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## KEY ACCOMPLISHMENTS

- OHSSP developed a new OHI for motorized roadway fatal injuries based on CFOI data.
- OHSSP helped author the Iowa Burden of Injury Report (2009-2013 data) including the first sub-report on occupational injury.
- The OHSSP Manager was the subject matter expert for a two hour Iowa Public Radio show regarding worker injuries and construction fall injuries in Iowa, followed by an interview the following day by a major state TV station.

## FUNDAMENTAL (CORE) SURVEILLANCE AND PROGRAMMING

The mission of the Iowa OHSSP is to promote and protect the health and safety of Iowans in the workplace. The fundamental or core program provides administrative coordination and continuity across all IDPH OHSSP projects, explores options to improve the surveillance and data translation capacity of the entire program, and provides outreach, dissemination, and evaluation functions to support each project. The core program is also responsible for the Occupational Health Indicators (OHI) project and Adult Blood Lead Epidemiology and Surveillance (ABLES), as well as working with external partner projects and reports.

**Occupational Health Indicators (OHI):** The Program Manager submitted her recommendations for changes of the national OHI guidance document (for calculating 2013 OHI data) as the state-level lead contact for indicators one and four. Iowa 2013 OHI data was submitted.

- Outcomes (potential): Secondary usage of program outputs is also occurring. Iowa ABLES, OHI and prior FACE surveillance data are the most utilized program-generated outputs, and have been utilized by others for presentations, reports, program planning and education. OHSSP project data has also been utilized in media coverage.

OHI data was reviewed and incorporated into reports, presentations, and planning for activities with partners.

- Outcome (potential): Data was included in the publication of the 2014 Iowa Surveillance of Notifiable and Other Diseases Annual Report which is posted on the IDPH website.

A new OHI was drafted based on motorized roadway worker fatalities utilizing drill-down data options of CFOI data as the numerator and data from the NIOSH employed labor force (ELF) data tool as the denominator.

- Outcome (intermediate): The draft OHI was presented to the CSTE/NIOSH OHI workgroup on a March teleconference and to the Council of State and Territorial Epidemiologists occupational health subcommittee at the 2016 CSTE Annual Conference. The proposed OHI is currently being pilot tested by other states and NIOSH personnel prior to a vote for inclusion at the December 2016 grantee's meeting.

OHSSP continues to work in partnership with the Governor's Traffic Safety Bureau and the Iowa Department of Transportation as part of the Iowa Zero Fatalities program (<http://ia.zerofatalities.com/>).

- Outcome (intermediate): The 'Message Mondays' electronic messaging project has received national attention ([www.transportationmatters.iowadot.gov/message-mondays/](http://www.transportationmatters.iowadot.gov/message-mondays/)).

OHSSP was asked to be a member of the new Iowa Impaired Driving Fatality Reduction Task Force, which is working to reduce motor vehicle crashes and fatalities caused by alcohol or other drug use, distracted driving, and drowsy driving.

- Outcome (potential): Transportation incidents are the leading cause of worker deaths in Iowa. This partnership allows OHSSP to utilize existing resources from other agencies for dissemination and awareness.

**Iowa Adult Blood Lead Epidemiology and Surveillance (ABLES):** Iowa consistently has higher prevalence rates for adult lead exposures, with rates double the US rate for Blood Lead Levels (BLLs) of 10 µg/dL or greater (2014 rates: IA: 46.6, US: 20.4) and 25 µg/dL or greater (2014 rates: IA: 9.1, US: 4.5) per 100,000 employed adults when calculated using the Occupational Health Indicators method. Late in 2015, the CDC designated 5 µg/dL as the new reference BLL for adults, dropping the level considered elevated from 10 µg/dL. In 2015, there were 993 Iowa adults whose highest BLL in the calendar year was greater than 5 µg/dL. Of these, 232 had a BLL of greater than 5 µg/dL but less than 10 µg/dL.

