

# The effectiveness of COR in preventing work injury

Lessons from Alberta and British Columbia

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Christopher McLeod, MA PhD

IWH Speaker Series

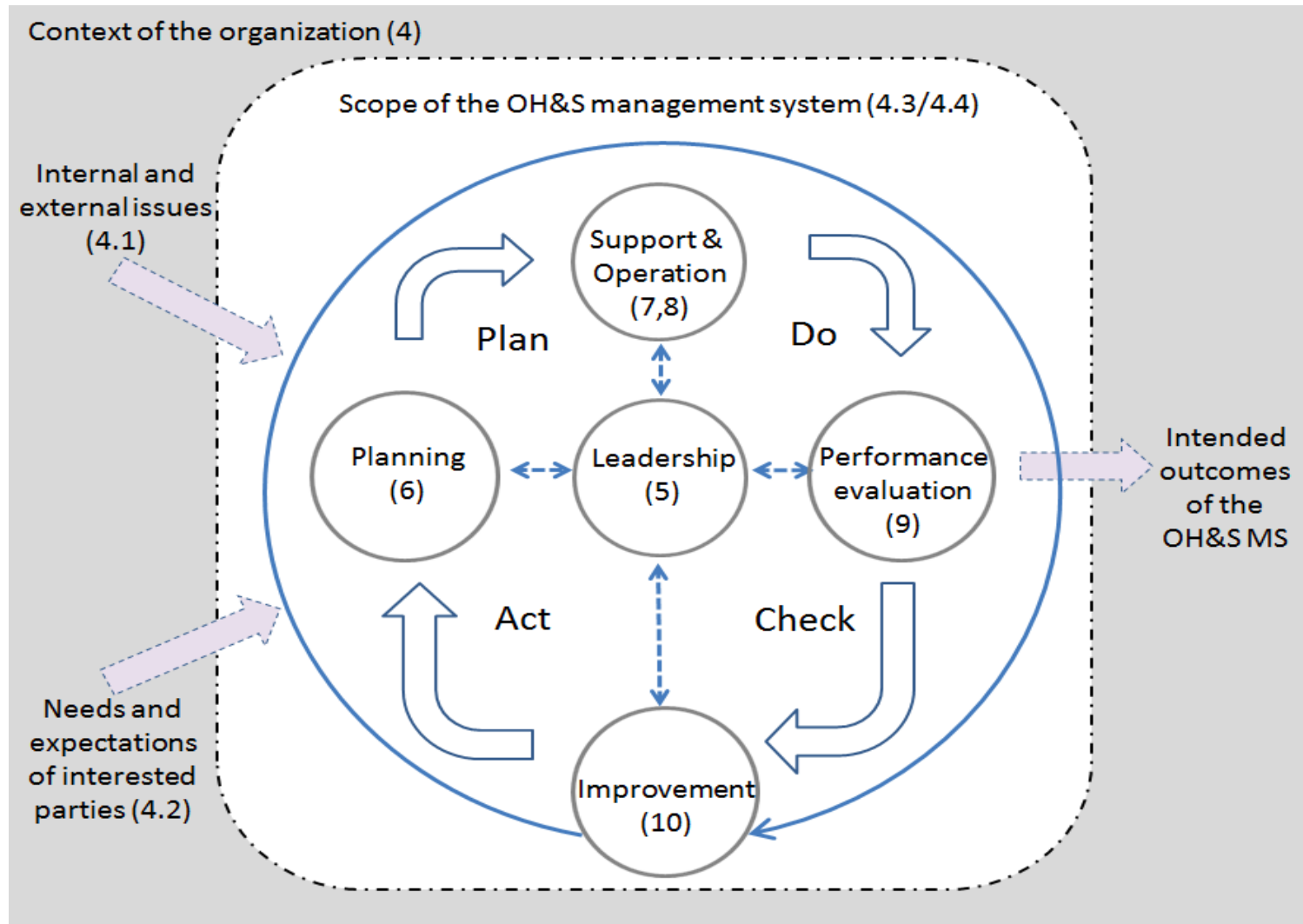
November 5, 2019



Partnership for **Work, Health** and **Safety**

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# What are Occupational Health and Safety Management Systems?



# OHSMS in Alberta and British Columbia – COR

The screenshot shows the WorkSafe BC website interface. At the top, the logo 'WORK SAFE BC' is on the left, and navigation links for 'Forms & Resources', 'Law & Policy', 'About Us', and 'Contact Us' are in the center. On the right, there are links for 'Log in' and 'Create an account'. Below the navigation is a menu with 'Health & Safety', 'Insurance', 'Claims', and 'I Am a...'. A search bar with the text 'Search worksafebc.com' and a magnifying glass icon is on the right. The breadcrumb trail reads: 'Home > Health & Safety > Create & manage a healthy & safe workplace > Certificate of recognition (COR)'. The main content area is titled 'Certificate of recognition (COR)' and includes a description: 'The Partners Program, also known as the certificate of recognition (COR), encourages employers to create an occupational health and safety management system that goes beyond the current legal requirements. The voluntary program recognizes employers that are proactive about improving workplace safety, and dedicated to continual improvement.' Below this are sections for 'Types of COR' and 'COR benefits'. A sidebar on the left lists various topics under 'Certificate of recognition (COR)'. At the bottom of the sidebar, there are two lines of text: 'If you're an employer interested' and 'If you're looking for an employer search tool.'

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Home > Health & Safety > Create & manage a healthy & safe workplace > Certificate of recognition (COR)

## Certificate of recognition (COR)

The Partners Program, also known as the certificate of recognition (COR), encourages employers to create an occupational health and safety management system that goes beyond the current legal requirements. The voluntary program recognizes employers that are proactive about improving workplace safety, and dedicated to continual improvement.

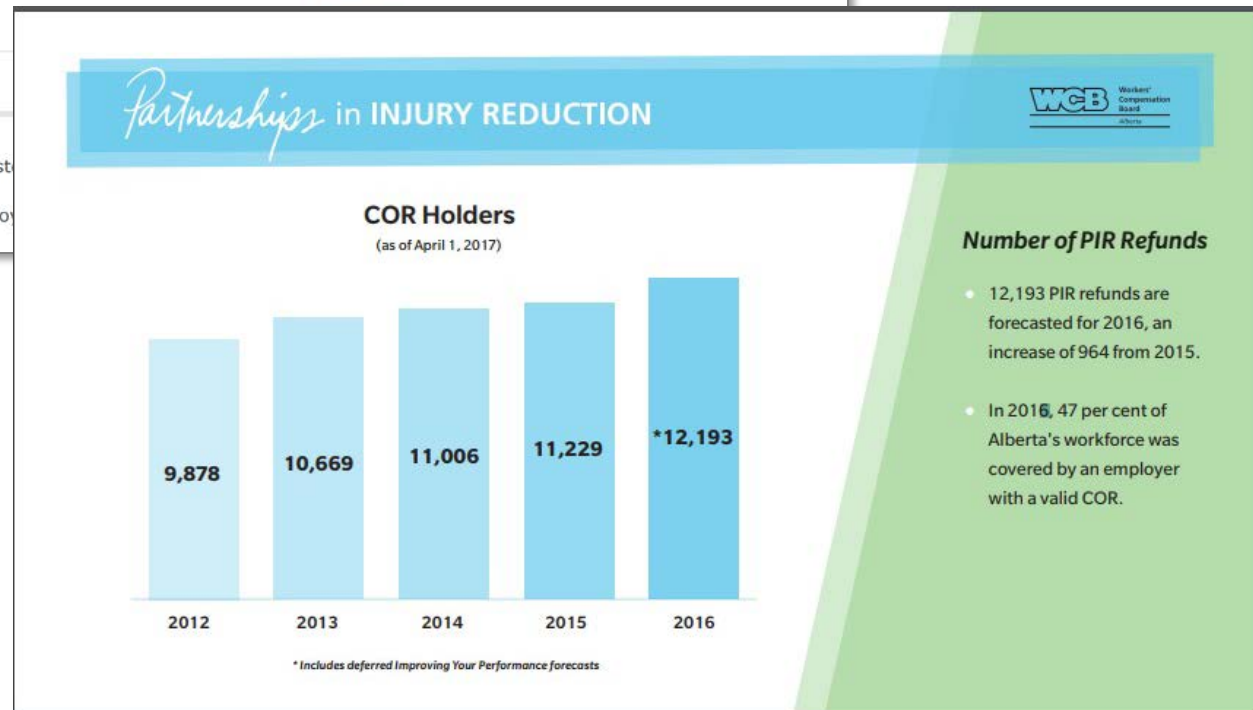
### Types of COR

### COR benefits

If you're an employer interested

If you're looking for an employer search tool.

- Certificate of recognition (COR)
- Program participation
- Certifying partners
- Occupational health & safety management systems
- Quality assurance
- Incentives
- Law & policy



# British Columbia COR program audit

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	Element	Parentage of total audit	Verification method
1	Management Leadership and Commitment	10 to 15	documentation, interviews, observation
2	Safe Work Procedures and Written Instructions	10 to 15	documentation, interviews
3	Training and Instruction of Workers	10 to 15	documentation, interviews
4	Hazard Identification and Control	10 to 15	documentation, interviews, observation
5	Inspection of Premises, Equipment, Workplaces, and Work Practices	10 to 15	documentation, interviews, observation
6	Investigation of Accidents	10 to 15	documentation, interviews, observation
7	Program Administration	10 to 15	documentation, interviews
8	Joint Health and Safety Committee	10 to 15	documentation, interviews

# Jurisdictional context

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## WorkSafeBC

- Provincial agency responsible for OHS and workers' compensation
- Governed by appointed Board of Directors (BOD) representing employers, workers and public interest
- Relationship with government via legislation and BOD appointment

## AB Ministry of Labour

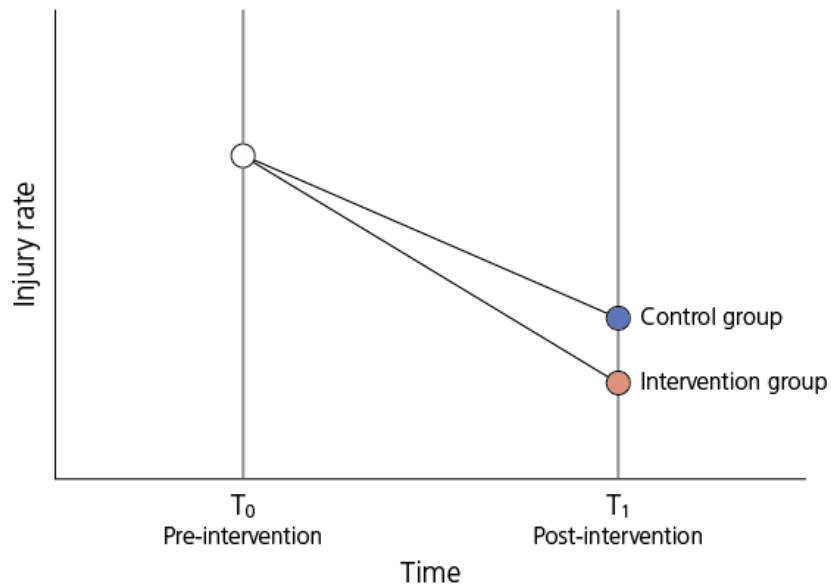
- Government ministry responsible for OHS, employment standards and labour relations
- Direct report to Minister of Labour via senior public servants

Is COR audit certification  
associated with lower  
firm-level injury rates in  
British Columbia?

