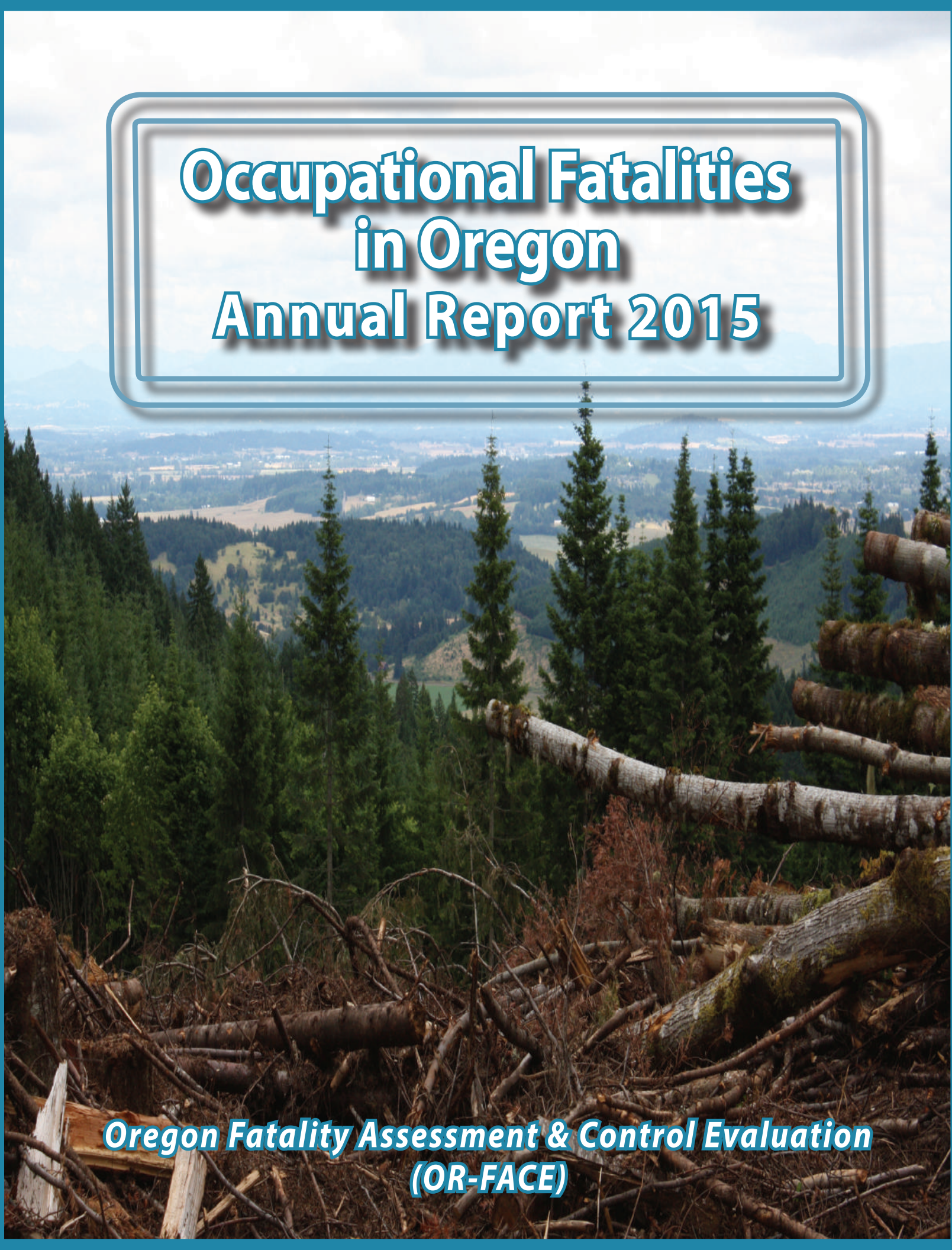
# Occupational Fatalities in Oregon Annual Report 2015



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 |

# Annual Report 2015

**Oregon Fatality Assessment and Control Evaluation**

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Contact Information:

OR-FACE Progam
Oregon Institute of
Occupational Health Sciences,
OHSU
3181 SW Sam Jackson Park Rd, L606
Portland, OR 97239-3098

phone: (503) 494-2281
e-mail: orface@ohsu.edu

website: www.ohsu.edu/or-face


*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

FACE Staff (Publication Year)
- Ryan Olson PhD
- Barb Epstien MPH, CIH, FAIHA
- Layla Mansfield MS
- Jason Malach-Fuller BS

Emeritus FACE Staff (Reporting Year)
- Illa Gilbert-Jones MS, CIH, CSP
- Katrina Bettencourt MS



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

*Principal Investigators:*
*Curtis Cude and Ryan Olson, PhD*

Cover photograph by Ryan Olson

# Report Summary

## REPORT HIGHLIGHTS

- OR-FACE conducts surveillance, investigation, assessment, and outreach related to traumatic occupational fatalities in Oregon (see pp. 5-6 for descriptions of activities).
- OR-FACE published eight blogs and one investigation report, *Driver killed when ejected from logging truck*. OR-FACE also published 15 toolbox talk guides, including 6 translated into Spanish (see pp. 7-10).
- Characteristics of fatal events and the workers involved are quantified in charts (see pp. 11-18).
- Abstracts provide a brief description of each incident and contributing factors (see pp. 19-30).
- Contact information for OR-FACE to access resources and to provide feedback - see back cover.

## INTRODUCTION

In 2015, Oregon Fatality Assessment and Control Evaluation recorded 38 fatal occupational incidents resulting in worker deaths. The number represents a rate of 2.1 fatalities per 100,000 employed workers in the civilian labor force in Oregon. The national worker fatality rate in 2015 was 3.38 per 100,000 full-time equivalent workers.

The following notable trends occurred in 2015:

- The total number of fatalities was lower, whereas the rate of employment was higher, relative to the previous 12 years (see fatality rate chart, p. 11).
- The transportation industry had the highest number of fatalities, followed by forestry and logging. These two industries have been among the top 4 industries for fatalities in 11 of the previous 12 years (see p. 15).
- Fatal cases from Contact events exceeded all other events, followed by Motor Vehicle Accidents. Nearly one-third of these occured in the transportation industry (see p. 16).

# Core Activities

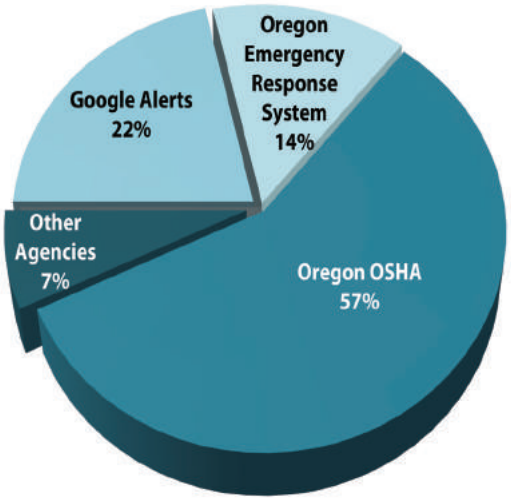
## SURVEILLANCE

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 2015, 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 notification following incident | | | | | | |
|---|---|---|---|---|---|---|
| | Days | | Months | | | Total |
| | 0-2 | 3-30 | 1-3 | 3-6 | 6-12 | |
| Google alerts | 3 | 5 | 1 | 0 | 2 | 11 |
| OR Emergency Response System | 2 | 1 | 0 | 0 | 0 | 3 |
| Oregon OSHA | 8 | 11 | 1 | 0 | 0 | 20 |
| Oregon State Police | 1 | 0 | 0 | 0 | 0 | 1 |
| Oregon Vital Statistics | 0 | 0 | 0 | 2 | 0 | 2 |
| Other | 0 | 0 | 1 | 0 | 0 | 1 |
| Total | 14 | 17 | 3 | 2 | 2 | 38 |

# Core Activities

## INVESTIGATION

In-depth investigations are conducted of selected cases 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 2015: *OR-2014-01-1, Driver killed when ejected from logging truck* (see page 9).

## OUTREACH

OR-FACE outreach efforts include publications and their distribution, safety events and initiatives, posters presentations and small field studies. Published OR-FACE safety materials are distributed online, directly by mail, and through collaboration with partner organizations. In 2015 OR-FACE distributed:

- 150 *Fallers Logging Safety* booklets to the Washington Contractors Logging Safety Conference
- 160 *Fallers Logging Safety* booklets to an Oregon saw shop
- 150 *toolbox talks and fatality investigations* about logging incidents to an Oregon logging association
- 560 construction related *toolbox talks and investigation reports* to SafeBuild Alliance/Safety week kick-off event, Construction Safety Summit, and a local safety consultant
- 36 OR-FACE documents to Oregon State Representatives and the Oregon Department of Consumer Business Services

## CITATIONS

Safety+Health (Jan 2015). National Safety Council monthly magazine "Oregon FACE issues 3 safety guides for logging industry"

Safety+Health (Apr 2015). National Safety Council monthly magazine. "FACEValue: Worker killed in fall from trailer platform"

Safety+Health (Aug 2015). National Safety Council monthly magazine. "Motor vehicle incidents continue to be top cause of Oregon worker fatalities: 2013 OR-FACE Annual Report"

Safety+Health (Sep 2015). National Safety Council monthly magazine "New safety resources available for Spanish speaking workers"

Safety+Health (Dec 2015). National Safety Council monthly magazine. "Oregon FACE releases new toolbox talks"

The National Truckers Association, Safety Issues, OR-FACE Investigation "Truck driver crushed between semi-trailer and loading dock"

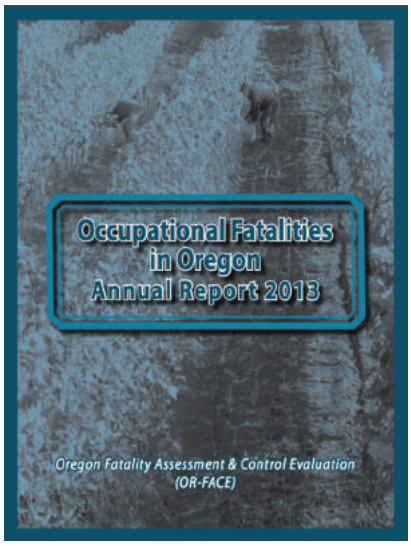
The National Truckers Association OR-FACE Investigation, "Salesman killed when forklift falls off truck loading ramp"

# 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 2013 annual report was published July 2017, 20 months after close of year (*to ensure accurate fatality surveillance, each Annual Report is closed out and 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 (http://www.ohsu.edu/or-face; or QR code). New reports are published regularly.

# Publications

## TOOLBOX TALK GUIDES

Fifteen Toolbox guides were produced in 2015. These guides are based on Oregon occupational fatal cases and are designed to help supervisors facilitate safety meetings by giving a toolbox talk about the incident. 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 discuss prevention recommendations. Six of these toolbox talk guides were translated into Spanish in 2015.





