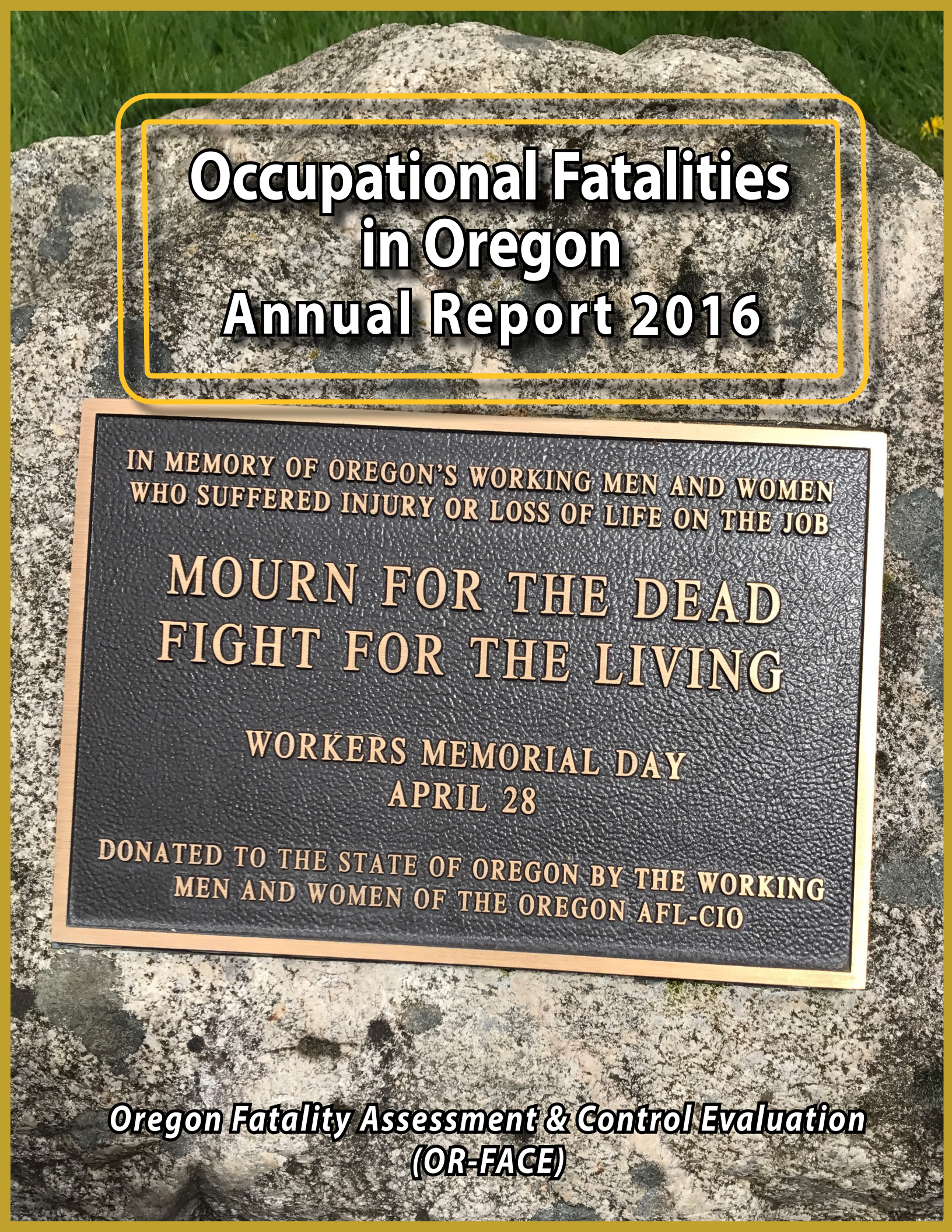
Occupational Fatalities in Oregon Annual Report 2016



Oregon Fatality Assessment & Control Evaluation (OR-FACE)

FACE Definitions

The Oregon Fatality Assessment and Control Evaluation (OR-FACE) program investigates work-related fatalities that are caused by a traumatic injury when the injury occurs within Oregon.

A location *within Oregon* means the incident, or some portion of the event or exposure, occurs within the geographical boundaries of the state of Oregon, including the coastal waters, airspace, and subterranean portions of the state.

A *work relationship* exists if an incident occurs (a) on the employer's premises and the person was there to work, or (b) off the employer's premises and the person was there to work, or the event or exposure was related to the person's work or status as an employee.

Work is defined as duties, activities, or tasks that produce a product or result, are done in exchange for money, goods, services, profit, or benefit, and are legal activities.

In Scope

- Self-employed, family, or volunteer workers, exposed to the same work hazards and perform the same duties or functions as paid employees, and that meet the work-relationship criteria.
- Suicides and homicides that occur at a worksite (included in OR-FACE scope since 2011).
- Fatal events or exposures that occur when a person is in travel status, if the travel is for work purposes, or is a condition of employment (excluding commute).

Out of Scope

- Institutionalized persons, including inmates of penal and mental institutions, sanitariums, and homes for the aged, infirm and needy, unless employed off the premises of their institutions.
- Fatal heart attacks and strokes, unless causally related to a traumatic injury or exposure.
- Fatal events or exposures that occur during a person's recreational activities that are not required by the employer.
- Fatal events or exposures that occur during a person's commute to or from work.

Adapted from Bureau of Labor Statistics (2001), *Census of Fatal Occupational Injuries: Definitions*. U.S. Department of Labor. Available online (April 13, 2017): http://stats.bls.gov/iif/oshcfdef.htm

Acronyms

BLS	U.S. Bureau of Labor Statistics
CDC	Centers for Disease Control and Prevention
CFOI	U.S. Census of Fatal Occupational Injuries
NAICS	North American Industry Classification System
NTSB	National Transportation Safety Board
NVDRS	National Violent Death Reporting System
OIICS	Occupational Injury and Illness Classification System
Oregon OSHA	Oregon Occupational Safety and Health Division
SOC	Standard Occupational Classification
DCBS	Department of Consumer and Business Services
OERS	Oregon Emergency Response System

Annual Report 2016

Oregon Fatality Assessment and Control Evaluation

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Contact Information

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This report is dedicated to the people in Oregon who have lost their lives as the result of traumatic workplace injuries, in the hope that better understanding of these fatal incidents may help to save the lives of other workers in similar situations.

Oregon FACE Program

Oregon Institute of Occupational Health Sciences

Oregon Health & Science University

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OR-FACE is supported by the National Institute for Occupational Safety and Health (grant #5U60OH008472) through the Oregon Health Authority.

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- Curtis Cude
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Report Summary

REPORT HIGHLIGHTS

- OR-FACE conducts surveillance, investigation, assessment, and outreach related to traumatic occupational fatalities in Oregon (see pg. 5-6 for descriptions of activities).
- OR-FACE published 14 blogs and 1 investigation report, *Crane operator killed by falling steel beam.* OR-FACE also published 5 toolbox talk guides (see pg. 8).
- Characteristics of fatal events and the workers involved are quantified in charts (see pg. 16-18).
- Abstracts provide a brief description of each incident and contributing factors (see pg. 19-35).
- Contact information for OR-FACE to access resources and to provide feedback — see back cover.

INTRODUCTION

In 2016, Oregon Fatality Assessment and Control Evaluation recorded 57 fatal occupational incidents resulting in worker deaths, as well as 2 incidents that could not be determined due to insufficient information. The number represents a rate of 2.92 fatalities per 100,000 employed workers in the civilian labor force in Oregon. The national worker fatality rate in 2016 was 3.6 per 100,000 full-time equivalent workers.

The following notable trends occurred in 2016:

- The forestry and logging industry had the highest number of fatalities, followed by transportation. These two industries have been among the top 4 industries for fatalities in 12 of the previous 13 years (see pg. 15).
- Fatal cases from Contact events exceeded all other events, followed by Motor Vehicle Incidents. Motor Vehicle Incidents still has the highest number of cumulative events through the duration of OR-FACE (see pg. 16).
- The size of the workforce was higher in all but three counties across Oregon (source: Bureau of Labor Statistics; annual average, not seasonally adjusted).

Core Activities

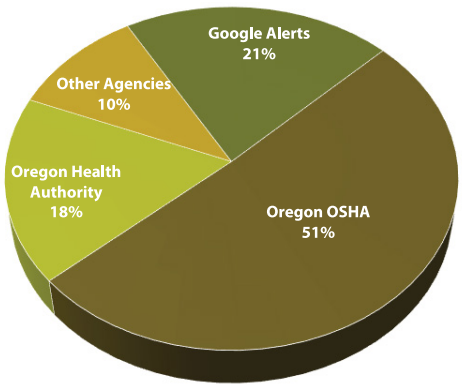
SURVEILLANCE

The OR-FACE surveillance system uses Oregon OSHA fatality notifications through Department of Consumer and Business Services (DCBS), quarterly reports of death certificates marked "at work" from the Oregon Public Health Division's Vital Statistics, a regular monitor of a programmed Google keyword alert, and Oregon Emergency Response System (OERS) reports.
For 2016, the majority of earliest first notifications regarding work-related fatalities originated from Oregon OSHA; other first notifications came from news media and other State agencies (see below).

ASSESSMENT

When fatalities are identified as FACE cases, sufficient data and information are collected about each incident for analysis and to produce case abstracts. Assessment data sources for each case include Oregon OSHA investigation reports, Medical Examiner reports, police reports, news reports, workers' compensation records, and occasionally other records such as business profiles, hospital or emergency response records, or investigation reports from other sources. OR-FACE analyzes incident data to identify and summarize trends. Incidents are coded and analyzed by industry (NAICS), occupation (SOC), and event (OIICS), as well as by demographic and other variables, such as the specific source or setting of the injury. Incident abstracts are created to explain each fatality with the aim of preventing similar fatal incidents in the future.

Notifications



Timing of first notification following incident							
	Days		Months				Total
	0-2	3-30	1-3	3-6	6-12	12+	
Google Alerts	6	6	0	0	0	0	12
Oregon Emergency Response	0	0	0	0	0	0	0
Oregon OSHA	16	13	0	0	0	0	29
Oregon State Police	4	0	0	0	0	0	4
Oregon Health Authority	0	0	0	9	0	1	10
Oregon Department of Consumer Business Services (DCBS)	0	0	1	1	0	0	2
Total	26	19	1	10	0	1	57

Core Activities

INVESTIGATION

In-depth investigations of selected cases are conducted by an OR-FACE fatality investigator/outreach specialist. Investigations may be completed independently, in collaboration with OR-OSHA investigators, or with contractors with relevant industry-specific expertise as needed. Investigation reports are reviewed by professional safety experts prior to publication. Investigation reports seek to draw urgent attention to issues and root causes, and to provide recommendations for preventing similar fatal injuries. One investigation report was published in 2016: *OR-2015-02-1, Crane operator killed by falling steel bea*m (see page 9).

OUTREACH

- 160 "Fallers Logging Safety" booklets to State Street Saw Shop
- 160 "Fallers Logging Safety" booklets to Oregon State University (OSU) College of Forestry
- 160 "Fallers Logging Safety" booklets to California Loggers Association
- 300 subscribers (digital distribution) regarding "Occupational Fatalities in Oregon Annual Report 2014", Investigation Report 2015-2-1, Hazard Alert, 5 Toolbox Talks
- 50 Fall Prevention Fact Sheets; Plan, Provide, Train pocket cards; and Simple Cost-free Plan to Get Started pamphlets to ASSE Columbia-Willamette and ASSE Santiam Section
- 30 pamphlets, fact sheets, and informational cards to OR-OSHA Construction Advisory Council
- 30 copies of 7 different investigative reports at Stand-down Event
- 50 "Fatal Hazards of Farms and Ranches" to OR-OSHA Tigard
- 25 "Occupational Fatalities in Oregon Annual Report 2014" to Oregon OSHA
- 5 "Occupational Fatalities in Oregon Annual Report 2014" to Oregon Occupational Public Health Program Advisory Board
- 50 "Young Workers Stay Alive on the Job" to SAIF Corporation
- 50 "Participate in Workplace Fatality Prevention" brochures to Oregon OSHA

CITATIONS

Safety+Health (Feb 2016). National Safety Council monthly magazine. "Disregarding manufacturer's instructions can be deadly, Oregon FACE warns."

Safety+Health (Dec 2016). National Safety Council monthly magazine. "Oregon FACE releases new toolbox talks."

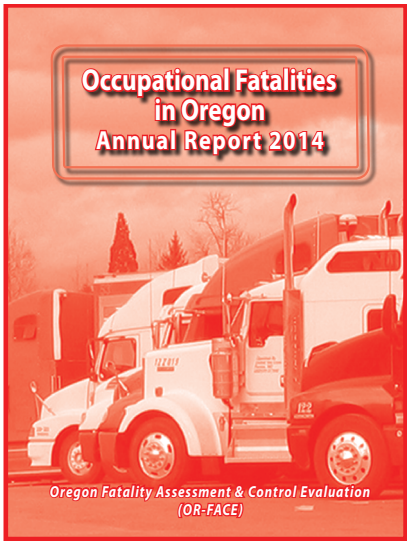
Safety Science (2016). "Toolbox talks to prevent construction fatalities: Empirical development and evaluation."

NIOSH FACE Meeting (Sept 2016). "Oregon FACE Update."

NIOSH FACE Meeting (Sept 2016). "Temporary/Contingent Worker Fatal Injuries: Case Studies and Prevention Recommendations."

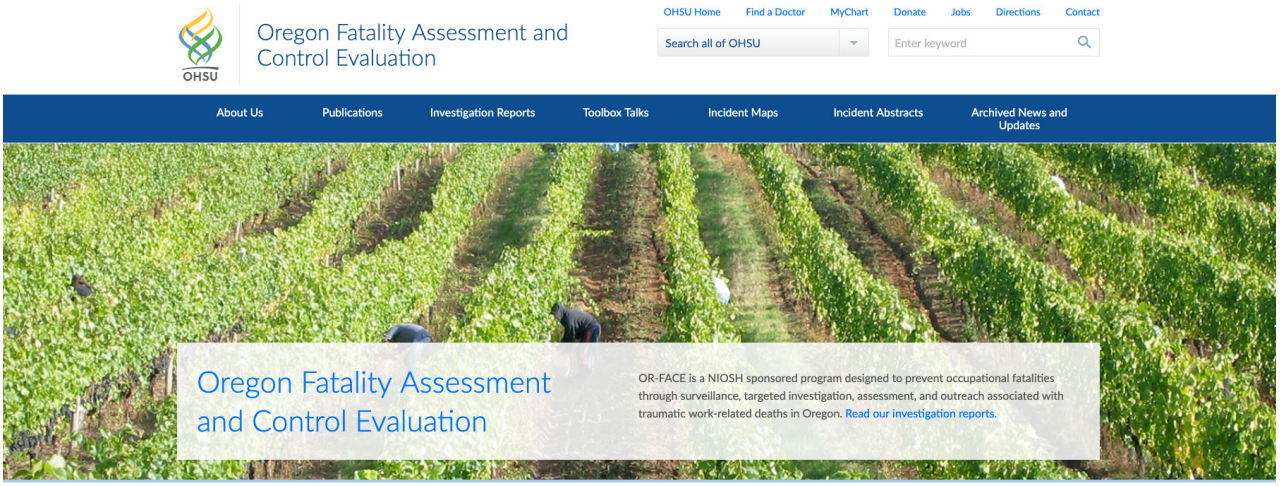
Publications

Oregon Fatality Assessment and Control Evaluation (OR-FACE) publications are for information, research, or occupational injury control only. OR-FACE is a research program, and has no legal authority to enforce state or federal occupational safety and health standards. The identity of the decedent, employer, and witnesses are not included in reports or alerts. FACE data are confidential under Oregon law (ORS 413.196).



