



# Workplace injury, illness and fatality statistics

Provincial summary 2021

Jobs, Economy and Northern Development, Government of Alberta

Date of publication: April 2023

Title of publication: Workplace injury, illness and fatality statistics - Provincial summary 2021

ISBN 978-1-4601-4601-5634-6

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Workplace injury, illness and fatality statistics - Provincial summary 2021 | Jobs, Economy and Northern Development

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## Overview

Alberta Jobs, Economy and Northern Development supports healthy and safe workplaces through evidence-informed prevention, education and enforcement. The data in this report gives a picture of provincial workplace injury, illness and fatality patterns, which is helpful for seeing if the evidence-informed prevention measures and compliance actions have an effect or if there are notable trends.

The COVID-19 pandemic shifted business models and the nature of work in many industries. In 2021, Albertans continued to adapt and made the best of the shifting environment. Workplace injuries, illnesses and fatalities continued to have a significant financial burden on the Alberta economy and a societal impact on Albertans. From 2017 to 2020, annual Workers' Compensation Board - Alberta (WCB) spending on injury claims averaged \$695 million. In 2021, injury claim costs decreased from that amount by more than half, to a total of \$327 million.<sup>1</sup> In addition to WCB costs, lost productivity from injured workers, along with the cost of hiring and training replacement staff, placed a further burden on employers already dealing with the economic and societal impact of the pandemic and facing significant post-pandemic recovery efforts.

Safe, fair and healthy workplaces positively impact workers, their families and employers. Jobs, Economy and Northern Development's prevention efforts and proactive programs focus on evidence-based understandings of workplace injuries, illnesses and fatalities. This work includes aligning actions and education that support a coordinated provincial occupational health and safety approach aimed at industries and employers at higher risk for injuries and illnesses. Jobs, Economy and Northern Development uses such data to inform program planning and work with occupational health and safety (OHS) system partners toward safer workplaces.

## Highlights

The following are some highlights of the 2021 annual injury, illness and fatality report.

- In 2021, accepted injury claim rates and person-years increased for non-COVID-19 claims. Injury claim rates increased on average by six per cent.
- Compared to 2020, WCB accepted 44,315 non-fatal, non-COVID-19 related injuries – an increase of 12 per cent. Non-COVID-19 disabling injuries accounted for 87 per cent of all disabling injury claims.
- In 2021, non-COVID-19 disabling, lost-time and modified injury claim rates increased (average increase of six per cent).
- Provincial and municipal, government, education and health services sector had the highest disabling and lost-time injury claim rates (non-COVID-19 claims). This sector also had the highest lost-time claim rate for COVID-19 illness.
- In 2021, the modified-work claim rate was highest among the manufacturing, processing and packaging sector (non-COVID-19 claims).
- Youth (aged 15-24) continued to have the highest adjusted disabling injury claim rate.<sup>2</sup> Youth also had the lowest adjusted fatality rate.
- Sprains, strains and tears were the leading injury across all age groups.
- Mental diseases and joint or muscular inflammation had the highest adjusted disabling illness rates across most age groups, except workers aged 65 and over.
- Exposure from COVID-19 illness resulted in 13 per cent of disabling injury claims and 25 fatalities.
- Mining and petroleum development sector had the highest disabling and modified-work COVID-19 illness claim rates.
- A total of 136 occupational fatalities occurred in Alberta. Of those, 25 workers lost their lives due to COVID-19-related illnesses based on WCB accepted claims. The remainder of the fatalities are comprised of:
  - 50 per cent caused by occupational illness;
  - 35 per cent caused by workplace incidents; and
  - 14 per cent caused by motor vehicle incidents.
- In 2021, youth worker (aged 15-24) fatalities decreased the most (67 per cent from 2020). Youth workers were also the least affected by workplace fatalities overall.
- From 2020 to 2021, the largest adjusted fatality rate increase occurred in the wholesale and retail sector (40 per cent).

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<sup>1</sup> This amount will further increase because some claims have yet to be fully processed.

<sup>2</sup> Please see Appendix A for definitions on key terms used in this report.

- Since 2019, the mining and petroleum development sector was the only sector with a continuous increase in adjusted fatality rates.

## Findings

### Alberta's labour force

In 2021, 2,239,400 workers were employed in Alberta.<sup>3</sup>

#### Labour force industry sectors

Unlike in 2020 where the highest annual employment decline occurred since 1976, 2021 saw employment increase in the majority (67 per cent) of industry sectors 1 (Table 1). All industry sectors increased except for six industry sectors:

- Agriculture.
- Forestry, logging and supportive activities for forestry.
- Information, culture and recreation.
- Manufacturing.
- Utilities.
- Wholesale trade.

The services-producing sectors had the largest workforce, with the health care and social assistance sector continuing to be the largest (302,700 workers) (Table 1). In 2021, both the goods-producing and services-producing sector had increases in employment (1.2 per cent and 6.5 per cent, respectively). In comparison to the previous year, the largest decline in employment (56.9 per cent) was in the forestry, logging and supportive activities for forestry sector, followed by agriculture (15.5 per cent). On the contrary, the largest increase in employment was in retail trade (17.5 per cent) and educational services (14.6 per cent).

Compared to 2020, full-time and part-time jobs increased (4.2 per cent and 9.3 per cent, respectively). Part-time jobs increased by 10.8 per cent in the services-producing sector, while declining in the goods-producing sector (4.6 per cent). This may be a result from temporary closures in the goods-producing industries during the pandemic and service industries adjusting their work environments, like working from home.

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

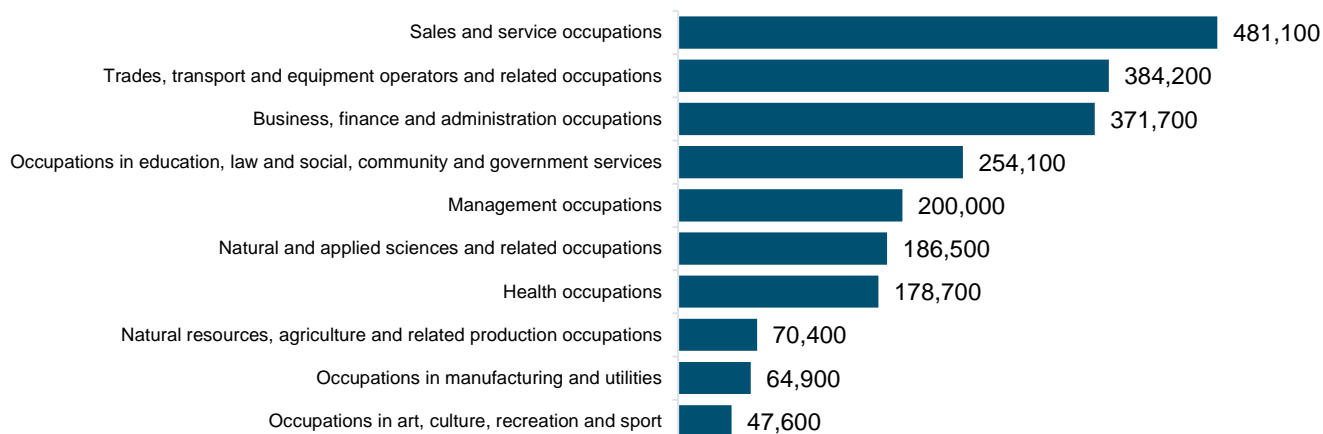
**TABLE 1: CHANGE IN EMPLOYMENT BY INDUSTRY SECTORS, ALBERTA, 2020-2021**

Industry	2020	2021	Per cent change
<b>Total, all industries</b>	<b>2,129,800</b>	<b>2,239,200</b>	<b>5.1↑</b>
<b>Goods-producing sectors</b>	535,600	542,100	1.2↑
Agriculture	42,500	35,900	15.5↓
Construction	214,000	222,200	3.8↑
Forestry and logging and support activities for forestry	5,100	2,200	56.9↓
Manufacturing	125,800	122,300	2.8↓
Mining, quarrying, and oil and gas extraction	125,200	139,300	11.3↑
Utilities	22,900	20,300	11.4↓
<b>Services-producing sectors</b>	<b>1,594,200</b>	<b>1,697,100</b>	<b>6.5↑</b>
Accommodation and food services	113,000	114,000	0.9↑
Business, building and other support services	70,400	72,400	2.8↑
Educational services	147,400	168,900	14.6↑
Finance, insurance, real estate, rental and leasing	104,100	116,800	12.2↑
Health care and social assistance	289,100	302,700	4.7↑
Information, culture and recreation	71,200	64,800	9.0↓
Other services (except public administration)	97,200	97,600	0.4↑
Professional, scientific and technical services	172,700	187,200	8.4↑
Public administration	102,100	102,700	0.6↑
Retail trade	224,800	264,100	17.5↑
Transportation and warehousing	120,200	130,900	8.9↑
Wholesale trade	82,000	75,100	8.4↓

Source: Statistics Canada, Labour Force Survey, Table; 14-10-0023-01 (formerly CANSIM 282-0008), prepared by Jobs, Economy and Northern Development

### Labour force occupations

Sales and trades occupations continue to account for the highest employment compared to all occupational groups (Figure 1).



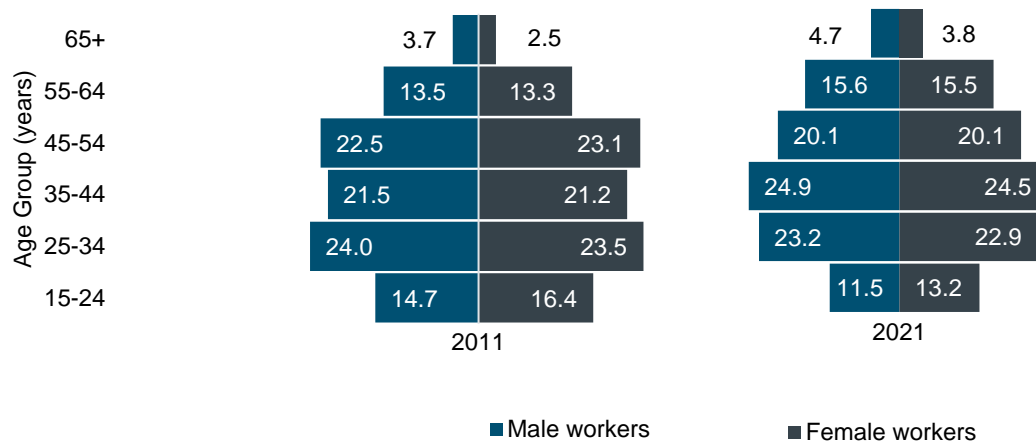
**Figure 1: Employment by occupation, Alberta, 2021**

Source: Statistics Canada, Labour Force Survey, Table; 14-10-0389-01, prepared by Jobs, Economy and Northern Development

### Labour force workers

Over the past 10 years, Alberta's labour force increased and shifted between age groups (Figure 2), proportionally there are:

- Less workers under the age of 25 years.
- More workers aged 35-44 years and 55 years and older.
- Female workers increased by 10 per cent while male workers increased by 4.3 per cent.



**Figure 2: Distribution (per cent) of Alberta workforce populations by age group and gender, 2011 and 2021**

Source: Statistics Canada's Labour Force Survey (2021 Historical Review), prepared by Jobs, Economy and Northern Development

## Workplace COVID-19 illness claims

Workers who contract COVID-19 as a result of their regular job duties are entitled to workers' compensation coverage if both of the following conditions are met:

- Exposure to COVID-19 arose out of the course of employment.
- The nature of the employment was shown to be the cause of the condition, or the nature of employment puts the worker at a greater risk of exposure.<sup>4</sup>

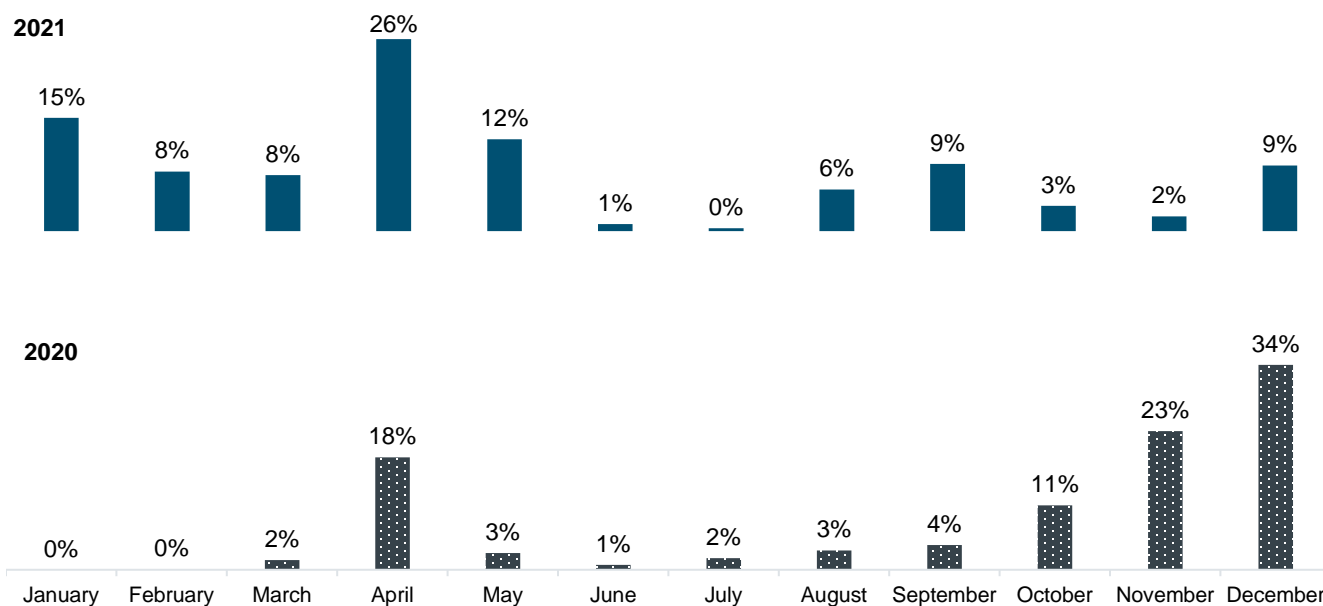
Some occupations and industries have a greater risk of exposure to COVID-19, including those which provide direct care to COVID-19 patients and those which provide direct services to the public. This section highlights characteristics of workers and industries based on WCB claim data involving COVID-19 illness.

In 2021, there were 6,814 illness claims and 25 workplace fatalities related to COVID-19 exposure. Since 2020, workplace COVID-19 illnesses increased by 15 per cent.

In 2021, workplace COVID-19 illness peaked in April (26 per cent), with 16 per cent of these claims occurring in the oil sands operation industry, followed by 15 per cent in industrial plant maintenance (Figure 3). This is different from the December 2020 peak that occurred mostly in the continuing care facilities industry (33 per cent).

<sup>4</sup> COVID-19 fact sheet for workers. Workers' Compensation Board-Alberta. (January 14, 2022) WCB-595. [www.wcb.ab.ca/about-wcb/whats-new/COVID-19.html](http://www.wcb.ab.ca/about-wcb/whats-new/COVID-19.html).





**Figure 3: COVID-19 illness claims, by incident month, Alberta, 2020-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Sectors and industries affected by COVID-19

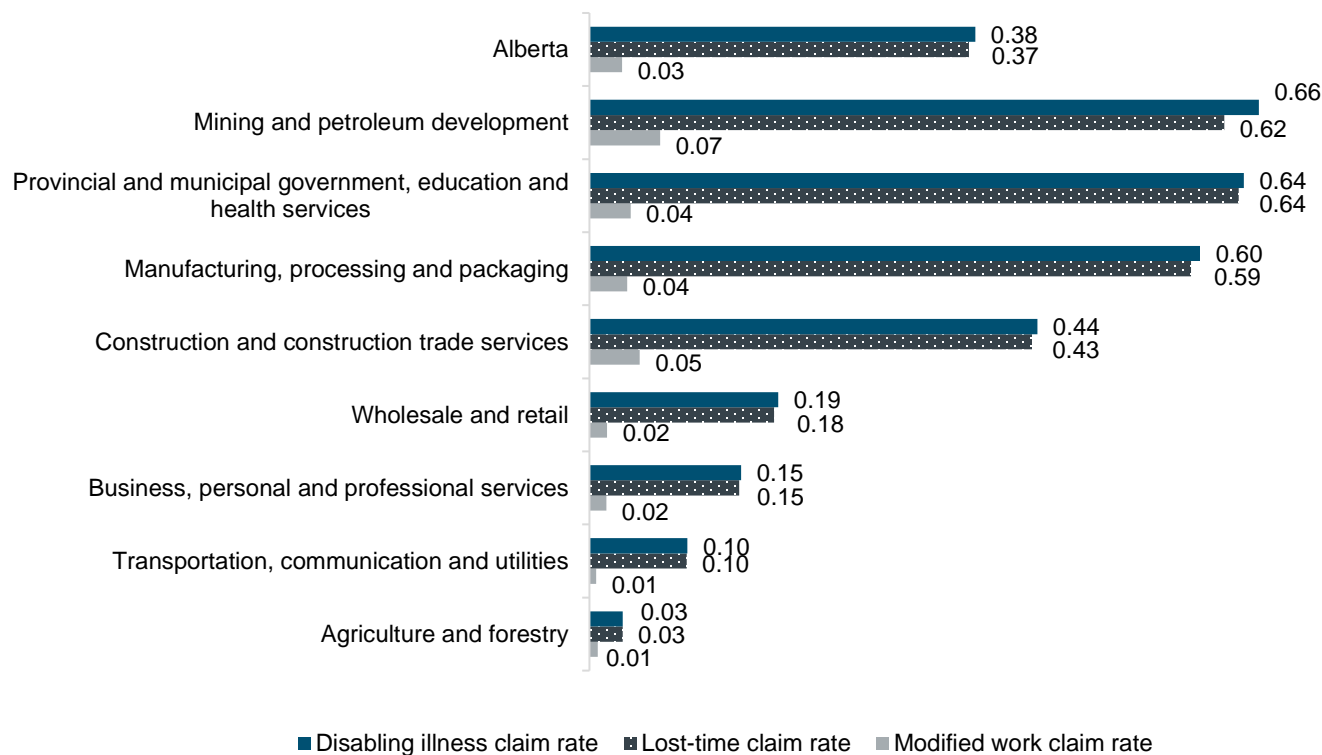
In 2021, the mining and petroleum development sector had the highest disabling and modified-work COVID-19 illness claim rates (0.66 per 100 person-years and 0.07 per 100 person-years, respectively) (Figure 4). In 2020, this sector had the third highest disabling and modified-work COVID-19 claims. Of 2021 COVID-19 claims in the mining and petroleum development sector:

- Drilling – oil and gas well industry had the highest COVID-19 illness claim rate (2.92 per 100 person-years), followed by oil sands operations (2.16 per 100 person-years).
- Heavy equipment operators (except cranes) were the occupation group with the most COVID-19 illness claims involved (17 per cent).

The provincial and municipal government, education and health services had the highest lost-time COVID-19 illness claim rate (0.64 per 100 person-years) (Figure 4). Of these claims:

- Continuing care facilities reported the highest COVID-19 illness claim rate, followed by day homes and daycare centres (2.45 per 100 person-years and 1.82 per 100 person-years, respectively).
- Nearly a quarter of COVID-19 illness claims involved nurse aides and orderlies (24 per cent).

Both sectors surpassed the provincial claims rates (see Figure 4).



**Figure 4: WCB COVID-19 illness claim rates (per 100 person-years) by industry sector, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### COVID-19 WCB claimants

COVID-19 illness claims involved trades, transport and equipment operators and workers in related occupations (13 per cent) (Appendix C – Table C1).

Similar to 2020, almost 29 per cent of COVID-19 disabling illness claims represented workers in the 35-44 age group (Appendix C – Table C2). Of these workers, 11 per cent were in the oil sands operations industry, followed by eight per cent in the health care services industry.

### Female workers

In contrast to 2020, female workers had lower rates of COVID-19 illness claims than male workers (Figure 5). Female workers also had fewer COVID-19 disabling injury claims compared to male workers (38 per cent and 62 per cent, respectively).

COVID-19 disabling injury claims among female workers occurred most often in these industries: health care services, continuing care facilities and seniors' supportive living and lodges (18 per cent, 18 per cent and seven per cent, respectively).

A third of COVID-19 claims were in nursing and nursing-related occupations (33 per cent).

