

Workplace Injury, Illness and Fatality Statistics

Provincial Summary 2019

Labour and Immigration, Government of Alberta

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Overview

Alberta Labour and Immigration enables healthy and safe workplaces through evidence-based prevention, education and enforcement. As part of this mission, Labour and Immigration prepares an annual report on Alberta's workplace injury, illness and fatality statistics. The data in this report gives a picture of specific provincial workplace injury and illness patterns, which the department uses to help evaluate and improve evidence-based prevention measures.

Background

Workplace injuries and illness have a significant financial burden on the Alberta economy. The Alberta Workers' Compensation Board (WCB) reports that from 2013 to 2018, annual claim spending has averaged \$537 million. As of March 2020, provincial occupational injury and illness claims from 2019 totaled \$343,021,559. This number will increase further as some claims are still ongoing. In addition to WCB costs, lost productivity from injured workers, along with the cost of hiring and training replacement staff, further burdens businesses.

Workplace injuries and illness also impact workers, families and communities. One study found that an injured worker's family members experienced more fractures, sprains and other musculoskeletal disorders in the three months following the workplace injury.¹ Spouses and children are at higher risk for injuries and increased use of health care services when caring for the injured relative or taking on additional chores. The added stress of lost wages and the effect on a worker's self-esteem can also contribute to the emotional strain on the household and increase the need for mental health care services.

Safe, fair and healthy workplaces have a positive impact on workers, their families, and job creators. Labour and Immigration prevention efforts and proactive programs focus on evidence-based understandings of workplace injuries, illness and fatalities. This includes aligning actions and education aimed at industries and employers that are at higher risk for injuries. Labour and Immigration uses the data to inform program planning and to work with occupational health and safety (OHS) system partners, toward the goal of safer workplaces.

¹ Asfaw, Abay & Pana-Cryan, Regina & Bushnell, Paul & Sauter, Steven. (2015). Musculoskeletal disorders and associated health care costs among family members of injured workers. *American Journal of Industrial Medicine*. 58. 10.1002/ajim.22500.

Key findings

The following are some highlights of the report:

- Agriculture and forestry had the highest 2019 disabling injury rate, the second highest lost-time claim rate and a 46 per cent increase in fatality rate.
 - Over half of these injuries occurred in the greenhouse and market garden, logging and woodland operations and feed lot industries.
- The highest per cent of injury claims occurred among males 25-34 (25 per cent) and females 35-44 years old (23 per cent).
- While youth represent 12 per cent of the labour force, they have the highest disabling injury rates and the lowest fatality rates (even when excluding occupational illness fatalities).
 - Young males (15 to 24 years old) had the highest disabling injury rate in 2019, relative to other age and gender groups.
- Modified work claims decreased by nine per cent from 2018.
- All construction and construction trade services injury rates decreased from 2018.
- Transport truck drivers, nurse aides, orderlies and retail sale occupations had the most musculoskeletal injury claims (14 per cent).
- Workers in the health care services, general trucking and restaurant and catering industries experienced the most fall incidents (16 per cent). Transport truck drivers had the most disability claims for falls (eight per cent).
- Workplace violence and harassment related injury claims in 2019 are higher than in previous years.
- There were 129 workplace fatalities in 2019.
 - Forty-seven per cent were caused by occupational illnesses, 36 per cent were caused by workplace incidents and 18 per cent were caused by motor vehicle incidents.
 - Due to the nature and delayed presentation of occupational illness, it is expected there will be higher proportions of fatalities seen in older workers.
 - The transportation, communication and utilities sector had the highest fatality rate in 2019.

Measuring workplace injuries and illness

Measures such as lost-time claim rates and disabling injury rates can help assess how well OHS processes, policies and procedures are working. They are lagging indicators² that over time can give insight into health and safety performance trends.

The 2019 injury and illness data in this report refers to incidents that occurred in 2019 and were accepted as a disabling injury, lost-time and/or modified work WCB claim. Supplemental data can be found in Appendix C.

Overview of measures

The following measures are used to provide a snapshot of workplace injury and illness trends among Alberta workers.

Person-years measure the length of workers' exposure within a workplace within a year. This is not the same as the number of workers: for instance, a person-year of one can represent one full-time or several part-time workers. This measure is used as a proxy to estimate the workforce and often as a denominator to calculate rates. It is also an indicator of risk: when person-years increase over time, more workers are at risk for workplace incidents.

Lost-time claim is a work-related injury or illness claim that results in a worker missing work beyond the day they were injured. Lost-time claims are an indicator of severity. If a worker is injured and cannot perform their pre-injury or modified tasks, the injury may be more severe.

Modified work claim is a work-related injury or illness claim where workers had their regular work duties changed to enable them to return to work. This also includes workers that have modified work duties after lost time due to a work-related injury or illness.

Disabling injury claim is a work-related injury or illness claim where workers lost time from the job and/or returned to modified work duties. This measure covers a wider range of injuries than the lost-time claim rate, since it includes less severe injuries that are appropriate for modified work.

Injury rate assesses the worker's risk of an injury or illness, if they worked during a one-year period. Examples are lost-time injury rates, modified work injury rates and disability injury rates. Comparison of injury rates over time or industries can identify if the risk has increased, decreased or remained stable over time. Increased rates can indicate unaddressed risk factors, new trends

² Lagging indicators measure the end result of OHS processes, policies and procedures. They are a record of things that have already happened. Since they record things after the fact, they inform a reactive health and safety culture.

or signal the need for further assessments of health and safety systems. In general, the lower the rate the better.

Adjusted rates are injury rates calculated using different methodology and information than lost-time claim, disabling injury and fatality rates. The population is adjusted to reflect the proportions of a reference population. The adjustments are made to account for the varying population sizes within specific groups, for example age groups or gender.

Fatality means the death of a worker caused by a work-related incident or exposure and accepted by WCB for compensation.

Adjusted fatality rate assesses the worker's risk of a fatality, if they worked during a one-year period.

Measure considerations

Several factors can contribute to changes in lost-time, modified work and disabling injury claims rates, including but not limited to:

- changes in workplace health and safety culture;
- enhanced regulatory compliance;
- improved support for modified-work arrangements; and
- industry-led initiatives to improve workers' health and safety.

With improved workplace health and safety measures, there would be anticipated decreases in lost-time, modified work and disabling injury claims rates.

Findings

Alberta's labour force

In 2019, Canada's Labour Force Survey results show 2,343,000 workers were employed in Alberta. This data is similar to the survey results in 2018.³ While over the past 10 years Alberta's labour force increased, the labour force shifted between age groups (Figure 1).

- There are fewer workers under the age of 25 years.
- There are more workers aged 25-44 years and over 54 years.

This may be a result of postponing entry into the labour force in favour of education, more short-term employment⁴ and leaving the family home at a later age.⁵



Figure 1: Alberta workforce populations by age group and gender, 2009 and 2019.

Source: Statistics Canada's Labour Force Survey (2019 Historical Review), prepared by Labour and Immigration.

³ Statistics Canada. Table 14-10-0327-01 Labour force characteristics by sex and detailed age group, annual. <https://doi.org/10.25318/1410032701-eng>

⁴ Labour force data is based on the labour force on a specific date. Workers in short-term employment may not be employed on that date but employed at other times throughout the year.

⁵ Statistics Canada. What has changed for young people in Canada? 2015 <https://www150.statcan.gc.ca/n1/pub/75-006-x/2013001/article/11847-eng.htm>

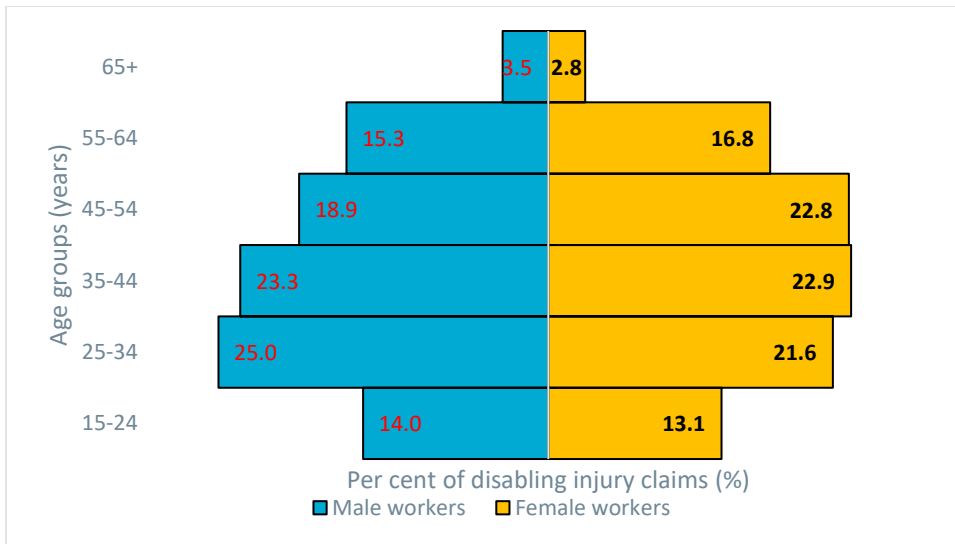


Figure 2: Disabling injuries by work force population by age and gender, 2019

Source: WCB data; Prepared by Labour and Immigration

Provincial key findings

While the number of person-years worked in Alberta increased since 2017, the increase since 2018 (Table 1) is slight and similar to the increase in the labour force (0.5 per cent).

Table 1: Injury claims, rates and person-years, 2017 to 2019

	2017 Total (rate per 100 person-years)	2018 Total (rate per 100 person-years)	2019 Total (rate per 100 person-years)	% change from 2017 to 2018	% change from 2018 to 2019
Person-years	1,846,168	1,877,341	1,884,632	1.7↑	0.4↑
Lost-time claims (injury rate)	26,473 (1.43)	28,155 (1.50)	28,515 (1.51)	4.6↑	0.9↑
Modified-work claims (injury rate)	39,665 (2.15)	40,954 (2.18)	37,270 (1.98)	1.5↑	9.3↓
Disabling injury claims (injury rate)	49,488 (2.68)	51,611 (2.75)	50,078 (2.66)	2.6↑	3.3↓

Source: WCB data; prepared by Labour and Immigration

As shown in Table 1, Alberta provincial injury rates changed from 2018 to 2019.