ANNUAL REPORTS

The 2014 annual report was published in October of 2016, 22 months after close of year (*to ensure accurate fatality surveillance, each Annual Report is closed out and has historically been published approximately 18 months after the end of a study year)*. OR-FACE annual reports include analysis of the fatal incidents with charts for industry, event, age, gender, time, month, and more. These reports also include an abstract of each case. See our website (www.ohsu.edu/or-face) for a complete catalogue of annual reports and other useful materials, which date back to 2003 when the OR-FACE program began.



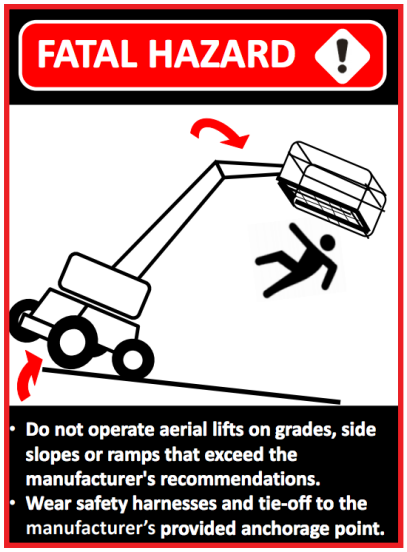
Find published presentations, safety booklets, reports, and other resources at the OR-FACE website

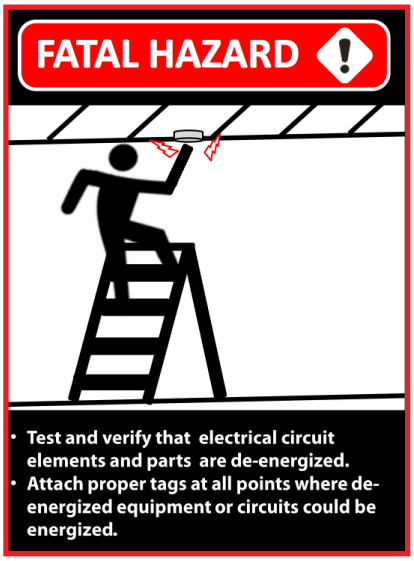
www.ohsu.edu/or-face or scan the provided QR code.

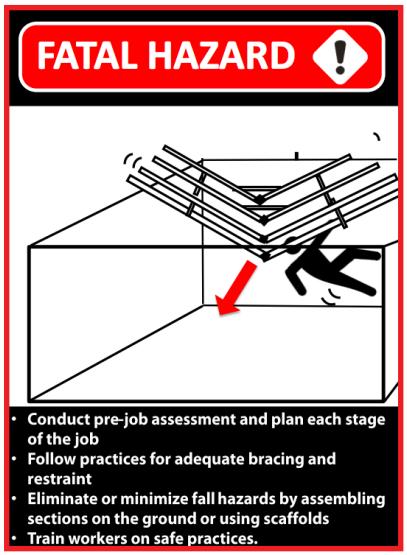
New reports are published regularly.

TOOLBOX TALK GUIDES

Five toolbox talk guides were produced in 2016. These guides are based on Oregon occupational fatality cases and are designed to help supervisors share fatal stories with their employees and discuss prevention recommendations. The front of each two-sided guide shows an image depicting the event with key prevention recommendations listed underneath. This side is shown to the workers and the other side provides text to help the supervisor tell the fatality story and identify preventive actions that can be taken at their own work-site.







OR-FACE ALERT

Follow manufacturer's instructions

Multiple Oregon construction deaths have been linked to not following manufacturer's instructions for equipment or building materials. Three example cases are described below. Using manufacturer's instructions in training, and consulting them before operations, can save lives.

For complete fatality investigation reports vist the OR-FACE website.

Construction Fatal Stories

Case 1: A 40-year old crane operator was killed when a 35-foot (5600 lb) H-beam fell crushing the crane cab and striking him in the head. During a pile driving operation, the H-beam pile had been placed in a drilled 25-foot hole. While using a vibratory hammer to force the pile further into the hole, the pile shifted. After several failed attempts to correctly position the pile it was extracted using the hydraulic clamp of the vibratory hammer and moved 12 feet from the hole. It was held in a vertical position with the bottom of the pile resting on the ground. The clamp holding the top of the pile unexpectedly released. The pile was not rigged to the clamp housing or attached to the whipline. The 5600 lb pile fell, struck and crushed the crane cab, and killed the operator.

The crew was not aware of the manufacturer instructions warning of clamp failure if the hydraulic clamp cylinder was not bled of entrained air. Pile lifting instructions in the manual required a shackle and short line attached to the hole in the pile clamp housing with the shackle fastened into the lifting hole in the pile.

Case 2: A 40-year-old pipelayer was struck in the head by the flying rigging of a towline that failed at an excavation site, and died 2 days later. During installation of a sewer pipeline, a hydraulic excavator, commonly called a track-hoe, pulled a 14,000 lb. steel trench shield forward inside a 14.5 ft trench, using a wire rope and hook system. The pipelayer was standing inside the shield while it was being moved. A hook attached to the track-hoe failed, causing the taut rigging to snap loose, fly into the trench shield, and hit the pipelayer on the back of his hard hat. The pipelayer was air evacuated to a hospital, where he later died.

The manufacturer safety instructions warned that coupler and components should not be modified. The closed lifting eye had been removed and replaced with a latched hook.

Case 3: A 33-year old carpenter foreman was killed when the roof truss system he and his crew were installing collapsed. The critical elements of standard practice provided in the BCSI-B1 Summary Sheet Guide to Handling, Installing, Restraining and Bracing of Trusses prior to and during truss installation were not followed. After the thirteenth truss was toenailed into its place, the victim disconnected the truss from the rigging. The truck operator and crew member on the trailer saw the truss system collapsing and yelled to warn the crew. The foreman sustained a fatal head injury when he was struck on the head by a falling truss.

The Structural Building Components Association, BCSI-B1 Summary Sheet-Guide to Handling, Installing, Restraining and Bracing of Trusses, delivered by the truck driver, contained specifications for adequate bracing during truss installation.

PLEASE POST

Oregon Fatality Assessment and Control Evaluation (503)494-2281

OREGON **FATALITY ASSESSMENT AND CONTROL EVALUATION**

www.ohsu.edu/xd/research/centers-institutes/oregon-institute-occupational-health-sciences/outreach/or-face/

Oregon Institute of Occupational Health Sciences

OREGON HEALTH & SCIENCE UNIVERSITY

Fatality Investigation Report

OR 2015-02-1

Crane operator killed by falling steel beam

SUMMARY

A 40-year old crane operator was killed when a 35-foot (5600 lb) H-beam fell crushing the crane cab and striking him in the head. During a pile driving operation, the H-beam pile had been placed in a drilled 25-foot hole. While using a vibratory hammer to force the pile further into the hole, the pile shifted. After several failed attempts to correctly position the pile it was extracted using the hydraulic clamp of the vibratory hammer and moved 12 feet from the hole. It was held in a vertical position with the bottom of the pile resting on the ground. The clamp holding the top of the pile unexpectedly released. The pile was not rigged to the clamp housing or attached to the whipline. The 5600 lb pile fell, struck and crushed the crane cab, and killed the operator.

Figure 1: Crane cab struck by H-beam.

RECOMMENDATIONS

- **Employers should ensure that pile driving operations include measures to prevent inadvertent release of piles from lifting and pile driving equipment.**
- **Employers should ensure that workers are trained on the hazards of equipment and follow manufacturer's operating manual.**

Keywords: construction, machinery, crane [NAICS=423320]Oregon FACE Program
Publication Date: December 2015

Blogs

OR-FACE staff regularly publish contributions to the "Oregon and the Workplace" blog, which is part of the social media outreach of the Oregon Institute of Occupational Health Sciences. Once a blog is published it is shared through Twitter (868 followers), Facebook (346 likes), and the Institute newsletter (2100 subscribers). OR-FACE contributed seven blogs in 2016.

2014 OR-FACE Annual Report published

The Oregon Fatality Assessment & Control Evaluation (OR-FACE) published Occupational Fatalities in Oregon Annual Report 2014. OR-FACE annual reports include analysis of the incidents with charts for industry, event, age, gender, time, month and more. These reports also include an abstract of each case. In 2014, OR-FACE recorded 59 fatal occupational incidents and 62 worker deaths. The forestry/logging industry had the highest number of fatalities for the year with transportation following in a close second. There were 5 delayed deaths (>2 days from date of injury) in 2014. The incident for one of these cases occurred 4 years ago.

Occupational Fatalities in Oregon Annual Report 2014

Resources
OccHealthSci topic Safety and Toolbox Talks
Oregon FACE website

Posted by: Ila Gilbert-Jones in Fatality investigations, Info, Safety
On: Tuesday, September 27, 2016

New OR-FACE toolbox talk guides published

Safety communication is an integral part of maintaining an injury prevention culture. Its implementation can be in a variety of methods such as warning labels, safety training and meetings, hazard alerts and informal communications between supervisors, workers, and co-workers. Toolbox talks are short discussions on safety typically facilitated by team leaders. OR-FACE toolbox talk guides are a collaboration of many to influence safe behaviors, sharing real fatal stories and recommendations to prevent similar incidents. In August OR-FACE published three new guides. There are now 24 toolbox talk guides published on the OR-FACE website. Six have Spanish translations.

Posted by: Ila Gilbert-Jones in Info, Safety
On: Wednesday, September 7, 2016

New OR-FACE hazard alert

OR-FACE ALERT
"Follow manufacturer's instructions"

Hazard Alert

OR-FACE published a new hazard alert, "Follow manufacturer's instructions." The document summarizes three Oregon construction fatal stories. Common to the three cases was failure to follow manufacturer's instructions:

Case 1: A pile was held in a vertical position with the bottom of the pile resting on the ground. The clamp holding the top of the pile unexpectedly released. The pile was not rigged to the clamp housing or attached to the whipline. It fell on the crane cab killing the operator. The crew was not aware of the manufacturer instructions warning of clamp failure if the hydraulic clamp cylinder was not bled of entrained air. Pile lifting instructions in the manual required a shackle and short line attached to the hole in the pile clamp housing with the shackle fastened into the lifting hole in the pile.

Case 2: The manufacturer safety instructions warned that coupler and components should not be modified. The closed lifting eye had been removed and replaced with a latched hook. A hook attached to the track-hoe failed, causing the taut rigging to snap loose, fly into the trench shield, and hit the pipelayer on the back of his hard hat.

Case 3: The critical elements of standard practice provided in the BCSI-B1 Summary Sheet Guide to Handling, Installing, Restraining and Bracing of Trusses prior to and during truss installation were not followed. The foreman sustained a fatal head injury when he was struck on the head by a falling truss.

For other hazard alerts, investigation reports, and toolbox talk guides go to the OR-FACE website.

Oregon FACE helps with OSHA 10 for high schoolers

Oregon campaign to prevent falls in construction

On May 6 there were 60+ attendees at the Portland, Oregon Stand-Down event. A few truly went the distance and traveled from Idaho and Washington. Several local organizations (see April 29 blog) began collaborating in January to ensure an effective campaign during 2016 National Safety Stand-down week (May 2-6). These partners, among many things, arranged for advertising on metro buses, presentations at safety meetings, distributed resources to association members, apprenticeship programs, and workers compensation safety consultants. The May 6 event was a culmination of all the activities that the partners initiated for and during the week.

L to R: Harvey McGill (PNW OSHA Education Center), Cecil Tipton, (Oregon Area Director, OSHA), David Douglas, Dan Daley and Russ Nicolai

Special thanks to industry experts, Dan Daley (Daley Construction), Russ Nicolai (Snyder, roofing contractor), and David Douglas (Fred Shearer & Sons) for their presentations. Several attendees noted that their discussions on personal experience, commitment and passion were extremely valuable.

Russ Nicolai and attendees

Harvey facilitating panel discussion

Posted by: Ila Gilbert-Jones in Event, Info, Safety
On: Monday, May 23, 2016

OR-FACE report used in SAIF Ag Seminars

There's a new face in the 2015-2016 SAIF Agricultural Safety Seminar series. Kevin White, executive director of the Oregon Future Farmers of America Foundation, co-taught the English sessions with veteran instructor, Kevin Pfau. Although not in person, Kirk Lloyd did present a segment, "News from OSHA", by video. The seminars began in November and will be held in 16 cities across the state. Eight sessions will be conducted entirely in Spanish. I attended the session held in Hillsboro on January 5.

The OR-FACE investigation report, "Vineyard worker killed in fall from trailer," was incorporated into a group activity. Kevin Pfau read the introduction and provided some background on the case. Each table of participants were then asked to play the role of the safety committee to find and prioritize the hazards and then develop strategies to eliminate or reduce hazards. Descriptions of the topics covered in the seminar can be found here.

Kevin White led the discussion on culture of risk-taking, e.g., not communicating the risks and how to perform a task with minimal risk of injury. According to SAIF data (SAIF policyholders only) there are about 2,200 Oregon agricultural injuries a year with a cost almost $20 million, approximately $50,000 per day in dollars alone. The human costs (pain, suffering) and loss of revenue were not included in monetary cost described above, thus total cost is much higher. Kevin emphasized that these factors reinforce the need for change and to "Think about safety in a new way."

I look forward to next year's series and more discussions on enhancing safety culture on farms and within the agricultural community.

Posted by: Ila Gilbert-Jones in Event, Fatality investigations, Info, Safety
On: Wednesday, January 13, 2016

New fatality report and upcoming rigging/signaling course

OR-FACE has published Fatality Investigation Report, "Crane operator killed by falling steel beam." A 40-year old crane operator was killed when a clamp holding the top of the 35-foot, 5600 lb H-beam pile unexpectedly released the pile. The pile was not rigged to the clamp housing or attached to the crane whip line, fell striking the crane cab. For the complete report or other fatality investigation reports go to the OR-FACE website.

Based on discussions about this incident, ASSE Columbia-Willamette Chapter is hosting a Rigging & Signaling Safety Training Course on March 14, 2016. The course is to assist the employer in meeting the "Qualified Rigger" and/or "Qualified Signalperson" requirements. To encourage participation, the course cost has been significantly reduced. Class size is limited and registration is online.

