Oregon Fatality Assessment and Control Evaluation (OR-FACE)

Analysis of Oregon occupational fatalities from surveillance, investigation, and assessment findings

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Session A1: Topics in Safety

Overview

- What is OR-FACE
  - Mission
  - History
- Surveillance data (occupational fatalities, 2003-2015)
- Investigations
- Outreach
- Research projects
Mission (background)

• Workplace fatalities: preventable, yet unacceptably common events
  – Each day traumatic injuries kill ~13 workers on the job
  – Each year ~ 350,000 workers killed on the job globally, with nearly 5,000 deaths in US
  – Current Oregon occupational fatality rate = 2.6 deaths per 100,000 workers
    (national average = 3.5)

Mission (goal / objectives)

• Prevent traumatic work-related deaths in Oregon through
  – Surveillance
  – Targeted investigation
  – Assessment
  – Outreach
FACE History

- NIOSH surveillance research program
  - Began in 1982
  - Expanded to states in 1992
- OR-FACE
  - Joined 14 other state programs in 2002
  - 2010 only 9 states
  - Currently only 7 states

NIOSH Fatality Assessment and Control Evaluation (FACE) Program

[Map showing state locations with different colors indicating state FACE status]

About This Map
- State FACE
- NIOSH FACE
- Non-FACE states where investigations have been conducted
- States where no FACE investigations have been performed
Surveillance 2015 Sources

- Oregon OSHA: 57%
- Oregon Emergency Response System: 14%
- News Media: 22%
- Other Agencies: 7%

Worker fatalities in Oregon (2003-2015) by year

*State of Oregon Employment Department [Total nonfarm employment, annual average not seasonally adjusted]
Worker fatalities in Oregon (2003-2015):
top 10 industries in total number

Total Number of Fatal Cases

- Transportation: 129
- Forestry and logging: 107
- Construction: 94
- Agriculture: 79
- Manufacturing: 60
- Admin/support/waste...: 44
- Public Administration: 17
- Other Services: 27
- Fishing: 26
- Retail trade: 26

Worker fatalities in Oregon (2003-2015)
by industry

Forestry and Logging

- Oregon Forestry and Logging Fatalities
- Employment x100000

Transportation

- Oregon Transportation Fatalities
- Employment x100000
Worker fatalities in Oregon (2003-2015) by industry (cont’d)

### Agriculture

![Agriculture fatalities chart](chart.png)

### Construction

![Construction fatalities chart](chart.png)

Worker fatalities in Oregon (2003-2015): Events

#### Transportation

- Contact with objects and equipment: 72
- Transportation (MVA): 7
- Transportation (Air): 7
- Transportation (Mobile Machinery): 6
- Transportation (Pedestrian): 5
- Transportation (Water): 5
- Fall: 5
- Fire/Explosion: 3
- Exposure: 3
- Violence: 2
- Overexertion: 2

#### Forestry and Logging

- Contact with objects and equipment: 13
- Transportation (MVA): 13
- Transportation (Air): 5
- Transportation (Mobile Machinery): 3
- Transportation (Pedestrian): 3
- Transportation (Water): 2
- Fall: 2
- Exposure: 2
- Fire/Explosion: 1
- Violence: 1
- Overexertion: 1

#### Construction

- Contact with objects and equipment: 31
- Transportation (MVA): 21
- Transportation (Air): 10
- Transportation (Mobile Machinery): 9
- Transportation (Pedestrian): 8
- Fall: 6
- Exposure: 3
- Fire/Explosion: 2
- Violence: 2
- Overexertion: 2

#### Agriculture

- Contact with objects and equipment: 21
- Transportation (MVA): 12
- Transportation (Air): 10
- Transportation (Mobile Machinery): 9
- Transportation (Pedestrian): 7
- Fall: 6
- Exposure: 3
- Fire/Explosion: 2
- Violence: 2
- Overexertion: 2
Investigations

