000s. In the latter years there was a slight decline to a rate of 2.0 in 2009 for ED-treated cases (preliminary data). Analysis of temporal trends for both surveillance systems by various case characteristics did not provide ready explanation for the differences between SOII and NEISS-Work data over time.

CONCLUSIONS (description of the main outcome of the study): The SOII and NEISS-Work surveillance systems each provide unique perspectives on temporal trends in nonfatal occupational injuries and illnesses. Comparisons across years suggest that equivalent declines in injury/illness rates did not occur. Systematic underreporting by employers is only one possible explanation for the disproportionate rates of decline.

AUTHORS (list collaborator name, degree and agency): Larry L. Jackson, Ph.D., NIOSH/CDC

AUTHORS (FIRST NAME, LAST NAME): Larry L. Jackson

CONTROL ID: 1061967

TITLE: Toxic chemical use data for primary prevention of work-related asthma in Massachusetts: Hazard surveillance to practice

CURRENT TOPIC: Linking surveillance to action: Interventions and policy change at the local, state, and national level

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Work-related asthma (WRA) is estimated to affect tens of thousands of adults in Massachusetts, contributing to serious disease and poor quality of life. Primary prevention seeks to reduce the use of chemicals associated with WRA, which will decrease the numbers of people exposed on the job and in the community. Efforts directed at cleaning products have led to the exclusion of known asthmagens in 3rd party-certified cleaners. A similar, broadly envisioned project involves the Massachusetts Departments of Public Health and Environmental Protection, the Office of Technical Assistance (OTA), and the Toxics Use Reduction Institute (TURI) at UMass Lowell. TURI commissioned the Lowell Center for Sustainable Production (LCSP) to study asthma-related chemicals in Massachusetts. They analyzed data from manufacturers who use or manufacture large quantities of chemicals, collected under the Toxics Use Reduction Act (TURA). Findings indicated that use of asthma associated chemicals dropped 27% from 1990 to 2005. However, use of toluene diisocyanate and chlorine, two asthmagens, increased significantly over this period, and, while cumulative formaldehyde use declined, it totaled 105 million pounds over the 16-years.

METHODS (study design and appropriate statistical analysis): Following release of the report, LCSP and MDPH met with committees involved in the multistage decision-making process required by TURA to consider steps to address asthma. MDPH's Strategic Plan for Asthma in Massachusetts includes specific goals about reducing exposures to chemicals associated with asthma. OTA, working with TURI, volunteered to be the lead partner on these goals, directed toward reducing risk in the workplace (use and byproducts, fugitive releases), in the community (releases, byproducts, transfers) and among consumers (incorporated into products).

RESULTS (specific results in summary form): OTA will take the lead in developing methods that seek to decrease overall use of three chemicals selected for action: formaldehyde, chlorine and isocyanates. The following strategies are under consideration: designation of formaldehyde as a high risk chemical (carcinogenicity) which requires reporting of smaller quantities; outreach to healthy housing and building science agencies to investigate formaldehyde and isocyanates in insulation; and research on safer alternatives and more efficient use.

CONCLUSIONS (description of the main outcome of the study): Analysis of TURA data on use of asthmagens prompted collaborative efforts aimed at primary prevention of asthma in Massachusetts. This process demonstrates an approach of using data, relying on strategic plans, and partnering among environmental and public health agencies and academia to develop and implement primary prevention of asthma. These steps were facilitated by working relationships developed over many years.

AUTHORS (list collaborator name, degree and agency): Elise Pechter MPH, CIH
Massachusetts Department of Public Health
Occupational Health Surveillance Program

AUTHORS (FIRST NAME, LAST NAME): Elise Pechter

CONTROL ID: 1062055

TITLE: Sharps injuries among nurses in Massachusetts hospitals, 2002-2009

CURRENT TOPIC: Linking surveillance to action: Interventions and policy change at the local, state, and national level

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Sharps injuries among healthcare workers are a recognized hazard and have been associated with occupational transmission of more than 20 diseases.

To address this hazard, legislative campaigns at the state and national level were championed by nurses and resulted in regulations designed to protect healthcare workers from sharps injuries. In Massachusetts, regulations require hospitals to use sharps with engineered sharps injury protections (SESIPs), maintain records of sharps injuries among healthcare workers, and submit these data annually to MDPH. This study was undertaken to further characterize sharps injuries among nurses.

METHODS (study design and appropriate statistical analysis): Every year since 2002, each MDPH licensed hospital has submitted data on sharps injuries among healthcare workers to MDPH. This analysis was restricted to injuries among nurses for the years 2002-2009. Rates were calculated for those working in acute care hospitals using full time employee equivalents (FTEs) as the denominator. Rates for physicians were computed for comparison purposes.

RESULTS (specific results in summary form): While rate of sharps injuries among physicians (76.5/1,000 FTE) is higher than that of nurses (37.5/1,000 FTE), nurses account for the greatest proportion of sharps injuries 38% (9,714) reported to the Massachusetts Sharps Injury Surveillance System. Almost half of the injuries (47%, 4,565) involved hypodermic needles/syringes, devices for which alternatives with sharps injury prevention features are available. More than a third of injuries (37%, 3,594) among nurses involved devices lacking sharps injury prevention features; 56% (5,439) occurred with SESIPs. Injuries related to injection procedures (55%, 2,101) and blood procedures (45%, 869) occurred most often after use and before disposal. In contrast, injuries related to line procedures (41%, 587) and suturing (49%, 384) occurred most often during use of the device.

CONCLUSIONS (description of the main outcome of the study): There is continued need to increase the use of SESIPs where available. As such, nurses and their organizations should demand and use the SESIPs to which they are, by law, entitled and should play an active role in the selection of those devices. Injuries occurring during use, a time when SESIPs are not protective, underscore the importance of training and technique. Injuries occurring after use demonstrate that the use and activation of SESIPs is critical to sharps injury prevention. The large proportion of injuries involving SESIPs highlights the need to evaluate the various mechanisms of sharps injury prevention features. Targeted prevention efforts aimed at the devices used and procedures performed by nurses will help to minimize the number of sharps injuries in this occupation group.

AUTHORS (list collaborator name, degree and agency): Angela K. Laramie, MPH, Massachusetts Department of Public Health Occupational Health Surveillance Program

Vivian Pun, MPH, Massachusetts Department of Public Health Occupational Health Surveillance Program

Letitia Davis, ScD, Massachusetts Department of Public Health Occupational Health Surveillance Program

AUTHORS (FIRST NAME, LAST NAME): Angela Laramie

CONTROL ID: 1062771

TITLE: Obesity Prevalence by Industry and Occupation of Employment in Washington State

CURRENT TOPIC: Linking surveillance to action: Interventions and policy change at the local, state, and national level

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Employer incentives for workplace wellness programs are included in the recent healthcare reform legislation. Prevalence estimates of worker obesity and health behaviors by industry and occupation of employment at the state-level are generally unavailable and will inform the development of worksite wellness programs. We describe the prevalence of obesity and related health behaviors for workers by their industry and occupation of employment.

METHODS (study design and appropriate statistical analysis): Descriptive analyses by industry and occupation of employment of body mass index measures and health behaviors related to non-occupational physical activity, work activity level, and fruit and vegetable intake among employed Washington State respondents to the Behavioral Risk Factor Surveillance System (BRFSS) survey from 2003-2007.

RESULTS (specific results in summary form): By industry, the prevalence of obesity for all 51,566 employed respondents was 23.6% (95% Confidence Interval [CI], 23.1%-24.1%). Prevalence estimates ranged from 16.0% [95% CI: 12.3-19.8%] for workers in the Veterinary, Landscape and Agricultural Services industry to 37.9% [95% CI: 32.9-42.9%] for the Trucking Services industry. By occupation, the overall obesity prevalence for the 52,209 employed respondents was 23.6% [95% CI: 23.1-24.1%], which ranged from 10.2% [95% CI: 7.2-13.1%] for Health Diagnosing occupations to 38.0% [95% CI: 33.4-42.6%] for Truck Drivers. Consumption of ≥ 5 servings of fruits and vegetables per day was highest within the healthcare industry and lowest among Grocery Store and Warehousing industry workers.

CONCLUSIONS (description of the main outcome of the study): There is significant variation in the prevalence of obesity, physical activity levels and fruit and vegetable intake within employed populations in Washington State. National and state-level efforts to enhance the development of effective worksite weight loss prevention programs will need reliable health behavior data at the industry and occupational level.

AUTHORS (list collaborator name, degree and agency): Z. Joyce Fan, PhD; Washington Dept. of Labor & Industries
Naomi Anderson, MPH; Washington Dept. of Labor & Industries
Edmund Rauser; Washington Dept. Labor and Industries

AUTHORS (FIRST NAME, LAST NAME): David Bonauto

CONTROL ID: 1055380

TITLE: Six workers killed during pipe cleaning at a natural gas power plant in Connecticut: The Kleen Energy explosion

CURRENT TOPIC: Linking surveillance to action: Interventions and policy change at the local, state, and national level

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): On February 7, 2010, an explosion occurred at a natural gas-fired power plant under construction in Middletown, CT. At the time of the explosion, it is estimated that approximately 150 workers were present at the construction site, of which over 50 were injured, six fatally.

METHODS (study design and appropriate statistical analysis): In the year since the fatal explosion at the Kleen Energy plant, several local, state, and federal agencies have undertaken extensive investigations into the underlying causes of that explosion. The Connecticut Department of Public Health responded to the scene in the initial hours after the explosion and has participated and commented on several of the subsequent investigations. The purpose of this presentation is to summarize those findings as well as resulting regulatory changes.