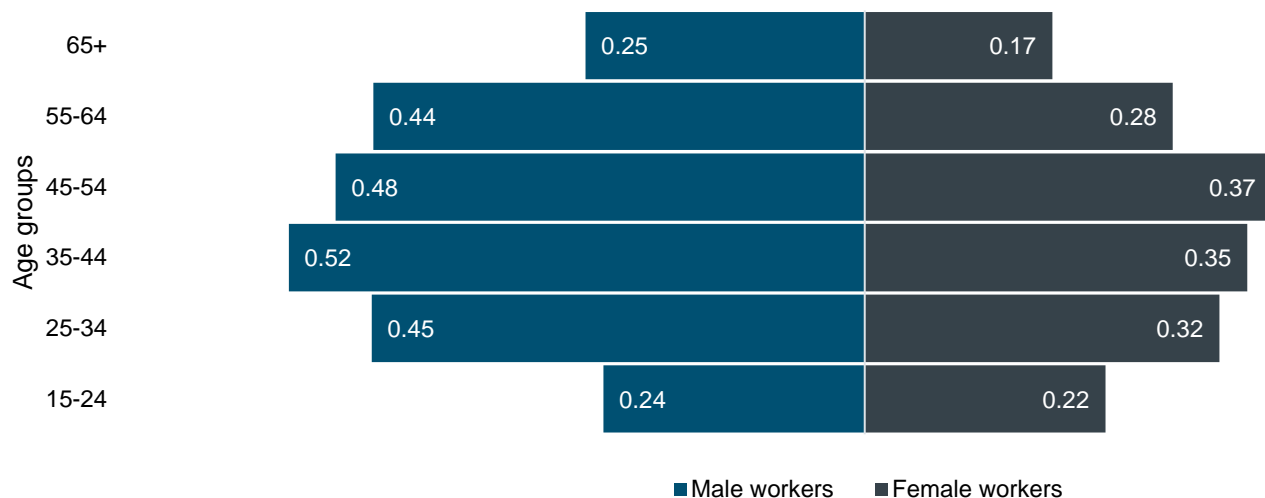
### Male workers

Male workers have higher adjusted COVID-19 illness claim rates than female workers across all age groups (Figure 5). Male workers aged 35-44 years had the highest adjusted disabling injury claim rate.

COVID-19 disabling injury claims among male workers were highest in the construction and construction trade services sector (30 per cent).

At the industry level, COVID-19 disabling injury claims among male workers occurred most often in the oil sands operations, industrial plant maintenance and meat processing industries (12 per cent, 11 per cent and 10 per cent, respectively).

The occupation groups with the most COVID-19 claims were in the trades, transport and equipment operators and related occupations (19 per cent).



**Figure 5: Adjusted COVID-19 illness claim rates (per 100 person-years) for COVID-19 WCB claims, by age group and gender, Alberta, 2021**

Source: WCB data, Statistics Canada's Labour Force Survey (2021 Historical Review), prepared by Jobs, Economy and Northern Development

## Industry sectors

Examining claims at the industry level gives insight into the risks workers have within a sector and allows comparisons between sectors.

For more information on industry sector-specific details, see the associated Workplace injury, illness and fatality statistics industry infographics. <https://open.alberta.ca/publications/workplace-injuries-illnesses-and-fatalities-2021>

## Injury and illness

This section will highlight emerging trends for non-COVID-19 injury claims within the industry sectors. As worker traits, job duties, the physical environment and workplace culture differ across industries and employers, the risks for injury and illness vary.

From 2020 to 2021, disabling injury claim rates increased across all sectors except for agriculture and forestry (decreased by ten per cent) and manufacturing, processing and packaging (Appendix C – Figure C1).

The 2021 disabling injury claim rate in the manufacturing, processing and packaging sector stayed nearly the same as 2020 (decreased by less than one per cent). Business, personal and professional services had the largest increase in the disabling injury claim rate (14 per cent). In 2021, mining and petroleum development had the second highest increase in the disabling injury claim rate (13 per cent) although mining and petroleum development had the lowest rate among all sectors (1.10 per 100 person-years). This is a consistent trend since 2017.

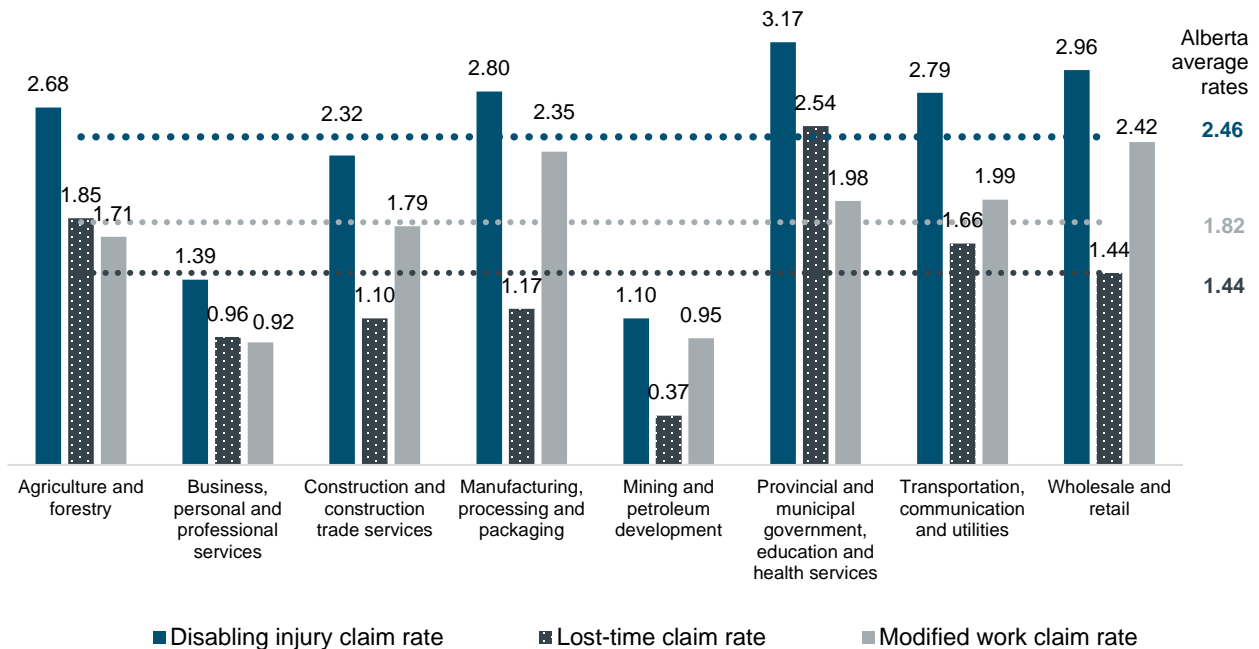
In 2021, over half of the industry sectors surpassed the provincial average disabling injury claim rate (2.46 per 100 person-years) (Figure 6 and Appendix C – Table C3):

- Agriculture and forestry (2.68 per 100 person-years).
- Manufacturing, processing and packaging (2.80 per 100 person-years).
- Provincial and municipal government, education and health services (3.17 per 100 person-years).
- Transportation, communication and utilities (2.79 per 100 person-years).
- Wholesale and retail trade (2.96 per 100 person-years).

The top three industry sectors with the highest disabling injury rates were:

- Provincial and municipal government, education and health services (3.17 per 100 person-years).
- Wholesale and retail trade (2.96 per 100 person-years).

- Manufacturing, processing and packaging (2.80 per 100 person-years).



**Figure 6: WCB injury claim rates (per 100 person-years) by industry sector (excluding COVID-19 related claims), Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

## Workplace incidents

This section presents findings from non-COVID-19 WCB workplace-related injury and illness claims. This includes details on injury traits (i.e., the types, causes and nature of injuries, as well as the body parts injured) and characteristics of injured workers.

**TABLE 2: ALBERTA LABOUR FORCE AND PERSON-YEARS, 2017-2021**

	Year					Yearly per cent change	
	2017	2018	2019	2020	2021	2019-2020	2020-2021
Person-years	1,846,168	1,877,341	1,885,902	1,710,728	1,799,301	9.3↓	5.2↑
Labour force (employed)	2,220,600	2,263,600	2,279,400	2,129,500	2,239,400	6.6↓	5.2↑

Source: Statistics Canada's Labour Force Survey (2021 Historical Review), prepared by Jobs, Economy and Northern Development

**TABLE 3: ALBERTA INJURY CLAIMS, RATES (PER 100 PERSON-YEARS), 2017-2021**

	Year					Yearly per cent change				
	2017	2018	2019	2020		2021		2019-2020	2020-2021	2020-2021
				Non-COVID-19	COVID-19	Non-COVID-19	COVID-19	Non-COVID-19	Non-COVID-19	COVID-19
Lost-time claims	26,659	28,503	29,344	23,607	5,878	25,861	6,699	19.6↓	9.5↑	14.0↑
Lost-time injury claim rate	1.44	1.52	1.56	1.38	0.34	1.44	0.37	11.5↓	4.3↑	8.8↑
Modified-work claims	39,722	41,084	37,952	29,299	304	32,699	576	22.8↓	11.6↑	89.5↑
Modified-work claims injury claim rate	2.15	2.19	2.01	1.71	0.02	1.82	0.03	14.9↓	6.4↑	50.0↑
Disabling injury claims	49,614	51,837	50,698	39,614	5,903	44,315	6,814	21.9↓	11.9↑	15.4↑
Disabling injury claim rate	2.69	2.76	2.69	2.32	0.35	2.46	0.38	13.8↓	6.0↑	8.6↑

Source: WCB data, Statistics Canada's Labour Force Survey (2021 Historical Review), prepared by Jobs, Economy and Northern Development

Prior to the pandemic in 2020, Alberta's labour force trended upwards (Table 2). In 2020, impacts from the pandemic, including physical distancing requirements and closure of non-essential industries, negatively impacted Alberta's economy. The Alberta workforce declined by nearly seven per cent between 2019 and 2020.

As businesses slowly re-opened, distancing requirements and other social restrictions lessened and the labour force adapted to the shift in working environments. Employment in Alberta increased by five per cent in 2021. Workplace injuries also increased as employment grew (Table 3). WCB accepted 44,315 non-fatal non-COVID-19 related disabling injury claims, up from 39,614 in 2020 (an increase of nearly 12 per cent). Non-COVID-19 disabling injuries accounted for 87 per cent of all disabling injury claims. Disabling, lost-time and modified injury claim rates all increased in 2021 (4 to 6 per cent increase) (Table 3 and Appendix C – Figure C2).

The lost-time injury claim rate in 2021 mirrored the rate in 2017, when the rate increased steadily until the onset of the pandemic (Table 3). From 2020 to 2021, the modified-work injury claim rate increased proportionally more than lost-time and disabling injury claim rates. Modified work depends on the suitability and availability of alternative work for an injured or ill worker; for this reason, returning to modified work duties may have been challenging due to the pandemic's work-from-home measures and temporary workplace closures; however, in 2021, as many businesses re-opened, modified working arrangements became more accessible, which may explain the larger increase in modified work claim rates.

### Types of workplace incidents

"Type of workplace incident" describes the different events that directly resulted in the injury or illness being approved by WCB as work-related. In 2021, the top three types of workplace incidents were (Appendix C – Table C4):

- Bodily reactions and exertions (45 per cent).
- Slips, trips and falls (19 per cent).
- Struck by or against objects (14 per cent).

Table 4 shows the breakdown of each leading type of workplace incident.

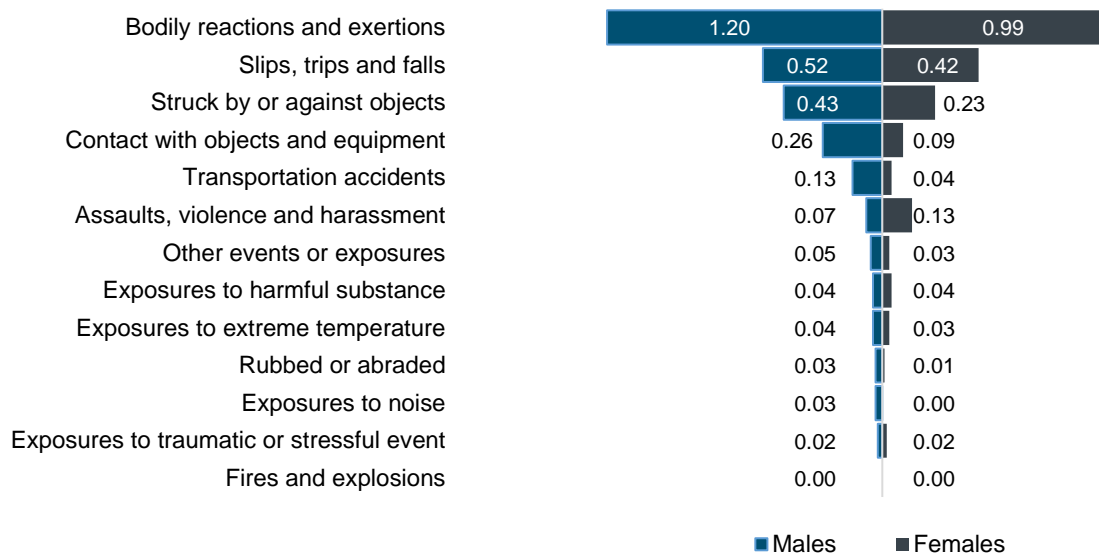
**TABLE 4: LEADING TYPE OF WORKPLACE INCIDENTS, ALBERTA, 2021**

Type of workplace incident	Bodily reactions and exertions	Slips, trips and falls	Struck by or against objects
Leading industry sector	Health care services (11%)	General trucking (7%)	Food and convenience stores (5%)
Leading occupation	Nurse aides, orderlies, etc. (8%)	Transport truck drivers (8%)	Retail sales (7%)
Leading gender	Males (58%)	Males (59%)	Males (68%)
Leading age group	35-44 (26%)	55-64 (22%)	25-34 (27%)
Leading part of body	Back (37%)	Foot, ankle, or toe (17%)	Finger (20%)
Leading nature of injury	Sprains or strain (82%)	Sprains or strain (48%)	Surface wound or bruise (25%)
Leading source	Person (49%)	Floor, walkway, or ground surface (70%)	Non-powered hand tool (13%)

Source: WCB data, prepared by Jobs, Economy and Northern Development

Additional information on slips, trips and falls is further explored in the [Prevention initiative section](#) of this report.

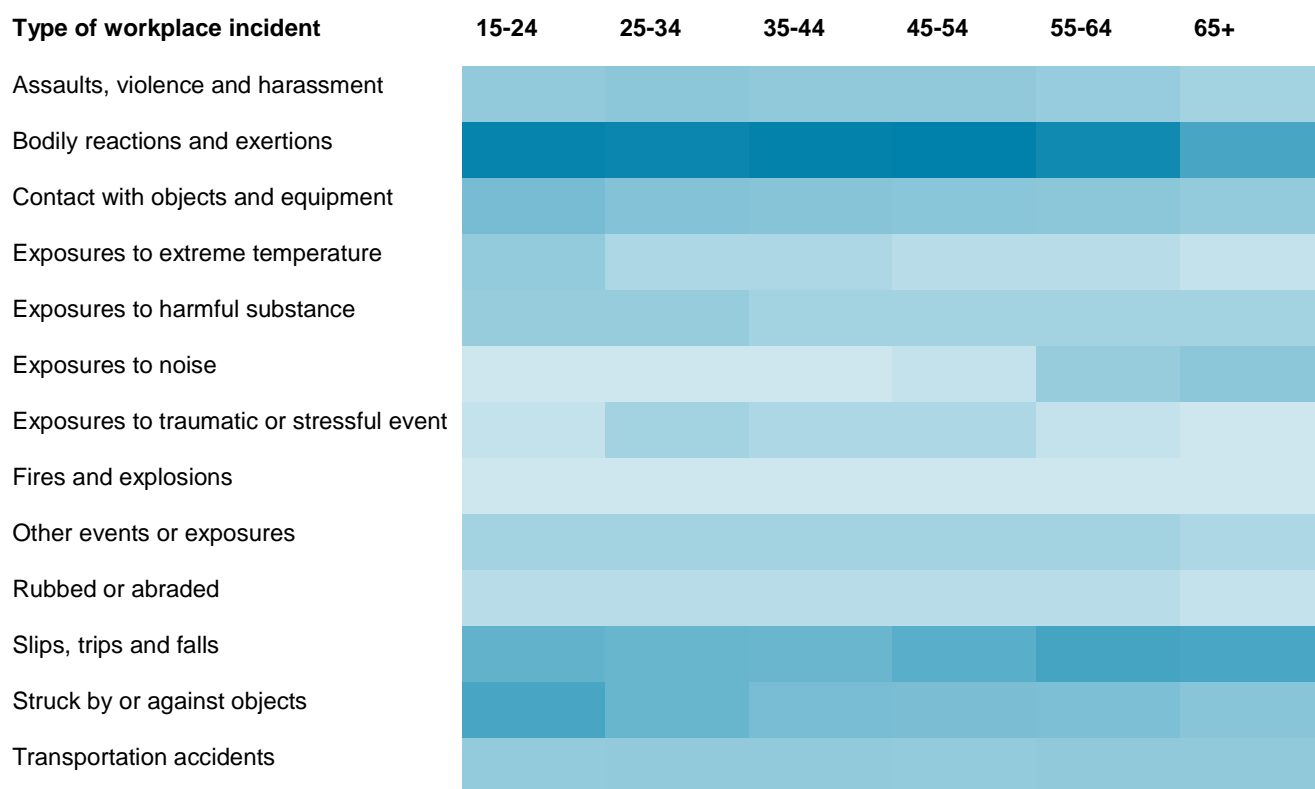
Male workers have higher adjusted disabling injury claim rates compared to female workers across all types of incidents, except for assaults and violent acts (Figure 7). Incidents involving contact with objects and equipment had the largest gender difference, with male workers having almost twice the number of claims.



**Figure 7: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by type of injury and gender, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

Bodily reaction and exertion related claims are highest among all age groups. Several types of workplace incidents are also more frequent among particular age groups (Figure 8). After peaking at ages 25-34, assault and violent act incidents and contact with objects and equipment decreased with age. After age 35, fall incidents also increased (Figure 8).



**Figure 8: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by type of injury and age group, Alberta, 2021 (darker colours indicate higher rates)**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Source of a workplace incident

The source of a workplace incident identifies the primary objects, substances, exposure, or bodily motion that directly inflicts the injury or illness.<sup>5</sup> As in previous years, the three most cited sources for workplace incidents were (Appendix C – Table C5):

- Persons, plants, animals and minerals (32 per cent), which includes:
  - Person (92 per cent).
  - Food, plant, tree, or vegetation (three per cent).
  - Animal or animal product (two per cent).
- Structures and surfaces (17 per cent), which includes:
  - Floor, walkway, or ground surface (84 per cent).
  - Other structure or surface (14 per cent).
  - Structure (two per cent).
- Containers (11 per cent), which includes:
  - Non-pressurized container (72 per cent).
  - Other container (13 per cent).
  - Skid or pallet (10 per cent).

Table 5 shows the breakdown of each leading source within the primary category. Sprains or strains were the leading nature of injury for each leading source. Consistent with 2020, transport truck drivers have the most injuries involving the floor, walkway or ground surface.