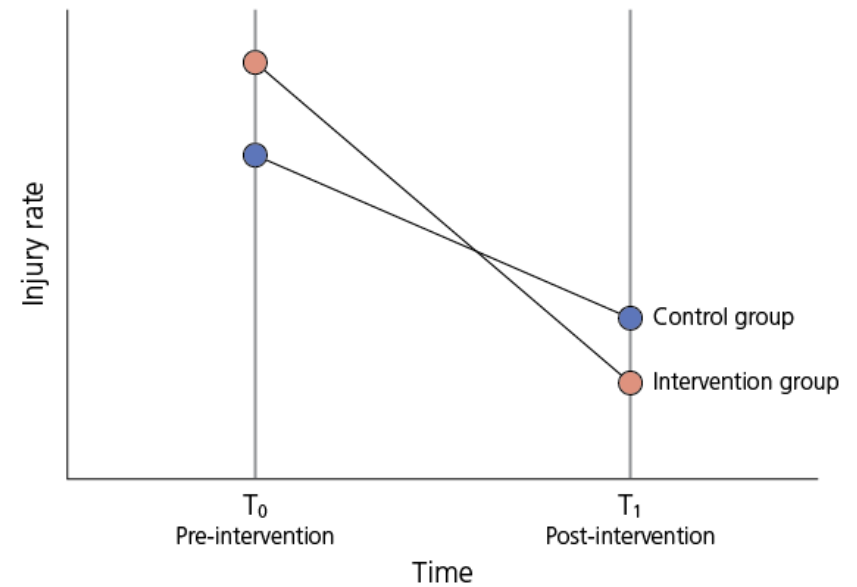
# Approaches to program evaluation

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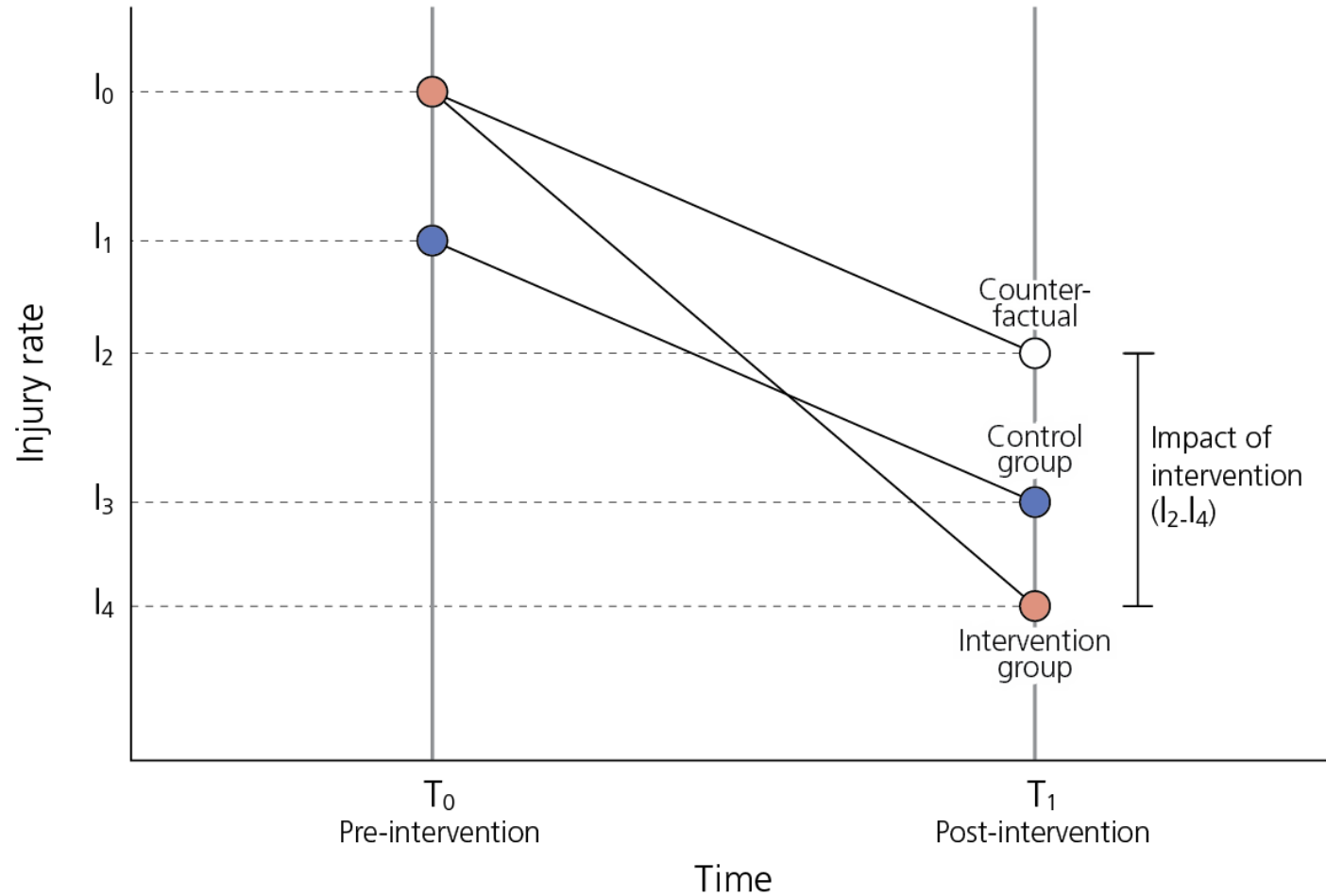
## Randomization



## Observational



# Difference-in-differences (DiD) methodology





# Methods

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- Matching of COR and non-COR firms
- GEE negative binomial regression model
  - Outcome variables
    - Short-term and long-term disability and fatality rate
    - Serious injury rate
    - Health care only
  - Intervention variables
    - COR indicator (COR vs. non-COR)
    - Intervention indicator (years of COR certification)
  - Control variables
    - Industry subsector, firm size, industry rate, year of assessment

# Overview of firms in our study

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Sector	Non-COR Firms	COR Firms	Total
Primary Resources	13,108	1662	14,770
Manufacturing	14,166	346	14,512
Construction	57,989	1314	59,303
Transportation and Warehousing	31,931	1039	32,970
Trade	27,926	73	27,999
Public Administration	975	28	1003
Services	106,995	1191	108,186
Total	253,090	5653	258,743

# Overview of firms in our study - Matched cohort

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Sector	Non-COR Firms	COR Firms	Total
Primary Resources	967	1,361	2,328
Manufacturing	292	326	618
Construction	1,061	1,238	2,299
Transportation and Warehousing	867	1,032	1,899
Trade	69	71	140
Public Administration	24	27	51
Services	1,054	1,169	2,223
Total	4,334	5,224	9,558

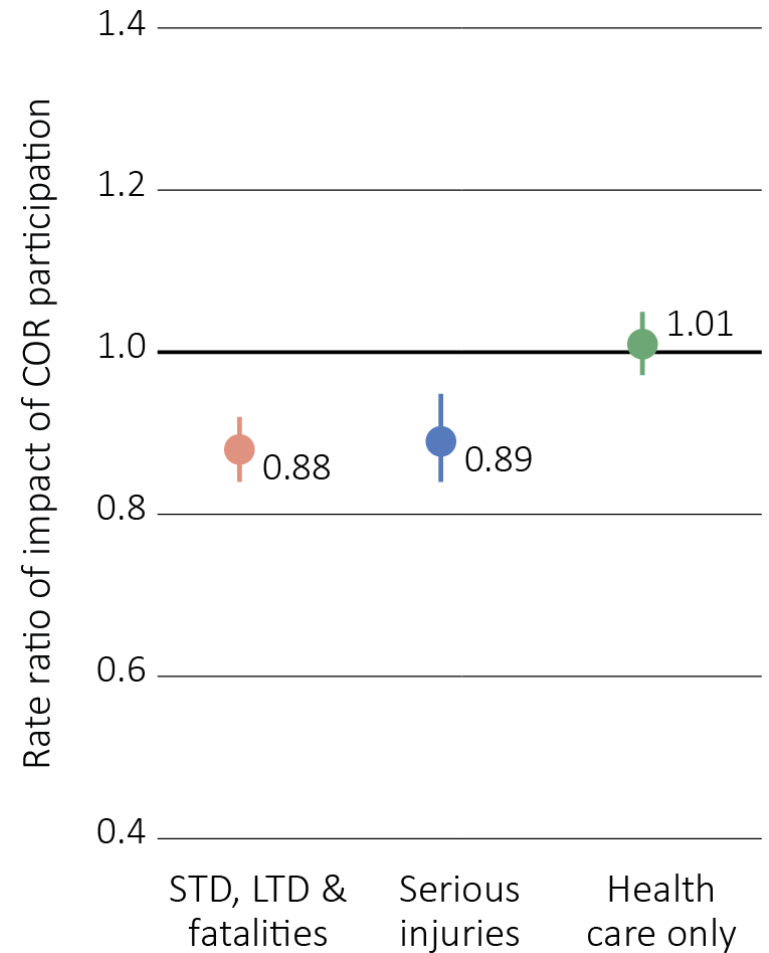
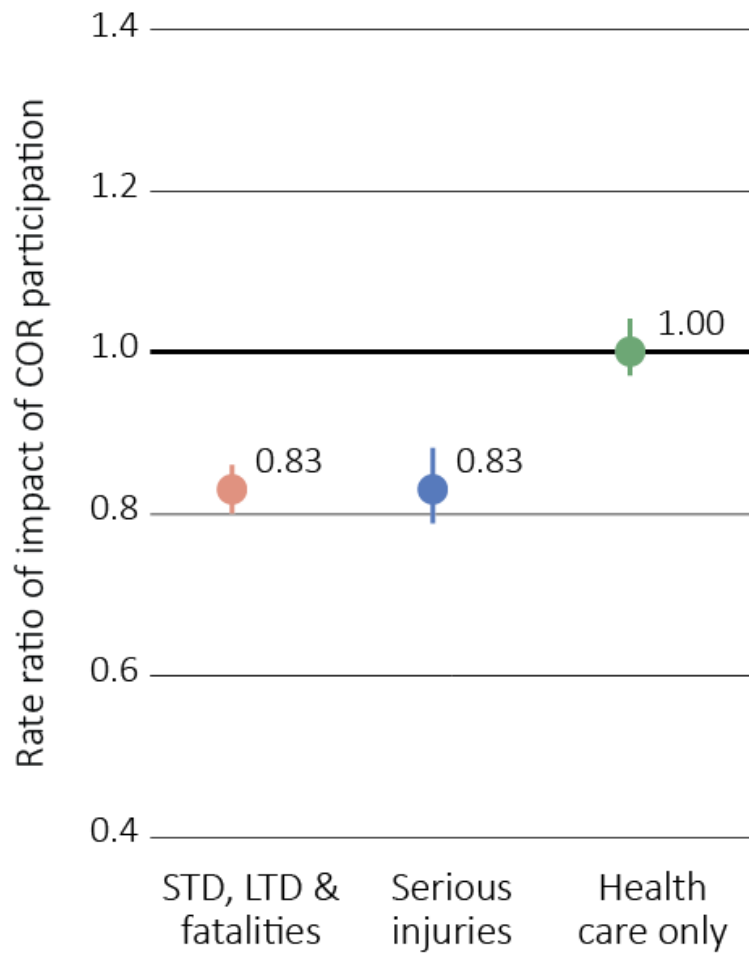
# What we found: Overall