RESULTS (specific results in summary form): On the morning of the explosion, workers at the Kleen Energy construction site performed approximately 15 "gas blows" at a pressure of approximately 650 psig. In the 10 minutes prior to the explosion, approximately 500,000 cubic feet of natural gas was released into an outdoor space congested by surrounding power generation equipment. In total in the four hours preceding the explosion, approximately 2 million cubic feet of natural gas was released into this space, or enough natural gas to fuel a typical American home every day for 25 years. This volume of natural gas was found to be greatly in excess of what was necessary to adequately clean fuel gas piping.

CONCLUSIONS (description of the main outcome of the study): The US Chemical Safety Board (CSB) developed 18 Urgent Recommendations as a result of their investigational findings. These recommendations directed action for several different agencies and stakeholders, including OSHA, the National Fire Protection Association (NFPA), the American Society of Mechanical Engineers (ASME), major gas turbine manufacturers, the Governor and Legislature of the State of Connecticut, and the Electric Power Research Institute (EPRI). In addition, the Connecticut Department of Public Health has developed recommendations for the Connecticut Siting Council for incorporation into current and future siting permits for gas-fueled power plants in the state.

AUTHORS (list collaborator name, degree and agency): Thomas St. Louis, MSPH, Connecticut Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Thomas St. Louis

CONTROL ID: 1058646

TITLE: Adult Blood Lead Epidemiology and Surveillance (ABLES) website usage and case coding exercise

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The CDC/NIOSH's Adult Blood Lead Epidemiology and Surveillance (ABLES) program tracks laboratory-reported elevated blood lead levels in adults. State ABLES programs collect data on adult BLLs from laboratories and health-care providers through mandatory reporting requirements. For BLLs ≥ 25 $\mu\text{g/dL}$, follow-up by telephone generally is conducted to ensure completeness of information on the industry where the person works, exposure source (occupational or nonoccupational), and other variables. ABLES data, publications and resources are available at the ABLES website

<http://www.cdc.gov/niosh/topics/ABLES/ables.html>

METHODS (study design and appropriate statistical analysis): To improve the performance of the ABLES program, an industry and occupation case coding exercise will be submitted to all ABLES participating states. Responses will be analyzed by NIOSH and the ABLES coding committee. The results will be analyzed and discussed with all attendees to identify strengths and needs for improvement and additional data coding issues will also be discussed. Omniture codes are embedded in ABLES web pages to track ABLES web pages usage. The number of countries that visited the ABLES Program web pages, the number of views, and the number of visits during the past year will be summarized to illustrate how the ABLES data are being used globally.

RESULTS (specific results in summary form): Results are not available at this time as these programmatic activities will take place by April 2011.

CONCLUSIONS (description of the main outcome of the study): Improvement in the industry and occupation coding of the ABLES data from participating states. Awareness of how the ABLES website is being viewed by various countries of the world.

AUTHORS (list collaborator name, degree and agency): Janet Graydon, BS

Walter Alarcon, MD MSC

CDC/NIOSH

AUTHORS (FIRST NAME, LAST NAME): Janet Graydon

CONTROL ID: 1059104

TITLE: Characterization of adult blood lead levels below 25 mcg/dL in the New Hampshire Adult Blood Lead Epidemiology and Surveillance (ABLES) Program.

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Objective

To better understand the health effects of lower Blood Lead Levels (BLLs between 10 and 24 µg/dL) in the New Hampshire adult population and to support the broader discussion of feasibility of collecting and documenting these lower BLLs.

Background

Lead adversely affects multiple organ systems and can cause permanent damage. Until recently, a blood lead level (BLL) of 25 micrograms per deciliter (µg/dL) or greater for adults was considered "elevated," and the Healthy People 2010 goal was to eliminate BLLs above this level. However, adverse health effects have been found with cumulative exposure at BLLs lower than 25 µg/dL. The Council for State and Territorial Epidemiologists and the National Institute for Occupational Safety and Health have recommended changing the case definition for an elevated blood lead level (EBLL) in adults from 25 µg/dL to 10 µg/dL, thereby dramatically increasing the "caseload" in New Hampshire by almost 4 and half.

METHODS (study design and appropriate statistical analysis): In order to learn more about the health effects of lower BLLs, and to analyze the feasibility of obtaining exposure/occupation information on these lower levels," we have performed more in-depth data analysis of the NH adult population with BLLs between 10 and 24 µg/dL and for those above 25 µg/dL. In addition, we documented and coded data for 2009 by industry and occupation (to the best of our ability). Analysis was made using a basic frequency distribution, by gender, age, geography, blood lead level, work relatedness, process, and by industry and occupation. Employee survey results from BLLs 25 µg/dL and above will also be analyzed.

RESULTS (specific results in summary form): Preliminary results of data analysis will be presented, as well as lessons learned from the process of further documenting industry and occupation for all BLLs 10 µg/dL and above.

CONCLUSIONS (description of the main outcome of the study): Knowledge gained from this study will support the broader discussion of the need for improved data collection and documentation of health effects from lower BLLs in the adult population.

AUTHORS (list collaborator name, degree and agency): Karla Armenti, ScD, Occupational Health Surveillance Program, Suzanne Allison and Paul Lakevicius, Healthy Homes and Environments Section, NH Division of Public Health Services, Rosemary Caron, PhD, and Sarah DiStefano, Department of Health Management and Policy, University of New Hampshire

AUTHORS (FIRST NAME, LAST NAME): Karla Armenti

CONTROL ID: 1061481

TITLE: Adult Lead Poisoning and the RRP Rule in Iowa

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Iowa was the second state authorized by the U.S. Environmental Protection Agency to implement the Renovation, Repair, and Painting Program, commonly known as the RRP program. The program, which went into effect on April 22, 2010, requires contractors performing renovation, repair and painting projects that disturb paint in homes, child care facilities, and schools built before 1978 to be trained, certified, and to follow specific work practices to prevent lead contamination. In Iowa, it is estimated that 15,000 workers would initially need to comply with this rule, including workers in construction, demolition, renovation and repair, paint contractors, and plumbers.

Iowa was one of seven states NIOSH reported as having the highest prevalence rates of adults with blood lead levels (BLLs) => 25 ug/dL for 2007, with a rate almost three times the US rate. State surveillance identified most of those exposures occurred in occupations and industries other than construction. Few construction workers were being tested for lead exposure, even though these workers are a high risk group. Iowa was unable to provide state-level data about the incidence or prevalence of adult lead poisoning due to construction activities when the RRP rule went into effect.

In anticipation of more construction workers learning about the risks of lead exposure during training courses, the Iowa Occupational Health & Safety Surveillance Program sent out an alert to medical providers in the spring of 2010, explaining that patients may come in requesting lead testing, and to consider testing all patients working in construction or other high-risk occupations.

METHODS (study design and appropriate statistical analysis): This presentation will use case studies of adults who work in the construction industry and have presented with elevated blood lead levels to illustrate the impact of the RRP rule in Iowa as it pertains to adult BLL surveillance.

RESULTS (specific results in summary form): As anticipated, the RRP rule has generated testing of adults who work in construction. Test results have identified workers with elevated blood lead levels. Construction workers often had no prior BLL on record. Elevated results were associated with the use of unsafe work practices, such as the use of heat guns or power sanders.

CONCLUSIONS (description of the main outcome of the study): The increase in testing of a high-risk group has shown that Iowa's construction workers are at risk of exposure above the current medical level of concern and provides the basis for establishing rates of exposure benchmarks for the state. Public Health programming has been adapted to target medical providers concerning the importance of testing at-risk workers, including adults doing renovation and repair work on their own properties. Additional industry-level and community-based outreach is being planned.

AUTHORS (list collaborator name, degree and agency): Kathy Leinenkugel
MPA

Iowa Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Kathy Leinenkugel

CONTROL ID: 1061723

TITLE: Factors associated with high blood lead levels at first laboratory report in Alabama: From the Adult Blood Lead Epidemiology and Surveillance (ABLES) program

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): ABLES is a state-based surveillance program that allows the identification of adult individuals at risk for lead exposure. Alabama is one of the 40 participating states (since 1991). The purpose of this analysis was to describe the ABLES data between 1991 and 2009; to establish a baseline based on each case's initial laboratory report, and to determine factors predictive of high blood lead levels (BLL) in Alabamians.

METHODS (study design and appropriate statistical analysis): Initial laboratory report received per individual, with BLL > 10µg/dL, age >16 years old, and residents from Alabama were included. The association between baseline characteristics and high BLL was assessed by univariable (UV) and multivariable (MV) regression analysis.

RESULTS (specific results in summary form): A total of 7,128 individuals were included in the analysis, of which 93% were male, 6.1% female, and 0.9% unknown. Reported race included 20.2% African-American, 12.8% Caucasian, 1.8% Hispanic, and 65.2% unknown. The mean (SD) age was 36.1 (13.7) years (range 16-103) while BLL was 23.3 (13.7) µg/dL (range 10-500). Work-related exposure information was available for 57.6%, among those 48.6% worked in manufacturing, 2.1% mining, 3.5% other industries and 44.8% unknown. UV analysis showed that age, gender, race, year of initial report, and industry were associated with high BLL. In the MV analysis only race, year of initial report and industry remained associated with high BLL ($F=26.4$, $p\text{-value}<0.0001$, $R^2=0.13$).

