

Aging workers at increased risk of fatal transportation-related injuries

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OR-FACE

(Fatality Assessment & Control Evaluation)



surveillance, targeted investigation,
assessment, and outreach



Current Aims (2010-15)

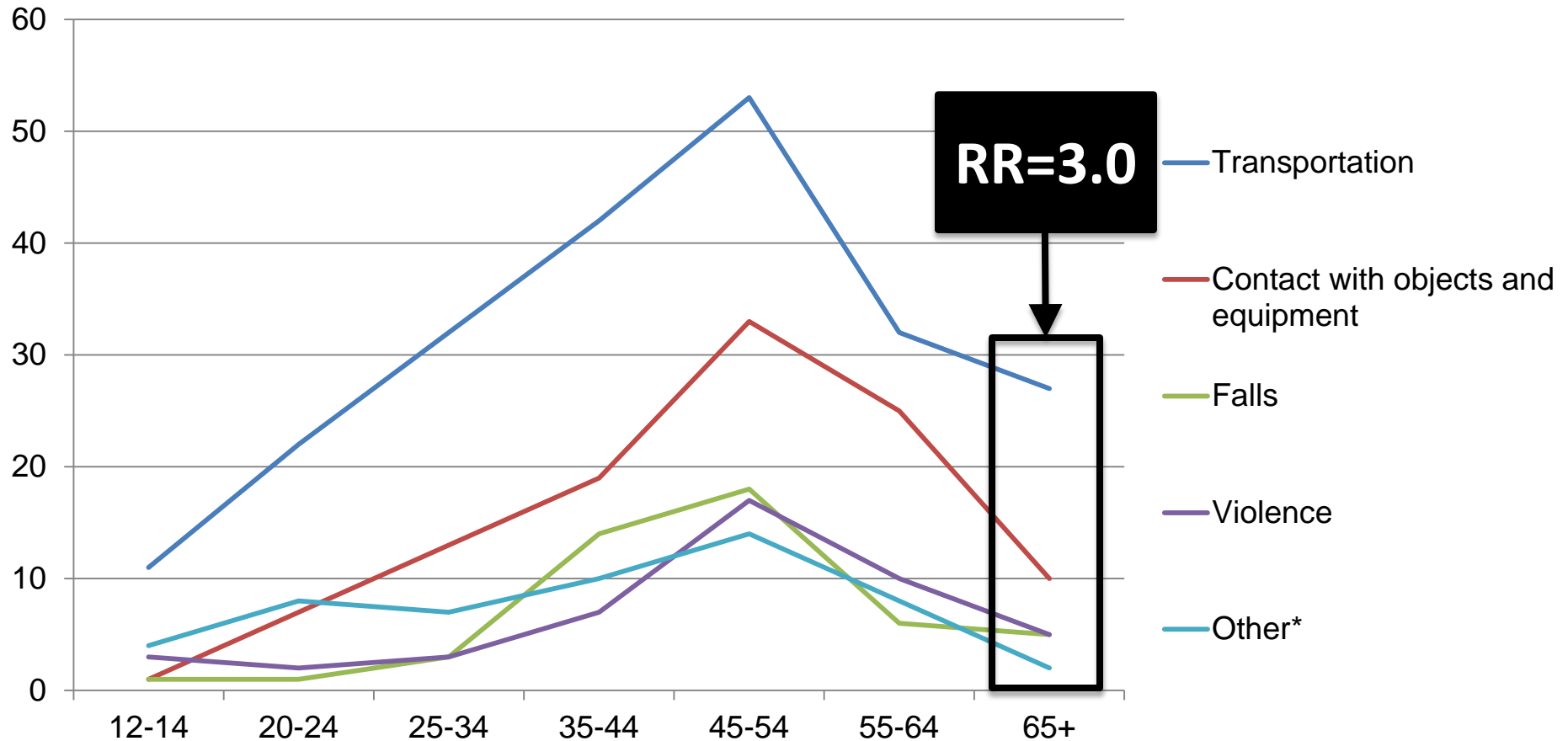
1. Maintain core fatality surveillance, investigation, assessment, and prevention
2. Continue outreach in historical priority areas, including young workers, immigrant workers, commercial fishermen, and loggers
 - Develop other priority outreach activities as appropriate
3. Collaborate with institutional partners to develop effective intervention strategies
4. Evaluate program activities
5. **[NEW] Interventions to prevent transportation & mobile machinery deaths among workers >65 yrs**
6. **[NEW] Interventions to prevent construction falls**

Overview

1. The “signal” in the data for workers 65+
2. The “future researchers should...” gap
3. Investigation of four hypotheses
4. Social and intervention implications



Oregon Occupational Fatalities by Age Group and Event (2003-2009)



*Other includes exposure to harmful substances, fire/explosion, and overexertion.