- Disabling injury claims decreased by three per cent to 50,078 claims.
- Modified work claims decreased by nine per cent to 37,270 claims.
- Lost-time claims remained stable at 28,515 claims.

The decrease in disabling injury claims rate was affected by decreases in modified work claims. Decreases in modified work claims can reflect increasing severity of workplace injuries or that modified duties may not be possible (due to nature of injury or employers' ability to accommodate). In these circumstances, lost-time claims would increase. Since in 2019, the lost-time injury rate was stable; the decrease in modified work claims may signal less claims being reported for incidents suitable for modified work and/or less injuries not resulting in lost-time.

Industry sector injury key findings

Examining claims at the industry level gives insight on the risks workers face across the various industries. As worker traits, job duties, physical environment and workplace culture differ across industries and employers, the risks for injury and illness also vary. This section identifies injury risks for each industry sector.

In 2019, half of the industry sectors surpassed the provincial rates for disabling injury, modified work and lost-time claims (Figure 3 and Appendix C - Figure C6 and Table C2).

Agriculture and forestry⁶

In 2019, agriculture and forestry had the highest disabling injury rate (3.52 per 100 person-years). This sector also had the largest increases in disabling and modified work injury rates from 2018 (24 per cent). Despite an increased modified work claim rate from 2018, agriculture and forestry was also the industry sector with the lowest proportion of modified work claims in 2019 (62 per cent).

Over half of the injuries in agriculture and forestry occurred in the greenhouses and market gardens, logging and woodland operations and feed lot industries.

⁶ After January 1, 2016, employers in farming and ranching industries with waged, non-family member workers were required to have WCB coverage. . This was no longer required as of January 31, 2020.

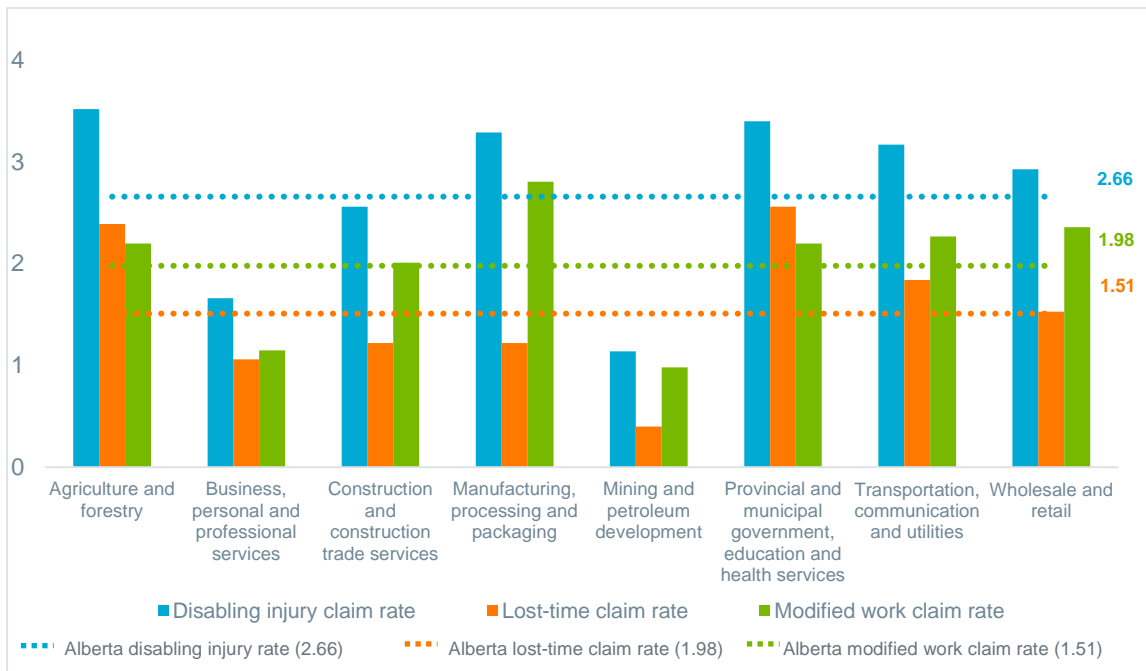


Figure 3: WCB claim rates by industry sector and Alberta rates, 2019

Source: WCB data; prepared by Labour and Immigration

Construction and construction trade services

All injury rates for construction and construction trade services decreased from 2018 to 2019. Person-years also dropped by three per cent in this sector, the largest decrease among the industry sectors. This may reflect job losses in the sector. The construction sector has experienced proactive OHS inspection initiatives for the past 10 years.

Manufacturing, processing and packaging

Among Alberta's industry sectors, the manufacturing, processing and packaging sector had the third highest disabling injury rate in 2019. Eighty-five per cent of this sector's disabling claims involved modified work, enabling workers to return to the labour force more quickly.

Within this sector, the meat processing industry had 19 per cent of disabling injury claims followed by steel and metal fabrication at 18 per cent. OHS executed a proactive metal steel fabrication inspection initiative in 2019/2020. Findings from this initiative will follow in another report.

Mining and petroleum

Consistent with the previous three years, mining and petroleum development had the lowest disabling, modified work and lost-time injury rates in Alberta in 2019. This industry sector also had the highest proportion of modified work injuries (86 per cent). Although the low injury rates may be an indicator of a successful health and safety system, the extent of modified work injuries suggests that prevention of minor injuries requires more focused efforts.

Provincial and municipal government, education and health

In 2019, the provincial and municipal government, education and health sector had the second highest disabling injury rate (3.40 per 100 person-years) and the highest lost-time injury rate (2.56 per 100 person-years) among all sectors. Correctional officers had the most injuries (39 per cent) requiring time off from work.

Transportation, communication and utilities

In 2019, the transportation, communication and utilities sector had injury rates higher than the provincial rate. The sector also had a high proportion of injuries requiring modified work (72 per cent) and lost-time (58 per cent). Forty-seven per cent of the injuries in this sector were in the general trucking industry. OHS conducted a proactive trucking inspection initiative in 2019/2020. Findings from this initiative will follow in future reports.

Characteristics of workplace injuries and illnesses

Disabling injury rates have decreased in recent years. The following section provides details on age, gender, and the types, sources and nature of the injury claims.

Injured workers: Age and gender differences

Exploring characteristics of injured workers can provide helpful insight when developing injury prevention measures. Workplace injuries vary across age groups and gender (Appendix C - Table C3, Table C4, Figure C7 and Figure C8). Studies have shown that older workers are more often affected by injuries that lead to disability while injuries to younger workers are more common. Gender differences in workplace injuries is also prevalent.

Even within the same gender, workers of different age groups may face different levels of risk for injury (Appendix C - Table C5). For instance, female workers ages 15-19 may be affected by different injuries compared to female workers over the age of 65.

Figure 4 shows that the risk of occupational injury and illness varied by gender and age groups. In 2019, males had higher disabling injury rates than females overall and for each age group.



Figure 4: Disabling injury adjusted rates by age and gender, 2019

Source: WCB data, Statistics Canada's Labour Force Survey (2019 Historical Review); prepared by Labour and Immigration

Youth

Youth, who represent 12 per cent of the labour force, had the highest disabling injury rates in 2019 (Figure 4).

- The highest disabling injury rate (2.98 per 100 person-years) was in younger workers (15 to 24 years old).
- Young males (15 to 24 years old) had the highest overall disabling injury rate (3.79 per 100 person-years).
- Of disabling injuries, 49 per cent required modified work and 74 per cent required time off work.
- Injuries affecting youth occur often in the restaurant and catering (nine per cent), food and convenience stores (six per cent) and auto dealer (three per cent) industries.

- Nearly half of all injuries in youth are caused by overexertion (19 per cent), being struck by an object (17 per cent) and falls (13 per cent).
- Sprains, strains and wounds cause about 70 per cent of disabling injuries.

Young males are more likely to get injured on the job than any other worker. Young workers are at risk for a number of reasons including inexperience, lack of adequate training and increased exposure to dangerous jobs.⁷

Types of workplace incidents

The type of workplace incidents describes the event or incident that directly resulted in the injury or illness.

In Alberta, the top three types of disabling incidents in 2019 (Appendix C - Table C6) were:

- bodily reaction or exertion injuries – 46 per cent;
- contact with objects or equipment – 22 per cent; and
- falls – 17 per cent.

Overexertion caused 46 per cent of the bodily reaction or exertion incidents. Health care services accounted for 10 per cent of bodily reaction and exertion incidents. In health care services, nurse aides and orderlies has the most disabling injury claims for bodily reactions and exertion.

Of falls, 69 per cent occurred on the same level. Health care services, general trucking and restaurant and catering had the most fall incidents (15 per cent). Transport truck drivers had the most disability claims for falls (nine per cent). In 2019, the OHS prevention initiative identified slips, trips and fall as a priority area ([alberta.ca/occupational-health-and-safety-prevention-initiative.aspx](https://doi.org/10.24095/hpcdp.36.5.01)). OHS system partners are collaborating to look for opportunities to reduce injuries related to these hazards. This topic will be further explored later in the report.

⁷ Pratt, B., Cheesman, J., Breslin, C., & Do, M. T. (2016). Occupational injuries in Canadian youth: an analysis of 22 years of surveillance data collected from the Canadian Hospitals Injury Reporting and Prevention Program. *Health promotion and chronic illness prevention in Canada: research, policy and practice*, 36(5), 89–98. <https://doi.org/10.24095/hpcdp.36.5.01>

Source of workplace incident

The source of a workplace incident identifies the primary objects, substances, exposure or bodily motion that directly inflicts the injury or illness⁸. In Alberta, the three most often cited sources for injuries in 2019 were (Appendix C - Table C7):

- persons, plants, animals and minerals – 31 per cent;
- structures and surfaces – 18 per cent; and
- parts and materials – 10 per cent.

The health care services and continuing care facilities industries account for 22 per cent of disabling claims involving persons, plants, animals and minerals. Nurse aides, orderlies and registered nurses had 16 per cent of the disabling claims for person, plants, animals and minerals.