CONCLUSIONS (description of the main outcome of the study): Alabama ABLES population (1991-2009) was predominantly male, of unknown race, in their thirties. Manufacturing appears to be the most common industry. Although race, year of initial report, and industry were associated with high BLL, the association was weak since only 13% of data correlates with industry. Incomplete data collecting and reporting may have contributed to the inconclusive analysis. In order to target effective interventions more complete information is needed.

AUTHORS (list collaborator name, degree and agency): Martha L. Sanchez, M.D., M.P.H., Alabama Department of Public Health; Sherri L. Davidson, M.P.H., Alabama Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Martha Sanchez

CONTROL ID: 1061727

TITLE: Oil field workers and take home lead exposure

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The Oklahoma Childhood Lead Poisoning Prevention Program (OCLPPP) has identified “pipe dope” containing lead as the most likely cause of lead poisoning in at least four children, including two siblings, of three oil field workers working with pipe dope between 2006 and 2009. Adults who work on the well work over and drill sites may come in contact with this threading compound, commonly known as pipe dope that can contain large amounts of lead.

Pipe dope is very difficult to remove from hands, clothing and shoes and is easily transferred to vehicles and to workers’ homes if scrupulous precautions such as changing clothes and shoes and washing hands before leaving the worksite are not maintained.

METHODS (study design and appropriate statistical analysis): Blood test performed on children showed high levels of lead ranging from 18 µg/dL to 30 µg/dL, high enough to cause potentially irreversible health effects. Due to high blood lead levels, all the children received an environmental investigation from the OCLPPP.

RESULTS (specific results in summary form): OCLPPP’s investigation of recent pipe dope related cases revealed that some oil field workers using this product may not be utilizing adequate personal protective equipment, or may not be following other instructions such as washing hands before smoking, eating, or drinking as specified on the Material Safety Data Sheet. Additionally, some employers may not be providing shower and other facilities to make sure that workers change out their possibly contaminated work cloths before leaving the work site. Finally, workers also launder the work clothes at home along with other family items potentially spreading the lead contamination.

Blood lead tests of workers along with environmental lead levels of their clothes, shoes and other household items such as furniture are often good indicators of potential “take home” lead exposure. Two of the three workers had elevated blood lead levels of 29 µg/dL and 39 µg/dL while one worker did not get a lead test. Elevated environmental lead levels were found in work clothes as well as inside the laundry room washing machines which were used to wash work clothes along with other family clothes. Additionally, elevated environmental lead levels were found in the work shoes as well as household furniture like recliners where the workers used to sit with their children without changing work clothes.

CONCLUSIONS (description of the main outcome of the study): Although these cases account for a very small percentage of the total elevated blood lead level cases, there could be more undocumented cases as a result of oil field workers taking lead home. This is based on our findings that some work sites that use this compound may not be providing adequate education and protection for their workers.

The OCLPPP recommends employers and worksites to work with the Oklahoma Department of Labor’s Safety Pays OSHA Consultation Division as well as the Mid-Continent Exploration & Production Safety Network. Given the health hazards associated with pipe dope containing lead, employers and worksites should also consider effective alternative options like lead free biodegradable pipe dopes or dope free connections.

AUTHORS (list collaborator name, degree and agency): Fahad Khan, MPH
Oklahoma State Department of Health

AUTHORS (FIRST NAME, LAST NAME): Fahad Khan

CONTROL ID: 1061833

TITLE: Adult Blood Lead Epidemiology and Surveillance (ABLES) program: A dialogue to improve data quality and outreach

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

KEY OBJECTIVES: In this 1.5 hour program review session, the NIOSH ABLES program and the State ABLES Program principal investigators will dialogue on improving ABLES data quality, ABLES data usage, reaching out to stakeholders, and current and future implications of program updates. Also, the ABLES coding committee and the ABLES laboratory working group will describe the progress made towards achieving their charges.

BRIEF SUMMARY: The Adult Blood Lead Epidemiology and Surveillance (ABLES) program is a state-based surveillance program. Currently 40 states participated in the ABLES program and one more state will join the system. This public health surveillance program is based in the National Institute for Occupational Safety and Health (NIOSH), an institute of the Centers for Disease Control and Prevention (CDC). State ABLES programs collect, analyze and report their data, identify new and high-risk lead exposures, follow-up with physicians, workers and employers, target workplace for site visits where needed, provide referrals for consultation, enforcement, and target educational materials for employers and workers. NIOSH calculates national and state rates and distribution by industries and disseminates findings and recommendations to stakeholders; participates in CDC's Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP); participates in the Federal Interagency Lead-Based Paint Task Force; and collaborates with State and Federal partners and workers-affiliated organizations to reduce lead exposures. In 2010, NIOSH implemented programmatic changes in the statement of work with an updated case definition for an elevated blood lead level (BLL $\geq 10\mu\text{dL}$) and a revised funding schedule. The ABLES program also recommended updating the operational definition for an elevated BLL (BLL $\geq 10\mu\text{dL}$) for Healthy People 2020 objective to reduce lead exposure in adults, which was accepted.

AUTHORS (list collaborator name, degree and agency): Walter A. Alarcon, MD MSc, CDC/NIOSH

AUTHORS (FIRST NAME, LAST NAME): Walter Alarcon

CONTROL ID: 1062178

TITLE: Survey of Lead Safe Work Practices Among Residential Construction Contractors

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): In New Jersey, the construction and renovation business represents a significant number of adult blood lead cases reported to our adult lead registry. The relative proportion of cases in the lead registry from the construction and renovation trades with significant levels of blood lead appears to be increasing over time in New Jersey, with a 12 % increase since 2001. One potential explanation can be the increasing need to renovate older homes with lead paint and the subsequent exposure among this cohort of workers. Overall, New Jersey's homes are older than many other states, with over 19% of homes in New Jersey built before 1940 and 28% built before 1949. This high percentage of older homes, which typically contain paint with significant amounts of lead pigment, has the consequence of significant lead exposures among construction and renovation employees.

METHODS (study design and appropriate statistical analysis): This survey utilized both field observations and a mailed written survey to gather information about residential construction contractor practices, knowledge, attitudes, and beliefs regarding lead safe work practices.

General contractors in both New Jersey and Virginia were identified through the use of the NJ ABLES blood lead registry and through the use of the Dun and Bradstreet Selectory business database (D&B, Short Hills, NJ). After identification, companies were mailed a letter of introduction followed by either a written survey or phone calls to invite the companies to participate in the survey.

For companies agreeing to a site visit, an industrial hygienist visited job sites to conduct observations. While on-site, the industrial hygienist recorded observations utilizing a standardized field checklist that assisted them in documenting observed work practices, equipment, and PPE. We also conducted video exposure monitoring (VEM) on selected work practices when the contractor agreed to allow filming of their work.

RESULTS (specific results in summary form): We observed general contractors that had no knowledge or appreciation of the hazards of lead paint and utilized prohibited work practices (e.g. heat guns, dry power sanding) without any PPE. We found that after lead exposed contractors entered the ABLES system they became very educated about the hazards of lead. Variability existed among general contractor awareness between a state with an ABLES program (NJ) and state that does not have an ABLES program (VA). We also found variability in contractor awareness of EPA's RRP rule and also variability among contractors regarding their intent to comply with the new EPA rule.

CONCLUSIONS (description of the main outcome of the study): Many general contractors do not appreciate lead paint hazards and are unaware of the new EPA Repair and Renovation Rule requirements, for which they must now comply. The NIOSH ABLES program is effective at educating workers about the hazards of lead.

AUTHORS (list collaborator name, degree and agency): 1) James D. Blando, Ph.D.

Old Dominion University

School of Community and Environmental Health

2) Nickita Antoine, M.P.H.

Old Dominion University

School of Community and Environmental Health

3) Daniel Lefkowitz, Ph.D.

New Jersey Department of Health and Senior Services, Occupational Health Surveillance Program.

AUTHORS (FIRST NAME, LAST NAME): James Blando

CONTROL ID: 1057580

TITLE: Adult Blood Lead Epidemiology and Surveillance (ABLES) program: Annual progress report

CURRENT TOPIC: Lead exposure surveillance (ABLES)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH)'s Adult Blood Lead Epidemiology and Surveillance (ABLES) program tracks laboratory-reported elevated blood lead levels (BLL) in adults. The program objective is to build state capacity to initiate, expand, or improve adult blood lead surveillance programs which can accurately measure trends in adult blood lead levels and which can effectively intervene to prevent lead exposures. As part of CDC, NIOSH is currently the only federal agency funding occupational surveillance for lead exposures.

METHODS (study design and appropriate statistical analysis): State ABLES programs collect adult BLL data from laboratories and health-care providers through mandatory reporting requirements. BLL reporting requirements vary among ABLES states, ranging from the reporting of all BLLs to BLLs $\geq 40 \mu\text{g/dL}$. Most ABLES states submit data on all BLLs to NIOSH, including reports from persons whose BLL fall below the state reporting requirement. NIOSH analyses the data and disseminates findings and recommendations to stakeholders.

