

2018 Report on Work Fatality and Injury Rates in Canada

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Executive Summary

Canadian workers compensation boards reported that 904 workers died due to work-related causes in 2016. This report provides a jurisdictional comparison of work-related fatality rates in Canada between 2011 to 2016 using data from the Association of Workers' Compensation Boards of Canada (AWCBC).

A comparison of fatality rates is important for identifying trends over time both within and between provinces and territories.

Job-related fatalities are classified as *injury* (e.g., death due to job-related electrocution) or *occupational disease* related (e.g., death from mesothelioma due to work-related exposure to asbestos).

Important Data Limitations

Several factors affect the accuracy, reliability, and jurisdictional comparability of fatality and injury rates within Canada. Readers should consider several factors (e.g., industry mix, jurisdictional size, injury under-reporting, differences in legislation among jurisdictions) when interpreting and comparing fatality and injury rates.

Injury-Related Fatality Rate

Among provinces with over 100,000 workers, Saskatchewan's five-year average injury fatality rate ranks highest (6.3 deaths per 100,000 workers) followed by Alberta (3.8 per 100,000) and Newfoundland and Labrador (3.2 per 100,000).

Since 2011, most jurisdictions have experienced declining injury fatality rates. However, a comparison of the average 2011-2013 rate to the average 2014-2016 rate revealed an 83% increase in New Brunswick's rate and a 32% increase in Newfoundland and Labrador's rate.

Occupational Disease-Related Fatality Rate

Among provinces with over 100,000 workers, Newfoundland and Labrador has the highest five-year average occupational disease fatality rate (8.3 deaths per 100,000 workers) followed by Nova Scotia (5.1 per 100,000), and Alberta and British Columbia (both 3.7 per 100,000).

Unlike injury-related fatality rates, which show a general downward trend, the direction of change in occupational disease fatality rates varies among jurisdictions, with some showing increasing and others declining rates. A comparison of three-year average rates (average 2011 to 2013 rate compared to the average 2014 to 2016 rate) showed that Nova Scotia is experiencing the greatest increase (21%), followed by New Brunswick (17%), and British Columbia (9%).

Injury Rate

Among provinces with over 100,000 workers, Manitoba had the highest five-year average injury rate (3.10 injuries per 100 workers) followed by Saskatchewan (2.35 per 100), and British Columbia (2.27 per 100).

Since 2011 nearly all jurisdictions have experienced declining injury rates. However, New Brunswick is an exception. A comparison of three-year average rates (average 2011 to 2013 rate compared to the average 2014 to 2016 rate) showed a 2% increase. Further, New Brunswick's 2016 injury rate is 16% higher than its 2013 to 2015 average injury rate.

Recommendations to Address Data Limitations

The following recommendations could strengthen the accuracy and comparability of the data for future analyses, as well as foster improved prevention of work-related injury, disease and fatalities in Canada.

1. *Harmonize data collection and reporting within and across jurisdictions*
2. *Explore creative solutions to address the problem of under-reporting*
3. *Enhance primary prevention activities*

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Dedication

To those who died because of their work



Lloyd Smith, age 52, died on the job October 2017. Picture from CBC News British Columbia.



Robert Hogue, father, died from work-related injuries December 2017. Picture from Edmonton Journal.



Jared Moffat, age 34, died on the job June 2017. Picture from CBC News Newfoundland & Labrador.



Malcolm Trudell, age 26, died on the job January 2018. Picture from The London Free Press.



Jeff Howes, age 26, died on the job December 2017. Picture from CBC News Ottawa.



Ian Gallagher, age 33, died on the job November 2017. Picture from Global News.



Jesse Hoehn, age 25, died on the job February 2017. Picture from The Davidson Leader.



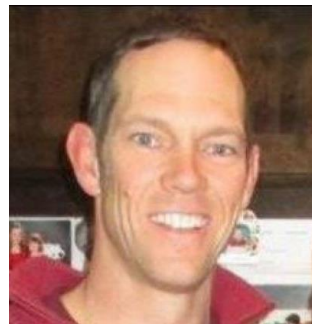
Eric Labelle, age 47, father of four, died on the job July 2017. Picture from kawarthaNOW.com.



Joe Burke, age 80, died from a work-related disease July 2017. Picture from CBC News Nova Scotia.



Tyler Wallace, age 33, died on the job July 2017. Picture from Cape Breton Post.



Steven Lutes, age 42, died on the job January 2017. Picture from CBC News New Brunswick.



Tom Gardiner, age 54, died on the job January 2018. Picture from CBC News Newfoundland & Labrador.

1.0 Introduction

Canadian workers compensation boards reported that 904 workers died due to work-related causes in 2016.

This report uses publicly available data from the Association of Workers' Compensation Boards of Canada (AWCBC) to estimate the injury and occupational disease-related fatality rates across Canadian provinces and territories between 2011 and 2016. For comparison purposes provincial and territorial work-related injury rates are also provided.

A comparison of fatality rates is important for identifying trends over time within and between jurisdictions. Such comparisons not only shed light on where the greatest need is for targeted injury prevention but also help to identify potential changes to regulatory and enforcement regimes. Furthermore, differentiating between the rates of *occupational injury* and *occupational disease* fatalities provides insight into the types of policy changes that may be required.

There are four sections in this report. The first section describes the methodology. The second section addresses important limitations associated with AWCBC data. The third part compares fatality and injury rates across provinces and territories. The final section graphically illustrates provincial fatality and injury rates between 2010 and 2016.

2.0 Methodology

The AWCBC (2018) defines a workplace fatality as “a death resulting from a work-related incident (including disease) that has been accepted for compensation by a Board/Commission”. Such fatalities are classified as being related to *injury* (for example, a death due to job-related electrocution) or *occupational disease* (for example, death from mesothelioma due to work-related exposure to asbestos).¹

Each year provincial and territorial workers’ compensation boards and commissions submit injury, fatality, and other data to the AWCBC (Figure 1). Not surprisingly, data available through the AWCBC’s website show that provinces with a relatively large labour force also report a higher number of work-related fatalities than smaller jurisdictions. While the AWCBC and research studies (e.g., Morassaei et al., 2013) focus on workplace injury *rates* (and thus take into account jurisdictional differences in labour force size), the AWCBC and other publications do not report provincial and territorial work-related fatality rates.

Figure 1: The AWCBC and Provincial and Territorial WCBs



¹ In 2010, the AWCBC began differentiating between the number of injury and occupational disease-related fatalities in its publicly posted data.

In this report, work-related injury and occupational disease fatality rates were calculated by dividing the total number of fatalities in each jurisdiction by the estimated number of full-time equivalent (FTE) workers in the corresponding jurisdiction, and then multiplying the result by 100,000 to arrive at a fatality rate per 100,000 workers.² Related data were downloaded from the AWCBC website and are available upon request.

There are two important caveats about the fatality and injury rates summarized in this report. First, WCBs report aggregate injury and fatality data by calendar year. However, there is a significant time-lag between the end of administrative data collection, reporting of injury and fatality statistics in provincial and territorial WCB annual reports, and the posting of the aggregate data to the AWCBC's website. At the time this report was written, no 2017 injury and fatality data were available on the AWCBC website. Relatedly, it is important to note that AWCBC data are based on when a claim was accepted by a WCB, not when the incident occurred.

Second, work-related injury and fatality claims data, like other health-related data, have limitations related to accuracy and comparability that need be taken into account.

2.1 Important Data Limitations

Researchers and journalists have identified several factors that affect the accuracy, reliability, and jurisdictional comparability of occupational fatality and injury rates in Canada (e.g., Barnetson, 2012; Sharpe & Hardte, 2006; Thompson, 2007). Grant's (2017a-c) recent reporting provides an overview of many of these factors and related solutions. Readers should consider these factors when interpreting provincial fatality and injury rates.³ Later in this report, we provide suggestions for addressing limitations associated with injury and fatality data (see section 5.0).

1. *Injury and fatality underreporting.* For a variety of reasons (e.g., injury severity, claim suppression, use of alternative insurance policies to cover an injured worker's expenses), workers and employers may not report all eligible work-related injuries to a compensation board. Estimates of work-related injury underreporting in Canada vary. For example, Shannon and Lowe's (2002) study found that 40% of eligible claims were not reported to a compensation board or commission. A more recent study of injury underreporting in Manitoba concluded: "There appears to be significant under-claiming of WCB benefits in Manitoba. Survey evidence suggests that around 30.1% of workers who experienced a work-related injury that involved more than 5 days of lost working time may not have claimed WCB Lost Earnings Benefits" (Prism Economics and Analysis, 2013, p. 2).

² The number of FTE reflects the estimated total number of employees covered by a compensation board (based on employer payroll estimates) as opposed to the total number of people employed in a jurisdiction. Given that the AWCBC uses the total number of FTE for calculating lost-time injury rates, this same approach was used for calculating fatality rates in this report. An alternative approach, used by Sharpe and Hardte (2006), uses Statistics Canada Labour Force Survey estimates of the total number of employed workers (instead of the estimated total number of FTE).

³ With respect to data limitations, the AWCBC provides this general cautionary note: "Differences in population, industry mixes, coverage and legislation/policy may affect comparability between jurisdictions. These measures use standard definitions that may differ from WCB reports. Please contact the WCB directly with any inquiries about an individual jurisdiction. Additional measures and explanatory footnotes for the above measures can be found in the Detailed Key Statistical Measures Report."

There is also evidence that underreporting extends to compensation board work-related fatality data. Koehoorn et al.'s (2015) comparison of BC workers' compensation data and external data sources (coroner, hospital, and vital statistics data) estimated that 7% to 24% of work-related fatalities (*depending* upon the data source), between 1991 and 2009, were not captured by the workers compensation system. The authors note that they could not determine what proportion of unreported cases involved deceased workers not covered by compensation board insurance (see point two below).

CAREX (CARcinogen EXposure) estimates occupational exposure to a wide range of known and suspected carcinogens in Canada. For instance, it estimates that 152,000 Canadian workers are currently exposed to asbestos (CAREX, 2018). Fatalities due to occupational disease, such as mesothelioma, are not always diagnosed and recorded as such (i.e., as being caused by occupational exposure) in WCB and AWCBC data. Investigative reporting by Mojtehdzadeh (2016, 2017) revealed that the Workplace Safety Insurance Board (WSIB) in Ontario is in the process of reviewing (and overturning) a significant number of previously denied occupational disease claims linked to occupational exposure to several carcinogens at a General Electric factory in Peterborough, Ontario.