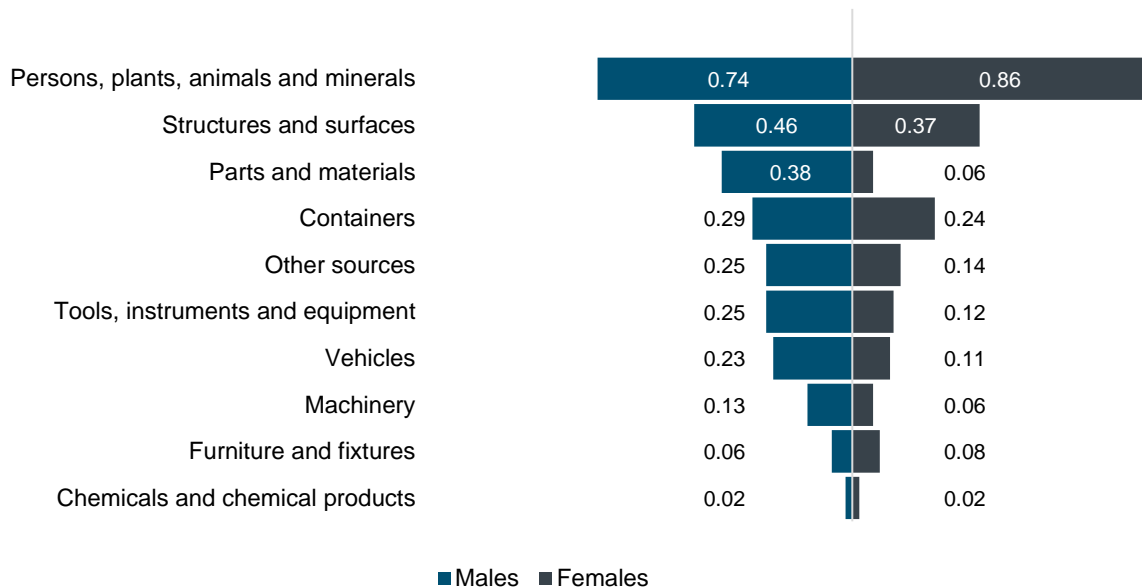
<sup>5</sup> Pratt, B., Cheesman, J., Breslin, C., & Do, M. T. (2016). Occupational injuries in Canadian youth: an analysis of 22 years of surveillance data collected from the Canadian Hospitals Injury Reporting and Prevention Program. *Health promotion and chronic illness prevention*

**TABLE 5: LEADING SOURCE OF INJURY CHARACTERISTICS, ALBERTA**

Top source of injury category	Person	Floor, walkway, or ground surface	Non-pressurized container
Leading industry sector	Health care services (18%)	General trucking (8%)	Food and convenience stores (16%)
Leading occupation	Nurse aides and orderlies (12%)	Transport truck drivers (8%)	Stockers, clerks and order fillers (15%)
Leading gender	Female (51%)	Male (57%)	Male (54%)
Leading age group	35-44 (26%)	55-64 (22%)	35-44 (24%)
Leading part of the body	Back (25%)	Foot, ankle, or toe (15%)	Back (40%)
Leading type of injury	Bodily reaction (37%)	Fall to same level (67%)	Overexertion (69%)
Leading nature of the injury	Sprain or strain (72%)	Sprain or strain (44%)	Sprain or strain (72%)

Source: WCB data, prepared by Jobs, Economy and Northern Development

Male workers had higher disabling injury rates for all sources of injuries, except within two categories: persons, plants, animals and minerals; and furniture and fixtures and chemicals (Figure 9). Incidents involving parts and materials had the largest gender difference, with male workers having six times the number of claims.

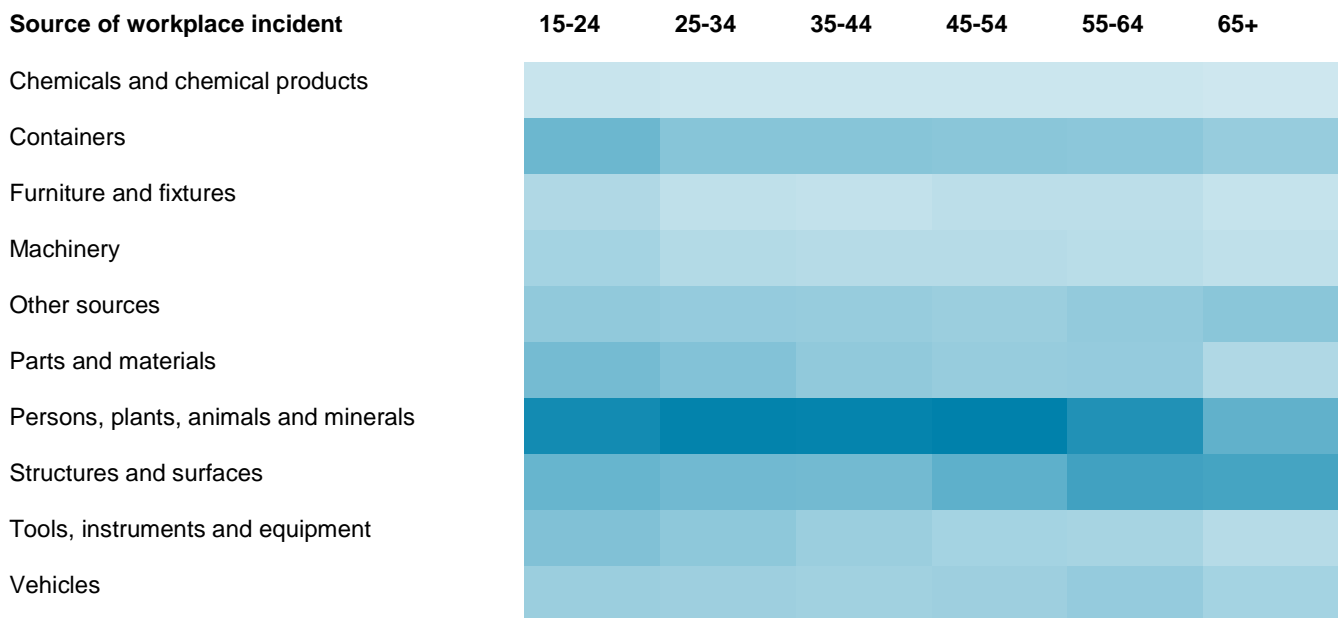


**Figure 9: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by the source of injury and gender, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

For most age groups, incident involving persons, plants, animals and minerals had the highest adjusted disabling injury claim rate, with the exception among the oldest worker group (ages 65 and older) (Figure 10). Structures and surfaces were the leading sources of injuries in older workers (Figure 10). Claims involving tools, instruments and equipment, machinery and containers decreased with worker age.





**Figure 10: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by the source of injury and age group, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

## Injury and illness

### Workplace injuries

A work injury results from any work-related event or exposure to a harmful substance.<sup>6</sup>

In 2021, traumatic injuries and disorders were the leading cause of disabling workplace injuries and illnesses (93 per cent) – consistent with the previous year. The three most common traumatic injuries and disorders were (Appendix C – Table C6):

- Sprains, strains and tears (57 per cent).
- Wounds and bruises (17 per cent).
- Other injuries (16 per cent).

Table 6 shows a detailed breakdown of each leading ‘primary nature of injury’ category. Food and convenience stores had the most injuries from wounds and bruises and other injuries compared to other industry sectors.

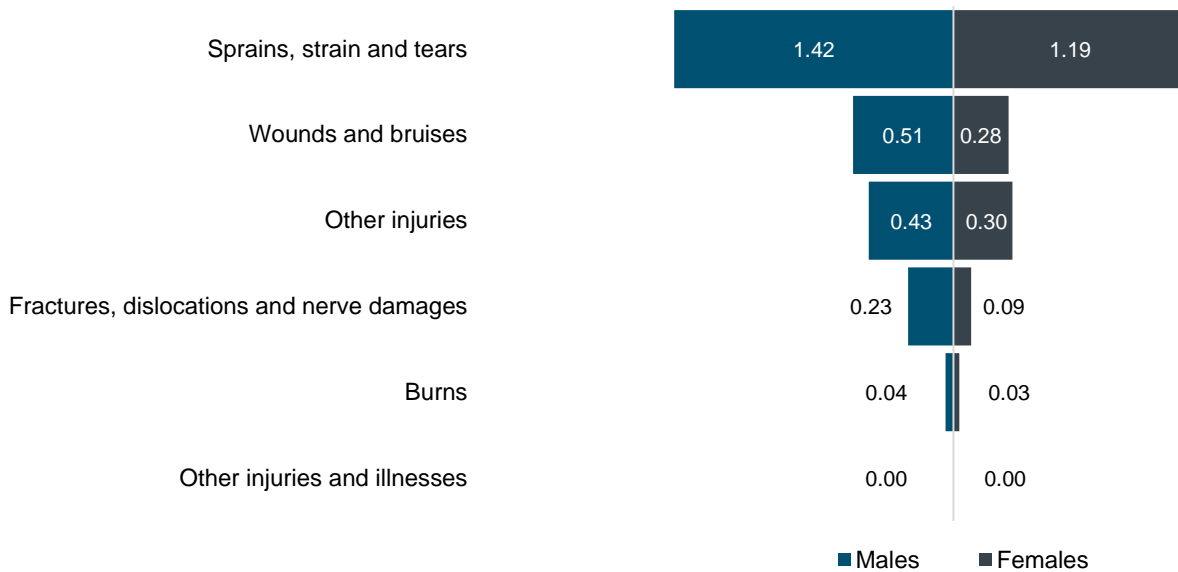
**TABLE 6: LEADING NATURE OF INJURY CHARACTERISTICS, ALBERTA, 2021**

Nature of injury	Sprains, strains and tears	Wounds and bruises	Other injuries
Leading industry sector	Health care services (11%)	Food and convenience stores (5%)	Food and convenience stores (6%)
Leading occupation	Nurse aides, orderlies, etc. (8%)	Retail sales (5%)	Retail sales (8%)
Leading gender	Male (58%)	Male (68%)	Male (62%)
Leading age group	35-44 (25%)	25-34 (25%)	25-34 (23%)
Leading part of body	Back (34%)	Finger (25%)	Head (23%)
Leading type of injury	Overexertion (37%)	Struck by object (31%)	Struck by object (16%)
Leading source	Person (40%)	Floor, walkway, or ground surface (18%)	Person (17%)

Source: WCB data, prepared by Jobs, Economy and Northern Development

Male workers had higher disabling injury claim rates based on all nature of injury-types (Figure 11).

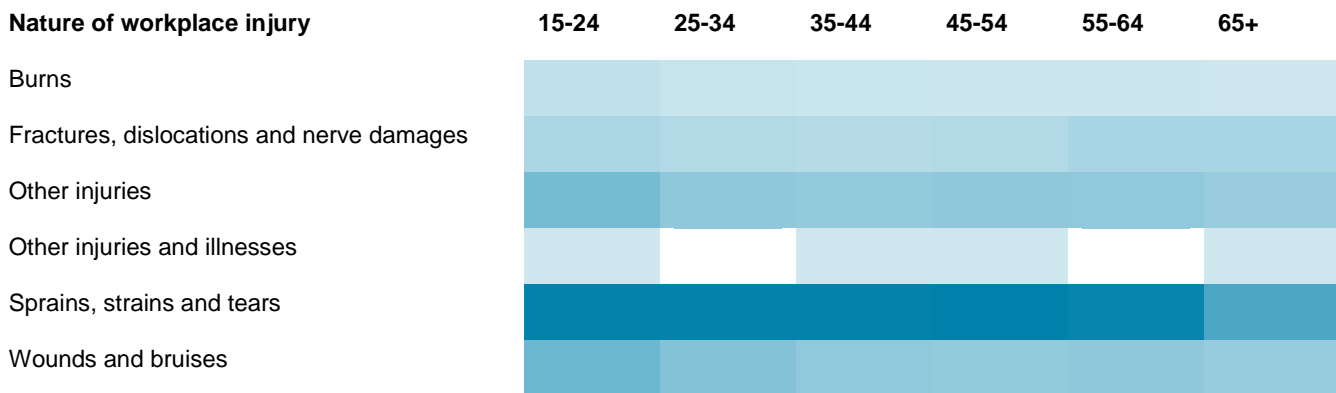
<sup>6</sup> National work injury/disease statistics program (NWISP) definitions. Association of Workers' Compensation Boards of Canada. (2022) <https://awcbc.org/en/statistics/national-work-injury-disease-statistic-program-definitions/>



**Figure 11: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by nature of workplace injury and gender, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

Sprains, strains and tears were the leading injury across all age groups (Figure 12). Injuries involving fractures, dislocations and nerve damage and multiple trauma injuries were also highest in workers ages 55 and over. Injuries from burns decreased with age.



**Figure 12: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by nature of injury and age group, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Workplace illnesses

An occupational illness is a health condition that results from exposure to a physical, chemical or biological agent in the workplace to the extent that normal physiological mechanisms are affected and the health of the worker is impaired.<sup>7,8</sup>

In 2021, the most common workplace illnesses were:

- Systemic illness and disorders (56 per cent), which includes:
  - Inflammation of joint or muscle (49 per cent).
  - Ear or hearing condition (18 per cent).
  - Other systemic illness or disorder (15 per cent).

<sup>7</sup> Occupational health hazards and illnesses. Government of Ontario. Ministry of Labour, Training and Skills Development. (2020)

<sup>8</sup> National work injury/disease statistics program (NWISP) definitions. Association of workers' compensation boards of Canada. (2022)

<https://awcbc.org/en/statistics/national-work-injury-disease-statistic-program-definitions/>

- Other illnesses (35 per cent), which includes:
  - Mental illness (98 per cent).
  - Other illness (two per cent).
- Abnormal symptoms and conditions (seven per cent), which includes:
  - Non-specific allergic reaction (50 per cent).
  - Other symptoms (29 per cent).
  - Loss of consciousness (11 per cent).

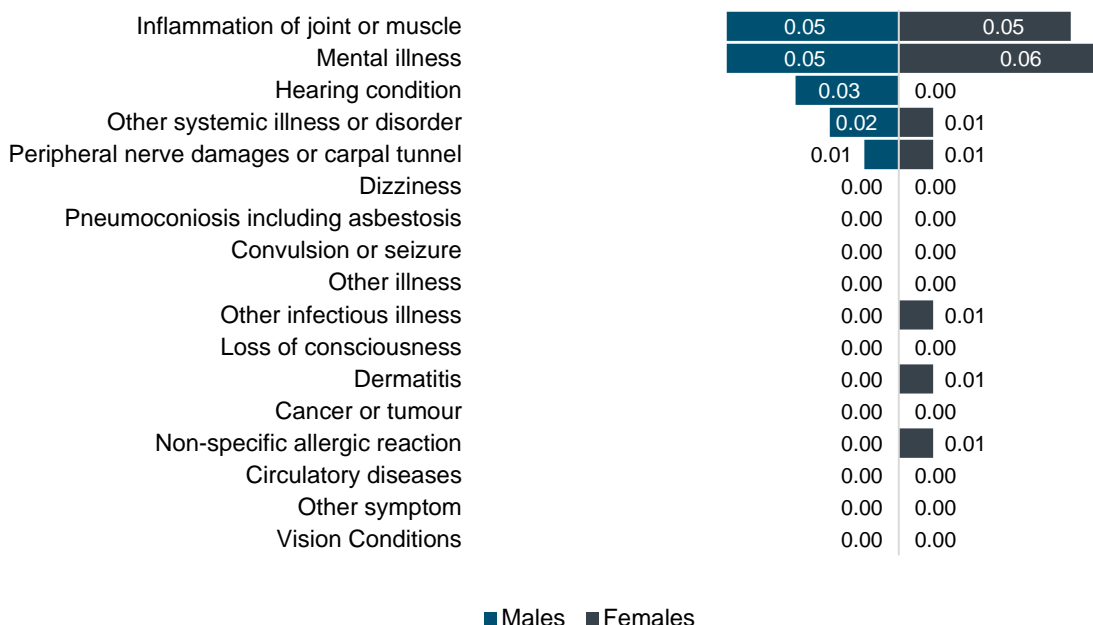
Table 7 shows a detailed breakdown of the leading nature of illness within each primary nature of illness category. Exposure to a traumatic or stressful event was the reason for 41 per cent of claims for mental illness followed by assaults and violent acts by a person (24 per cent). The disabling injury rate for mental illness doubled from 2017 to 2019 and has since remained stable (2017: 0.03 per 100 person-years; 2019: 0.06 per 100 person-years).

**TABLE 7: LEADING NATURE OF ILLNESS CHARACTERISTICS, ALBERTA, 2021**

Nature of illness	Inflammation of joints and muscles	Mental illness	Non-specific allergic reaction
Leading industry sector	Food and convenience stores (9%)	Health care services (38%)	Health care services (44%)
Leading occupation	Retail sales (5%)	Ambulance and paramedical jobs (25%)	Nurse aides and orderlies, etc. (17%)
Leading gender	Male (52%)	Male and female (50% each)	Female (80%)
Leading age group	45-54 (26%)	25-34 (32%)	35-44 (24%)
Leading part of body	Arm (36%)	Nervous system (92%)	Other body system (35%)
Leading type of injury	Repetitive motion (52%)	Exposure to traumatic or stressful event (41%)	Exposure to caustic, noxious, or allergenic substance (81%)
Leading source	Person (68%)	Person (87%)	Chemical or chemical product (35%)

Source: WCB data, prepared by Jobs, Economy and Northern Development

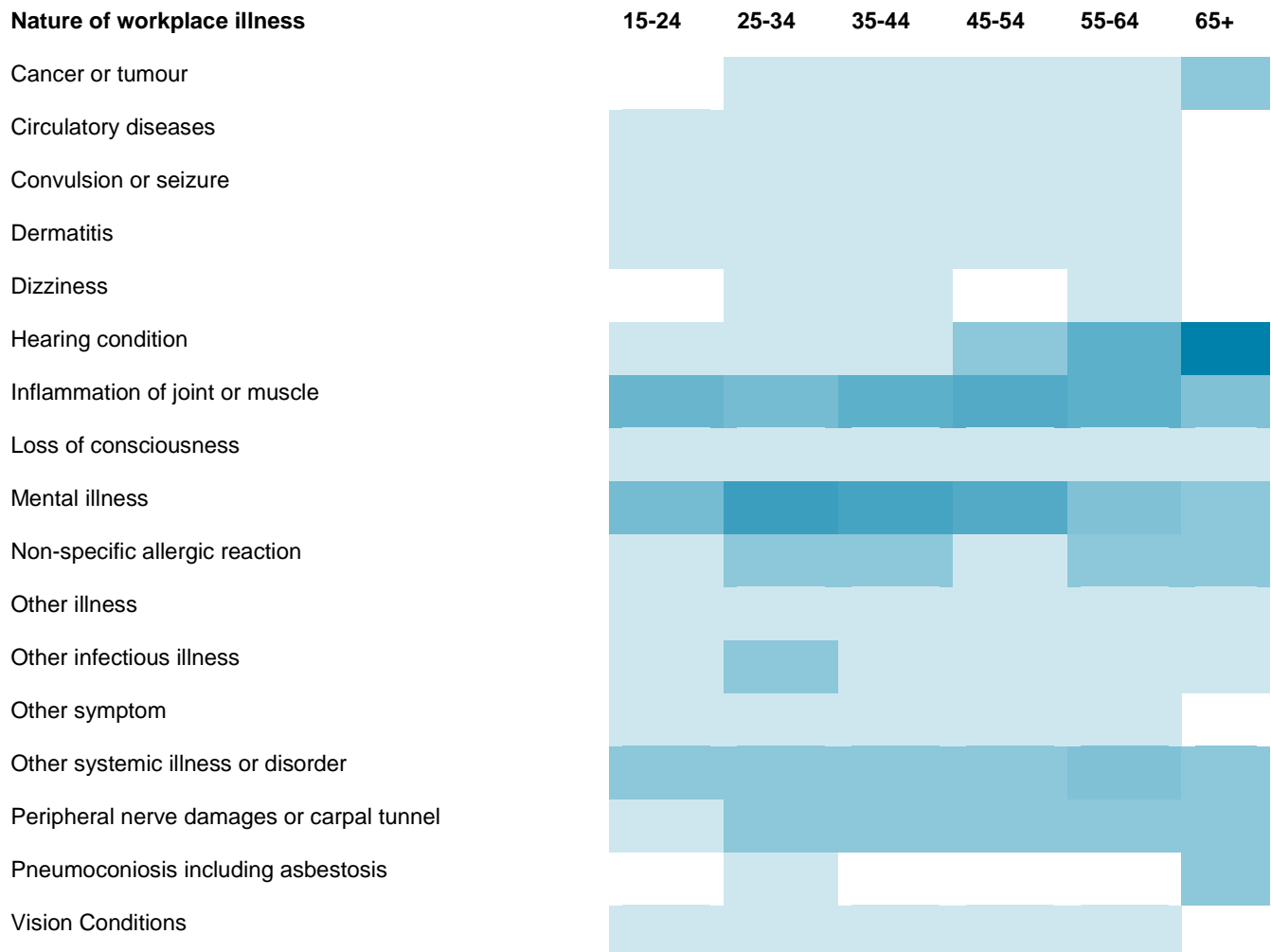
Workplace illness claims are mostly similar between worker genders. There were some exceptions: ear and hearing conditions were three times higher in male workers (Figure 13). Mental, dermatitis, non-specific allergic reactions and other infectious illnesses were slightly higher in female workers. Female workers ages 15 to 34 had higher rates of mental illness claims than male workers of the same age groups.



**Figure 13: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by nature of workplace illness and gender, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

When adjusted for age, disabling illness rates for mental illnesses were highest in workers ages 25 to 44 (Figure 14). Workers aged 65 and older had the highest adjusted disabling illness rate for hearing conditions (0.13 per 100 person-years).



**Figure 14: Adjusted disabling illness claim rates (per 100 person-years) for non-COVID-19 claims by nature of illness and age group, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

A detailed breakdown of the percentage of workplace illness disabling injury claims is provided in Appendix C – Table C7.