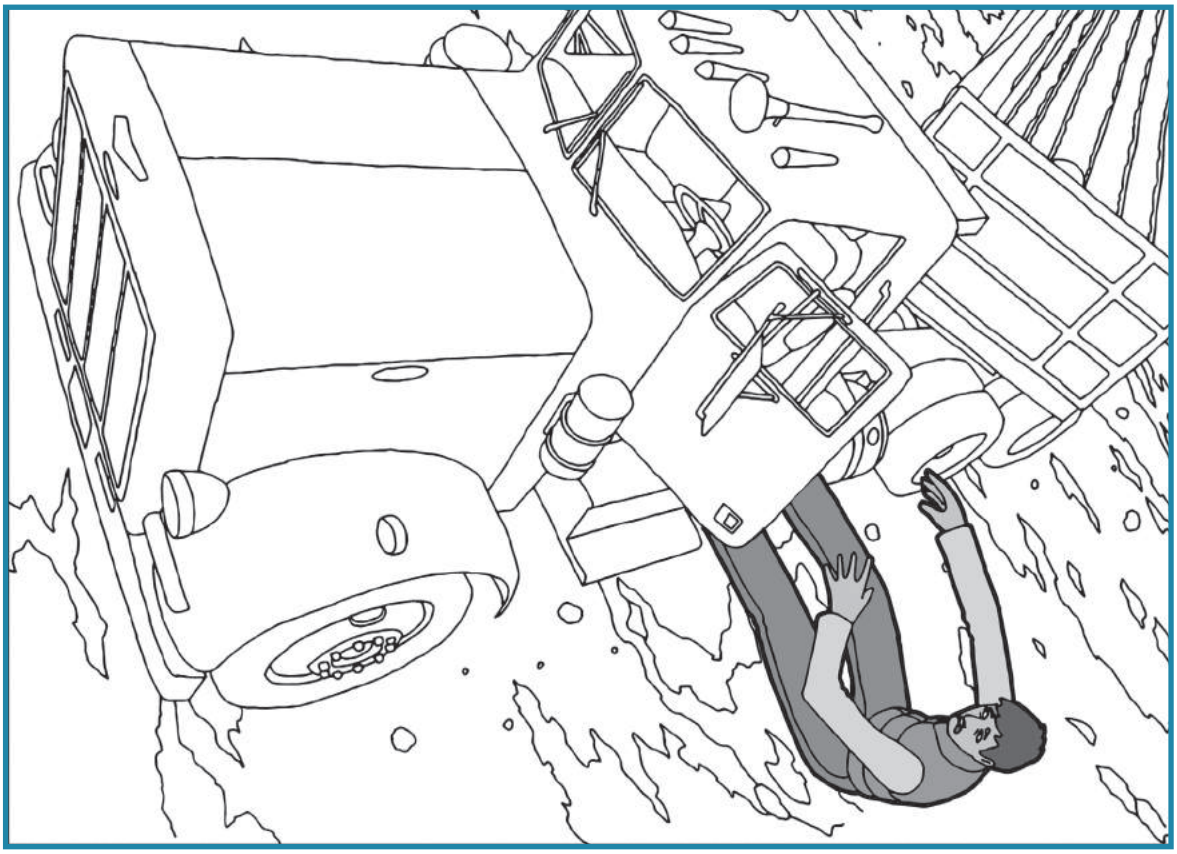
# Investigations

***OR-2014-01-1, Driver killed when ejected from logging truck***

In January 2014, a 39 year-old driver was killed when he was ejected from the cab of a logging truck after it veered off the haul road into a canyon. The driver had left a landing with a load of logs at about 5:30am. There were reports of dense fog in the area until about 7:30 am. Shortly thereafter, about ½ mile from the landing, another truck driver noticed tire tracks that trailed off the main haul road into a steep canyon. He then saw the wrecked truck and trailer below. The driver was found next to the rear axle of the truck, approximately 150 yards below the road. There were no skid marks or steering corrections indicated by the tire tracks suggesting that the driver inadvertently drove off the road after encountering the dense fog condition.

**Recommendations**

- Employers should train truck drivers to recognize unsafe driving conditions and to stop operations when conditions are unsafe.
- Logging truck fleet owners that require operation under fog conditions should install front fog lamps in trucks and ensure that lights are working and windshields and cab windows are clean.
- Drivers should use seat belts when operating a logging truck and employers should enforce existing seat belt use policies.
- Drivers should clean their windshields as often as needed and conduct regular vehicle inspections to ensure that brakes are working correctly.

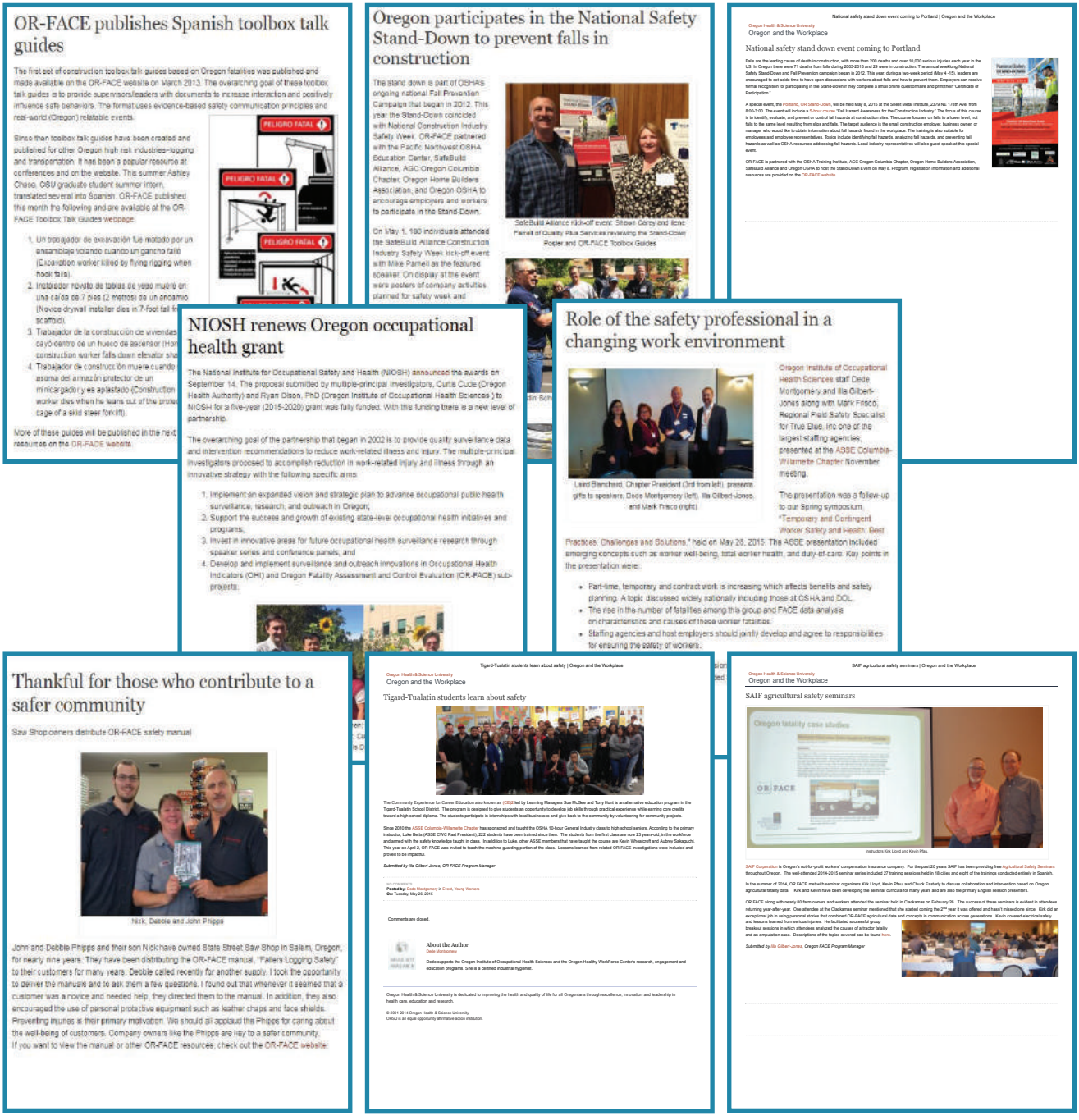


An illustration of the incident.

Illustration by Joseph Boquiren

# Blogs

These blogs are part of the social media outreach of the Oregon Institute of Occupational Health Sciences. Once a blog is published it is shared through Twitter (700 followers), Facebook (306 likes), and the newsletter (1400 subscribers). OR-FACE contributed eight blogs in 2015.



OR-FACE publishes Spanish toolbox talk guides

Oregon participates in the National Safety Stand-Down to prevent falls in construction

National safety stand down event coming to Portland | Oregon and the Workplace

NIOSH renews Oregon occupational health grant

Role of the safety professional in a changing work environment

Thankful for those who contribute to a safer community

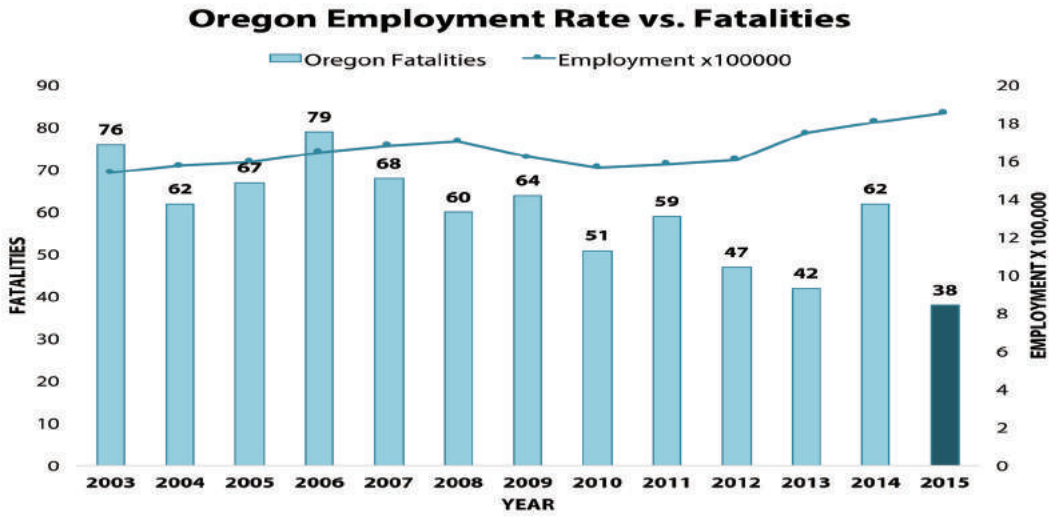
Tigard-Tualatin students learn about safety | Oregon and the Workplace

SAIF agricultural safety seminars | Oregon and the Workplace

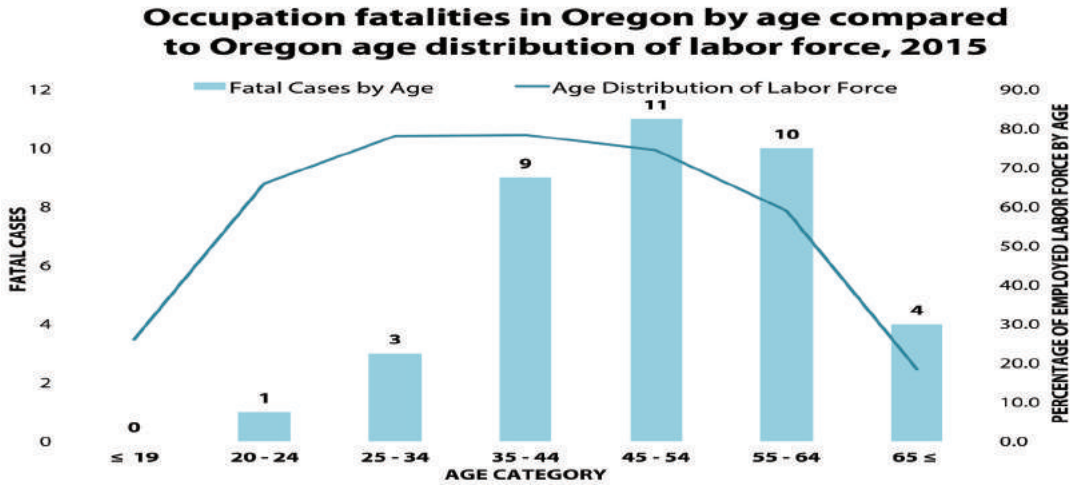
# Charts

**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: forestry/logging (code 113), fishing (code 114) and agriculture (codes 111-112). For occupation (SOC), Farming/Fishing/Forestry (code 45) is split into sub codes: agriculture (code 45-2000), fishing (code 45-3000), forestry (code 45-4010) and logging (code 45-4020). For event (OIICS), Transportation is divided into types: Motor Vehicles, Mobile Machinery, Air, and Water.**

