

Occupational Health and Injury Surveillance in Louisiana (LOHIS) Fundamental Plus Program
Louisiana Department of Health, Office of Public Health Annual Report of Major
Accomplishments and Outcomes
June 2016 – July 2017

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MAJOR ACCOMPLISHMENTS AND OUTPUTS

Collect, analyze, and interpret surveillance data:

Occupational Health Indicators

The employment demographic profile and 21 of 24 occupational health indicators for 2014 were calculated and submitted to NIOSH and Council of State and Territorial Epidemiologists (CSTE) for inclusion in the multi-state occupational health indicators document available on the CSTE website. Two indicators, 5 and 8, were not calculated due to the requirement of Workers' Compensation claim data, which is not available. Emergency department data were also not available for a newly created indicator for occupational heat-related deaths. A report summarizing Louisiana data is currently being compiled and will be made available on our webpage.

Intermediate Outcome: Publication of the indicator summary report to our webpage raises public awareness of occupational health and safety in Louisiana.

Mortality Surveillance

Louisiana has one of the highest work-related fatality rates in the country; significantly greater than the national rate. A multisource mortality surveillance system was established to provide timely and detailed data on worker fatalities. A database has been created to track occupational fatality cases captured from death certificates, OSHA Fatality and Catastrophe Reports, and publically available data sources (e.g., news articles, police websites). All death certificates are reviewed monthly to identify fatalities that are not coded as work-related, but are suspected to be so. So far, six cases with corroborating evidence that the fatal accident was work-related have been identified. We have requested that the coroners revise these death certificates to classify the deaths as work-related. All publically available data are shared with Louisiana's Census of Fatal Occupational Injury (CFOI) staff to aid in complete case ascertainment. A report summarizing findings from 2015 and 2016 is currently under internal review. A subset of work-related fatalities – homicides – was independently reviewed for an 11-year period (2005-2016). This analysis was undertaken to describe the risk of work-related homicides in terms of demographic and employment variables in an effort to inform safety and prevention strategies, particularly in the New Orleans and Baton Rouge areas that have some of the highest violent crime rates in the country. Findings were written up in a manuscript for publication, which is undergoing in-house review.

Potential Impact: Reporting timely and reliable occupational fatality data with industry and cause of death details is essential for increasing awareness about high-risk occupations and

activities, and is an important complement to CFOI data. Additionally, our monthly death certificate review allows for timely feedback to coroners about questionable coding issues.

Amputations in the Manufacturing Industry

We are supporting OSHA Region 6 targeted enforcement on amputations in the manufacturing industry. Using our syndromic surveillance system that collects daily chief complaint data from the majority of Louisiana hospitals, we are able to identify individuals seen in the emergency department due to an amputation. Based on key words, diagnostic codes and demographics, we conduct medical record reviews on cases that were possibly work-related (work-relatedness is not consistently captured in our syndromic data). We have identified 7 work-related amputation cases to date and are in the process of obtaining employer information needed for OSHA referral.

Intermediate Impact: Work-related amputations most often occur when workers operate machines without proper or adequate safety guards. This activity will assist OSHA in identifying work-related amputations and meet its goal of enforcing safety regulations, holding employers responsible for the protection of workers, and reducing the number of work-related amputations.

Data Source Development:

Louisiana Collision Reporting and Analysis for Safer Highways (LACRASH) Data

Motor vehicle accidents are one of the primary causes of work-related injuries and fatalities. The Highway Safety and Research Group (HSRG) at Louisiana State University collects, analyzes, and distributes motor vehicle crash data from law enforcement and other state agencies. The LACRASH software system is used by law enforcement agencies throughout the state to electronically capture motor vehicle crash reporting information. HSRG produces data reports using LACRASH data, including commercial motor vehicle crash reports that are updated nightly. We worked with HSRG on a data quality project to evaluate the coding of health severity in the LACRASH data. The project was based on previously validated work by the National Highway Traffic Safety Administration that linked CRASH data with health databases such as hospitalization and mortality records to determine the severity of crash-related health effects. Piloting with 3-years of hospitalization data (2012-2014), we computed severity using International Classification of Diseases Programs for Injury Classification, which translates injury diagnosis into standard injury categories. The computed hospitalization data are probabilistically linked to LACRASH data. Preliminary results for 1-year indicate that of matched cases, about 75% had a severity score more severe than the LACRASH code, including 21 fatalities that were coded with severe or moderate injuries.

