

# Work-Related Immediate Inpatient Hospitalizations

Washington State, 2019 and 2020

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## ABBREVIATIONS

CHARS	Comprehensive Hospital Abstract Reporting System
DOSH	WA Dept. of Labor & Industries Division of Occupational Safety & Health
FTE	Full Time Equivalent
L&I	Washington State Department of Labor and Industries
NAICS	North American Industry Classification System
OIICS	Occupational Injury and Illness Classification System
OSHA	Occupational Safety and Health Administration
SF	Washington Industrial Insurance State Fund
SHARP	Safety and Health Assessment and Research for Prevention
SI	Self-Insured
WC	Workers' Compensation

## KEYWORDS

SHARP; work-related immediate inpatient hospitalizations; work-related hospitalization; work-related injury; occupational injury; workers' compensation

## EXECUTIVE SUMMARY

Workers in Washington State continue to experience injuries on the job severe enough to require immediate hospital admission. Although accounting for only a small proportion of workers' compensation claims in Washington, traumatic occupational injuries that result in immediate inpatient hospitalization can have devastating and long-term repercussions for workers and their families, and are costly to employers.

The Washington State Work-Related Immediate Inpatient Hospitalization Surveillance System links Washington workers' compensation claim data and hospital discharge data to identify occupational injuries and illnesses that lead to hospital admission within one day of the incident. In 2019 and 2020, SHARP continued to use this unique system to track and characterize these severe injuries.

### Key Findings:

- The number and rate of work-related immediate inpatient hospitalizations was lower in 2019 and 2020 than in the previous five years.
  - In 2019, there were 646 work-related immediate inpatient hospitalizations, and a rate of 23.5 hospitalizations per 100,000 FTE.
  - In 2020, there were 601 work-related immediate inpatient hospitalizations, and a rate of 23.2 hospitalizations per 100,000 FTE.
- Older workers had higher hospitalization rates than younger workers. In both years, workers age 65 and older had the highest hospitalization rates; 43.0 hospitalizations per 100,000 workers in 2019 and 30.0 per 100,000 workers in 2020.
- Over fifteen percent of hospitalized workers preferred to receive communication about their workers' compensation claims in a language other than English. Of those, the majority preferred Spanish.
- Workers in the Construction industry sector (NAICS 23) suffered the highest number and rate of work-related immediate inpatient hospitalizations. While Construction accounts for only 7% of employment in Washington, construction industry workers account for over 20% of immediate inpatient hospitalizations each year.
- Falls from Elevation led to immediate worker hospitalizations more often than any other injury event type, accounting for approximately one quarter of hospitalizations each year; 24.3% of hospitalizations in 2019, and 26.0% of hospitalizations in 2020.
- Smaller employers experienced higher rates of worker hospitalizations than larger employers. Employers with ten or fewer FTE experienced rates of immediate hospitalizations that were more than three times higher than the rates of the largest employers.

## INTRODUCTION

Although work-related injuries severe enough to require immediate hospital admission comprise only a small proportion of occupational injuries in Washington State, when they do occur, they can be devastating to workers and their families, and costly to employers. These injuries are preventable.

Employers in Washington State are required to report work-related incidents that result in inpatient hospitalization to the Washington State Department of Labor and Industries (L&I) Division of Occupational Safety and Health (DOSH) within eight hours.<sup>1</sup> However, no system previously existed to track reportable work-related inpatient hospitalizations.

To address this deficit, the Safety and Health Assessment and Research for Prevention (SHARP)<sup>2</sup> program at L&I developed the Washington State Work-Related Immediate Inpatient Hospitalization Surveillance System<sup>3</sup> to track these serious injuries to learn more about the industries and workers most at risk, and inform prevention efforts.

A work-related immediate inpatient hospitalization is classified as a work-related injury or illness that leads to inpatient hospital admission within one day of the incident or exposure. Cases are detected by linking data from the Comprehensive Hospital Abstract Reporting System (CHARS)<sup>4</sup> to L&I workers' compensation (WC) claim information to identify hospital admissions that occur the day of or the day following a work-related injury or exposure (See Appendix A for methods).

The current report contains information from the Work-Related Immediate Inpatient Hospitalization Surveillance System for years 2019 and 2020.

## RESULTS

In 2019, 646 work-related immediate inpatient hospitalization claims were identified.<sup>5</sup> The overall rate of work-related immediate inpatient hospitalizations was 23.5 hospitalizations per 100,000 Full Time Equivalent (FTE) workers (Table 1).<sup>6,7</sup>

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<sup>1</sup> Washington Administrative Code (WAC) 296-27-031, Reporting fatalities, inpatient hospitalizations, amputations, and losses of an eye as the result of work-related incidents: <https://apps.leg.wa.gov/wac/default.aspx?cite=296-27-031>

<sup>2</sup> SHARP program website: <https://lni.wa.gov/safety-health/safety-research/about-sharp>

<sup>3</sup> Work-Related Immediate Inpatient Hospitalization Surveillance System: <https://lni.wa.gov/safety-health/safety-research/ongoing-projects/immediate-inpatient-hospitalizations>

<sup>4</sup> Comprehensive Hospital Abstract Reporting System (CHARS): <https://www.doh.wa.gov/DataandStatisticalReports/HealthcareinWashington/HospitalandPatientData/HospitalDischargeDataCHARS>

<sup>5</sup> Defined by year of hospital discharge.