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




Source of labor force: BLS http://www.bls.gov/lau/table14full13.pdf p. 61-2. Retrieved: May 2017.
Source of fatality counts: OR-FACE

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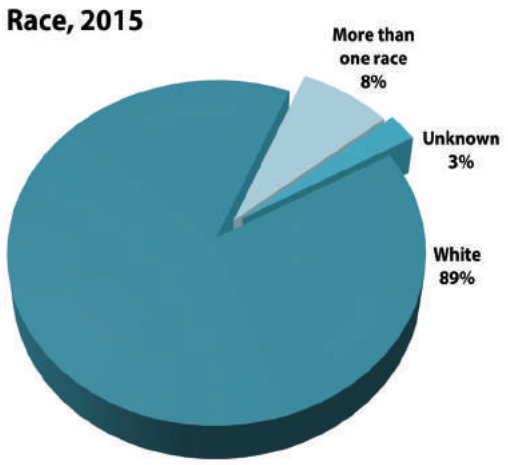
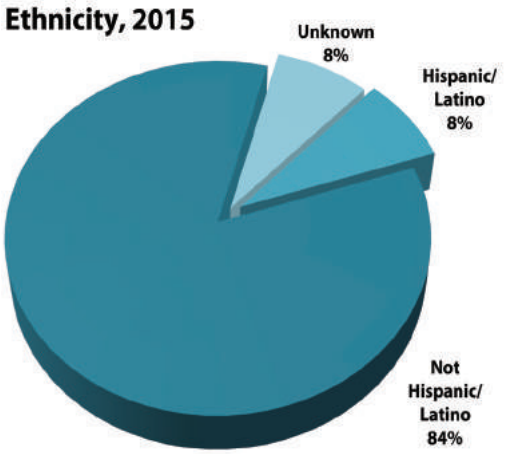
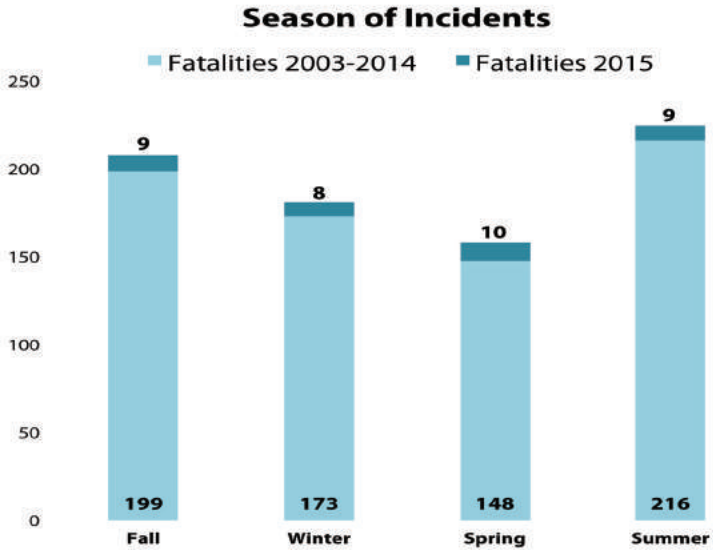
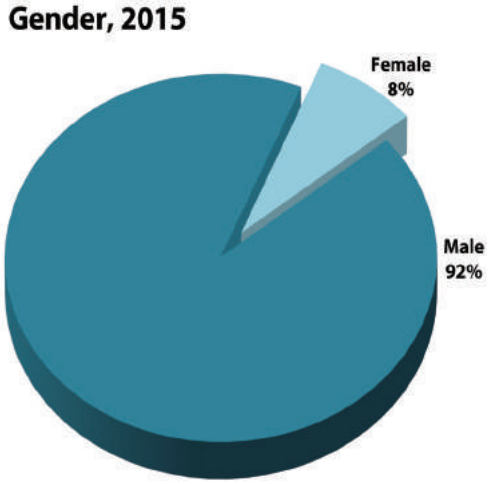
Source of fatality counts: OR-FACE