Intermediate Outcome: These findings have prompted HSRG to re-evaluate their methods for determining fatalities in order to improve LACRASH data quality. LACRASH is a data source that can be used in tracking work-related injuries and fatalities from motor vehicle crashes.

Adult Blood Lead Surveillance:

There were 76 cases with blood lead levels (BLLs) ≥ 10 $\mu\text{g}/\text{dL}$ and 30 cases with BLLs ≥ 25 $\mu\text{g}/\text{dL}$ from 7/1/2016 to the present. One worksite was referred to OSHA due to elevated blood lead levels. Follow-up was conducted on all of the cases, and exposure information, to date, was received for approximately 88% of the cases $\geq 10\mu\text{g}/\text{dL}$ and 100% of the cases $\geq 25\mu\text{g}/\text{dL}$. All except two of these cases were men, and almost all were work-related. During the last 2 years, we have received 34 cases with BLLs ≥ 10 $\mu\text{g}/\text{dL}$ from shooting range workers

(primarily firearm instructors). In response, we emailed approximately 800 firearm instructors general information about lead exposure (e.g., health effects, how to protect yourself and your students, enforcement requirements, etc.). Additionally, findings and a recommendation for increased OSHA enforcement of indoor firing ranges were presented at a workplace safety conference sponsored by OSHA-Consultation. A more in-depth, 2-page guide, Prevent Lead Exposure in Indoor Shooting and Firing Ranges, containing information regarding prevention measures and employer protection requirements has been published on our website and is in the process of being distributed to target audiences. Prevent Lead Exposure in Indoor Shooting and Firing Ranges has also been shared on the Adult Blood Lead Epidemiology and Surveillance (ABLES) listserv.

Intermediate Outcome: These information-disseminating activities have led to increased awareness of the dangers of lead exposure among shooting range workers, and helped to inform OSHA of lead exposure issues concentrated at indoor firing ranges. As a result of posting our Prevent Lead Exposure in Indoor Shooting and Firing Ranges to the ABLES listserv, two state health departments will tailor the guide for use in their state.

Heat-related Surveillance:

Multi-State Occupational Heat-Related Illness Study

Together with NIOSH we are co-leading a multi-state occupational heat-related illness study that will link emergency department (ED) data for occupational heat-related illness and other conditions with temperature and air quality data to determine the effect of changes in temperature and air quality on the ED visits. Methodology is based on previous analysis of Louisiana's data. We developed data selection and coding criteria, coordinated data collection and standardization from six Southeastern states, and assisted in study design and data quality issues. There are approximately 2 million ED visits included in the study.

Potential Outcome: Preliminary results, which provide evidence that supports the lowering of the heat index threshold at which workplace heat intervention efforts are implemented to 95°F rather than the commonly used threshold of 105°F, were presented at the annual Southeastern States Occupational Network (SOUTHON) conference held in April 2017.

Linking Environmental and Health Outcome Data to Identify Vulnerable Populations

We collaborated with the Louisiana Public Health Institute, the Trust for Public Land, and the City of New Orleans to develop a GIS-driven tool that will enhance the city's ability to link climate change drivers to individual health outcomes at the neighborhood level, particularly the impact of extreme heat. Our role on this project was to calculate age-adjusted rates of ED visits at the zip code level for the city of New Orleans for diseases that are potentially impacted by climate such as respiratory illnesses, cardiovascular diseases, and heat-related illness. The tool, Climate-Smart Cities New Orleans, was launched in July 2017.

End Outcome: The GIS tool facilitates the identification and engagement of vulnerable populations including outdoor and low-income workers, and provides outside researchers the means to evaluate impacts of heat on susceptible populations.

Collaborate and interact with state, regional, and federal partners and stakeholders:

National Violent Death Registry

We are collaborating with the National Violent Death Registry System to link their violent death surveillance data with our work-related mortality surveillance system. We also provide technical assistance on industry and occupation coding of their data.

Potential Outcome: Our expertise with industry and occupation coding will improve the newly established National Violent Death Registry System's occupational data. Combining the activities of both programs with regard to work-related fatalities will strengthen data quality, partnerships, and interventions.

Environmental Public Health Tracking

Occupational Health Indicator data are posted on the Environmental Public Health Tracking (Tracking) website and our methodology for evaluating weather data (temperature and humidity) has been adopted for ongoing weather data collection and evaluation.

Potential Outcome: Publishing data on the Tracking website provides another avenue for dissemination of occupational-related data to the public.