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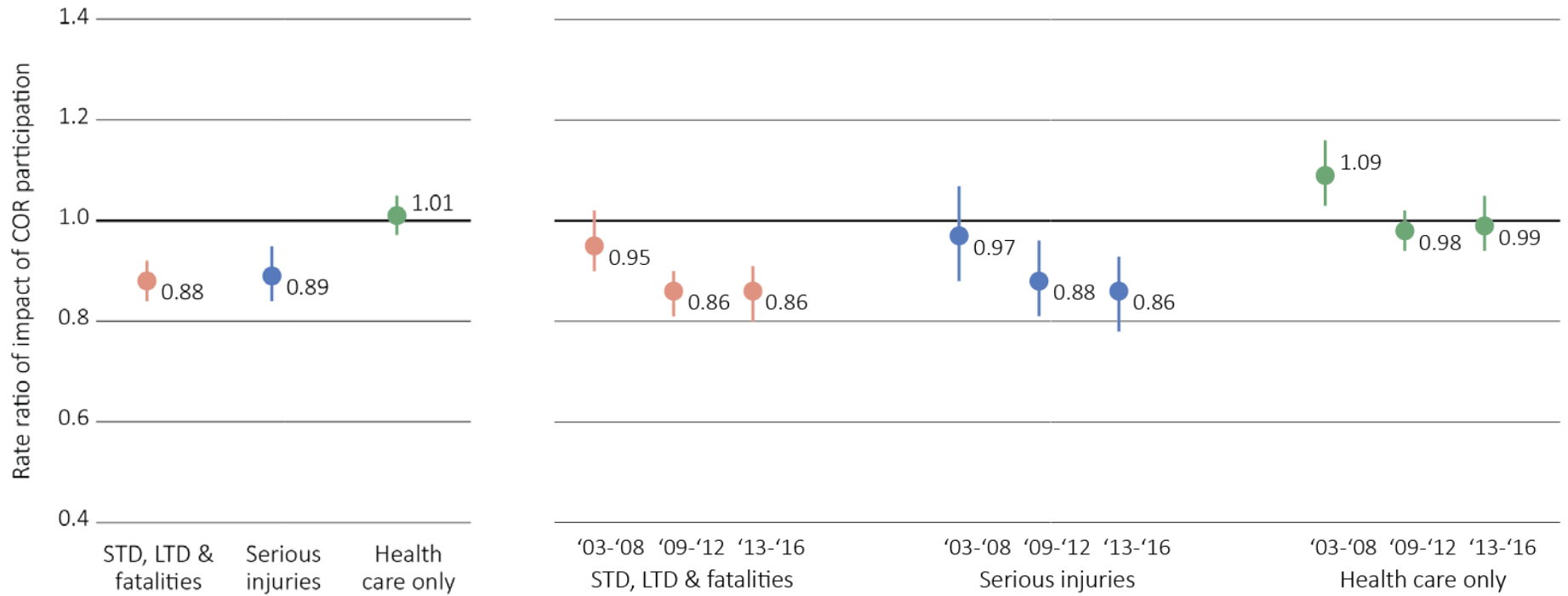
- Matched and unmatched estimates provided similar results
- COR certification reduced SLF and Serious Injuries, but not Health Care Only
- Effect of COR certification was larger in recent years

# Overall, unmatched and matched

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# Overall and by time period

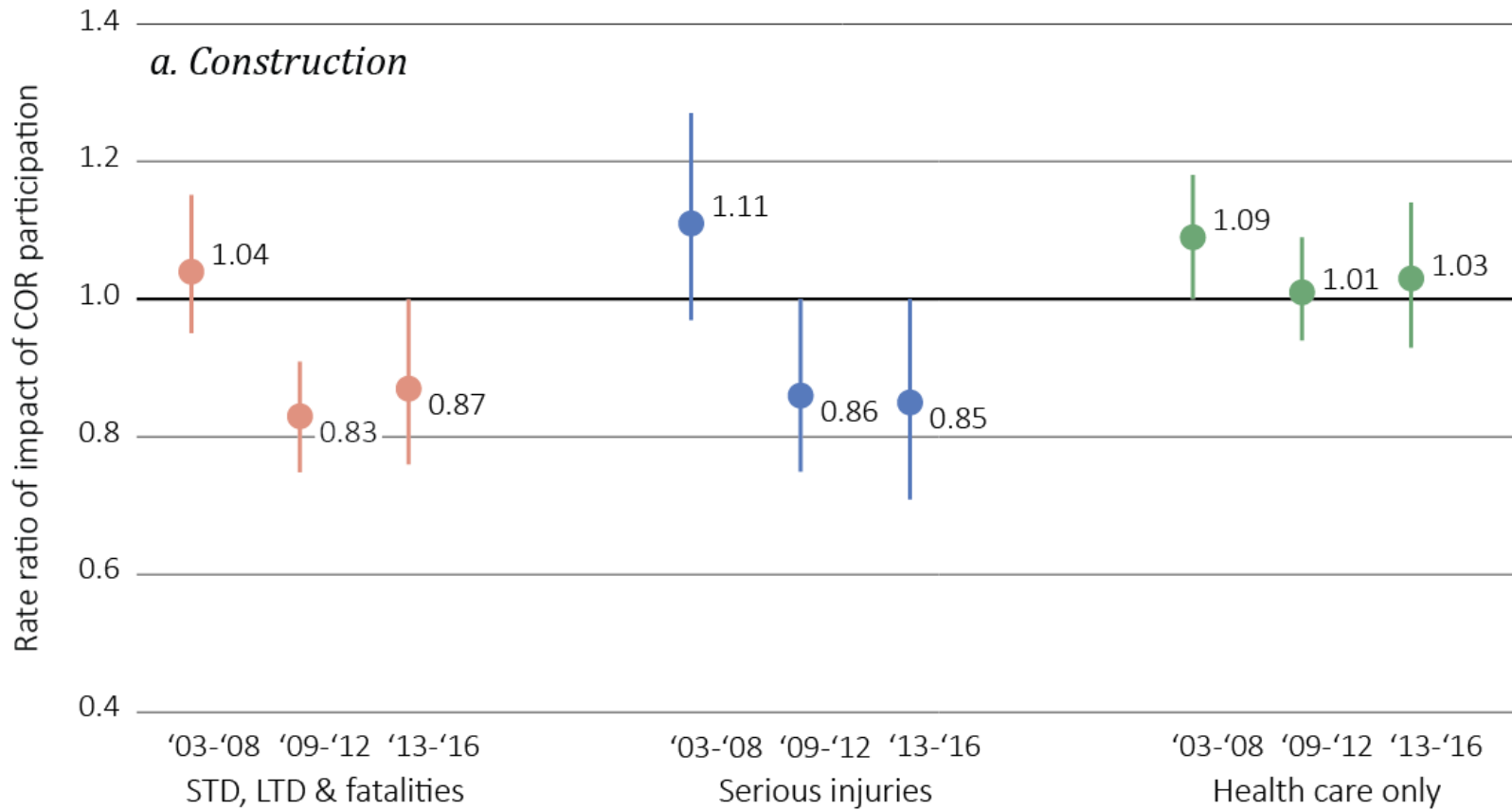


## By sector

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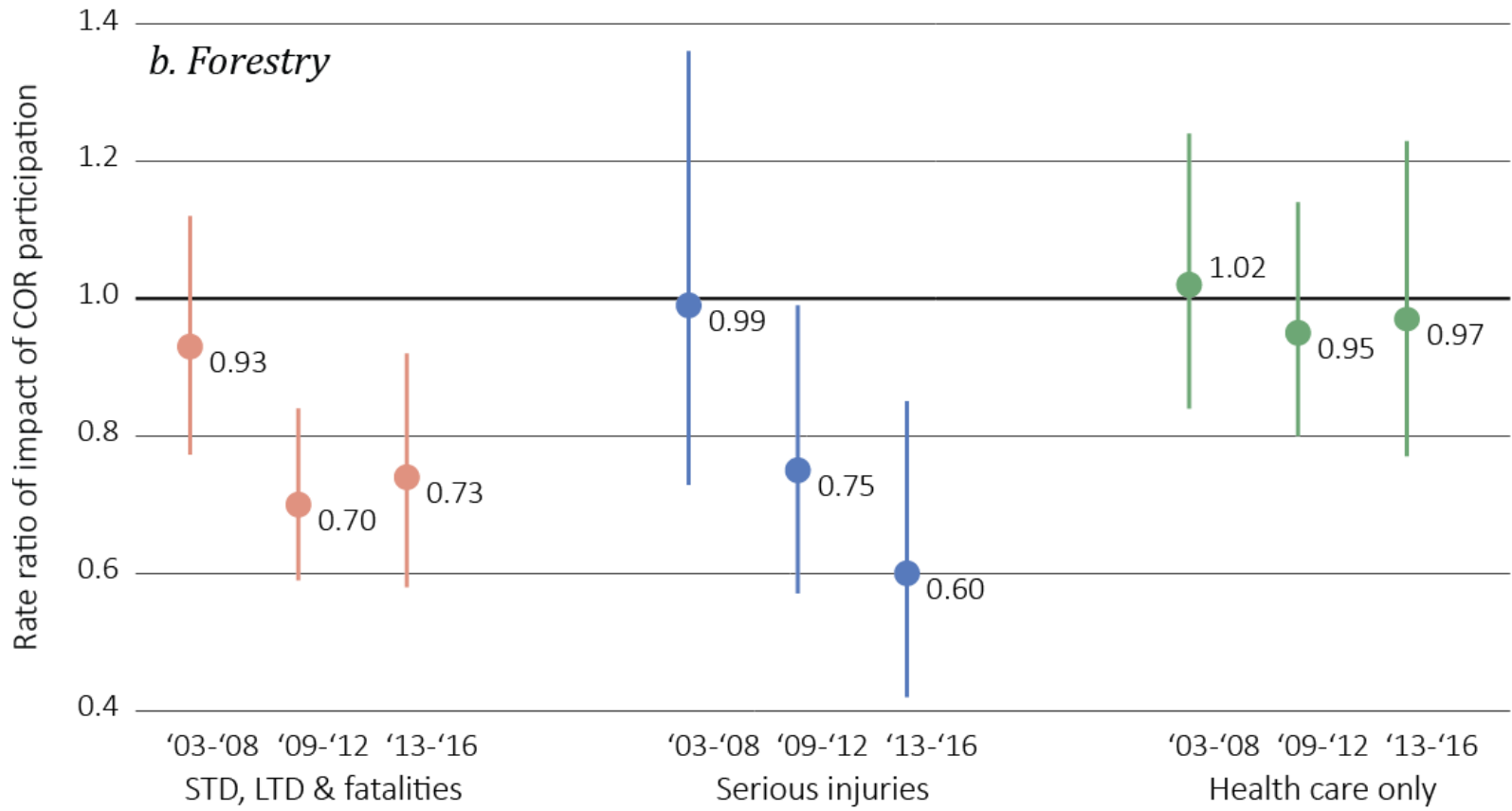
- Greatest effect found:
  - Manufacturing
  - Forestry
- Effect in Construction post 2009 only
- No effect in Transportation or statistically significant effect in Oil and Gas
- Effect on injury rates greater in recent periods across multiple sectors