2. *Jurisdictional differences in the proportion of workers insured.* Within federal, provincial, and territorial occupational health and safety legislation, every worker has some level of protection (e.g., right to training); however, this is not the same for injury/illness compensation insurance. While the majority of Canadian workers are covered by workers' compensation insurance, there are notable gaps in coverage. For example, most agricultural workers are not covered by compensation boards and agricultural-related fatalities are reported separately (e.g., Shah et al., 2011). More generally, coverage rates vary by jurisdiction from a high of 98% in British Columbia to a low of 71% in Saskatchewan (AWCBC, 2018). Injuries and deaths that occur in workplaces not covered by compensation board insurance are not counted in AWCBC data. Moreover, lower coverage rates can skew fatality and injury rates when the proportion of uncovered workers is employed in relatively more (or relatively less) dangerous industries.

3. *Increasing use of workplace accommodation practices.* Increasing knowledge and use of job accommodation practices among employers can reduce the number of lost-time injury claims to a compensation board. An injury that likely led to one day off work in the past may result in no time lost in the same workplace today due to availability of modified duties to the injured worker on the day of their injury. In this way, a reduction in the number of lost-time injury claims may not reflect an equal reduction in the actual number of workplace injuries.

4. *Jurisdictional differences in injury and fatality definitions.* Provinces and territories define work-related lost-time injuries differently. For instance, some compensation boards count a lost-time injury when a worker misses their next scheduled shift due to their injury, whereas some other boards count lost-time injuries when an injured worker leaves their current shift (AWCBC, 2018).

In terms of fatalities, some compensation boards have “found dead” clauses in their legislation. These boards are more likely to accept all fatalities that occur in a workplace even when there is uncertainty about the link between a workplace incident and the cause of death (e.g., a heart attack). Further, some jurisdictions have “right to elect” clauses that allow workers who, for example, are injured in a vehicle collision while working, to seek compensation from an auto insurer instead of a compensation board. Similarly, spouses of deceased workers may elect to seek benefits from an auto insurer instead of a compensation board. Work-related fatalities and injuries that are compensated outside of a WCB system may not be counted in AWCBC statistics.⁴ There are also differences in how jurisdictions assess and count occupational disease claims. For instance, “presumption clauses” for occupational groups (e.g., firefighters) can vary by jurisdiction. This may affect the types of cancers and other illnesses (e.g., PTSD) that are compensated. Finally, some compensation boards report injury and illness statistics for self-insured employers yet the AWCBC does not include these data in their reporting.

5. *Missing and incomplete data.* Occasionally a compensation board’s data submission to the AWCBC may be incomplete or may not conform to AWCBC definitions. In these cases, the AWCBC provides explanatory notes for missing and non-comparable provincial and territorial data. A list of these exceptions, for the years 2010 to 2016, for jurisdictions with such data limitations, is shown in the Appendix at the end of this report.

7. *Jurisdictional differences in current and past industry mix.* Differences in the types of industry operating in a jurisdiction can influence injury rates and the number of work-related fatalities (Berriault et al., 2017). Moreover, past industry mixes may influence the present rate of occupational disease, such as the impact of extracting, processing, and manufacturing asbestos between the 1950s and 1970s on current claims for asbestos-related mesothelioma (e.g., Bianco & Demers, 2013).

8. *Jurisdictional differences in labour force size.* While fatality rates take into account workforce size (based on coverage rates), small jurisdictions can experience dramatic changes in their rates due to relatively small changes in the number of fatality claims each year. For this reason, work fatality rates in provinces with more than 100,000 workers are highlighted in this report.

⁴ In relatively rare cases the family of a deceased worker, who is killed by faulty product or equipment, may decide not to accept WCB benefits and, instead, sue a product manufacturer. These fatalities may not be included in WCB fatality counts.

3.0 Work-Related Fatality and Injury Rates by Jurisdiction, 2012-2016

In 2016, the AWCBC reported 312 injury and 592 occupational disease-related fatalities in Canada. Quebec had the highest number of injury-related fatalities (80), while Ontario reported the greatest number of occupational disease-related deaths (231). In that same year, over 240,682 lost-time injury claims were accepted by provincial and territorial WCBs, with Quebec reporting the highest number of these claims (68,537).

Table 1: Number of Work-Related Fatalities and Lost-Time Injuries in 2016

	Number of Lost-Time Injuries	Number of Injury Related Fatalities	Number of Occupational Disease Related Fatalities
Alberta	24,380	67	77
British Columbia	51,044	59	85
Manitoba	14,272	4	12
New Brunswick	4,516	13	7
Newfoundland and Labrador	3,589	5	8
Nova Scotia	6,087	9	15
NWT/Nunavut	826	1	0
Ontario	57,368	58	231
Prince Edward Island	1,010	1	1
Quebec	68,537	80	137
Saskatchewan	8,589	14	17
Yukon	464	1	2
Total	240,682	312	592

3.1 Provincial and Territorial Work-Related Injury Fatality Rates

Table 2 compares the 2016 injury-related fatality rate to the average 2013 to 2015 rate for each jurisdiction.⁵

Among jurisdictions with over 100,000 full-time equivalent employees, New Brunswick (85%), Quebec (25%), and Nova Scotia (23%) showed the greatest percentage increase in their 2016 injury fatality rate. Whereas, Saskatchewan showed the greatest decline (-42%), followed by Newfoundland and Labrador (-33%), and Ontario (-29%).

Table 2: Percentage Change in Injury Fatality Rate, 2016 Rate Compared to Average 2013-2015 Rate (per 100,000)

	Average 2013-2015 Rate	2016 Rate	Percentage Change
Alberta	3.7	3.4	-7%
British Columbia	2.8	2.5	-10%
Manitoba	0.9	0.8	-10%
New Brunswick	2.1	3.8	85%
Newfoundland and Labrador	3.6	2.4	-33%
Nova Scotia	2.3	2.9	23%
NWT/Nunavut*	9.6	2.5	-74%
Ontario	1.3	1.0	-29%
Prince Edward Island*	0.5	1.5	208%
Quebec	1.7	2.1	25%
Saskatchewan	5.9	3.4	-42%
Yukon*	7.7	4.5	-41%

* Fewer than 100,000 FTEs

⁵ The results shown in Tables 2-10 are based on an analysis of AWCBC data by the report's lead author.

Given the relatively small labour force size and relatively small number of fatalities in some jurisdictions, three year moving average rates may provide a more accurate picture of general trends in injury-related fatality rates.

Table 3 compares the average rate between 2011 and 2013 to the average rate between 2014 and 2016. Among provinces with over 100,000 workers, New Brunswick had the greatest percentage injury fatality rate increase (83%) followed by Newfoundland and Labrador (32%). Manitoba showed the greatest decline (-58%), followed by Saskatchewan (-25%), and Ontario (-22%).

Table 3: Percentage Change in Injury Fatality Rate, 2011-2013 Average Rate Compared to 2014-2016 Average Rate (per 100,000)

	Average 2011-2013 Rate	Average 2014-2016 Rate	Percentage Change
Alberta	4.1	3.4	-17%
British Columbia	3.0	2.7	-10%
Manitoba	1.6	0.7	-58%
New Brunswick	1.7	3.1	83%
Newfoundland and Labrador	2.7	3.6	32%
Nova Scotia	2.5	2.1	-16%
NWT/Nunavut	21.5	6.3	-70%
Ontario	1.5	1.2	-22%
Prince Edward Island	1.9	1.0	-50%
Quebec	1.9	1.8	-2%
Saskatchewan	7.0	5.3	-25%
Yukon	5.9	7.7	31%

Table 4 shows the average injury-related fatality rate over the past five years (i.e., 2012 and 2016) by jurisdiction. Considering provinces with over 100,000 workers, Saskatchewan ranks highest (6.3 per 100,000) followed by Alberta (3.8 per 100,000) Newfoundland and Labrador (3.2 per 100,000).

Table 4: Average Injury Fatality Rate 2012-2016 (per 100,000)

	Average 5-year Rate
Alberta	3.8
British Columbia	2.8
Manitoba	1.0
New Brunswick	2.5
Newfoundland and Labrador	3.2
Nova Scotia	2.3
NWT/Nunavut	7.8
Ontario	1.3
Prince Edward Island	1.7
Quebec	1.8
Saskatchewan	6.3
Yukon	6.4

3.2 Provincial and Territorial Work-Related Occupational Disease Fatality Rates

Table 5 compares the 2016 occupational disease-related fatality rate to the average rate between 2013 and 2015.

Among provinces with over 100,000 workers, Saskatchewan (63%), Quebec (14%), and Ontario (11%) showed the greatest percentage increases in occupational disease fatality rates. Whereas, Newfoundland and Labrador (-59%), Manitoba (-22%), and Nova Scotia (-10%) showed the greatest percentage decreases.

Table 5: Percentage Change in Occupational Disease Fatality Rate, 2016 Rate Compared to Average 2013-2015 Rate (per 100,000)

	Average 2013-2015 Rate	2016 Rate	Percentage Change
Alberta	3.9	3.9	2%
British Columbia	3.6	3.7	3%
Manitoba	3.1	2.4	-22%
New Brunswick	2.2	2.1	-8%
Newfoundland and Labrador	9.4	3.8	-59%
Nova Scotia	5.3	4.8	-10%
NWT/Nunavut	1.6	0.0	-100%
Ontario	3.4	3.8	11%
Prince Edward Island	0.5	1.5	210%
Quebec	3.2	3.6	14%
Saskatchewan	2.6	4.2	63%
Yukon	4.5	9.1	100%

* NWT/Nunavut had no recorded occupational disease-related fatalities in 2016.

Table 6 compares the percentage change in occupational disease-related fatality rates by jurisdiction. Again, given the small labour force size in some jurisdictions and relatively small number of fatalities in these jurisdictions, three-year averages rates were compared (i.e., average 2011 to 2013 rate compared to the average 2014 to 2016 rate) to identify general trends over recent years.

Considering provinces with over 100,000 workers, Nova Scotia (21%), New Brunswick (17%), and British Columbia (9%) showed the greatest percentage increase in occupational disease fatality rate. In contrast, Newfoundland and Labrador had the greatest percentage decline (-42%) followed by Manitoba (-35%) and Saskatchewan (-25%).

Table 6: Percentage Change in Occupational Disease Fatality Rate, Average 2011-2013 Rate Compared to Average 2014-2016 Rate (per 100,000)

	Average 2011-2013 Rate	Average 2014-2016 Rate	Percentage Change
Alberta	3.5	3.6	3%
British Columbia	3.5	3.8	9%
Manitoba	4.2	2.7	-35%
New Brunswick	1.8	2.1	17%
Newfoundland and Labrador	11.5	6.7	-42%
Nova Scotia	4.4	5.3	21%
NWT/Nunavut	0.8	0.8	-2%
Ontario	3.8	3.6	-5%
Prince Edward Island*	0.0	1.0	-
Quebec	3.6	3.3	-8%
Saskatchewan	3.9	2.9	-25%
Yukon	4.5	4.6	2%

* PEI had no recorded occupational disease-related fatalities between 2011 and 2013.