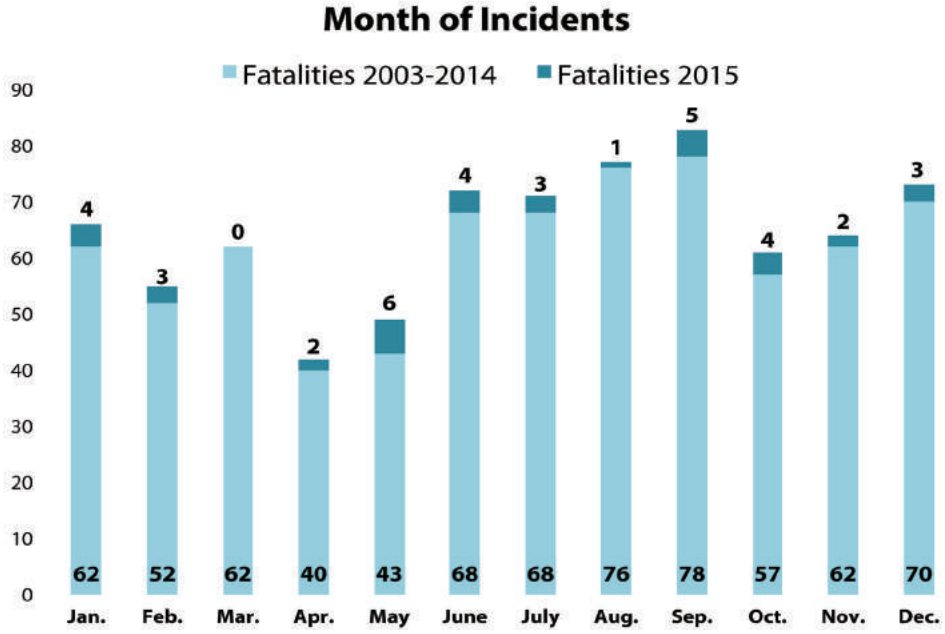
# Charts


Race, 2015
More than one race 8%
Unknown 3%
White 89%

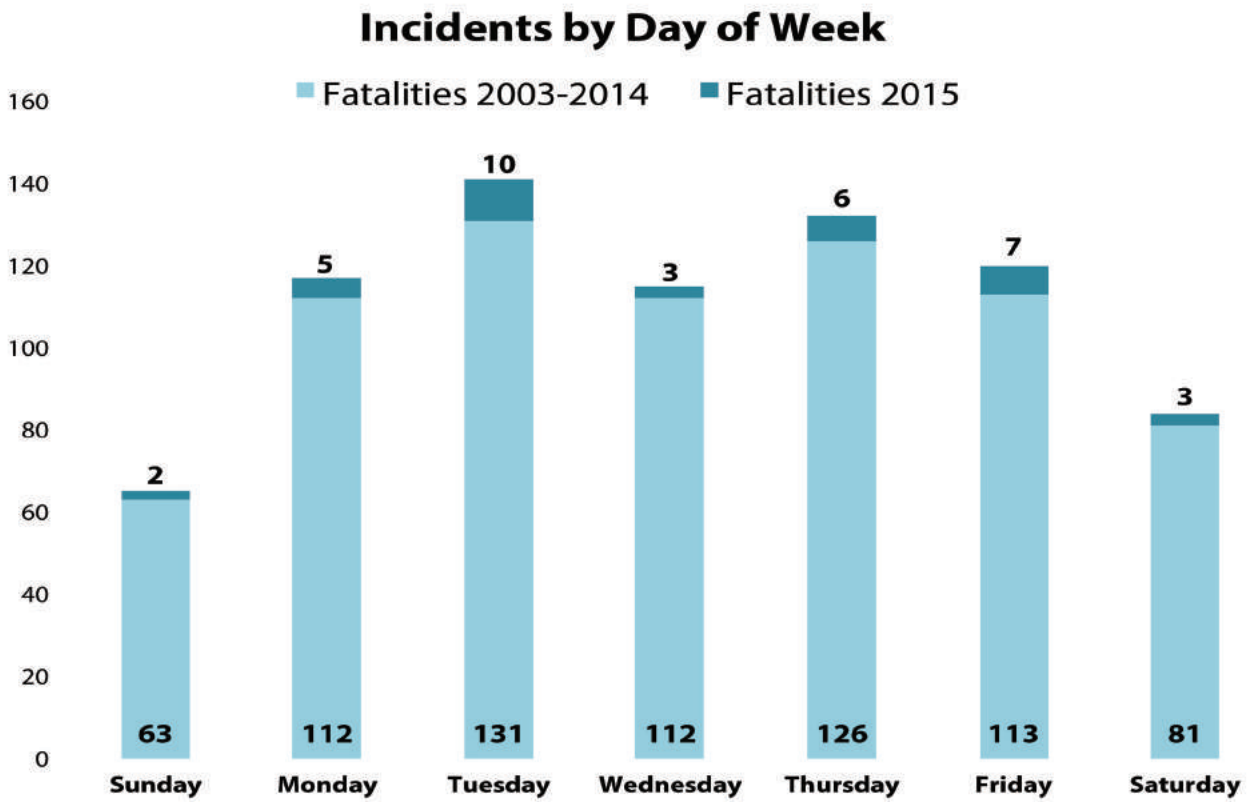

Ethnicity, 2015
Unknown 8%
Hispanic/ Latino 8%
Not Hispanic/ Latino 84%

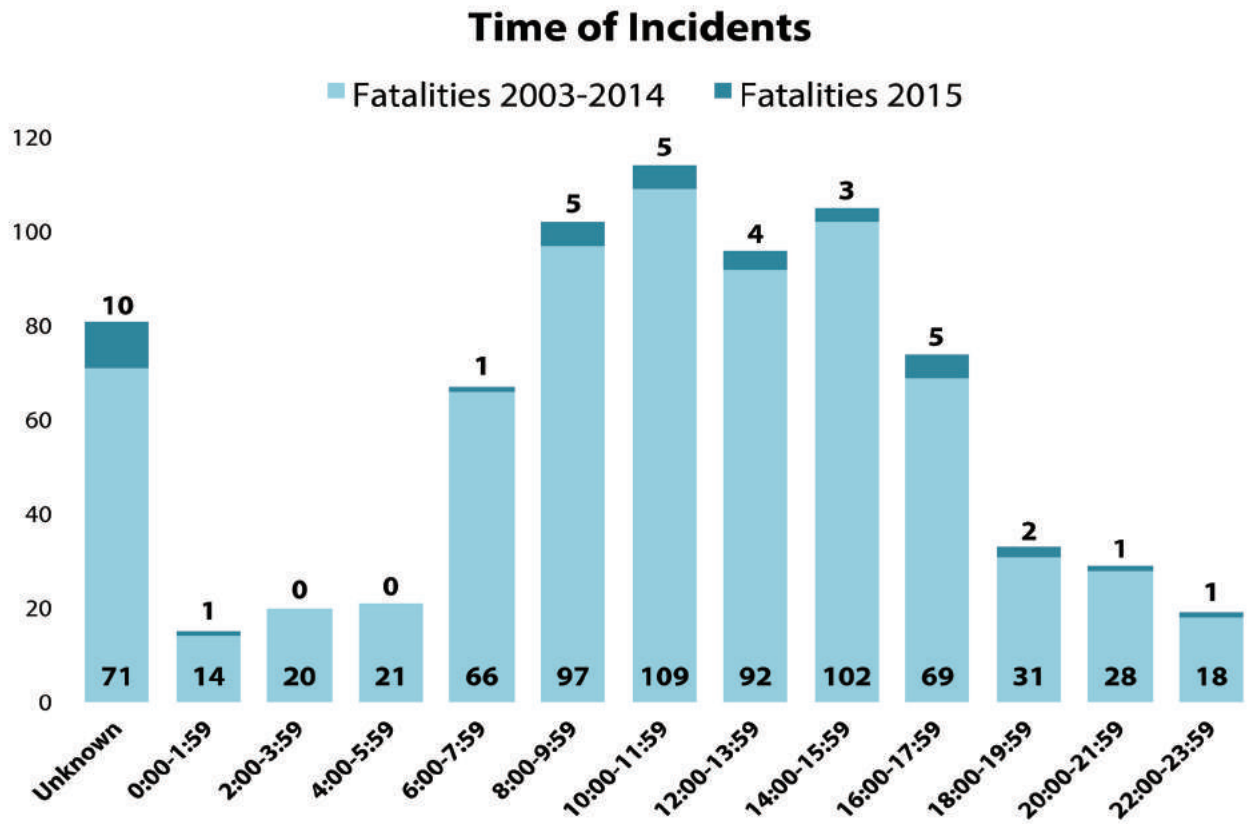

Season of Incidents
Fatalities 2003-2014
Fatalities 2015
250
200
150
100
50
0
9
8
10
9
199
173
148
216
Fall
Winter
Spring
Summer


Gender, 2015
Female 8%
Male 92%


Month of Incidents
Fatalities 2003-2014
Fatalities 2015
90
80
70
60
50
40
30
20
10
0
4
3
0
2
6
4
3
1
5
4
2
3
62
52
62
40
43
68
68
76
78
57
62
70
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sep.
Oct.
Nov.
Dec.

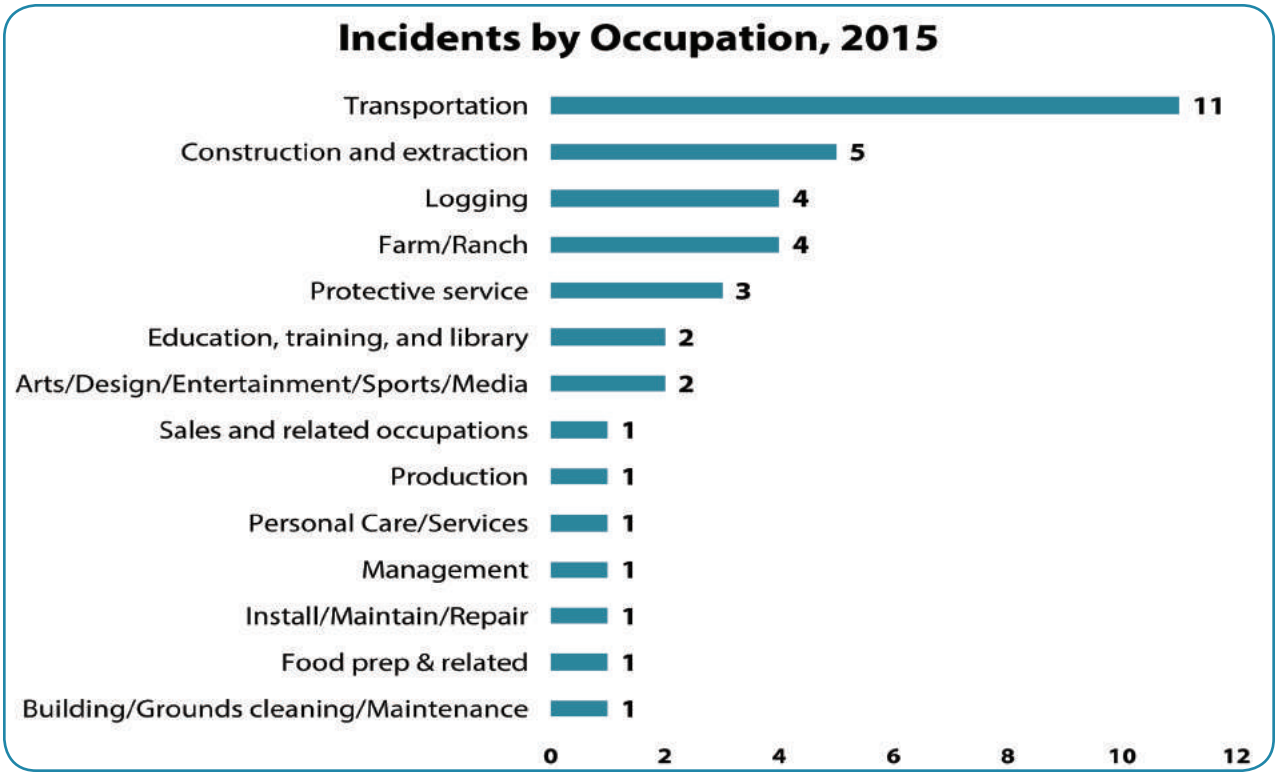
# Charts


Incidents by Day of Week
Fatalities 2003-2014
Fatalities 2015
160
140
120
100
80
60
40
20
0
63
2
112
5
131
10
112
3
126
6
113
7
81
3
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

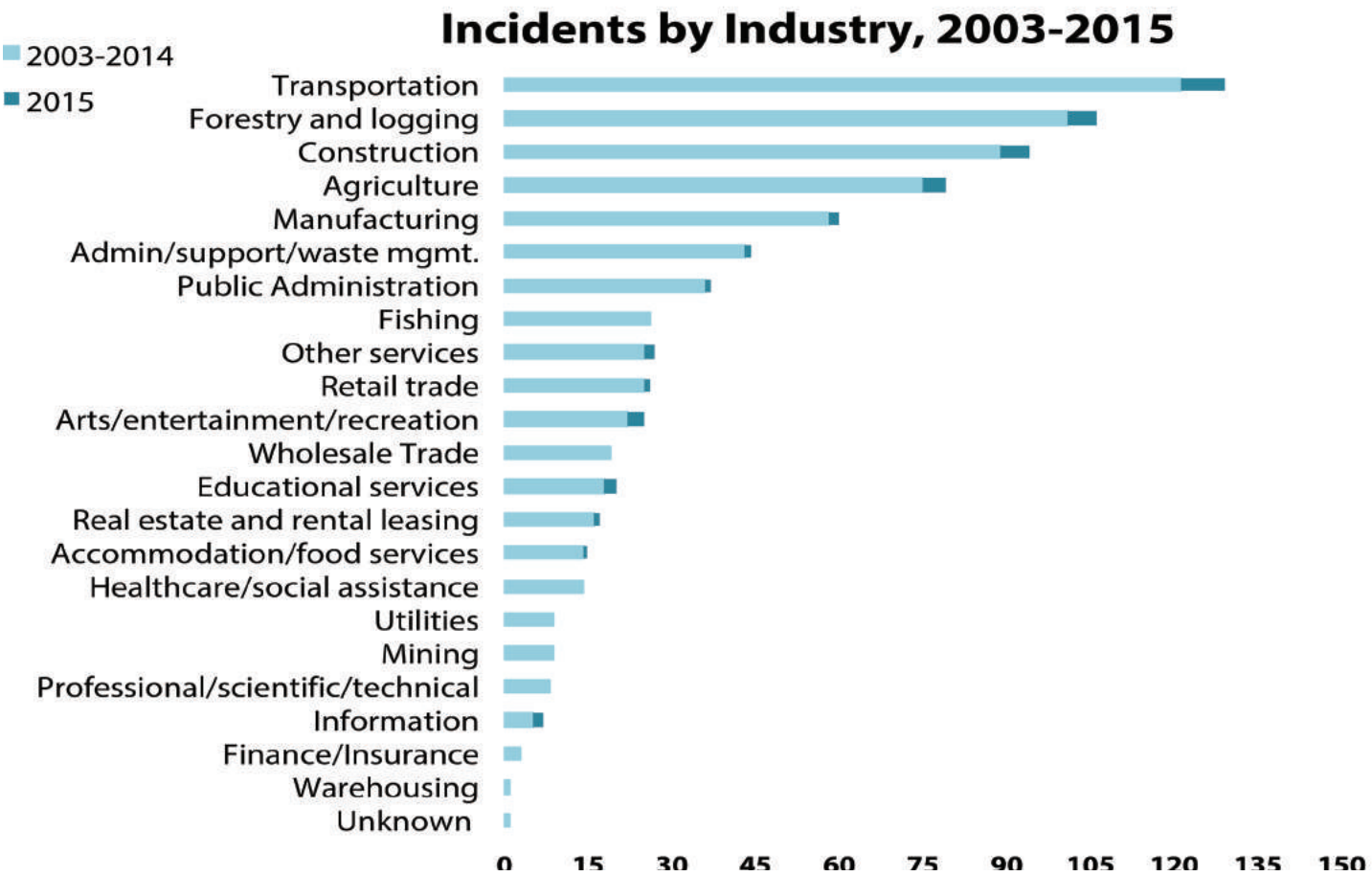

Time of Incidents
Fatalities 2003-2014
Fatalities 2015
120
100
80
60
40
20
0
71
10
14
1
20
0
21
0
66
1
97
5
109
5
92
4
102
3
69
5
31
2
28
1
18
1
Unknown
0:00-1:59
2:00-3:59
4:00-5:59
6:00-7:59
8:00-9:59
10:00-11:59
12:00-13:59
14:00-15:59
16:00-17:59
18:00-19:59
20:00-21:59
22:00-23:59