### Parts of body affected

The parts of body directly affected by workplace injuries or illnesses can provide information on patterns and gaps within health and safety systems. The three most commonly injured parts of body were (Appendix C – Table C8):

- Trunk (37 per cent).
- Upper extremity (25 per cent).
- Lower extremity (20 per cent).

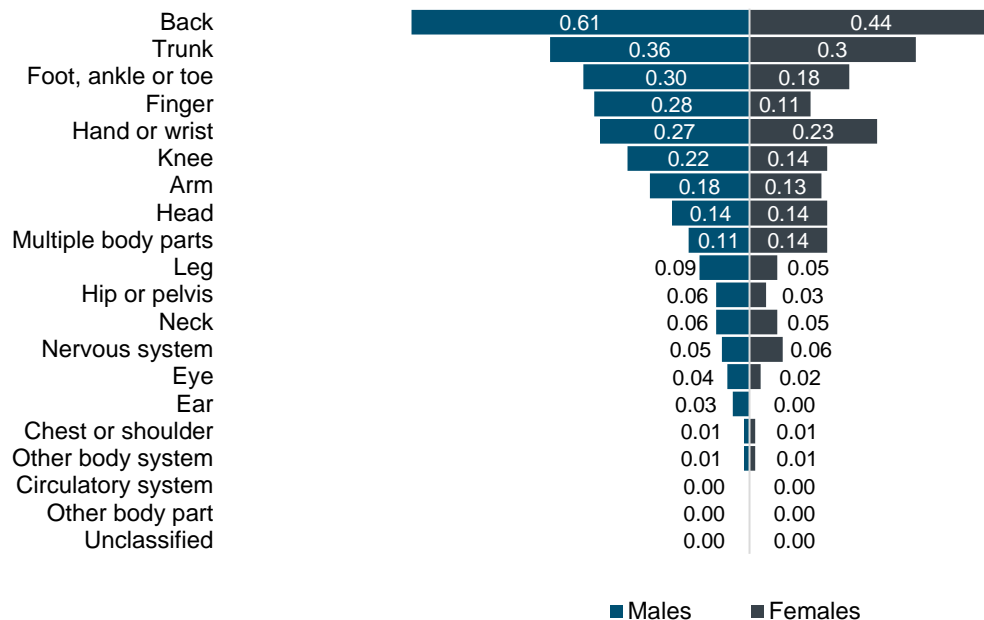
Table 8 shows a detailed breakdown of each leading injured part of body category. Sprains or strains are consistently the nature of injury for all commonly injured parts of body. These are largely attributed to overexertion or bodily reaction.

**TABLE 8: LEADING INJURED PARTS OF BODY CHARACTERISTICS, ALBERTA, 2021**

Injured part of body	Trunk	Upper extremity	Lower extremity
Leading injured part of body - detailed	Back (58%)	Hand or wrist (42%)	Foot, ankle, or toe (49%)
Leading industry sector	Health care services (11%)	Health care services (6%)	General trucking (6%)
Leading occupation	Nurse aides, orderlies, etc. (8%)	Retail sales (5%)	Transport truck drivers (6%)
Leading gender	Male (60%)	Male (64%)	Male (65%)
Leading age group	35-44 (24%)	25-34 (25%)	25-34 (24%)
Leading type of injury	Overexertion (44%)	Overexertion (17%)	Bodily reaction (27%)
Leading nature of injury	Sprain or strain (76%)	Sprain or strain (34%)	Sprain or strain (59%)
Leading source	Person (32%)	Person (19%)	Person (41%)

Source: WCB data, prepared by Jobs, Economy and Northern Development

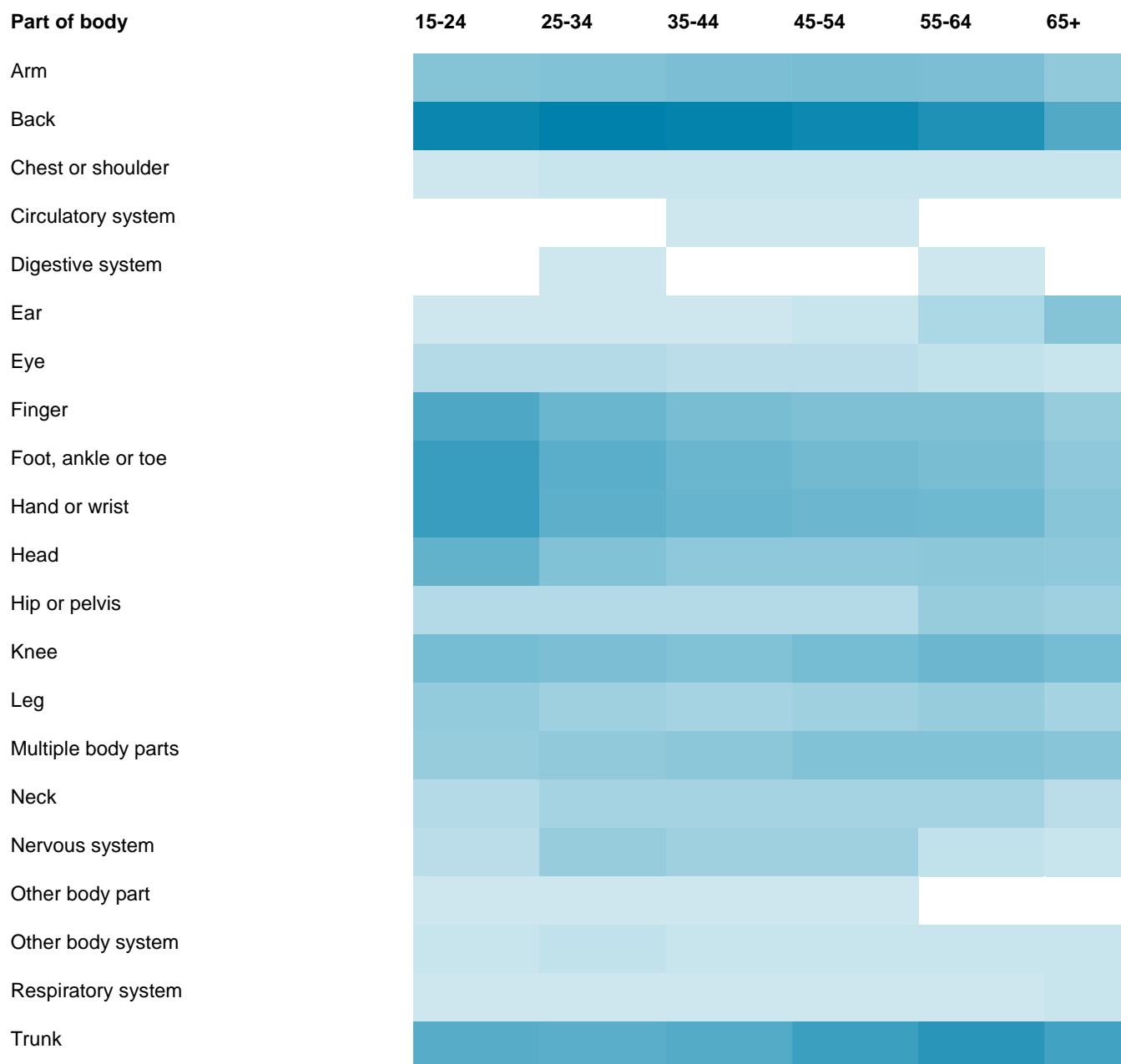
Female workers had more injuries involving the hand or wrist, nervous system and multiple parts (multiple body parts from two or more classifications) compared to male workers (Figure 15). Injuries to all other parts of body were found more often in male compared to female workers. Male workers had almost two times the injury rate for both fingers and legs.



**Figure 15: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by injured parts of body and gender, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

Injuries to eyes, fingers, feet and hands decreased with worker age (Figure 16). Injuries to ears, body trunk and multiple body parts increased with worker age. Head, foot, hand, wrist and finger injuries were highest in youth (ages 15-24). Back injuries were highest across all worker age groups.



**Figure 16: Adjusted disabling injury claim rates (per 100 person-years) for non-COVID-19 claims by injured parts of body and age group, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

## Workers

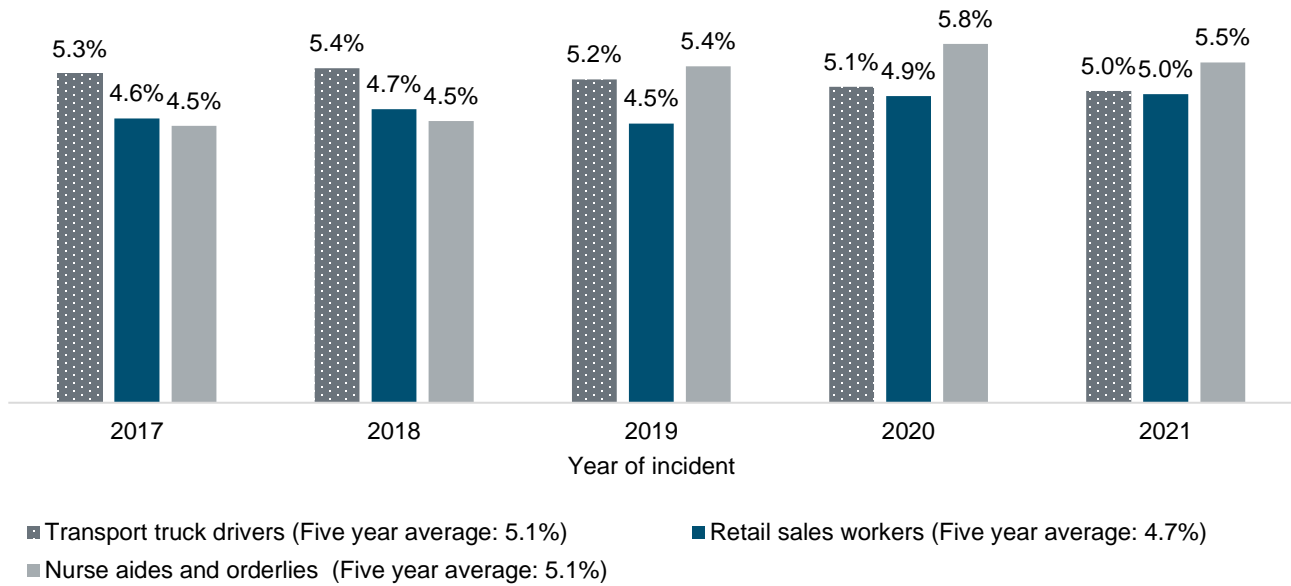
The following section provides details on the characteristics of injured workers.

### Occupations

In 2021, the occupations with the greatest number of disabling injury claims were:

- Nurse aides and orderlies (2,327 injury claims).
- Transport truck drivers (2,132 injury claims).
- Retail sales workers (2,111 injury claims).

All three occupations each accounted for five per cent of total disabling injury claims. From 2017 to 2018, transport truck drivers had the most disabling injury claims. In 2019, nursing aides and orderlies became the leading occupation with the most claims (Figure 17).



**Figure 17: Percentage of disabling injury claims by leading three occupations, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

Table 9 shows a detailed breakdown of characteristics within each occupation.

**TABLE 9: LEADING OCCUPATION CHARACTERISTICS, ALBERTA, 2021**

Occupation	Nurse aides and orderlies	Transport truck drivers	Retail sales workers
Leading industry sector	Continuing care facilities (40%)	General trucking (51%)	Food and convenience stores (27%)
Leading gender	Female (92%)	Male (95%)	Female (64%)
Leading age group	45-54 (29%)	55-64 (26%)	15-24 (25%)
Leading type of injury	Overexertion (44%)	Overexertion (18%)	Overexertion (28%)
Leading source	Person (68%)	Floor, walkway, or ground surface (23%)	Person (21%)
Leading nature of injury	Sprain or strain (78%)	Sprain or strain (57%)	Sprain or strain (52%)
Leading injured part of body - detailed	Back (30%)	Back (21%)	Back (23%)

Source: WCB data, prepared by Jobs, Economy and Northern Development

All three occupations experienced sprains and strains most frequently and had back injuries. Transport truck drivers with injuries were older while injured retail sales worker tended to be younger. Injured nurse aides and orderlies and retail sales workers were more likely to be female workers.

### Age and gender

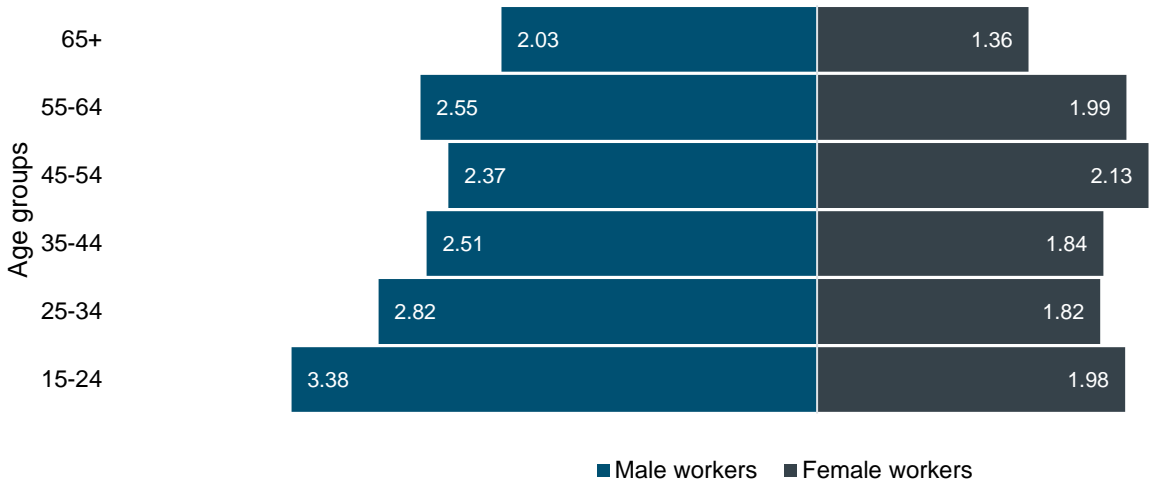
Workplace injuries and illnesses vary across age groups and genders (Figures 18, 19 and Appendix C – Figures C3, C4). Studies have shown that injuries which lead to disability affect more older workers, while injuries to younger workers are more common.<sup>9</sup> For the 2021 Alberta workforce population (Figure 2 – [Alberta's labour force](#)), younger males workers had a high rate of disabling injuries relative to the smaller percentage of workers in this age and gender group (Figure 18). Although workers between ages 35 to 44 were the largest age group of workers, they experienced less disabling injuries than other age groups.

<sup>9</sup> A. Farrow, F. Reynolds, *Health and safety of the older worker*, *Occupational Medicine*, Volume 62, Issue 1, January 2012, Pages 4–11, <https://doi.org/10.1093/occmed/kgr148>

Gender differences in workplace injuries are also prevalent, as some industries and occupations are more common to specific worker genders (Appendix C – Table C9). Even within the same gender, workers of different age groups may face different levels of injury risk (Figures 18 and 19). For instance, female workers aged 15-24 are affected by different injuries compared to female workers over the age of 65.

In 2021, WCB disabling injury claims show:

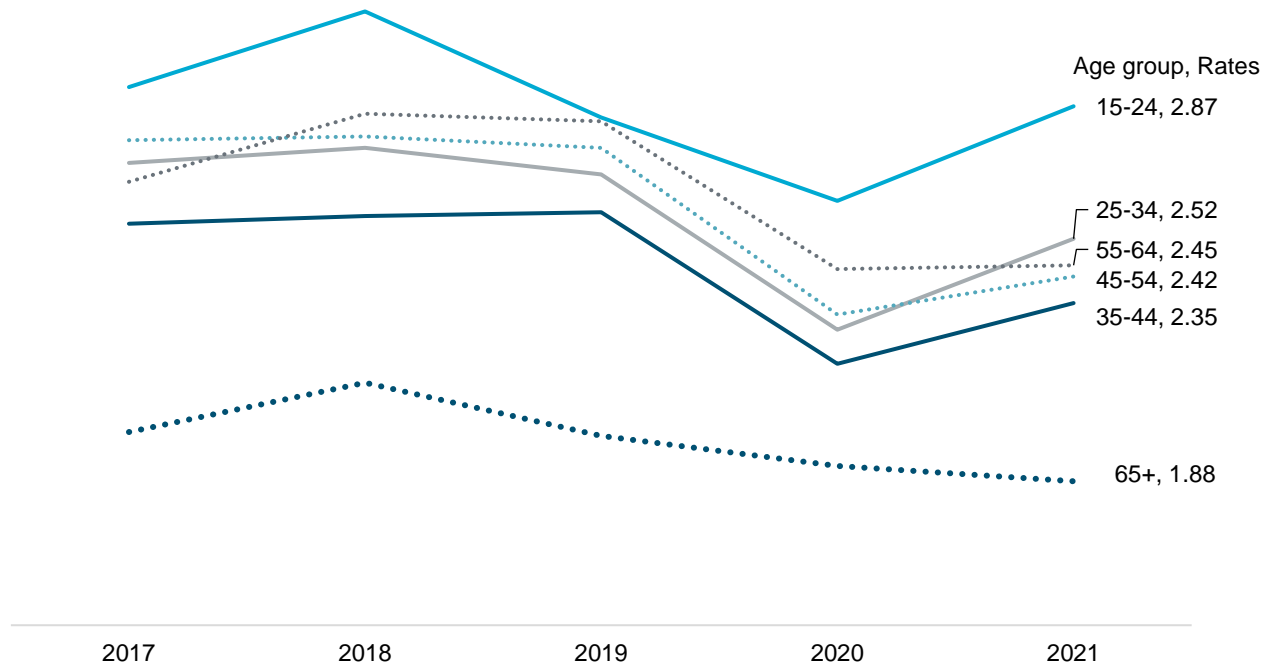
- Male workers had 61 per cent of disabling injury claims.
- Female workers had slightly higher injury claim rates for mental illnesses and infectious diseases.
- Workers in the 25 to 34 and 35 to 44 age groups each had 24 per cent of disabling injury claims.
- Young male workers (aged 15-24 years) had the highest adjusted disabling injury rates among all males (3.61 per 100 person-years), with the most common injuries being overexertion (19 per cent) and being struck by an object (18 per cent).
- Female workers aged 45-54 had the highest adjusted disabling injury rates among all females (2.28 per 100 person-years).  
Of these:
  - The highest number (18 per cent) worked in health care services, followed by 11 per cent in continuing care facilities.
  - Nearly 16 per cent were nurse aides and orderlies, while eight per cent were retail workers.
  - The most common injuries were overexertion (26 per cent) and fall to same level (16 per cent).



**Figure 18: Adjusted disabling claim injury rates (per 100 person-years) for non-COVID-19 claims by age group and gender, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development





**Figure 19: Adjusted disabling claim injury rates (per 100 person-years) for non-COVID-19 claims by age group, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Young workers (15-24)

Youth workers (15-24 years old) are at risk for workplace injuries for several reasons, including inexperience, lack of adequate training and increased exposure to dangerous jobs.<sup>10</sup> In Alberta, youth represent 12 per cent of the labour force.

WCB claims from youth workers had the following characteristics:

- In 2021, this group had 14 per cent of total disabling injury claims.
- Bodily reaction or exertion was the most common type of incidents for both male and female workers (1.38 per 100 person-years and 0.87 per 100 person-years respectively).
- Persons, plants, animals and minerals was the most common source for male and female workers (0.82 per 100 person-years and 0.72 per 100 person-years respectively).
- Have the highest adjusted disabling injury claim rate among all age groups (2.87 per 100 person-years).
- Claims occurred most often in the restaurant and catering, food and convenience stores and wholesaling industries (eight per cent, seven per cent and five per cent, respectively).
- Retail sales workers were involved in nine per cent of claims.
- Nearly half of all injuries and illnesses were caused by overexertion, being struck by an object or bodily reaction and exertion (20 per cent, 16 per cent and 11 per cent, respectively).
- Most claims were related to sprains and strains (48 per cent).

### Older workers (65+)

Older workers (65+ years old) may experience longer recovery times and have worse outcomes after a workplace injury.<sup>11</sup> In Alberta, older workers represent four per cent of the labour force. Other older worker characteristics include:

<sup>10</sup> 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>

<sup>11</sup> Macpherson, R.A., Lane, T.J., Collie, A., & McLeod, C.B. (2018). Age, sex and the changing disability burden of compensated work-related musculoskeletal disorders in Canada and Australia. *BMC Public Health*, 18, 758. <https://doi.org/10.1186/s12889-018-5590-7>

- This worker group had three per cent of total disabling injury claims in 2021.
- Slips, trips and falls was the most common type of incidents for male workers (0.68 per 100 person-years) while bodily reaction or exertion was most common in female workers (0.61 per 100 person-years).
- Structures and surfaces was a more common source of incident for male workers while persons, plant, animals and minerals were more common for female workers (0.61 per 100 person-years and 0.47 per 100 person-years respectively).
- The adjusted disabling injury claim rate among all older workers was 1.88 per 100 person-years.
- Claims occurred most often in the trucking service, food and convenience stores and health care services industries (nine per cent, six per cent and six per cent, respectively).
- Nearly 12 per cent of claims involved transport truck drivers.
- Nearly half of all injuries and illnesses were caused by falls to the same level, overexertion and bodily reaction (22 per cent, 18 per cent and eight per cent respectively).
- Most claims were related to sprains or strains (51 per cent).