<sup>6</sup> One FTE = 2000 hours worked in a year

<sup>7</sup> Hospitalization rates by year were calculated using payroll hours reported by employers to L&I.

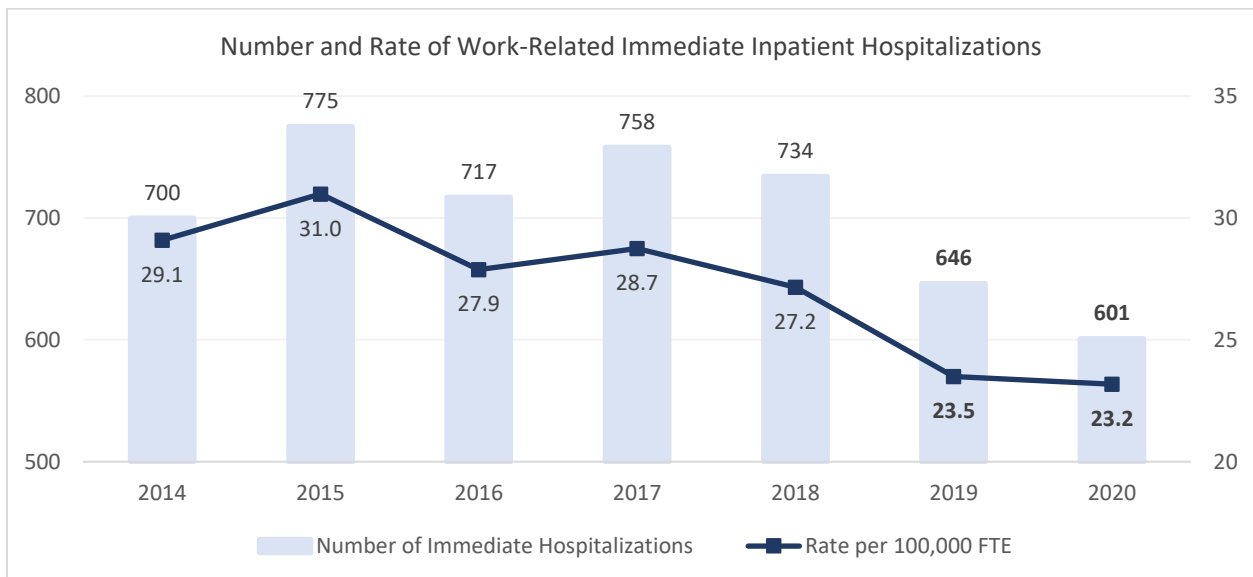
In 2020, 601 work-related immediate inpatient hospitalizations were identified, with a rate of 23.2 work-related immediate inpatient hospitalizations per 100,000 FTE.

Both the number and rate of work-related immediate inpatient hospitalizations were lower in 2019 and 2020 than in any of the previous five years (Figure 1).<sup>8</sup>

**Table 1. Work-Related Immediate Inpatient Hospitalizations Number and Rate per 100,000 FTE, and Total Workforce, Washington State, 2019 and 2020.**

Year	Total Hospitalizations	Total Washington FTE	Hospitalizations per 100,000 FTE
2019	646	2,750,187	23.5
2020	601	2,592,644	23.2

**Figure 1. Number and Rate of Work-Related Immediate Inpatient Hospitalizations, Washington State, 2014 through 2020.**



## Workers

### Gender

In both 2019 and 2020, the majority of workers who experienced work-related immediate inpatient hospitalizations were men; 75.2% in 2019 and 83.0% in 2020 (Table 2). The rate of hospitalization was

<sup>8</sup> Work-Related Immediate Inpatient Hospitalizations—Washington State, 2014–2018: [https://lni.wa.gov/safety-health/safety-research/files/2020/96\\_07\\_2020\\_WorkRelatedImmediateInpatientHospitalizations\\_2014to2018.pdf](https://lni.wa.gov/safety-health/safety-research/files/2020/96_07_2020_WorkRelatedImmediateInpatientHospitalizations_2014to2018.pdf)

also higher for men; 28.4 hospitalizations per 100,000 workers in 2019, and 30.1 hospitalizations per 100,000 workers in 2020.<sup>9</sup>

The work-related immediate inpatient hospitalization rate for women was 9.9 hospitalizations per 100,000 workers in 2019, and 6.5 per 100,000 workers in 2020.