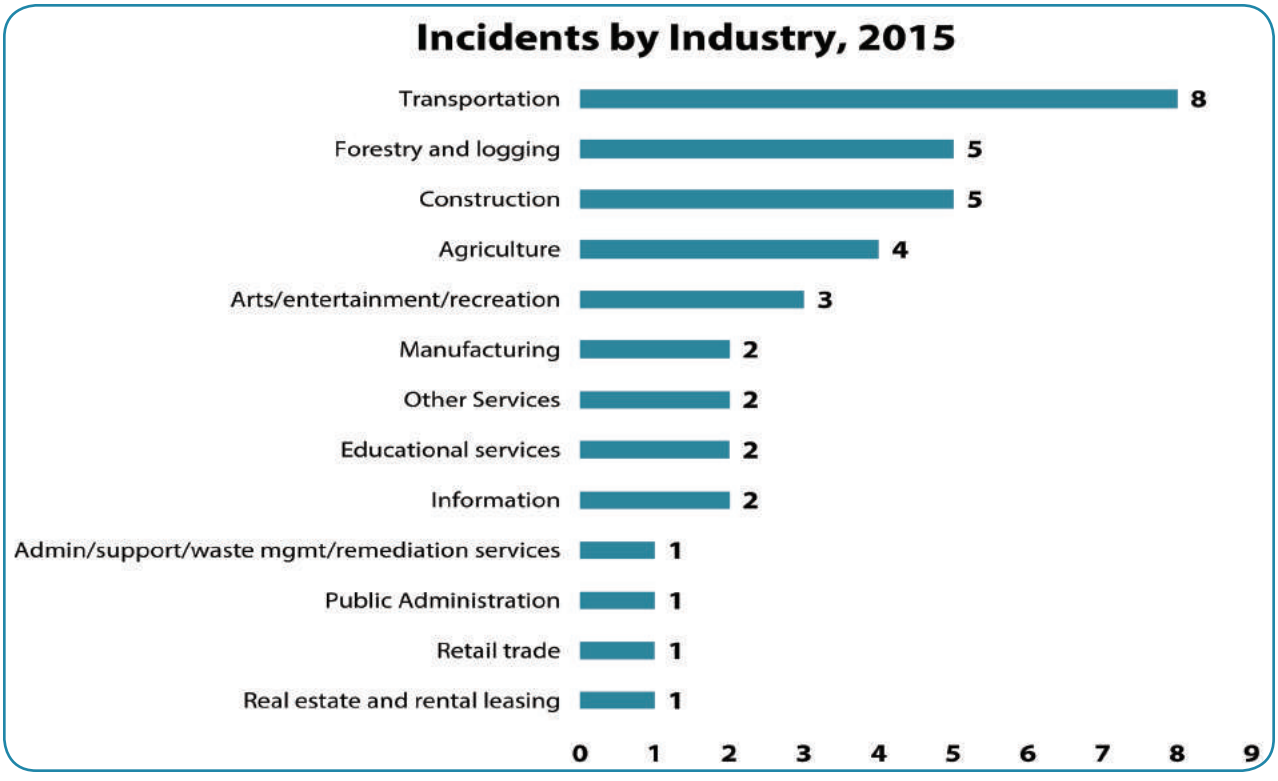
# Charts


Incidents by Occupation, 2003-2015
2003-2014
2015
Transportation
Construction and extraction
Farm/Ranch
Install/Maintain/Repair
Logging
Management
Production
Protective service
Building/Grounds cleaning/Maintenance
Fishing
Sales and related occupations
Forestry
Material/Moving
Personal Care/Services
Office/Administrative
Education, training, and library
Arts/Design/Entertainment/Sports/Media
Healthcare Practice/tech
Military
Food prep & related
0 20 40 60 80 100 120 140 160 180 200

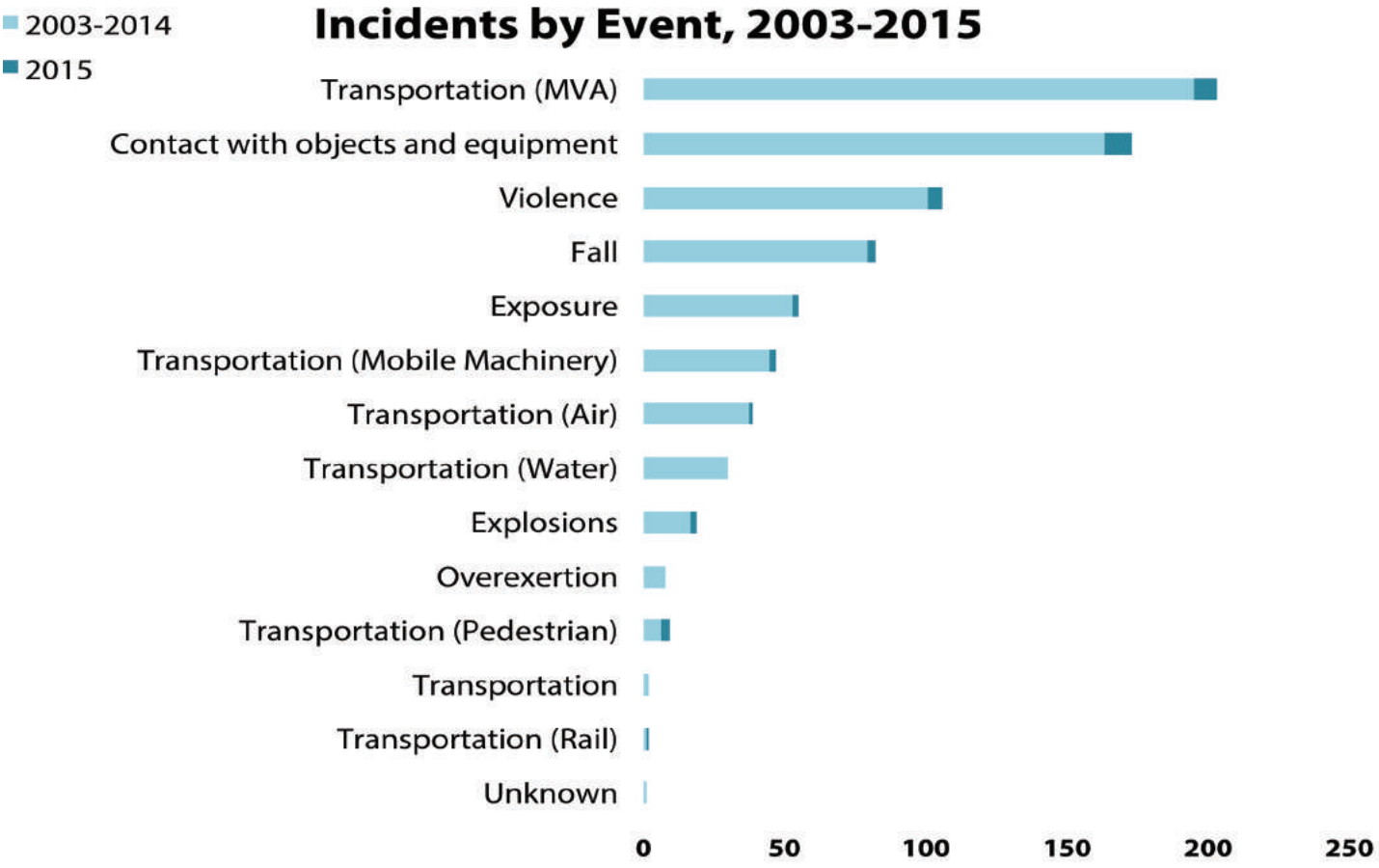

Incidents by Occupation, 2015
Transportation 11
Construction and extraction 5
Logging 4
Farm/Ranch 4
Protective service 3
Education, training, and library 2
Arts/Design/Entertainment/Sports/Media 2
Sales and related occupations 1
Production 1
Personal Care/Services 1
Management 1
Install/Maintain/Repair 1
Food prep & related 1
Building/Grounds cleaning/Maintenance 1
0 2 4 6 8 10 12

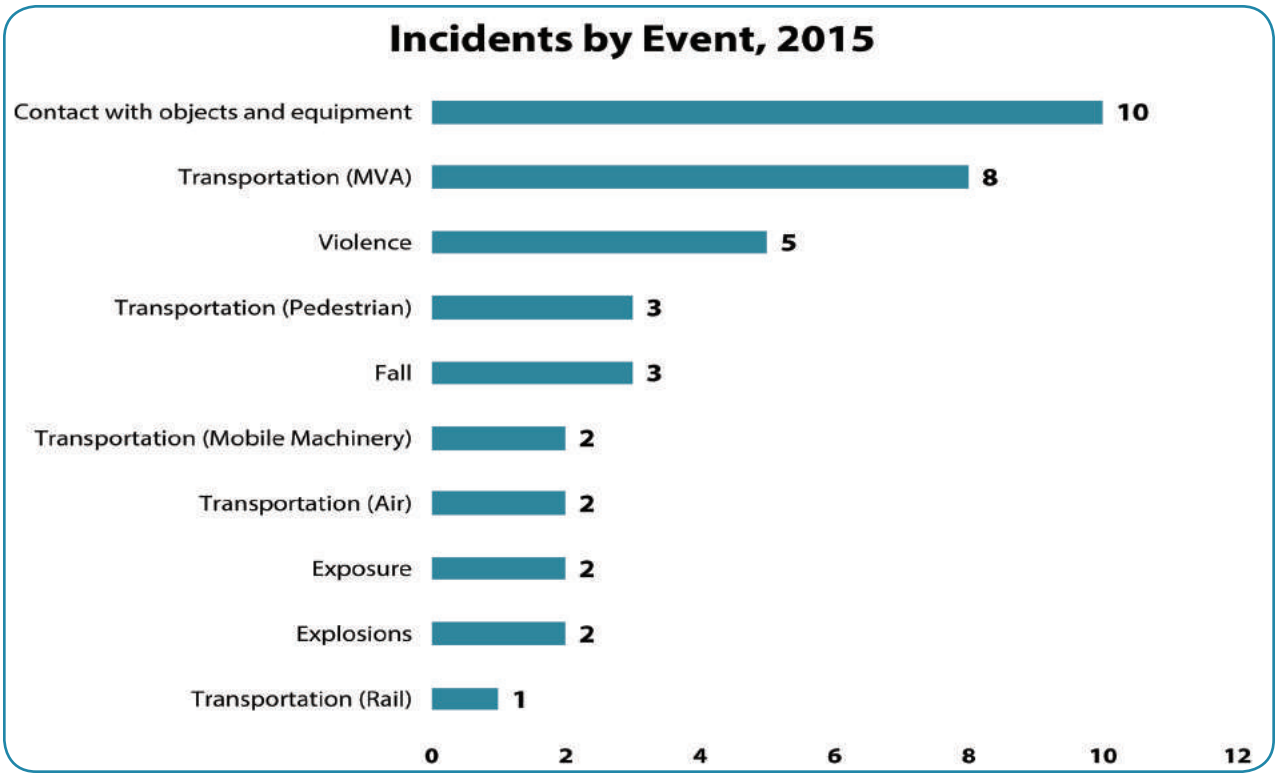
# Charts


Incidents by Industry, 2003-2015
2003-2014
2015
Transportation
Forestry and logging
Construction
Agriculture
Manufacturing
Admin/support/waste mgmt.
Public Administration
Fishing
Other services
Retail trade
Arts/entertainment/recreation
Wholesale Trade
Educational services
Real estate and rental leasing
Accommodation/food services
Healthcare/social assistance
Utilities
Mining
Professional/scientific/technical
Information
Finance/Insurance
Warehousing
Unknown
0 15 30 45 60 75 90 105 120 135 150


Incidents by Industry, 2015
Transportation 8
Forestry and logging 5
Construction 5
Agriculture 4
Arts/entertainment/recreation 3
Manufacturing 2
Other Services 2
Educational services 2
Information 2
Admin/support/waste mgmt/remediation services 1
Public Administration 1
Retail trade 1
Real estate and rental leasing 1
0 1 2 3 4 5 6 7 8 9

# Charts

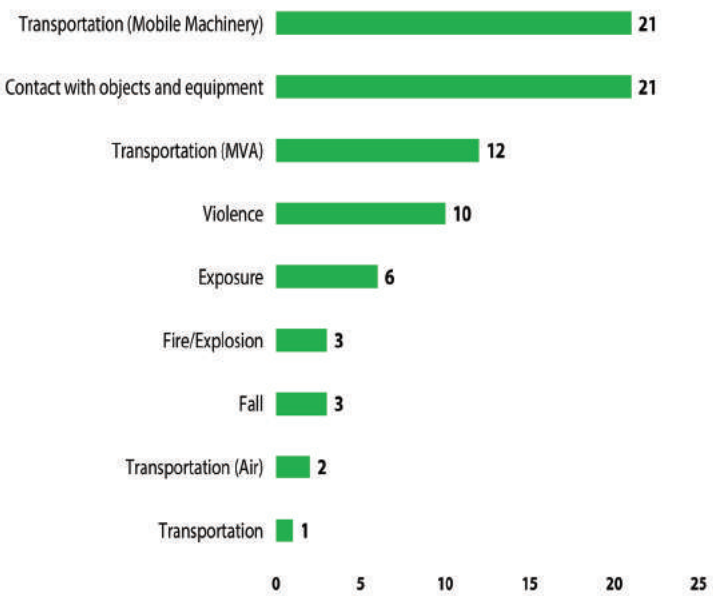

2003-2014
2015
Incidents by Event, 2003-2015
Transportation (MVA)
Contact with objects and equipment
Violence
Fall
Exposure
Transportation (Mobile Machinery)
Transportation (Air)
Transportation (Water)
Explosions
Overexertion
Transportation (Pedestrian)
Transportation
Transportation (Rail)
Unknown
0
50
100
150
200
250