# By sector and period

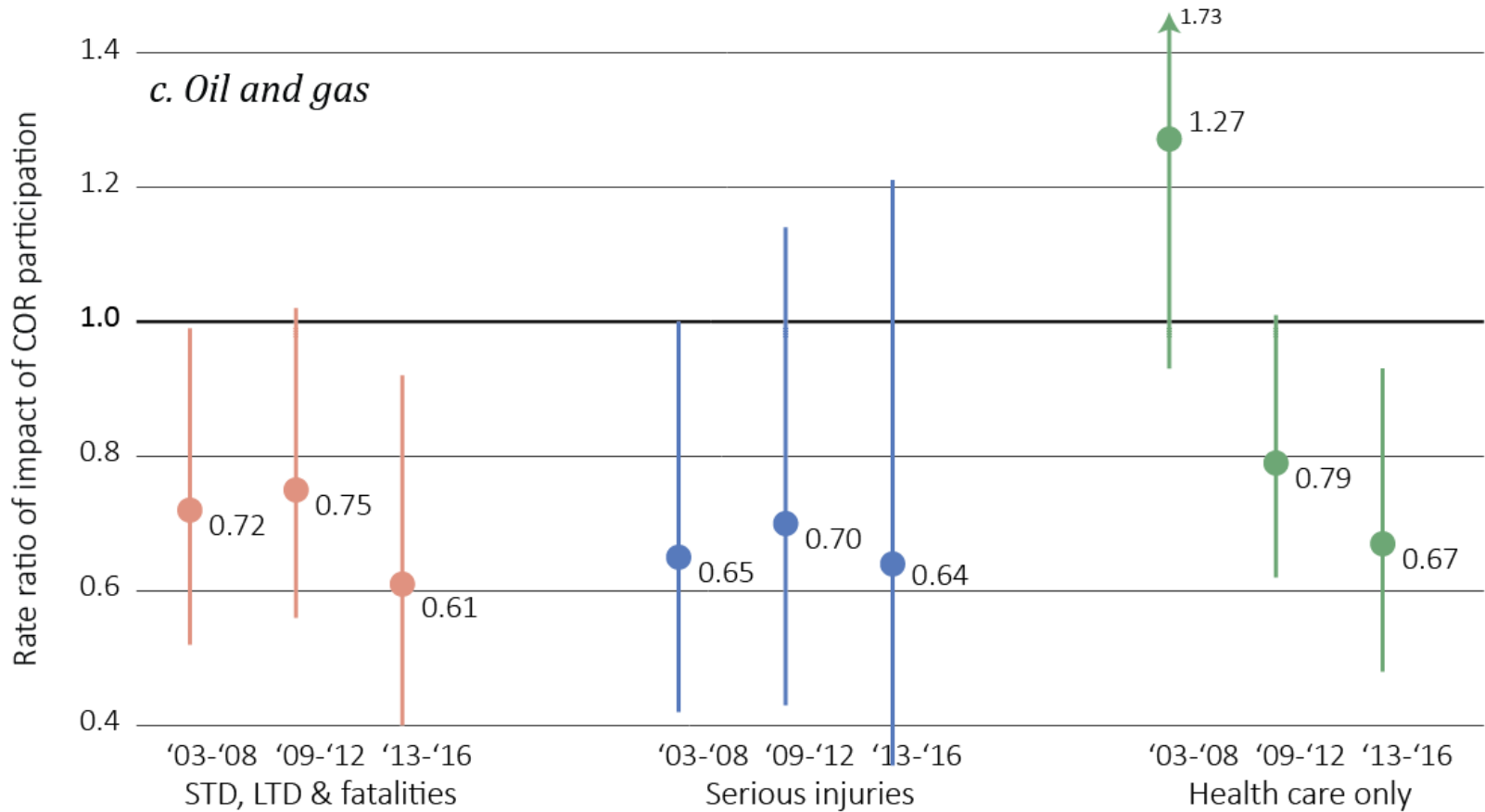




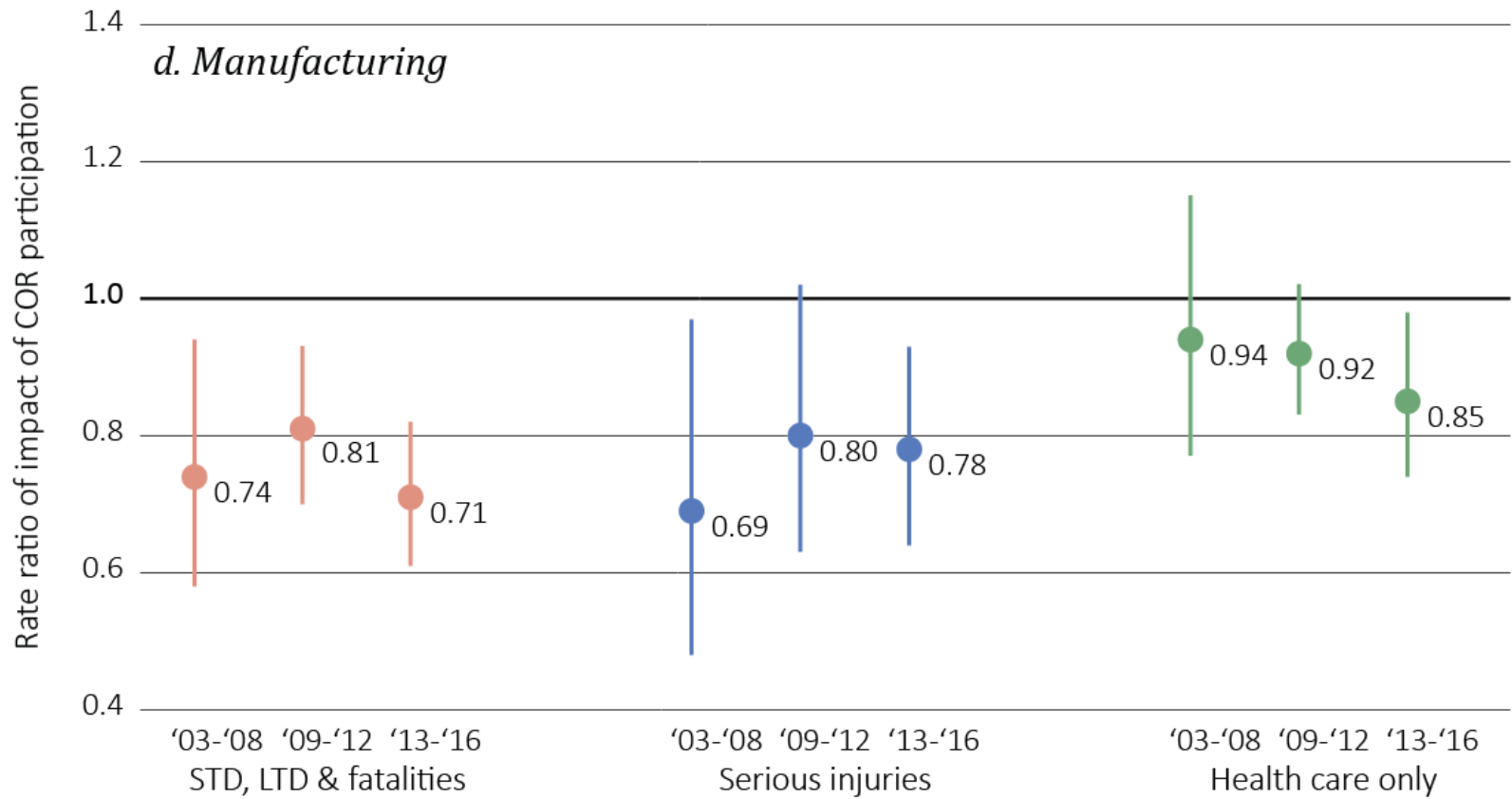
# By sector and period



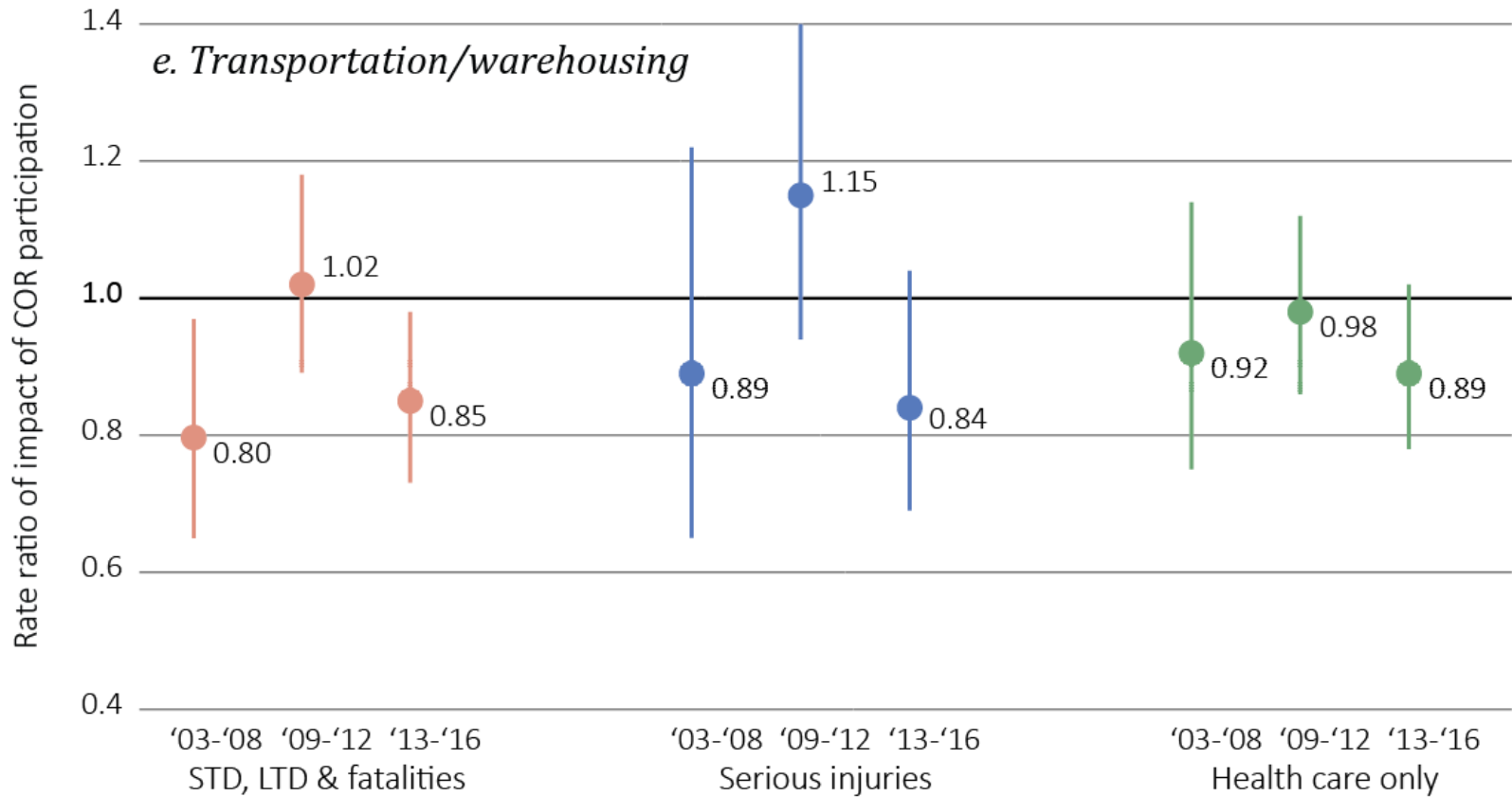
# By sector and period



# By sector and period



