Wisconsin Fundamental Occupational Health (OH) and Safety Surveillance Program
Annual Report of Major Accomplishments and Outcomes: July 1, 2016 – June 30, 2017

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SPECIFIC AIMS

The Wisconsin OH Program remains engaged in advancing surveillance, epidemiology, interventions and capacity building. Program aims are aligned with the previous grant period and include surveillance of Wisconsin's occupational illness, injury and death; disseminating information to residents about safe work practices; and acting as a workplace safety and health resource.

MAJOR OUTPUTS AND ACCOMPLISHMENTS

Occupational Health Surveillance

Calculated and reported Wisconsin's 2014 occupational health indicators (OHI) data for all 24 indicators to the National Institute for Occupational Safety and Health (NIOSH) for publication by the Council of State and Territorial Epidemiologists (CSTE).

Funded industry and occupation collection on the Wisconsin Behavioral Risk Factor Surveillance System (BRFSS) survey through 2020. Data were used in a 2013-2015 occupational asthma analysis and presented at 2017 CSTE.

Updated Wisconsin mesothelioma incidence and mortality surveillance (1997-2013) and coded industry and occupation within these datasets for further analysis.

Submitted Wisconsin's 2015 adult lead data to NIOSH's Adult Blood Lead Epidemiology and Surveillance (ABLES) Program. Conducted follow-back of blood lead levels ≥25 µg/dL during 2016-2017. Provided case information to Wisconsin Occupational Safety and Health Administration (OSHA).

Updated the Adult Lead Program's contact materials: launched new Wisconsin Adult Lead Program website in May 2016; updated all contact letters; created fact sheets on lead poisoning and take-home lead for workers; created electronic versions of two survey instruments.

Expanding Surveillance and Partnerships

In 2016 Wisconsin and Minnesota Health Departments responded to reports of elevated blood lead levels in shipyard workers in Superior, Wisconsin. An incident management system coordinated the investigation, and approximately 350 exposed workers were surveyed. This investigation strengthened multi-state partnerships, improved outreach to workers and local health departments, and resulted in multiple communication products. Safety information about lead poisoning prevention was distributed to workers, clinicians, and company/union representatives. Several articles (Page 4) have been published. A ship repairers' fact sheet was shared with the NIOSH Maritime Center for national dissemination, and a NIOSH Workplace Solutions document will be developed.

Wisconsin partnered with the Midwest Occupational Health Collaborative which resulted in the launch of a multi-state initiative to incorporate adult lead data into CDC's Healthy Homes and Lead Poisoning Surveillance System (HHLPSS). The initiative has been discussed at national meetings and is supported by CDC/NIOSH staff. The Collaborative met three times this year, and also initiated the generation of Wisconsin agricultural injury indicator data presented at the CSTE conference.

The Occupational Surveillance Advisory Group (OSAG) October 2016 and April 2017 meetings have resulted in new consideration of vulnerable worker groups for outreach and intervention activities.

OH Surveillance staff met with Wisconsin OSHA area directors and Wisconsin Worker's Compensation Division in February 2017 to find ways to collaborate on emerging occupational health concerns.

Occupational illnesses, including carbon monoxide, silicosis, and asbestosis, were proposed for addition to Wisconsin's list of reportable conditions.

Data agreements with Wisconsin's Division of Workforce Development will enhance our Workers' Compensation data with Unemployment Insurance denominator data.

Two investigations were initiated this year by Wisconsin OH staff in collaboration with local health departments: a fluorescent lightbulb recycling facility with occupational mercury exposure, and a sphagnum moss packaging facility with potential sporotrichosis exposures/infection.

The OH program met with Bureau of Labor Statistics (BLS) staff and the Environmental Public Health Tracking (EPHT) Program to begin incorporating BLS data into a new Occupational Health section of an existing portal, to be followed by OH Surveillance indicator data.

Other – Changes in Key Personnel
Dr. Jonathan Meiman became Project PI in August 2016 after the retirement of Dr. Henry Anderson.

Reports, Publications and Communications (Also see Table 1 and Page 4)
Fact sheets were developed for OH indicators (Workplace Safety Matters, https://www.dhs.wisconsin.gov/publications/p01593); for shipyards (Protecting Shipworkers from Lead, https://www.dhs.wisconsin.gov/publications/p01625); and for workers handling lead (Keep Your Family Safe - Don't Bring Home Lead from Your Job, https://www.dhs.wisconsin.gov/publications/p01737; and Lead and Your Health: No Amount of Lead is Safe, Even for Adults, https://www.dhs.wisconsin.gov/publications/p01738).

Occupational health queries (26) from local health departments, the public, other government agencies, unions, and industry were addressed and logged in a new tracking system.

NIOSH E-News submission in July 2017 described the investigation of lead exposures at a Wisconsin shipyard (https://www.cdc.gov/niosh/enews/enewsv14n4.html). A CSTE OH Success Story (https://cste.site-ym.com/?SuccessStories , April 2017) described WI and MN collaboration.

The OH webpage had 453 active sessions and 2349 page views last year. Since its rollout less than 2 months ago, the Adult Lead Program webpage has had 35 active sessions and 158 page views.

Workgroups
Program staff contributions to the CSTE OH Subcommittee, the CSTE OH Indicator (OHI) Workgroup, and the NIOSH BRFSS I/O Workgroup developed partnerships and collaboration among states.

OUTCOMES

Potential (Short-Term) Outcomes

Most of the above outputs include dissemination of findings contributing to reduced workplace risks. Collaboration and engagement of Wisconsin's OH program with state and federal agencies as well as professional organizations put partnering into practice and increased coordination among agencies.