Incidents by Event, 2015
Contact with objects and equipment
10
Transportation (MVA)
8
Violence
5
Transportation (Pedestrian)
3
Fall
3
Transportation (Mobile Machinery)
2
Transportation (Air)
2
Exposure
2
Explosions
2
Transportation (Rail)
1
0
2
4
6
8
10
12

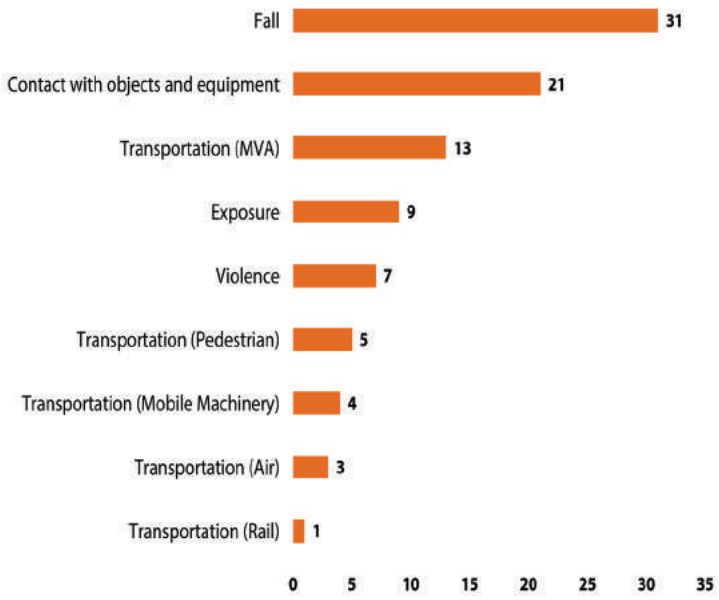
# Charts

## Event by Select Industries, 2003-2015

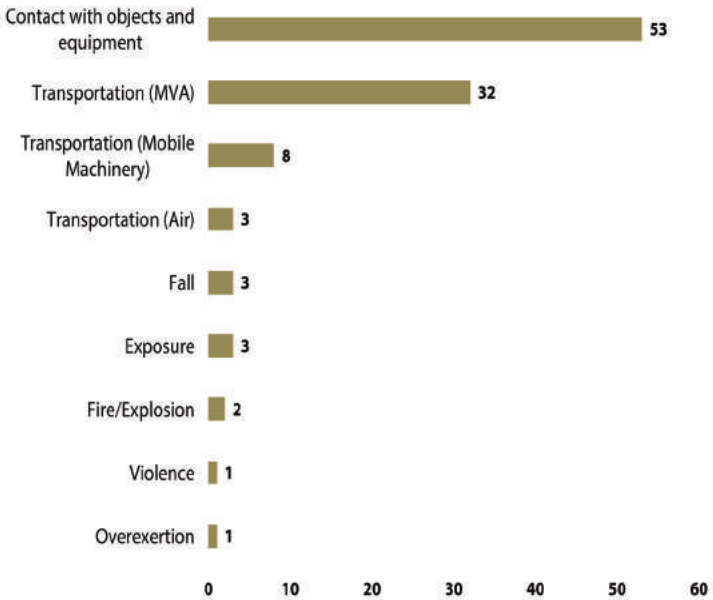
### Agriculture



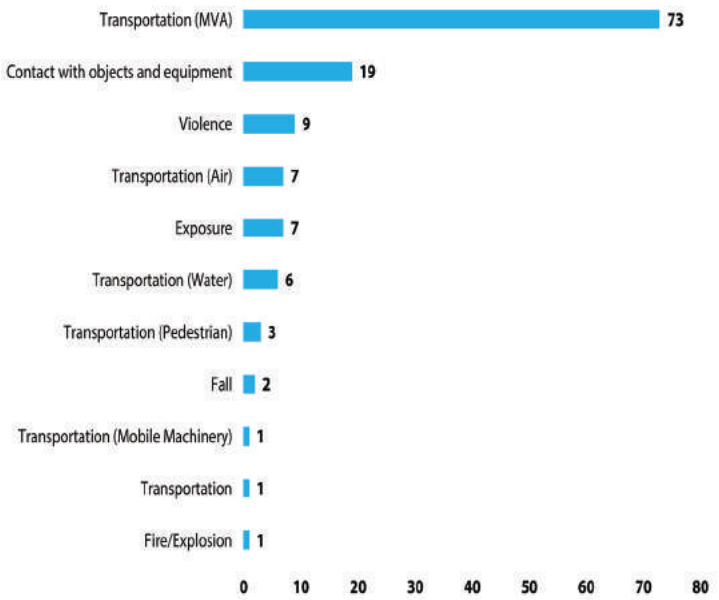

### Construction



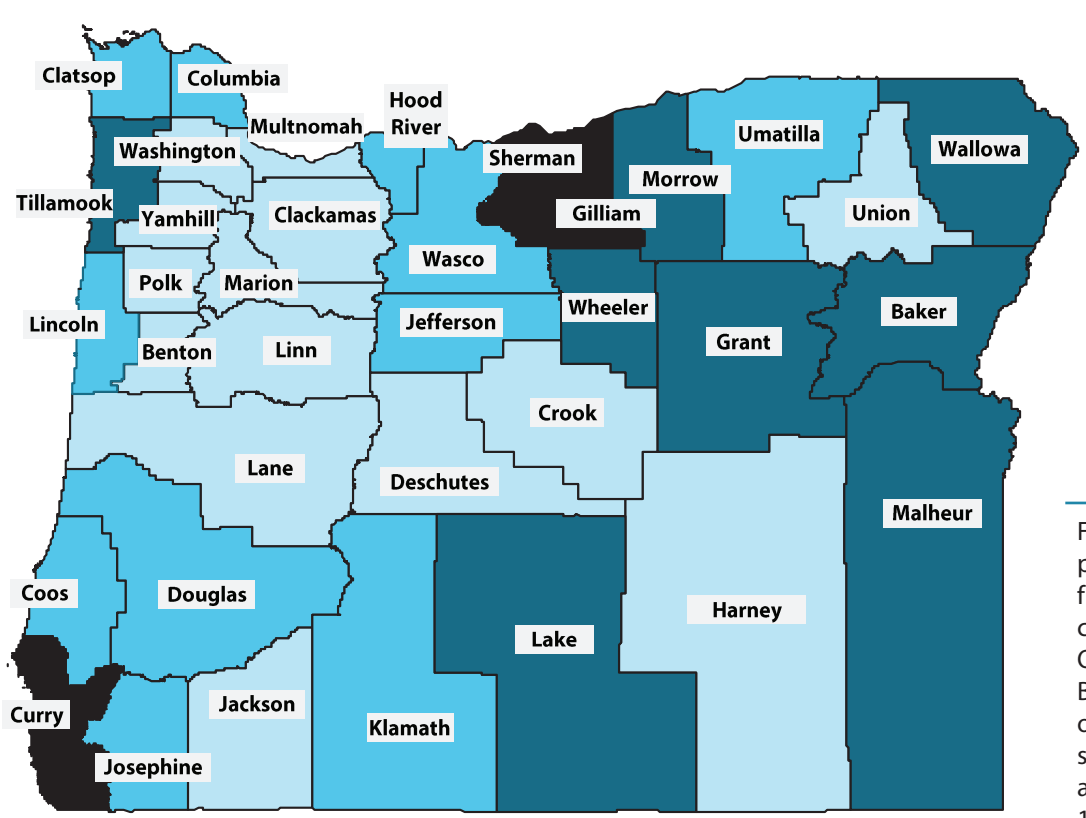

### Forestry and Logging

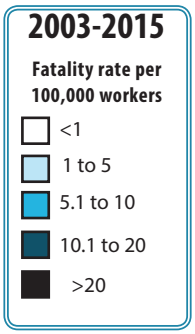



### Transportation



# Oregon Counties




2003-2015 overall fatality rate = 3.3 per 100,000 employees
2015 overall fatality rate = 2.1 per 100,000 employees

Fatality rates in counties with smaller populations may vary dramatically from year to year. Fatality rates are calculated by dividing the employed Oregon labor force (as reported by BLS) in a given year by the recorded occupational fatality count in that same year, and then that figure is adjusted to represent the rate per 100,000 fulltime employees.

**Oregon population, employed labor force, and fatalities by county**

| County | Total Population 2015 | Employed Labor Force 2015 | Fatalities 2003-2015 | Fatalities 2015 |
|---|---|---|---|---|
| | **4,013,845** | **1,790,800** | **776** | **38** |
| Baker | 16,425 | 5,206 | 15 | 0 |
| Benton | 90,005 | 36,762 | 12 | 1 |
| Clackamas | 397,385 | 153,864 | 53 | 2 |
| Clatsop | 37,750 | 17,299 | 16 | 1 |
| Columbia | 50,390 | 10,851 | 19 | 2 |
| Coos | 62,990 | 22,520 | 27 | 3 |
| Crook | 21,085 | 5,885 | 5 | 0 |
| Curry | 22,470 | 6,295 | 18 | 0 |
| Deschutes | 170,740 | 73,923 | 40 | 4 |
| Douglas | 109,910 | 36,710 | 36 | 4 |
| Gilliam | 1,975 | 768 | 4 | 0 |
| Grant | 7,430 | 2,373 | 5 | 1 |
| Harney | 7,295 | 2,350 | 1 | 0 |
| Hood River | 24,245 | 12,638 | 11 | 0 |
| Jackson | 210,975 | 84,443 | 32 | 1 |
| Jefferson | 22,445 | 6,460 | 9 | 1 |
| Josephine | 83,720 | 25,088 | 26 | 1 |
| Klamath | 67,110 | 22,172 | 32 | 0 |
| Lake | 8,010 | 2,343 | 5 | 0 |
| Lane | 362,150 | 150,735 | 64 | 2 |
| Lincoln | 47,225 | 17,366 | 22 | 1 |
| Linn | 120,860 | 44,418 | 22 | 0 |
| Malheur | 31,480 | 12,380 | 22 | 1 |
| Marion | 329,770 | 145,456 | 31 | 1 |
| Morrow | 11,630 | 5,522 | 10 | 1 |
| Multnomah | 777,490 | 490,933 | 81 | 5 |
| Polk | 78,570 | 19,360 | 13 | 1 |
| Sherman | 1,790 | 829 | 4 | 0 |
| Tillamook | 25,690 | 8,966 | 21 | 0 |
| Umatilla | 79,155 | 28,987 | 33 | 1 |
| Union | 26,625 | 9,966 | 5 | 0 |
| Wallowa | 7,100 | 2,373 | 5 | 0 |
| Wasco | 26,370 | 10,737 | 13 | 0 |
| Washington | 570,510 | 280,341 | 47 | 2 |
| Wheeler | 1,445 | 276 | 1 | 0 |
| Yamhill | 103,630 | 34,205 | 16 | 2 |

Population data sources: Portland State University Population Research Center and BLS Local Area. Unemployment Statistics. Retrieved May 2017.