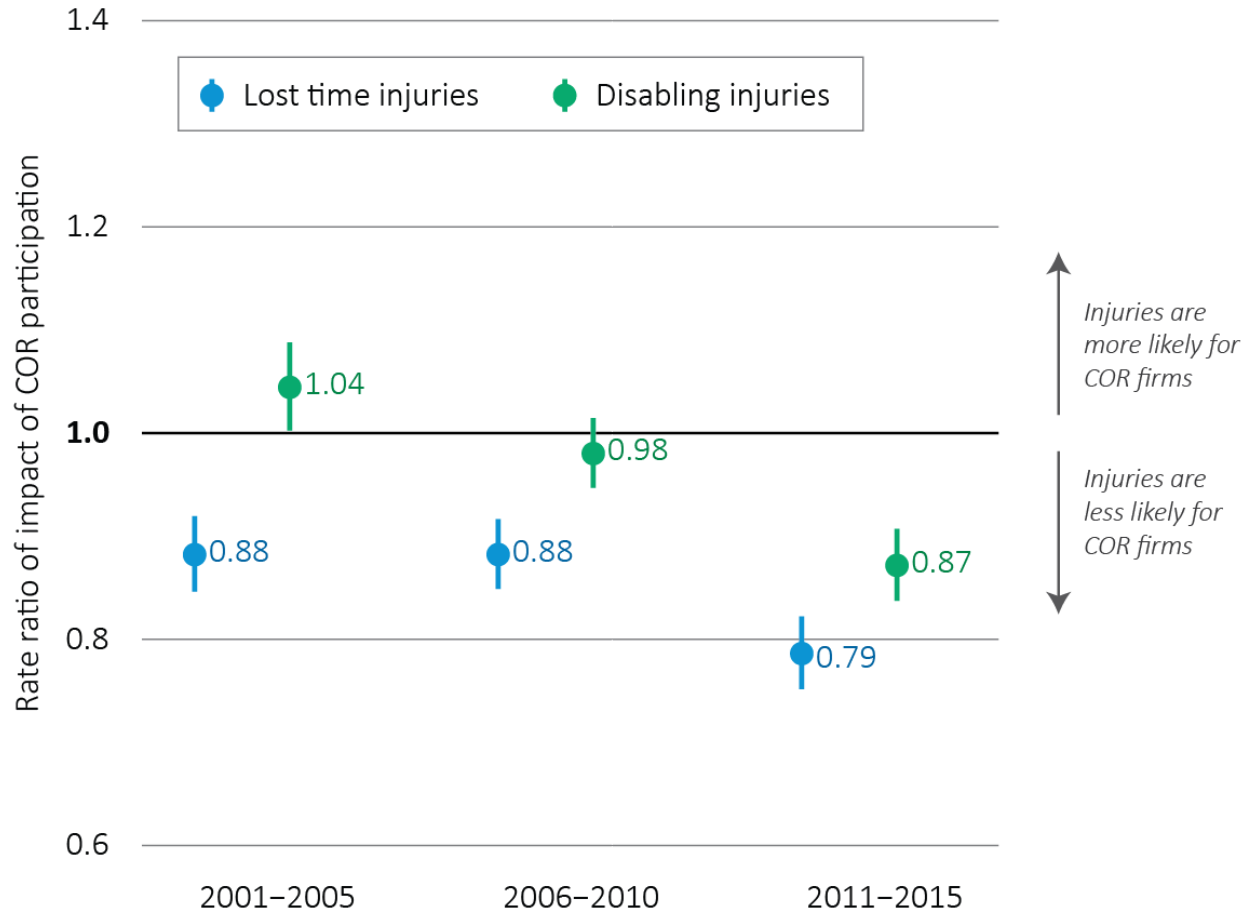
# By sector and period



Partners in Injury Reduction  
Evaluation in Alberta

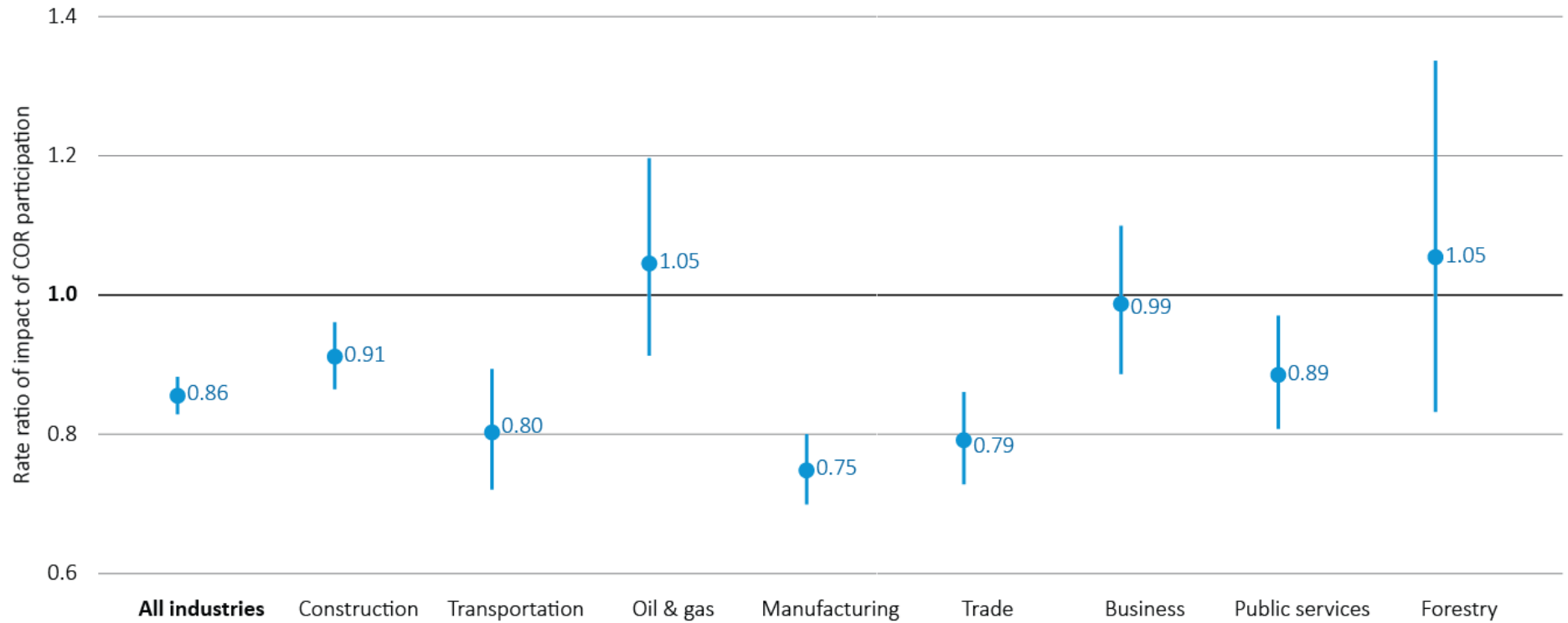
**Is COR associated with  
lower firm-level injury  
rates in Alberta?**