Resources:
OccHealthSci.org subtopic: Cranes

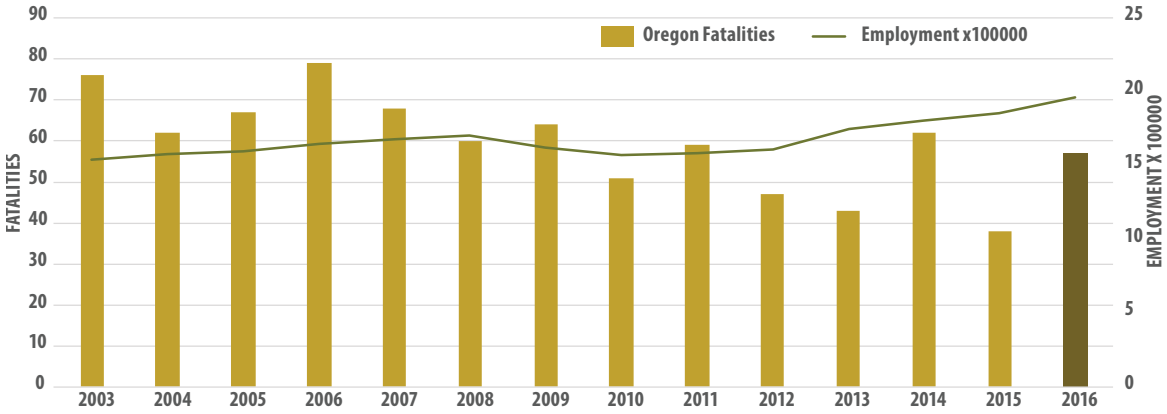
Posted by: Ila Gilbert-Jones in Event, Fatality investigations, Info, Safety, Uncategorized
On: Thursday, February 4, 2016

Charts

In charts and abstracts, OR-FACE highlights risk factors and patterns in fatalities. For these analyses a few of the major two digit classification codes are split into sub codes. For industry (NAICS): Agriculture/Forestry/Fishing/Hunting (code 11) is separated into sub codes: Agriculture (codes 111 112), forestry/logging (code 113); and fishing/hunting/trapping (code 114). For occupation (SOC), Farming/Fishing/Forestry (code 45) is split into sub codes: Agriculture (code 45 2000), fishing and hunting (code 45 3000), forest/conservation (code 45 4010); and logging (code 45 4020). For event (OIICS), Transportation is divided into the following codes: Aircraft (code 21), rail vehicle (code 22), animal/other non-motorized vehicle (code 23), pedestrian vehicular (code 24); and water vehicle (code 25). For descriptive purposes in response to industry interest in Oregon, OR-FACE further delineates motorized land vehicle events (codes 26 and 27) into motor vehicle and mobile machinery.

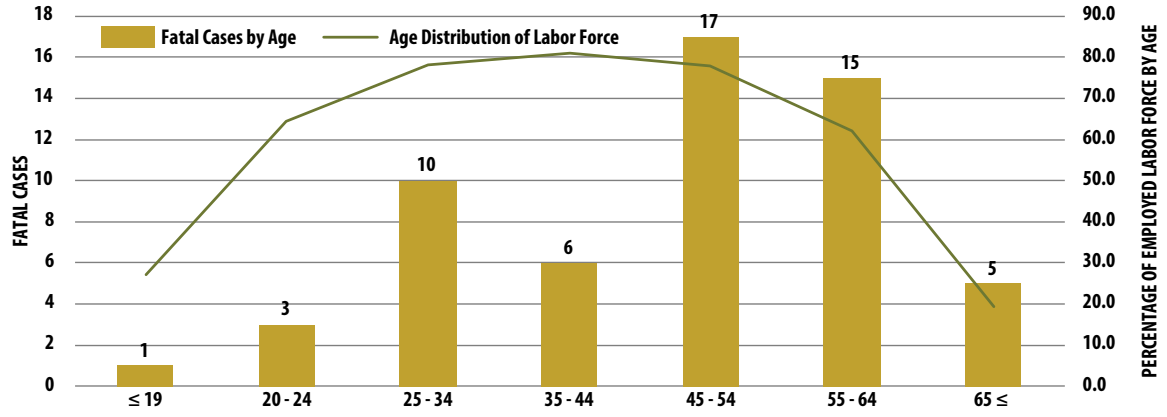
OR-FACE began occupational fatality surveillance in 2003. The highest fatality count occurred in 2006; the lowest count was in 2015. The bars below reflect fatalities; the line reflects employment rate.

Oregon Employment Rate vs. Fatalities



Source of labor Force: BLS https://www.bls.gov/lau/table14full16.pdf P. 48. Retrived: April 2018.
Source of fatality counts: OR-FACE

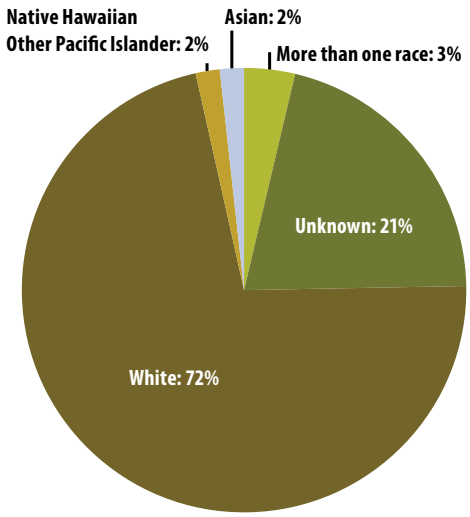
Occupational fatalities in Oregon by age compared to Oregon age distribution of labor force, 2016



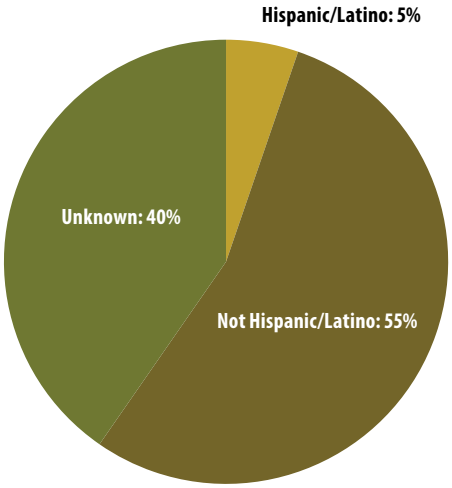
Source of labor Force: BLS https://www.bls.gov/lau/table14full16.pdf P. 48. Retrieved: April 2018.
Source of fatality counts: OR-FACE