**Table 2. Work-Related Immediate Inpatient Hospitalizations by Gender, Washington State, 2019 and 2020.**

Gender	2019 Hospitalizations (%)	Rate per 100,000 Workers	2020 Hospitalizations (%)	Rate per 100,000 Workers
Female	160 (24.8%)	9.9	102 (17.0%)	6.5
Male	486 (75.2%)	28.4	499 (83.0%)	30.1

### Age

Over one third of work-related immediate inpatient hospitalizations occurred among workers age 55 or older; 38.9% (n=251) in 2019, 33.1% (n= 199) in 2020 (Table 3).

Older workers also had higher rates of work-related immediate inpatient hospitalizations than those in younger age groups. In both years, workers age 65 and above had the highest hospitalization rates; 43.0 hospitalizations per 100,000 workers in 2019 and 30.0 per 100,000 workers in 2020. Workers age 55 to 64 had the second highest hospitalization rates.

**Table 3. Work-Related Immediate Inpatient Hospitalizations by Age Group, Washington State, 2019 and 2020.**

Age Group	2019 Hospitalizations (%)	Rate per 100,000 Workers	2020 Hospitalizations (%)	Rate per 100,000 Workers
18 and under	s	s	s	s
19-24	63 (9.8%)	19.9	59 (9.8%)	20.5
25-34	113 (17.5%)	14.8	107 (17.8%)	14.5
35-44	99 (15.3%)	13.1	107 (17.8%)	14.4
45-54	114 (17.6%)	17.0	124 (20.6%)	19.0
55-64	160 (24.8%)	29.0	137 (22.8%)	25.7
65 and above	91 (14.1%)	43.0	62 (10.3%)	30.0

s = Suppressed due to small number (<10)

### Language Preference

In 2019, 17.3% (n=112) of workers who experienced an immediate inpatient hospitalization indicated that they preferred to receive information about their L&I claim in a language other than English, with 15.6% (n=101) of claimants preferring Spanish.

<sup>9</sup> Hospitalization rates by gender and age were calculated using Quarterly Workforce Indicators (QWI) data, from the Longitudinal Employer-Household Dynamics (LEHD) program at the United States Census Bureau. The QWI are a source of employment data with a methodology and reporting requirements that differ somewhat from WC employment data. <https://lehd.ces.census.gov/>

In 2020, 15.8% (n=95) of hospitalized workers indicated that they preferred to receive claim information in a language other than English, with 13.5% (n=81) of claimants preferring Spanish.

## Injuries

### *Injury Event*

In both 2019 and 2020, falls from elevation led to work-related immediate inpatient hospitalizations more often than any other injury event type, accounting for approximately one quarter of hospitalizations (Table 4).<sup>10</sup> Falls from elevation were the cause of 24.3% (n=157) of hospitalizations in 2019 and 26.0% (n=156) of hospitalizations in 2020.

Falls on the same level and being struck by or against an object or equipment were the next most frequent injury events leading to hospitalization.

Together, these three injury event types accounted for over half of all work-related immediate inpatient hospitalizations in each year; 59.1% in both 2019 (n=382) and 2020 (n=355).

**Table 4. Work-Related Immediate Inpatient Hospitalizations by Injury Event, Washington State, 2019 and 2020.**

<b>Injury Event</b>	<b>2019 Hospitalizations (%)</b>	<b>2020 Hospitalizations (%)</b>
Fall from elevation	157 (24.3%)	156 (26.0%)
Fall same level	132 (20.4%)	99 (16.5%)
Struck by/against object or equipment	93 (14.4%)	100 (16.6%)
Highway accident	40 (6.2%)	31 (5.2%)
Caught in/under/between	37 (5.7%)	36 (6.0%)
Overexertion, Repetitive Motion	32 (5.0%)	39 (6.5%)
Bodily Conditions	23 (3.6%)	21 (3.5%)
Extreme Temperature	20 (3.1%)	s
Assault by animal	18 (2.8%)	s
Assault by person	16 (2.5%)	13 (2.2%)
Transportation accident other than highway or pedestrian	13 (2.0%)	15 (2.5%)
Pedestrian struck by vehicle or equipment	13 (2.0%)	14 (2.3%)
Exposure to caustic, noxious, allergic substance	s	22 (3.7%)
Other contact with objects or equipment	s	10 (1.7%)
Fires and explosions	s	s
Other and Nonclassifiable	36 (5.6%)	30 (5.0%)

s = Suppressed due to small number (<10)

<sup>10</sup> For additional information on aggregated injury nature and injury event type classification, see SHARP technical report 64-1-2013, Prioritizing Industries for Occupational Injury and Illness Prevention and Research, Washington State Workers' Compensation Claims Data, 2002-2010. [https://lni.wa.gov/safety-health/safety-research/files/2013/bd\\_3f.pdf](https://lni.wa.gov/safety-health/safety-research/files/2013/bd_3f.pdf)



## Nature of Injury

Fracture was the most common nature of injury experienced by workers requiring immediate inpatient hospitalization in both 2019 and 2020, accounting for approximately 40% of claims each year (Table 5). The second most frequent injury nature classification in both years was Multiple Traumatic Injuries.