# All industries, by time period



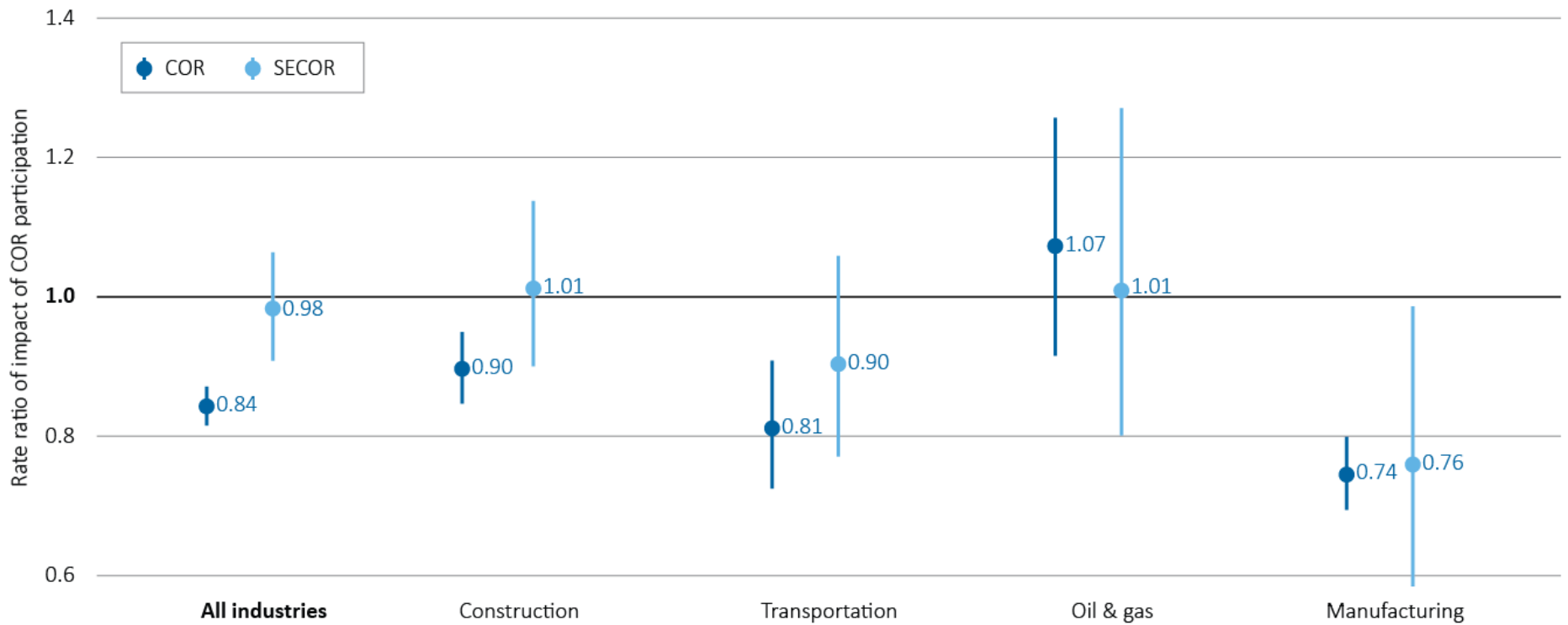
# Overall effect, by industry sector, for lost time injuries

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# COR vs. SECOR, by selected industry sector, for lost time injuries

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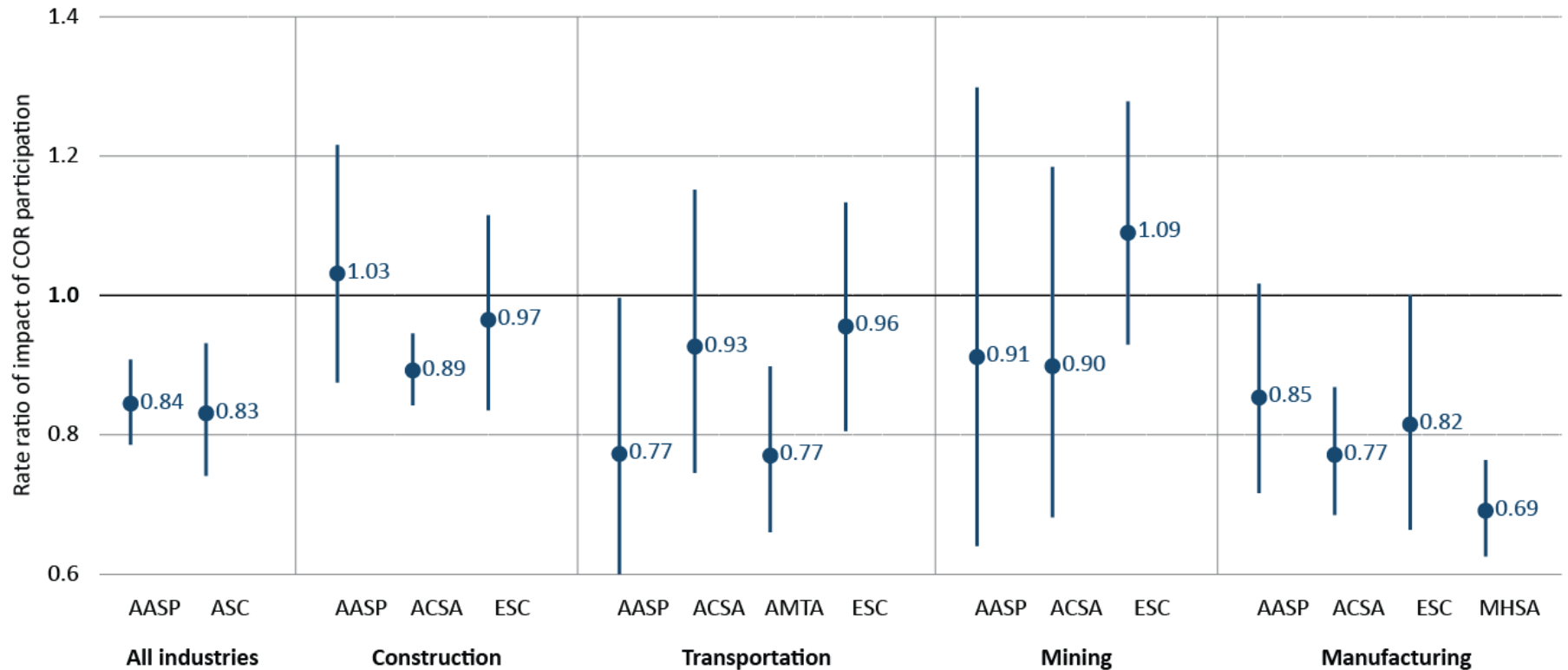


## Certifying partner by sector

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- Differences observed between COR effectiveness and certifying partner
- Firms with certifying by partners using the partnership audit tool did not perform better than those using other audit tools

# Certifying partner, by industry sector, for lost time injuries

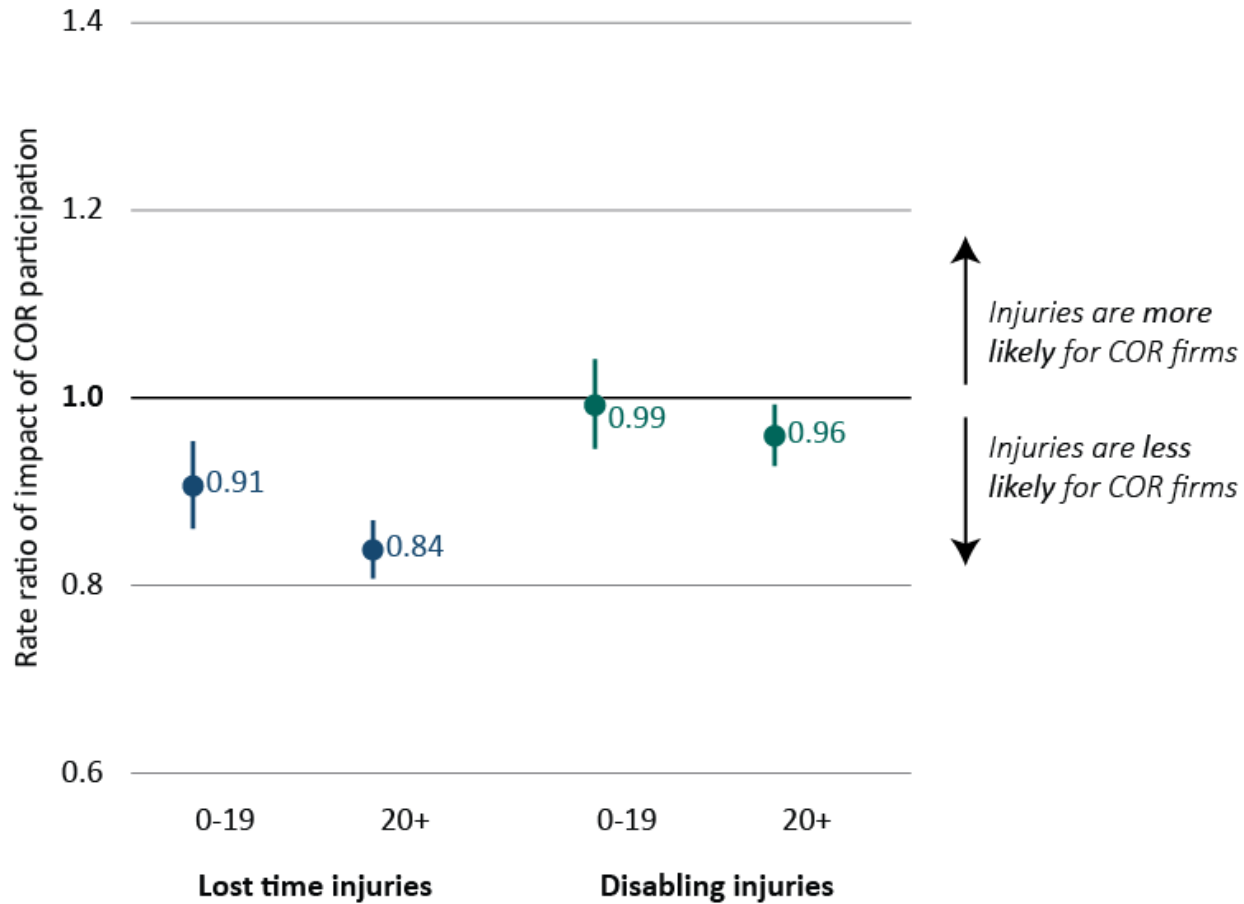


## What we found: by firm size

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- Firm size had a similar effect on COR effectiveness as COR type (COR vs. SECOR)
- Small firms had smaller reduction in lost time injuries
- Small firms had no reduction in disabling injuries

# All industries, by firm size



# Conclusions

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- Matched and unmatched estimates provide similar results
- SECOR has smaller or no effect on reducing injuries
- Effect of COR has increased over time, even after accounting for years of COR
- No difference between funded and non-funded certifying partners
- No added benefit of certifying partners using partnership audit tool

# How the research informed policy and practice change

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## WorkSafeBC

- Research findings a part of public consultation material on proposed changes to COR program
- Presented to and informed BOD deliberations on proposed COR policy and practice changes

## AB Ministry of Labour

- Evaluation one of three assessments of COR program
- Findings presented to responsible Assistant Deputy Minister and Executive Director
- Findings supported recommendations to Minister on COR policy and practice changes

Do better BCCSA audit scores predict lower firm injury rates?