Charts

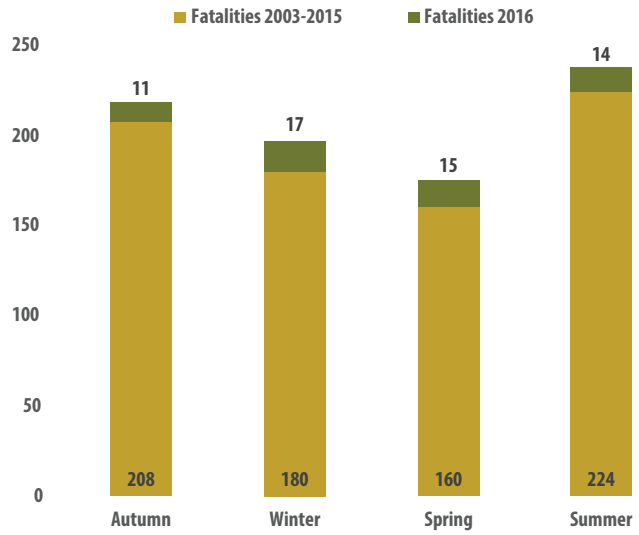
Race



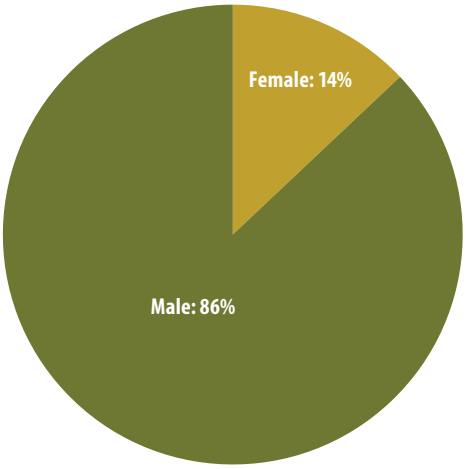
Ethnicity



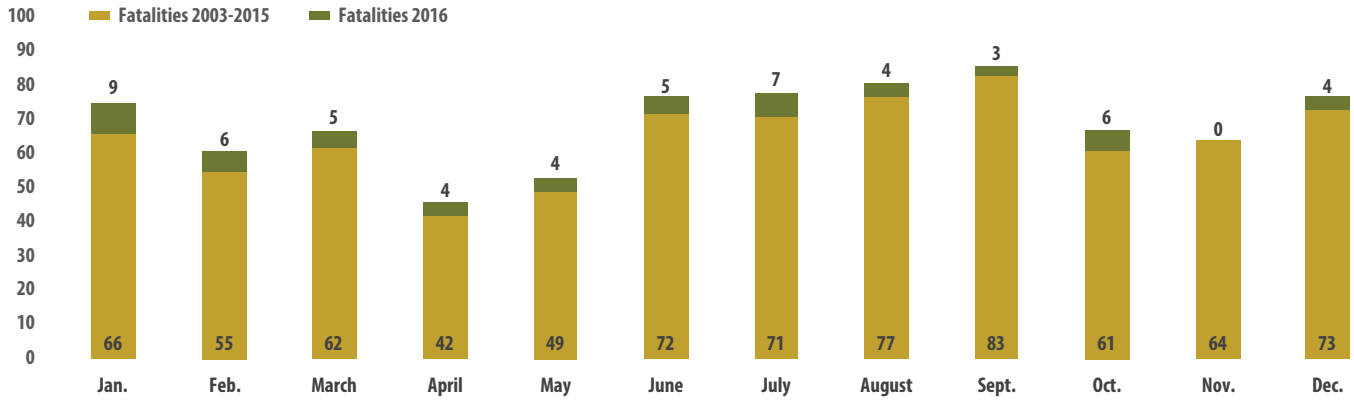
Season of Incidents



Gender

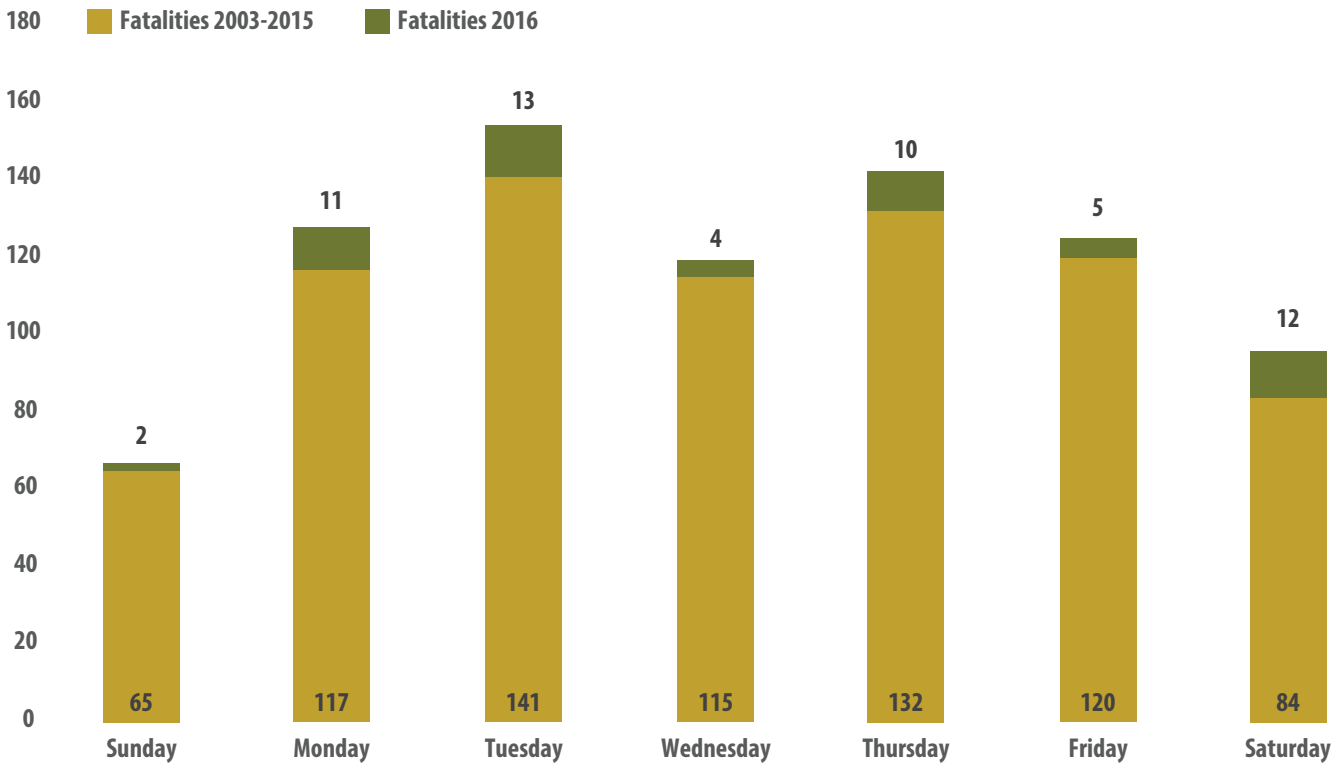


Month of Incidents

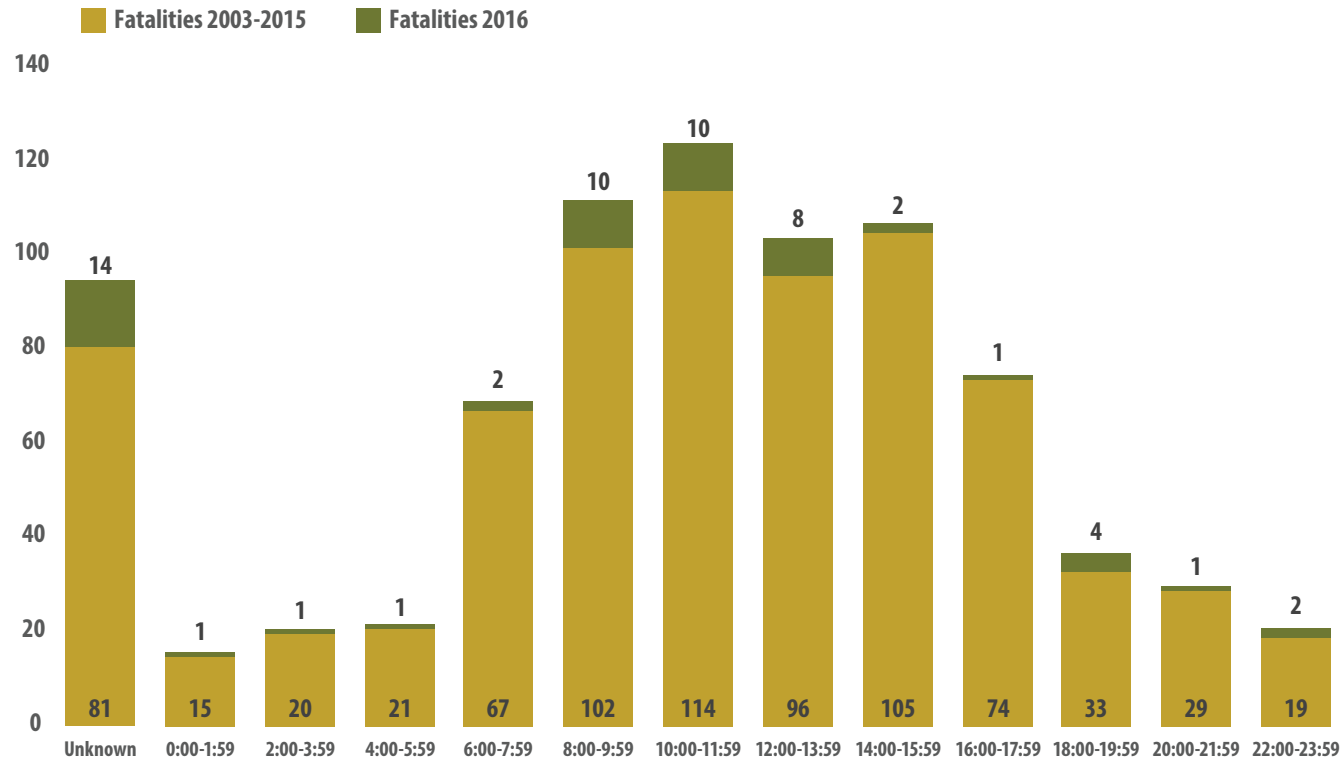


Charts

Incidents by Day of Week

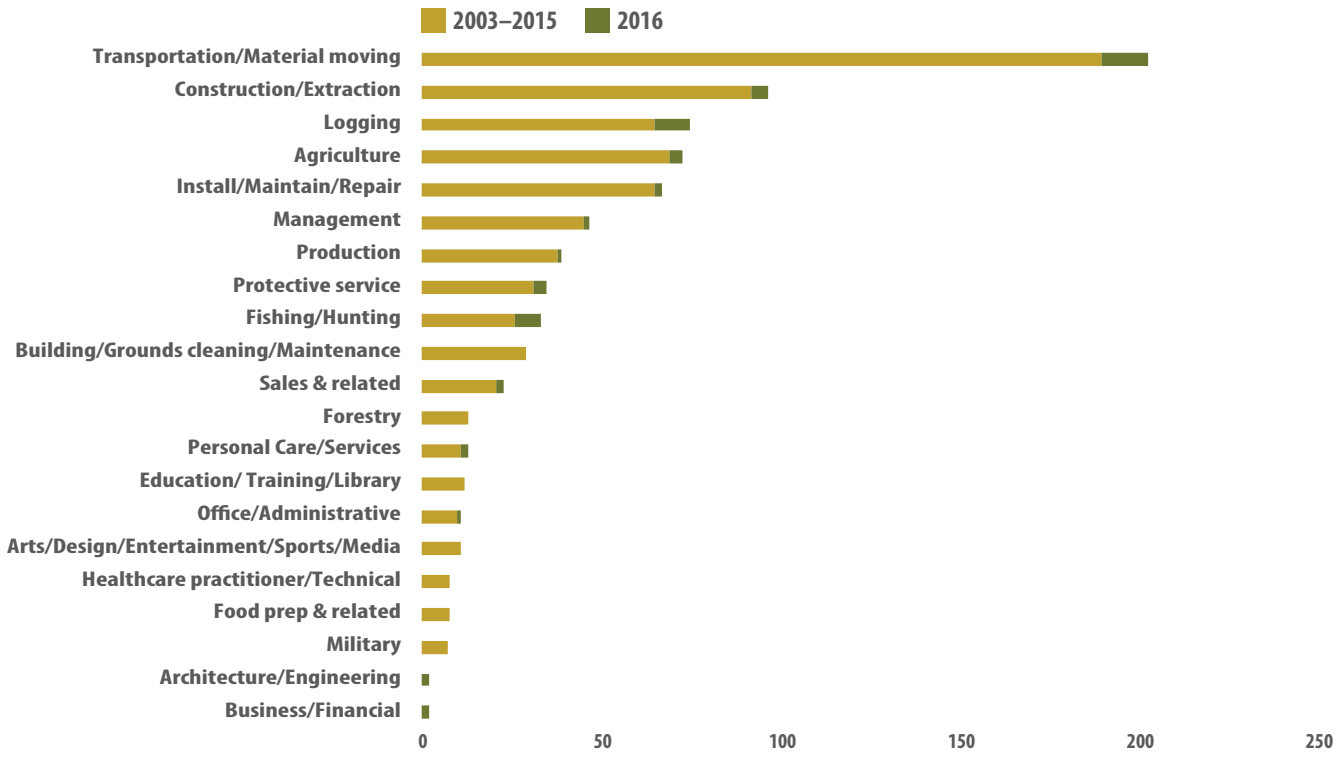


Incidents by Time of Day

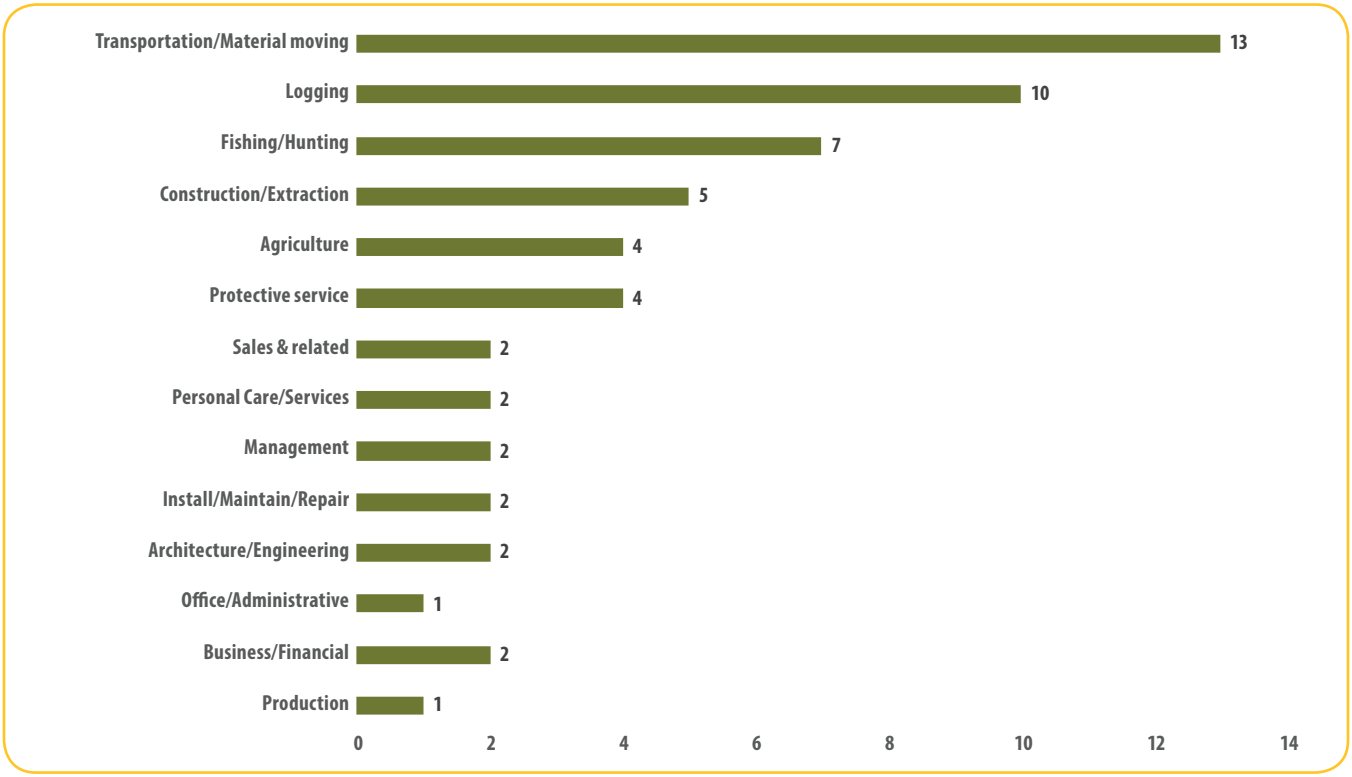


Charts

Incidents by Occupation, 2003–2016

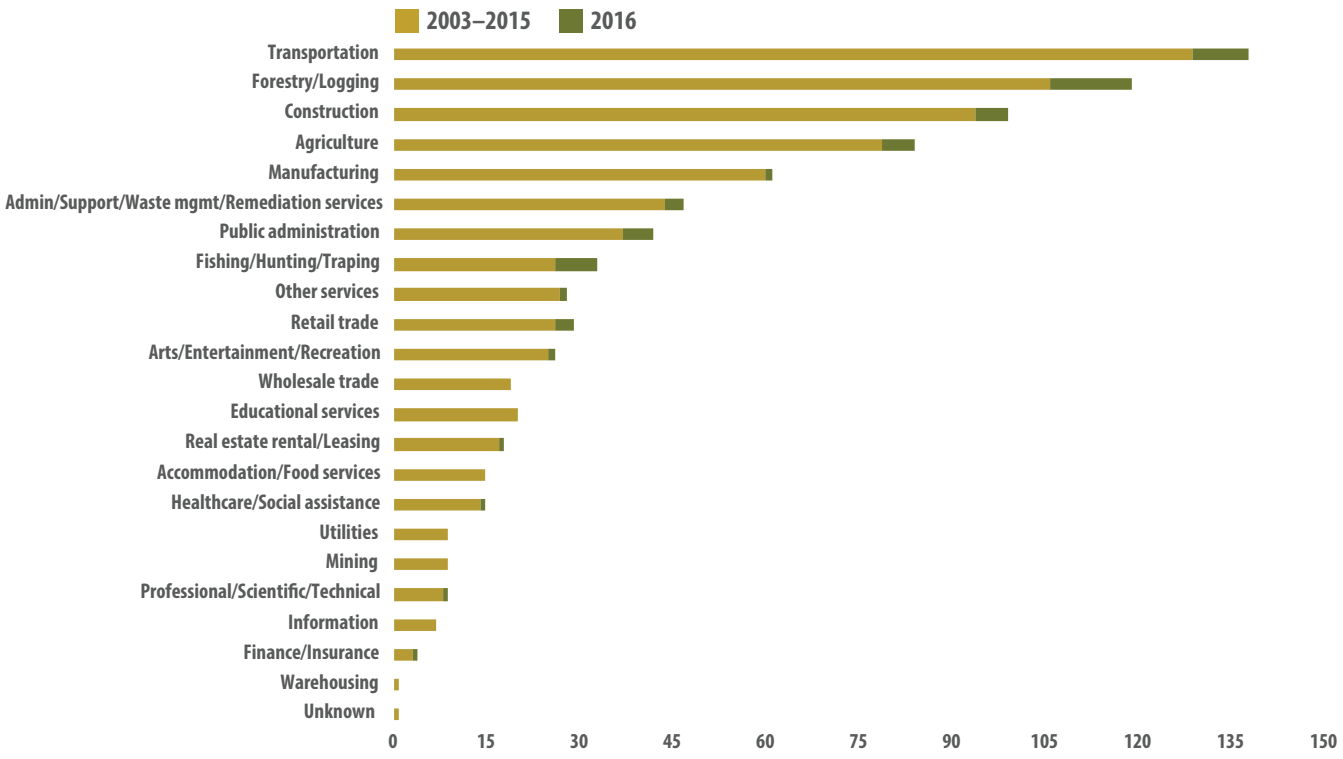


Incidents by Occupation 2016

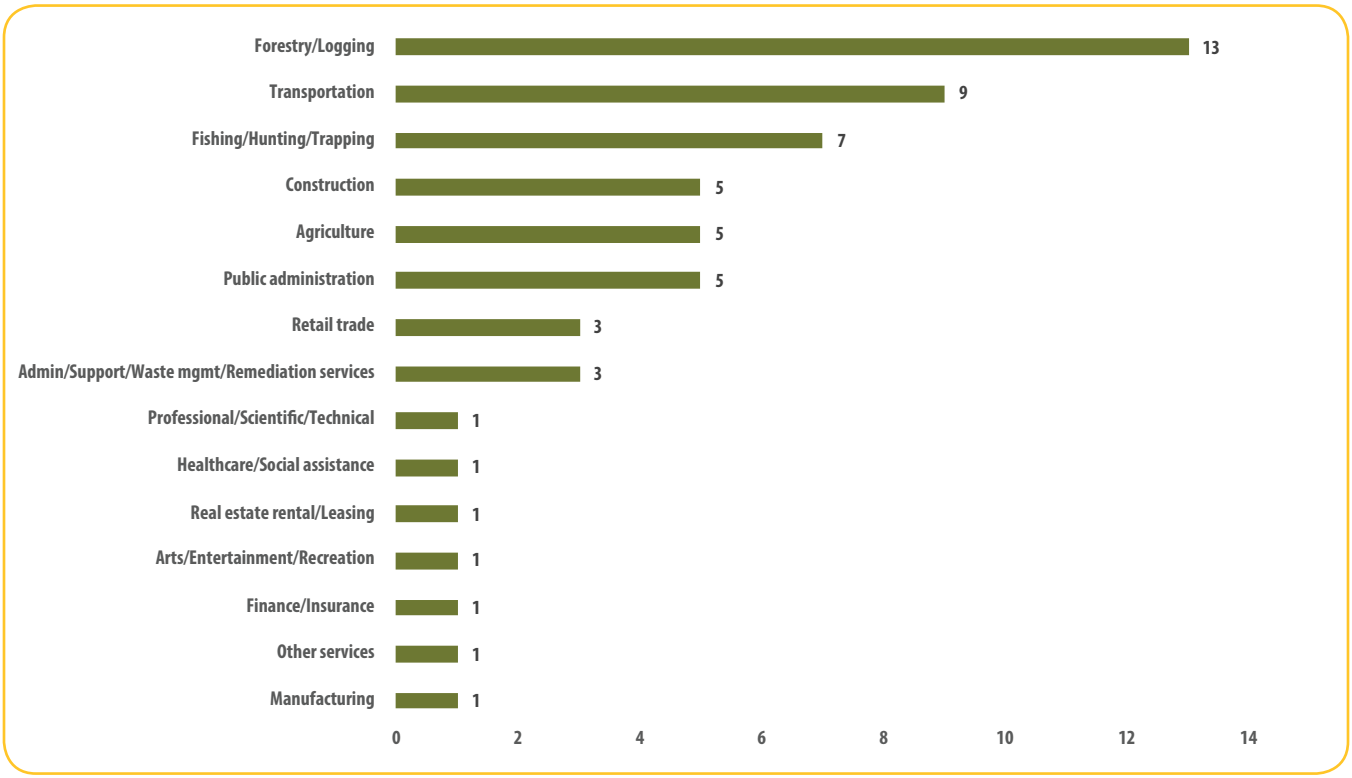


Charts

Incidents by Industry, 2003–2016

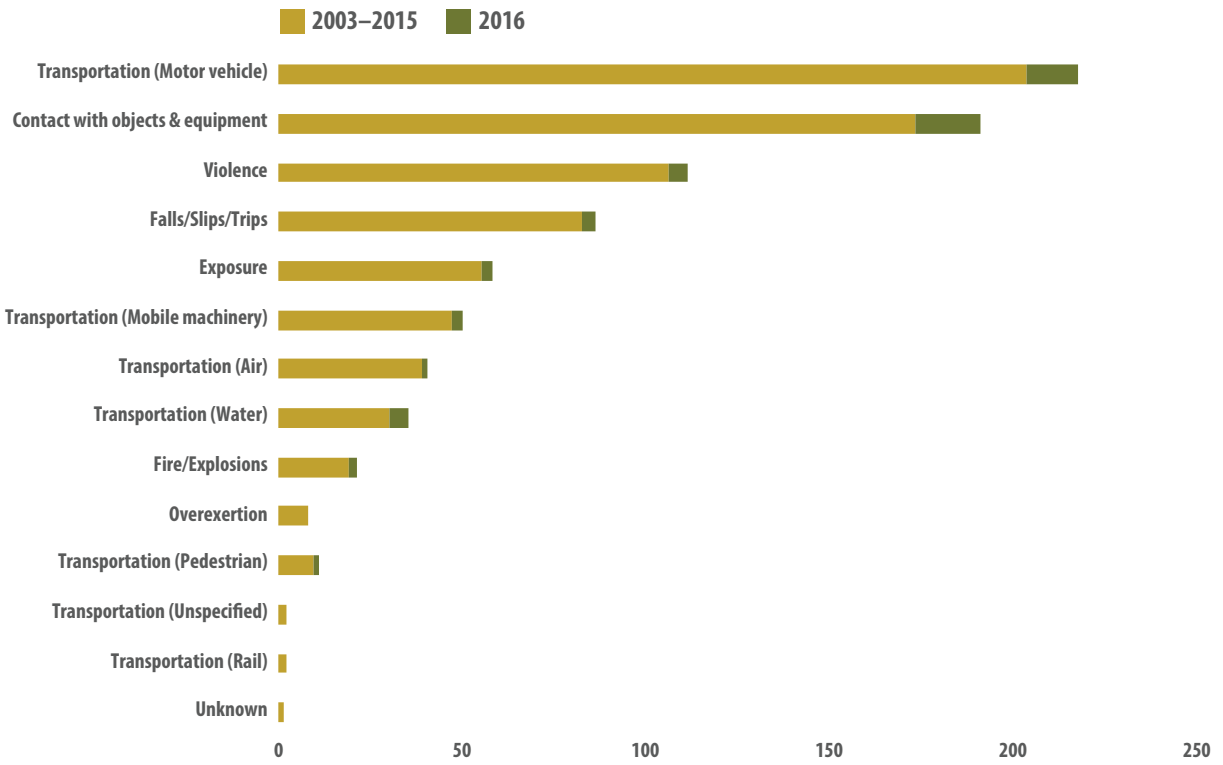


Incidents by Industry 2016

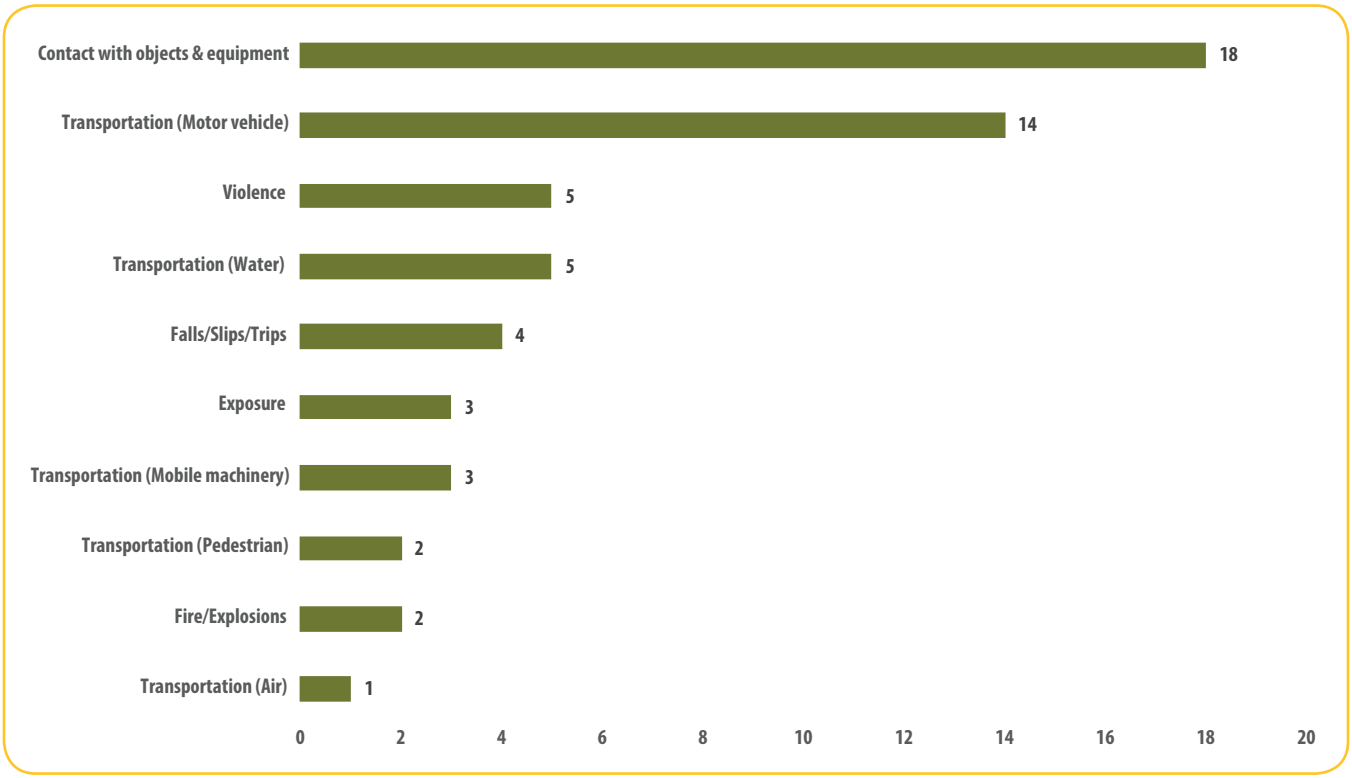


Charts

Incidents by Event, 2003–2016



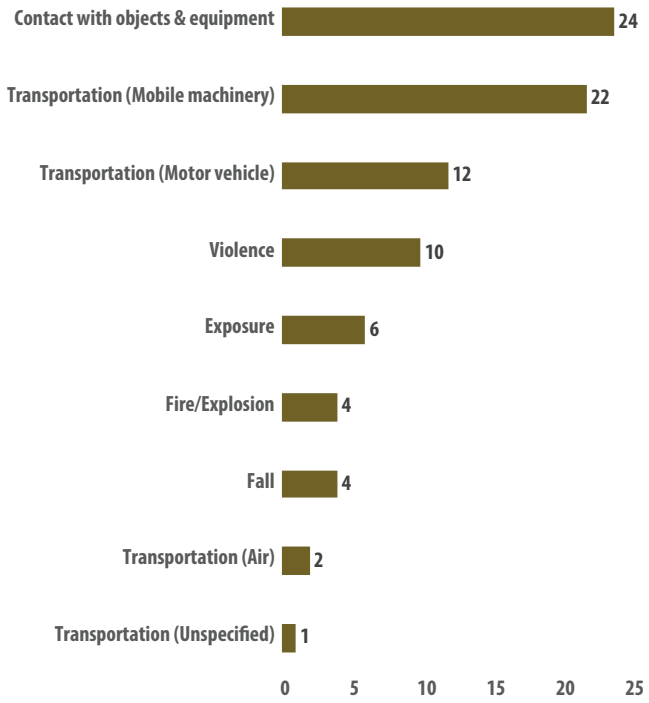
Incidents by Event 2016



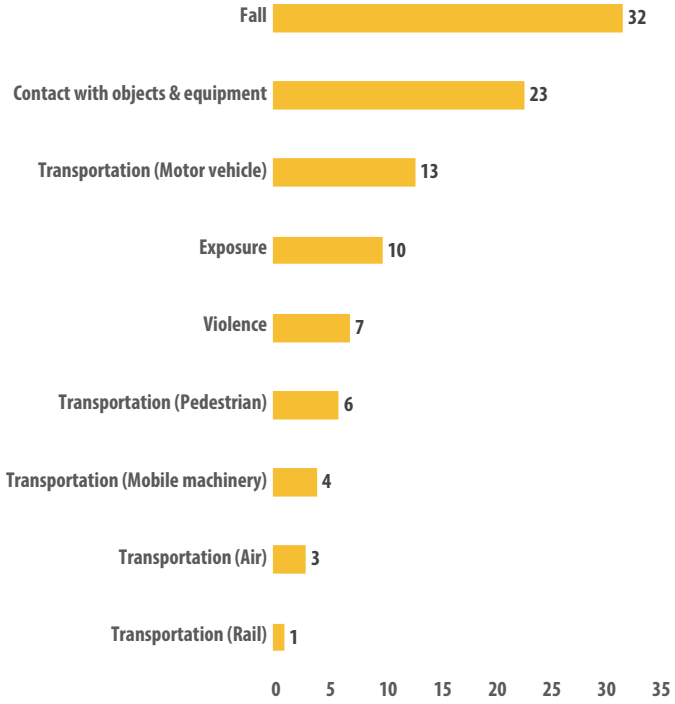
Charts