Table 7 shows the average occupational disease fatality rate between 2012 and 2016 by jurisdiction. Overall, Newfoundland and Labrador has the highest rate (8.3 deaths per 100,000) followed by Nova Scotia (5.1 per 100,000).

Table 7: Average Occupational Disease Fatality Rate 2012-2016 (per 100,000)

	Average 5-year Rate
Alberta	3.7
British Columbia	3.7
Manitoba	3.6
New Brunswick	2.1
Newfoundland and Labrador	8.3
Nova Scotia	5.1
NWT/Nunavut	1.0
Ontario	3.6
Prince Edward Island	0.6
Quebec	3.4
Saskatchewan	3.3
Yukon	5.4

3.3 Provincial and Territorial Work-Related Lost-Time Injury Rates

Table 8 compares the 2016 lost-time injury rate (per 100 full-time equivalent employees) to the average rate between 2013 and 2015.

Limited to jurisdictions with over 100,000 employees, New Brunswick showed the greatest increase (16%) followed by Ontario (4%). Saskatchewan (-8%), Manitoba (-7%), and Alberta (-4%) showed the greatest percentage decline in injury rate.

Table 8: Percentage Change in Time-Loss Injury Rate, 2016 Rate Compared to 2013-2015 Rate (per 100)

	Average 2013-2015 Rate	2016 Rate	Percentage Change
Alberta	1.30	1.25	-4%
British Columbia	2.26	2.20	-3%
Manitoba	3.09	2.89	-7%
New Brunswick	1.14	1.33	16%
Newfoundland and Labrador	1.74	1.72	-1%
Nova Scotia	1.92	1.93	1%
NWT/Nunavut	2.19	2.03	-7%
Ontario	0.91	0.94	4%
Prince Edward Island	1.30	1.47	13%
Quebec	1.79	1.80	1%
Saskatchewan	2.28	2.11	-8%
Yukon	1.98	2.10	6%

Table 9 compares the percentage change in lost-time injury rate by jurisdiction. Three-year averages rates were compared (i.e., the average 2011 to 2013 injury rate was compared to the average 2014 to 2016 injury rate).

Among jurisdictions with over 100,000 workers, Saskatchewan showed the greatest decrease in time-loss injury rate (-23%), followed by Ontario (-10%) and Alberta (-10%).

Table 9: Change in Time-Loss Injury Rate, Average 2011-2013 Rate Compared to Average 2014-2016 Rate (per 100)

	Average 2011-2013 Rate	Average 2014-2016 Rate	Percentage Change
Alberta	1.41	1.27	-10%
British Columbia	2.32	2.23	-4%
Manitoba	3.24	3.02	-7%
New Brunswick	1.19	1.21	2%
Newfoundland and Labrador	1.84	1.72	-7%
Nova Scotia	2.00	1.92	-4%
NWT/Nunavut	2.24	2.13	-5%
Ontario	1.00	0.90	-10%
Prince Edward Island	1.28	1.38	8%
Quebec	1.87	1.78	-5%
Saskatchewan	2.76	2.13	-23%
Yukon	2.10	2.06	-2%

Table 10 shows the average lost-time injury rate over the past 5 years (i.e., between 2012 and 2016) by jurisdiction. Among provinces with over 100,000 workers, Manitoba had the highest rate (3.10 per 100) followed by Saskatchewan (2.35 per 100) and British Columbia (2.27 per 100).

Table 10: Average Time-Loss Injury Rate 2012-2016 (per 100)

	Average 5-year Rate
Alberta	1.31
British Columbia	2.27
Manitoba	3.10
New Brunswick	1.19
Newfoundland and Labrador	1.74
Nova Scotia	1.94
NWT/Nunavut	2.14
Ontario	0.93
Prince Edward Island	1.34
Quebec	1.80
Saskatchewan	2.35
Yukon	2.04

4.0 Provincial Fatality and Injury Rate Graphs, 2010-2016

The graphs below provide a visual representation of fatality and lost-time injury rates by jurisdiction between 2010 and 2016. Due to relatively high yearly variability in rates in smaller jurisdictions, graphs for NWT/Nunavut, PEI, and the Yukon Territory are omitted.