Increased partner awareness of the OH program was accomplished through presentations, meetings and collaboration. Examples include creation of new Adult Lead and Occupational Tracking websites, OSAG meetings, and multi-partner collaboration on the shipyard lead exposure investigation.

Intermediate Outcomes

The Fraser shipyard investigation ensured that messaging was shared with workers, companies, unions, local health departments, the media, and other public health agencies. Contact with the NIOSH Maritime center has ensured that lead messaging reaches a national audience.

Input and expertise from OSAG members has focused intervention efforts on vulnerable workers. Partnering with Wisconsin's Workers Compensation, adding industry and occupation to Wisconsin BRFSS data, and collaborating with Minnesota on a novel agricultural injury indicator have led to improved assessment of occupational illness and injury.

End (Long-Term) Outcomes

OH Program activities contributed to an increased capacity among local/tribal health departments and state and community partners to collectively address work-related concerns. The program will continue to monitor surveillance data to prevent work-related injuries and illnesses in Wisconsin.

Table 1 Conferences, Presentations, and Lectures

Date	Event/Description (UW=University of Wisconsin—Madison)
11/15/2016	Occupational Asthma lecture, UW Population Health Sciences course
12/6 – 12/8/2016	National Institute for Occupational Safety and Health (NIOSH) Partners meeting/Council of State and Territorial Epidemiologists Occupational Health (CSTE OH) Subcommittee meeting/NIOSH Workers Compensation Meeting: Presentation on Adult Lead Surveillance
1/30/17	Retained Bullet lecture for UW Population Health Sciences Seminar
2/9/2017	Shipyard Lead Exposures in Wisconsin seminar at WI Division of Public Health
2/28 – 3/3/2017	Radiation Emergency Medicine, Oak Ridge Institute for Science and Education
4/9/2017	Shipyard Lead Exposures in WI lecture, UW Population Health Sciences course
4/20/2017	Occupational Reproductive Health lecture, UW Population Health Sci. course
5/23 – 5/25/2017	Wisconsin Public Health Association Conference: Presentation on Shipyard Lead Exposures in Wisconsin and Adult Lead Program Website rollout
6/4 – 6/8/2017	CSTE Annual Meeting/ NIOSH Partners Meeting/CSTE OH Meeting: Presentations on Occupational Asthma Burden, Agricultural Injury Indicator, and Shipyard Lead Exposures in Wisconsin
6/19 – 6/20/2017	Society for Perinatal and Epidemiologic Research Annual Meeting: Poster on Workforce Participation and Healthy Worker Biases
6/20 – 6/23/2017	Society for Epidemiologic Research Annual Meeting: Poster on Shipyard Lead Exposures in Wisconsin

NEW PUBLICATIONS AND WEBSITE RESOURCES

Publications

Alarcon WA; State Adult Blood Lead Epidemiology and Surveillance (ABLES) Program Investigators. Elevated blood lead levels among employed adults – United States, 1994-2013. MMWR Morb Mortal Wkly Rep 2016 Oct 14;63(55):59-65.doi: 10.15585/mmwr.mm6355a5.

Anderson, HA, Tomasallo, C, Werner MA. 17. Chronic Respiratory Diseases. In Remington PL et al. (Ed.), Chronic Disease Epidemiology, Prevention, and Control (4th edition). Washington, DC: American Public Health Association, 2016.

Grajewski B, Rocheleau CM, Lawson CC, Johnson CY. "Will my work affect my pregnancy?": Resources for anticipating and answering patients' questions. Amer J Obstet Gynecol 2016: 597-602.

Grajewski B, Whelan EA, Nguyen MM, Kwan LC, Cole RJ. Sleep disturbance in female flight attendants and teachers. Aerosp Med Hum Perform 2016; 87(7): 638-645.

Pinkerton LE, Hein MJ, Grajewski B, Kamel F. Mortality from neurodegenerative diseases in a cohort of US flight attendants. Amer J Ind Med 2016; 59(7): 532-7. DOI: 10.1002/ajim.22608.

Smith KE, Shafer MM, Weiss D, Anderson HA, Gorski PR. High-precision (MC-ICPMS) isotope ratio analysis reveals contrasting sources of elevated blood lead levels of an adult with retained bullet fragments, and of his child, in Milwaukee, Wisconsin. Biol Trace Elem Res. 2016 Oct 19; DOI 10.1007/s12011-016-0872-3.

Weiss D, Baertlein LA, Yendell SJ, Christensen KY, Tomasallo CD, Creswell PD, Camponeschi JL, Meiman JG, Anderson HA. Lead Exposure among Workers at a Shipyard — Wisconsin, 2015–2016. In review 2017.

Weiss D, Lee D, Feldman R, Smith KE. Severe lead toxicity attributed to bullet fragments retained in soft tissue. BMJ Case Reports 2017 Mar 8;2017. doi: 10.1136/bcr-2016-217351.

Weiss D, Tomasallo CD, Meiman JG, Alarcon W, Graber NM, Bisgard KM, Anderson HA. Elevated blood lead levels associated with retained bullet fragments – United States, 2003 – 2012. MMWR Morb Mortal Wkly Rep 2017 Feb 10; 66(5):130-133.

Weiss D, Yendell SJ, Baertlein LA, Christensen KY, Tomasallo CD, Creswell PD, Camponeschi JL, Meiman JG, Anderson HA. Notes from the field: Occupational lead exposures at a shipyard – Douglas County, Wisconsin, 2016. MMWR Morb Mortal Wkly Rep 2017 Jan 13;66(1):34. doi:10.15585/mmwr.mm6601a8.

Website Resources

Wisconsin Division of Public Health, Occupational Surveillance Program. Adult Lead Program. https://www.dhs.wisconsin.gov/occupational-health/ables/index.htm. Wisconsin Department of Health Services, May 24, 2017.