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Occupational Health Indicators Component

Surveillance

Beyond calculating and disseminating the occupational health indicators, Occupational Public Health Program (OPHP) staff engaged in a wide range of other occupational health surveillance efforts.

Staff, in partnership with OR-FACE, collaborated on an analysis of elevated occupational fatalities among older workers in Oregon. The project uses data from OR-FACE, Bureau of Labor Statistics, Oregon Workers' Compensation, Census of Fatal Occupational Injuries (CFOI), and peer reviewed literature to address research gaps and recommend evidence-based guidance interventions. The results of this analysis, including prevention recommendations, are being written up into a manuscript, which we plan to submit to Accident Analysis and Prevention this summer.

Staff analyzed 5 years' worth of blood lead tests for adults in Oregon 16 years of age and older. Between 2006 and 2010, there were 33,400 tests for blood lead, of which nearly 14% were greater than or equal to 10 µg/dL. Individuals with blood lead of 25 µg/dL or greater were more likely to have an occupational source. The results of this analysis were published on the OPHP website. A notice also went out over the state-based surveillance listserv in addition to the ABLES listserv. A link was also sent to our partners at Oregon OSHA, who posted it on their website.

Program staff completed a trend analysis of Oregon SOII (Survey of Occupational Injuries and Illnesses) based on a general approach provided by NIOSH. Staff examined 6 years worth of SOII data (2003-2008) for rates of injuries and illnesses combined, and rates for injuries only and illnesses only. The total injury and illness rate decreased by 3.9%; the total injury rate decreased by 3.2%; and the total illness only rate decreased by 10.3%. These results are consistent with published BLS studies, showing a consistent downward trend in injury and illness rates since 2003.

In year 7, Oregon's Department of Consumer and Business Services was able to share its data on closed medical and indemnity costs. The cost data were linked back to claimant information via each claim's unique identifier. Program staff summarized cost data for indicator conditions of interest (amputations; carpal tunnel syndrome). The average cost of amputations went up around 41% between 2001 and 2010; for carpal tunnel syndrome, 55%. In addition, staff analyzed Hospital Discharge Index (HDI) for cost of all work-related hospitalizations; burns; and pneumoconiosis. These data show that average charges for work-related hospitalizations increased as well during the time period. These data will be used in a comprehensive, 5-year indicator report that staff is currently writing that will go beyond what is typically reported for indicators, and will use supplemental data on costs, as well as demographic data on indicators where available.

With the help of an intern from Oregon State University, Master of Public Health Program, staff created a survey of our advisory committee (AC). The purpose of the survey was to gauge member satisfaction with how the AC worked in the past and gain insight into how better to structure the AC in the future.

Those who responded to the survey were satisfied with their involvement in the AC. All responding members reported that they saw value in being a member of the committee, while 60% stated they would be moderately or definitely likely to continue being a member. Priority areas to focus on in the future were identified as health care workers, especially non-English speakers, as well as home health workers. Clearer guidance on members' role in the AC, and increased representation from other groups (e.g., industry organizations, unions) were also recommended as positive changes. We plan to share the results of this analysis, and gain further input on any changes we propose at the next AC meeting, which we are planning in September 2012.

Partnerships

Staff maintained an active role in O[yes], a statewide coalition of agencies and organizations devoted to improving the health and safety of young workers in Oregon. Dan Cain, the new OPHP lead worker, became nominated as a board member after O[yes] received 501(c)3 nonprofit status. In addition, OPHP partnered with O[yes] and the Center for Research on Occupational and Environmental Toxicology (CROET) at the Northwest Agriculture Show, where safety and health message were shared with visitors to raise awareness about agriculture-related injuries and illnesses.

OPHP was integrated into the "Healthy Workplaces" unit, which includes the Adult Blood Lead Epidemiology and Surveillance (ABLES) and Hazardous Substance Incident Surveillance (HSIS) programs as well as the Environmental Public Health Emergency Preparedness program. Data sharing occurs regularly; for example, when HSIS receives notification of a workplace fatality via the Oregon Emergency Response System, that information is quickly shared with OPHP and OR-FACE.

Program staff have been involved with colleagues in the Preparedness, Surveillance, and Epidemiology and Injury sections regarding the possible generation of an indicator for carbon monoxide poisoning. Staff have been reviewing the data already available in Oregon, including death records, hospital discharges, and poison center records. The program epidemiologist shared previous CSTE work on generation of a work-related carbon monoxide poisoning indicator that may be useful when defining a case definition.

Presentations

Walters, Jaime and Trena VanDeHey. "Getting the lead out: collaboration, not chelation." Oregon Public Health Association (OPHA) Conference. Corvallis, OR. 11 October 2011. Oral presentation.