4.1 Provincial Fatality Rate Graphs

Figure 2: Alberta Work-Related Fatality Rates, 2010-2016

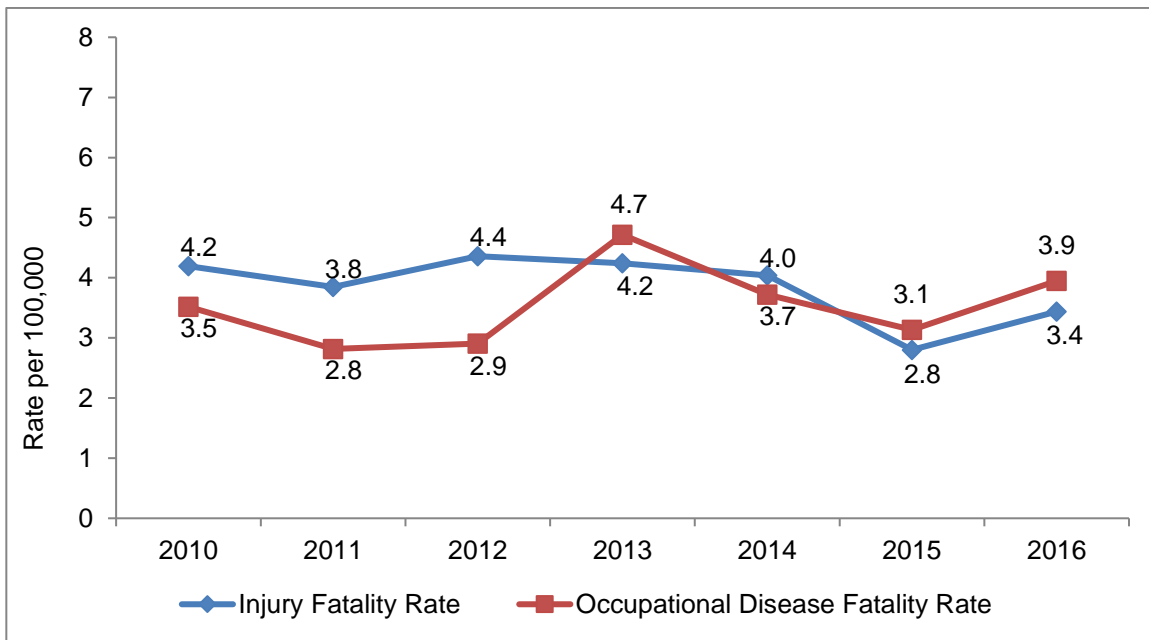


Figure 3: British Columbia Work-Related Fatality Rates, 2010-2016

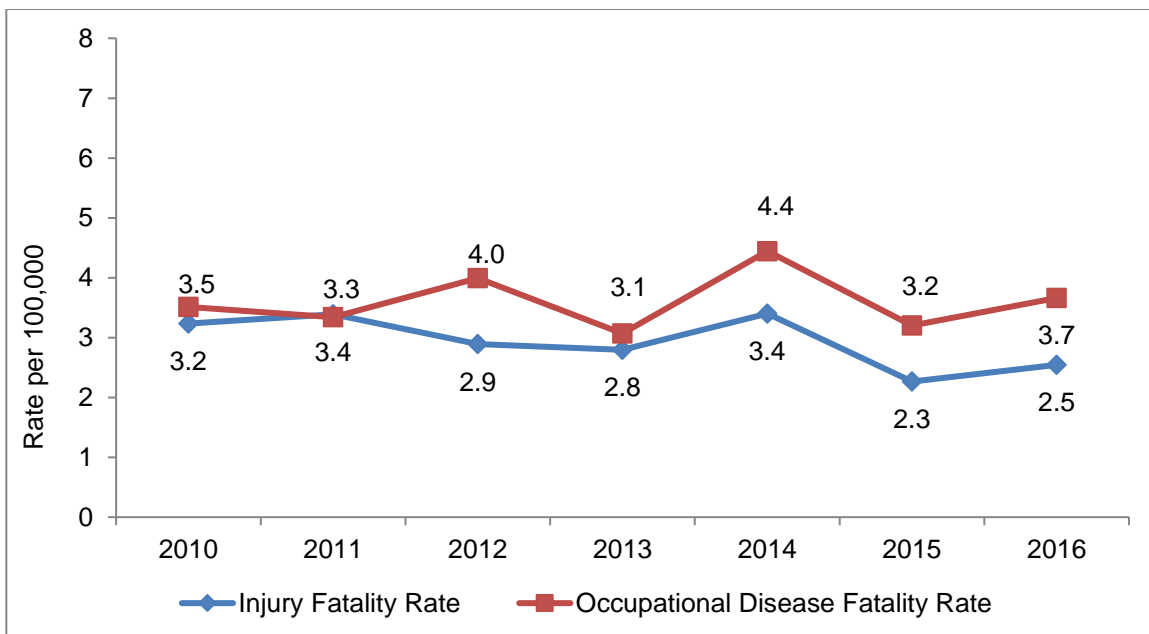


Figure 4: Manitoba Work-Related Fatality Rates, 2010-2016

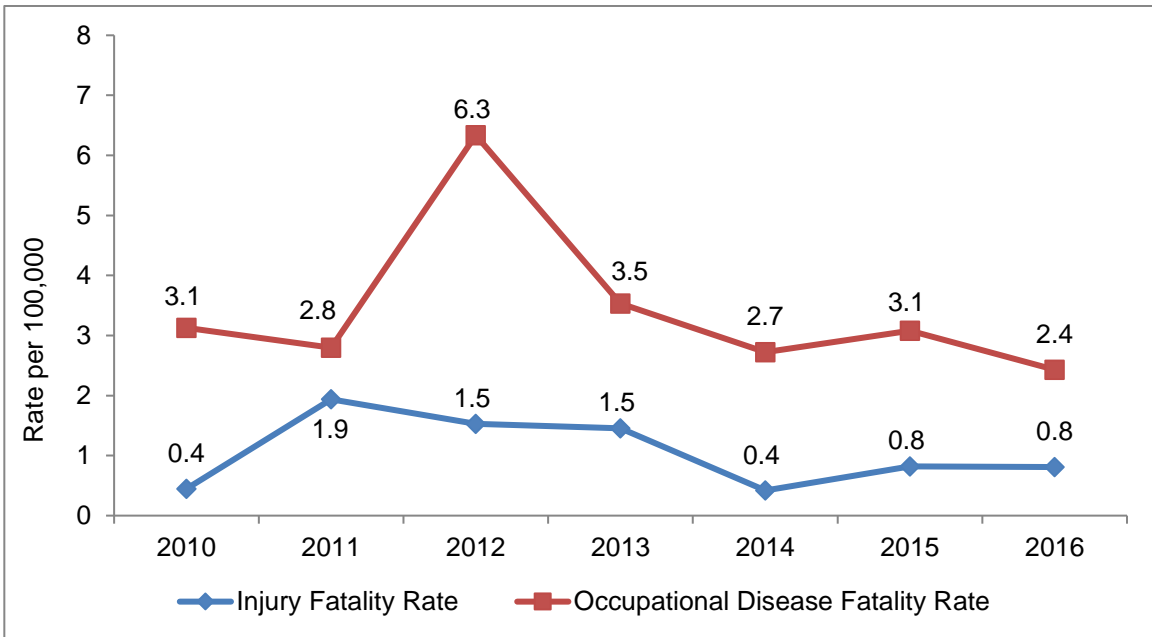


Figure 5: New Brunswick Work-Related Fatality Rates, 2010-2016

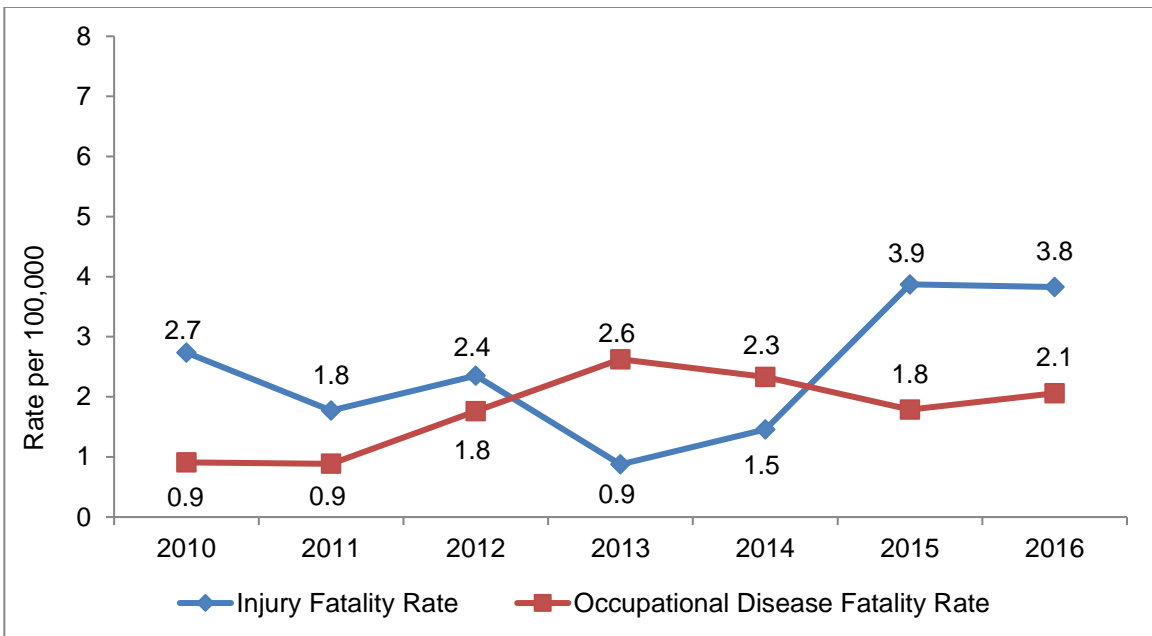