Pesticide Surveillance

Paraquat and diquat are herbicides that have the potential to be highly toxic and/or life threatening to humans. While it is illegal to transfer these pesticides to other containers, since 2000 there have been 17 deaths, 3 involving children, caused by people mistakenly drinking paraquat that had been transferred to a beverage container. We contributed to the evaluation of paraquat and diquat poisoning data that was included in a multistate analysis by NIOSH.

Intermediate Outcome: Increased safety measures aimed at reducing risks to the public including new EPA packaging requirements making it impossible to illegally transfer the herbicides to other containers is in the process of being implemented.

Indoor Air Quality

We have provided indoor air quality consultations for potential workplace exposures to various substances including asbestos, freon, mold in HVAC systems, and lead.

Potential Outcome: These consultations help protect worker health and safety.

Southeastern States Occupational Network (SOUTHON)

We continue to serve as co-chair of the SouthON Conference, in addition to co-leading calls and webinars with 12 SouthON states and other stakeholders. The 2-day conference was held in Nashville, April 6-7.

Intermediate Impact: This conference is critical for strengthening the occupational health community in the southeast, and establishing connections between key stakeholders including state health departments, academia, education and research centers, and NIOSH.

Office of Workers' Compensation Administration (OCWA)

We collaborated with OWCA to prepare and submit a funding application for the Workers' Compensation Surveillance Grant. Through this process, we demonstrated to OWCA leadership the value of Workers' Compensation (WC) claim data for improved injury surveillance and targeting high-risk occupations and industries. The grant was not funded, but we have continued to further some of the proposed grant activities. We are establishing a data sharing

agreement between LDH and OWCA, and proposing a data linkage project to determine underreporting of worker injuries to OWCA.

Potential Impact: Strengthening of relationship with OCWA staff, and development of WC claim data as a new data source.

Publications

Work-related Asbestos Exposure. Louisiana Department of Health. Office of Public Health. Section of Environmental Epidemiology and Toxicology. Posted June 2016. [Work-related Asbestos Exposure](#).

Louisiana Service Worker Wellness BRFSS Report. Centers for Disease Control and Prevention. NIOSH eNews. July 2016.

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Alarcon WA, State Adult Blood Lead Epidemiology and Surveillance (ABLES) Program Investigators. Elevated Blood Lead Levels Associated with Retained Bullet Fragments – United States, 2003-2012. MMWR Morb Mortal Wkly Report. 2017, Feb 10; 66(5): 130-133. doi: [Elevated BLL with Retained Bullet Fragments](#). PubMed PMID: 28182606.

Surveillance System captures work-related fatal injuries in Louisiana. Centers for Disease Control and Prevention. NIOSH eNews. March 2017.

Louisiana Service Worker Wellness BRFSS Report. BRFSS State Newsletter. Centers for Disease Control and Prevention. Population Health Surveillance. Spring 2017, Issue 8. [BRFSS Newsletter](#)

People and Programs Spotlight Louisiana's Occupational Health & Injury Surveillance. Louisiana Healthy Homes Coalition newsletter. June 2017.

Shooting Ranges: Prevent Lead Poisoning. Column by the Louisiana Occupational Health & Injury Surveillance Program. Louisiana Healthy Homes Coalition newsletter. June 2017.

Annual Heavy Metal and Carbon Monoxide Surveillance 2016 Reports. Louisiana Department of Health. Office of Public Health. Section of Environmental Epidemiology and Toxicology. Posted June 2017. [Annual Heavy Metal & CO Report](#).

Occupational Health Indicator Report, 2005-2014. Louisiana Department of Health. Office of Public Health. Section of Environmental Epidemiology and Toxicology. July 2017.

Presentations

Louisiana's Heavy Metal & Carbon Monoxide Surveillance Program. Louisiana Healthy Homes and Childhood Lead Poisoning Prevention Program Advisory Board Meeting. J Lewis. New Orleans, LA. October 2016.

Louisiana's Occupational Health & Injury Surveillance Program. Louisiana State University Health Sciences Center/Occupational Health Sciences Class. J Lewis. November 9, 2016.

Louisiana's Occupational Health & Injury Surveillance Program. Tulane University School of Public Health & Tropical Medicine/Global Environmental Health Sciences Department Seminar. J Lewis. March 2, 2017.

Louisiana's Occupational Health & Injury Surveillance Program. Louisiana State University Health Sciences Center/Epidemiology Class. J Lewis. March 9, 2017.

Louisiana's Work-Related Fatalities. 3rd Annual Workers' Memorial Day Program. Louisiana OSHA Consultation/Louisiana Workforce Commission. April 28, 2017, Baton Rouge, LA. J. Lewis, M. Lackovic.