IDPH OHSSP ABLES	# IA Adults BLLs >5 µg/dL or higher**	# IA Adults BLLs 10 µg/dL or higher	Prevalence rate* IA adults BLLs >5 µg/dL or higher**	Prevalence rate* IA adults BLLs 10 µg/dL or higher	Prevalence rate* IA adults BLLs 25 µg/dL or higher
<b>2010</b>	Not calc.	731	Not calc.	46.5	10.9
<b>2011</b>	Not calc.	832	Not calc.	53.0	15.3
<b>2012</b>	Not calc.	818	Not calc.	52.4	12.5
<b>2013</b>	Not calc.	856	Not calc.	53.5	12.6
<b>2014</b>	Not calc.	759	Not calc.	46.6	9.1
<b>2015</b>	993	761	60.6	46.4	9.5

\* rate per 100,000 employed adults 16 years of age or older

\*\* An additional 133 individuals had BLLs of 5 µg/dL, although it is currently unknown how many results were equal to 5 µg/dL and how many were actually less than 5 µg/dL – a data extraction limitation for which we are exploring options to overcome. For this reason, the numbers shown only represent persons with results greater than 5 µg/dL.

IDPH OHSSP ABLES involves the review of incoming adult blood lead data (Iowa has mandatory reporting of all blood lead tests). Elevated reports were given additional follow-up to determine if it was a known case or a newly reported exposure; follow-back was done for missing or incomplete data, and educational materials were provided to medical providers and new cases.

Referrals were made by OHSSP to the Iowa OSHA enforcement program regarding elevated blood lead results meeting certain criteria.

- Outcome (intermediate): These referrals led to OSHA inspections with at least one company cited for non-compliance of OSHA standards.

### Beyond ABLES

The Beyond ABLES campaign strategy was developed this year. OHSSP learned that local medical providers were unaware of the levels of lead exposure being experienced by their patients working in battery manufacturing plants. The goal of the campaign is to provide targeted education, outreach, and awareness

activities to the workers and medical providers in counties in Iowa with the highest number of adults with elevated blood lead levels of 10 mcg/dL or higher while building capacity at the local public health level. The baseline data being used is the county level 2013 OHSSP data. Key messaging will focus on take-home lead risks, medical impacts from long-term chronic lead exposure, and risks to young adults entering the battery manufacturing workforce.

- Key partners have been identified for the Beyond ABLES project. Each phase involves a county that currently lacks a local child lead program while the other counties have established local public health child lead programs.
- Phase 1 will include three NE Iowa counties which represent 48% of all adult EBLs in 2013, and 55% of battery plant worker EBLs, with the largest battery plant in the state. The major medical clinic in the county has agreed to partner with this project.
- Phase 2 will include four counties in the south-central part of Iowa near the second largest battery plant in the state. Surrounding county health departments have expressed interest. Phase 2 will also cover counties adjacent to Phase 1, including the proposed site of a new battery plant.
- Phase 3 will include eight counties and workers from the third largest battery plant in Iowa, as well as other manufacturing plants with a high risk of lead exposure.

Beyond ABLES Campaign	2013 Number of EBLs Base Data	Percent of ALL 2013 Adult EBLs	Percent of 2013 Battery Plant Worker EBLs
Phase 1 (2015-2017 budget years)	414	48%	55%
Phase 2 (2017-2018 budget years)	239	28%	32%
Phase 3 (2018-2019 budget year)	101	12%	13%
Total Covered	754	88%	100%

### Data Analysis and Dissemination – Burden of Injury Report

OHSSP uses departmental data from hospital discharge, emergency department, death, and trauma registry records in partnership with other projects to ensure the inclusion of work-related analysis. An example is a project which updates the Iowa Burden of Injury report, which was originally released in 2008, and did not include any occupational analysis. The new report includes extracted data findings for occupational injuries. The report will be posted on the OHSSP webpage after final approval of the entire report this fall. Key findings were shared at the Iowa Governor’s Conference for Public Health in April, 2016.

### Upper Midwest States Occupational Health Collaborative with Minnesota and Wisconsin.

Iowa OHSSP formed a Tri-State collaboration with the Wisconsin and Minnesota Occupational Health and Safety State Based Surveillance programs. The collaboration goals are to address issues of occupational health and safety at a multi-state level. The States share borders and often have citizens living in one state and working in a neighboring state. The states have similar industry workforces. A stronger relationship between these states allows for increased communication and leveraging of resources. The three programs use the occupational fatalities indicators as a tool to identify potential similarities and differences between the states. Iowa and Wisconsin are also pilot testing the methodology Minnesota developed to identify injuries with a relationship to agriculture using hospital discharge data.