Figure 6: Newfoundland and Labrador Work-Related Fatality Rates, 2010-2016

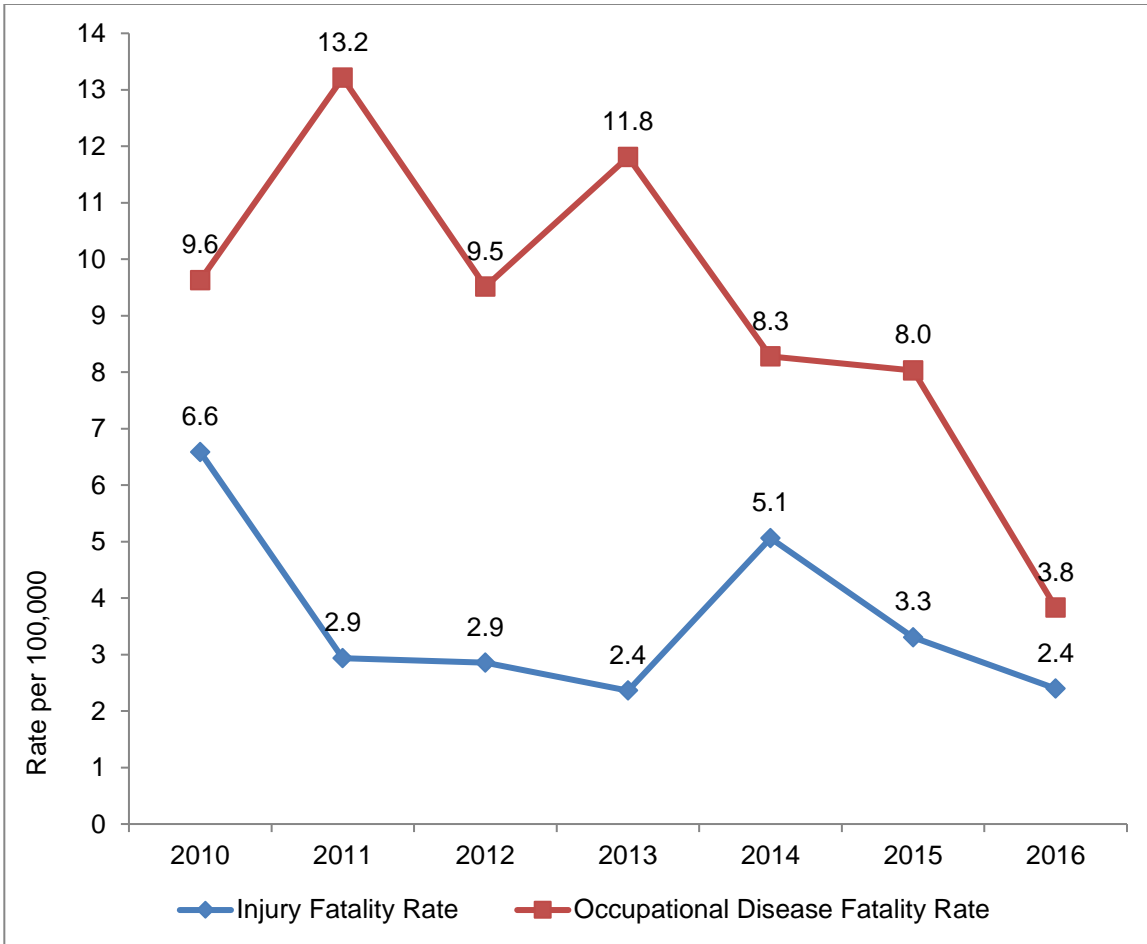


Figure 7: Nova Scotia Work-Related Fatality Rates, 2010-2016

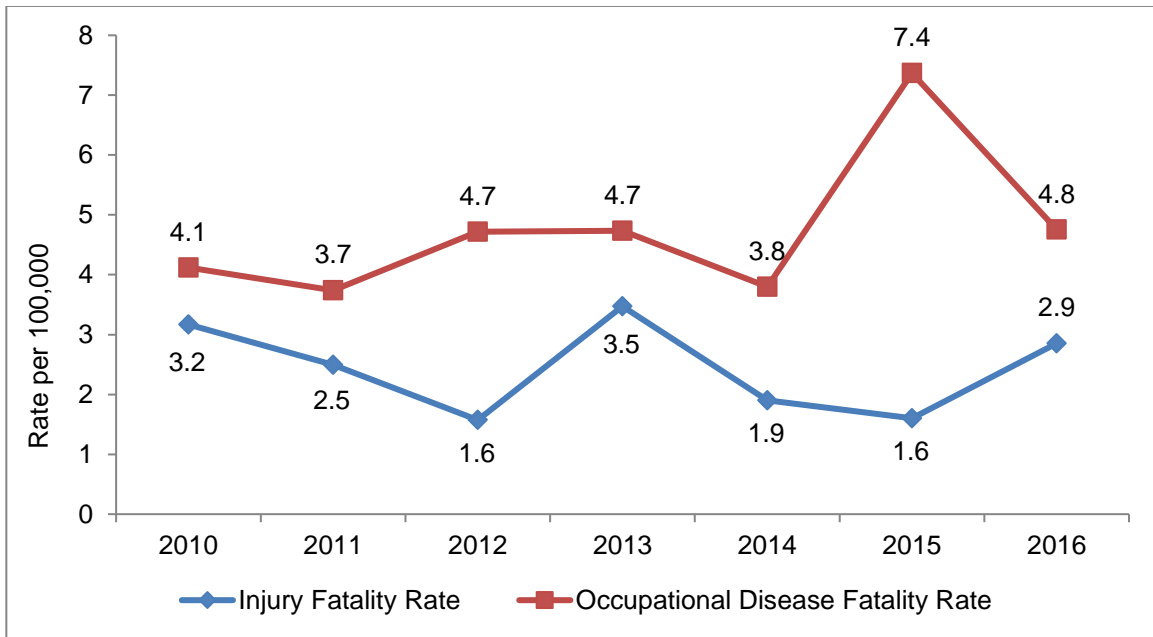


Figure 8: Ontario Work-Related Fatality Rates, 2010-2016

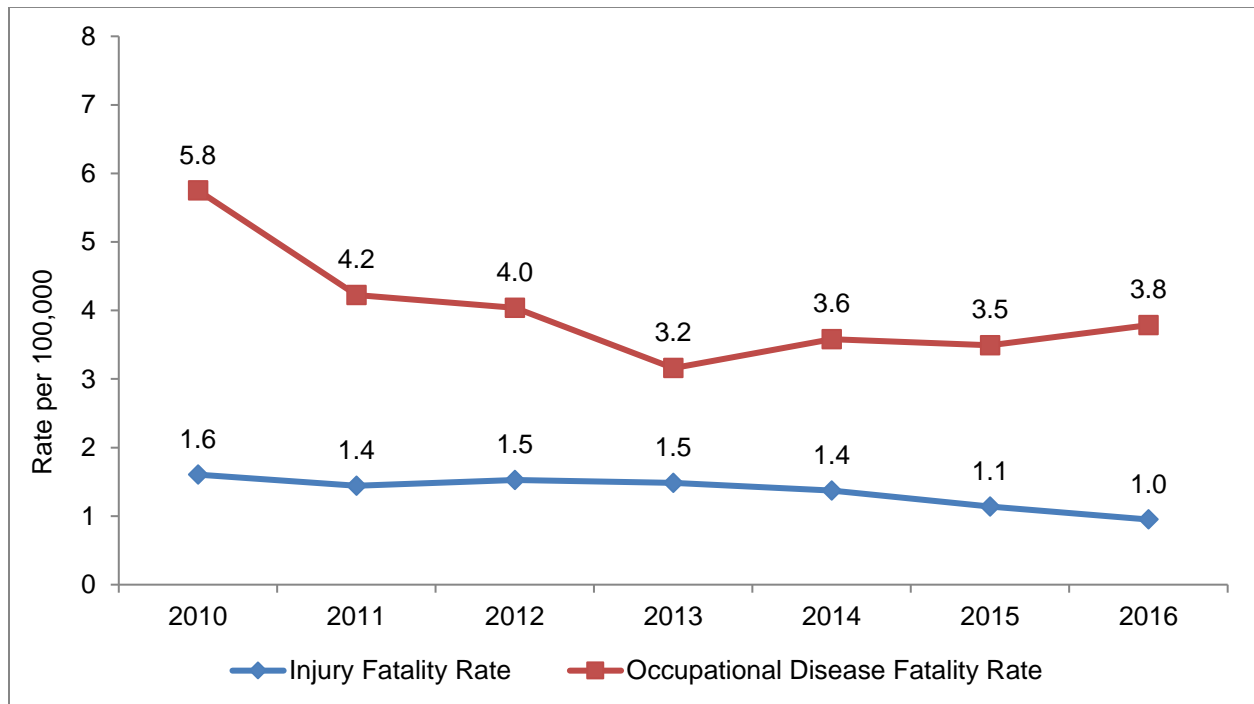


Figure 9: Quebec Work-Related Fatality Rates, 2010-2016

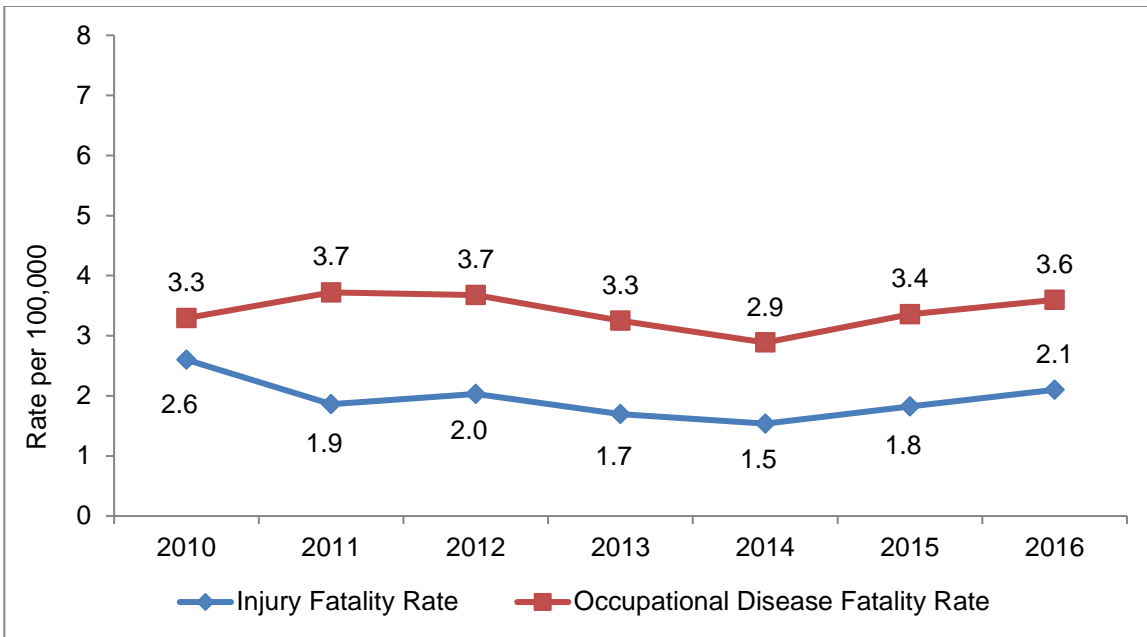
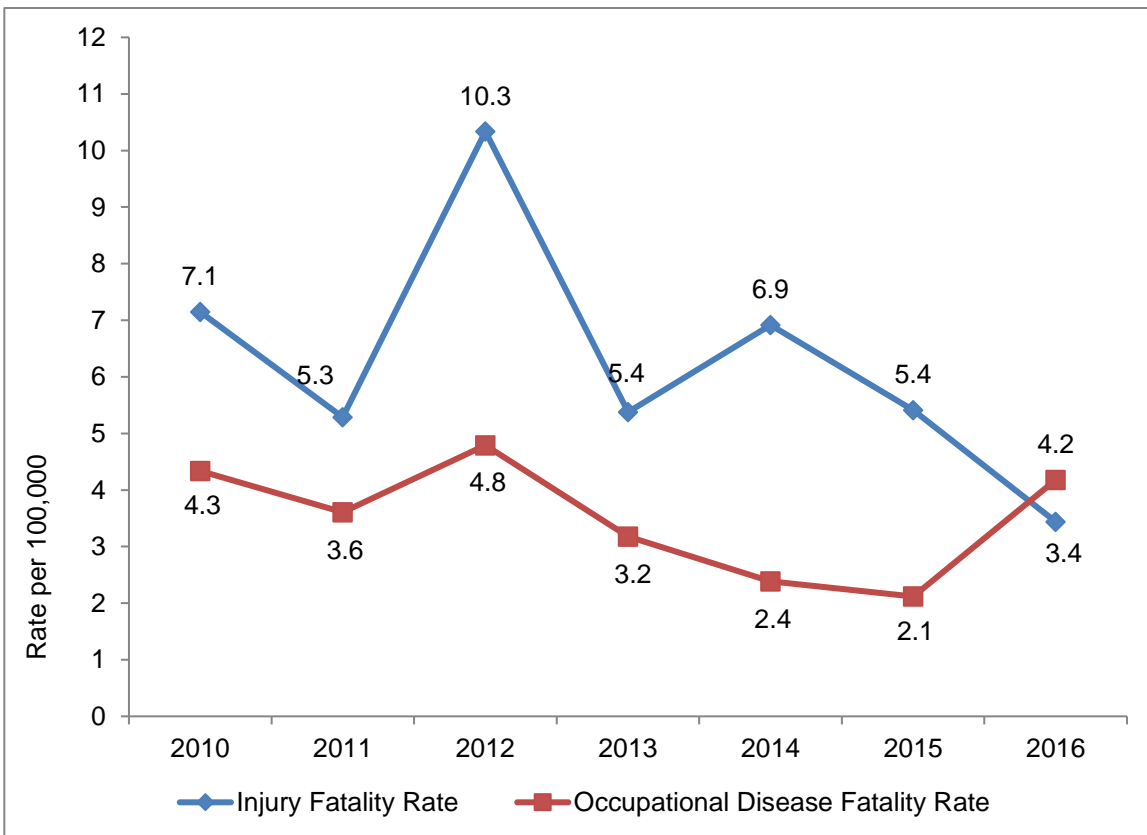