**Table 5. Work-Related Immediate Inpatient Hospitalizations by Nature of Injury, Washington State, 2019 and 2020.**

<b>Nature of Injury</b>	<b>2019 Hospitalizations (%)</b>	<b>2020 Hospitalizations (%)</b>
Fracture	262 (40.6%)	239 (39.8%)
Multiple traumatic injuries	103 (15.9%)	103 (17.1%)
Open wounds (other than amputations)	49 (7.6%)	38 (6.3%)
Traumatic injuries to muscles, tendons, ligaments	42 (6.5%)	50 (8.3%)
Intracranial injuries	39 (6.0%)	21 (3.5%)
Diseases, Disorders, Conditions	33 (5.1%)	43 (7.2%)
All other traumatic injuries	27 (4.2%)	32 (5.3%)
Burns	22 (3.4%)	9 (1.5%)
Amputation	14 (2.2%)	11 (1.8%)
Surface wounds and bruises	13 (2.0%)	20 (3.3%)
Nonclassifiable	42 (6.5%)	35 (5.8%)

## Industry

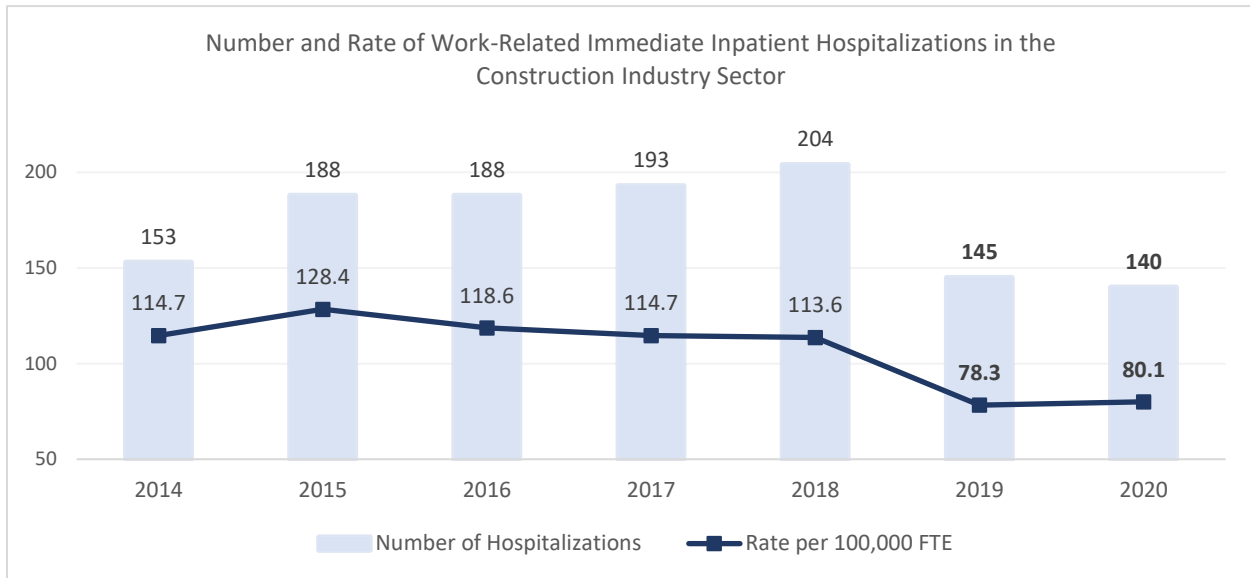
The Construction industry sector (NAICS 23) experienced the highest number and rate of work-related immediate inpatient hospitalizations in both report years. In each year, over one in five hospitalizations occurred in the Construction sector; 22.4% in 2019 and 23.3% in 2020 (Table 6).

In 2019, there were 145 worker hospitalizations in the Construction sector, and a rate of 78.3 hospitalizations per 100,000 FTE. In 2020, there were 140 worker hospitalizations in the Construction sector, and a rate of 80.1 hospitalizations per 100,000 FTE. Both the number and rate of Construction industry hospitalizations were lower in 2019 and 2020 than in the previous five years (Figure 2).

The five industry sectors with the highest number of hospitalizations accounted for more than half of all work-related immediate inpatient hospitalizations each year—Construction (NAICS 23); Manufacturing (NAICS 31-33); Administrative and Support and Waste Management and Remediation Services (NAICS 56); Agriculture, Forestry, Fishing, and Hunting (NAICS 11); and Retail Trade (NAICS 44-45).

The Agriculture, Forestry, Fishing, and Hunting industry sector (NAICS 11) had the second highest rate of work-related immediate inpatient hospitalizations in both years; 54.3 hospitalizations per 100,000 FTE in 2019, and 57.0 per 100,000 FTE in 2020.