RESULTS (specific results in summary form): In 2010, 40 states participated in the ABLES program and one more state will join the system. Currently all programs submit lead exposure data at the updated case definition for an elevated blood lead level (BLL $\geq 10 \mu\text{g/dL}$) and conduct activities to prevent lead exposures. NIOSH updated the ABLES website and launched the ABLES Charts and Interactive Database website (<http://wwwn.cdc.gov/niosh-survapps/ables/Default.aspx>). This new public health surveillance tool is an important milestone in the pursuit of making lead exposure data accessible and easily understandable by the general public and the public health community. The ABLES program is the data source for tracking Healthy People objective to reduce lead exposures in adults since 1990. The Department of Health and Human Services launched Healthy People 2020 (HP 2020) objectives this year. HP 2020 occupational health and safety goal 7 (OSH-7) is to reduce the proportion of persons who have elevated blood lead concentrations from work exposures. State ABLES programs lead exposure data for the first 3 quarters of 2010 have been received by NIOSH and is undergoing quality control.

CONCLUSIONS (description of the main outcome of the study): This session will describe NIOSH and State ABLES programs' contributions to reduce lead exposures in the U.S. during the past year, the challenges for lead exposure surveillance, and will highlight the need to continue efforts to build federal and state capacity to initiate, expand, or improve adult blood lead surveillance programs.

AUTHORS (list collaborator name, degree and agency): Walter A. Alarcon, MD MSc, CDC/NIOSH

AUTHORS (FIRST NAME, LAST NAME): Walter Alarcon

CONTROL ID: 1055455

TITLE: New web-based tools for occupational surveillance data

CURRENT TOPIC: Innovative methods for presenting occupational and environmental health hazards and surveillance data to workers and the general public

ABSTRACT BODY:

KEY OBJECTIVES: To demonstrate newly implemented web-based information dissemination and interactive data query tools produced by the National Institute for Occupational Safety and Health for occupational surveillance.

BRIEF SUMMARY: One of the key goals of the National Institute for Occupational Safety and Health (NIOSH) Surveillance program is to enhance the use of surveillance information at the federal and state levels for the prevention of occupational injuries, illnesses, and hazards.

Over the last year NIOSH has implemented several new web-based applications on the internet in support of this goal. This presentation will demonstrate several new data query tools, web sites, and information dissemination applications to help state-based programs find, use, and/or contribute to the body of occupational surveillance information available on-line. Some of the applications that will be demonstrated include: State-based Occupational Health Surveillance Clearinghouse, Interactive Map of the US Fire Fighter Fatalities, Work-related Lung Disease Surveillance System, and the NIOSH Data and Statistics Gateway information portal.

AUTHORS (list collaborator name, degree and agency): Susan Nowlin, NIOSH

Larry Jackson, BS PHD, NIOSH

Patricia L. Schleiff, MS, NIOSH

AUTHORS (FIRST NAME, LAST NAME): Susan J. Nowlin, Larry Jackson

CONTROL ID: 1058308

TITLE: Nonfatal Occupational Injuries and Illnesses by Industry Sector—United States, 2007

CURRENT TOPIC: Examining occupational injuries and illnesses using state or national surveys

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The National Institute for Occupational Safety and Health conducts surveillance of nonfatal occupational injuries and illnesses by using the National Electronic Injury Surveillance System—Occupational Supplement (NEISS-Work), a hospital emergency department (ED) system. Results from recently implemented industry coding of NEISS-Work data have not previously been presented. NEISS-Work national estimates by industry sector complement data from the Bureau of Labor Statistics' Survey of Occupational Injuries and Illnesses (SOII), an employer-based national surveillance system.

METHODS (study design and appropriate statistical analysis): We classified the industry sector for injured/ill workers treated in EDs by using narrative information on employer name, type of business, type of job, and injury location. We calculated injury rates and 95% confidence intervals per 100 full-time equivalent workers (FTE) by using labor force estimates from the Current Population Survey. We compared industry sector rates and characteristics of ED-treated cases to total recordable cases from SOII.

RESULTS (specific results in summary form): Based on NEISS-Work, we estimate that approximately 3.4 million occupational injuries and illnesses were treated in EDs in 2007. Workers in agriculture [4.2 (± 1.3) incidents per 100 FTE] and construction [3.7 (± 1.4) incidents per 100 FTE] experienced the highest injury/illness rates. Workers aged 18 to 19 years experienced the highest injury/illness rates in every industry sector, except for agriculture, where 15 to 17 year olds experienced the highest rate. Although events and exposures differed between industry sectors, contact with objects and equipment was the most common event overall and in most industry sectors. However, in the construction and healthcare sectors, bodily reaction and exertion was the most common event. Sprains and strains were the most common type of injury/illness overall and in most industry sectors. The NEISS-Work rate of injury/illness at primary jobs among workers ≥ 16 years of age was less than the SOII total recordable case rate in 2007 [RR = 0.58 (± 0.15)], whereas rates among workers in the agriculture [RR = 0.76 (± 0.24)] and construction [RR = 0.71 (± 0.26)] sectors were less disparate.

CONCLUSIONS (description of the main outcome of the study): Examining NEISS-Work data by industry sector facilitates identification of industry-specific hazards and allocation of limited injury prevention resources. Comparing data from NEISS-Work and SOII by industry sector is effective for understanding the potential impact of the systems' different sampling frames. One advantage of the NEISS-Work data set is that it includes all US workers, whereas the 2007 SOII excludes certain classes of workers, including self-employed, small farm, household and public sector workers. Both systems are essential for understanding the impact of injuries/illnesses by industry sector.

AUTHORS (list collaborator name, degree and agency): Chris R. Estes, MPH, NIOSH

Larry L. Jackson, PhD, NIOSH

AUTHORS (FIRST NAME, LAST NAME): Chris R. Estes

CONTROL ID: 1060258

TITLE: Planning for analysis of the 2010 occupational health supplement to the National Health Interview Survey (NHIS)

CURRENT TOPIC: Examining occupational injuries and illnesses using state or national surveys

ABSTRACT BODY:

KEY OBJECTIVES: Describe the National Health Interview Survey (NHIS). Describe the content of the 2010 NHIS occupational health supplement (OHS). Describe the analyses that we plan to perform using the 2010 NHIS-OHS. Discuss other analyses that could be performed using the 2010 NHIS-OHS

BRIEF SUMMARY: This session will provide an opportunity to discuss opportunities for analysis of soon-to-be-released data from the 2010 National Health Interview Survey occupational health supplement (NHIS-OHS).

The NHIS is a cross-sectional in-person household survey conducted annually by the National Center for Health Statistics (NCHS) to monitor the health of the United States population through the collection and analysis of data on a broad range of health topics. The sampling plan follows a multistage area probability design that permits the representative sampling of households. NHIS data are collected annually from approximately 35,000 to 40,000 households. Basic industry and occupation information is collected from a sample adult from each household who also answers detailed health questions.

In 1988, NIOSH funded an occupational health supplement (OHS) which collected data on occupational exposures, hearing loss, asthma, dermatitis, and musculoskeletal disorders. Results were published in many peer-reviewed papers in the 1990's. A second NHIS-OHS was conducted in 2010 to collect data on general occupational exposures, psychosocial exposures, work organization characteristics, and work-relatedness of common health conditions (i.e., dermatitis, carpal tunnel syndrome and occupational asthma, conditions that are not well documented by traditional occupational health surveillance systems). Questionnaire development began in 2006, final questions were submitted to NCHS in 2009, and data collection began in January of 2010. The data will be publicly available in June, 2011.

The new NHIS-OHS includes similar questions to the 1988 supplement about dermatitis, carpal tunnel syndrome and occupational asthma so that we can examine changes in the frequency of these highly prevalent conditions across industry sectors. Questions on other topics (e.g., psychosocial exposures) have been adapted from other validated survey instruments, where possible. Data from the OHS can be combined with data from the core NHIS questionnaire for analysis of relationships between occupational exposures and other common health conditions and interactions between occupational and nonoccupational factors (e.g., tobacco use, physical activity).

NIOSH investigators will be developing communication products to disseminate the key findings from the survey, and we also hope to collaborate with partners on many different analyses to maximize the impact of this project. Our ultimate goal is that evidence-based interventions by stakeholders will reduce work-related diseases and injuries. In addition, the results of this surveillance project will inform future hypothesis-driven research.

AUTHORS (list collaborator name, degree and agency): Sara E. Luckhaupt, MD, MPH, National Institute for Occupational Safety and Health

AUTHORS (FIRST NAME, LAST NAME): Sara Luckhaupt

CONTROL ID: 1061451

TITLE: Employment of Middle School Students: Findings from the Massachusetts Youth Health Survey, 2009

CURRENT TOPIC: Examining occupational injuries and illnesses using state or national surveys

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Each year thousands of teenagers in the United States work. To date, most research on youth employment has focused on older teens (16-18 years old). Some studies of younger teens and pre-teens indicate younger youth are also working. Little information about where these younger children are working is available.

METHODS (study design and appropriate statistical analysis): The Massachusetts Youth Health Survey (MYHS) is conducted every other year in a random sample of middle and high schools and classrooms within those schools throughout the Commonwealth in conjunction with the Youth Risk Behavior Survey. Responses are weighted (i.e., adjusted for non-response and distribution of students by grade, sex and race/ethnicity) in order to be representative of all Massachusetts students. In 2009, questions about work for pay other than babysitting or yard work during the last year and the type of "place most recently worked at" were included in the MYHS. To describe type of work, students selected from a pick list that included the option "other, please specify". Middle school student responses to these two questions were analyzed. Narrative text responses describing type of work were reviewed to better characterize where middle school students report working, and to evaluate the students' understanding of the initial question and the performance of the pick list.

RESULTS (specific results in summary form): Data were collected from 2,859 middle school students from grades 6 through 8 in 69 schools. The overall response rate was 56%. Eighteen percent of students responded that they had been employed for pay in the past year. 460 students responded to the question about the type of place that they most recently worked. Of these, the most common responses were: other (52%), recreation or entertainment (12%), landscaping company (10%), restaurant (9%), and construction site (7%).