- Outcome (intermediate): This relationship allowed for a rapid response to an occupational incident in 2016 involving hundreds of employees exposed to high levels of lead. The Tri-State collaboration resulted in a coordinated response with decreased confusion and miscommunication.

## Output Highlights

### **Magnitude and characteristics of acute paraquat-and diquat-related illnesses in the US: 1998–2013.**

Gamola Z.Fortenberry , John Beckman, Abby Schwartz, Joanne Bonnar Prado, Lucia S.Graham, Sheila Higgins, Michelle Lackovic, Prakash Mulay, Heidi Bojes, Justin Waltz, Yvette Mitchell, Kathy Leinenkugel, Michel S.Oriel, Elizabeth Evans, Geoffrey M.Calvert; Published by Elsevier Inc. Environmental Research 146 (2016)191–199. <http://dx.doi.org/10.1016/j.envres.2016.01.003>. January 2016

**Acute occupational pesticide-related illness and injury —United States, 2007–2010.** Calvert GM, Beckman J, Prado JM, Bojes H, Mulay P, Lackovic M, Waltz J, Schwartz A, Mitchell Y, Moraga-McHaley S, Leinenkugel K, Higgins S. In Centers for Disease Control and Prevention. Summary of Notifiable Non-infectious Conditions and Disease Outbreaks. October 23, 2015 for MMWR 2015; 62 (No. 54): 5-10.

### **Notes from the Field: Acute Mercury Poisoning After Home Gold and Silver Smelting - Iowa, 2014.**

Koirala S, Leinenkugel K. [MMWR Morb Mortal Wkly Rep](http://www.cdc.gov/mmwr/morbidityandmortalityreports). 2015 Dec 18; 64(49):1365-6. doi: 10.15585/mmwr.mm6449a4. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6449a4.htm>

- **Secondary use of Iowa data in article:** There's Gold in Them Thar Kitchens. Paul D. Blanc. Psychology Today. Posted 12/22/15. <https://www.psychologytoday.com/blog/household-hazards/201512/there-s-gold-in-them-thar-kitchens>

**Trends in non-fatal agricultural injuries requiring trauma care.** Celestin Missikpode, Corinne Peek-Asa1, Tracy Young, Amanda Swanton, Kathy Leinenkugel, and James Torner. Injury Epidemiology (2015) 2:30 DOI 10.1186/s40621-015-0062-3 Epub 2015 Dec 4. Abstract: <http://www.injepjournal.com/content/2/1/30>.

**Elevated Blood Lead Levels Among Employed Adults — United States, 1994–2012.** Centers for Disease Control and Prevention. Summary of Notifiable Non-infectious Conditions and Disease Outbreaks. Alarcon, Walter A. and state program contacts (listed in report). Published October 23, 2015 for MMWR 2015; 62 (No. 54): 52-75. [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6254a4.htm?s\\_cid=mm6254a4\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6254a4.htm?s_cid=mm6254a4_w)

**Acute occupational pesticide-related illness and injury —United States, 2007–2010.** Centers for Disease Control and Prevention. Summary of Notifiable Non-infectious Conditions and Disease Outbreaks. Calvert GM, Beckman J, Prado JM, Bojes H, Mulay P, Lackovic M, Waltz J, Schwartz A, Mitchell Y, Moraga-McHaley S, Leinenkugel K, Higgins S. Published October 23, 2015 for MMWR 2015; 62 (No. 54): 5-10. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6254a2.htm>

**A cluster of lead poisoning among consumers of Ayurvedic medicine.** Laura Breeher, Marek A. Mikulski, Thomas Czczok, Kathy Leinenkugel, Laurence J. Fuortes. [Int J Occup Environ Health](http://www.ncbi.nlm.nih.gov/pubmed/25843124). 2015 Oct; 21(4):303-7. doi: 10.1179/2049396715Y.0000000009. <http://www.ncbi.nlm.nih.gov/pubmed/25843124> - abstract, full text available on request.

**Midwest Regional Agricultural Safety and Health Conference** – presentation on Pesticide Surveillance in Iowa; exhibit display - Nov 17-18, 2015:

**Presentation at the Iowa Governor's Conference on Public Health:** The Burden of Injury in Iowa: A Statewide Report - April 13, 2016.