### Other workers (25-64)

Workers between the ages of 25-64 years also face unique experiences that may increase their risk for workplace injuries, illnesses and fatalities. Job demands and other non-work factors can impact rates and differ between age groups.<sup>12</sup> In Alberta, workers ages 25-64 years represent 84 per cent of the labour force.

- This group had 82 per cent of total disabling injury claims in 2021.
- Bodily reactions or exertions was the most common type of incidents for both male and female workers (1.20 per 100 person-years and 1.03 per 100 person-years respectively).
- The adjusted disabling injury claim rate was 2.43 per 100 person-years.
- Claims occurred most often in the health care service, cities and general trucking service industries (10 per cent, five per cent and five per cent, respectively).
- Nearly six per cent of claims involved nurse aides, orderlies, etc.
- Nearly half of all injuries and illnesses were caused by overexertion, falls to the same level and bodily reaction (24 per cent, 12 per cent and 11 per cent respectively).
- Most claims were related to sprains or strains (59 per cent).

## Occupational fatalities

In 2021, 136 workers were fatally injured from workplace injuries or illnesses. Of these, 25 workers lost their lives due to COVID-19-related illness. The remaining 111 fatalities were from non-COVID-19 events. This section highlights fatalities based on the non-COVID-19 related events.

Of fatalities from non-COVID-19 related injuries (Figure 20 and Appendix C –Tables C10 and 11):

- Occupational illnesses comprised 50 per cent.
- Workplace incidents comprised 35 per cent.<sup>13</sup>
- Motor vehicle incidents comprised 14 per cent.

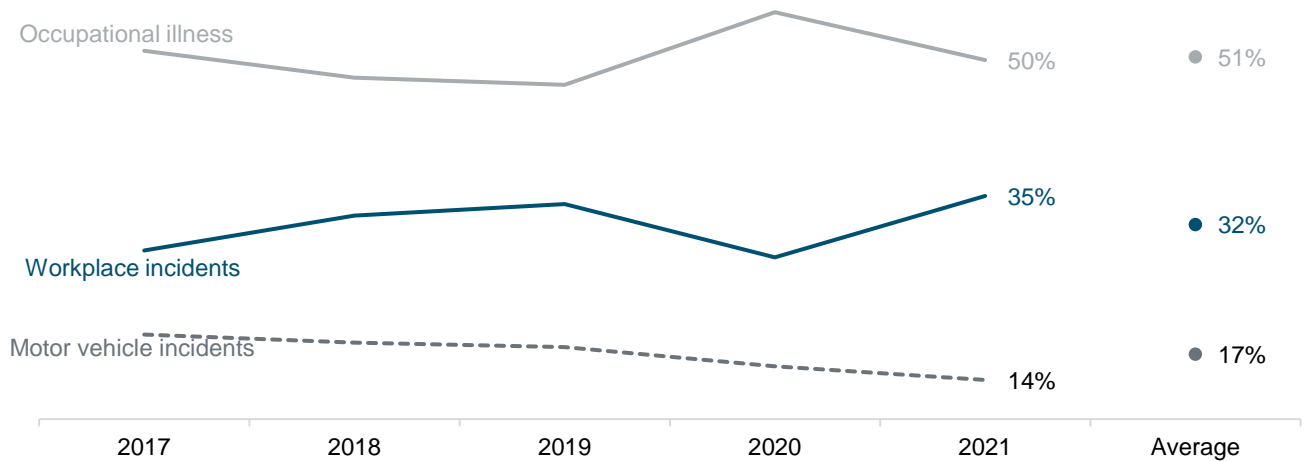
Occupational adjusted fatality rates (all fatalities) have increased over the past three years, with the rate in 2021 being the highest in the last 10 years (Figure 21). In 2020-2021, although the number of person-years decreased with the smaller workforce, the number of occupational fatalities was higher than 2018 and 2019.

Trends based on the proportion of occupational fatalities from the past five years (Figure 20 and Appendix C –Tables C10 and C11) show:

- Occupational illnesses continue to be the leading cause of fatalities.
- After a decrease in 2020, injuries at the workplace increased in 2021.
- Until 2021, motor vehicle incidents decreased.

<sup>12</sup> Chau, N., Bhattacharjee, A., Kunar, B.M., & Group, L. (2009). Relationship between job, lifestyle, age and occupational injuries. *Occupational Medicine*, 59(2), 114-119. <https://doi.org/10.1093/occmed/kqp002>

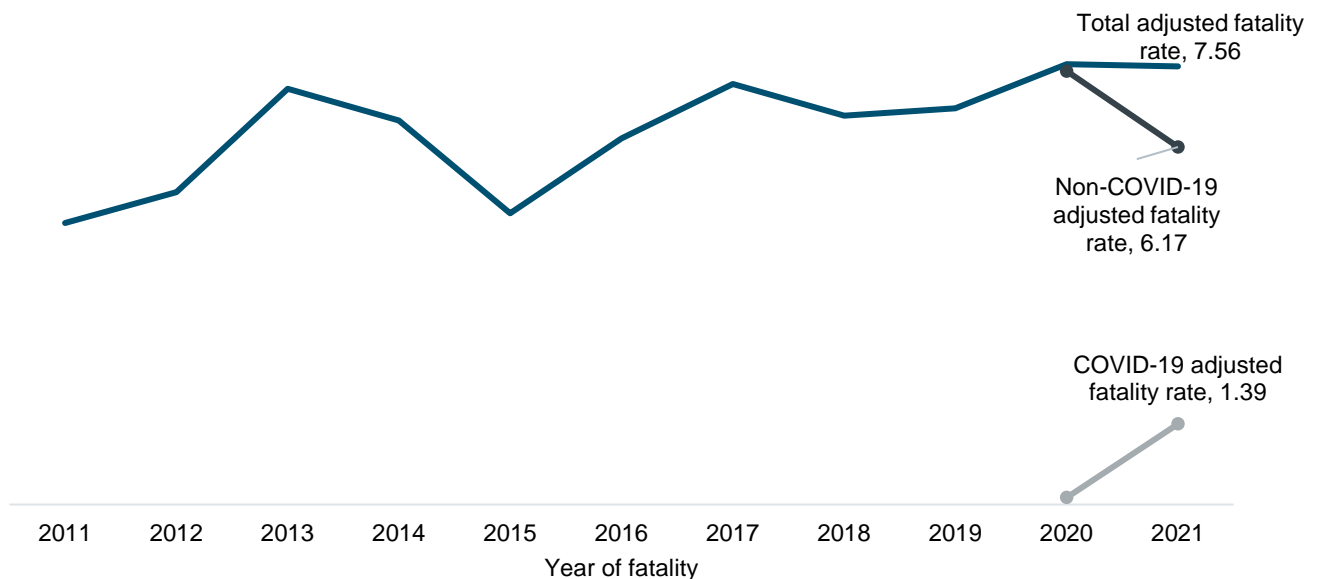
<sup>13</sup> Workplace incident is when an injury occurred in a workplace. It doesn't include occupational illnesses or motor vehicle incidents.



**Figure 20: Per cent of occupational fatalities (based on year of death) by category, Alberta, 2017-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related fatalities only



**Figure 21: Occupational adjusted fatality rates (per 100,000 person-years) by year of death, Alberta, 2011-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related fatalities only

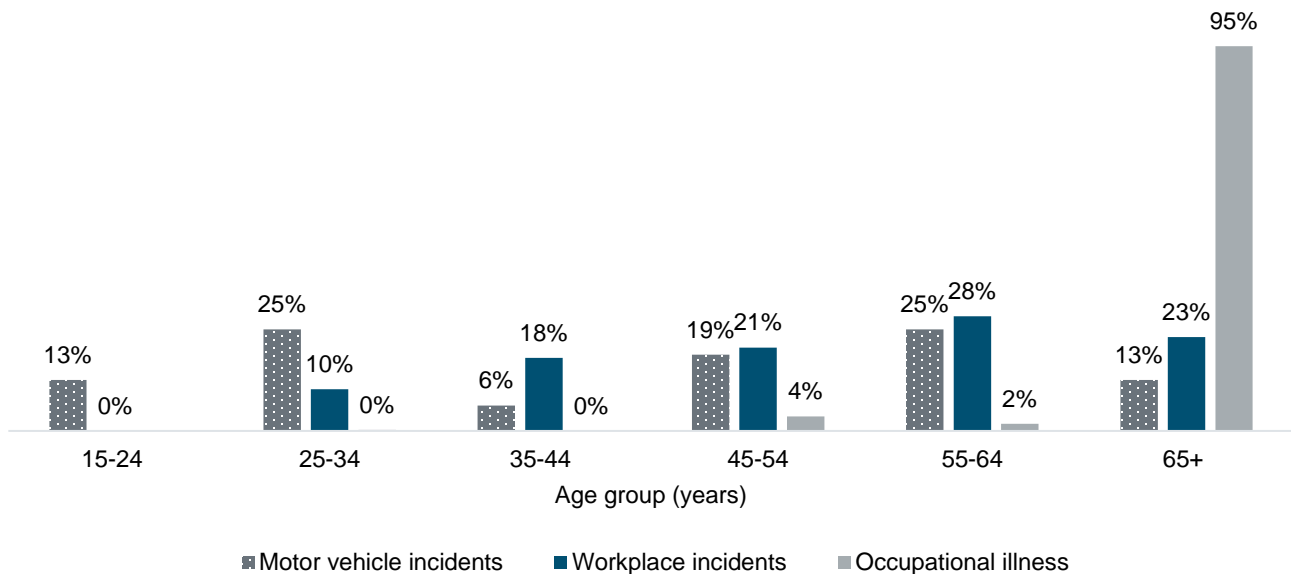
In 2021, asbestosis and mesothelioma were the leading types of occupational illness fatalities and accounted for 41 per cent of occupational illness fatality claims, slightly lower than in 2021 (45 per cent). Alberta OHS conducts asbestos inspections in response to notification of projects. Industrial construction, mechanical insulation installation and servicing and petrochemicals manufacturing industries had the most occupational illness fatalities from asbestosis and mesothelioma combined (13 per cent each).

For workplace incident fatalities, 28 per cent were from struck by or against objects. Of these fatalities:

- The majority (91 per cent) were struck by an object.
- Over half (55 per cent) involved solid building material.
- The construction and construction trade services sector accounted for 36 per cent.

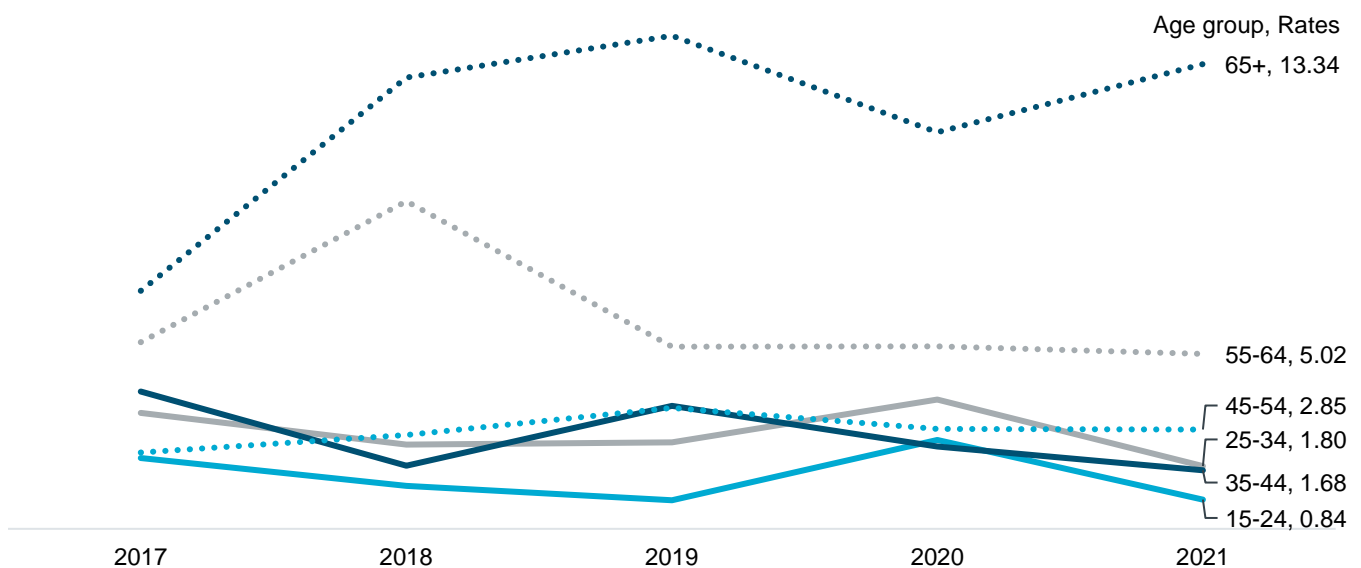
## Occupational fatality by age groups

The categories of occupational fatalities varied across age groups. Youth workers (aged 15-24) were more likely to have occupational fatalities due to motor vehicle incidents, while older workers (aged 65 and older) were more likely to experience fatalities from occupational illness (Figure 21). Due to the nature and long latency of occupational illnesses, it is expected to see higher proportions in older workers. Workers aged 55-64 had the highest percentage of workplace incidents (28 per cent).



**Figure 22: Per cent of occupational fatalities (based on year of death) within fatality categories by age group, Alberta, 2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development  
 Note: 2020 and 2021 include non-COVID-19 related fatalities only



**Figure 23: Adjusted fatality rate (per 100,000 person-years) due to workplace incidents (dotted lines) or motor vehicle incidents (solid lines) by age group, Alberta, 2017-2021**

Source: WCB data, Statistics Canada's Labour Force Survey (2021 Historical Review), prepared by Jobs, Economy and Northern Development  
 Note: To better reflect current workplace hazards, occupational illness fatalities are not represented in Figure 23 and 2020 and 2021 include non-COVID-19 related fatalities only

From 2017 to 2021, age differences of occupational fatalities from workplace incidents or motor vehicle incidents (Figure 23) showed:

- In 2021, fatalities in youth workers aged 15-24 had the greatest decrease (67 per cent from 2020). Youth workers were also the least affected.
- In 2021, the adjusted fatality rates increased only in the oldest age group (aged 65 and older).

In workers aged 65 and older, fatalities occurred mostly in the construction and construction trade services sector (28 per cent). The majority of work-related fatalities in older workers were from workplace incidents (82 per cent).

Although youth workers are at lower risk for work-related fatalities than older workers, they are at higher risk for workplace injuries (see section - Injured workers: Age and gender differences).

### **Occupational fatality rates in industry sectors**

As work activities and environments vary among workplace settings, occupational injuries and fatalities characteristics also vary. In 2021, the highest adjusted fatality rate was in the agriculture and forestry sector (16.29 per 100,000 workers), with over half relating to motor vehicle incidents (57 per cent). Fatality data across industry sectors (Appendix C – Figure C5 and Table C12) show:

- Since 2019, mining and petroleum development was the only sector with a continuous increase in adjusted fatality rates.
- From 2020 to 2021, the largest adjusted fatality rate decrease occurred in business, personal and professional services sector (68 per cent). Between 2017 to 2021, this sector also had the lowest adjusted fatality rates.
- From 2020 to 2021, the largest adjusted fatality rate increase occurred in the wholesale and retail sector (40 per cent).
- The adjusted fatality rate for the provincial and municipal government, education and health sector was lower than the provincial rate, even though this sector had the highest disabling injury claim rate and lost-time injury claim rate among all sectors.

Although mining and petroleum had an increase in adjusted fatality rate in 2021, the mining and petroleum development sector had the lowest disabling and lost-time injury claim rates across all sectors.

### **Occupational fatalities by occupation**

In 2021, transport truck drivers (11 per cent) and firefighters (six per cent) had the highest proportion of fatalities. This trend has been consistent since 2017.

### **Prevention initiative**

In 2019, Alberta 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 OHS system partners is a key. The purpose of the initiative is to raise awareness of illness and injury areas where workers are most at risk or affected the most. Based on evidence and consultation, the priorities are:

- Musculoskeletal disorders (MSD) due to repetitive use, overexertion and heavy lifting.
- Slips, trips and falls.
- Psychosocial hazards (e.g., workplace violence, harassment and mental health).

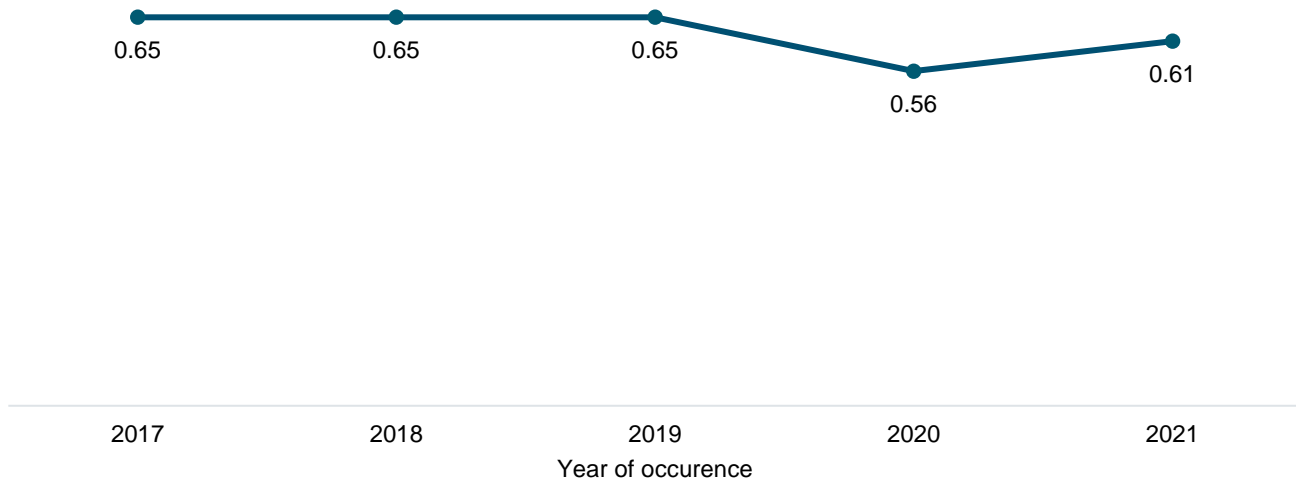
### **Musculoskeletal disorders**

MSD remain one of the most common occupational injuries for Alberta workers in all sectors. In 2021, these injury types accounted for 22 per cent of total provincial injury claims.

From 2017 to 2021, of disabling injuries related to MSD (Figure 24):

- Between 2017 to 2019, the disabling injury claim rate remained stable, declined in 2020 and increased in 2021.
- Overexertion was the most common (83 per cent) cause of injury, followed by repetitive motion injury (17 per cent).
- Bodily motion – injured or ill worker was the most common source of injury (17 per cent) followed by health care patient or resident in a health care facility (12 per cent).
- Sprains or strains occurred in 98 per cent of these injuries.

- Injuries affected the back (41 per cent), followed by the trunk (24 per cent).
- The sector with the highest five-year average rates for disabling and lost-time injury claims was the provincial and municipal government, education and health services sector. The rates were 0.89 per 100 person-years and 0.62 per 100 person-years, respectively.
  - The Alberta-wide five-year average rates were 0.62 per 100 person-years and 0.31 per 100 person-years, respectively.
- Nurse aides and orderlies had the most MSD claims (nine per cent).
- Male workers had 58 per cent of MSD injuries.
- Over a quarter (26 per cent) of injuries involved workers ages 35-44 years.