Event by Select Industries, 2003–2016

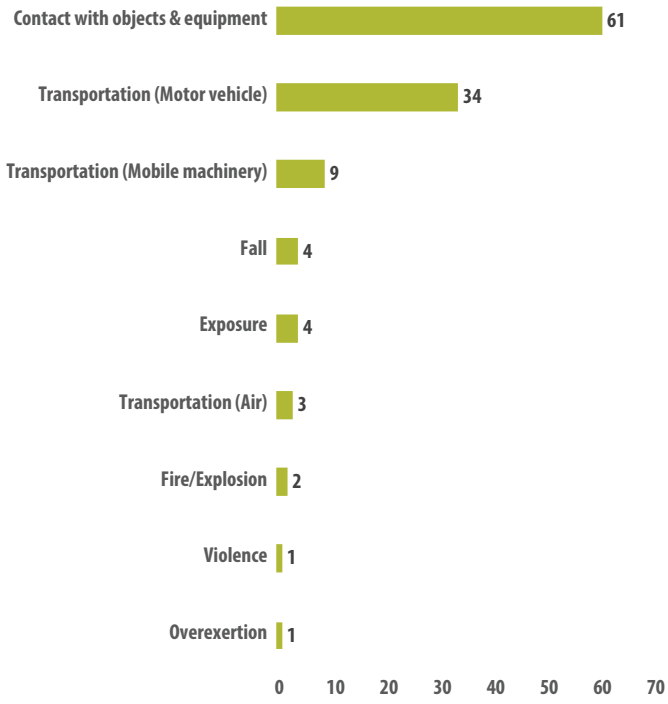
Agriculture



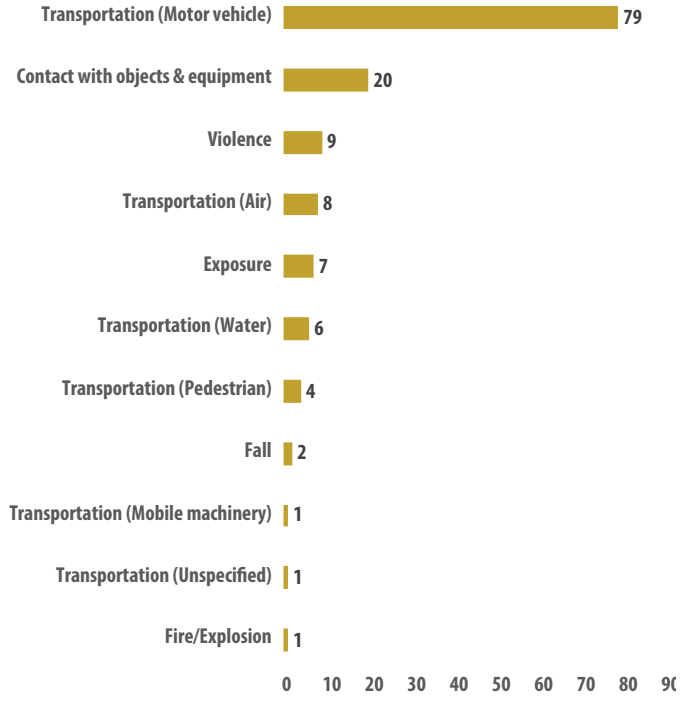
Construction



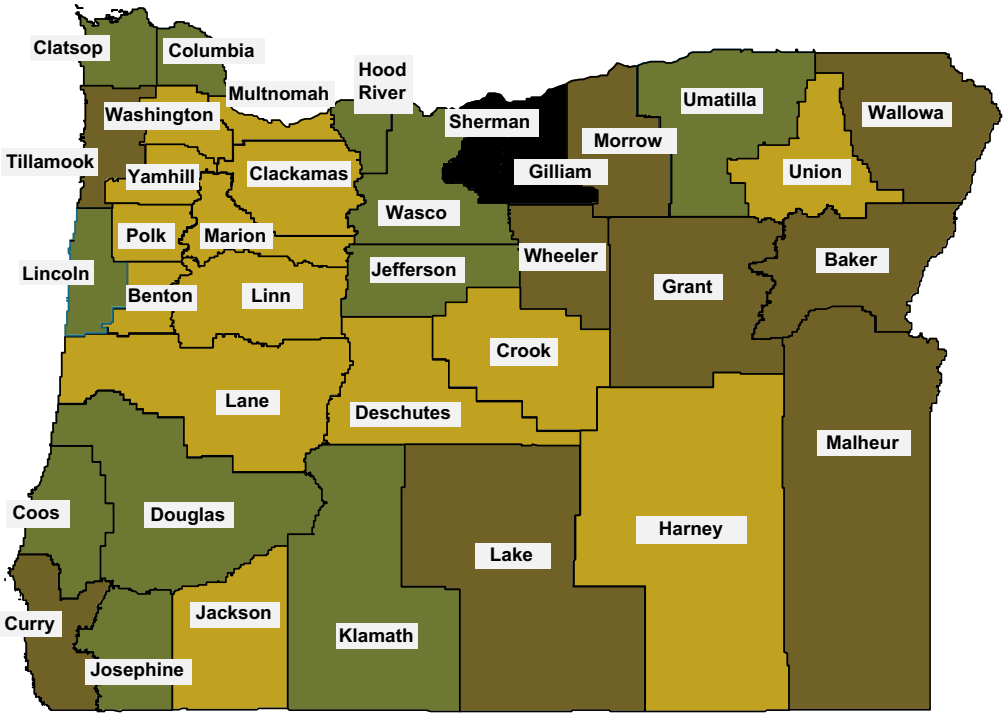
Forestry/Logging



Transportation



Oregon Counties



2003 – 2016

Fatality rate per 100,000 workers

- Gold 1 to 5
- Olive 10.1 to 20
- Green 5.1 to 10
- Black > 20

2003-2016 overall fatality rate = 3.3 per 100,000 employees;

2016 overall fatality rate = 2.92 per 100,000 employees

The employed Oregon labor force (as report by BLS) is used as a denominator for the fatality rate. The figure is adjusted to represent a rate of 100,000 full-time employees. Thus, the 14-year fatality rate is calculated by adding up all fatalities from every year, multiplying by 100,000, and then divided by the summed Oregon labor force across the 14 years. The rates in counties with low population density are particularly highly variable year by year.