Additional analysis of 422 surveys with written text describing work found the most common response was paper route (15%), followed by sports-related (9%), for a neighbor (9%), shoveling (7%), and dog walking (6%). Eleven percent listed babysitting, yard work, or for a family member. Additional results will be presented by age, gender, race and ethnicity.

CONCLUSIONS (description of the main outcome of the study): Despite Massachusetts child labor laws prohibiting work (with few exceptions) by anyone under age 14, many middle school students are working, some in high risk industries. Outreach about child labor laws and health and safety for students and parents should begin before high school. Further refinement of employment questions and the pick list, as well as cognitive testing with middle school students is needed.

AUTHORS (list collaborator name, degree and agency): Beatriz P. Vautin, MPH, Massachusetts Department of Public Health; Sara Rattigan, MS, Massachusetts Department of Public Health; Letitia Davis, ScD, Massachusetts Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Beatriz Vautin

CONTROL ID: 1061986

TITLE: Teacher perceptions of the classroom environment and their health and performance: Results from a survey of teachers in New York State (NYS) Public Schools, 2009.

CURRENT TOPIC: Examining occupational injuries and illnesses using state or national surveys

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): School teachers spend a considerable amount of time inside school buildings. Previous research suggests links between school conditions and teacher health and productivity, but few studies have looked comprehensively at teacher outcomes in relation to specific classroom conditions. The NYS Department of Health recently conducted a survey of teachers in non-New York City public schools. The purpose of the survey was to learn how teachers perceive classroom environmental conditions and how these conditions may impact teacher health and performance.

METHODS (study design and appropriate statistical analysis): Project staff and collaborators conducted a random statewide telephone survey of teachers to assess the following classroom attributes: indoor air quality (IAQ), housekeeping, climate, lighting and acoustics. Teachers were also asked questions about their health symptoms, how symptoms and classroom conditions affected them, and their home environment.

RESULTS (specific results in summary form): Among the 501 teachers responding, the most commonly reported classroom IAQ problems were dust (59%), dust reservoirs (42%) and odors from art supplies (32%). About 66% reported food eaten daily in classroom and 30% reported inadequate storage. Over two fifths each reported the classroom being too dry, cold or hot and 78% reported not being able to control the temperature via a thermostat. Among those with classroom windows, 90% reported that they could control glare, and that the lighting intensity was appropriate. Over 50% reported excessive noise and the most common source was from nearby classrooms or hallways (32%). Leading health symptoms included sinus problems (22%) and allergies/congestion (21%). Most symptoms tended to worsen during the day or week, and improve when away from school. Many classroom characteristics relating to IAQ, housekeeping, climate, lighting and acoustics were significantly associated with the increased likelihood of health symptoms after controlling for demographics and home environmental conditions. The strongest associations for having any symptom were classroom dryness, dust and inability to control temperature with a thermostat. For having any allergic symptom, the strongest associations were dryness, dust and classroom pets. Not being able to control glare was most strongly associated with having at least one lighting-related symptom and excessive noise from nearby classrooms and hallways was most strongly associated with having at least one acoustics-related symptom.

CONCLUSIONS (description of the main outcome of the study): Poor classroom indoor air quality, housekeeping, climate, lighting and acoustics were associated with health symptoms among this sample of teachers in NYS schools. These results are consistent with existing research and highlight the importance of healthy and functional indoor environments in the educational arena.

AUTHORS (list collaborator name, degree and agency): Christine Kielb, MS, NYS Department of Health; Shao Lin, Ph.D., NYS Department of Health; Anne Orsini, MS, NYS Department of Health; Neil Muscatiello, MS, NYS Department of Health; Joan Rogers-Harrington, MS, NYS United Teachers; Wendy Hord, MS, NYS United Teachers

Bureau of Environmental and Occupational Epidemiology, New York State Department of Health, Troy, NY 12180
2 New York State United Teachers, Latham, NY 12110

AUTHORS (FIRST NAME, LAST NAME): Christine Kielb

CONTROL ID: 1054147

TITLE: Occupational injury rates and severity among minor, young-adult, and adult workers — Washington State, 2005–2007

CURRENT TOPIC: Examining occupational injuries and illnesses using state or national surveys

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Compared with workers of other ages in Washington State, minors (persons aged 16–17 years) experience elevated occupational injury rates. However, the level of injury severity in comparison with other workers has not been characterized. This study examines occupational injury rates and severity for 2005–2007 by age group, comparing minor workers with young-adult workers (ages 18–24 years) and adult workers (25–64 years).

METHODS (study design and appropriate statistical analysis): The American Community Survey (ACS), an annual survey collecting data using U.S. Census methods on population samples, was used to estimate the employment distribution for workers aged 16–17 years by industry and to estimate full-time equivalents (FTEs) by age group (16–17, 18–21, 22–24, 25–44, and 45–64 years) within those industries employing the highest percentage of minors. To calculate the industry-specific occupational injury rates for each age group, accepted workers' compensation claims were divided by FTE estimates for the industry-specific age group. Injury severity was determined by calculating rates for compensable claims (claims resulting in temporary or total work disability), median compensable claim costs, and median time-loss duration for all age groups within each industry.

RESULTS (specific results in summary form): On the basis of ACS data, we estimated that 112,899 minors were employed in Washington State during 2005–2007. Industries employing the greatest percentage of minors were restaurants/food service (36.2%); retail grocery stores (10.6%); amusement, gambling, and recreation (6.6%); department/discount stores (4.8%); and construction (2.2%). Per 10,000 FTEs, the overall accepted-claims rate was highest for workers aged 18–21 years (1,473) compared with workers aged 16–17 years (1,344), aged 22–24 years (1,079), aged 25–44 years (716), and aged 45–64 years (642). Industry-specific claim rates were highest for either the minor or young-adult age groups. The overall compensable-claims rate was highest among workers aged 18–21 years (242/10,000 FTEs) and lowest among workers aged 16–17 years (161/10,000 FTEs). Median compensable-claims costs and median days lost from work were highest among the adult workforce.

CONCLUSIONS (description of the main outcome of the study): Minor and young-adult workers are injured more frequently than adult workers. However, injuries resulting in payment of a compensable claim in aggregate are less severe in terms of claim costs and time lost from work. To better understand the cause and effects of injuries to minor and young adult worker injuries Washington State's Department of Labor and Industries will interview injured minor and young adult workers, their families as well as their employers.

Keywords: adolescent; accidents, occupational health

AUTHORS (list collaborator name, degree and agency): Primary Author: Eric Jalonen, MPH

Washington State Department of Labor and Industries

Safety and Health Assessment and Research for Prevention Program

Secondary Author: David Bonauto, MD, MPH

Washington State Department of Labor and Industries

Safety and Health Assessment and Research for Prevention Program

AUTHORS (FIRST NAME, LAST NAME): Eric Jalonen

CONTROL ID: 1053453

TITLE: Measuring Occupational Surveillance Program Impact using the CDC's Evaluation Framework

CURRENT TOPIC: Evaluating results of occupational health surveillance programs

ABSTRACT BODY:

KEY OBJECTIVES: Participants will learn how to develop an evaluation plan based on the Centers for Disease Control and Prevention's (CDC) Framework for Program Evaluation in Public Health

(<http://www.cdc.gov/mmwr/pdf/rr/rr4811.pdf>).

Participants will learn how to incorporate their evaluation plan into occupational surveillance programs to better evaluate their functionality, resources, outcomes and impact.

BRIEF SUMMARY: A safe and healthy workplace for all workers is a public health goal that occupational safety and health professionals strive to achieve. As with all public health goals, an important first step is to conduct high-quality surveillance. Many state and federal health agencies have developed occupational safety and health surveillance programs aimed at collecting baseline data, monitoring trends, responding to occupational health threats, and prioritizing occupational health and safety issues and concerns.

With an increased emphasis on the quality and accountability of public health programs, it is essential that occupational health and safety surveillance programs demonstrate their program's functionality, effectiveness and impact through comprehensive program evaluation. Many programs may not be adequately evaluated because useful program evaluation is often considered to be a resource/time intensive process that is completely independent of the program itself. To assist with ensuring programs can be effectively evaluated, the CDC has developed a systematic set of program evaluation steps, the Framework for Program Evaluation in Public Health, that can be used as a practical guide to easily and systematically incorporate evaluation into public health programs. The framework can be applied to occupational safety and health surveillance programs as a driving force for demonstrating program functionality, impacts and outcomes; enhancing quality of services and data; effectively identifying priority areas; and informing leadership and management of important occupational safety and health priorities, issues and trends.

This roundtable will demonstrate how CDC's Framework for Program Evaluation in Public Health can be incorporated into routine occupational health and safety surveillance program operations.