**Figure 24: Musculoskeletal disabling injury claim rate, Alberta, 2017-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

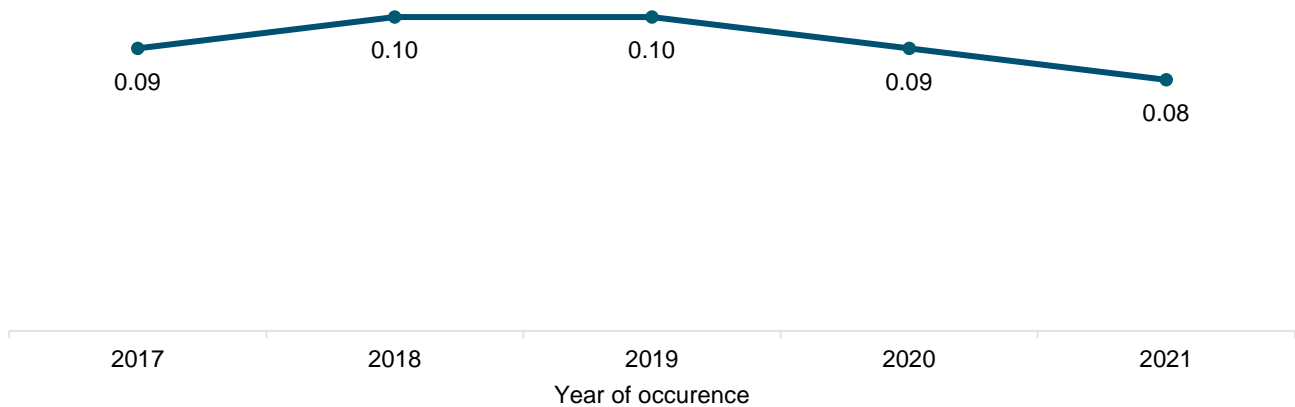
### Slips, trips and falls

In 2021, injuries related to slips, trips and falls account for 17 per cent of total disabling injuries. Falls accounted for the majority (14 per cent) of these injuries while slips and trips accounted for three per cent.

#### Slips and trips

From 2017 to 2021, of disabling injuries related to slips and trips (Figure 25):

- Since 2019, the disabling injury claim rate declined.
- The majority were due to slipping, tripping or losing balance without a fall (44 per cent).
- Bodily motion – injured or ill worker, was the common source in nearly 100 per cent of slips and trips.
- Sprains or strains occurred in 83 per cent of these injuries, followed by fractures (eight per cent).
- Foot, ankle, or toe were the most commonly injured body part (35 per cent), followed by the knee (22 per cent).
- The sector with the highest five-year average rates for disabling and lost-time injury claims was the transportation, communication and utilities sector. The rates were 0.14 per 100 person-years and 0.08 per 100 person-years, respectively.
  - The Alberta-wide five-year average rates were 0.09 per 100 person-years and 0.05 per 100 person-years, respectively.
- Transport truck drivers had the most slips and trips injury claims (seven per cent).
- Injuries were to male workers (67 per cent).
- Workers aged 25-34 and 35-44 years were involved in injuries (23 per cent each).



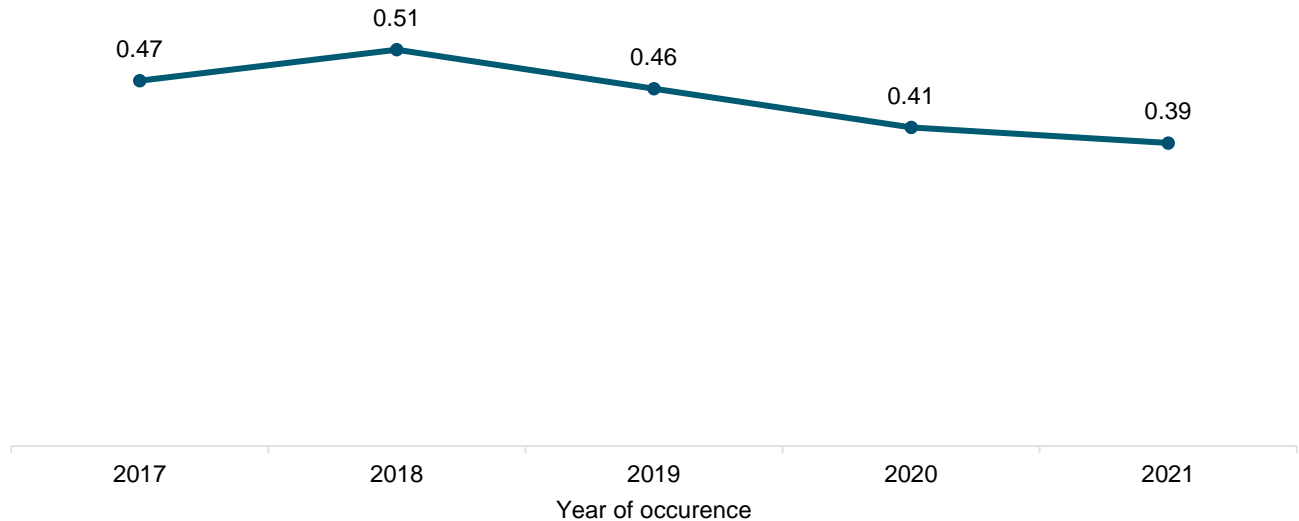
**Figure 25: Slips and trips disabling injury claim rate, Alberta, 2017-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Falls

From 2017 to 2021, of disabling injuries related to falls (Figure 26):

- Since 2018, the disabling injury claim rate declined.
- The majority were due to workers falling on the same level (70 per cent). Of these falls, 82 per cent were to a floor, walkway, or other surface.
- Sprains or strains occurred in 43 per cent of these injuries, followed by surface wounds or bruises (19 per cent).
- The back was the most commonly injured body part (15 per cent), followed by the trunk (14 per cent).
- The sector with the highest five-year average rates for disabling and lost-time injury claims was the transportation, communication and utilities sector. The rates were 0.66 per 100 person-years and 0.44 per 100 person-years, respectively.
  - The Alberta-wide five-year average rates were 0.45 per 100 person-years and 0.29 per 100 person-years, respectively.
- Transport truck drivers had the most fall-related injury claims (eight per cent).
- Nearly 60 per cent of injuries were to male workers.
- Workers aged 55-64 years were involved in 23 per cent of injuries.



**Figure 26: Falls disabling injury claim rate, Alberta, 2017-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Psychosocial hazards

Psychosocial hazards are any hazards that affect the mental well-being or mental health of a worker and may lead to physical effects by overwhelming the individual's coping mechanisms.<sup>14</sup> These hazards can result in physical and/or psychological illness and injury outcomes.<sup>15</sup>

In 2021, psychosocial hazards accounted for two per cent of all disabling injuries.

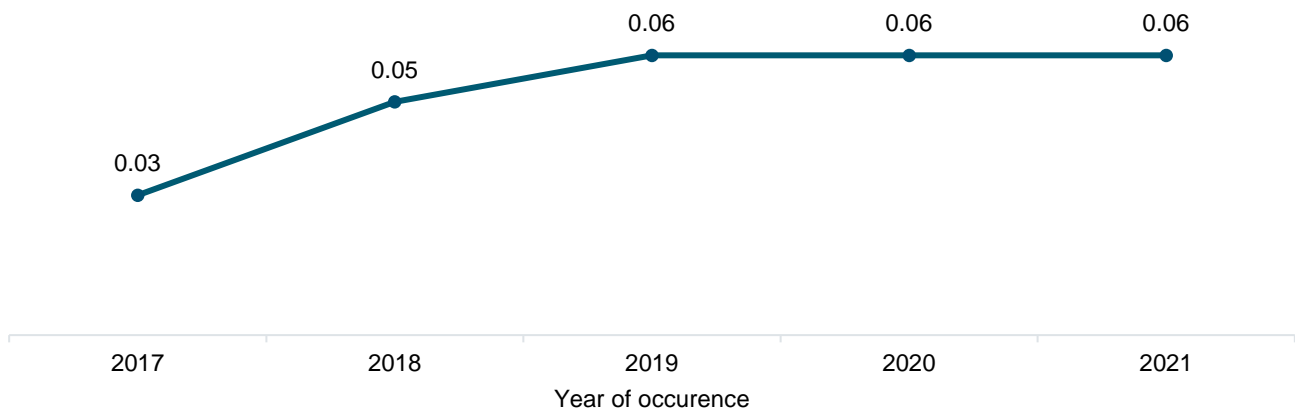
In 2017 to 2021, of psychosocial hazard related injury claims (Figure 27):

- After an increase from 2017 to 2019, the disabling injury rate plateaued at 0.06 per 100 person-years.
- Bodily condition of an injured or ill worker was the most common source in 55 per cent of injury claims followed by a person – not an injured or ill worker (14 per cent).
- Anxiety occurred in 44 per cent of these injuries.
- Nearly 92 per cent of injuries affected the nervous system.
- The sector with the highest five-year average rates for disabling and lost-time injury claims was provincial and municipal government, education and health services sector. Both injury claim rates were 0.19 per 100 person-years.
  - The Alberta-wide five-year average rates were each 0.05 per 100 person-years.
- Ambulance and paramedical workers had the most injury claims (18 per cent), followed by bus driver, subway and transit operators (eight per cent).
- Just over 50 per cent of injuries were in female workers (50.4 per cent).
- Injuries involved workers ages 25-34 years (30 per cent).

<sup>14</sup> Psychosocial hazards. Work Safe Alberta Occupational Health and Safety Teacher Resources. Government of Alberta. <https://ohs-pubstore.labour.alberta.ca/download/sample/287>

<sup>15</sup> 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).





**Figure 27: Psychosocial hazards disabling injury claim, Alberta, 2017-2021**

Source: WCB data, prepared by Jobs, Economy and Northern Development

### Workplace harassment and violence

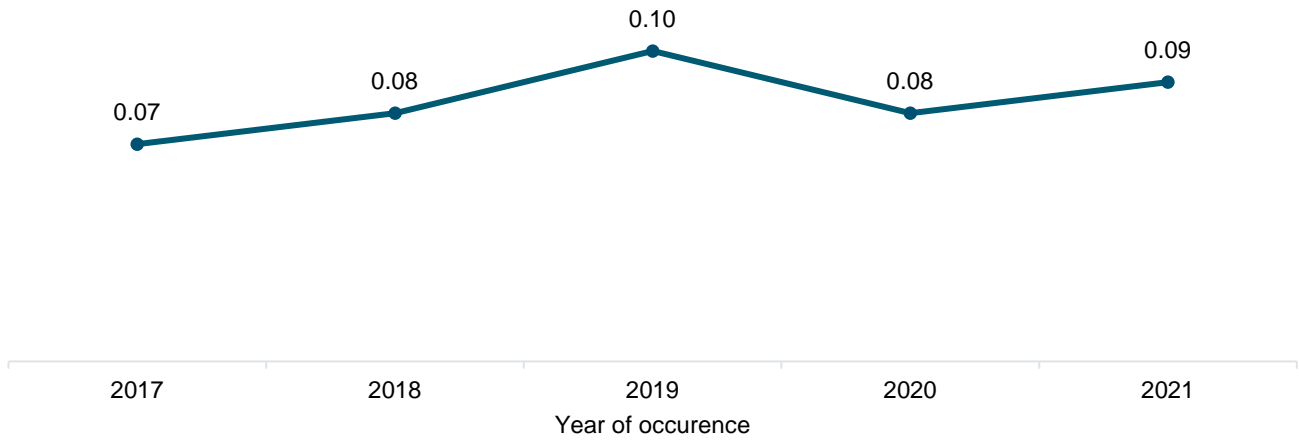
Workplace harassment is behaviour intended to intimidate, offend, degrade or humiliate a particular person or group in the workplace.<sup>16</sup> Workplace violence can include physical attack or aggression, threatening behaviour, verbal or written threats, domestic violence or sexual violence. Workplace harassment and violence are psychosocial hazards and can cause physical and psychological harm.

In 2021, workplace violence and harassment accounted for three per cent of all disabling injury claims.

From 2017 to 2021, of workplace violence and harassment related injury claims (Figure 28):

- From 2017 to 2020, the rate increased, followed by a decrease in 2021.
- Hitting, kicking and beating was the most common type of injury (30 per cent).
- Person – not an injured or ill worker, was the most common source of injury (35 per cent) followed by health care patient or resident in a health care facility (31 per cent).
- Sprains, strains and tears occurred in 29 per cent of these injuries, followed by bruises or contusions (19 per cent).
- The nervous system and the head were each affected in 20 per cent of injuries, respectively.
- The sector with the highest five-year average rates for disabling and lost-time injury claims was provincial and municipal government, education and health services sector. The rates were 0.34 per 100 person-years and 0.28 per 100 person-years, respectively.
  - The Alberta-wide five-year average rates were 0.08 per 100 person-years and 0.07 per 100 person-years, respectively.
- Nurse aides and orderlies had the most injury claims (17 per cent), followed by social and community service workers (12 per cent).
- Female workers had the greatest number of injuries (62 per cent).
- Injuries involved workers aged 25-34 years (32 per cent).

<sup>16</sup> Harassment and violence in the workplace: OHS information for employers, supervisors and workers. (February 2023) Government of Alberta. <https://ohs-pubstore.labour.alberta.ca/li045>



**Figure 28: Workplace violence and harassment disabling injury claim rate, Alberta, 2017-2021**  
Source: WCB data, prepared by Jobs, Economy and Northern Development

## **Alberta Occupational Health and Safety's strategic direction**

In 2021, employment increased in the majority of industry sectors following the highest annual employment decline that occurred in 2020 with the COVID-19 pandemic. The pandemic continued to impact the business models and nature of work in many industries. Many workplace injury, illness and fatality rates remained high for certain industry sectors, occupations and age groups. Continuing to explore the impacts of these patterns and characteristics (related to non-COVID-19 and COVID-19 illness) on industries and workers can lead to insights on the future of worker health and safety.

Proactive OHS inspection initiatives have been in place within various industry sectors, including different types of employers and populations of workers with vulnerabilities. These initiatives have resulted in workplace inspections to monitor compliance with OHS legislative requirements and promote awareness of the importance of the employers' internal responsibility systems. Alberta OHS also actively responds to concerns reported by employers, workers and the general public.

To address the issues highlighted in this report, Alberta OHS along with OHS system partners will continue to find additional ways increase awareness for system priorities, develop educational resources that address the needs of OHS system stakeholders and explore ways to enhance focused, proactive initiatives for industries with consistently high injury, illness and fatality claim rates. Findings will be shared with stakeholders and involve OHS system Prevention Initiative partners, which include Certifying Partner organizations, labour groups, employers, academia, not-for-profit organizations, among others.

The evidence featured in this report builds on previous work aimed at enhancing health and safety systems, as well as prevention measures to reduce worker injuries, illnesses and fatalities. In 2021, the province and those involved within Alberta's OHS system, continued to adapt to rapid changes to be responsive to system needs. Alberta OHS, along with OHS system partners will continue to be agile, working to strategically achieve the goal of healthier and safer workplaces.

## Conclusion

The Workplace Injury, Illness and Fatality Statistics - Provincial Summary 2021 prepared by Jobs, Economy and Northern Development provides an overview of workplace injury, illness and fatality trends in Alberta.

Information on Alberta's labour force, industry and occupation trends, as well as injury and illness characteristics, are presented in the report. This information will be used by Jobs, Economy and Northern Development to help Alberta OHS guide strategic initiatives and programs that assist in keeping workers healthy and safe.

# Appendix A

Measures such as claim counts and claim rates can help assess how well Alberta OHS processes, policies and procedures are working. They are lagging indicators<sup>17</sup> that over time can give insight into health and safety performance trends.

The 2021 injury, illness and fatality data in this report refers to incidents that occurred in the 2021 calendar year and were accepted as a WCB claim.

## Overview of measures

The following measures are used when reporting workplace injury, illness and fatality trends among Alberta workers.

### Claim counts

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

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

**Modified-work claim** is a work-related injury or illness WCB 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.

**Lost-time claim** is a work-related injury or illness WCB claim that results in the worker missing work beyond the day they were injured. Lost-time claims can be used as an indicator of severity. The injury may be more severe if a worker cannot perform their pre-injury or modified tasks.

**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 worker or several part-time workers. This measure is used as a proxy to estimate the employed workforce and is often used 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.

### Claim rates

**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. The 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/illness claim rate** is calculated using a different methodology and different 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 2021 Labour Force Survey for Alberta. The number of injury/illness claims from workers and the adjusted person-years is used to calculate the rate.

**Injury/illness claim rates** are the number of claims per 100 person-years worked. The injury/illness claim rate is calculated by dividing the number of injury/illness claims by the person-years estimate and multiplying the result by 100.

### Measure considerations

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

- Changes in workplace health and safety culture.
- Enhanced regulatory compliance.

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<sup>17</sup> 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.

- Improved support for modified-work arrangements.
- Industry-led initiatives to improve workers' health and safety.

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

# Appendix B

## Data considerations

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

This report only covers employers registered with WCB.

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

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

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

Workplace injuries and illnesses reported are based on WCBs classification system.

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

Percentages displayed in tables may not total to 100 due to rounding.

Effective April 1, 2018, the *Workers' Compensation Act* Section 24.2(3) was added to introduce presumptive psychological injury coverage for all workers with a diagnosis of psychological injury and exposure to a traumatic event at work.<sup>18</sup>

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.

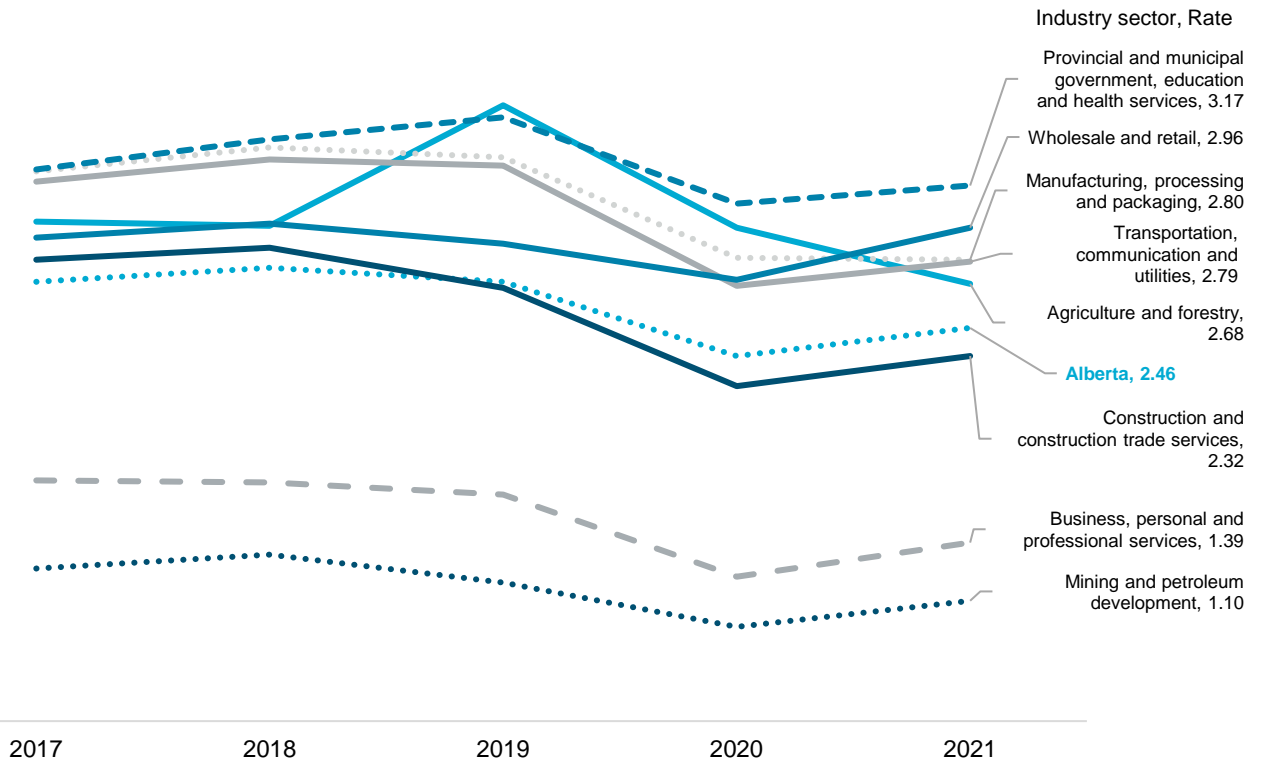
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<sup>18</sup> WCB Policy [https://www.wcb.ab.ca/assets/pdfs/public/policy/manual/printable\\_pdfs/0301\\_2\\_app6.pdf](https://www.wcb.ab.ca/assets/pdfs/public/policy/manual/printable_pdfs/0301_2_app6.pdf)