COUNTY	TOTAL POPULATION 2016	EMPLOYED LABOR FORCE 2016	FATALITIES 2003-2016	FATALITIES 2016	COUNTY	TOTAL POPULATION 2016	EMPLOYED LABOR FORCE 2016	FATALITIES 2003-2016	FATALITIES 2016
Baker	16,510	5,420	17	2	Lake	8,015	2,442	6	1
Benton	91,320	37,106	12	0	Lane	365,940	153,925	70	6
Clackamas	404,980	159,594	55	2	Lincoln	47,735	17,850	23	1
Clatsop	38,225	17,909	21	5	Linn	122,315	45,746	24	2
Columbia	50,795	11,090	19	0	Malheur	31,705	12,837	22	0
Coos	63,190	22,784	34	7	Marion	333,950	149,400	34	3
Crook	21,580	5,985	5	0	Morrow	11,745	5,473	11	1
Curry	22,600	6,492	18	0	Multnomah	790,670	498,798	87	6
Deschutes	176,635	77,821	41	1	Polk	79,730	19,540	14	1
Douglas	110,395	37,934	39	3	Sherman	1,795	836	4	0
Gilliam	1,980	793	5	1	Tillamook	25,920	9,167	22	1
Grant	7,410	2,370	5	0	Umatilla	79,880	29,966	37	4
Harney	7,320	2,414	2	1	Union	26,745	9,950	7	2
Hood River	24,735	13,062	12	1	Wallowa	7,140	2,471	5	0
Jackson	213,765	87,261	33	1	Wasco	26,700	11,073	13	0
Jefferson	22,790	6,491	11	2	Washington	583,595	288,202	49	2
Josephine	84,675	26,225	26	0	Wheeler	1,465	308	1	0
Klamath	67,410	22,793	33	1	Yamhill	104,990	34,580	16	0
					OREGON	4,076,350	1,860,691	833	57

INFORMATION KEY
Description

Industry
Occupation

Season
County of Incident

OR-FACE Number

Abstracts

of fatal occupational incidents in Oregon by type of event 2016

Contact - Explosion - Exposure - Falls Transportation - Violence

Contact with objects and equipment

Caught in machinery

Construction
Construction/extraction

Winter
Clackamas

OR 2016-01-1

A 43-year-old self-employed construction worker was killed when he became entangled in the auger in the hopper of a cement pumping truck. A witness indicated the worker may have been attempting to clear ice that had become lodged in the auger when he slipped and fell into the hopper. The auger was operating at the time of the incident. He was pulled in and was pinned beneath the drive shaft and entangled with the blades. He died at the scene of crush chest injuries and compression asphyxia.

Struck by falling material

Manufacturing
Production

Winter
Lane

OR 2016-03-1

A 51-year-old sander operator was killed when he was struck by wood laminate panels during a forklift operation he was observing. The sander operator was waiting for and observing a forklift operator from approximately 10-12 feet away while the forklift was accessing a stack of panels for him to work on. The forklift was transferring the top stack of four units of panels out of the way to a temporary location (onto a scissor lift), in order to access a lower stack to be moved for the sander operator to work on. Reports indicate that each stack contained 40, 4-foot by 8-foot sheets of laminate paneling, each weighing 100 pounds. The load being moved was not secured, and it caught on another stack as it was being lowered onto the temporary scissor lift location. The load slid to one side off the forks of the forklift, and 30 of the sheets fell rapidly from a height of approximately 10 feet, striking the sander operator, knocking him down, and piling on top of him. Co-workers immediately began removing sheets from the sander operator and 911 was contacted. The worker was taken to a hospital where he was pronounced deceased from blunt force chest trauma.

Contact with objects and equipment

Overturned skid steer loader Transportation/ warehousing Transportation/material moving Winter Lane OR 2016-04-1	A 37-year-old skid steer loader operator was loading recycled cardboard onto a flatbed semi-trailer at a large retail store. He manually seated the loading ramps onto the brackets located on the back of the trailer. He then began driving skid steer loader in reverse up the ramps onto the trailer. Evidence indicated the ramps were not properly secured in place and that the incline was twice as steep as the manufacturer's recommended maximum slope. Witnesses reported observing that the fork attachment was in an elevated position over the skid-steer cab, and the right front wheel was not tracking properly on the ramp. The right front wheel left the ramp and the skid-steer loader fell forward to the ground and landed on its side. The operator exited the skid steer loader and pushed the cab back into the upright position. He then manually engaged the interlocking safety bar that allows the machine to be operated, and then attempted to "walk" the skid steer back onto the trailer by operating the controls from outside the vehicle. The skid steer fell to one side and struck the operator. He died at the scene from blunt force chest trauma.
Struck by log Forestry/logging Forest/conservation/ logging Winter Clatsop OR 2016-11-1	A 47-year-old logger was struck by a tree he had just felled. He and two co-workers were working on steep terrain, cutting oversized timber determined to be too large for mechanical timber falling equipment. They were working approximately 300 to 400 feet apart. It was reported that the decedent was working to fell a large (80 to 100 feet in height) alder tree that had a side lean. As it fell, the alder tree became lodged in a large nearby spruce tree. To dislodge the alder, the decedent selected a large (approximately 116 feet in height) cedar to use as a "driver tree" that would fall into and release the alder from the snag. He faced and back-cut the cedar and inserted a wedge in the intended direction. He then retreated uphill from the area of the stump, following his established escape route. As the cedar tree fell it made contact with the alder but did not drive it from spruce tree; instead, it kicked back, and then struck and landed on the decedent. One co-worker reported hearing a tree fall, and then no sounds were heard after that. He walked over to the area and saw the decedent lying on the ground, pinned under an approximately 20-inch diameter cedar log. The decedent's hard hat was seen nearby on the hill. Co-workers immediately began to cut the section of tree off the decedent's chest while calling for help. He died on the scene from crush injury to the chest. An investigation performed after the incident indicated that the decedent had followed appropriate regulatory and industry manual felling practices at the jobsite.
Trench collapse Construction Construction/extraction Spring Multnomah OR 2016-16-1	A 29-year old construction worker was killed when a trench wall collapsed. The worker was part of a crew installing a new sewer line for a single-family home. The deceased and one other employee were working in an excavation that was approximately 10 feet deep and 3 feet wide in the area where the collapse occurred. The deceased was working in between two pieces of shoring that were spaced 15 feet apart when the wall collapsed, covering him with approximately 6 feet of dirt. He died from traumatic compression asphyxia.

Contact with objects and equipment

Struck by tree Forestry/logging Forest/conservation/ logging Spring Coos OR 2016-17-1	A 61-year-old logger was killed when a small (approximately 8-inch diameter) alder tree that had stood approximately 15 feet from where he was working uprooted and struck him in the back of the head and upper neck. The deceased was wearing a hardhat at the time of the incident. He and a co-worker were cutting timber in separate areas of the jobsite, out of each other's line of sight. The co-worker reported hearing the decedent's saw idling and walked over to check on him. When he found the 61-year-old logger pinned underneath the uprooted tree, he quickly worked to saw the tree off the victim and called for emergency assistance. The 61-year-old logger died on the scene from blunt force trauma and positional asphyxiation. It was later determined that the tree that uprooted had a small root system and was believed to have failed and fallen on its own; the root failure of the fallen tree was unrelated to the tree the logger had just felled at the time of the incident.
Struck by tree Forestry/logging Forest/conservation/ logging Spring Coos OR 2016-17-1	A 61-year-old logger was killed when a small (approximately 8-inch diameter) alder tree that had stood approximately 15 feet from where he was working uprooted and struck him in the back of the head and upper neck. The deceased was wearing a hardhat at the time of the incident. He and a co-worker were cutting timber in separate areas of the jobsite, out of each other's line of sight. The co-worker reported hearing the decedent's saw idling and walked over to check on him. When he found the 61-year-old logger pinned underneath the uprooted tree, he quickly worked to saw the tree off the victim and called for emergency assistance. The 61-year-old logger died on the scene from blunt force trauma and positional asphyxiation. It was later determined that the tree that uprooted had a small root system and was believed to have failed and fallen on its own; the root failure of the fallen tree was unrelated to the tree the logger had just felled at the time of the incident.
Crushed by falling log Forestry/logging Forest/conservation/ logging Spring Marion OR 2016-23-1	A 54-year-old independent logging contractor was felling trees on a multi-employer work site when the tree he was cutting fell onto a pile of logs. One of the logs shifted, struck him, and pinned him between a previously felled tree and another log. It is not known whether he was wearing a hardhat. He died on the scene from crushing head and neck injuries.

Contact with objects and equipment

Struck by falling tree Forestry/logging Forest/conservation/ logging Summer Lane OR 2016-26-1	A 55-year-old logging company owner died from multiple blunt force injuries when he was thinning timber with two other tree fallers. He cut a large tree that quickly rolled down a hill, up the trunk of a standing tree, and then shot upward approximately 15-20 feet in the air back toward him and landed on top of him. Co-workers cut the tree into multiple pieces to remove it from his body and they called 911. He died at the scene from multiple blunt force injuries. Evidence suggested that the hard hat he had been wearing fell off when he tried to run out of the path of the rolling tree.
Struck by log Forestry/logging Transportation/material moving Summer Linn OR 2016-27-1	A 54-year-old independent contract log truck driver was hauling two loaded trailers from a logging site, when he stopped alongside the road and attempted to tighten the bindings on the load on the second trailer. One of the logs came loose, fell from the trailer, and struck him. Evidence suggested the deceased had been wearing a hard hat at the time of the incident. He died at the scene from traumatic head injury.
Struck by log Forestry/logging Forest/conservation/ logging Summer Lincoln OR 2016-28-1	A 53-year-old logger/hook tender was working with a rigging slinger at a yarding operation on a steep slope. It was reported that the area they were working in was later measured to have a 40% slope. The two workers were pulling the choker down the hill. The hook tender had choked a turn of logs and exited the area away from the cables to approximately 45 feet below the skyline, while the rigging slinger stayed uphill approximately 30 feet above the skyline. Although he had radioed that he was in the clear, the hook tender was outside the line of site of the rigging slinger and was less than one-and-a-half tree lengths away from the rigging. When the yarder began pulling a turn of logs, an estimated 120-foot log upended and swung down the hill, striking the hook tender and causing him to fall down the hill. When the rigging slinger saw the log swing down the hill he signaled the yarder to stop the lines. He then ran over to the edge of the hill and saw the injured hook tender lying on the ground and not moving. The yarder operator later reported he thought he saw a hard hat "flying through the air" before stopping the line. The crew initiated emergency evacuation procedures. The hook tender was airlifted to a hospital where he died five days later due to complications from multiple blunt force chest and extremity trauma.

Contact with objects and equipment

Crushed between two vehicles Agriculture Agriculture Summer Umatilla OR 2016-29-1	A 27-year-old wheat farmer was pinned between a water tender truck and a semi-truck while attempting to connect a tow strap between the two vehicles. The deceased was operating the semi-truck that was towing a straight trailer and pup trailer. The vehicle lost traction and became stuck in the field, facing uphill on a sloped hill. It was reported that the hill was later measured to be between 5 and 7 degrees. A second farmer who was operating a water tender truck drove over to the semi-truck to assist. The second farmer positioned the water tender truck in front of the semi-truck, facing the same direction. The 27-year-old farmer exited his truck to guide the water tender backing up. The second farmer parked the water tender and exited to help connect the tow strap. The emergency brake was set on the water tender, but the vehicle was left running and the wheels were not chocked. The type of transmission or type of brake are not known. The two farmers walked between the two vehicles when the tow vehicle rolled backwards, striking the farmer who had been operating the water tender truck and pinning the deceased between the two vehicles. 911 was called and the water truck driver moved the truck forward to provide access to the farmer who was pinned between the two vehicles. Two other farmers were called and came over from other parts of the field and attempted basic first aid. The 27-year-old farmer was pronounced deceased at the scene, from blunt force trauma to the head and chest. The second farmer was treated for injuries at a hospital.
Crushed by forklift Other Services Installation/ maintenance/repair Autumn Umatilla OR 2016-34-1	A 66-year-old automotive shop owner was working underneath a forklift on a maintenance ramp when the forklift rolled off the ramp and crushed him. The type of ramp or vehicle lift in use is unknown. He was pronounced deceased at the scene from a basal skull fracture and severe crush injuries. No additional information regarding the incident was available.
Crushed by pickup truck Agriculture Agriculture Autumn Polk OR 2016-35-1	A 45-year-old contract farm worker was harvesting hop vines in a field. He and another contract worker were riding on a raised platform on the flatbed of a 1-ton pickup truck. The process involved the truck idling in neutral and being pushed forward by a front-loader tractor. The truck and tractor were reportedly moving less than approximately 5 miles per hour. The hop vines they were harvesting had been previously cut off at the ground by another crew and were left hanging from a trellis. The task being performed by the victim was to guide the bottoms of the vines (which were previously cut) onto the flatbed. The tractor had a cutter attachment that was raised up to cut the top of the vines, which would then allow the cut vines to drop into the truck bed. At some point during the process, the decedent fell off the flatbed and was then crushed by the rear wheels of the truck as it advanced. It is not known what caused him to fall. Reportedly no one saw him fall, as visibility was obstructed by the vines. He died at the scene. OR-FACE was not provided a copy of the Medical Examiner's report for this incident; therefore, the specific cause of death is not known.

Contact with objects and equipment

Struck by log Forestry/logging Forest/conservation/ logging Winter Coos OR 2016-40-1	An 18-year-old logging employee was working with a crew in a forested rural area adjacent to a single-lane gravel road. The crew was stacking and then loading logs onto trucks to be yarded onto the road. The 18-year-old logger was walking alongside a turn of logs as it was being moved, when one of a group of six logs got hung up on the ground and swung around, striking him in the back. He died at the scene from traumatic head injury.
Caught between logs Forestry/logging Forest/conservation/ logging Autumn Lane OR 2016-42-1	A 27-year-old logging employee was working as a rigging slinger at the bottom of a steep, rugged slope. He had radioed for a tow assist out of the unit. After the tow lifted him off the ground, he fell an estimated 50 feet and became trapped waist-deep among felled and bucked timber. It was reported that while being towed up out of the unit, he was attempting to hold onto the choker and ride the rigging in a non-standard manner. After he fell, he radioed co-workers for help; the co-workers were able to pull him out of the hole and onto a stretcher. He was initially conscious but then lost consciousness, and co-workers administered CPR until paramedics arrived. It was reported that the decedent suffered multiple broken bones and was impaled by his femur bones as a result of the fall. He died at the scene from blunt force lower extremity trauma.
Struck head against dock and drowning Fishing/hunting/ trapping Fishing/hunting Spring Clatsop OR 2016-54-1	A 22-year-old commercial fisherman was attempting to tie off a fishing vessel when the boat shifted and knocked him off balance. It was reported that he hit his head on the dock and became pinned between the dock and the boat, and then fell into the water. His body was found 8 days later. Cause of death was reported as asphyxiation due to drowning.
Struck by falling load Transportation/ warehousing Transportation/material moving Spring Multnomah OR 2016-55-1	A 64-year-old former truck operator who had worked for a materials recycling company died from complications of traumatic quadriplegia that resulted from an incident in 2002. At the time of the incident, the decedent had opened the back doors of his semi-truck and a 1000-pound bale of compressed recycled cardboard fell out and hit him in the head, resulting in multiple spinal injuries and quadriplegia.