Nature of injury or illness

The nature of an injury or illness describes the main physical or psychological harm that resulted from the incident.

In Alberta, the leading nature of disabling injury was traumatic injuries and disorders (92 per cent). The three most common traumatic injuries and disorders in 2019 were (Appendix C - Table C8):

- sprains and strains – 57 per cent;
- wounds (open and superficial) – 19 per cent; and
- fractures and dislocations – seven per cent.

Of all traumatic injury claims, 14 per cent involved multiple traumatic injuries. Workers in health care services accounted for 10 per cent of sprains and strains injuries, with nurse aides and orderlies accounting for another seven per cent. The general trucking industry had the most disabling injury claims for fractures and dislocations (seven per cent).

⁸ National Work Injury/Disease Statistics Program Definitions. (2020) <https://awcbc.org/en/statistics/national-work-injurydisease-statistic-program-definitions/>

Parts of body affected

The body part directly affected by the injury or illness can provide information on patterns and gaps within health and safety systems. The three most commonly injured body parts in 2019 (Appendix C - Table C9) were the:

- trunk – 37 per cent;
- upper extremities – 25 per cent; and
- lower extremities – 19 per cent.

Back injuries (most common trunk injury) are mainly from overexertion (47 per cent). Trunk injuries were most common in the nurse aides and orderly and transport truck driver occupations (13 per cent).

Contact with objects or equipment are the most common causes of upper extremity injuries. The majority of upper extremity injuries were from sprains and strains (32 per cent) and open wounds (24 per cent).

Most lower extremity injuries were from bodily reaction (27 per cent) and falls (25 per cent). Over half of the lower extremity injuries were sprains, strains and tears.

Occupational fatalities⁹

In 2019, 129 workers were fatally injured (Appendix C - Table C10):

- 47 per cent from occupation illnesses;
- 36 per cent from workplace incidents; and
- 18 per cent from motor vehicle incidents.

Occupational fatality rates have stabilized over the past three years (Figure 5).

Of occupational fatalities from 2015 to 2019 (Figure 6 and Appendix C -

⁹ All adjusted fatality rates will be referenced as “fatality rates” within this report.

Table C10, Note: Annual fatality data changes based on the processing cycle of a claim. As such, data presented in this table will not be comparable to previous or future reports.

Table C11 and Figure C9: Adjusted fatality rates by type of incident, 2015 to 2019):

- occupational illnesses were the leading cause;
- the trend of increased workplace incidents continued; and
- the proportion of motor vehicle incidents ranged from 18 to 20 per cent

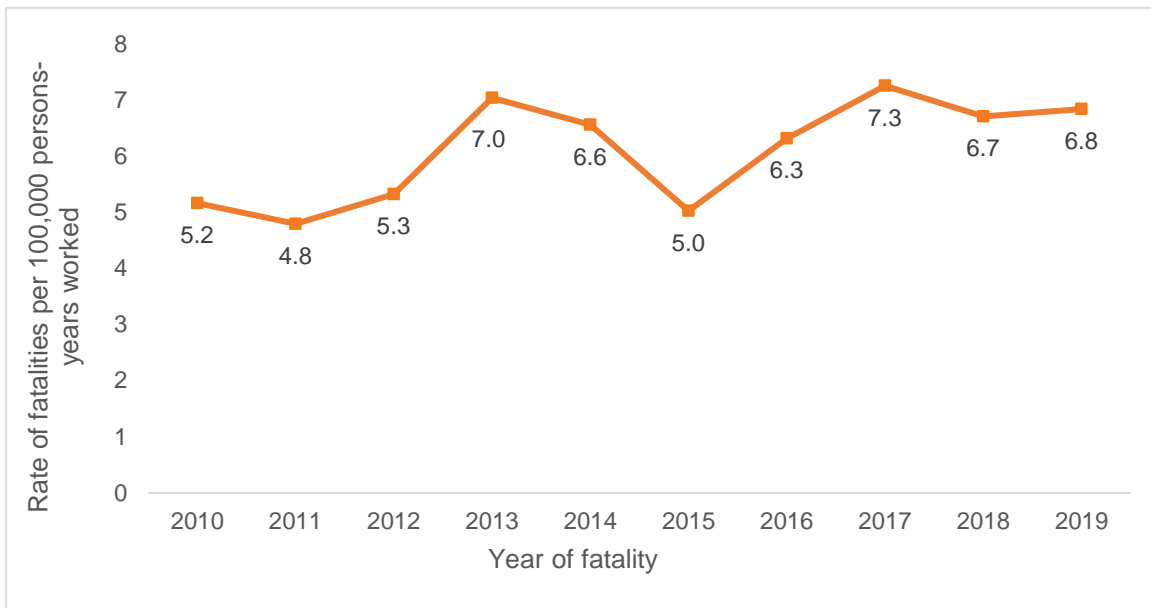


Figure 5: Occupational adjusted fatality rate by year of death, 2010 to 2019

Source: WCB data, prepared by Labour and Immigration

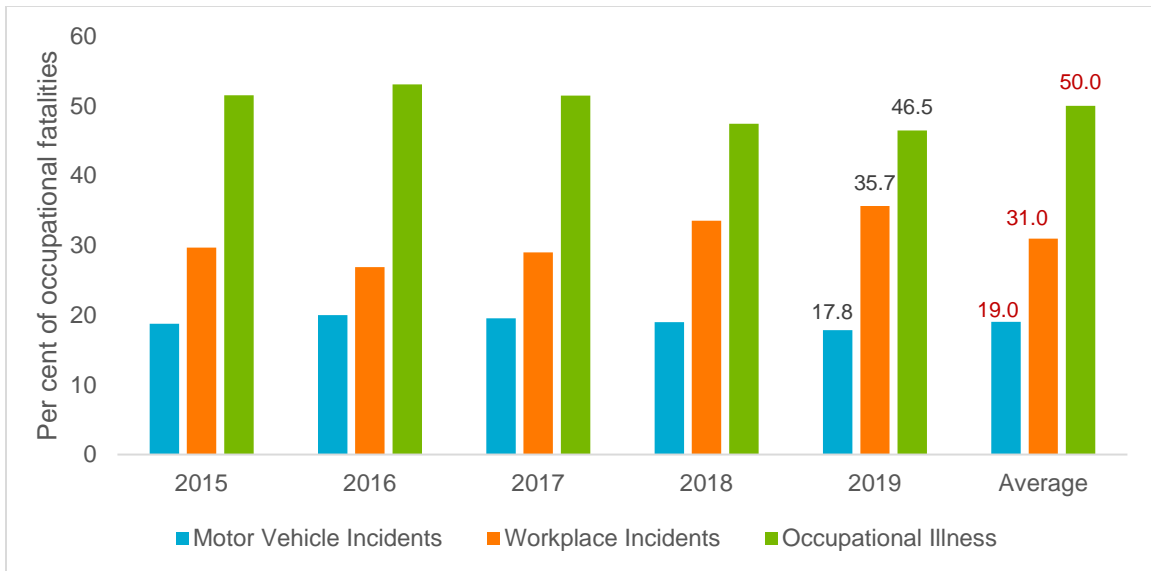


Figure 6: Per cent of occupational fatalities (based on year of death) by type, 2015 to 2019

Source: WCB data, prepared by Labour and Immigration

Fifty-six per cent of occupational illness fatalities resulted from exposure to asbestos. Construction and construction trade services sector had the most asbestos exposure fatalities (54 per cent). Plumbers, welders and insulators represented 21 per cent of occupations fatally injured by asbestos exposure. OHS conducts asbestos inspections in response to notification of projects.

Twenty-four per cent of workplace incident fatalities were from falls. Of these, over one quarter (27 per cent) were falls to the floor, walkway or other surface. Twenty-seven per cent of falls occurred to workers in the transport and heavy equipment operations occupations.

Occupational fatality by age groups

The type of occupational fatalities varied across age groups in 2019. Young workers were more likely to have occupational fatalities due to motor vehicles incidents, while older workers were more likely to experience fatalities from occupational illness (Figure 7 and Appendix C - Table C12). Due to the nature and latency of occupational illness, it would be expected to see higher proportions in older workers.

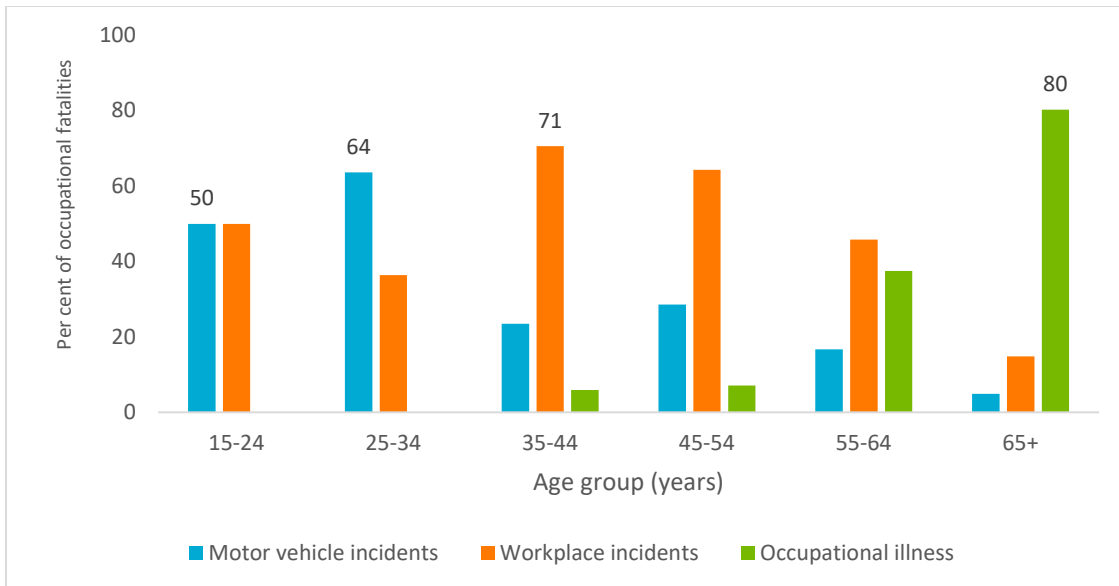


Figure 7: Per cent of occupational fatalities (based on year of death) by type and age group, 2019

Source: WCB data, prepared by Labour and Immigration

From 2017-2019, age differences of occupational fatalities (Figure 8) showed:

- occupational illness mostly affected elderly workers (65+);
- fatalities in workers age 55-64 dropped 44 per cent from 2018; and
- young workers were the least affected.