# Appendix C

## Supplemental Data

### Figures

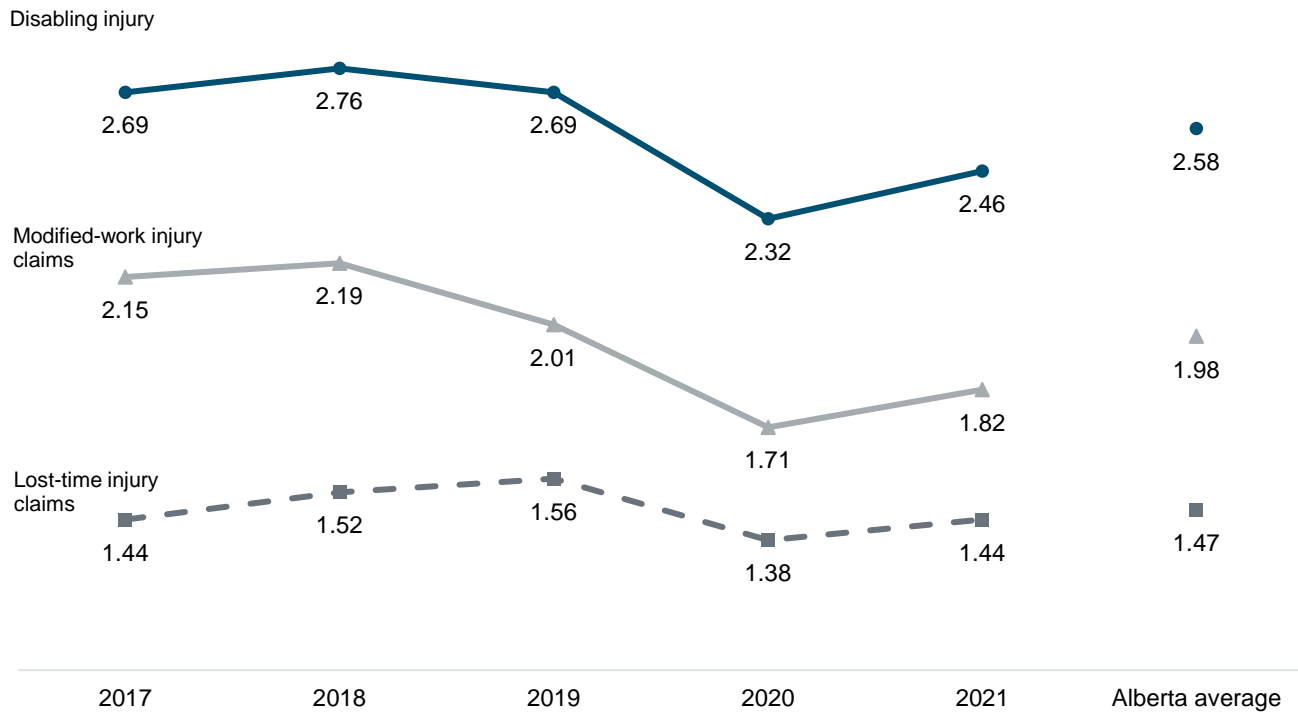


**Figure C1: Disabling injury claim rate (per 100 person-years) by major industry sector, Alberta, 2017-2021**

Source: WCB Data, prepared by Jobs, Economy and Northern Development

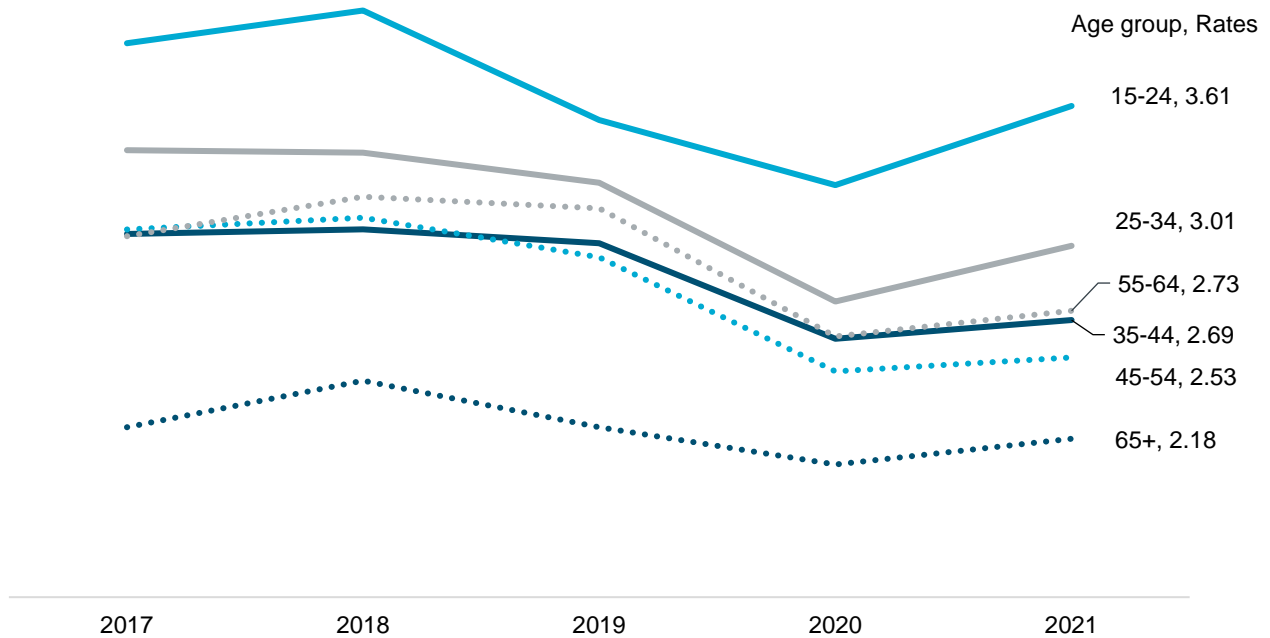
Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only





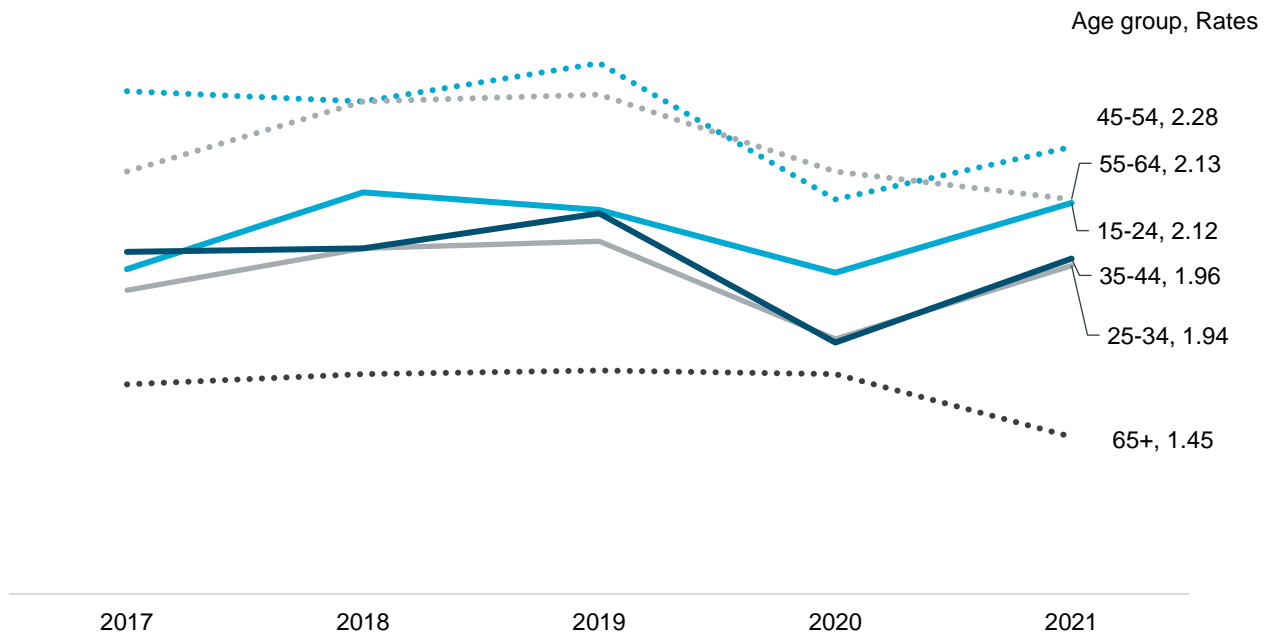
**Figure C2: Injury claim rates (per 100 person-years), Alberta, 2017-2021**

Source: WCB Data, prepared by Jobs, Economy and Northern Development  
 Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only



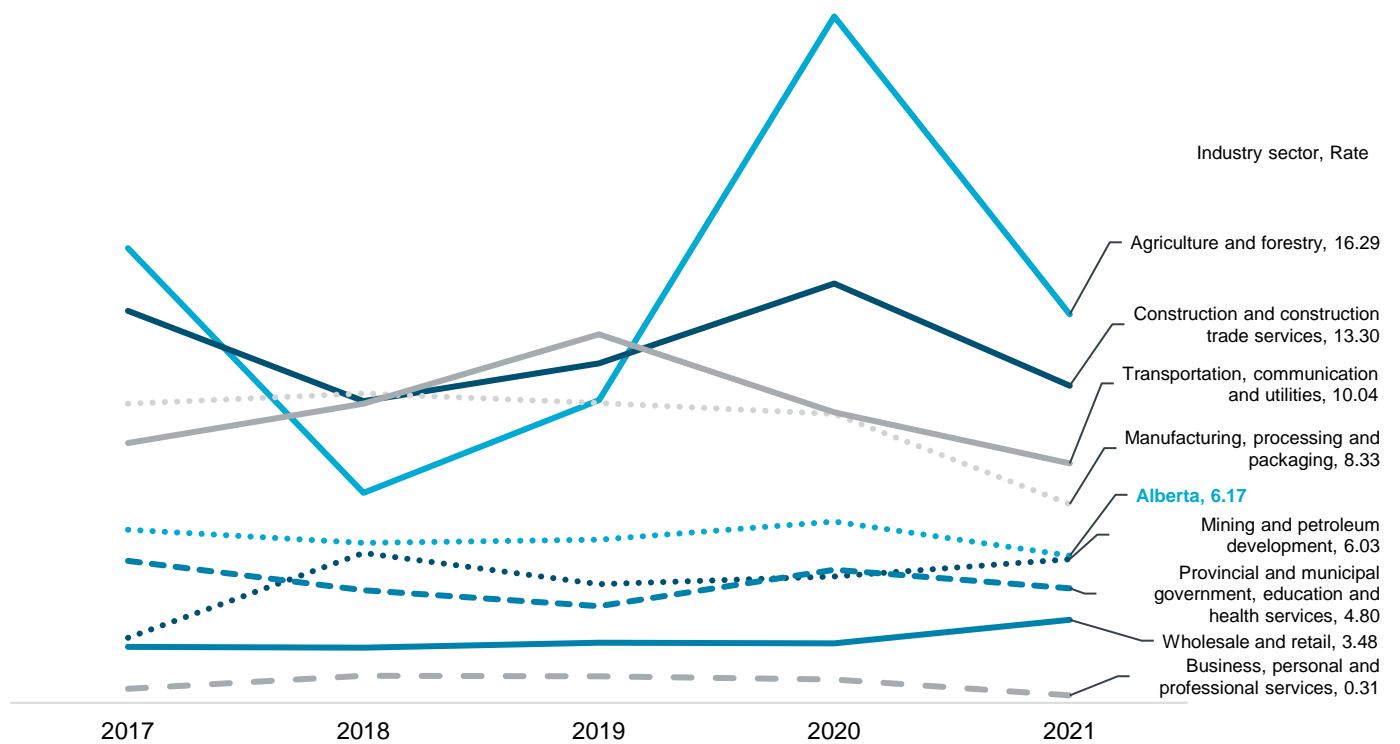
**Figure C3: Adjusted disabling injury claim rate (per 100 person-years) by age group, male workers, Alberta, 2017-2021**

Source: WCB Data, prepared by Jobs, Economy and Northern Development  
 Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only



**Figure C4: Adjusted disabling injury claim rate (per 100 person-years) by age group, female workers, Alberta, 2017-2021**

Source: WCB Data, prepared by Jobs, Economy and Northern Development  
 Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only



**Figure C5: Adjusted fatality rate (per 100,000 person-years) by major industry sector, Alberta, 2017-2021**

Source: WCB Data, prepared by Jobs, Economy and Northern Development  
 Note: 2020 and 2021 include non-COVID-19 related fatalities only

## Tables

**TABLE C1: OCCUPATIONS OF WORKERS WITH COVID-19 ILLNESS CLAIMS, ALBERTA, 2021**

Occupation	Number	Per cent
Trades, transport, and equipment operators and related occupations	841	13
Assisting occupations in support of health services	612	9
Labourers in processing, manufacturing and utilities	425	7
Paraprofessional occupations in legal, social, community and education services	365	6
Processing and manufacturing machine operators and related production workers	357	5
Transport and heavy equipment operation and related maintenance occupations	349	5
Trades helpers, construction labourers and related occupations	348	5
Service support and other service occupations	297	5
Technical occupations in health	269	4
Maintenance and equipment operation trades	250	4
Professional occupations in nursing	233	4
Care providers and educational, legal and public protection support occupations	193	3
Occupations in front-line public protection services	192	3
Service representatives and other customer and personal services occupations	177	3
Sales support occupations	170	3
Harvesting, landscaping and natural resources labourers	123	2
Other installers, repairers and servicers and material handlers	117	2
Technical occupations related to natural and applied sciences	108	2
Workers in natural resources, agriculture and related production	107	2
Service supervisors and specialized service occupations	106	2
Distribution, tracking and scheduling coordination occupations	105	2
Sales representatives and salespersons - wholesale and retail trade	103	2
Natural resources, agriculture and related production occupations	91	1
Middle management positions in retail and wholesale trade and customer service	78	1
Professional occupations in law and social, community and government services	77	1
Office support occupations	74	1
Administrative and financial supervisors and administrative occupations	61	1
Processing, manufacturing and utilities supervisors and central control operators	56	1
Management positions - administrative, financial and business services, and communication (except broadcasting)	37	1
Professional occupations in health (excluding nursing)	33	1
Assemblers in manufacturing	31	0
Management positions - construction and transportation	31	0
Professional occupations in natural and applied sciences	24	0
Sales and service occupations	18	0
Management positions - health	16	0
Management positions - public protective services, education and government services	16	0
Technical occupations in art, culture, recreation and sport	16	0
Professional occupations in business and finance	12	0
Occupations in Education, Law and Social, Community and Government Services	9	0
Managers in Manufacturing and Utilities	4	0
Managers in engineering, architecture, science and information systems	3	0
Senior management occupations	3	0
Management positions - primary industry	2	0
Management positions - art, culture, recreation and sport	1	0

Source: WCB Data, prepared by Jobs, Economy and Northern Development

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**TABLE C2: COVID-19 DISABLING ILLNESS CLAIMS BY AGE GROUP, ALBERTA, 2020-2021**

Year	2020		2021	
	Number	Per cent	Number	Per cent
15-24 years	395	7	503	7
25-34 years	1,270	22	1,611	24
35-44 years	1,756	30	1,955	29
45-54 years	1,479	26	1,546	23
55-64 years	775	13	1,027	15
65 years and over	101	2	168	2
<b>Total</b>	<b>5,776</b>	<b>100</b>	<b>6,810</b>	<b>100</b>

Source: WCB data, prepared by Jobs, Economy and Northern Development

**TABLE C3: INJURY CLAIMS AND INJURY CLAIM RATES (PER 100 PERSON-YEARS) BY MAJOR INDUSTRY SECTOR, ALBERTA, 2017-2021**

Major industry sector	Measure	Year					Yearly change (%)	
		2017	2018	2019	2020	2021	2019-2020	2020-2021
Agriculture and forestry	Person-years	20,972	22,716	23,640	24,325	24,559	2.9↑	1.0↑
	Lost-time claims	478	499	577	454	454	21.3↓	0.0
	Lost-time injury claim rate	2.28	2.20	2.44	1.87	1.85	23.5↓	1.0↓
	Modified-work claims	395	423	526	496	419	5.7↓	15.5↓
	Modified-work claims injury claim rate	1.88	1.86	2.23	2.04	1.71	8.4↓	16.3↓
	Disabling injury claims	627	675	843	721	658	14.5↓	8.7↓
	Disabling injury claim rate	2.99	2.97	3.57	2.96	2.68	16.9↓	9.6↓
Business, personal and professional services	Person-years	343,653	352,610	361,540	305,439	319,893	15.5↓	4.7↑
	Lost-time claims	3,607	3,734	3,774	2,503	3,072	33.7↓	22.7↑
	Lost-time injury claim rate	1.05	1.06	1.04	0.82	0.96	21.5↓	17.2↑
	Modified-work claims	4,343	4,343	4,091	2,534	2,933	38.1↓	15.7↑
	Modified-work claims injury claim rate	1.26	1.23	1.13	0.83	0.92	26.7↓	10.5↑
	Disabling injury claims	5,835	5,968	5,876	3,733	4,462	36.5↓	19.5↑
	Disabling injury claim rate	1.70	1.69	1.63	1.22	1.39	24.8↓	14.1↑
Construction and construction trade services	Person-years	328,688	331,966	316,176	295,867	308,292	6.4↓	4.2↑
	Lost-time claims	4,072	4,431	4,143	3,268	3,377	21.1↓	3.3↑
	Lost-time injury claim rate	1.24	1.33	1.31	1.10	1.10	15.7↓	0.8↓
	Modified-work claims	7,693	7,863	6,585	4,848	5,532	26.4↓	14.1↑
	Modified-work claims injury claim rate	2.34	2.37	2.08	1.64	1.79	21.3↓	9.5↑
	Disabling injury claims	9,211	9,506	8,404	6,434	7,140	23.4↓	11.0↑
	Disabling injury claim rate	2.80	2.86	2.66	2.17	2.32	18.2↓	6.5↑
Manufacturing, processing and packaging	Person-years	175,426	177,349	174,954	156,777	168,021	10.4↓	7.2↑
	Lost-time claims	2,083	2,301	2,225	1,798	1,968	19.2↓	9.5↑
	Lost-time injury claim rate	1.19	1.30	1.27	1.15	1.17	9.8↓	2.1↑
	Modified-work claims	5,057	5,240	4,936	3,711	3,946	24.8↓	6.3↑
	Modified-work claims injury claim rate	2.88	2.95	2.82	2.37	2.35	16.1↓	0.8↓
	Disabling injury claims	5,677	5,964	5,789	4,400	4,711	24.0↓	7.1↑
	Disabling injury claim rate	3.24	3.36	3.31	2.81	2.80	15.2↓	0.1↓
Mining and petroleum development	Person-years	146,648	143,240	140,747	132,015	132,755	6.2↓	0.6↑
	Lost-time claims	633	642	634	534	495	15.8↓	7.3↓
	Lost-time injury claim rate	0.43	0.45	0.45	0.40	0.37	10.2↓	7.8↓
	Modified-work claims	1,675	1,727	1,431	1,060	1,257	25.9↓	18.6↑

Major industry sector	Measure	Year					Yearly change (%)	
		2017	2018	2019	2020	2021	2019-2020	2020-2021
	Modified-work claims injury claim rate	1.14	1.21	1.02	0.80	0.95	21.0↓	17.9↑
	Disabling injury claims	1,848	1,907	1,681	1,284	1,456	23.6↓	13.4↑
	Disabling injury claim rate	1.26	1.33	1.19	0.97	1.10	18.6↓	12.8↑
Provincial and municipal government, education and health services	Person-years	352,864	359,940	370,074	344,319	361,677	7.0↓	5.0↑
	Lost-time claims	8,199	8,885	9,839	8,330	9,197	15.3↓	10.4↑
	Lost-time injury claim rate	2.32	2.47	2.66	2.42	2.54	9.0↓	5.1↑
	Modified-work claims	8,187	8,641	8,545	6,871	7,170	19.6↓	4.4↑
	Modified-work claims injury claim rate	2.32	2.40	2.31	2.00	1.98	13.6↓	0.7↓
	Disabling injury claims	11,460	12,237	12,994	10,617	11,480	18.3↓	8.1↑
	Disabling injury claim rate	3.25	3.40	3.51	3.08	3.17	12.2↓	2.9↑
Transportation, communication and utilities	Person-years	137,693	143,579	142,412	131,337	139,417	7.8↓	6.2↑
	Lost-time claims	2,345	2,665	2,731	2,081	2,318	23.8↓	11.4↑
	Lost-time injury claim rate	1.70	1.86	1.92	1.58	1.66	17.4↓	4.9↑
	Modified-work claims	3,485	3,689	3,362	2,509	2,776	25.4↓	10.6↑
	Modified-work claims injury claim rate	2.53	2.57	2.36	1.91	1.99	19.1↓	4.2↑
	Disabling injury claims	4,387	4,735	4,655	3,511	3,895	24.6↓	10.9↑
	Disabling injury claim rate	3.19	3.30	3.27	2.67	2.79	18.2↓	4.5↑
Wholesale and retail	Person-years	340,225	345,940	356,358	320,649	344,687	10.0↓	7.5↑
	Lost-time claims	4,759	5,021	5,413	4,631	4,974	14.4↓	7.4↑
	Lost-time injury claim rate	1.40	1.45	1.52	1.44	1.44	4.9↓	0.1↓
	Modified-work claims	8,700	8,949	8,274	7,027	8,358	15.1↓	18.9↑
	Modified-work claims injury claim rate	2.56	2.59	2.32	2.19	2.42	5.6↓	10.6↑
	Disabling injury claims	9,907	10,314	10,246	8,664	10,199	15.4↓	17.7↑
	Disabling injury claim rate	2.91	2.98	2.88	2.70	2.96	6.0↓	9.5↑