Figure 10: Saskatchewan Work-Related Fatality Rates, 2010-2016



4.2 Provincial Injury Rate Graphs

Figure 11: Alberta Work-Related Injury Rate, 2010-2016

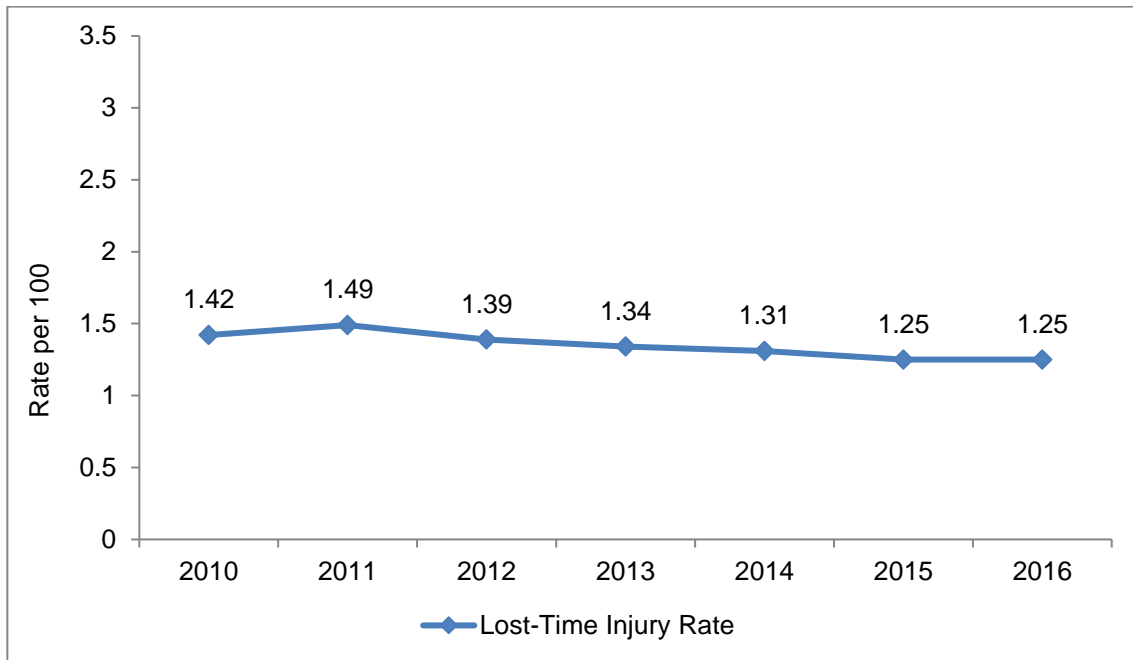


Figure 12: British Columbia Work-Related Injury Rate, 2010-2016

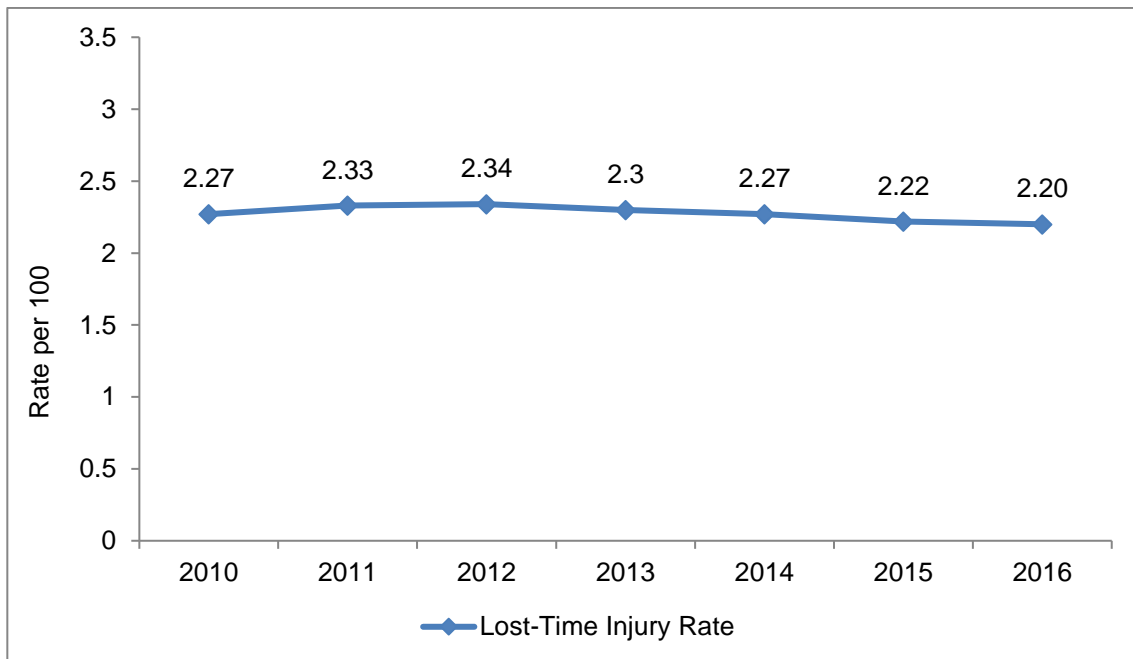


Figure 13: Manitoba Work-Related Injury Rate, 2010-2016

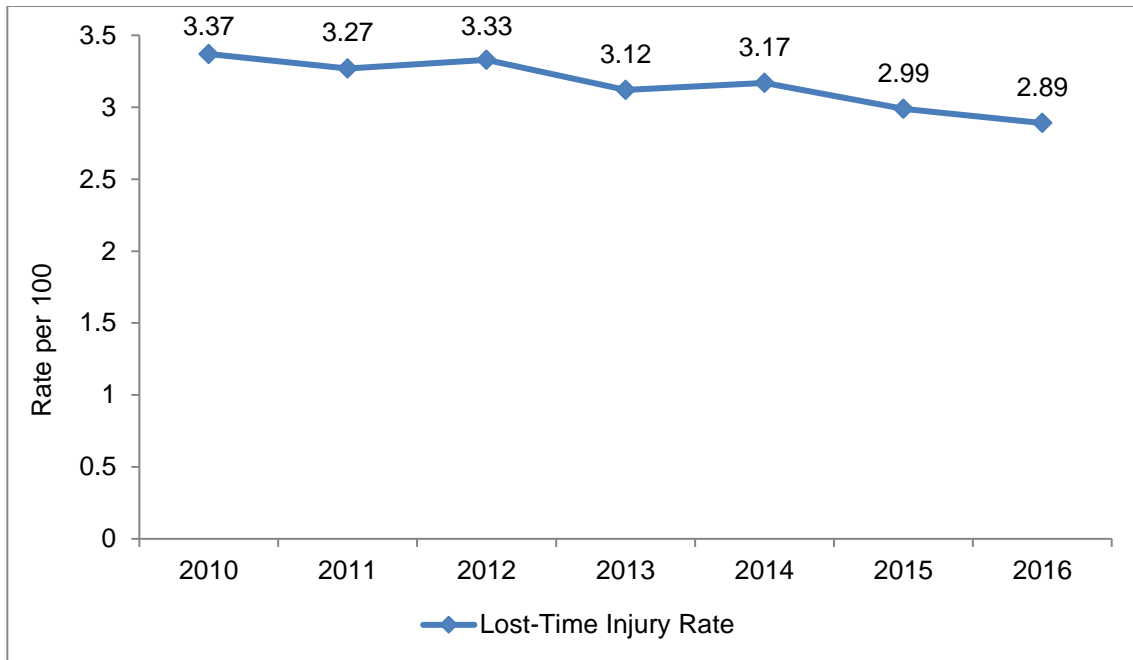


Figure 14: New Brunswick Work-Related Injury Rate, 2010-2016

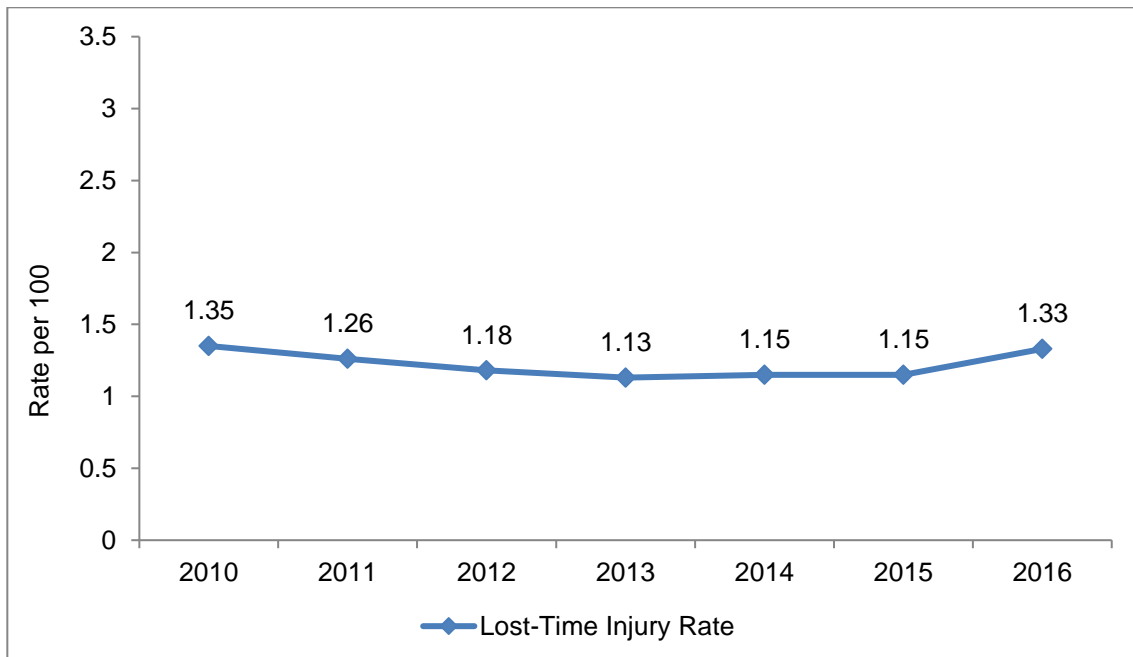


Figure 15: Newfoundland and Labrador Work-Related Injury Rate, 2010-2016

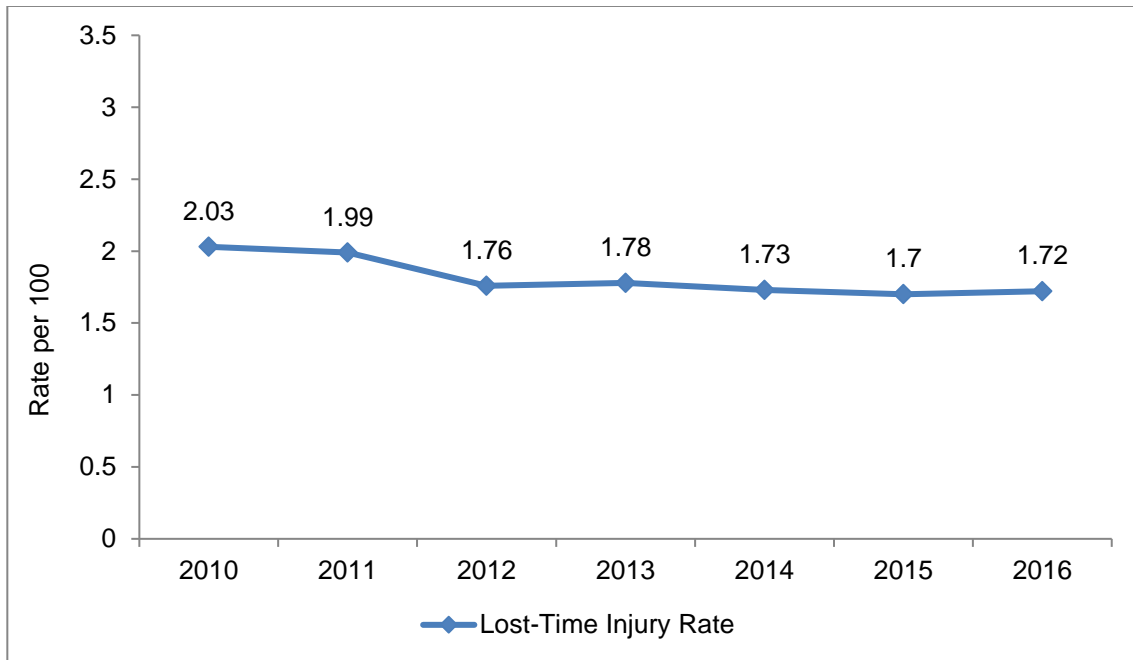


Figure 16: Nova Scotia Work-Related Injury Rate, 2010-2016

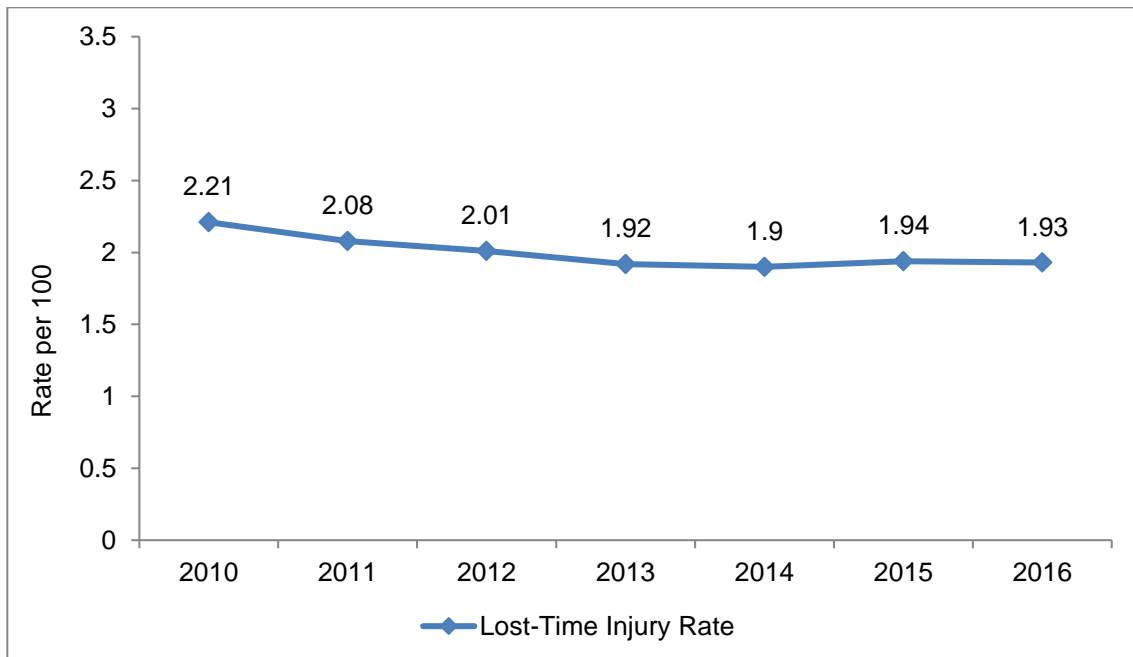


Figure 17: Ontario Work-Related Injury Rate, 2010-2016

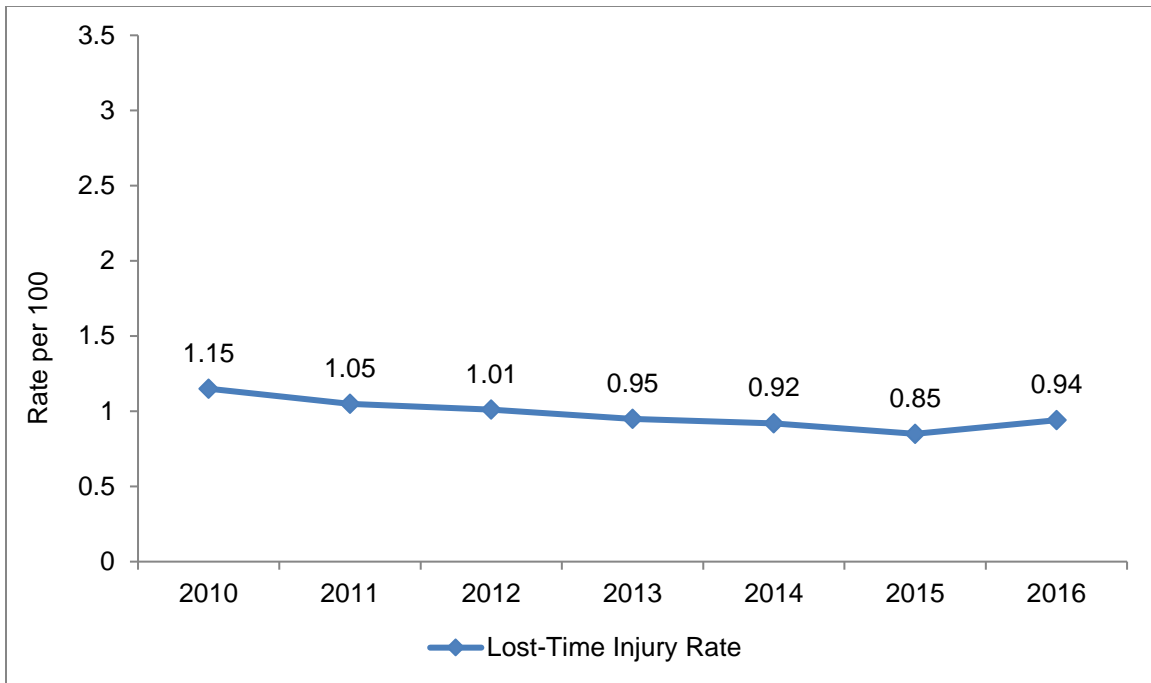


Figure 18: Quebec Work-Related Injury Rate, 2010-2016

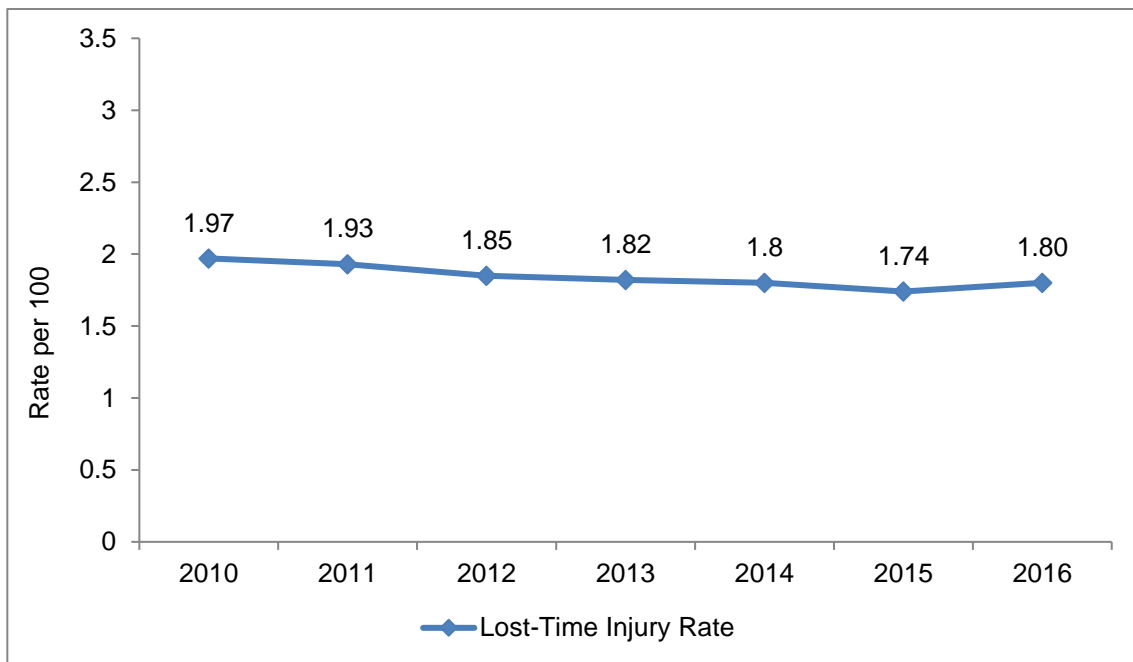
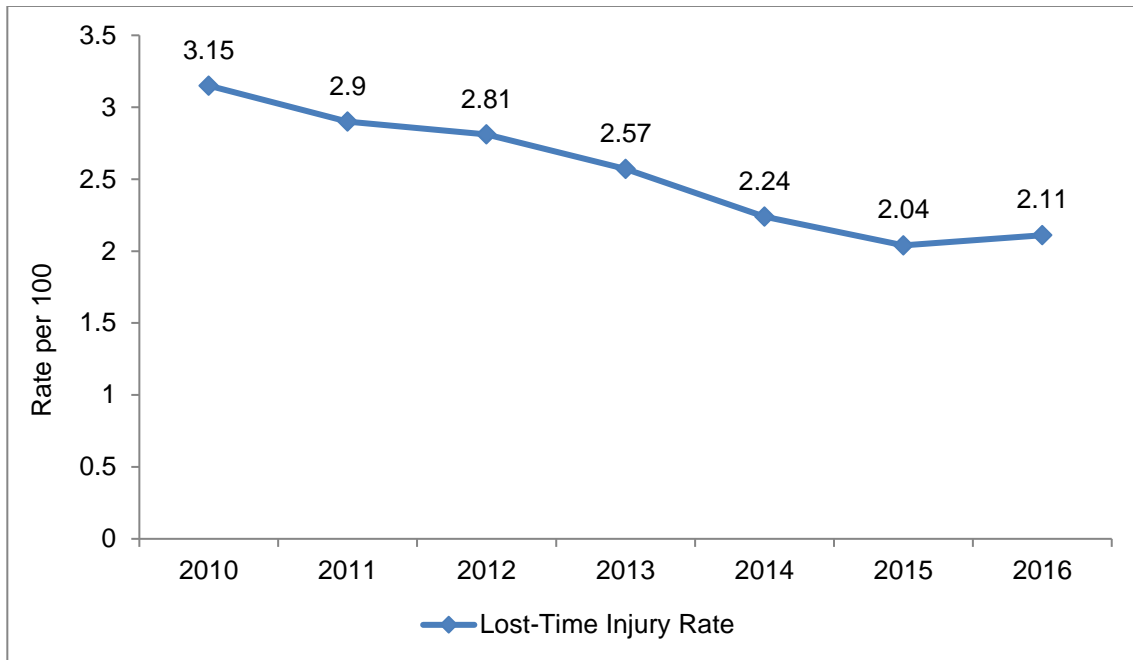


Figure 19: Saskatchewan Work-Related Injury Rate, 2010-2016



5.0 Recommendations to Address Data Limitations

The following recommendations address some of the data limitations identified in Section 2.1 of this report. If implemented, they could strengthen the accuracy and comparability of the data for future analyses, as well as foster improved prevention of work-related injury, disease and fatalities in Canada.

1. Harmonize data collection and reporting within and across jurisdictions

Efforts should be undertaken to harmonize data collection and reporting amongst the systems responsible for occupational injury/disease prevention and workers' compensation in Canada. A recent review of the workers' compensation system in Alberta illustrated that there is an appetite for improved collection and sharing of data, within and across jurisdictions⁶. In its final report, the WCB Review Panel recommended that:

OHS and WCB jointly establish a working group featuring representation from employers, workers, the WCB and OHS, to examine issues and make improvements to the collection and use of data related to workplace injuries and illnesses.

Among its efforts, the working group should develop and implement solutions related to:

- *The use of data for purposes other than those for which it was collected;*
- *The harmonization of data among the WCB, OHS, other entities, and other public agencies, boards and commissions in Alberta;*
- *The timeliness of data that is gathered; and*
- *Addressing privacy implications that might attend the gathering of data regarding workplace injuries and illnesses and the sharing of that data among the WCB, OHS and other entities.*

Recommendation 59

If organizations responsible for prevention and for workers' compensation came together both within and across jurisdictions to harmonize the meaning (i.e., the definitions) and the formats (i.e., the coding and the categorization) of the data they collected, it would not only facilitate interjurisdictional comparisons, but it would also be helpful for identifying opportunities for workplaces to improve. This would be particularly advantageous for employers that operate in multiple provinces. Harmonization could be achieved either prospectively (i.e., by jurisdictions agreeing to collect exactly the same information on a go-forward basis) or retrospectively (i.e., pre-existing data collected by each jurisdiction is processed to make sure that it is compatible). Australia's National Data Set for Compensation-based Statistics is a useful model for how such an initiative could be accomplished. Alternatively, Statistics Canada could take a lead role in harmonizing injury and fatality data in Canada (Grant, 2017a).

⁶ Working Together. Report and Recommendations of the Alberta Workers' Compensation Board Review Panel (June 2017) is available online at <https://www.alberta.ca/assets/documents/WCB-Review-Final-Report.pdf>.