**Figure 2. Number and Rate of Work-Related Immediate Inpatient Hospitalizations in the Construction Industry Sector, Washington State, 2014 through 2020.**



**Table 6. Work-Related Immediate Inpatient Hospitalizations by NAICS Industry Sector, Washington State, 2019 and 2020.**

NAICS Sector Description: Code	2019	Rate per	2020	Rate per
	Hospitalizations (%)	100,000 FTE	Hospitalizations* (%)	100,000 FTE
Construction: 23	145 (22.4%)	78.3	140 (23.3%)	80.1
Manufacturing: 31-33	58 (9.0%)	22.5	56 (9.3%)	24.1
Administrative and Support and Waste Management and Remediation Services: 56	55 (8.5%)	37.9	58 (9.7%)	42.5
Retail Trade: 44-45	55 (8.5%)	17.1	51 (8.5%)	16.0
Agriculture, Forestry, Fishing, and Hunting: 11	53 (8.2%)	54.3	54 (9.0%)	57.0
Information; Finance and Insurance; Real Estate and Rental and Leasing; Professional, Scientific, and Technical Services; Management of Companies and Enterprises: 51-55	49 (7.6%)	10.1	28 (4.7%)	5.7
Transportation and Warehousing: 48-49	45 (7.0%)	53.4	34 (5.7%)	42.3
Health Care and Social Assistance: 62	38 (5.9%)	9.6	44 (7.3%)	11.4
Public Administration: 92	36 (5.6%)	24.7	35 (5.8%)	24.9
Wholesale Trade: 42	31 (4.8%)	23.6	33 (5.5%)	26.4
Accommodation and Food Services: 72	27 (4.2%)	14.1	16 (2.7%)	11.8
Educational Services: 61	24 (3.7%)	14.4	18 (3.0%)	11.7
Other Services (except Public Administration): 81	15 (2.3%)	15.5	21 (3.5%)	24.7
Arts, Entertainment, and Recreation: 71	s	s	s	s
Mining, Quarrying, Oil and Gas Extraction: 21	s	s	s	s
Utilities: 22	s	s	s	s

\* 2020 hospitalizations exclude two claims that were not assigned to an employer account

s = Suppressed due to small number (<10)

In the Construction industry sector (NAICS 23), falls from elevation were by far the most common injury event leading to immediate inpatient hospitalization, accounting for nearly half of all cases (48.1%). Being struck by or against objects or equipment was the next most frequent injury event type, followed by falls on the same level (Table 7).

In the Manufacturing industry sectors (NAICS 31-33), one in five hospitalizations were due to injuries that occurred when workers were struck by or against objects or equipment (20.2%). Falls on the same level were the next most frequent injury event leading to hospitalization, followed by caught in/under/between injuries.

In the Administrative and Support and Waste Management and Remediation Services sector (NAICS 56), over one in three hospitalizations were due to falls from elevation (34.5%). Injuries from being struck by or against objects or equipment were the second leading cause of hospitalization, followed by falls on the same level.

In the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), injuries due to falls from elevation were the leading cause of work-related immediate inpatient hospitalization (29.0%).

In the Retail industry sector (NAICS 44-45), falls on the same level were most frequent, leading to over one-third of work-related immediate inpatient hospitalizations (35.8%).

**Table 7. Most Common Injury Events Leading to Work-Related Immediate Inpatient Hospitalizations by Selected Industry Sector, Washington State, 2019 and 2020 (Combined).**

Industry Sector (Total Hospitalizations, 2019–2020) Injury Event Type	Hospitalizations	Percent of Industry Total
<b>Construction (n=285)</b>		
Fall from elevation	137	48.1%
Struck by/against object or equipment	60	21.1%
Fall same level	25	8.8%
<b>Manufacturing (n=114)</b>		
Struck by/against object or equipment	23	20.2%
Fall same level	19	16.7%
Caught in/under/between	18	15.8%
<b>Administrative and Support and Waste Management and Remediation Services (n=113)</b>		
Fall from elevation	39	34.5%
Struck by/against object or equipment	21	18.6%
Fall same level	17	15.0%
<b>Agriculture, Forestry, Fishing and Hunting (n=107)</b>		
Fall from elevation	31	29.0%
Struck by/against object or equipment	21	19.6%
Highway accident	13	12.1%
<b>Retail Trade (n=106)</b>		
Fall same level	38	35.8%
Struck by/against object or equipment	14	13.2%
Fall from elevation	11	10.4%

## Occupation

In 2019 and 2020, workers in Construction and Extraction Occupations (SOC 2000 major code 47-0000)<sup>11</sup> experienced the highest number of work-related immediate inpatient hospitalizations, accounting for approximately one-fifth of all hospitalized workers each year (Table 8).

In 2019, 128 workers in Construction and Extraction Occupations were hospitalized. The three detailed occupations with the most immediate hospitalizations were Construction Craft Laborer (n=44, SOC 47-2061), Carpenters (n=21, SOC 47-2031), and Roofers (n=15, SOC 47-2181). In 2020, 127 workers in Construction and Extraction Occupations were hospitalized. Construction Craft Laborers experienced the highest number of hospitalizations (n=52), followed by Roofers (n=18).