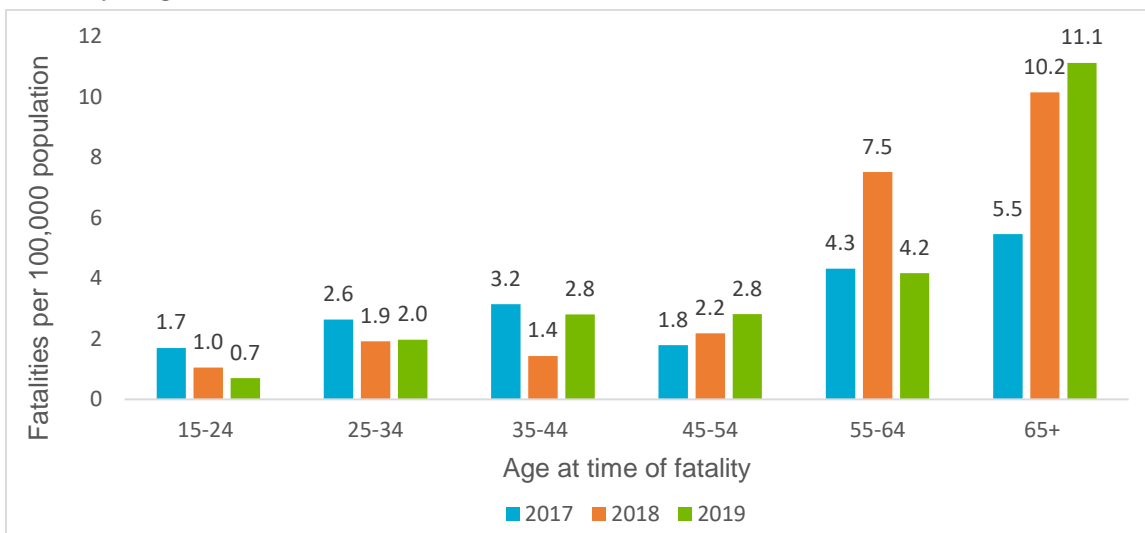


Figure 8: Occupational fatality adjusted rates due to workplace traumatic incidents or motor vehicle incidents by age group, 2017 to 2019

To better reflect current workplace hazards, occupational illness fatalities are not represented in Figure 8.

Source: WCB data, Statistics Canada's Labour Force Survey (2019 Historical Review), prepared by Labour and Immigration.

In the 55-64 year age group, while there was a large decline from 2018¹⁰, the rate is similar to 2017. For this age group, the decreased fatality rate in 2019 is largely seen in two sectors: 1) construction and construction trade services and 2) transportation, communication and utilities.

While young workers are at a lower risk for work-related fatalities than older workers, they are at greater risk for workplace injuries (see *Injured workers: Age and gender differences* section).

Occupational fatality rates in industry sectors

As work activities and environments vary among workplace settings, the occupational injuries and fatalities vary. Fatality data across industry sectors (Figure 9 and in Appendix C - Figure C10 and Table C13) shows:

- In 2019, the highest fatality rate in Alberta was the transportation, communication and utilities sector.
 - This is the only sector with a continuous increase in fatality rates from 2017 to 2019.
- From 2018 to 2019, the largest increase in fatality rate was the agriculture and forestry sector (46 per cent increase).
- The largest decrease from 2018 to 2019 was in the mining and petroleum sector.
- The business, personal and professional services sector had the lowest fatality rates in each of 2017, 2018 and 2019.
- The provincial and municipal government, education and health services sector was the only industry sector to see a continuous decrease in their fatality rate from 2017 to 2019.

¹⁰ Occupational fatalities in 2018 spiked in the 55-64 year age group. Increases in 2018 were mainly seen in the construction and construction trade services, retail and wholesale trade, service industries and transportation and utilities sectors.

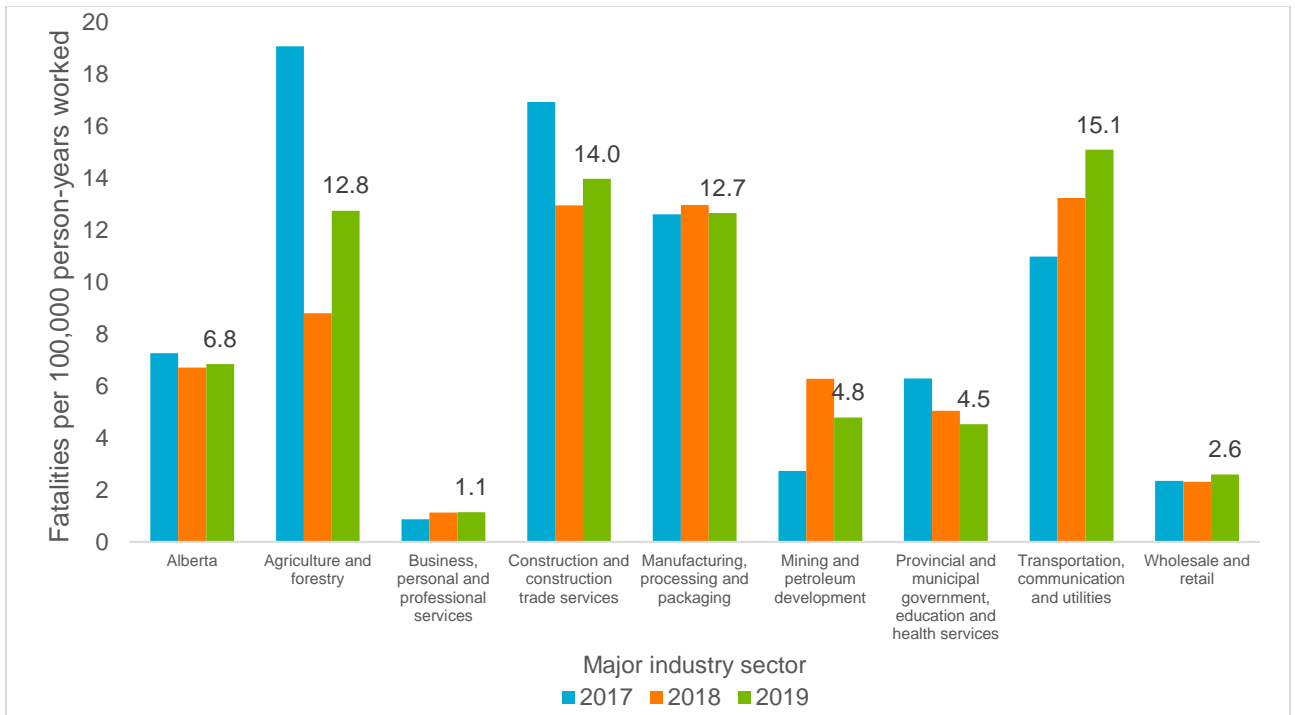


Figure 9: Adjusted fatality rate by major industry sector, 2017 to 2019

Source: WCB Data, Prepared by Labour and Immigration

Along with highest fatality rate, the transportation, communication and utilities sector had disabling injuries and modified work claims higher than the provincial average.

While the agriculture and forestry sector had the highest increased fatality rate, this sector also had highest disabling injury and second highest lost-time claim rates.

Along with the largest decrease in fatalities in 2019, the mining and petroleum development sector had the lowest injury rates across all sectors.

Occupational fatalities by occupation

Transport truck drivers (11 per cent) and firefighters (six per cent) had the highest proportion of fatalities between 2017 and 2019.

Prevention Initiative

In 2019, OHS introduced a prevention initiative that outlines priorities for the OHS system. Initiatives are more likely to succeed when resources are focused on specific issues and collaborating with system partners is a key goal. The purpose is to raise awareness of illness and injury areas where workers are most at risk or a mostly affected. Based on evidence and consultation, the priorities are:

- musculoskeletal disorders due to repetitive use, overexertion and heavy lifting;
- slips, trips and falls; and
- psychosocial hazards (e.g., workplace violence, harassment and mental health).

Musculoskeletal injuries

Musculoskeletal injuries (MSI) remain one of the most common occupational injuries and illnesses for Alberta workers in all sectors. This category accounted for 67 per cent of provincial total injury claims from 2015 to 2019.

Of disabling injury and lost-time claims related to MSI injuries from 2017 to 2019:

- the rate remained stable between 2017 and 2019;
- the transportation, communication and utilities sector has the highest disabling injury rate of MSI based on a three-year average;
- the provincial and municipal government, education and health services sector had the highest lost-time claim rate;
- transport truck drivers, nurse aides, orderlies and retail sale occupations had the most musculoskeletal injury claims (14 per cent); and
- overexertion was the most common cause of injury, followed by bodily reaction.

Slips, trips and falls

Injuries related to slips, trips and falls account for 17 per cent of injuries in 2019. Of disabling injury and lost-time claims related to slip, trip and fall injuries from 2017-2019:

- approximately 18 per cent of all disabling injuries were due to workers falling, with nearly 70 per cent of falls occurring on the same level.

Psychosocial hazards

Psychosocial hazards include workplace violence, harassment and mental health. These hazards can result in physical and/or psychological illness and injury outcomes.¹¹ Approximately, two per cent of WCB claims involve a psychological injury.¹²

Of workplace violence and harassment related injury claims from 2015 to 2019 (Figure 10):

- there was a 58 per cent increase in disabling injury claims from 2015 to 2019, (943 claims to 1,678 claims);
- 69 per cent occurred in provincial and municipal government, education and health services sectors; and
- female workers and those 25 to 34 years of age experienced the highest per cent of these injuries.