2. Explore creative solutions to address the problem of under-reporting

Efforts should be undertaken to develop, implement and evaluate methods to ensure that all work-related injuries, diseases and fatalities are captured – and appropriately compensated – by the workers' compensation systems. Some options that could be considered are:

- Estimate the prevalence of time-loss injury (Prism Economics and Analysis, 2013), non-time-loss injury, and fatality under-reporting (KoeHoorn et al., 2015) in each jurisdiction.
- Foster the linkage of population-based administrative datasets with the workers' compensation administrative datasets (using, for example, British Columbia's repository of linked administrative data, Population Data BC⁷, or the Partnership for Work, Health and Safety⁸ as a model);
- Create population-based exposure and/or injury/disease/fatality surveillance systems and linking them with primary prevention activities (Ontario's newly created Occupational Disease Surveillance System⁹ provides a model that could be adapted and expanded to other jurisdictions); and,
- Design tools, resources and awareness campaigns for health care providers to facilitate contact between their patients and the workers' compensation system (like, for example, an initiative that was undertaken by the BC Cancer Registry to advise physicians that their patients with mesothelioma may be eligible for workers' compensation benefits¹⁰).

3. Enhance primary prevention activities

Efforts should be undertaken to enhance primary prevention activities within and across jurisdictions. These efforts could include:

- Targeting high risk industries and occupations
- Ensuring compliance with existing occupational health and safety regulatory frameworks
- Improving enforcement activities (e.g., focussed inspections, targeted programs and initiatives)
- Creating multi-pronged primary prevention initiatives that combine consultation, education and enforcement activities
- Developing public awareness campaigns, partnerships and community outreach.

⁷ See <https://www.popdata.bc.ca/>.

⁸ See <http://pwhs.ubc.ca/>.

⁹ The Occupational Disease Surveillance System (ODSS) was created by the Occupational Cancer Research Centre. For more information on the OCRC, see <http://www.occupationalcancer.ca/>.

¹⁰ See Hurrell, AC et al (2013) for a description of this initiative.

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Appendix: AWCBC Explanatory Notes (2010-2016)

Manitoba

Variable	Year	Note
Injury Frequency	2010	The 2010 Annual Report states that the 2010 preliminary time loss injury rate is 3.3%. The Annual Report's approach differs slightly from the AWCBC approach to this statistic.
Injury Frequency	2011	The 2011 Annual Report states that the 2011 preliminary time loss injury rate is 3.3%. The Annual Report's approach differs slightly from the AWCBC approach to this statistic.
Injury Frequency	2012	The 2012 Annual Report states that the 2012 preliminary time loss injury rate is 3.3%. The Annual Report's approach differs slightly from the AWCBC approach to this statistic.
Injury Frequency	2013	The 2012 Annual Report states that the 2012 preliminary time loss injury rate is 3.3%. The Annual Report's approach differs slightly from the AWCBC approach to this statistic. ,The 2013 Annual Report states that the 2013 preliminary time loss injury rate is 3.2%. The Annual Report's approach differs slightly from the AWCBC approach to this statistic.
Injury Frequency	2014	The 2014 Annual Report states that the 2014 preliminary time loss injury rate is 3.2%. The Annual Report's approach differs slightly from the AWCBC approach to this statistic.

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New Brunswick

Variable	Year	Note
Total Number of Lost-Time Claims	2010	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,971 lost-time claims (including day of accident) in total in 2010.
Total Number of Lost-Time Claims	2011	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,688 lost-time claims (including day of accident) in total in 2011.
Total Number of Lost-Time Claims	2012	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,302 lost-time claims (including day of accident) in total in 2012.
Total Number of Lost-Time Claims	2013	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,276 lost-time claims (including day of accident) in total in 2013.
Total Number of Lost-Time Claims	2014	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,349 lost-time claims (including day of accident) in total in 2014.
Total Number of Lost-Time Claims	2015	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,152 lost-time claims (including day of accident) in total in 2015.
Injury Frequency	2010	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,971 lost-time claims (including day of accident) in total in 2010.
Injury Frequency	2011	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,688 lost-time claims (including day of accident) in total in 2011.
Injury Frequency	2012	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,302 lost-time claims (including day of accident) in total in 2012.
Injury Frequency	2013	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,276 lost-time claims (including day of accident) in total in 2013.
Injury Frequency	2014	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,349 lost-time claims (including day of accident) in total in 2014.
Injury Frequency	2015	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,152 lost-time claims (including day of accident) in total in 2015.
Injury Frequency	2016	NB has a 3 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. NB accepted 5,698 lost-time claims (including day of accident) in total in 2016.

2018 Report on Work Fatality and Injury Rates

Nova Scotia

Variable	Year	Note
Total Number of Lost-Time Claims	2010	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2010 annual report is 6,921.
Total Number of Lost-Time Claims	2011	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2011 annual report is 6,616.
Total Number of Lost-Time Claims	2012	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2012 annual report is 6,341.
Total Number of Lost-Time Claims	2013	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2013 annual report is 6,034.
Total Number of Lost-Time Claims	2014	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2014 annual report is 5,953.
Total Number of Lost-Time Claims	2015	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2015 annual report is 6,014.
Total Number of Lost-Time Claims	2016	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2016 annual report is 5,847. This annual report figure does not include permanent disability claims.

2018 Report on Work Fatality and Injury Rates

Nova Scotia (Continued)

Variable	Year	Note
Injury Frequency	2010	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2010 annual report is 6,921.
Injury Frequency	2011	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2011 annual report is 6,616.
Injury Frequency	2012	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2012 annual report is 6,341.
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Injury Frequency	2014	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2014 annual report is 5,953.
Injury Frequency	2015	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2015 annual report is 6,014.
Injury Frequency	2016	NS has a 2 day waiting period therefore, the number of lost time claims listed in this report may not reflect every lost time injury for this province. The total number of lost-time claims published in the WCB of Nova Scotia's 2016 annual report is 5,847. This annual report figure does not include permanent disability claims.

2018 Report on Work Fatality and Injury Rates

Northwest Territories/Nunavut

Variable	Year	Note
Injury Frequency	2010	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Injury Frequency	2011	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Injury Frequency	2012	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Injury Frequency	2013	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Injury Frequency	2014	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Injury Frequency	2015	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Injury Frequency	2016	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.

2018 Report on Work Fatality and Injury Rates

Northwest Territories/Nunavut (Continued)

Variable	Year	Note
Percentage of Workforce Covered	2010	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Percentage of Workforce Covered	2011	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Percentage of Workforce Covered	2012	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Percentage of Workforce Covered	2013	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Percentage of Workforce Covered	2014	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.
Percentage of Workforce Covered	2015	NT/NU allows self-employed individuals with no assessable payroll to opt out of personal coverage, should they so choose.
Percentage of Workforce Covered	2016	For injury frequency and workforce covered calculations, NT/NU uses SEPH data, which are 3% to 6% lower than labour force data. This methodology results in the injury frequency being overestimated due to the characteristics of the data.

2018 Report on Work Fatality and Injury Rates

Ontario

Variable	Year	Note
Number of Fatalities Accepted - Occupational Disease	2015	Prescribed cancer legislation allowing coverage of firefighter presumptive occupational disease claims are included - Cancers in Firefighters and Fire Investigators Legislation (Policy 23-02-01).
Number of Fatalities Accepted - Injury	2012	This KSM will not match By the Numbers (BTN) as the traumatic fatality count in BTN is by year of death, whereas this KSM represents traumatic fatalities by year accepted, regardless of year of death.
Number of Fatalities Accepted - Injury	2013	This KSM will not match By the Numbers (BTN) as the traumatic fatality count in BTN is by year of death, whereas this KSM represents traumatic fatalities by year accepted, regardless of year of death.
Number of Fatalities Accepted - Injury	2014	This KSM will not match By the Numbers (BTN) as the traumatic fatality count in BTN is by year of death, whereas this KSM represents traumatic fatalities by year accepted, regardless of year of death.
Number of Fatalities Accepted - Injury	2015	This KSM will not match By the Numbers (BTN) as the traumatic fatality count in BTN is by year of death, whereas this KSM represents traumatic fatalities by year accepted, regardless of year of death.
Injury Frequency	2010	Ontario Board is no longer publishing harmonized LTI rate.
Injury Frequency	2011	Ontario Board is no longer publishing harmonized LTI rate.
Percentage of Workforce Covered	2011	2011 Labour Force Survey (LFS) estimates are based on 2006 Census population estimates, whereas prior years were based on 2001 Census population estimates.
Percentage of Workforce Covered	2012	2012 and 2011 Labour Force Survey (LFS) estimates are based on 2006 Census population estimates, whereas prior years were based on 2001 Census population estimates.
Percentage of Workforce Covered	2013	2013 Labour Force Survey (LFS) estimates are based on 2006 Census population estimates, whereas years prior to 2011 were based on 2001 Census population estimates.
Percentage of Workforce Covered	2014	2014 Labour Force Survey (LFS) estimates are based on 2006 Census population estimates, whereas years prior to 2011 were based on 2001 Census population estimates.
Percentage of Workforce Covered	2015	2014 Labour Force Survey (LFS) estimates are based on 2006 Census population estimates, whereas years prior to 2011 were based on 2001 Census population estimates.

2018 Report on Work Fatality and Injury Rates

Prince Edward Island

Variable	Year	Note
Total Number of Loss-Time Claims	2010	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Total Number of Loss-Time Claims	2011	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Total Number of Loss-Time Claims	2012	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Total Number of Loss-Time Claims	2013	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Total Number of Loss-Time Claims	2014	As of January 1, 2014, PEI has a waiting period equivalent to 40% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Total Number of Loss-Time Claims	2015	Data has not yet been published. It is currently in a pre-approval state.
Number of Fatalities Accepted - Occupational Disease	2015	Data has not yet been published. It is currently in a pre-approval state.
Injury Frequency	2010	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.

2018 Report on Work Fatality and Injury Rates

Prince Edward Island (Continued)

Injury Frequency	2011	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Injury Frequency	2012	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Injury Frequency	2013	As of April 1, 2002, PEI has a waiting period equivalent to 60% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Injury Frequency	2014	As of January 1, 2014, PEI has a waiting period equivalent to 40% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.
Injury Frequency	2015	As of January 1, 2014, PEI has a waiting period equivalent to 40% of weekly compensation being required before compensation is payable; therefore, the number of lost time claims listed in this report may not reflect every lost time injury for PEI as of March 31 of the following year.

2018 Report on Work Fatality and Injury Rates

Prince Edward Island (Continued)

Variable	Year	Note
Percentage of Workforce Covered	2010	The province of PEI became assessed and as such costs and revenues are now included. Liabilities of the province for past claims have been assumed by the WCB of PEI.
Percentage of Workforce Covered	2011	The province of PEI became assessed and as such costs and revenues are now included. Liabilities of the province for past claims have been assumed by the WCB of PEI.
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Percentage of Workforce Covered	2014	The province of PEI became assessed and as such costs and revenues are now included. Liabilities of the province for past claims have been assumed by the WCB of PEI.
Percentage of Workforce Covered	2015	The province of PEI became assessed and as such costs and revenues are now included. Liabilities of the province for past claims have been assumed by the WCB of PEI.

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Variable	Year	Note
Number of Fatalities Accepted - Injury	2015	No note