Contact with objects and equipment

Struck by log Arts/entertainment/ recreation Personal care/service Spring Douglas OR 2016-12-1	A 57-year-old backcountry ski guide was checking snow conditions ahead of a group he was leading when he was caught in an avalanche and became pinned between snow and a tree. Specific weather conditions or information about any safety equipment he was carrying were not reported. He was extricated and transported to a hospital. His condition deteriorated, and he was transferred to another hospital the next morning where he died within a few hours. The cause of death was reported as severe bilateral flail chest injury with multiple fractured ribs and hemothorax.

Exposure to harmful substances or environments

Electrocution Construction Construction/extraction Summer Tillamook OR 2016-25-1	A 55-year-old construction worker was part of a three-person crew installing siding on a two-story garage located next to a residential building. The deceased worker was one of two employees who were working on the ground while the third worker was working on the roof of the building. The crew was attempting to erect a pump-jack scaffold system using two aluminum poles of approximately 37-foot length. The first pole was erected without incident. In the process of erecting the second pole, for unknown reasons, the crew on the ground lost control of the pole and the top of the pole swung away from the building toward an energized overhead power line that was located approximately 30 feet above the ground. All three employees attempted to regain control of the pole, but the top of the pole made contact with the overhead power line. The two employees on the ground received a high-voltage electrical shock. The 55-year-old worker on the ground was knocked unconscious; the second worker at ground level suffered severe burns to his hands and feet. The worker on the roof was not injured. Both injured employees were transported to a hospital, where the 55-year-old worker died several hours later, with cause of death reported as accidental electrocution. The other injured employee survived with serious burns.
Drug overdose Forestry/logging Forest/conservation/ logging Summer Douglas OR 2016-48-1	A 33-year-old logging worker employed as a choker setter by a contract logging company became confused and then collapsed and stopped breathing as the work shift ended. Attempts to revive him were made but were unsuccessful. Evidence suggested there had been initial concern about heat stroke. However, the worker died on the scene from what was later determined by the medical examiner to be methamphetamine intoxication. Additional evidence also suggested that the worker had been drinking heavily the night before and smelled of alcohol upon arriving at work.

Exposure to harmful substances or environments

Drug overdose Retail trade Management Summer Jackson OR 2016-50-1	A 34-year-old owner of a retail shop died from an opiate drug overdose. He was found deceased on the bathroom floor at his workplace. He was found by local police, who had been notified by the roommate of the retail shop owner who reported he had not heard from the shop owner for a few days. It was reported that the deceased had a history of recreational drug use. Results of toxicology testing indicated the presence multiple controlled substances.

Falls, slips, trips

Fall through roof opening Construction Construction/extraction Spring Multnomah OR 2016-15-1	A 30-year-old construction worker died after falling through a hole in a roof of a newly constructed single-story commercial building while removing damaged plywood decking. The worker and a crew of approximately 4 to 5 co-workers had spent several days removing damaged plywood decking from multiple locations on the flat roof. On the fourth day of this activity, the decedent was assigned to perform a "housekeeping" task, to gather the damaged plywood sheets that co-workers had previously removed and stack them to the side for subsequent removal from the roof via forklift. The others on the crew were to continue to remove damaged sheets. Shortly after the work shift began, the decedent was attempting to remove a 4-foot by 8-foot piece of unsecured plywood decking that was covering a hole, when he fell through the opening approximately 19 feet onto concrete below. This piece of plywood was not nailed down nor was it marked to indicate it was covering a hole. It was reported that his co-workers used a rope grab fall protection system when removing plywood sheets; however, the decedent was not wearing a harness while gathering the removed plywood sheets. First responders arrived at the scene within 5 minutes and transported the victim to an area hospital, where he died 25 days later from blunt force head injuries.
Complications following fall injury Agriculture Agriculture Winter Hood River OR 2016-18-1	A 62-year-old cherry orchard worker slipped and fell from the third rung of a six-foot ladder while pruning and suffered a right shoulder injury. It was also reported that the ladder fell on top of him. The cause of the fall is not known. It was reported that he immediately got up and continued to work, he did not have immediate significant pain, and there was no reported visual injury such as scrapes or cuts. At home that evening he developed flu-like symptoms and shoulder pain. He went to the hospital the next day where he was diagnosed with influenza-like illness and shoulder bursitis and was discharged and sent home in good condition. One day later, he returned to the hospital with severe shoulder pain and swelling, and tests indicated a fast-spreading bacterial skin infection. His condition continued to deteriorate, and he died in the hospital three days later from necrotizing fasciitis and sepsis due to right arm trauma.

Falls, slips, trips

Fall from tree Forestry/logging Forest/conservation/ logging Winter Lane OR 2016-21-1	A 53-year-old logging worker died after falling 30-35 feet from a tree he was trimming at a residential property. While working in the tree he fell and struck his head and chest on a set of steps below that were constructed of treated lumber. According to a co-worker on site, the deceased was wearing full climbing gear including a harness and tree climbing spurs, and two safety lines were in place in the tree. The condition of the safety equipment is not known. The helper reported hearing the spurs slip prior to the fall. Toxicology screening showed the presence of opiates, alcohol, and cannabinoids in the deceased's system. He died at the scene from multiple blunt force injuries due to the fall from height.
Fall from ladder Real estate/rental/ leasing Management Spring Washington OR 2016-51-1	A 62-year-old commercial real estate owner was found deceased on the floor of the electrical room of a building he owned. He was found approximately five feet from the base of a fixed ladder in the electrical room. The ladder was attached to an 8-foot wall and led to a small platform where another fixed ladder was in place that led to a roof hatch. The roof hatch was open at the time the deceased was found, indicating he had gone up to the roof. It was reported that he routinely entered the electrical room to perform daily checks, as he had received reports of homeless people periodically occupying the room and the roof. It appeared that he fell from one of the ladders or the platform onto the concrete floor. However, he was working alone at the time of the incident, so it is not known from which height he fell. Cause of death was a fractured neck and base of skull.

Fires and explosions

Explosive fire Agriculture Installation/ maintenance/repair Spring Umatilla OR 2016-22-1	A 62-year-old farm maintenance worker was performing renovation work inside an empty onion storage building. He reportedly was in the process of removing two large doors and support beams inside the building, using portable cutting and grinding tools. A flashover fire occurred that burned hot and fast, causing extensive burn injuries. Specific cause could not be determined; possibly sparks ignited flammable materials present in the building, such as accumulations of dust, debris, oil, or spray foam wall insulation. He suffered severe burns and died in the hospital burn center two days later from a combination of smoke inhalation and thermal injuries.
Electrical fire, inhalation of combustion products Health care/social assistance Personal care/service Spring Clackamas OR 2016-43-1	A 26-year-old live-in home care worker was employed by the son of an 88-year-old homeowner to provide care for the elderly homeowner. During the night while caring for the elderly man, an accidental electrical fire occurred in the home. According to fire investigation reports, the source of the fire was a damaged electrical cord that was attached to a bedside table lamp. Evidence indicated the caregiver and homeowner were sleeping when the fire began and were not able to escape. It was reported that the fire extinguished itself. The two decedents were found the next morning by a day-time nursing assistant who provided twice-per-week care. The caregiver and homeowner died from inhalation of products of combustion.

Transportation (Air)

Airplane crash Transportation/ warehousing Transportation/material moving Summer Jefferson OR 2016-47-1	A 61-year-old self-employed pilot was killed while flying a biplane with an open cockpit at an airshow. The plane was performing a low-altitude loop with a smoke trail. It was reported that during the completion of a loop that the pilot was not able to pull up in time to avoid collision with the ground. The exact cause of the failure to pull up was not reported, but evidence indicated a possible high-speed stall occurred. The plane's tail hit the ground and the plane bounced and slid, and then caught fire soon after impact. The pilot was pronounced deceased at the scene with multiple blunt force injuries.

Transportation (Pedestrian)

Stuck by passenger car Transportation/ warehousing Transportation/material moving Winter Union OR 2016-09-1	A 50-year-old tractor trailer truck driver had stopped on the shoulder of an interstate highway to install chains on his tires due to icy weather conditions. As he was installing chains on the left rear axle of the trailer, a passenger car that was traveling on the highway lost control and slid sideways toward the truck. The passenger car's front bumper struck the truck driver and pushed him underneath the trailer. Reports indicated that icy roads and fog were contributing factors in the incident, with fog limiting visibility to approximately one-quarter mile. The truck driver died at the scene from chest trauma.
Stuck by passenger car Construction Construction/extraction Autumn Marion OR 2016-38-1	A 45-year-old construction worker was working as a skid steer operator on a construction site located in a small urban neighborhood. During the work shift he walked across the street to his personal vehicle. When he was walking back to the work site crossing the street he was fatally struck by a passenger car. It was reported that the passenger car driver was arrested and tested positive for cannabinoids. The construction worker was pronounced deceased at the scene from blunt force head injuries.

Transportation (Water)

Capsized fishing vessel, drowning Fishing/hunting/ trapping Fishing/hunting Winter Coos OR 2016-06-1, 2, 3	A crew of four commercial crab fishermen was returning from a day setting crab pots at sea (off the south coast of Oregon), when their 40-foot crab fishing boat experienced mechanical difficulties. It was reported that the onboard generator stopped working and they did not have lighting to continue fishing after dark. It was raining heavily, and wind speed was greater than 30 miles per hour; the seas were rough, with waves of 8 to 10 feet. The captain attempted to maneuver the vessel into the bay and back to shore. Just after entering the channel and heading into the mouth of the bar, a large wave hit the stern of the boat, which pushed the boat onto its side. It rolled over two or three times, then hit a jetty. The boat broke apart upon impact and sank; reports indicate that the captain heard a loud explosion when the impact occurred. The captain was thrown into the water and then up onto the jetty. He was able to make it to shore and contacted the U.S. Coast Guard for help. The Coast Guard dispatched helicopter and boat crews, and found one of the injured crew, a 52-year-old commercial fisherman, wedged between two rocks approximately three-quarter mile down the shore line. The Coast Guard initiated CPR, then flew the 52-year-old fisherman to a hospital where resuscitative efforts were unsuccessful. The Coast Guard also found a life raft and a few pieces of debris at the scene; however, a sonar scan was unable to locate the remains of the vessel. It was suspected that it had been swept outside the channel into deeper water. The other two crewmen, a 31-year-old, and a 37-year-old, were reported as missing. Approximately three weeks after the incident, the body of the 31-year-old missing fishermen had washed ashore more than 40 miles north of the incident; he was found by a passerby who called 911. It is not known whether the fourth crew member was found; the last available information reported indicates he was still missing. It was reported that none of the crew were wearing life jackets. Cause of death for the three deceased crew members was reported as saltwater drowning.
Capsized fishing vessel, drowning Fishing/hunting/ trapping Fishing/hunting Winter Coos OR 2016-07-1	A crew of three commercial crab fishermen was returning from retrieving crab pots that were set by a fishing vessel that capsized the week before (see OR 2016-06-1,2,3). As they were crossing the bar, the boat's drive shaft failed, causing the boat to lose maneuverability. The boat was hit by a large wave that pushed it broadside and capsized it. It was reported that all three crew members were able to don survival suits before being thrown into the ocean. Two of the crew were able to get to shore. The third crew member, a 46-year-old commercial crab fisherman, was found floating face down in the water after an approximately 45-minute search. A US Coast Guard helicopter pulled him out of the water, initiated CPR, and then flew him to a hospital where resuscitative efforts continued for four hours. The surviving two crew members were taken to a hospital by ambulance where they were treated and released. The 46-year-old fisherman died that evening. Cause of death was reported as blunt force injuries and saltwater drowning.

Transportation (Water)

Drowning, entrapped inside capsized fishing vessel Fishing/hunting/ trapping Fishing/hunting Spring Coos OR 2016-31-1	A 67-year-old commercial fisherman was working as the skipper of a 40-foot commercial fishing vessel when, for unknown reasons, the boat capsized, and he was entrapped behind the door of the wheel house. The vessel had just crossed the bar and entered a channel in southern Oregon as it was returning from sea when it rolled over. Factors that caused the boat to capsize are not known; the weather did not appear to be the cause. The two other crew members on deck were able to swim to shore. Several unsuccessful attempts were made to recover the skipper. His remains were recovered 18 days after the incident by a professional diver.

Transportation (Motorized land vehicle: Motor vehicle)

Head-on collision Forestry/logging Transportation/material moving Winter Linn OR 2016-05-1	A 39-year-old truck driver was driving an unloaded logging truck, traveling eastbound on a 5-lane undivided highway. A commercial truck traveling westbound crossed the center lane into the path of the logging truck, resulting in a head-on collision. Review of witness interview documentation suggests the logging truck driver was wearing a safety belt. The logging truck driver was transported to a local hospital by emergency responders. He died in the hospital 8 days later from head and chest trauma sustained in the crash.
Rear-end collision Transportation/ warehousing Transportation/material moving Winter Baker OR 2016-10-1	A 63-year-old commercial truck driver was driving a semi-trailer truck on an interstate highway. It was reported that he was driving at highway speed when he rear-ended another semi-truck that was stopped in the lane due to a recent prior collision. Although evidence indicated the driver was wearing a safety belt when he rear-ended the other truck, he died at the scene from head injuries sustained in the crash.

Transportation (Motorized land vehicle: Motor vehicle)

Drove over embankment Admin./support/ waste management/ remediation services Protective service Spring Klamath OR 2016-13-1	A 25-year-old security guard was operating a company pickup truck while performing overnight patrol duties. He was driving between two industrial properties when, for unknown reasons, the vehicle drifted to the left on a right-hand turn on a dirt road. Evidence indicated there were no visual signs of the vehicle making a sudden swerve, skid, or slide. The vehicle left the road and rolled down a 300-foot, 45-degree slope. The vehicle came to rest on dry ground at the bottom of a canyon next to a river. It was reported that the deceased was ejected from the vehicle; his body was found five days later, approximately 200 yards downstream, submerged in three feet of water. It is unknown whether the deceased was wearing a safety belt at the time of the incident, but there was no evidence of safety belt trauma on the body. A vehicle inspection performed after the crash showed nothing mechanically that would have contributed to the incident. Weather also did not appear to be a contributing factor. The reported cause of death was blunt force trauma; he died prior to entering the water.
Overturned semi-truck Transportation/ warehousing Transportation/material moving Spring Douglas OR 2016-14-1	A 52-year-old long-haul truck driver was found deceased at the scene of his overturned semi-truck. He was traveling southbound on an interstate highway when his truck left the road, struck the center median, and overturned. There did not appear to be other vehicles involved, and the cause of the crash was unknown. The cause of death was reported as blunt force chest trauma.
Overturned semi-truck Transportation/ warehousing Transportation/material moving Spring Morrow OR 2016-19-1	A 62-year-old truck driver was operating a semi-truck towing two milk tankers, traveling westbound on an interstate highway. For unknown reasons, the vehicle veered onto the shoulder of the highway and rolled over. The driver was pinned in the cab by the steering wheel. It was reported that it took emergency response personnel more than an hour to extricate him; he was conscious during that time and stated he did not know why his vehicle had left the roadway. He was transported to a hospital where he died a few hours later from blunt force chest trauma. It is not known if he had been wearing a safety belt.