Data Sources and Analyses

- Data

- ***Fatalities:*** OR-FACE (State), CFOI (National)
- ***Rate Denominators:*** Current Pop Survey (BLS)
- ***Lost work time:*** Oregon Workers' Comp Claims
- ***Other factors:*** Empirical research literatures

- Analyses:

- ***Rates:*** fatalities per 100,000 workers
- ***Contrasts:*** rate ratios and 95% CIs
- ***Trends:*** Poisson regression applied to 7 yrs

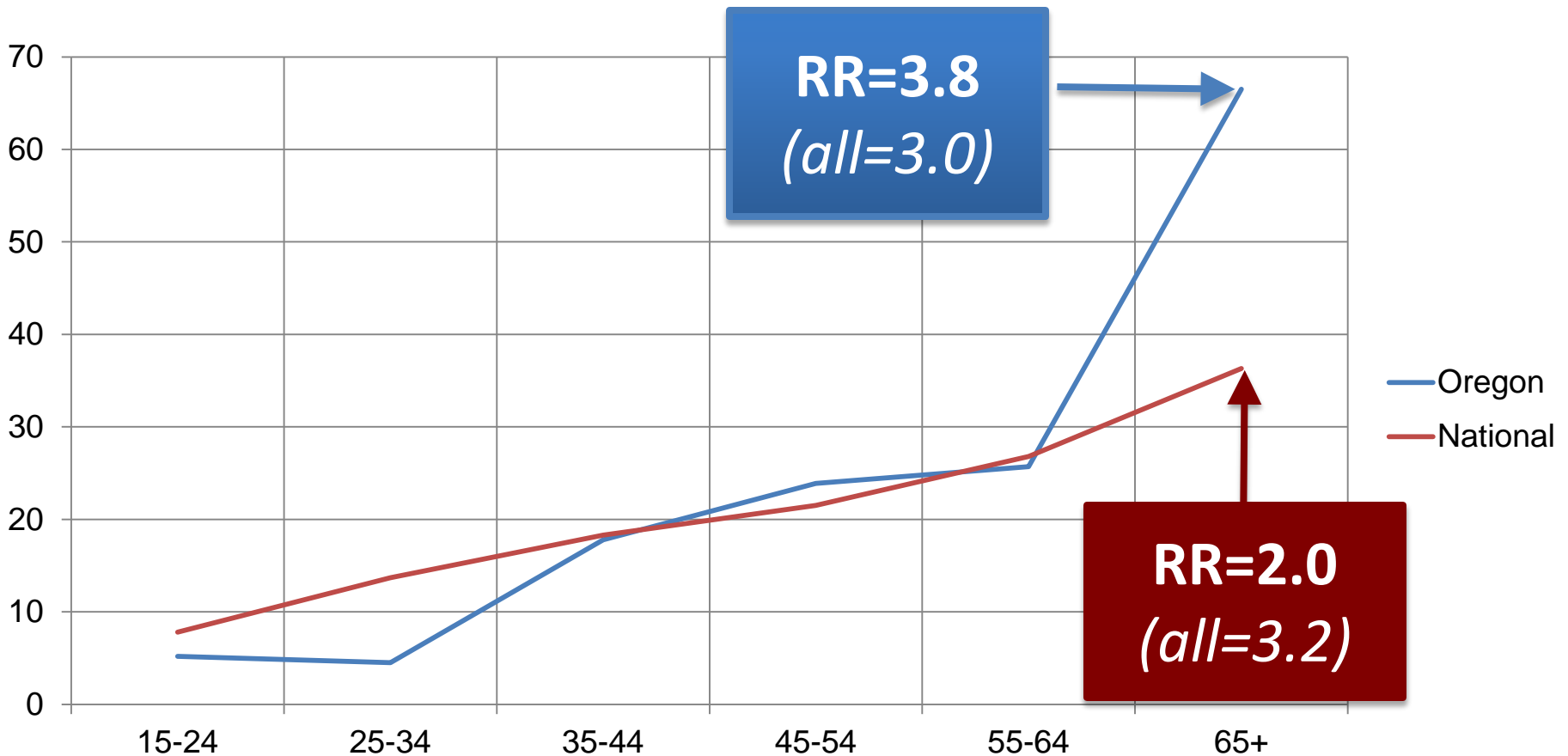
Hypotheses



1. Hazard exposure
2. Organization of work
3. Physical fragility
4. Normative changes in capacity

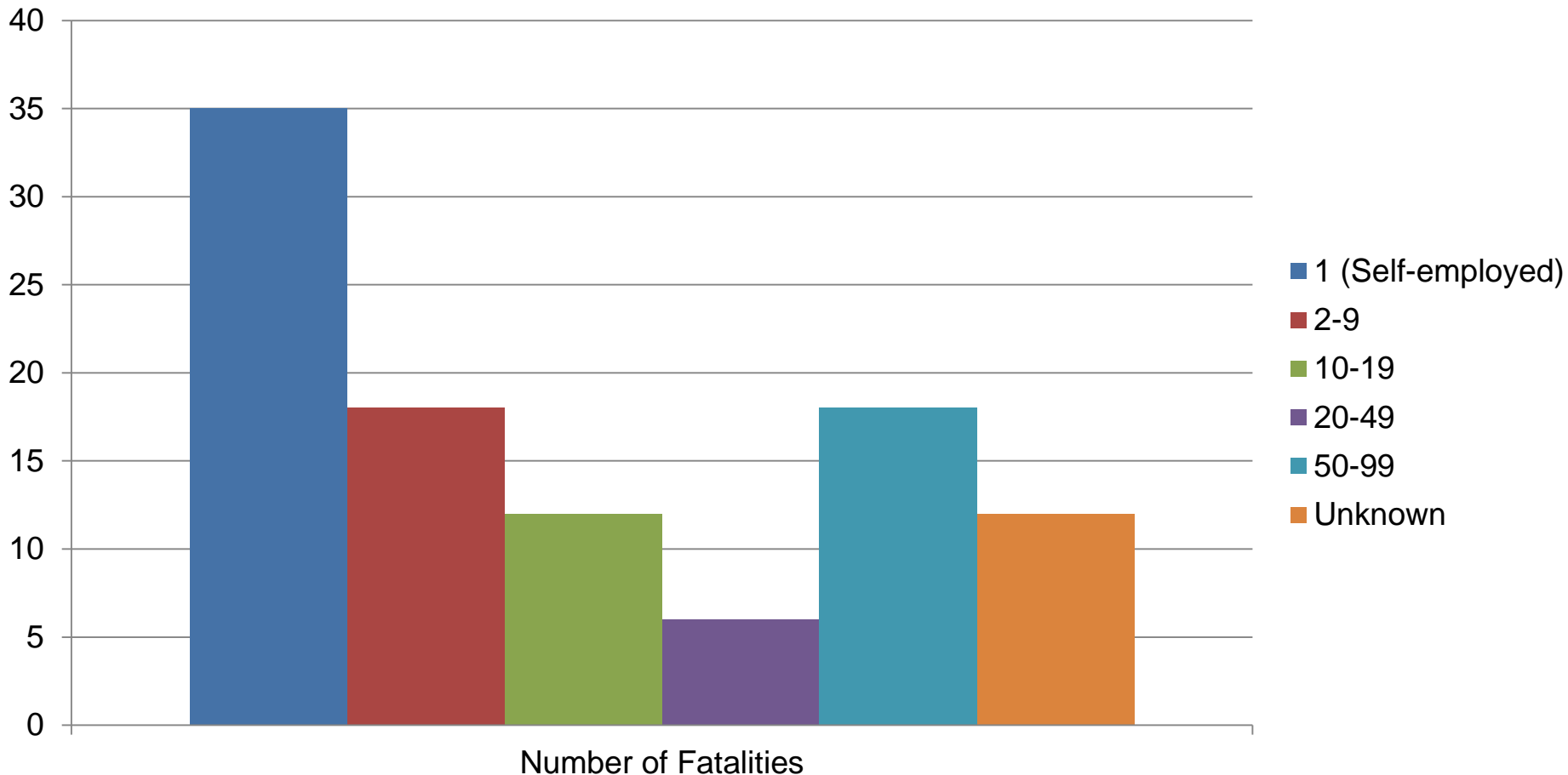
H¹: Hazard Exposure

Fatality Rates for Males Employed in Transportation and Material Moving Occupations, 2003-2009



H²: Organization of Work

Employer Size for Oregon Male Transportation Fatalities ≥65 (2003-2009)



Empirical Literature

- 65+ employees elevated in small orgs (Stokols *et al.* 2001)
- Small org lower safety investments (Lentz *et al.* 2001)
- Retirement age, front line work, job roles



H³: Fragility

Hospitalization for Oregon disabling claims by event type (2003-2009)

All events	<65	≥ 65
Yes**	5,242 (4.1)	238 (9.5)
No	123,139	2,253
Total	128,381	2,491

Transportation	<65	≥ 65
Yes**	614 (10.8)	31 (24.2)
No	5,079	97
Total	5,693	128

** $p < .0001$

Lost work time per injury