Workers in Transportation and Material Moving Occupations (SOC 53-0000) experienced the next highest number of immediate inpatient hospitalizations in both years; 118 in 2019 and 97 in 2020. Over half of these workers were in one of two detailed occupations: Truck Drivers, Heavy and Tractor-Trailer (SOC 53-3032) and Laborers and Freight, Stock, and Material Movers, Hand (SOC 53-7062).

In 2019, workers in Production Occupations (SOC 51-0000) had the third highest number of hospitalizations (n=56, 8.7%). In 2020, workers in Installation, Maintenance, and Repair Occupations (SOC 49-0000) had the third highest number of hospitalizations (n=56, 9.3%).

**Table 8. Work-Related Immediate Inpatient Hospitalizations by SOC 2000 Major Occupation Group, Washington State, 2019 and 2020.**

Major Occupation Group (SOC 2000)	2019 Hospitalizations (%)	2020 Hospitalizations (%)
47-0000 Construction and Extraction Occupations	128 (19.8%)	127 (21.1%)
53-0000 Transportation and Material Moving Occupations	118 (18.3%)	97 (16.1%)
51-0000 Production Occupations	56 (8.7%)	53 (8.8%)
45-0000 Farming, Fishing, and Forestry Occupations	51 (7.9%)	39 (6.5%)
49-0000 Installation, Maintenance, and Repair Occupations	50 (7.7%)	56 (9.3%)
37-0000 Building and Grounds Cleaning and Maintenance Occupations	31 (4.8%)	38 (6.3%)
41-0000 Sales and Related Occupations	25 (3.9%)	27 (4.5%)
11-0000 Management Occupations	22 (3.4%)	19 (3.2%)
35-0000 Food Preparation and Serving Related Occupations	20 (3.1%)	11 (1.8%)
33-0000 Protective Service Occupations	17 (2.6%)	32 (5.3%)
29-0000 Healthcare Practitioners and Technical Occupations	17 (2.6%)	10 (1.7%)
43-0000 Office and Administrative Support Occupations	16 (2.5%)	13 (2.2%)
25-0000 Education, Training, and Library Occupations	13 (2.0%)	11 (1.8%)
31-0000 Healthcare Support Occupations	9 (1.4%)	11 (1.8%)
39-0000 Personal Care and Service Occupations	8 (1.2%)	11 (1.8%)
Other Major Groups (Groups with <10 hospitalizations in both years)	20 (3.1%)	13 (2.2%)
Nonclassifiable or Blank	45 (7.0%)	33 (5.5%)

<sup>11</sup> Standard Occupational Classification (SOC) system, 2000. <https://www.bls.gov/soc/home.htm>

## Claims

### *Claim Liability*

The majority of claims for work-related immediate inpatient hospitalizations were filed by workers whose employers were insured through the Washington State Department of Labor and Industries' industrial insurance State Fund.

In 2019, 81.6% (n=526) of immediate hospitalization claims were filed by workers covered through the State Fund, and 18.6% (n=120) by workers whose employers were self-insured.

In 2020, 81.9% (n=492) of immediate hospitalization claims were filed by workers covered through the State Fund, and 18.1% (n=109) by workers whose employers were self-insured.

More than half of State Fund immediate inpatient hospitalization claims remained open one year after injury in both years. For State Fund claims with 2019 hospital discharge dates, 54.2% were still open at one year, and 53.3% for 2020 claims.

### *Claim Status*

Accepted Washington State workers' compensation claims can be classified as either *medical aid only* or *compensable*. Compensable claims are those that are eligible for wage replacement for lost work time (after a three-day waiting period), or involve permanent partial disability or death.

At the time of data extraction, 90.4% (n=584) of 2019 work-related immediate inpatient hospitalization claims were classified as compensable. In 2020, 92.0% (n=553) of work-related immediate inpatient hospitalization were compensable.

### *Claim Costs*

Although L&I collects administrative data for Self Insured employer claims, information about injury, cost, and days of time loss is often limited or incomplete. For this reason, claim cost information is limited to State Fund claims only.

For State Fund work-related immediate inpatient hospitalizations claims with 2019 discharge dates, total claim costs paid at one year from injury, including medical costs and time loss payments, totaled \$43,130,312. One year after injury, the median claim cost paid to date was \$47,472, and the average claim cost was \$82,310. The maximum claim cost was approximately \$1,327,188. Medical costs paid at one year for State Fund claims with hospital discharge dates in 2019 totaled \$32,912,358. The average medical cost was \$62,810, and the median cost was \$33,138.

For State Fund work-related immediate inpatient hospitalization claims with 2020 discharge dates, claim costs paid at one year totaled \$39,416,987. One year after injury, the median claim cost was \$52,332, and the average claim cost was \$80,116. The maximum claim cost was approximately \$881,360. Medical

costs paid at one year for State Fund claims with hospital discharge dates in 2020 totaled \$29,439,433. The average medical cost was \$59,836, and the median cost was \$36,213.