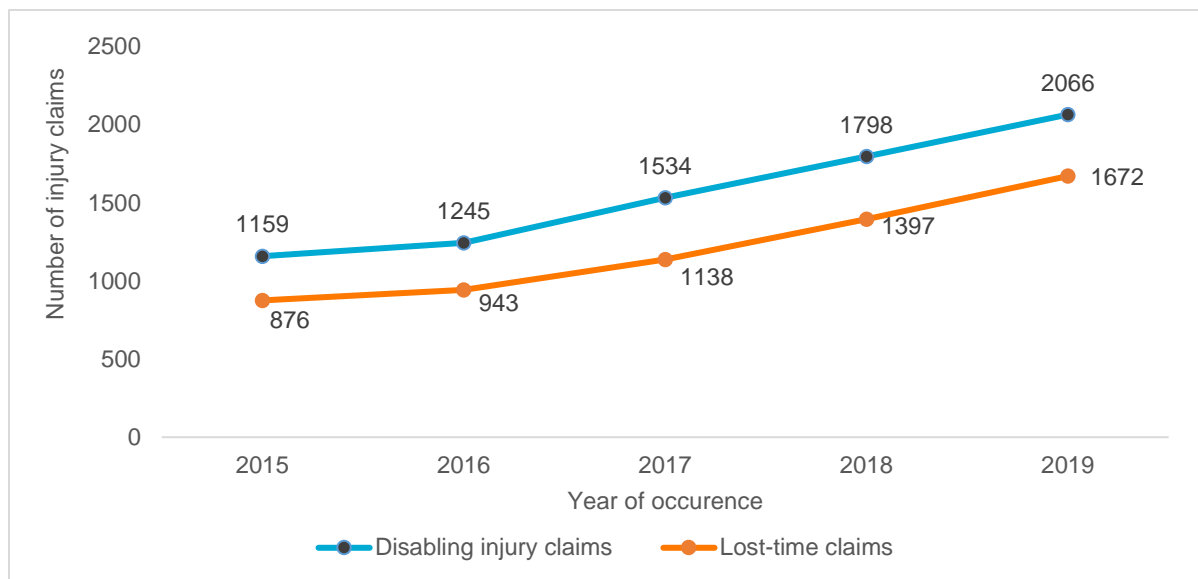


Figure 10: Workplace violence and harassment claims, 2015 to 2019

Source: WCB data, Prepared by Labour and Immigration

¹¹ The 2013 to 2017 Alberta WCB data on assault and violence disabling injury incidents in the fuel and convenience industry reported the top three injury outcomes from these incidents were anxiety (17 per cent), bruises/contusions (16 per cent) and cuts/lacerations (10 per cent).

¹² Workers' Compensation Board – Alberta 2019 Annual Report [Online]. Available at: https://www.wcb.ab.ca/annual-report-2019/assets/pdfs/2019_annual_report.pdf.

Government Strategic Direction

Some industries, occupations and age groups have consistently higher injury and fatality rates. Given the recent decline in the working population, the impact of high injury rates can have a more pronounced effect on the economy, businesses and families. Harnessing the knowledge from these trends can elevate strategies aimed at enhancing health and safety systems and customizing prevention measures that will reduce worker injuries and fatalities.

Numerous proactive OHS inspection initiatives have been in place within various sectors, employers and vulnerable workers populations. These initiatives inspect workplaces for dangerous conditions, monitor compliance with OHS legislative requirements and promote awareness of the importance of internal responsibility systems. In addition, OHS reactively responds to complaints.

Next steps to address the issues identified in this report may include developing educational resources and exploring more focused industry-specific proactive initiatives for industries with consistently high injury rates. Findings can be shared with internal and external stakeholders, including the Alberta OHS System Prevention Initiative working groups, Certifying Partners and labour groups.

Conclusion

The Workplace Injury, Illness and Fatality Statistics: Provincial Summary 2019 prepared by Labour and Immigration provides a picture of workplace injury and fatality trends in Alberta. Industry and occupation trends as well as injury and illness characteristics are presented in the report. This information will be considered by Labour and Immigration in planning for new and ongoing proactive programs, and by the Alberta OHS Prevention Initiative. The information gathered from reports like this helps to focus OHS inspection initiatives on areas that can benefit the most.

Appendix A

Terms and definitions

Adjusted fatality rate adjusts for delays in reporting and claim processing. The number of accepted fatalities is limited to fatalities processed within the same calendar year as the fatality. Adjusted fatality rate is calculated by dividing the number of fatalities by the person-years estimate and multiplying the result by 100,000. The result is expressed as fatalities per 100,000 person-years. Fatality rates in this report include fatalities at Alberta work sites that are under either federal or provincial jurisdiction.

Adjusted injury rate is calculated using different methodology and information than lost-time claim, disabling injury and fatality rates. The population is adjusted to reflect the proportions of a reference population. The adjustments are made to account for the varying population sizes within specific groups, for example, age groups or gender. The reference population used is the 2019 Labour Force Survey for Alberta. The number of injury or fatality claims from workers and the adjusted person-years are used to calculate the rate.

Fatality means the death of a worker caused by a work-related incident or exposure and accepted by WCB for compensation. This report includes fatalities at Alberta work sites that are under either federal or provincial jurisdiction.

Injury rates are the number of claims per 100 person-years worked. One person-year is equivalent to one full-time worker working for one year or equal to 2,000 hours worked. So a rate of five shows that five work-related injuries that resulted in lost time occur on a jobsite every 2,000 hours worked.

Psychological injury claims consider when there is a confirmed psychological or psychiatric diagnosis as defined in the most current version of the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the condition results from one of the following:

- organic brain damage;
- an emotional reaction to a work-related physical injury;
- an emotional reaction to a work-related treatment process;
- traumatic onset psychological injury or stress; or
- chronic onset psychological injury or stress.

Appendix B

Data considerations

The number of injuries are based on claims by the worker. If a claim is not filed, then there is a gap in number of injuries that actually occurred in the workplace.

This report only covers employers registered with WCB.

Not all worker groups are covered by WCB (such as self-employed doctors) and are also not included in the data.

Industry findings are based on WCB industry classifications, not the North American Industry Classification System (NAICS).

Workplace injuries and illnesses reported are based on WCB's classification system.

Person-years worked are estimated and audited by WCB. This is a measure for length of workers' exposure within a workplace and is not an equivalent of number of workers.

Due to administrative processing times, the year WCB accepts a fatality claim may not be the same year the fatality occurred. In addition, number of fatalities by death year and its associated adjusted fatality rate are calculated by considering claims accepted as of December 31 of the death year. In this report, fatality statistics are based on the year of death. Fatality data based on year of acceptance is shown in Appendix C.

Per cents displayed in tables may not total to 100 due to rounding.

Effective April 1, 2018, *Workers' Compensation Act* (WCA) Section 24.2(3) was added to introduce presumptive psychological injury coverage for all workers with a diagnosis of psychological injury and exposure to traumatic event(s) at work¹³. This could have a major impact on the results for 2018 and 2019.

This report presents administrative WCB data, and this data can change based on the processing cycle of a claim. As such, data presented in this report may not be comparable to previous or future reports.

¹³ WCB Policy https://www.wcb.ab.ca/assets/pdfs/public/policy/manual/printable_pdfs/0301_2_app6.pdf