- Chance of temporary disability days paid beyond median (21 days)
 - 57.6% vs. 48.7%
 - (X-sq 83.2, $p < .00001$)

H⁴: Normative Changes in Capacity

- Vision impairment
 - Cataracts and glaucoma increase at-fault crashes
 - Visual acuity decline and night driving
- Hearing loss
 - 23% prevalence 65-75 yrs, 40% prevalence 75+
 - Possible impact on driving in presence of distractions

H⁴: Normative Changes in Capacity

- Cognitive
 - Attention, visual-spatial, perceptual speed declines related to driving performance and crash risk
- Psychomotor
 - Reaction time, declines accelerate after 70

Conclusions

- **H1 Hazard exposure:** Some support
 - When controlling for employment, national level effect reduced but remained significant
- **H2 Organization of work:** Some/strong support
 - Small organizations have lower safety investments
 - Retirement age and job roles
- **H3 Physical fragility:** Some/strong support
 - Greater hospitalization and lost work time per injury
- **H4 Normative changes:** Strong support
 - Age related changes affect driving and crash risk

Intervention implications



Hierarchy of Controls

1. Engineering & job design
2. Personnel selection, *placement*, and training
3. Feedback & motivation

Questions?



***Putting Science
to Work!***

web: www.ohsu.edu/croet/face