Guiding Principles

• Maintain confidentiality
• Provide facts
• Provide best practice recommendations
  – Beyond regulatory requirements
  – Hierarchy of controls

Targeted Investigations

• Goals
  – Prevent fatal work-related injuries
  – Study work environment, workers, tasks, tools... and management role in controlling how these factors interact

• OR-FACE priorities
  – Portland metro (broad) & surrounding
  – Fall in construction
  – Transportation / mobile machinery
  – Temporary / contingent workers
  – Others, per collaborative partnerships
  – Multiple factors beyond OSHA scope
Recent Investigative Reports (2015-2017)

- Vineyard worker killed in fall from trailer
- Contract sanitation worker killed cleaning meat blending equipment
- Driver killed when ejected from logging truck
- Crane operator killed by falling steel beam
- Forestry worker killed in vehicle from timber falling activity

Outreach / Resources

- Oregon Institute of Occupational Health Sciences
  - Education
  - Outreach
  - Publications
  - Newsletter
  - Blog
  - Symposia
  - Online videos
OR-FACE Website

Google OR-FACE

Outreach / Publications

- Annual reports
- Interactive maps
- Safety booklets
- Toolbox talks
- Hazard alerts
- Blogs
Annual Reports (since 2003)

- Published 18 months
- Case abstracts, based on document review
  - OSHA investigation
  - Police investigation
  - Medical examiner reports
  - National Transportation Safety Board
  - US Coast Guard
  - Others

Interactive maps
(2003-2013) by industry
Interactive maps (2003-2013) by event, occupation

Event

Occupation

Safety booklets
Toolbox Talks

Keep it simple...

Toolbox Talk Guide

Our safety talk today is about a 30-year-old foreman from another company who died when a crane he was operating collapsed. The worker was operating a crane to lift a steel girder over a building under construction. The girder weighed about 2 tons (4,000 lbs) and was more than 50 ft long. The crane operator was using a long boom to lift the steel girder over the building. The worker lost control of the crane and it collapsed, killing the operator.

So here are some ways we can prevent something like this from happening where we work:

- Never exceed the load or extension limits of a lift or crane.
- Use a spotter and communication system to prevent lift over workers.
- Never work directly under a load.

GUIDE QUESTIONS:

- “What are some ways to prevent accidents?”
- “What are some safety measures you should take before operating a lift or crane?”
- “What are some common mistakes that operators make when operating lifts or cranes?”
- “What are some safety tips for crane operators?”
- “What are some common safety hazards associated with lifts and cranes?”
- “What are some safety measures you should take before operating a lift or crane?”
- “What are some common mistakes that operators make when operating lifts or cranes?”
- “What are some safety tips for crane operators?”
- “What are some common safety hazards associated with lifts and cranes?”
Peer-reviewed publication

• Safety Science v.86 (2016) pp.122-131

Hazard Alerts

• One page
• Bulleted recommendations
• Abstracts of similar cases
**Targeted Research**

- Use knowledge gained through surveillance and investigation, e.g. identify high hazard industries, prevalent injuries, needs for prevention
- Develop and conduct field studies
- Ultimate aim: from lessons learned, produce evidence-based, practical intervention tools & methods
Current Research Projects

• Social network analysis
  – *Identify info pathways and opinion leaders to better target communications in high risk industries*

• Preventing falls in residential construction
  – *Test “trigger event” hypothesis*

• Mobile toolbox talks
  – *Establish & evaluate mobile marketing system to promote fatality prevention toolbox talks in residential construction*

FACE’s “Bottom Line...”

• Targeted investigations
  – Identify contributing factors
  – Develop comprehensive, best-practice recommendations for preventing similar deaths

• Targeted research
  – Surveillance → investigation → identify high hazard industries, prevalent injuries, prevention needs
  – Develop and conduct field studies

• Outreach
  – Produce evidence-based, practical prevention tools & methods
Thank you!