Publications

Walters, Jaime. Adult Blood Lead Reporting in Oregon, 2006-2010. November 2011. Available at http://public.health.oregon.gov/HealthyEnvironments/WorkplaceHealth/Documents/9563-AdultLeadReport-FINAL-web_version.pdf

Occupational Health Indicators for 2009 will be disseminated to various partners/stakeholders, submitted to NIOSH, posted on the CSTE website, and made available at <http://public.health.oregon.gov/HEALTHYENVIRONMENTS/WORKPLACEHEALTH/Pages/fundamental.asp>
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Oregon Fatality Assessment and Control Evaluation (OR-FACE)

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The OR-FACE project of Improving Occupational Health in Oregon: Turning Data to Action is conducted in partnership with the Center for Research on Occupational and Environmental Toxicology (CROET) at Oregon Health & Science University (OHSU).

The objectives of the OR-FACE program are:

- Maintain the occupational fatality surveillance and investigation activities.
- Develop intervention strategies designed to reduce occupational fatalities associated with falls.
- Develop intervention strategies to reduce occupational fatalities for older workers, aged 65 and over.
- Continue interventions in current areas of concern related to young workers, immigrant workers, commercial fishermen, and logging; and develop other outreach activities in priority areas as appropriate.
- Collaborate with institutional partners to develop effective intervention strategies.
- Evaluate program activities.

SURVEILLANCE AND INVESTIGATION OUTPUTS

Surveillance

Provisionally, OR-FACE recorded 52 fatalities in 52 incidents in 2011, and 20 fatalities in 19 incidents in 2012.

The OR-FACE 2009 Annual Report (expected publication July/August-2012) recorded 58 fatal occupational incidents, with 64 worker deaths. These analyses identified the following notable trends in 2009:

- Transportation remained the principal source of fatal injury, comprising nearly half (48%) of all events. Transportation incidents involved motor vehicles (71%), mobile machinery (11%), aircrafts (11%), and fishing vessels (7%).
- In 2008, a higher proportion (73%) of incidents than usual involved middle-aged workers (45-64). In 2009, a pronounced decrease in fatalities involving middle-aged workers occurred (reduced to approximately one-half of total fatalities).
- Violence was the third most common category of fatal occupational events in 2009, representing 16% of total incidents. The elevated number of work-related suicides in 2008 (9) declined in 2009 to 3 total. Two of the four deaths involving females in 2009 were from a homicide.

Investigation

One investigation report was published, and two are currently under final review. Two additional cases are currently in active investigation.

- OR-2008-1: Mechanic killed by excavator bucket during maintenance. Outlines risk factors during heavy equipment maintenance, including a recurring hazard alert for Oregon: the activation of vehicle/machinery controls with loose clothing or tools.
- OR-2005-10-1: Residential construction worker falls from ladder while working on a window (under final review). Recommendations for controlling roofing hazards, including stored materials on roofs, appropriate access to upper levels of construction projects, and general ladder safety.
- OR-2005-64-1: Home Construction worker falls from ladder, roofing material lands on worker (under final review). Provides recommendations for controlling hazards related to ladder use during general residential construction, including planning appropriate methods of access to upper levels of construction projects, methods to stabilize ladders, and general ladder safety.

OUTREACH AND INTERVENTION OUTCOMES

Potential Outcomes

- Increasing the use of personal flotation devices (PFDs) among commercial fisherman. In collaboration with partners at the University of Washington, we published a final report of the Oregon Crab Fishing Safety Assessment study (Croteau & Zoller, December 2011). The report highlighted current levels of PFD use, barriers to use, worker evaluations of 5 PFD types, and recommendations for improved use. Fifty copies of the report were distributed to the US Coast Guard, the Oregon Dungeness Crab Commission, NIOSH, and personal flotation device manufacturers. Future fishing fatalities may be prevented if key partners respond to the report, such as the Coast Guard increasing enforcement of PFD use, the Oregon Dungeness Crab Commission distributing report findings to its members, or manufacturers enhancing their offerings (price, availability, or choice) of PFD types preferred by workers.
- Improving safety among young workers. OR-FACE continued to participate in the Oregon Young Employee Safety, O[yes], Coalition. Results from the young employee focus groups (April-2011), which engaged young workers in discussing workplace hazards, issues impacting their health and safety, and outreach strategies, were presented at the Oregon Public Health Association Meeting (October-2011). A second iteration of an employer needs assessment survey (March-2011) is currently being administered statewide to policyholders with the two main Workers' Compensation insurance providers in Oregon (SAIF and Liberty Northwest). The results of the employer needs assessment and young employee focus groups will identify gaps in safety protections for younger workers and identify opportunities for future injury prevention interventions.
- Identifying interventions for preventing transportation-related fatalities among older workers. In response to an observed elevated risk of fatal transportation events among workers over the age of 65, we conducted research on potential causal factors and intervention strategies. A presentation of preliminary results was presented (Olson, R., Walters, J., Karr, J., & Zoller, E., 2012) and we expect to submit a manuscript of findings in August of 2012. Findings showed that elevated risk is not entirely due to older workers being employed in hazardous transportation jobs, and suggests future interventions related to the organization of work among small employers may have leverage for reducing transportation deaths in this population.