Appendix C

Supplemental Data

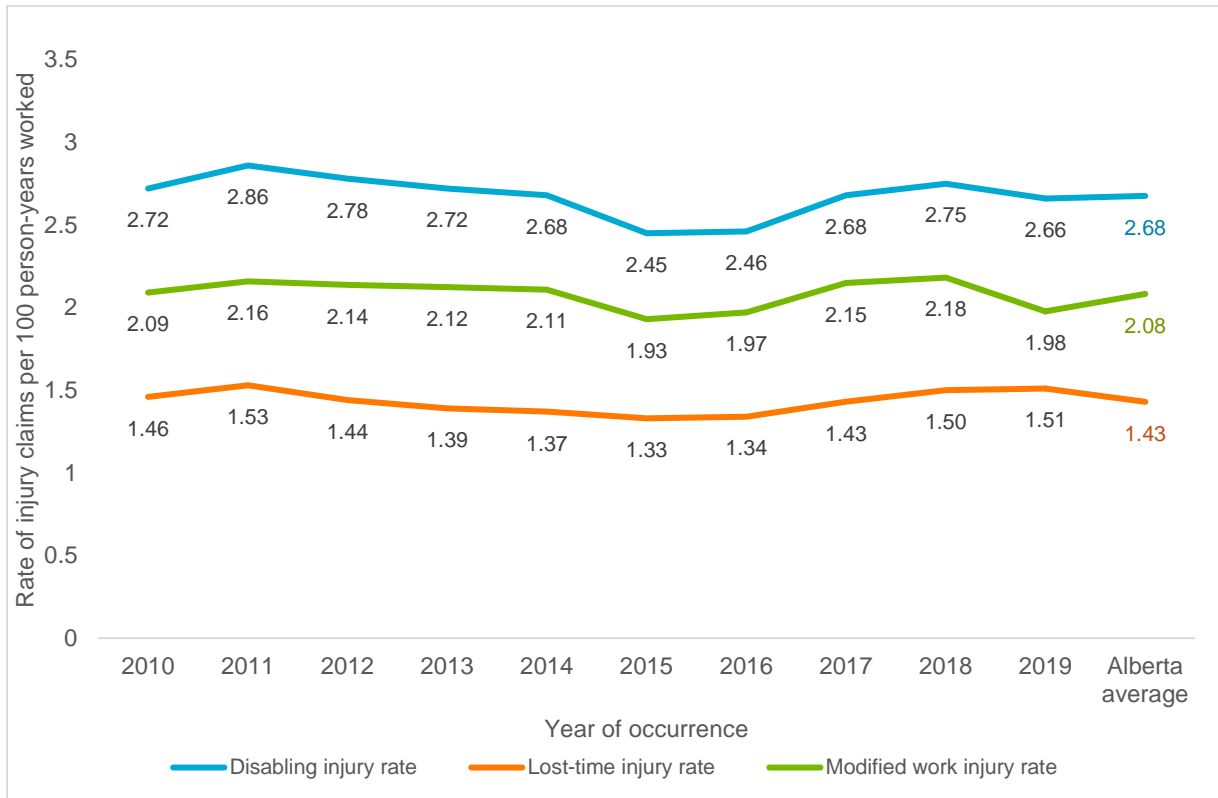


Figure C5: WCB injury rates, 2010 to 2019

Source: WCB data, prepared by Labour and Immigration

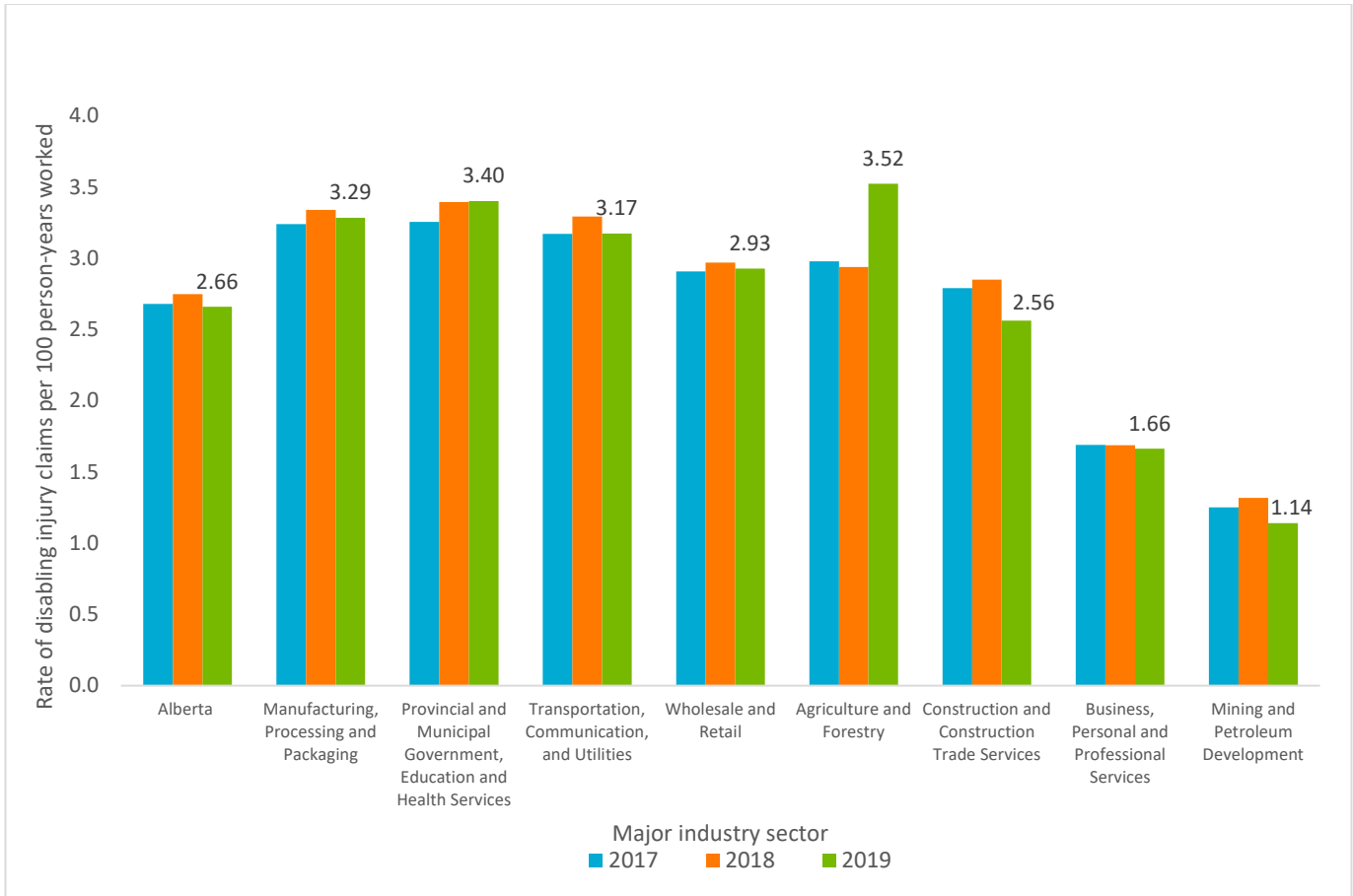


Figure C6: Disabling injury rate by industry sector, 2017 to 2019

Source: WCB data, prepared by Labour and Immigration

Table C2: Injury claims and injury rates by major industry sector, 2017 to 2019

Major industry sector	Measure	2017	2018	2019	Change 2017 to 2018 (%)	Change 2018 to 2019 (%)
Agriculture and forestry	Person-years	20,972	22,716	23,528	8.3↑	3.6↑
	Lost-time claims (rate)	476 (2.27)	492 (2.17)	562 (2.39)	4.4↓	10.1↑
	Modified-work claims (rate)	395 (1.88)	414 (1.82)	514 (2.18)	3.2↓	19.8↑
	Disabling injury claims (rate)	625 (2.98)	668 (2.94)	829 (3.52)	6.9↑	24.1↑
Business, personal and professional services	Person-years	346,442	355,449	351,017	2.6↑	1.2↓
	Lost-time claims (rate)	3,616 (1.04)	3,744 (1.05)	3,725 (1.06)	1.0↑	1.0↑
	Modified-work claims (rate)	4,363 (1.26)	4,366 (1.23)	4,030 (1.15)	2.4↓	6.5↓
	Disabling injury claims (rate)	5,857 (1.69)	5,998 (1.69)	5,836 (1.66)	0.0	1.8↓
Construction and construction trade services	Person-years	330,736	331,966	321,898	0.4↑	3.0↓
	Lost-time claims (rate)	4,049 (1.22)	4,360 (1.31)	3,939 (1.22)	7.4↑	6.9↓
	Modified-work claims (rate)	7,729 (2.34)	7,853 (2.37)	6,468 (2.01)	1.3↑	15.2↓
	Disabling injury claims (rate)	9,231 (2.79)	9,467 (2.85)	8,254 (2.56)	2.2↑	10.2↓
Manufacturing, processing and packaging	Person-years	174,476	177,349	173,793	1.6↑	2.0↓
	Lost-time claims (rate)	2,038 (1.17)	2,238 (1.26)	2,119 (1.22)	7.7↑	3.2↓
	Modified-work claims (rate)	5,053 (2.90)	5,227 (2.95)	4,879 (2.81)	1.7↑	4.7↓
	Disabling injury claims (rate)	5,653 (3.24)	5,925 (3.34)	5,711 (3.29)	3.1↑	1.5↓

Major industry sector	Measure	2017	2018	2019	Change 2017 to 2018 (%)	Change 2018 to 2019 (%)
Mining and petroleum development	Person-years	146,648	143,240	146,261	2.3↓	2.1↑
	Lost-time claims (rate)	613 (0.42)	608 (0.42)	585 (0.40)	0.0↑	4.8↓
	Modified-work claims (rate)	1,668 (1.14)	1,726 (1.20)	1,436 (0.98)	5.3↑	18.3↓
	Disabling injury claims (rate)	1,835 (1.25)	1,889 (1.32)	1,669 (1.14)	5.6↑	13.6↓
Provincial and municipal government, education and health services	Person-years	350,074	357,102	375,510	2.0↑	5.2↑
	Lost-time claims (rate)	8,153 (2.33)	8,780 (2.46)	9,602 (2.56)	5.6↑	4.1↑
	Modified-work claims (rate)	8,133 (2.32)	8,546 (2.39)	8,244 (2.20)	3.0↑	7.9↓
	Disabling injury claims (rate)	11,400 (3.26)	12,128 (3.40)	12,779 (3.40)	4.3↑	0.0
Transportation, communication and utilities	Person-years	136,595	143,579	145,736	5.1↑	1.5↑
	Lost-time claims (rate)	2,310 (1.69)	2,650 (1.85)	2,677 (1.84)	9.5↑	0.5↓
	Modified-work claims (rate)	3,443 (2.52)	3,688 (2.57)	3,308 (2.27)	2.0↑	11.7↓
	Disabling injury claims (rate)	4,333 (3.17)	4,730 (3.29)	4,626 (3.17)	3.8↑	3.6↓
Wholesale and retail	Person-years	340,225	345,940	346,889	1.7↑	0.3↑
	Lost-time claims (rate)	4,743 (1.39)	4,959 (1.43)	5,300 (1.53)	2.9↑	7.0↑
	Modified-work claims (rate)	8,694 (2.56)	8,926 (2.58)	8,183 (2.36)	0.8↑	8.5↓

Major industry sector	Measure	2017	2018	2019	Change 2017 to 2018 (%)	Change 2018 to 2019 (%)
	Disabling injury claims (rate)	9,899 (2.91)	10,277 (2.97)	10,164 (2.93)	2.1↑	1.3↓

Source: WCB Data, Prepared by Labour and Immigration

Table C3: Disabling injuries by gender and major industry sector, 2019

Major Industry Sector	Females		Males		Total
	Count	%	Count	%	
Agriculture and forestry	257	31	572	69	829
Business, personal and professional services	3,279	56	2,557	44	5,836
Construction and construction trade services	748	9	7,506	91	8,254
Manufacturing, processing and packaging	953	17	4,758	8	5,711
Mining and petroleum development	161	10	1,508	90	1,669
Provincial and municipal government, education and health services	8,725	68	4,054	32	12,779
Transportation, communication and utilities	815	18	3,811	82	4,626
Wholesale and retail	3,978	39	6,186	61	10,164

Data Source: WCB Data, prepared by Labour and Immigration

Table C4: Lost-time claims, adjusted injury rates and employments by gender, 2019

Gender	Lost-time claims	% of lost-time claims	People in employment	% in employment	Lost-time claim injury adjusted rate
Males	16,250	57	1,262,200	54	1.60
Females	11,265	43	1,066,300	46	1.41
Total	28,515	100	2,343,000	100	1.51

Data Source: WCB Data, Statistics Canada's Labour Force Survey (2018 Historical Review); Prepared by Labour and Immigration

Table C5: Lost-time claim adjusted injury rates by gender and age groups, 2017 to 2019