**Table 9. Work-Related Immediate Inpatient Hospitalization Claim Costs Paid One Year From Injury, WA State Fund Claims, 2019 and 2020.**

Year of Discharge	Total Claim Costs Paid after One Year	Medical Costs Paid after One Year
2019	\$43,130,312	\$32,912,358
2020	\$39,416,987	\$29,439,433

## Employers

### Employer Size

Smaller employers had higher rates of work-related immediate inpatient hospitalizations in 2019 and 2020. In both years, the smallest employers, those with ten or fewer FTE, had the highest number and rate of work-related immediate inpatient hospitalizations—more than triple the rate of the largest employers (Table 10).

The smallest employers also accounted for the highest numbers of worker hospitalizations each year. In 2019, 25.4% (n=164) of immediate inpatient hospitalizations were among workers of employers with ten or fewer FTE, a rate of 46.9 hospitalizations per 100,000 FTE. In 2020, 28.8% (n=173) of immediate inpatient hospitalizations were among workers of employers with ten or fewer FTE, a rate of 51.0 hospitalizations per 100,000 FTE.

**Table 10. Work-Related Immediate Inpatient Hospitalizations by Employer Size, Washington State, 2019 and 2020.**

Employer Size (FTE)	2019		2020	
	Hospitalizations (%)	Rate per 100,000 FTE	Hospitalizations (%)	Rate per 100,000 FTE
<=10	164 (25.4%)	46.9	173 (28.8%)	51.0
11-49	145 (22.4%)	31.8	119 (19.8%)	28.6
50-249	151 (23.4%)	27.0	134 (22.3%)	26.3
250 - 999	69 (10.7%)	15.7	64 (10.6%)	15.8
1000+	117 (18.1%)	12.4	109 (18.1%)	11.8

\* 2020 hospitalizations exclude two claims that were not assigned to an employer account

## DISCUSSION

The number and rate of work-related immediate inpatient hospitalizations was lower in both 2019 and 2020 than in previous surveillance years. There were approximately 12% fewer immediate hospitalizations in 2019 than in 2018, and the rate of hospitalization was 13.6% lower. In 2020, during the first year of the COVID-19 pandemic, the number of hospitalizations fell again, but the rate remained similar to that of 2019. Ongoing observation is needed to determine if the reductions seen indicate a downward trend in these severe injuries that will continue into the future.

Overall, worker, injury, and industry characteristics of immediate inpatient hospitalization cases in 2019 and 2020 were similar to those previously reported for the preceding five years.

Older workers were again found to have higher rates of work-related immediate inpatient hospitalizations than younger workers. Workers aged 65 and older had the highest hospitalization rates, followed by workers in the 55 to 64 age group. In both years, workers 65 and older had hospitalization rates more than double the rates of workers in the 25 to 34 and 35 to 44 age groups. Workers age 55 and over accounted for over one-third of all work-related immediate inpatient hospitalizations in each year. The U.S. Bureau of Labor Statistics projects that by 2030, workers age 55 and older will account for approximately one-quarter of the civilian labor force.<sup>12</sup> Understanding occupational injury and illness risks specific to older workers should be prioritized.

In both 2019 and 2020, workers age 19 to 24 experienced the third highest rate of immediate inpatient hospitalization. Focused prevention efforts are needed to reach young workers in this age group in high-risk occupations and industries.

As in recent years, in both 2019 and 2020, over fifteen percent of work-related immediate inpatient hospitalization claimants indicated that they preferred to receive workers' compensation claim information in a language other than English. Spanish was the most preferred language among these workers. This highlights the ongoing need for occupational injury and illness training and prevention efforts that are linguistically and culturally appropriate.

The Construction industry sector (NAICS 23) continues to have the highest number and rate of work-related immediate inpatient hospitalizations in Washington State. However, in 2019, there were 29% fewer worker hospitalizations in the Construction industry sector than in the previous year; 145 hospitalizations compared to 204 in 2018. From 2018 to 2019, the work-related immediate inpatient hospitalization rate in the Construction industry sector also fell, from 117.1 to 78.3 hospitalizations per 100,000 FTE. In 2020, the Construction hospitalization case count and rate remained similar to 2019.

Smaller employers had higher counts and rates of work-related immediate inpatient hospitalizations. In 2019, workers at the smallest employers (ten or fewer FTE), experienced over three times the

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<sup>12</sup> U.S. Bureau of Labor Statistics Employment Projections, Labor Force Projections: <https://www.bls.gov/emp/data/labor-force.htm>

immediate inpatient hospitalization rate of workers at the largest employers (1000 or more FTE). In 2020, the difference in hospitalization rates between the smallest and largest employers was even greater. Smaller employers typically do not have dedicated safety departments or personnel, and it is important to find ways to provide injury prevention outreach to these businesses.