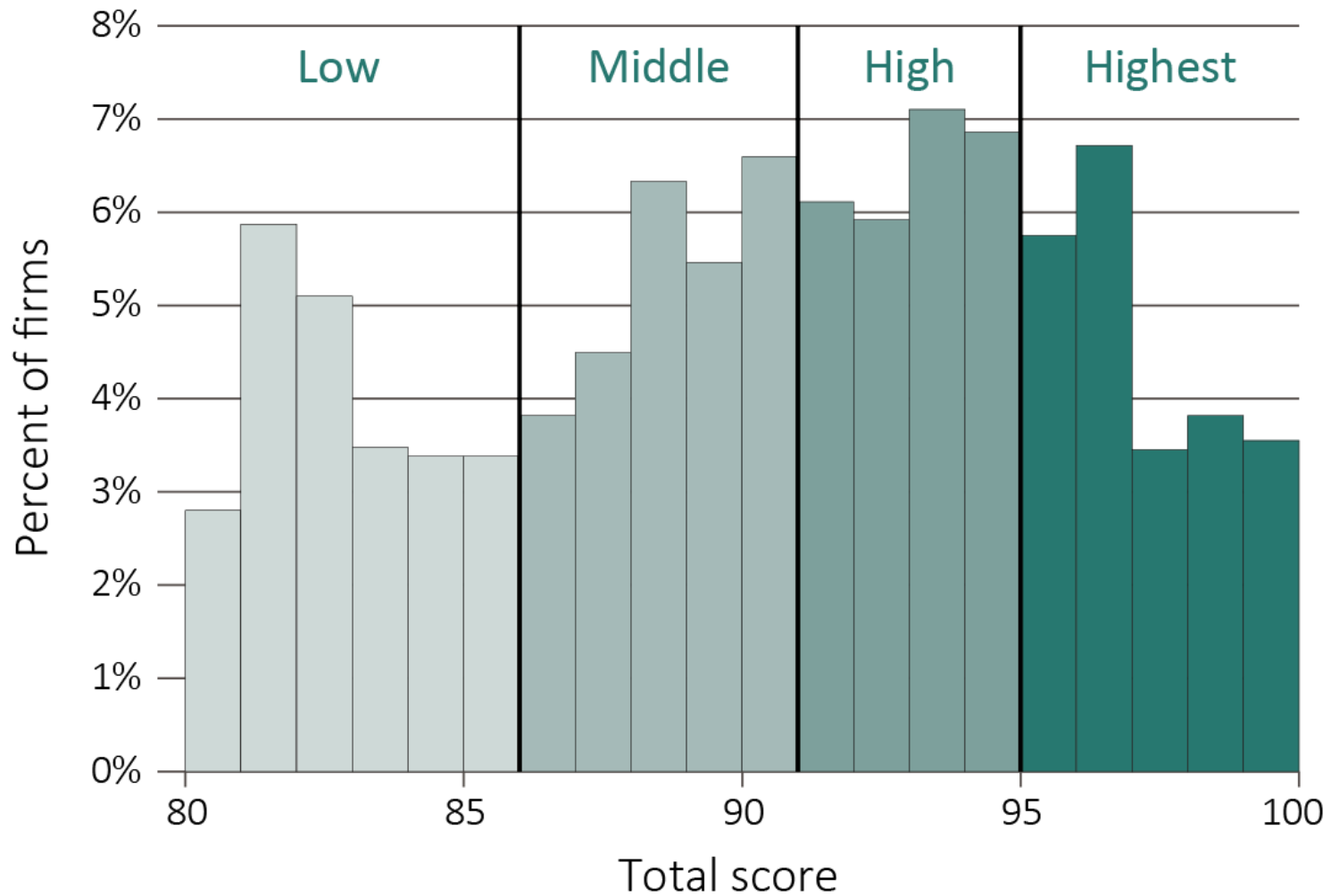
# BCCSA COR audit structure

	Description	Possible Score	% of Total Score
<b>Element 1</b>	Company health and safety policy	27	8.4%
<b>Element 2</b>	Workplace hazard assessment and control	40	12.5%
<b>Element 3</b>	Safe work practices	16	5.0%
<b>Element 4</b>	Safe job procedures	16	5.0%
<b>Element 5</b>	Company rules	9	2.8%
<b>Element 6</b>	Personal protective equipment	18	5.6%
<b>Element 7</b>	Preventative maintenance	12	3.7%
<b>Element 8</b>	Training and communication	46	14.3%
<b>Element 9</b>	Inspections	30	9.3%
<b>Element 10</b>	Investigations and reporting	30	9.3%
<b>Element 11</b>	Emergency preparedness	28	8.7%
<b>Element 12</b>	Records and statistics	18	5.6%
<b>Element 13</b>	Legislation	12	3.7%
<b>Element 14</b>	JOHS	19	5.9%
<b>Total Score (large audits)</b>		321	



# Overall distribution of audit score with quartiles

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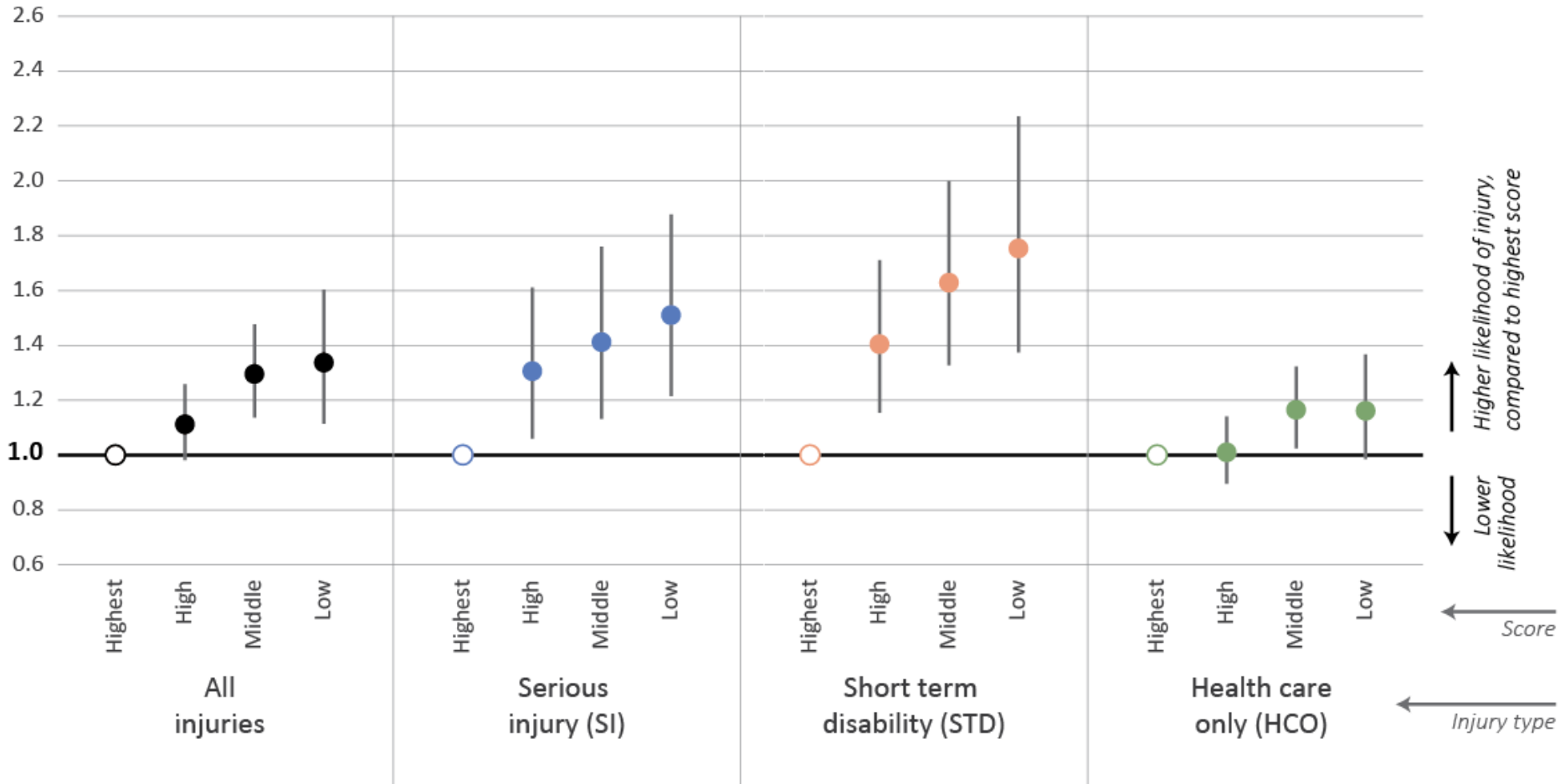


# What we found: Overall

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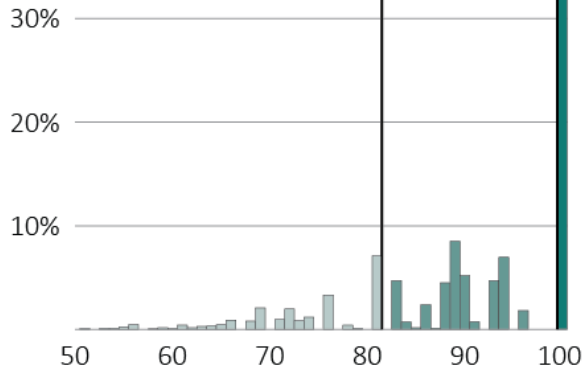
- Overall score on the audit was a strong predictor of firm-injury rate
- Finding similar for large and small firms
- Association found for both construction and non-construction firms; but findings more consistent for construction firms
- Among construction firms consistent and robust relationship for external audits; much weaker for internal audits

# Overall audit score and injury rates

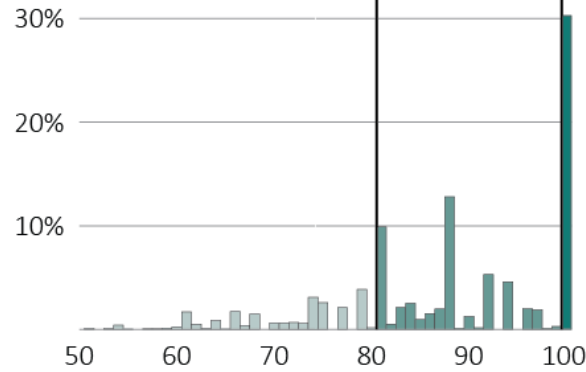


# Distribution of element scores – high variation

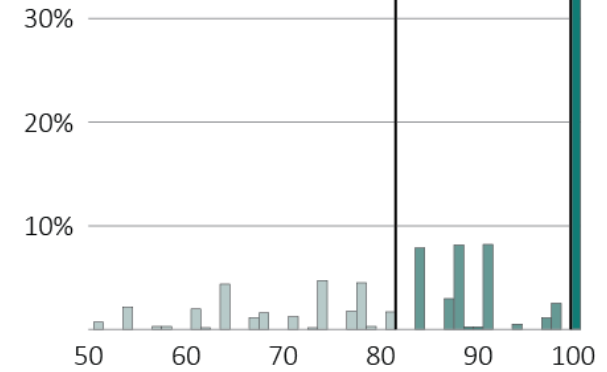
2: Workplace hazard assessment and control