AUTHORS (list collaborator name, degree and agency): Corey Campbell, MS, Occupational Safety and Health Specialist, Western States Office, National Institute for Occupational Safety and Health

Yvonne Boudreau, MD, MSPH, Deputy Director, Western States Office, National Institute for Occupational Safety and Health

AUTHORS (FIRST NAME, LAST NAME): Corey R. Campbell, Yvonne Boudreau

CONTROL ID: 1061846

TITLE: Evaluating employer reporting of amputations to the U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses System in California

CURRENT TOPIC: Evaluating results of occupational health surveillance programs

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): In collaboration with the U.S. Bureau of Labor Statistics (BLS), the California Department of Public Health (CDPH) Occupational Health Branch has been conducting multisource surveillance of amputations in California, including the Survey of Occupational Injuries and Illnesses System (SOII). National and state-based data from the SOII are derived from a sample of employers' Occupational Health and Safety Administration (OSHA) logs of Work-Related Injury and Illness. Recent studies suggest that the SOII may undercount injuries and illnesses and that using additional data sources, such as workers' compensation records, may improve tracking of work-related injuries and illness. The extent of the SOII undercount may vary for different endpoints depending on several factors, such as recognition of work-relatedness by employers and misclassification of cases on the OSHA logs. However, undercounting may be less likely for the most severe and recognizable injuries, such as traumatic amputations. In this study, we conducted an analysis of the California BLS SOII data to determine the extent to which employer reporting captures all cases of amputations as ascertained by an electronic workers' compensation database.

METHODS (study design and appropriate statistical analysis): A case classification scheme was developed to identify probable amputation cases in the California Workers' Compensation Information System (WCIS), and a sample of medical records were reviewed to confirm the accuracy of diagnosis. For the years 2006 through 2008, all reports from the BLS SOII were matched with WCIS amputation cases using record linkage methods based on variables common to both data sources. The number of matched cases and cases that appear uniquely in each dataset were tabulated, compared for completeness, and evaluated by establishment to account for the BLS SOII's employer sampling process. Sensitivity and specificity analyses of the BLS SOII were also conducted.

RESULTS (specific results in summary form): From 2006 to 2008, 6,570 WCIS records and 336 SOII cases were identified as amputation cases. Record linkage results are anticipated in the second quarter of 2011. Preliminary results suggest there are fewer than expected amputation cases in the BLS SOII compared to WCIS, even after taking into account that SOII only collects data from a sample of the total work establishments in California.

CONCLUSIONS (description of the main outcome of the study): The study will identify areas within workplace amputation surveillance that require improvement, such as the accuracy of OSHA logs and utilizing additional state-based surveillance systems to supplement the BLS SOII. These conclusions may be generalized to improve national surveillance of workplace injury and illness.

AUTHORS (list collaborator name, degree and agency): Lauren Joe, MPH, CDC/CSTE Applied Epidemiology Fellow, California Department of Public Health; Rachel Roisman, MD, MPH, California Department of Public Health; Matt Frederick, California Department of Public Health; John Beckman, BS, California Department of Public Health; Stella Beckman, MPH, CDC/CSTE Applied Epidemiology Fellow, California Department of Public Health; Martha Jones, PhD, California Department of Industrial Relations; Robert Harrison, MD, MPH, California Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Lauren Joe

CONTROL ID: 1049105

TITLE: Evaluation of multi-source surveillance for work-related carpal tunnel syndrome in California, 2007-2008

CURRENT TOPIC: Evaluating results of occupational health surveillance programs

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Work-related carpal tunnel syndrome (WR-CTS) is a musculoskeletal disorder caused by ergonomic stressors such as repetitive motion and vibration, which results in compression of the median nerve at the wrist. Because WR-CTS affects workers in all sectors and has a longer average duration of disability than other work-related conditions, the Council of State and Territorial Epidemiologists has included CTS as a core occupational health indicator. In order to address recent evidence that their Survey of Occupational Illness and Injury (SOII) undercounts work-related injury and illness, the U.S. Bureau of Labor Statistics (BLS) is collaborating with the California Department of Public Health (CDPH) Occupational Health Branch to perform multi-source surveillance of WR-CTS in order to enumerate the true incidence of the condition and estimate the magnitude of undercounting by the SOII.

METHODS (study design and appropriate statistical analysis): Individuals with WR-CTS were identified in the SOII data, Doctor's First Reports of Occupational Injury or Illness (DFR) and the California Department of Industrial Relations' Workers' Compensation Information System (WCIS). A sample of medical records was obtained for WCIS cases and reviewed to ensure accuracy of diagnosis. Cases were matched between data sets using record linkage methods, and capture-recapture analysis was used to determine the completeness of ascertainment of the data sources and estimate the total incidence of WR-CTS in California during 2007-2008. The characteristics of a surveillance system for WR-CTS using these data sources are described using the CDC's Updated Guidelines for Evaluating Public Health Surveillance Systems.

RESULTS (specific results in summary form): 5,597 DFRs, 11,812 WCIS records, and 459 SOII cases from 2007-2008 were identified as cases of WR-CTS. Results of record linkage and capture-recapture analysis are expected to be available in the first quarter of 2011. Preliminary analyses suggest that the linkage of multiple data sources significantly improves sensitivity to detect WR-CTS.

CONCLUSIONS (description of the main outcome of the study): In addition to providing an estimate of the current burden of WR-CTS in California, the results of this evaluation will assist CDPH in determining the feasibility of using state-based data sources to supplement the BLS SOII as a national surveillance system for occupational injury and illness.

AUTHORS (list collaborator name, degree and agency): Stella Beckman, MPH, CDC/CSTE Applied Epidemiology Fellow, California Department of Public Health

Rachel Roisman, MD, MPH, California Department of Public Health

Matt Frederick, California Department of Public Health

John Beckman, BS, California Department of Public Health

Lauren Joe, MPH, CDC/CSTE Applied Epidemiology Fellow, California Department of Public Health

Martha Jones, PhD, California Department of Industrial Relations

Robert Harrison, MD, MPH, California Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Stella Beckman

CONTROL ID: 1056658

TITLE: Methodologic challenges in conducting mortality analyses after a disaster - Experience with the WTC Responders Fatality Investigation Program

CURRENT TOPIC: Epidemiology and surveillance of workers involved in emergency response: Public Health roles and tools

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): A variety of workers responded to the World Trade Center (WTC) disaster, many of whom have suffered illnesses associated with their exposures. The WTC Responders Fatality Investigation (RFI) program was the data collection center for fatalities occurring among this population in order to conduct an initial assessment regarding whether responders were at high risk for certain causes of death.

METHODS (study design and appropriate statistical analysis): The study population included any responder death that occurred between September 12, 2001 and June 30, 2009. Because there was no central method to identify the responders, deaths were identified primarily through obituary reviews and names provided by other WTC programs. A sample cohort was created using information from the WTC Health Registry. Cause-specific mortality was analyzed using proportionate and standardized mortality ratios, and proportionate cancer mortality ratios.

RESULTS (specific results in summary form): There were 836 identified; the cause of death was confirmed for 814 deaths. Capture-recapture analyses indicated approximately 53% of expected deaths were identified. Because the ascertainment of deaths was incomplete, it was determined that the results of the PMRs were biased and unreliable. Few of the SMRs were elevated or statistically significant, primarily due to the healthy worker effect and low case ascertainment.

CONCLUSIONS (description of the main outcome of the study): Because the results of this study were inconclusive, it is recommended that the currently established WTC programs conduct death matching of their cohorts on a periodic basis to examine whether there is an increased risk among their cohorts. Elevated results should be used to generate hypotheses for future research.

AUTHORS (list collaborator name, degree and agency): Kitty H. Gelberg, Ph.D., MPH
New York State Department of Health
Bureau of Occupational Health

AUTHORS (FIRST NAME, LAST NAME): Kitty Gelberg

CONTROL ID: 1061515

TITLE: Defining cancer outcomes among four cohorts of rescue/recovery workers who responded to the World Trade Center disaster

CURRENT TOPIC: Epidemiology and surveillance of workers involved in emergency response: Public Health roles and tools

ABSTRACT BODY:

KEY OBJECTIVES: -To describe the establishment of a multi-institutional, multi-disciplinary expert panel;
- To describe the common rules for defining cancer across cohorts.

BRIEF SUMMARY: Background:

The attacks on the World Trade Center (WTC) on September 11, 2001 (9/11) and its resulting collapse produced a massive dust cloud, fires that were not extinguished for months, and rescue/recovery efforts that for some lasted beyond 2002. Workers experienced potential exposures to a complex mix of airborne pollutants, including known and suspected carcinogens, raising concerns about whether such exposures will be associated with an increased risk of cancer. Although long-term follow-up is required, representatives from each of the four cohorts of WTC-responders have met to establish common rules for classifying cancer in future analyses.

Methods:

The four participating cohorts include: the WTC Responder Health Consortium (N~27,000), the WTC Health Registry (n~30,700), the Fire Department of the City of New York (N~15,400), and the Environmental Health Center (N~800). The WTC Cancer Review Board includes epidemiologists, oncologists and pathologists as well as community/labor representatives and meets periodically to review de-identified cancer cases from each site to determine how cases should be classified and counted for analytic purposes.

Results:

The following classification rules were agreed upon for external (comparisons to state and national cancer surveillance data [SEER]) and internal (comparisons within cohorts) analyses:

1. Common cancer definitions (i.e., confirmed, probable, possible, not confirmed, reporting error) will be used and in general, only confirmed cases by medical records will be eligible for analyses.
2. Only malignant cancer cases (ICD-O-3 Behavior 3) will be included, except in cases where common practice is for cancer registries to report lower behavior tumors/pathology.
3. Categorization of cancer by anatomic site unless hematologic histology.

For internal analyses only, the following additional rules were agreed upon:

1. If a primary cancer re-occurs with the same histology within 5 years of diagnosis it will be considered a relapse and not counted again. An exception is made for paired organs (e.g., breast, lung, kidney), when the newly affected organ is contralateral to the primary cancer.
2. If pathology reports contradict information from state cancer registries, information from the pathology reports will take precedence.