INFORMATION KEY
*Description*

Industry
Occupation

Season
County of Incident

OR-FACE Number

# Abstracts

**of fatal occupational incidents in Oregon**
**by type of event**
**2015**

**Contact - Explosion - Exposure - Falls**
**Transportation - Violence**

## Contact with objects and equipment

*Struck by steel beam*

Construction
Transportation

Winter
Multnomah

OR-2015-02-1

A 40-year old crane operator died from blunt force head trauma when a 35-foot (5600-lb) H-beam pile being held vertically upright by one end fell and crushed the crane cab. During a pile driving operation, the H-beam pile had been placed in a drilled 25-foot hole; however, the pile shifted during use of a vibratory hammer. After several failed attempts to correctly position the pile, the hydraulic clamp of the vibratory hammer was used to extract the pile and move it 12 feet from the hole. The pile was held in a vertical position with the bottom resting on the ground. The pile was not rigged to the clamp housing or attached to the whipline. The clamp holding the top of the pile unexpectedly failed, releasing the pile, which struck the crane cab and operator.

*Hit a deer while driving*

Manufacturing
Transportation

Spring
Lane

OR-2015-06-1

A 37-year-old delivery van driver died from blunt force head and chest trauma after being struck by a deer that crashed through his windshield. The driver was traveling westbound on a state highway, driving at a normal highway speed, and wearing a safety belt. A deer was hit by another vehicle that was traveling in the opposite direction, causing the deer to flip into the air and into the delivery driver's windshield, striking the driver.

*Struck by falling log*

Forestry and logging
Logging

Spring
Coos

OR-2015-10-1

A 45-year-old logging employee who was working as a chaser died from traumatic chest injury after being struck by a 24-foot long log that slipped during yarding. The crew was yarding and landing logs below the road on a steep (50%) slope, when the loader broke down at the edge of the landing chute. Another turn of logs was landed before the previous turn was removed and before personnel were in the clear. The chaser was on the blind side of the yarder (relative to the loader operator) when the turn was being landed. Workers were not wearing high-visibility clothing that contrasted with the background, making it difficult for the loader operator to see them.

## Contact with objects and equipment

| | |
|---|---|
| *Struck by falling tree and chainsaw*<br><br>Forestry and logging<br>Logging<br><br>Summer<br>Columbia<br><br>OR-2015-15-1 | A 54-year-old self-employed logging worker died from crushing head injuries when she and a co-worker were clearing several trees around a residential property and she was struck by a falling alder tree. They had felled and delimbed a large fir tree and were bucking the logs, when a nearby tree that had been damaged struck her in the back of the head. As she fell after being struck by the tree, she also suffered severe lacerations on the front of her head from the chain saw she was using. A certified logger with the fire department had to cut trees in order to remove her from the two trees that pinned her in. |
| *Pinned beneath tractor-trailer*<br><br>Transportation<br>Transportation<br><br>Summer<br>Josephine<br><br>OR-2015-18-1 | A 59-year-old truck driver died from severe blunt trauma when he was run over and pinned beneath the rear tire of the tractor-trailer truck he was driving. The vehicle apparently experienced a mechanical problem. The driver pulled over to work on the vehicle's brakes. Chocks to prevent the tractor-trailer from rolling or moving had not been provided and none were readily available from other sources. The truck was found to be in neutral, and the brakes were not set. The vehicle rolled backwards approximately 80 feet, dragging the driver, then it jackknifed, trapping him under the rear trailer tire. |
| *Crushed beneath truck bed*<br><br>Other services<br>Install/maintain/repair<br><br>Summer<br>Morrow<br><br>OR-2015-21-1 | A 57-year-old mechanic died from crushing chest and spine trauma while working on an old farm truck. He was pinned between the truck's tilt bed and its frame. He had been working alone in an area that was under development and did not return home from work that day. His body was found the next day, pinned beneath the hydraulic dump truck bed. |
| *Pinned inside delimbing equipment*<br><br>Forestry and logging<br>Logging<br><br>Autumn<br>Lincoln<br><br>OR-2015-24-1 | A 38-year-old logging employee died from compression injury of the head and chest when he became pinned inside the delimbing attachment that was attached to the processor equipment he was working on. He was working alone at the time of the incident and was attempting to repair a malfunctioning component of the equipment. Shortly after the incident occurred the machine was observed to be idling, indicating that lock-out/tag-out procedures were not followed as required to de-energize equipment before performing repairs. |

## Contact with objects and equipment

| | |
|---|---|
| *Caught between hay bales and tractor*<br><br>Agriculture<br>Agriculture<br><br>Winter<br>Jefferson<br><br>OR-2015-26-1 | A 76-year-old self-employed rancher was killed in his hay shed when a stack of hay bales collapsed and overturned, pinning him against his tractor. He died from traumatic asphyxiation. |
| *Caught in harvesting machine auger*<br><br>Agriculture<br>Agriculture<br><br>Summer<br>Polk<br><br>OR-2015-36-1 | A 51-year-old farm worker was killed while harvesting hazelnuts. He was operating a tractor pulling a harvesting machine when he stopped, got off the tractor, and reached into the bucket of the harvester, possibly to clear the feed path. While doing so, loose clothing got caught in the auger, which pulled across his neck and pulled him into the hopper. He died from asphyxiation due to strangling (positional asphyxia). |
| *Stuck by roller coaster*<br><br>Personal care and service<br>Entertainment attendants and related workers<br><br>Autumn<br>Multnomah<br><br>OR-2015-37-1 | A retired 58-year-old died from a pulmonary embolism due to blunt force injuries that occurred in 1976 when she was working at a small amusement park and was struck by a roller coaster. The roller coaster accident was listed as a direct contributor to her death. |

## Explosion

| | |
|---|---|
| *Historic military vehicle explosion*<br><br>Information<br>Arts/design/entertainment/sports/media<br><br>Autumn<br>Deschutes<br><br>OR-2015-23-1, 2 | Two individuals were contracted by a historic military aircraft museum to demonstrate a World War II era tank destroyer (armored combat vehicle) firing artillery rounds. The demonstration was being filmed to become part of a new exhibit on military aircraft being built for the museum. The work involved shooting tank rounds at a plate steel target located several hundred yards away. The two workers were sitting inside the turret, operating the tank destroyer. The work day was divided into two filming sessions, reportedly with ample time for set-up. Two rounds were successfully fired; a third round exploded inside the chamber, blowing up the gun housing and throwing metal fragments back into the turret. One worker, a 22-year-old laborer who restored military vehicles, was sitting on the right side in the turret when the explosion occurred; he died from massive head, chest, and left arm trauma from the blast. The second worker, a 51-year-old owner of the tank destroyer who was assisting with the demonstration, was sitting on the left side in the turret; he died from concussive injury to the chest and abdomen. The camera crew members were positioned behind protective objects and at safe distances away from the tank. The cause of the explosion was being investigated by relevant agencies, but conclusions of those investigations are not known to OR-FACE. |

## Exposure

| | |
|---|---|
| *Hypothermia*<br><br>Forestry and logging<br>Protective service<br><br>Winter<br>Coos<br><br>OR-2015-01-1 | A 53-year-old logging worker who was serving as watchman died of hypothermia after becoming stranded in the forest. He had been exposed to the elements overnight and possibly longer. He became stranded after his ATV high centered and got stuck on a ground level stump. Due to a previous condition that caused him significant difficulty walking, he was unable to reach shelter after his ATV became disabled. |
| *Drug overdose*<br><br>Arts/entertainment/rec.<br>Protective service<br><br>Winter<br>Deschutes<br><br>OR-2015-27-1 | A 29-year-old lifeguard working at swim and fitness center died of an accidental drug overdose from an opioid pain medication. Evidence suggests he was using this drug for recreational purposes at the time of his death, and that he had a history of substance abuse. He was found in the locker room of the facility. |

## Falls

| | |
|---|---|
| *Fall from ladder*<br><br>Construction<br>Construction/extraction<br><br>Winter<br>Benton<br><br>OR-2015-03-1 | A 50-year-old construction worker was installing siding on a building (type of building not reported) when he fell approximately 20 feet from an extension ladder to the ground and suffered blunt force head and chest injuries. He was transported by medical personnel from the construction site to the hospital, where he died five days later as a result of the injuries sustained in the fall. Contributing factors to the fall were not identified. |
| *Fall from scaffold*<br><br>Construction<br>Construction/extraction<br><br>Summer<br>Washington<br><br>OR-2015-12-1 | A 46-year-old construction worker died from blunt force head and neck injuries after falling approximately 25 feet from a pump-jack scaffold platform onto a concrete breezeway below. He was installing siding on a newly constructed three-story apartment building. The pump-jack system was only partially installed. |
| *Fall from scaffold*<br><br>Accommodation/food<br>Construction/extraction<br><br>Summer<br>Multnomah<br><br>OR-2015-17-1 | A 61-year-old painter/handyman died from multiple blunt force traumatic injuries sustained when he fell approximately 20 feet from a scaffold into a creek. He had been painting the exterior of a commercial restaurant/bar. There were no witnesses to the event; however, evidence suggests he may have landed on a steep embankment prior to landing in the creek. When emergency responders arrived at the scene, he was in the water with a bystander holding his head above the water. He was transported to the hospital where he died later that day. |

## Transportation (Air)

| | |
|---|---|
| *Helicopter crash*<br><br>Educational services<br>Education/training/lib.<br><br>Summer<br>Yamhill<br><br>OR-2015-14-1 | A 31-year-old helicopter pilot who was a certified flight instructor for a flight training school died when the helicopter he was operating crashed approximately 15 minutes after take-off. The flight instructor died from blunt force trauma to chest. A student pilot also died in the crash. The local instructional flight was reported to have been operating in accordance with applicable federal general operating and flight rules, and visibility was not a factor in the crash. Witnesses reported that after observing the helicopter depart from the airport, there were audible indications that the helicopter was experiencing mechanical issues. Witnesses then observed the pilot attempting an autorotation (an accident-avoidance maneuver attempted by helicopters pilots after experiencing loss of power, in which rotor blades are driven by air flow). Significant portions of the helicopter were destroyed as a result of the impact forces and post-crash fire. |
| *Airplane crash*<br><br>Agriculture<br>Agriculture<br><br>Spring<br>Malheur<br><br>OR-2015-31-1 | A 51-year-old rancher died when he was moving cattle using a single-engine airplane. He made several passes over the cattle, flying low to the ground. The plane came in contact with power transmission lines, causing it to crash. He died at the scene from multiple blunt force injuries. |

## Transportation (Animal and other non-motorized)

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|---|---|
| *Bucked from horse*<br><br>Agriculture<br>Agriculture<br><br>Spring<br>Deschutes<br><br>OR-2015-32-1 | A 58-year-old rancher was roping cattle when he was bucked off his horse and the horse landed on him. He died from severe head and neck injury. |