Transportation (Motorized land vehicle: Motor vehicle)

Two-car collision Public Administration Office/admin. Support Summer Baker OR 2016-30-1	A 59-year-old public agency employee died from a head injury in a two-car collision that occurred in an uncontrolled intersection in a residential neighborhood. The deceased was driving southbound when his vehicle was struck on the driver's side by another vehicle that was traveling west at the intersection. Reports suggested the deceased appeared to have the right of way at the time of the incident, although the speed of travel of either vehicle is not known. His vehicle rolled over upon impact. Evidence indicates he was not wearing a safety belt and his sunroof was open. He died at the scene.
Rear-end collision Forestry/logging Transportation/material moving Summer Lake OR 2016-33-1	A 60-year-old logging truck driver died when he crashed into the back of another logging truck traveling directly ahead of him while traveling downhill on a state highway. Both vehicles were carrying loads of logs, and the collision caused both vehicles to leave the highway and the 60-year-old driver's cab to catch fire. The 60-year old driver was pronounced deceased at the scene from blunt trauma. The driver of the second vehicle was not injured. It is unknown whether the decedent was wearing a seatbelt at the time of the crash.
Head-on collision Retail Trade Sales/related Autumn Clatsop OR 2016-39-1, 2	Two retail store employees, a 21-year-old store manager and a 23-year-old sales associate, were killed in a two-vehicle collision after making a store-to-store transfer of merchandise. The store manager was driving her personal sport utility vehicle (SUV); the sales associate was a passenger. The stores were located approximately 70 miles apart. During their return trip, while traveling eastbound on a two-lane highway in an unpopulated area, the driver crossed the center line into oncoming traffic and struck a pickup truck that was traveling westbound. The incident occurred during early evening hours. It was dark out and heavy rain was falling. It was reported that the store manager who was driving the SUV was exceeding speed limit and was not wearing a safety belt; the sales associate was wearing a safety belt. Both employees were pronounced deceased at the scene, both from blunt force trauma to the head and chest. The driver and passenger of the westbound vehicle were treated for injuries.
Overturned semi-truck Transportation/ warehousing Transportation/material moving Autumn Deschutes OR 2016-41-1	A 47-year-old commercial truck driver was operating a semi-truck hauling a single trailer along a U.S. highway when, for unknown reasons, the truck went off the road. The vehicle overturned, and the driver and a passenger were thrown from the vehicle. The driver was pronounced deceased at the scene; the passenger suffered serious but non-fatal injuries. It is unknown whether the decedent was wearing a safety belt at the time of the incident. Cause of death was reported as severe posterior head injury and deceleration injury to chest.

Transportation (Motorized land vehicle: Motor vehicle)

Vehicle overturned, rolled down embankment Transportation/ warehousing Transportation/material moving Summer Washington OR 2016-44-1	A 51-year-old driver of a cement delivery truck was driving a load of cement to a construction work site. He was traveling down a road with a steep grade. Evidence suggested he did not shift to a lower gear but instead used the brakes to slow down. While the driver was making a 90-degree turn, the truck overturned and then rolled down a 20-foot embankment. Evidence indicated the driver was wearing a safety belt. He died at the scene from head and chest injuries.
Head-on collision Professional/scientific/ technical Architecture/ engineering Winter Harney OR 2016-45-1	A 71-year-old engineer sustained multiple injuries when the passenger car he was driving was struck head-on by a pickup truck. The engineer was returning from a site visit, driving westbound on a U.S. highway. The pickup truck was driving eastbound and crossed over into the oncoming lane of traffic in an attempt to pass an 18-wheel semi-tractor-trailer. The pickup truck collided with the passenger car head-on at highway speed. The engineer died at the scene from femur and rib fractures.
Overturned truck and subsequent fire and explosion Transportation/ warehousing Transportation/material moving Autumn Lane OR-2016-52-1	A 62-year-old commercial truck driver was killed while transporting gasoline in a truck pulling double-tanker trailers. Evidence suggests the passenger side back wheel of second trailer left the roadway, causing the trailer to overturn and pulling the front tank away from the cab. The front tank caught fire and exploded, engulfing the cab in flames. The driver was trapped in the cab for approximately four hours as fire crews attempted to keep the fire from spreading. The severity of the burns to his body prevented any further medical examination.
Head-on collision Civic/professional Business/financial operations Spring Jefferson OR 2016-53-1	A 69-year-old union organizer was driving a passenger vehicle on a US highway. She was driving to a meeting, when, for unknown reasons, her vehicle crossed the center line and collided head-on with a sports-utility vehicle. She died at the scene of head trauma.

Transportation (Motorized land vehicle: Mobile machinery)

Crushed by logging machine Forestry/logging Forest/conservation/ logging Summer Union OR 2016-24-1	A 48-year-old logger died from head trauma when the forwarder machine he was operating tipped over on a wet hillside and pinned him underneath the cab. He was hauling logs down an approximately 35-degree slope toward the skid road. It had been raining the night before and the morning of the incident, and the hill was covered with wet branch trimmings. The operator was not wearing a safety belt. The forwarder veered off course, hit several tree stumps, and tipped over when it reached the skid road. He was thrown from the operator's seat and out of the emergency exit door, which appeared to have sprung open and separated from the vehicle during the descent. He fell onto the ground and the forwarder landed on its side on top of him, crushing his head underneath the cab.
Run over by tractor Agriculture Agriculture Spring Umatilla OR 2016-32-1	A 76-year-old farmer died six days after sustaining crushing neck and leg injuries in a tractor incident. The deceased was driving his tractor when he fainted and then fell off the tractor to the ground. The tractor was in motion and ran over him. It is unknown whether there was a safety belt on the tractor. It was reported that the farmer suffered from heart disease and hypertension, which could have contributed to the fainting incident that led to the injuries. He was airlifted to a hospital and shortly thereafter was transferred to a palliative care facility where he died.
All-terrain vehicle incident Fishing/hunting/ trapping Fishing/hunting Autumn Gilliam OR 2016-37-1	A 58-year-old game bird hunting guide was driving a 4X4 all-terrain vehicle (ATV) on a gravel road between the hunting fields and hunting lodge. The guide was returning to the lodge after staging game birds for the next hunt. It was reported that light rain had begun to fall. Evidence indicated she was driving in the center of the road, at a speed of approximately 35 miles per hour (mph). As she entered a curve she crossed the center of the road into the path of oncoming traffic. She was not wearing a helmet. A pickup truck driven by another employee was traveling in the opposite direction at approximately 20 mph. When the truck driver saw the approaching ATV he swerved to the right but the ATV swerved in the same direction (to her left), resulting in a collision with the ATV impacting the passenger side of the pickup truck. The guide was thrown from the ATV onto the dirt shoulder of the road. She died from head trauma and broken neck.

Violence and other injuries by persons or animals

Gunshot wound Public administration Protective service Winter Clatsop OR 2016-08-1	A 39-year-old police officer was shot in the abdomen while attempting to serve a felony assault suspect with an arrest warrant. Two police officers were together at the scene. The suspect resisted arrest and the officer's partner deployed a taser. The suspect then fired a shot that struck the 39-year-old police officer. The second officer returned fire and shot the suspect. The injured police officer was brought to a local hospital where attempts were made to resuscitate him. He died shortly thereafter from complications of the gunshot wound. The medical examiner reported the officer had been wearing a protective vest, part of which was on his person at the hospital and part of which was later found at the scene. It is unknown whether first responders removed that part of the vest when attending to the officer.
Jumped from building Public administration Architecture/ engineering Winter Multnomah OR 2016-20-1	A 58-year-old engineer died from an apparent suicide after jumping from the office building she worked in to the sidewalk below. Witness reported seeing the deceased falling approximately mid-way down the building and striking the sidewalk below. No one reported seeing which exact floor she jumped from, but it was thought that she jumped from one of the upper level floors in the 11-story building. The incident occurred on a Saturday. The building is locked and secured on weekends, with no public access; building entry was restricted to employees who have a security card and passcode. Evidence indicated the time of her fall occurred shortly after entering the building. Police were notified and arrived within minutes. Evidence indicated there were two suicide-related notes in her pocket, and a family member reported that she had suffered from anxiety and depression and received periodic treatment. She was pronounced deceased at the scene from blunt force chest and abdominal injuries.
Self-inflicted gunshot wound Public administration Protective service Autumn Marion OR 2016-36-1	A 49-year-old dispatcher for a state law enforcement agency died from a self-inflicted gunshot wound to the head. She worked at a secured facility. She reportedly left work early and was later found by another employee who noticed the dispatcher's personal vehicle in the facility parking lot. The fellow employee saw the decedent slumped over in the driver's seat of her vehicle. It was reported that the decedent had a history of depression and may have recently experienced some work-related disciplinary actions.
Gunshot wound Admin./support/waste management/ remediation services Protective service Summer Multnomah OR 2016-46-1	A 28-year-old employee of a security service company was driving his vehicle on a public street. Specifics of his employment or work tasks were not reported. Witnesses reported seeing the decedent's car being followed. The decedent slowed his car down and got out. At about the same time, the occupants of the tailing vehicle also got out and began to fire at the security employee. He was struck by at least two bullets. He died of a gunshot wounds to the left shoulder and neck.

Violence and other injuries by persons or animals

Gunshot wound Finance/insurance Business/financial operations Autumn Multnomah OR 2016-49-1	A 36-year-old insurance company employee was working in the company office outside of regular business hours when another employee entered the office and shot her. Her body was found that evening by police, who were responding to a call regarding a suspicious vehicle parked near the office building. No other information about the incident is known. The employee died from the gunshot wound.

Worker fatalities with delayed death from date of injury (over 48 hours), 2016

EVENT	CAUSE OF DEATH	INTERVAL	FACE ID
Motor Vehicle Collision	Head and chest trauma	8 days	OR-2016-05-1
Fall	Blunt force head injuries	25 days	OR-2016-15-1
Fall	Necrotizing fasciitis and sepsis	5 days	OR-2016-18-1
Fire	Smoke inhalation and thermal injuries	2 days	OR-2016-22-1
Contact	Multiple blunt force chest and extremity trauma	5 days	OR-2016-28-1
Motor Vehicle Collision	Crushing neck and leg injuries	6 days	OR-2016-32-1
Contact	Asphyxiation due to drowning	8 days	OR-2016-54-1

Undetermined Cases

OR-FACE attempts to verify the details of fatalities through as many avenues as possible, to determine if a case meets our criteria of an occupational traumatic fatality. In cases with insufficient data, or when we cannot rule out a case, it is classified as "undetermined." For 2016, the following two cases are considered undetermined, pending additional information.

EVENT	DESCRIPTION	SEX	SEASON	NAICS CODE
Fall	Head Injury	Female	Winter	62 Health Care and Social Assistance
Unknown	Head injury	Male	Winter	11 Agriculture, Forestry, Fishing and Hunting

Event Definitions

The event or exposure describes the manner in which the injury or illness was produced or inflicted by the source of injury or illness.

CONTACT WITH OBJECTS AND EQUIPMENT

Codes apply to injuries produced by contact between the injured person and the source of injury except when contact was due to falls, transportation incidents, fires, explosions, assaults, or violent acts. Contact may be denoted by a statement that the injured person struck or was struck by an object, was caught in an object, rubbed against an object, or by words such as "hit by," or "hit," "bumped into," "crushed by," or "banged."

FALLS

Falls are events where the injury was produced by an impact between the injured person and an object or surface when the motion was generated by gravity.

BODILY REACTION AND EXERTION

Codes apply to cases, usually non-impact, in which injury or illness resulted from free bodily motion, from excessive physical effort, from repetition of a bodily motion, from the assumption of an unnatural position, or from remaining in the same position over a period of time.

EXPOSURE TO HARMFUL SUBSTANCES OR ENVIRONMENTS

Codes apply to cases in which the injury or illness resulted from contact with, or exposure to, a condition or substance in the environment. Cases of burns, heat stress, smoke inhalation, or oxygen deficiency resulting from an uncontrolled or unintentional fire are generally coded fire and explosions, unless a transportation incident or assault or violent act was involved.

TRANSPORTATION INCIDENTS

This code covers events involving transportation vehicles, powered industrial vehicles, or powered mobile industrial equipment where at least one vehicle (or mobile equipment) was in normal operation and the injury/illness was due to collision or other type of traffic accident, loss of control, or a sudden stop, start, or jolting of a vehicle regardless of the location where the event occurred. References to "vehicles" in should be interpreted to include powered industrial vehicles and powered mobile industrial equipment unless otherwise noted. Cases classified in this code include pedestrians, roadway workers, or other non-passengers struck by vehicles, powered industrial equipment on or off the roadway (including indoor locations) when the incident meets these criteria: (a) at least one vehicle was in regular operation, and (b) the impact was caused by a traffic incident or forward/backward travel of the vehicle.

FIRES AND EXPLOSIONS

Codes apply to cases where the injury or illness resulted from an explosion or fire. Included are cases where the person fell or jumped from a burning building, inhaled a harmful substance, or was struck by or struck against an object as a result of an explosion or fire. This division also includes incidents where the worker was injured due to being trapped in a fire or whose respirator had run out of oxygen during a fire. Excluded from this category are injuries to firefighters resulting from lifting fire hoses and falls not related to the fire or explosion itself, such as falls in the parking lot of a burning building.

ASSAULTS AND VIOLENT ACTS

Assaults and violent acts include cases where a person was injured or made ill by assaults, or by violent, harmful actions regardless of intent. Included in this division are assaults by others, injuries to oneself, and assaults by animals. This category includes injuries occurring in a hostile environment even though the person injured was not the intended victim, such as a teacher hit while breaking up a fight.

OTHER EVENTS OR EXPOSURES

This division classifies any event or exposure that is not classified or listed under any other division.

Adapted from US Bureau of Labor Statistics (2012), Occupational Injury and Illness Classification Manual. US Department of Labor. Accessed online (June 2017): https://www.bls.gov/iif/osh_oiics_2010_2_4.pdf

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OR-FACE conducts surveillance, investigation, and assessment of traumatic occupational fatalities in Oregon, and produces safety materials to promote worker safety aimed at preventing similar injuries. OR-FACE investigations of fatal occupational incidents assess risk factors that include the working environment, the worker, activity, tools, energy exchange, and role of management.

About the Oregon Institute of Occupational Health Sciences at Oregon Health & Science University

The Oregon Institute of Occupational Health Sciences is dedicated to health and safety in the workforce. The Institute's mission is to promote health, and prevent disease and disability among working Oregonians and their families during their employment years and through retirement. The Institute does so through basic and applied research, outreach, and education.

Oregon Health & Science University (OHSU) is dedicated to improving the health and quality of life for all Oregonians through excellence, innovation and leadership in health care, education and research. OHSU includes the schools of Dentistry, Medicine, Nursing, and Science & Engineering; OHSU Hospital; Doernbecher Children's Hospital; numerous primary care and specialty clinics, multiple research institutes; and several outreach and community service units. OHSU is an equal opportunity, affirmative action institution.

Published 2019. To ensure accurate fatality surveillance, each Annual Report has historically been published approximately 18 months after the end of a study year.