Conclusion: Participating cohorts will estimate cancer rates based on these rules to enable comparison of incidence rates, overall and site specific, across cohorts. Our effort underlines the importance of collaboration between institutions involved in multiple studies of a major health issue, especially if this carries a heavy social and political load, in order to generate comparable results and provide the best possible evidence.

AUTHORS (list collaborator name, degree and agency): James Cone, MD, MPH
New York City Department of Health and Mental Hygiene

and the WTC Working Group

AUTHORS (FIRST NAME, LAST NAME): Rachel Zeig-Owens, James Cone

CONTROL ID: 1061691

TITLE: Defining common categories of exposure among four cohorts of rescue/recovery workers who responded to the World Trade Center disaster

CURRENT TOPIC: Epidemiology and surveillance of workers involved in emergency response: Public Health roles and tools

ABSTRACT BODY:

KEY OBJECTIVES: - To describe the establishment of a multi-institutional, multi-disciplinary working group;
- To describe common categories of exposure to the World Trade Center site for analyses of cancer and other conditions across cohorts.

BRIEF SUMMARY: Background:

The attacks on the World Trade Center (WTC) on September 11, 2001 (9/11) and its resulting collapse produced a massive dust cloud, fires that persisted for many months and rescue/recovery efforts that for some lasted beyond 2002. Because environmental monitoring was limited, human exposures have primarily been characterized using questionnaires, the content of which varied by WTC program site. In order to facilitate comparison of epidemiological findings from four cohorts of WTC-responders under study in NYC, common categories of exposure were defined.

Methods:

The four participating cohorts of WTC-responders include: the WTC Responder Health Consortium (N~27,000), the WTC Health Registry (n~30,700), the Fire Department of the City of New York (N~15,400), and the Environmental Health Center (N~800). Investigators from each cohort, and community and labor representatives met periodically to compare questionnaires in order to define common WTC exposure categories. "Common" was defined as similar information collected and available for at least 70% of enrollees, in at least three cohorts.

Results: Three common exposure categories were identified:

1. Dust exposure on day of 9/11: Type A: Presence in lower Manhattan on 9/11 and heavy exposure to dust from the cloud; Type B: Presence in lower Manhattan, work on the pile resulting from the collapse of the WTC towers on 9/11, not present during period of heaviest exposure to dust from the cloud; Type C: Presence in lower Manhattan on 9/11, no pile work on 9/11, not present during period of heaviest exposure to dust from the cloud; Type D: No presence in lower Manhattan on 9/11.
2. Work periods at the WTC site: Presence any time within the following time periods: 9/11/2001, 9/12/2001, 9/13/2001-9/17/2001, 9/18/2001-12/31/2001, 1/1/2001-6/30/2002.
3. Work activities at the WTC site: Participation in firefighting, search and rescue, hand digging/bucket brigade, and/or welding/steel cutting/torch operation.

We were unable to define common categories for other work activities, work in indoor spaces, or for the use of masks/respirators or other protective equipment across cohorts. Work duration is available for all cohorts but a common variable based on total days (1-7; 8-30; 31-90; >90) was available for only 2 cohorts.

Conclusion: Participating cohorts will use common exposure categories for analyses of post-9/11 cancer and other health outcomes to enable comparisons of disease/condition incidence by these WTC exposure categories across cohorts. Whenever possible, efforts to monitor health impacts of future disasters should include exposure categories with identical definitions across cohort studies

AUTHORS (list collaborator name, degree and agency): Carey Maslow, DrPH, New York City Department of Health and Mental Hygiene
and the WTC Working Group

AUTHORS (FIRST NAME, LAST NAME): Jessica Weakley, Carey Maslow

CONTROL ID: 1054173

TITLE: I-Suite: A Tool for Injury and Illness Tracking at All Hazard Incidents and Events

CURRENT TOPIC: Epidemiology and surveillance of workers involved in emergency response: Public Health roles and tools

ABSTRACT BODY:

KEY OBJECTIVES: 1. Raise awareness of public health officials about injury and illness tracking among deployed resources through the electronic I-Suite system.

2. Demonstrate the injury and illness reporting module in I-Suite.

3. Solicit suggestions for improvements to I-Suite that would facilitate detection and investigation of events of public health significance among incident resources.

BRIEF SUMMARY: The I-Suite database application was developed for incident tracking of natural disasters. I-Suite is largely a resource and planning tool, but in 2007 a module was added to facilitate tracking and reporting of illnesses and injuries among human resources at an incident. Public health officials charged with investigating reportable conditions among wildland firefighters and other incident responders are largely unaware of I-Suite and its potential for contributing to public health investigations. Suggestions for improving the utility of I-Suite's injury and illness module to better address public health needs will inform the next, web-based iteration of this module.

AUTHORS (list collaborator name, degree and agency): Gina Bald, PMP, United States Department of Agriculture Forest Service

Donna Tate, United States Department of Agriculture Forest Service

Michelle Ryerson, Bureau of Land Management

AUTHORS (FIRST NAME, LAST NAME): Michelle Ryerson

CONTROL ID: 1060632

TITLE: OSHA's emerging issues surveillance and response system

CURRENT TOPIC: Emerging issues and public health responses (e.g., nanotechnology, underreporting, assessing health inequalities)

ABSTRACT BODY:

KEY OBJECTIVES: The roundtable will provide attendees with an overview of the Occupational Safety and Health Administration's (OSHA) emerging issues system. OSHA's goal for this project is to establish a proactive system for identifying, monitoring and responding to the potential hazards associated with emerging technologies and changing industry patterns. The roundtable will provide for discussion and feedback on the system's four major components: identification, analysis, response and evaluation. Unique response methods including the use of social media and information sharing will be discussed. Participants will be encouraged to offer suggestions for improvement and collaborations with the current system.

BRIEF SUMMARY: An important activity in OSHA's mission to ensure safe and healthful working conditions for working men and women is to anticipate and respond to emerging issues in occupational health. An emerging safety and health issue is one that is new or evolving and the risks are unknown, unrecognized, increasing, or changing. Potential workplace health and safety hazards can originate in new and changing technologies and industries, working populations, workplace processes, and materials.

OSHA is developing an Emerging Issues Surveillance and Response System under the coordination of its Office of Science and Technology Assessment. This system will allow for the identification of potential emerging issues, analysis of the impact and scope of these issues and development of unique, non-regulatory actions to reduce the safety and health risk to the working population. An evaluation component is incorporated to provide a continual feedback loop on the effectiveness of this system and to suggest improvements to the system.

AUTHORS (FIRST NAME, LAST NAME): David J. Valiante

CONTROL ID: 1054694

TITLE: Effectiveness of Novel Occupational Heat Regulations on Reducing Fatal and Serious Cases of Occupational Heat-Related Illness — California, 2005–2008

CURRENT TOPIC: Emerging issues and public health responses (e.g., nanotechnology, underreporting, assessing health inequalities)

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): In the United States during 1992–2008, approximately 29 heat-related worker deaths occurred annually. In 2005, the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA), enacted an occupational heat illness prevention regulation to decrease mortality. We analyzed demographics and illness severity, in relation to occupational prevention programs, after the new regulation to evaluate its potential impact on heat-related illness cases.

METHODS (study design and appropriate statistical analysis): Using surveillance data from all serious and fatal heat-related illness cases investigated by Cal/OSHA for 2005–2008, we described the characteristics of the population. We compared prevention programs, number and severity of cases, mortality rates, and demographics for each year after program implementation.

RESULTS (specific results in summary form): Overall, 142 cases occurred. Among investigated cases, 21% of employers had a heat illness prevention program in 2005, which increased to 61% in 2008. Reported heat-related illness cases increased from 25 (2005) to 63 (2008), whereas case-fatality rates declined from 52% (2005) to 10% (2008). Mean core body temperature of nonfatal cases decreased from 102.8 F in 2005 to 98.8 F in 2008. Demographic changes included 96% of cases were among males in 2005 versus 78% in 2008; 68% of cases were among Hispanics in 2005 versus 56% in 2008; and primary language spoken was 68% Spanish in 2005 versus 50% in 2008. The majority of cases were in construction and agriculture, which was consistent across time.

CONCLUSIONS (description of the main outcome of the study): Since regulation implementation, heat illness prevention programs increased, and severity of illness among investigated cases decreased. Demographic changes indicate that male, Hispanic, and Spanish-speaking workers are being reached with targeted information, or a greater diversity among cases is being reported.

AUTHORS (list collaborator name, degree and agency): Francisco A Meza, MD, MPH

California Department of Public Health

Amalia Neidhardt, CIH, MPH

Department of Industrial Relations

Dennis Shusterman, MD, MPH

California Department of Public Health

Gayle Windham, PhD

California Department of Public Health

Barbara Maternia, PhD, CIH

California Department of Public Health

Janice Prudhomme, DO, MPH

California Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Francisco Meza

CONTROL ID: 1060552

TITLE: Good digging - Mining worker's compensation data for pesticide illness cases

CURRENT TOPIC: Acute pesticide poisoning surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): The California Department of Public Health (CDPH) conducts multi-source surveillance of occupational pesticide poisoning as part of a National Institute for Occupational Safety and Health (NIOSH) supported program. Historically, the majority of the cases are identified through physician-mandated reporting for work-related injuries and illnesses documented on a Doctor's First Report of Occupational Injury or Illness (DFR). In an attempt to capture additional cases, an additional data source, the California Department of Industrial Relations' Workers' Compensation Information System (WCIS), was explored.