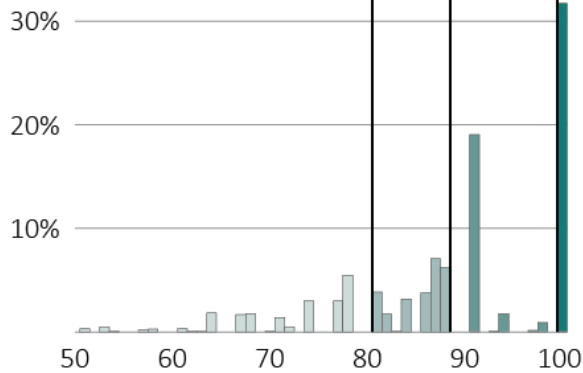
8: Training and communication



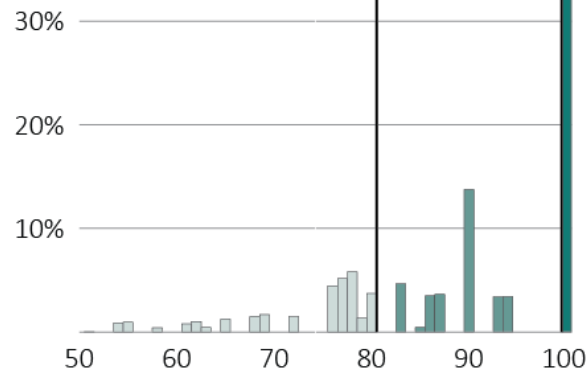
9: Inspections



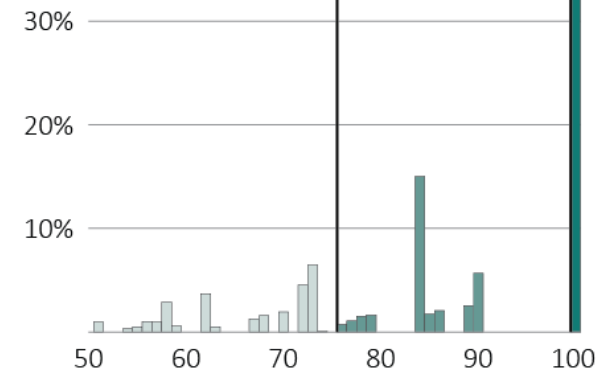
10: Investigations and reporting



11: Emergency preparedness

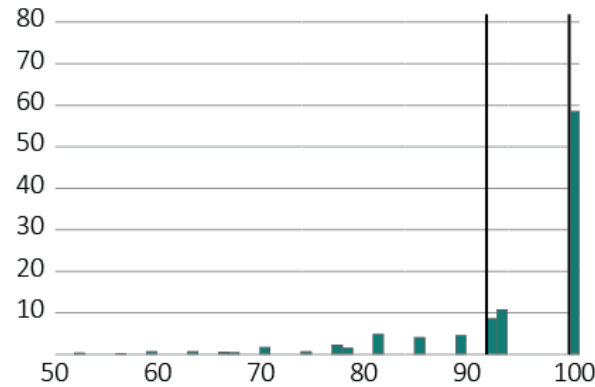


12: Records and statistics

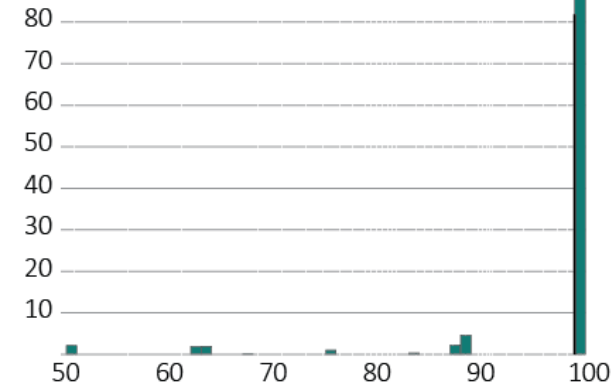


# Elements with lower variation

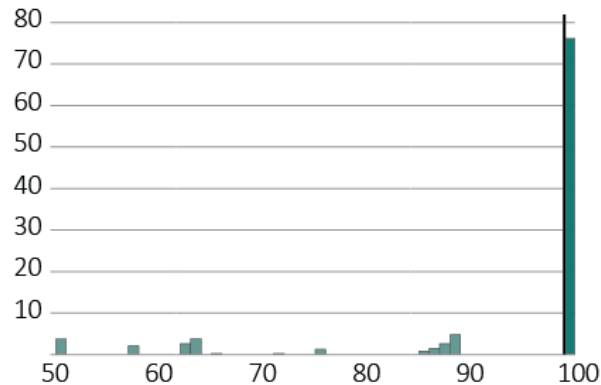
1: Company health and safety policy



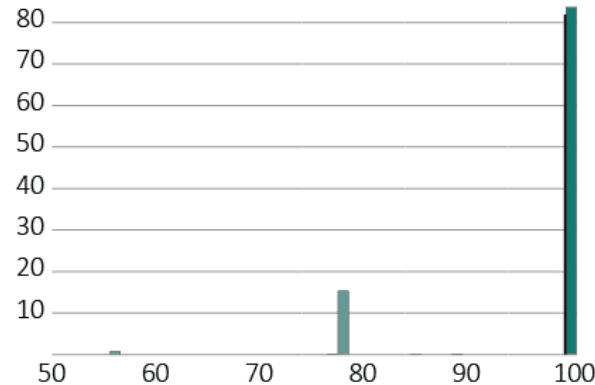
3: Safe work practices



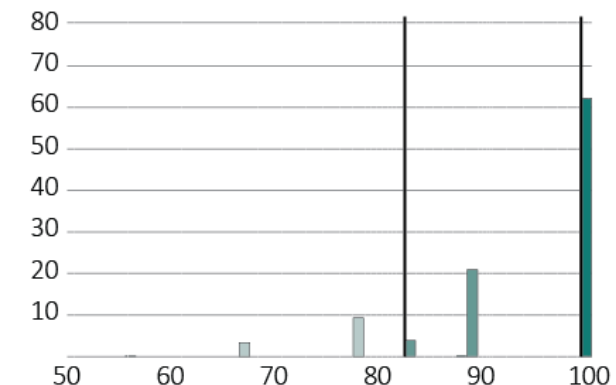
4: Safe job procedures



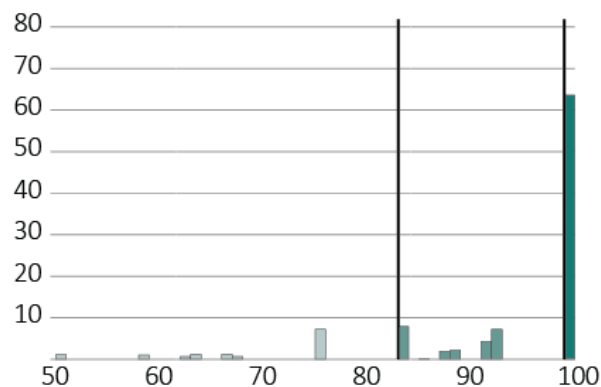
5: Company rules



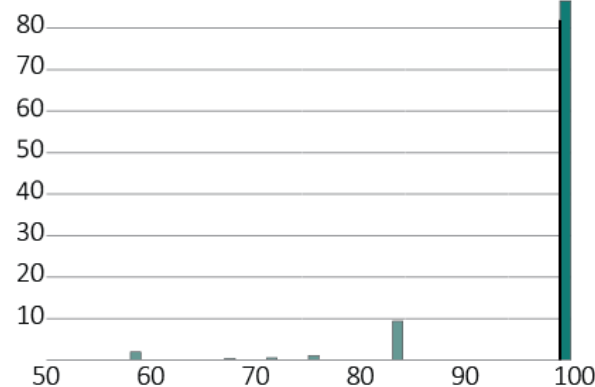
6: Personal protective equipment



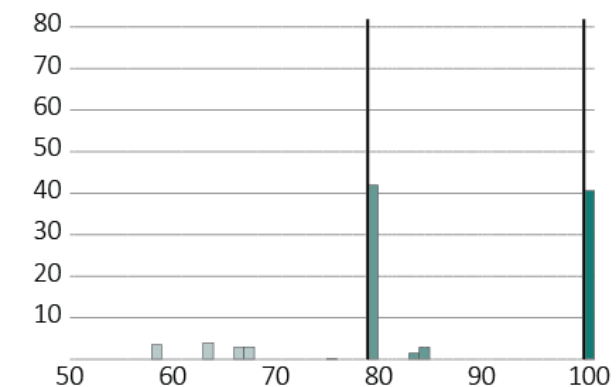
7: Preventative maintenance



13: Legislation



14: Joint health and safety committee



# Audit Element results

	Description	% of total score	Increase in SI rate for lowest scoring firms	Increase in STD rate for lowest scoring firms
Element 10	Investigations and reporting	9%	53%	51%
Element 2	Workplace hazard assessment and control	13%	28%	49%
Element 8	Training and communication	14%	19%	41%
Element 12	Records and statistics	6%	23%	29%
Element 11	Emergency preparedness	9%	30%	21%
Element 7	Preventative maintenance	4%	18%	20%
Element 9	Inspections	9%	10%	19%
Element 13	Legislation	4%	13%	29%
Element 14	JOHS	6%	33%	-6%
Element 1	Company health and safety policy	8%	14%	4%
Element 4	Safe job procedures	5%	15%	4%
Element 6	Personal protective equipment	6%	-10%	13%
Element 5	Company rules	3%	-3%	3%
Element 3	Safe work practices	5%	4%	-7%

# Implications

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- Clear and strong gradient in overall audit score and differences in relative injury rate
- Some evidence that getting below 80% on an element matters
- Certain elements strongly predictive
  - Focus for prevention and continuous improvement
- Identifies area of the audit that seem to really matter

# Acknowledgements

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## Funders

Supported by a Alberta Ministry of Labour OHS Futures Grant, WorkSafeBC and the British Columbia Construction Safety Alliance

## Data provided by

WorkSafeBC, Workers Compensation Board of Alberta, British Columbia Construction Safety Alliance

*"All inferences, opinions, and conclusions drawn in this presentation are those of the authors, and do not reflect the opinions or policies of the Data Steward(s)."*



# Partnership for **Work,** **Health** and **Safety**

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 @PWHS\_UBC

[chris.mcleod@ubc.ca](mailto:chris.mcleod@ubc.ca)