Age Group	Males			Females		
	2017	2018	2019	20167	2018	2019
15-24 years	1.72	1.81	1.68	1.09	1.28	1.27
25-34 years	1.45	1.50	1.53	1.08	1.15	1.22
35-44 years	1.41	1.47	1.49	1.21	1.27	1.34
45-54 years	1.67	1.72	1.64	1.60	1.53	1.71
55-64 years	1.75	1.87	1.82	1.46	1.60	1.63
65 years and over	1.61	1.65	1.44	1.03	1.05	1.14
Total	1.57	1.64	1.60	1.27	1.34	1.41

Data Source: WCB Data, Statistics Canada's Labour Force Survey (2018 Historical Review); Prepared by Labour and Immigration



Figure C7: Disabling adjusted injury rate by age, females, 2017 to 2019

Source: WCB data, Statistics Canada's Labour Force Survey (2018 Historical Review); Prepared by Labour and Immigration

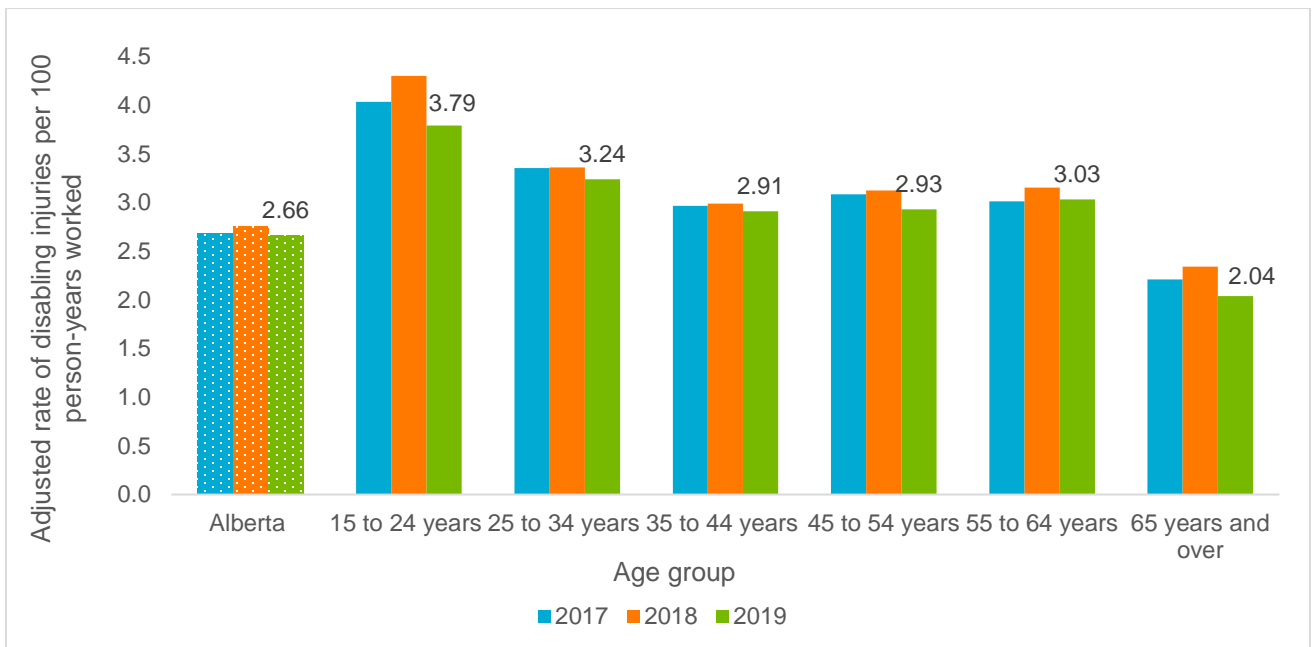


Figure C8: Disabling adjusted injury rate by age, males, 2017 to 2019

Source: WCB data, Statistics Canada's Labour Force Survey (2018 Historical Review); Prepared by Labour and Immigration

Table C6: Disabling injuries by type of injury or illness, 2017 to 2019

Type of event or exposure	2017 (%)	2018 (%)	2019 (%)
Bodily reaction or exertion	22,410	22,859	22,987
Overexertion	10846 (48)	11085 (48)	11136 (48)
Bodily reaction	6350 (28)	6585 (29)	6771 (29)
Repetitive motion	2465 (11)	2429 (11)	2522 (11)
Other bodily reaction/exertion	2749 (12)	2760 (12)	2558 (11)
Contact with objects or equipment	11804 (24)	12035 (23)	11165 (22)
Struck by object	5758 (49)	5850 (49)	5353 (48)
Struck against object	2152 (18)	2088 (17)	2034 (18)
Caught in object	2241 (19)	2280 (19)	2044 (18)
Rubbed or abraded	399 (3)	352 (3)	337 (3)
Other contact with object/equipment	1254 (11)	1465 (12)	1397 (13)
Falls	8677 (18)	9567 (19)	8570 (17)
Fall on same level	5991 (69)	6777 (71)	5949 (69)
Fall to lower level	2250 (26)	2203 (23)	2016 (24)
Other falls	436 (5)	587 (6)	605 (7)
Exposure to harmful substances	2620 (5)	2785 (5)	2548 (5)
Transportation accidents	2053 (4)	2130 (4)	2105 (4)
Assaults and violent acts	1534 (3)	1798 (3)	2066 (4)
Assaults and violent acts by person(s)	971 (63)	1155 (64)	1476 (71)
Other assaults and violent acts	563 (37)	643 (36)	590 (29)

Fires and explosions	62 (<1)	71 (<1)	53 (<1)
Other events or exposures	327 (<1)	361 (<1)	407 (<1)
Type of event - unknown	1 (<1)	5 (<1)	177 (<1)
Total	49,488 (100)	51,611 (100)	50,078 (100)

Source: WCB Data, Prepared by Labour and Immigration

Table C7: Disabling injuries by source of injury or illness, 2017 to 2019

Source of injury	2017 (%)	2018 (%)	2019 (%)
Persons, plants, animals and minerals	14489 (29)	14984 (29)	15598 (31)
Person-injured or ill worker	9865 (68)	10180 (68)	10253 (66)
Person-other than injured or ill worker	3074 (21)	3316 (22)	3852 (25)
Minerals - metallic or non-metallic (except fuel)	204 (1)	187 (1)	147 (1)
Other persons, plants, animals and minerals	1346 (9)	1301 (9)	1346 (9)
Structures and surfaces	8976 (18)	9943 (19)	9017 (18)
Parts and materials	5524 (11)	5639 (11)	5112 (10)
Containers	5251 (11)	5407 (10)	5192 (10)
Vehicles	3729 (8)	3855 (7)	3690 (7)
Tools, instruments and equipment	4326 (9)	4383 (8)	4105 (8)
Hand tools – non powered	2082 (48)	2240 (51)	1953 (48)
Hand tools – powered	434 (10)	430 (10)	351 (9)
Other tools, instruments and equipment	1810 (42)	1713 (39)	1801 (44)
Machinery	2168 (4)	2171 (4)	2053 (4)
Furniture and fixtures	1635 (3)	1607 (3)	1590 (3)
Chemicals and chemical products	474 (1)	508 (1)	446 (1)
Other sources	2915 (6)	3109 (6)	3058 (6)
Source of injury – unknown	1 (<1)	5 (<1)	217 (<1)
Total	49,488 (100)	51,611 (100)	50,078 (100)

Source: WCB Data, Prepared by Labour and Immigration

Table C8: Disabling injuries by nature of injury or illness, 2017 to 2019

Nature of injury	2017 (%)	2018 (%)	2019 (%)
Traumatic injuries and disorders	46154 (93)	48036 (93)	46265 (92)
Sprains/strain	25890 (56)	26678 (56)	26145 (57)
Superficial wounds	5159 (11)	5431 (11)	4963 (11)
Open wounds	4192 (9)	4251 (9)	3763 (8)
Fractures and dislocations	3699 (8)	3744 (8)	3443 (7)
Burns	952 (2)	981 (2)	801 (2)
Other traumatic injuries and disorders	6262 (14)	6951 (14)	7150 (15)
Systemic illness and disorders	2434 (5)	2242 (4)	2219 (4)
Infectious and parasitic illness	84 (<1)	167 (<1)	215 (<1)
Neoplasms, tumors and cancer	30 (<1)	31 (<1)	27 (<1)
Abnormal symptoms, conditions and disorders	207 (<1)	210 (<1)	224 (<1)
Multiple illness, conditions and disorders	5 (<1)	4 (<1)	2 (<1)
Other illness, conditions and disorders	513 (1)	849 (2)	1077 (2)
Nature of injury - unknown	61 (<1)	72 (<1)	49 (<1)
Total	49,488 (100)	51,611 (100)	50,078 (100)

Source: WCB Data, Prepared by Labour and Immigration

Table C9: Disabling injuries by parts of body injured by injury or illness, 2017 to 2019

Part of body injured	2017 (%)	2018 (%)	2019 (%)
Trunk	18208 (37)	18888 (37)	18664 (37)
Back, including spine, spinal cord	10536 (58)	10774 (57)	10624 (57)
Other trunk	7672 (42)	8114 (43)	8040 (43)
Upper extremities	13167 (27)	13571 (26)	12693 (25)
Finger(s), fingernail(s)	4629 (35)	4565 (34)	4231 (33)
Wrist(s) and hand(s) except finger(s)	5208 (40)	5378 (40)	5070 (40)
Other upper extremities	3330 (25)	3628 (27)	3392 (27)
Lower extremities	9431 (19)	9951 (19)	9524 (19)
Leg(s)	4720 (50)	4957 (50)	4963 (52)
Ankle(s) and foot (feet) except toe(s)	4244 (45)	4488 (45)	4117 (43)
Other lower extremities	467 (5)	506 (5)	444 (5)
Head	3802 (8)	3991 (8)	3951 (8)
Other head parts	3014 (79)	3288 (82)	3290 (83)
Eye(s)	788 (21)	703 (18)	661 (17)
Multiple body parts	2663 (5)	2721 (5)	2483 (5)
Neck, including throat	1153 (2)	1205 (2)	1183 (2)
Body systems	1004 (2)	1217 (2)	1504 (3)
Part of body - unknown	60 (<1)	67 (<1)	76 (<1)
Total	49,488	51,611	50,078

Source: WCB Data, Prepared by Labour and Immigration

Table C10: Occupational fatalities (based on year of death) by type, 2015 to 2019

Year	Motor vehicle incidents		Workplace incidents		Occupational disease		Total	
	Counts	%	Counts	%	Counts	%	Counts	%
2015	24	19	38	30	66	52	128	100
2016	29	20	39	27	77	53	145	100
2017	33	20	49	29	87	51	169	100
2018	30	19	53	34	75	47	158	100
2019	23	18	46	36	60	47	129	100
Average	27.8	19.0	45.0	31.0	73.0	50.0	145.8	100

Source: WCB Data, prepared by Labour and Immigration

Note: Annual fatality data changes based on the processing cycle of a claim. As such, data presented in this table will not be comparable to previous or future reports.