METHODS (study design and appropriate statistical analysis): Through an agreement with the California Division of Workers' Compensation, CDPH has access to WCIS data. Criteria for querying WCIS for pesticide illness cases were developed in several iterations to ensure the greatest case capture with the fewest false cases. After case selection criteria were applied to determine "possible" cases, "probable" cases were selected manually based on the injury description field. Medical records were requested for cases with medical provider information, and phone interviews were attempted for the other cases. Medical records and interviews were then abstracted for demographic, pesticide, and health effect data. Cases were classified using the NIOSH pesticide case classification matrix. A capture-recapture analysis was completed to evaluate the overlap between physician reports and cases in the WCIS.

RESULTS (specific results in summary form): Our final query criteria selected a total of 254 possible pesticide illness cases with an injury date of 2009. Of these 254 possible cases, 195 (77%) were deemed probable pesticide illness cases based on manual review. Medical records were requested for the 116 cases with medical provider information, and interviews were attempted for the 56 remaining cases that also had a valid phone number. Only 12% of the 195 cases had previously been identified via a DFR. Case-specific information will be presented to highlight the differences between cases identified from physician reports and from WCIS and to try to explain the observed underreporting.

CONCLUSIONS (description of the main outcome of the study): The WCIS is a rich new source of pesticide illness cases for our program. Our data show that occupational illnesses due to pesticide exposure are common, occur among a wide variety of workers, and result in a variety of adverse health effects. Each data source has limitations which is why multi-source surveillance is necessary to capture the largest number and variety of cases. The new subset of cases identified from WCIS serve as an opportunity to identify new areas of pesticide poisoning that can be prevented through outreach efforts.

AUTHORS (list collaborator name, degree and agency): John Beckman BS California Department of Public Health, Rachel Roisman MD MPH California Department of Public Health, Justine Weinberg MS Environmental Health Science California Department of Public Health, Egils Kronlins BA California Department of Public Health, Christine Hannigan BA California Department of Public Health, Robert Harrison MD MPH California Department of Public Health

AUTHORS (FIRST NAME, LAST NAME): Rachel Roisman

CONTROL ID: 1061991

TITLE: Implementing a pesticide poisoning surveillance system in Nebraska

CURRENT TOPIC: Acute pesticide poisoning surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): In 2010, the Nebraska Department of Health and Human Services initiated a pesticide poisoning (PP) surveillance program. This report summarizes existing PP data and initial surveillance approaches. There is a particular public health need for PP surveillance in Nebraska as available data indicates that the state has one of the top four highest PP rates in the country from 2000–2009.

METHODS (study design and appropriate statistical analysis): Existing data on PP in Nebraska includes hospital discharge data (HDD) and poison control center (PCC) data. PCC cases were obtained from the National Institute for Occupational Safety and Health (NIOSH) and were restricted to acute, work-related exposures that occurred from 2000–2009 among Nebraskans 16 years of age and older to these pesticide classes: disinfectants, fungicides, fumigants, herbicides, insecticides, repellents, and rodenticides. The rate of acute work-related PP was calculated and compared to the national rate.

PP cases in the HDD were obtained from the Nebraska Hospital Association from 2000–2009 and were identified based on an e-code of E861.4 or E863.0-E863.9; patients of any age were included. Descriptive analysis was conducted on the following variables: date of poisoning, pesticide class, gender, age, and zip code.

RESULTS (specific results in summary form): PCC data identified 81, 60, 58, 72, 51, 42, 46, 45, 37, and 46 occupational PP cases in Nebraska from 2000–2009, respectively. The annual rate of occupational PPs per 100,000 employed Nebraskans for the 10 year period was: 9.03, 6.67, 6.27, 7.68, 5.35, 4.43, 4.88, 4.72, 3.83, and 4.91, respectively. These rates were 2–4 times greater than the corresponding national rates (2.09, 1.84, 1.85, 1.82, 1.78, 1.83, 1.77, 1.68, 1.50, and 1.46, for 2000–2009, respectively).

HDD identified 173 hospitalizations and emergency department visits for PP in Nebraska from 2000–2009. Patients ranged in age from 0 to 90 (mean=24.0); 85 patients were female (49.1%) and 88 were male (50.9%). The number of poisonings based on the pesticide class were: rodenticides (n=49, 28.3%), other and unspecified insecticides (n=48, 27.7%), disinfectants (n=43, 24.9%), organophosphates (n=12, 6.3%), herbicides (n=10, 5.8%), organochlorines (n=7, 4.0%), fungicides (n=2, 1.2%), organochlorine and organophosphate (n=1, 0.5%), and mixtures of insecticides (n=1, 0.6%).

CONCLUSIONS (description of the main outcome of the study): Current surveillance data for PP in Nebraska exist, however their usefulness is limited because PCC data is not population-based and HDD lacks information on occupational exposures. The Nebraska PP surveillance program is identifying best surveillance practices expand upon the current data and institute a model PP surveillance and prevention program.

AUTHORS (list collaborator name, degree and agency): Alison Welch, M.S., Nebraska Department of Health and Human Services

Thomas Safranek, M.D., Nebraska Department of Health and Human Services

AUTHORS (FIRST NAME, LAST NAME): Alison M. Welch

CONTROL ID: 1062408

TITLE: Sentinel Event Notification System for Occupational Risks (SENSOR)-Pesticides: Case-Coding Exercise and Open Forum

CURRENT TOPIC: Acute pesticide poisoning surveillance

ABSTRACT BODY:

KEY OBJECTIVES: Review a case-coding exercise previously distributed to and completed by the state partner health departments, and then allow representatives to discuss issues, concerns, and pertinent topics in an open forum.

BRIEF SUMMARY: This presentation will review the responses to the case-coding exercise previously distributed to the state health departments participating in the SENSOR-Pesticides program. Following this, an open forum will give attendees an opportunity to present to NIOSH any topics or concerns about acute pesticide poisoning surveillance. Each section in the case-coding exercise will be reviewed briefly and short discussions of specific items may take place for clarification if necessary. The open forum will allow time for questions or concerns raised by individual representatives to the group for discussion.

AUTHORS (list collaborator name, degree and agency): Edward Kasner, MPH, CDC/ASPH Fellow, NIOSH/CDC; Geoffrey Calvert, MD, MPH, NIOSH/CDC

AUTHORS (FIRST NAME, LAST NAME): Edward Kasner, Geoffrey Calvert

CONTROL ID: 1062445

TITLE: SENSOR-Pesticides: annual progress report

CURRENT TOPIC: Acute pesticide poisoning surveillance

ABSTRACT BODY:

KEY OBJECTIVES: Update SENSOR-Pesticides partners and CSTE attendees on any pertinent information from the EPA, Coding Committee, or SPIDER software.

BRIEF SUMMARY: This presentation will update SENSOR-Pesticides state partners on recent developments pertinent to the program. An overview will be provided of recent changes to the SPIDER software program used by state-based SENSOR-pesticides state health departments to code and manipulate surveillance data. A summary of significant developments within EPA as it relates to the SENSOR-Pesticides program will be provided. Finally, a summary will be provided of coding committee activities regarding any recently developed variables, or codes added to existing variables.

AUTHORS (list collaborator name, degree and agency): Geoff Calvert, MD, MPH, NIOSH/CDC; Bob Stone, New York State Department of Health

AUTHORS (FIRST NAME, LAST NAME): Geoffrey Calvert, Robert Stone

CONTROL ID: 1062500

TITLE: Acute pesticide poisoning associated with control of bedbugs, Florida, Michigan, New York, North Carolina, Texas, and Washington, 2005-2010

CURRENT TOPIC: Acute pesticide poisoning surveillance

ABSTRACT BODY:

BACKGROUND (study objectives, hypothesis, or a description of the problem): Bed bugs, while not disease vectors, are a nuisance and their bites can be distressing. We collected reports on acute illnesses associated with pesticides used to control bed bugs.

METHODS (study design and appropriate statistical analysis): Data were collected from Florida, Michigan, New York, North Carolina, Texas, and Washington for years 2005 to 2010 on cases of pesticide poisonings related to the control of bedbugs. Demographic characteristics, such as age and race, product information such as active ingredients, health outcomes, and contributing factors relating to the injury were analyzed in SAS 9.2®.

RESULTS (specific results in summary form): At least 35 cases of acute illness associated with pesticides used to control bed bugs were identified from 2005-2010, including one fatality. The majority of these cases occurred between 2008 and 2010, and states are continuing to report more cases. Pyrethrins were implicated in at least 9 of the cases mentioned above, and piperonyl butoxide (PBO) and pyrethrins were implicated in the fatality. The fatality occurred after several applications of pesticides in the household; including one application directly to the victim's bed and two separate events of nine bug bombs per event released in the household in a period of five days. The fatality also applied pesticides directly to her skin and hair and had numerous underlying medical conditions.

CONCLUSIONS (description of the main outcome of the study): We believe this report will increase awareness of illnesses related to pesticide for controlling bed bugs and serve as an early warning to states about this emerging and complex issue. While there are currently few cases of pesticide poisonings associated with control of bedbugs, this could change if bed bugs become more prevalent or become more difficult to eradicate. These situations could lead to inappropriate and unsafe uses of pesticides to eradicate bed bugs.

AUTHORS (list collaborator name, degree and agency): Naomi Hudson, DrPh, CDC/NIOSH/DSHEFS/SB

AUTHORS (FIRST NAME, LAST NAME): Naomi Hudson