- Preventing residential construction fatalities. Based on patterns in Oregon data, our research outputs during the current year have focused on preventing falls in residential construction. More specifically, we developed and began evaluating one-page toolbox talk guides to help supervisors tell stories of Oregon construction fatalities during pre-shift safety talks. Survey results showed that there are opportunities to increase the frequency of safety as a topic in pre-shift briefings, and that most construction supervisors would prefer receiving materials from OR-FACE in a paper format. Next Olson (Program Director) oversaw the development of initial 1-page guides in partnership with the Portland State University Occupational Health Psychology (OHP) program and Hoffman Construction. Using evidence-based hazard communication principles, graduate student-led teams produced fourteen draft 1-page guides. If the one-page guides are ultimately adopted and used by large numbers of residential construction supervisors, this initiative has the potential to directly improve fall protection practices on residential construction worksites.

Intermediate Outcomes

- Distribution of existing OR-FACE publications. The goals of distributing existing publications are to influence employers' hazard control and supervisory practices, influence policy makers' occupational safety decisions, and to provide prevention information directly to line workers. In 2011-12 materials distributed and downloaded from our website were diverse and voluminous, especially the "Fallers Safety" booklets.
- OR-FACE publications in featured in National media. The OR-FACE investigation reports, Logger killed under rigging when carriage drops (June-2011), Temporary mill worker killed in fall down manlift shaft (September 2011/January 2012), and Bulldozer movement kills operator standing on track (April 2012) were featured in the FACE Value column of Safety + Health, the free National Safety Council monthly magazine.

PUBLICATIONS AND PRESENTATIONS

Peer-Reviewed Publications

- Hammond, T., Rischitelli, G. & Zoller, E. (October 24, 2011). Assessing data sources for state-level occupational fatality rates: Oregon, 2003–2007. *American Journal of Industrial Medicine*.

Additional Publications

- Investigation report: Mechanic killed by excavator bucket during maintenance (OR 2008-01-1) (July 2012).
- Annual report: OR-FACE Annual Report 2009 (July/August 2012).
- Final report: Croteau, G & Zoller, E. Oregon Crab Fishing Safety Assessment (December 2011).
- Annual report: OR-FACE Annual Report 2008 (July 2011).

Blogs

- Karr, J. & Olson, R. (Sept 8, 2011). Safety in Transportation: Increased risks for older workers? Oregon. Oregon and the Workplace Blog.
- Zoller, E. (Dec 29, 2011). Research to Practice: Oregon Commercial Crab Fishing Safety Assessment. Oregon and the Workplace Blog.

- Zoller, E. & Montgomery, D. (Jan 30, 2012). OR-FACE and CROET Participate in the Mid-Oregon Construction Safety Summit. Oregon and the Workplace Blog.

Presentations

- Olson, R., Walters, J., Karr, J., & Zoller, E. (May 27, 2012). Aging Workers at Increased Risk of Fatal Transportation-Related Injuries. Association for Behavior Analysis International. Seattle, WA.
- Zoller, E. (March 20/April 26, 2012). Staying Safe and Healthy at Work: A Guide for Young Employees. Oregon Health & Science University. Portland, OR.
- Zoller, E., Croteau, G. & Lincoln, J. (November 18, 2011). Oregon Commercial Crab Fishing Safety Assessment. Pacific Marine Expo. Seattle, WA.
- Zoller, E. (October 10, 2011). Oregon's Efforts to Prevent Young Worker Injuries and Fatalities. Oregon Public Health Association Meeting. Corvallis, OR.
- Zoller, E. (October 10, 2011). Oregon Commercial Crab Fishing Safety Assessment. Oregon Public Health Association Meeting. Corvallis, OR.
- Croteau, G. & Zoller, E. (June 26, 2011). Oregon Commercial Crab Fishing Safety Assessment. 2011 National Symposium on Agriculture, Forestry, & Fishing Health & Safety. Boise, ID.

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