# Transportation (Motor vehicle)

| | |
|---|---|
| *Overturned vehicle*<br><br>Transportation<br>Transportation<br><br>Spring<br>Yamhill<br><br>OR-2015-28-1 | A 67-year-old retired logger was working for a trucking company operating a dump truck, when it drifted off the side of the road, tipped to its side, and rolled down an embankment. Evidence suggests he kicked the windshield to get out of the vehicle, then walked approximately 35 feet up a slight incline from the wreckage toward the road, where he was found dead. He died from complications of injuries associated with the motor vehicle accident, with physiological stress (cardiac disease and morbid obesity) as contributing factors. |
| *Head-on collision*<br><br>Transportation<br>Transportation<br><br>Spring<br>Jackson<br><br>OR-2015-07-1 | A 38-year-old school bus driver traveling on a two-lane road died from multiple blunt force and penetrating trauma when the bus she was driving collided head-on with an oncoming semi-tractor trailer. The bus crossed over into the lane of oncoming traffic. A single adult passenger in the school bus was sitting in the front passenger seat. The passenger reportedly was looking out the side window at the time of impact and did not remember the bus going into the oncoming lane of the semi-truck. The semi-truck driver reportedly attempted to avoid the crash by locking the brakes and swerving off the road; however, the two vehicles collided head-on. The school bus driver was found slumped forward in the driver's seat with shoulder and lap belt buckled around her. |
| *Motor vehicle accident*<br><br>Transportation<br>Transportation<br><br>Autumn<br>Grant<br><br>OR-2015-20-1 | A 59-year-old truck driver was driving a semi-truck hauling a load of large hay bales when the truck went off the side of the road and collided with a large tree. There were no skid marks, suggesting the driver did not attempt to stop and may have been unconscious at the time of the collision. However, the body was badly burned in the crash so no additional medical examination was feasible. He died from blunt force trauma. |
| *Truck rollover down embankment*<br><br>Admin/support/waste mgmt./remediation<br>Transportation<br><br>Summer<br>Douglas<br><br>OR-2015-22-1 | A 40-year-old truck driver was driving a commercial dump truck along a remote section of state highway. For reasons unknown, the vehicle left the roadway, crashed through a guardrail, went over a cliff with an approximate 20-foot drop-off, and landed on its side. The road had a slight downhill grade and was dry and free of obstructions. No tire marks were found on the paved roadway prior to where the vehicle left the roadway. A forest fire was burning in the mountains a short distance away. Although there was a visible haze, the road visibility was not obstructed by smoke. The driver appeared to have struck his head on a rock. He died from blunt force head injuries. There was no report indicating whether a safety belt was in use at the time of the incident. |

## Transportation (Motor vehicle)

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|---|---|
| *Motor vehicle accident and subsequent explosive fire*<br><br>Transportation<br>Transportation<br><br>Winter<br>Multnomah<br><br>OR-2015-25-1 | A 41-year-old truck driver was driving a commercial tanker truck carrying 11,000 gallons of regular octane gasoline. He held the proper commercial driver's license and endorsements for this type of vehicle. The truck was reported to have been properly maintained and in good working order. At the time of the incident, the driver was reportedly traveling at the speed limit along a U.S. highway in an urban, industrial area. The incident occurred during daylight hours. The weather was rainy and the road surface was wet. For reasons unknown, the vehicle veered off the road, went down a railroad embankment that drops approximately 10 feet to the rail lines. A witness reported they did not observe the driver making any steering corrections or braking as the tanker truck left the road, and they thought the driver may have been slumped over the steering wheel. The truck crashed into a line of asphalt container cars that were parked on the rail tracks. The impact ruptured one of the truck's fuel tanks, causing explosive burn injuries to the driver and destruction of the vehicle. |
| *Motor vehicle accident*<br><br>Transportation<br>Transportation<br><br>Winter<br>Douglas<br><br>OR-2015-29-1 | A 68-year-old truck driver was transporting gravel along a logging road when the truck left the roadway and descended downhill, crashing into trees. A witness who saw the crash reported that he heard the driver indicate he was having mechanical problems. The driver's side of the vehicle was destroyed in the crash. The driver died at the scene from closed chest trauma. |
| *Truck rollover down embankment*<br><br>Forestry and logging<br>Logging<br><br>Winter<br>Columbia<br><br>OR-2015-30-1 | A 60-year-old logging truck driver died from head and chest trauma resulting from a rollover crash. The truck had just completed a slight turn and was driving along a straight stretch, then veered off the roadway and down an embankment, coming to rest on its side. The truck impacted and sheared two large trees; the truck's log load shifted forward in the process, impacting the back of the cab. The driver was pinned in the cab by a log. There were no skid marks or tire marks on the roadway to indicate excessive speed or erratic driving. The driver was not wearing a safety belt. |

## Transportation (Pedestrian)

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|---|---|
| *Run over by dump truck*<br><br>Construction<br>Construction/extraction<br><br>Spring<br>Douglas<br><br>*OR-2015-05-1* | A 44-year-old highway construction supervisor for a highway paving company died from blunt force pelvic trauma when he was run over by a dump truck on the jobsite. The construction project involved paving on the outside shoulder of the road. The supervisor was walking in a dump truck staging area within the construction zone. The dump truck driver was backing up his vehicle to transfer an empty box from the truck onto a trailer. Evidence suggests the driver may have stopped for some roller equipment that was crossing behind the dump truck, then he resumed driving in reverse. A co-worker called out to the driver to stop, as he had run over someone. The deceased had passed underneath the passenger side dual wheels and was hanging onto the fuel tank directly behind the steering axle. He was transported by ambulance to a hospital emergency room, where he died. The jobsite was operating under normal paving conditions and there were no specialized hazards within the work zone. Safety features on the dump truck were found to be in working order and safety devices associated with routine operation of the vehicle were used by the driver. The supervisor who was run over was trained and aware of jobsite hazards and had worked in the construction industry for several years. He was wearing a safety vest and was not talking on a cell phone at the time of the incident. It is not known why the deceased was walking in the area where the dump truck was backing up to the trailer. |
| *Struck by passenger car*<br><br>Construction<br>Construction/extraction<br><br>Spring<br>Marion<br><br>OR-2015-09-1 | A 55-year-old construction worker died from multiple blunt force traumatic injuries while he was working on a nighttime paving project on a 4-lane state highway located near an interstate highway. He was walking within the construction zone alongside a construction truck at the time of the incident. The eastbound highway lanes were closed and marked as such while construction was occurring, with eastbound traffic rerouted to a designated westbound lane. The construction worker was struck by drunk driver operating a passenger car. The car drove into the closed-off eastbound lanes, first striking the traffic cones and then the worker. The car drove another 75 feet, also striking the construction truck, before coming to a stop. |
| *Struck by SUV*<br><br>Transportation<br>Transportation<br><br>Autumn<br>Clatsop<br><br>OR-2015-11-1 | A 61-year-old truck driver (type of vehicle not known) had parked his truck along a business route of a US highway and was crossing the street when he was struck by a Jeep. The driver and passenger of the Jeep reported they did not see him until they hit him. It was a dark night with occasional drizzle. There were no street lights in the area. The Jeep's headlights were on at the time of impact, and the state patrolman responding to the scene reported that the driver of the Jeep did not appear to be impaired. The truck driver died at the scene from closed head trauma. |

## Transportation (Mobile machinery)

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|---|---|
| *Flipped all-terrain vehicle*<br><br>Public administration<br>Protective service<br><br>Spring<br>Coos<br><br>OR-2015-04-1 | A 43-year-old police officer serving as a timber deputy was operating an ATV in a rural area to monitor an area where a timber theft had been reported. Evidence suggested he was traveling down a steep embankment when the ATV rolled or flipped over onto him, entrapping him on the ground underneath. He died of compressional asphyxia. The officer was wearing a helmet with face shield, which showed considerable exterior damage resulting from the impact. Evidence indicated the ATV was covered in dirt, indicating it had rolled over in the dirt, and the handlebars were offset, appearing bent, consistent with the rollover crash. It is not known whether the ATV was equipped with rollover protection or whether the driver was wearing a safety belt. |
| *Tractor-trailer truck rear-ended another tractor-trailer truck*<br><br>Transportation<br>Transportation<br><br>Autumn<br>Umatilla<br><br>OR-2015-35-1 | A 47-year-old truck driver was operating a commercial tractor-trailer on an interstate highway. Visibility was limited at the time of the incident due to a dust storm. A collision involving a total of 11 vehicles occurred. A number of vehicles on the road had slowed down. The truck driver did not slow down, and rear-ended another tractor-trailer in front of him at full or near-full speed. The truck driver who rear-ended the vehicle in front of him died of massive internal injuries of the torso and head due to blunt force trauma and rapid deceleration. Several occupants of other involved vehicles were treated for injuries at nearby hospitals. Reports also noted that several minor vehicle collisions had occurred nearby earlier that evening during high winds and low visibility due to blowing dust. |

## Transportation (Rail)

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|---|---|
| *Run over by train*<br><br>Manufacturing<br>Production<br><br>Autumn<br>Washington<br><br>OR-2015-19-1 | A 46-year-old lumber mill worker died from traumatic amputating (blunt force) injuries after being run over by a train while he was working as a switchman. He was assisting a locomotive operator to move rail cars loaded with lumber from the mill and to bring empty rail cars back into the mill to be loaded. They had pushed one set of loaded cars and were hooking a set of empty cars to bring back to the mill. The switchman and operator were in radio communication when the cars were connected and when the switches were thrown. The operator did not see or hear from the switchman after that; however, he proceeded down the tracks. After arriving at the mill, the operator found the deceased's body lying on the tracks. Evidence suggests the deceased may have slipped while trying to mount a rail car while it was in motion, and was struck by the train. |

## Violence

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|---|---|
| *Suicide by hanging*<br><br>Retail trade<br>Sales and related<br><br>Summer<br>Clackamas<br><br>OR-2015-08-1 | A 47-year-old retail store employee died by from self-inflicted ligature hanging. She was found in her office by another store employee, hanging by the neck. |
| *Gunshot wound*<br><br>Real estate and rental leasing<br>Management<br><br>Summer<br>Lane<br><br>OR-2015-13-1 | A 39-year-old apartment manager died from a gunshot wound to the chest. He was approaching the door of an apartment occupied by a tenant to discuss relocation from the apartment in preparation for a remodel, when the tenant shot him. The shooter reportedly died later of a self-inflicted gunshot wound after barricading himself in his apartment. |
| *Gunshot wounds*<br><br>Educational services<br>Education/training/ library.<br><br>Autumn<br>Douglas<br><br>OR-2015-16-1 | A 67-year-old community college instructor died from gunshot wounds to the head during a mass shooting. He was shot while teaching a writing class. The shooter was a registered student in the class. Eight students in the class were also fatally shot during this incident. |
| *Gunshot wound*<br><br>Arts/entertainment/rec.<br>Food preparation and serving related<br><br>Winter<br>Multnomah<br><br>OR-2015-33-1 | A 54-year-old business owner died as a result of a gunshot wound of the neck. He was shot during an armed robbery of his restaurant/bar. He was admitted to a nearby hospital and was in the intensive care unit for 11 days before succumbing to his injury. |

## Violence

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|---|---|
| *Accidental asphyxiation*<br><br>Other services<br>Building/grounds cleaning/maintenance<br><br>Winter<br>Clackamas<br><br>OR-2015-38-1 | A 33-year-old worker employed to perform cleaning work at a residential rental property died of accidental asphyxiation via ligature around his neck. The deceased had a history of heroin and opiate abuse and attempted suicide via overdose. Toxicological evidence indicated the presence of cocaine and related derivatives, and anti-depressant medication. |

## Delayed

Worker fatalities with delayed death from date of injury (over 48 hours), 2015

| EVENT | CAUSE OF DEATH | INTERVAL | FACE ID |
|---|---|---|---|
| Fall | Blunt force head and chest injuries | 5 days | OR-2015-03-1 |
| Violence | Gunshot wound during an armed robbery | 11 days | OR-2015-33-1 |
| Contact | Pulmonary embolism due to blunt force injuries | 39 years | OR-2015-37-1 |

# 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 accidents, 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 ACCIDENTS**
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

# Contact Information

**OR-FACE Program**
**Oregon Institute of Occupational Health Sciences**
**Oregon Health & Science University**
**3181 SW Sam Jackson Park Rd, L606**
**Portland, OR 97239-3098**

**phone: (503) 494-2281**
**e-mail: orface@ohsu.edu**

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**WE WANT YOUR FEEDBACK**

**All OR-FACE publications are posted on the OR-FACE website at**
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**Let us know how you use them!**
**A short survey on the website allows you to offer feedback. We appreciate your comments.**

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 Insitute'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.

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