Table C11: Occupational fatalities (based on year of claim acceptance) by type, 2015 to 2019

Year	Motor vehicle incidents		Workplace incidents		Occupational illness		Total	
	Counts	%	Counts	%	Counts	%	Counts	%
2015	23	18	36	29	66	53	125	100
2016	29	20	38	2	77	54	144	100
2017	34	21	46	28	86	52	166	100
2018	30	19	56	35	76	47	162	100
2019	26	16	59	36	80	49	165	100
Average	28.4	19	47.0	26	77.0	51	152.4	100

Source: WCB Data, prepared by Labour and Immigration

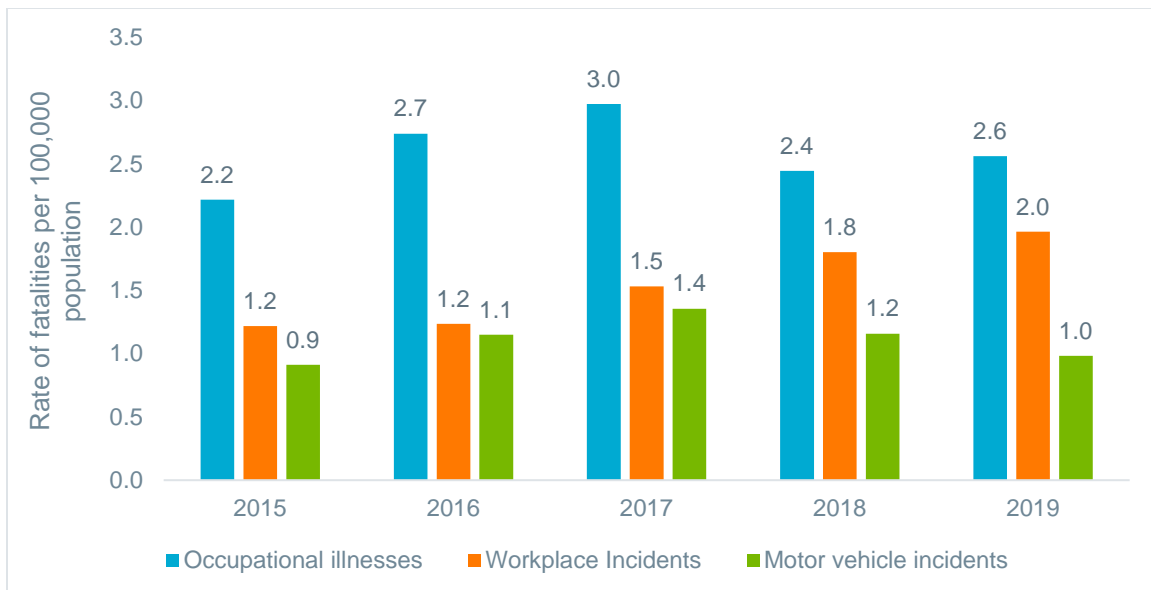


Figure C9: Adjusted fatality rates by type of incident, 2015 to 2019

Source: WCB Data, Statistics Canada's Labour Force Survey (2019 Historical Review) Prepared by Labour and Immigration

Table C12: Occupational fatalities (based on year of death) by type and age group, 2019

Age group	Motor vehicle incidents		Workplace incidents		Occupational illness		Total	
	Counts	%	Counts	%	Counts	%	Counts	%
15-24 years	1	50	1	5	0	0	2	100
25-34 years	7	64	4	36	0	0	11	100
35-44 years	4	24	12	71	1	6	17	100
45-54 years	4	29	9	64	1	7	14	100
55-64 years	4	17	11	46	9	38	24	100
65 years and over	3	5	9	15	49	80	61	100
Average	3.8	31.2	7.7	47.0	10.0	21.8	21.5	100
Total	23	18	46	36	60	47	129	100

Source: WCB Data, Prepared by Labour and Immigration

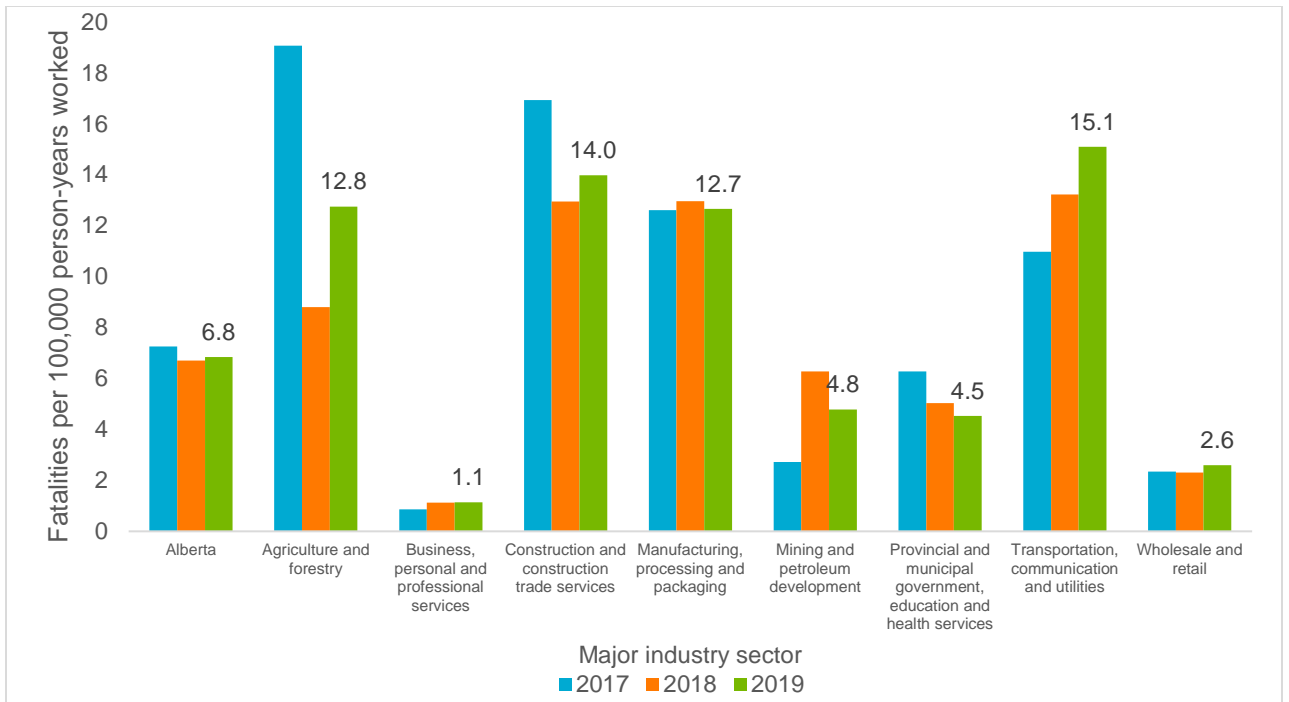


Figure C10: Adjusted fatality rate by major industry sector, 2017 to 2019

Source: WCB Data, Prepared by Labour and Immigration

Table C13: Occupational fatalities (based on year of death) by major industry sector, 2015 to 2019

Major industry sector	2015	2016	2017	2018	2019	Total	% Total
Agriculture and forestry	0	6	6	3	3	18	2
Business, personal and professional services	7	7	3	8	4	29	4
Construction and construction trade services	41	52	71	55	45	264	36
Manufacturing, processing and packaging	20	18	27	28	22	115	16
Mining and petroleum development	5	14	8	11	7	45	6
Provincial and municipal government, education and health services	23	17	28	20	17	105	14
Transportation, communication and utilities	22	23	17	22	22	106	15
Wholesale and retail	10	8	9	11	9	47	6
Total	128	145	169	158	129	729	100

Source: WCB Data, prepared by Labour and Immigration

Appendix D

Resources

To help address findings from this report, employers and workers can access key resources through the government's resource portal on alberta.ca/OHS (OHS Education and resources > OHS resources > OHS online resource portal):

- Establishing safety culture
 - Occupational health and safety employer's guide (LI009)
 - Occupational health and safety worker's guide (LI008)
 - Occupational health and safety starter kit (BP035)
 - Occupational Health and Safety Tool Kit for Small Businesses (SMB001)
- Closing compliance gaps
 - Hazard assessment and control: a handbook for Alberta employers and workers (BP018)
 - Harassment and violence in the workplace (LI045)
 - Slips, Trips and Falls (PH015)
 - Leading Indicators for Workplace Health and Safety: A user guide (BP019)

Read about the OHS prevention initiative at www.alberta.ca/occupational-health-and-safety-prevention-initiative.aspx.

Online employer records include five years of WCB data. Industry and safety associations, labour organizations, employers and workers can incorporate this information into their plans to enhance workplace health and safety. To search employer records, go to www.alberta.ca/employer-records-using-database.aspx.

For the most current information on the OHS Act, Regulation and Code please see www.alberta.ca/ohs-act-regulation-code.aspx. For information on enforcement programs, please see www.alberta.ca/ohs-compliance-enforcement.aspx.

OHS publishes OHS eNews to share news about resources and events. Go to www.alberta.ca/health-safety-eneews.aspx to subscribe to this monthly publication.