Source: WCB data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only

**TABLE C4: DISABLING INJURIES BY TYPE OF INJURY OR ILLNESS, ALBERTA, 2017-2021**

Type of injury	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
<b>Bodily reactions and exertions</b>	20,738	42	21,019	41	21,510	42	17,158	43	19,836	45
Overexertion	10,857	52	11,099	53	11,249	52	8,820	51	10,235	52
Bodily reaction	4,650	22	4,698	22	5,019	23	4,022	23	4,903	25
Other bodily reactions or exertions	2,748	13	2,766	13	2,607	12	2,299	13	2,558	13
Repetitive motion	2,481	12	2,449	12	2,630	12	2,006	12	2,135	11
Exertion	2	<1	7	<1	5	<1	11	<1	5	<1
<b>Slips, trips and falls</b>	10,388	21	11,488	22	10,464	21	8,453	21	8,542	19
Fall to same level	5,997	58	6,792	59	6,009	57	4,749	56	5,074	59
Fall to lower level	2,099	20	2,062	18	1,907	18	1,544	18	1,564	18
Slip or trip	1,700	16	1,900	17	1,813	17	1,483	18	1,451	17
Other fall	592	6	734	6	735	7	677	8	453	5
<b>Struck by or against objects</b>	7,913	16	7,948	15	7,422	15	5,266	13	6,118	14
Struck by object	5,759	73	5,859	74	5,378	72	3,833	73	4,436	73
Struck against object	2,154	27	2,089	26	2,044	28	1,433	27	1,682	27
<b>Contact with objects and equipment</b>	3,500	7	3,747	7	3,464	7	2,707	7	3,220	7
Caught in object or equipment	2,245	64	2,282	61	2,055	59	1,514	56	1,730	54
Other contact with object or equipment	1,255	36	1,465	39	1,409	41	1,193	44	1,490	46
<b>Assaults, violence and harassment</b>	1,539	3	1,819	4	2,121	4	1,602	4	1,779	4
Assault and violent act by person	973	63	1,174	65	1,519	72	1,082	68	1,170	66
Other assault, violence or harassment	326	21	401	22	362	17	347	22	392	22
Assault by animal	239	16	242	13	238	11	173	11	214	12
Self-inflicted injury	1	<1	2	<1	2	<1	-	-	3	<1
<b>Transportation accidents</b>	2,052	4	2,137	4	2,106	4	1,519	4	1,609	4
Highway accident	1,484	72	1,567	73	1,562	74	1,125	74	1,151	72
Non-highway accident	355	17	320	15	279	13	203	13	261	16
Other transportation accident	64	3	94	4	103	5	62	4	73	5
Pedestrian struck by vehicle	149	7	156	7	162	8	129	8	124	8
<b>Exposures to harmful substance</b>	1,176	2	1,158	2	1,225	2	883	2	795	2
Exposure to caustic, noxious or allergenic substance	1,041	89	1,044	90	1,070	87	726	82	659	83
Other exposure to harmful substance	83	7	71	6	112	9	122	14	95	12
Contact with electric current	49	4	39	3	38	3	33	4	41	5

Type of injury	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Exposure to air pressure changes	3	<1	4	<1	5	<1	2	<1	-	-
Other events or exposures	332	1	370	1	456	1	508	1	626	1
Exposures to extreme temperature	761	2	808	2	644	1	442	1	583	1
Contact with hot object or substance	661	87	685	85	537	83	370	84	437	75
Exposure to environmental cold	69	9	71	9	81	13	49	11	85	15
Exposure to environmental heat	20	3	47	6	19	3	17	4	48	8
Contact with cold object or substance	7	1	4	<1	4	1	4	1	8	1
Other exposure to extreme temperature	4	1	1	<1	3	<1	2	<1	5	1
Exposures to traumatic or stressful event	252	1	372	1	380	1	366	1	434	1
Exposures to noise	500	1	547	1	513	1	395	1	310	1
Rubbed or abraded	399	1	352	1	335	1	254	1	304	1
Rubbed or abraded by friction or pressure	328	82	288	82	257	77	206	81	223	73
Rubbed, abraded or jarred by vibration	71	18	64	18	78	23	48	19	81	27
Fires and explosions	64	<1	72	<1	55	<1	57	<1	36	<1
Fire	22	34	34	47	25	45	31	54	19	53
Explosion	38	59	34	47	28	51	23	40	13	36
Other fire or explosion	4	6	4	6	2	4	3	5	4	11
Type of event - unknown	0	0	0	0	0	<1	4	<1	123	<1
<b>Total</b>	<b>49,614</b>	<b>100</b>	<b>51,837</b>	<b>100</b>	<b>50,698</b>	<b>100</b>	<b>39,614</b>	<b>100</b>	<b>44,315</b>	<b>100</b>

Source: WCB data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only



**TABLE C5: DISABLING INJURIES BY THE SOURCE OF INJURY OR ILLNESS, ALBERTA, 2017-2021**

Source of injury	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Persons, plants, animals and minerals	14,525	29	15,069	29	15,918	31	12,589	32	14,294	32
Person	12,964	89	13,560	90	14,389	90	11,609	92	13,205	92
Animal or animal product	352	2	398	3	363	2	258	2	309	2
Food, plant, tree or vegetation	562	4	556	4	544	3	419	3	478	3
Infectious or parasitic agent	431	3	352	2	447	3	170	1	175	1
Mineral	215	1	202	1	171	1	129	1	123	1
Other person, plant, animal or mineral	1	<1	1	<1	4	<1	4	<1	4	<1
Structures and surfaces	8,988	18	9,966	19	9,098	18	7,247	18	7,535	17
Floor, walkway or ground surface	7,614	85	8,546	86	7,690	85	6,202	86	6,311	84
Other structure or surface	1,161	13	1,217	12	1,274	14	893	12	1,077	14
Structure	213	2	203	2	134	1	152	2	147	2
Containers	5,254	11	5,413	10	5,243	10	4,101	10	4,796	11
Non-pressurized container	3,705	71	3,797	70	3,656	70	2,935	72	3,473	72
Other container	747	14	805	15	795	15	574	14	613	13
Skid or pallet	494	9	486	9	502	10	379	9	457	10
Pressurized container	308	6	325	6	290	6	213	5	253	5
Parts and materials	5,531	11	5,648	11	5,157	10	3,761	9	4,210	10
Other part of material	2,620	47	2,638	47	2,527	49	1,871	50	2,090	50
Solid building material	2,252	41	2,307	41	1,983	38	1,417	38	1,588	38
Fastener, connector, rope, tie and hoist accessory	659	12	703	12	647	13	473	13	532	13
Other sources	2,976	6	3,189	6	3,295	6	2,830	7	3,578	8
Other source	2,976	100	3,188	100	3,292	100	2,826	100	3,411	95
Source of injury-unknown	0	0	1	<1	3	<1	4	<1	167	5
Tools, instruments and equipment	4,327	9	4,386	8	4,147	8	3,183	8	3,429	8
Non-powered hand tool	2,081	48	2,243	51	1,963	47	1,473	46	1,534	45
Other tool, instrument or equipment	1,616	37	1,481	34	1,630	39	1,269	40	1,426	42
Powered hand tool	434	10	429	10	356	9	282	9	299	9
Ladder	196	5	233	5	198	5	159	5	170	5
Vehicles	3,730	8	3,862	7	3,705	7	2,757	7	3,113	7
Highway vehicle	2,454	66	2,562	66	2,481	67	1,834	67	1,946	63

Source of injury	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Non-highway vehicle	1,181	32	1,226	32	1,146	31	858	31	1,085	35
Other vehicle	95	3	74	2	78	2	65	2	82	3
Machinery	2,169	4	2,175	4	2,063	4	1,615	4	1,731	4
Furniture and fixtures	1,638	3	1,611	3	1,603	3	1,095	3	1,230	3
Case, cabinet, rack or shelf	639	39	637	40	612	38	430	39	505	41
Other furniture or fixture	276	17	260	16	233	15	173	16	192	16
Furniture	723	44	714	44	758	47	492	45	533	1
Chemical or chemical product	476	1	518	1	469	1	436	1	399	1
<b>Total</b>	<b>49,614</b>	<b>100</b>	<b>51,837</b>	<b>100</b>	<b>50,698</b>	<b>100</b>	<b>39,614</b>	<b>100</b>	<b>44,315</b>	<b>100</b>

Source: WCB Data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only

**TABLE C6: DISABLING INJURIES BY NATURE OF INJURY OR ILLNESS, ALBERTA, 2017-2021**

Nature of injury	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Sprains, strain and tears	25,910	52	26,729	52	26,338	52	20,792	52	23,693	53
Sprain or strain	25,668	99	26,525	99	26,145	99	20,667	99	23,591	100
Other sprain, strain or tear	242	1	204	1	193	1	125	1	102	<1
Wounds and bruises	9,356	19	9,689	19	8,745	17	6,375	16	7,209	16
Surface wound or bruise	5,166	55	5,433	56	4,977	57	3,590	56	4,130	57
Open wound	4,190	45	4,256	44	3,768	43	2,785	44	3,079	43
Other injuries	6,265	13	6,961	13	7,232	14	5,825	15	6,697	15
Other injury	4,819	77	5,350	77	5,551	77	4,583	79	5,244	78
Intracranial injury	1,352	22	1,494	21	1,580	22	1,177	20	1,321	20
Effects of temperature and light	93	1	115	2	101	1	65	1	132	2
Effects of air pressure	1	<1	2	<1	0	0	0	0	0	0
Fractures, dislocations and nerve damages	3,700	7	3,750	7	3,446	7	2,845	7	3,016	7
Fracture	3,251	88	3,276	87	3,020	88	2,505	88	2,604	86
Dislocation	429	12	456	12	419	12	324	11	398	13
Trauma to nerve or spinal cord	15	<1	12	<1	5	<1	8	<1	11	<1
Other fracture, dislocation or nerve damage	5	<1	6	<1	2	<1	8	<1	3	<1
Systemic illness and disorders	2,497	5	2,338	5	2,403	5	1,869	5	1,704	4
Inflammation of joint or muscle	956	38	917	39	1,014	42	754	40	835	49
Other systemic illness or disorder	660	26	513	22	546	23	347	19	249	15
Peripheral nerve damages or carpal tunnel	227	9	226	10	213	9	178	10	177	10
Ear or hearing condition	504	20	550	24	520	22	396	21	309	18
Dermatitis	45	2	40	2	29	1	95	5	56	3
Eye or vision condition	45	2	48	2	30	1	60	3	47	3
Heart or circulatory illness	29	1	19	1	22	1	19	1	24	1
Pneumoconiosis including asbestosis	31	1	25	1	29	1	20	1	7	<1
Other illnesses	606	1	970	2	1,238	2	1,029	3	1,071	2
Mental illness	536	88	890	92	1,192	96	1,006	98	1,052	167
Other illness	70	12	80	8	46	4	23	2	19	3
Burns	954	2	983	2	803	2	567	1	631	1

Nature of injury	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Heat burn	604	63	603	61	470	59	354	62	388	61
Chemical burn	240	25	258	26	221	28	145	26	156	25
Other burn	97	10	114	12	108	13	64	11	78	12
Electrical burn	13	1	8	1	4	0	4	1	9	1
Abnormal symptoms and conditions	209	<1	213	<1	232	<1	247	1	208	<1
Non-specific allergic reaction	65	31	80	38	75	32	121	49	103	50
Other symptom	117	56	104	49	121	52	94	38	61	29
Loss of consciousness	14	7	15	7	24	10	21	9	23	11
Convulsion or seizure	6	3	7	3	5	2	5	2	11	5
Dizziness	7	3	7	3	7	3	6	2	10	5
Infectious and parasitic illness	84	<1	167	<1	220	<1	33	<1	61	<1
Other infectious illness	84	100	167	100	220	132	33	20	61	37
Neoplasms, tumours and cancer	33	<1	37	<1	41	<1	32	<1	19	<1
Cancer or tumour	33	100	37	100	41	100	32	100	19	100
Nature of injury - unknown	0	0	0	0	0	0	0	0	6	0
<b>Total</b>	<b>49,614</b>	<b>100</b>	<b>51,837</b>	<b>100</b>	<b>50,698</b>	<b>100</b>	<b>39,614</b>	<b>100</b>	<b>44,315</b>	<b>100</b>

Source: WCB Data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only

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**TABLE C7: PERCENTAGE OF WORKPLACE ILLNESS DISABLING INJURY CLAIMS, ALBERTA, 2021**

<b>Workplace illness</b>	<b>Number</b>	<b>Per cent</b>
Mental illness	1,052	34
Inflammation of joint or muscle	835	27
Ear or hearing condition	309	10
Other systemic illness or disorder	249	8
Peripheral nerve damages or carpal tunnel	177	6
Non-specific allergic reaction	103	3
Other infectious illness	61	2
Other symptom	61	2
Dermatitis	56	2
Eye or vision condition	47	2
Heart or circulatory illness	24	<1
Loss of consciousness	23	<1
Cancer or tumour	19	<1
Other illness	19	<1
Convulsion or seizure	11	<1
Dizziness	10	<1
Pneumoconiosis including asbestosis	7	<1

Source: WCB Data, prepared by Jobs, Economy and Northern Development

**TABLE C8: DISABLING INJURIES BY PARTS OF THE BODY INJURED BY INJURY OR ILLNESS, ALBERTA, 2017-2021**

Part of body injured	2017		2018		2019		2020		2021	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Trunk	18,245	37	18,948	37	18,865	37	14,747	37	16,458	37
Back	10,540	58	10,782	57	10,656	56	8,386	57	9,507	58
Trunk	6,589	36	7,041	37	7,106	38	5,443	37	6,028	37
Hip or pelvis	906	5	953	5	955	5	783	5	813	5
Chest or shoulder	210	1	172	1	148	1	135	1	110	1
Upper extremities	13,181	27	13,597	26	12,787	25	9,671	24	10,987	25
Hand or wrist	5,215	40	5,397	40	5,124	40	3,980	41	4,571	42
Finger	4,631	35	4,571	34	4,244	33	3,002	31	3,545	32
Arm	3,335	25	3,629	27	3,419	27	2,689	28	2,871	26
Lower extremities	9,432	19	9,978	19	9,572	19	7,732	20	8,937	20
Foot, ankle or toe	4,520	48	4,792	48	4,384	46	3,616	47	4,395	49
Knee	3,515	37	3,682	37	3,758	39	2,997	39	3,276	37
Leg	1,397	15	1,504	15	1,430	15	1,119	14	1,266	14
Head	4,998	10	5,267	10	5,263	10	4,096	10	4,405	10
Head	2,536	51	2,768	53	2,864	54	2,239	55	2,484	56
Neck	1,152	23	1,210	23	1,187	23	905	22	1,012	23
Eye	787	16	706	13	666	13	532	13	575	13
Ear	523	10	583	11	546	10	420	10	334	8
Multiple body parts	2,683	5	2,734	5	2,550	5	2,084	5	2,163	5
Body systems	1,017	2	1,248	2	1,594	3	1,230	3	1,303	3
Nervous system	506	50	818	66	1,098	69	921	75	975	75
Other body system	412	41	346	28	388	24	215	17	244	19
Respiratory system	95	9	79	6	94	6	85	7	79	6
Circulatory system	3	<1	1	<1	4	<1	1	<1	3	<1
Digestive system	0	0	4	<1	10	1	8	1	2	<1
Musculoskeletal system	1	<1	0	0	0	0	0	0	0	0
Other body parts	58	<1	65	<1	67	<1	54	<1	62	<1
Unclassified	54	93	63	97	65	97	52	96	57	92
Other body part	4	7	2	3	2	3	2	4	5	8
<b>Total</b>	<b>49,614</b>	<b>100</b>	<b>51,837</b>	<b>100</b>	<b>50,698</b>	<b>100</b>	<b>39,614</b>	<b>100</b>	<b>44,315</b>	<b>100</b>

Source: WCB Data, prepared by Jobs, Economy and Northern Development

Note: 2020 and 2021 include non-COVID-19 related injuries and illnesses only

**TABLE C9: DISABLING INJURIES BY GENDER AND MAJOR INDUSTRY SECTOR, ALBERTA, 2021**

Major Industry Sector	Female workers		Male workers		Total
	Number	Per cent	Number	Per cent	
Agriculture and forestry	190	29	468	71	658
Business, personal and professional services	2,522	57	1,936	43	4,458
Construction and construction trade services	639	9	6,500	91	7,139
Manufacturing, processing and packaging	882	19	3,827	81	4,709
Mining and petroleum development	118	8	1,338	92	1,456
Provincial and municipal government, education and health services	7,747	67	3,731	33	11,478
Transportation, communication and utilities	610	16	3,285	84	3,895
Wholesale and retail	4,365	43	5,828	57	10,193

Source: WCB Data, prepared by Jobs, Economy and Northern Development

**TABLE C10: OCCUPATIONAL FATALITIES (BASED ON YEAR OF DEATH) BY TYPE, ALBERTA, 2017-2021**

Year	Motor vehicle incidents		Workplace incidents		Occupational disease		Total	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
2017	33	25	49	21	87	23	169	100
2018	30	23	53	22	78	20	161	100
2019	27	20	51	21	71	19	149	100
2020	26	20	46	19	91	24	161	100
2021	16	12	39	16	56	15	111	100
<b>Average</b>	<b>26</b>	<b>20</b>	<b>48</b>	<b>20</b>	<b>77</b>	<b>20</b>	<b>150</b>	

Source: WCB data, prepared by Jobs, Economy and Northern Development

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, ALBERTA, 2017-2021**

Year	Motor vehicle incidents		Workplace incidents		Occupational disease		Total	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
2017	31	26	35	17	68	22	134	100
2018	27	23	42	21	57	19	126	100
2019	23	19	46	23	60	20	129	100
2020	23	19	39	19	68	22	128	100
2021	16	13	39	19	56	18	111	100
<b>Average</b>	<b>24</b>	<b>20</b>	<b>40</b>	<b>20</b>	<b>62</b>	<b>20</b>	<b>126</b>	

Source: WCB data, prepared by Jobs, Economy and Northern Development

**TABLE C12: OCCUPATIONAL FATALITIES (BASED ON YEAR OF DEATH) BY MAJOR INDUSTRY SECTOR, ALBERTA, 2017-2021**

Major industry sector	2017	2018	2019	2020	2021	Total	Per cent
Agriculture and forestry	6	3	3	8	4	24	3
Business, personal and professional services	3	8	5	3	1	20	3
Construction and construction trade services	71	56	55	66	41	289	39
Manufacturing, processing and packaging	27	30	22	23	14	116	16
Mining and petroleum development	8	11	10	9	8	46	6
Provincial and municipal government, education and health services	28	20	19	22	17	106	14
Transportation, communication and utilities	17	22	24	22	14	99	13
Wholesale and retail	9	11	11	10	12	53	7
<b>Total</b>	<b>169</b>	<b>161</b>	<b>149</b>	<b>163</b>	<b>111</b>	<b>738</b>	<b>100</b>

Source: WCB Data, prepared by Jobs, Economy and Northern Development



# 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](http://alberta.ca/OHS) (OHS online resource portal):

### Establishing safety culture

- Guide to OHS: Employers (LI009)
- Guide to OHS: Workers (LI008)
- Occupational health and safety and the internal responsibility system (LI051)
- Participation in health and safety for small business owners and workers (LI055)

### Closing compliance gaps

- A handbook for Alberta employers and workers: Hazard Assessment and Control (BP018)
- Harassment and violence in the workplace (LI045)
- Psychosocial hazards in the workplace: Assessment and control (BP024)
- 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](http://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](http://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](http://www.alberta.ca/ohs-act-regulation-code.aspx). For information on enforcement programs, please see [www.alberta.ca/ohs-compliance-enforcement.aspx](http://www.alberta.ca/ohs-compliance-enforcement.aspx).

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