Across industries, falls from elevation continue to be a leading cause of work-related immediate inpatient hospitalizations. In both 2019 and 2020, injuries due to falls from elevation led to immediate hospitalization more than any other injury event, approximately a quarter of all cases each year. Falls on the same level were the second leading cause of hospitalizations in 2019, and the third in 2020. Taken together, falls led to over 40% of work-related immediate inpatient hospitalizations each year. Fall hazards exist for workers in every industry, and preventing these injuries should be a priority for all employers.

While the number and rate of work-related immediate inpatient hospitalizations were found to be lower in 2019 and 2020 than in previously reported years, over six-hundred Washington State workers still suffered these severe and potentially debilitating injuries each year. The Washington State Work-Related Immediate Inpatient Hospitalization Surveillance System continues to be a useful source of descriptive information about the causes and characteristics of work-related injuries severe enough to require immediate inpatient hospitalization. Ongoing monitoring of work-related immediate inpatient hospitalizations is warranted to better understand which workers remain at risk for these serious injuries, where prevention efforts are working, and where continued focus is needed.

Limitations of the Washington State Work-Related Immediate Inpatient Hospitalization Surveillance System are primarily due to the inclusion and exclusion criteria associated with the data sources. CHARS data includes information about inpatient hospitalizations in Washington State acute care hospitals only. CHARS does not include hospitalization data from out-of-state facilities, Veterans' Affairs, or military hospitals. The CHARS data include only individuals 14 years or older.

Workers' compensation data are known to have specific limitations related to incomplete capture of claims eligible for benefits and statutory exclusions from coverage (RCW 51.12.020). Specific exclusions which may limit the completeness of these data include self-employed workers unless they choose elective coverage, non-mandatory coverage for company owners, and workers covered by alternative workers' compensation insurance (e.g. federal workers compensation programs or reciprocal state agreements for employees).

In addition, the surveillance system is dependent on the injury date as recorded in the workers' compensation administrative data to evaluate the timing of the injury relative to the hospitalization. Because the date of injury is adjudicated to reflect the last injurious exposure, some cases that appear to involve immediate hospitalizations instead involve injuries or illnesses that arise from exposures that occur over time.



## APPENDIX A: METHODS

A *work-related immediate inpatient hospitalization* is a work-related injury or illness that leads to an inpatient hospital admission on the day of injury event or exposure or the day following the injury event or exposure, in a Washington State acute care hospital. The work-related immediate inpatient hospitalization surveillance system links two data sources to identify cases meeting the case definition above: Washington State Department of Labor and Industries (L&I) accepted state fund and self-insured workers' compensation claims data, and the Washington Comprehensive Hospital Abstract Reporting System (CHARS). Washington State workers compensation claims data have been described in detail elsewhere.<sup>13,14</sup> The CHARS data system is operated by the Washington State Department of Health.

To identify cases, discharges for inpatient hospitalizations in Washington State hospitals for calendar years 2014–2018 were obtained. We extracted all accepted workers compensation claims with injury dates from one day before the earliest admission date in the hospitalization data through the most recent admission date. Records were linked across datasets based on name (last, first name or initial, middle), birthdate, workers' compensation injury date within one day of hospital admission date, sex, and worker's residence zip code; the dataset was limited to one discharge per claim (earliest admission). Unlinked records were excluded. Expected bill payer is not a data element necessary for linkage or for identification of a work-related injury event.

Limitations of our tracking system are due to the inclusion and exclusion criteria associated with the data sources. CHARS data includes inpatient hospitalizations in Washington State acute care hospitals. CHARS does not include hospitalization data from out-of-state facilities, Veterans' Affairs, or military hospitals. The CHARS data include only individuals 14 years or older. Workers compensation data are known to have specific limitations related to incomplete capture of claims eligible for benefits and statutory exclusions from coverage (RCW 51.12.020). Specific exclusions, which significantly limit the completeness of these data, include self-employed workers unless they choose elective coverage, non-mandatory coverage for company owners, and workers covered by alternative workers' compensation insurance (e.g. federal workers compensation programs or reciprocal state agreements for employees).

In the descriptive analyses, CHARS data provides information specific to year of admission and the designation that the person was hospitalized as an inpatient. All additional data elements were obtained through the Washington State Department of Labor and Industries workers' compensation claims data, including, worker demographics, preferred language for claim communications, industry and occupation of employment, occupational injury and illness classification codes (OIICS v1.01)<sup>15</sup> and, for state fund workers' compensation claims only, claim benefit costs, and time loss duration.

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<sup>13</sup> Wuellner SE, Bonauto DK. Injury classification agreement in linked Bureau of Labor Statistics and workers' compensation data. *Am J Ind Med*. 2014 Oct; 57(10):1100-1109.

<sup>14</sup> Bonauto DK, Silverstein BA, Adams DA, Foley M. Prioritizing industries for occupational injury and illness prevention and research, Washington state workers' compensation claims, 1999-2003. *J Occ Env Med* 2006; 48(8):840-851.

<sup>15</sup> Occupational Injury and Illness Classification System, v1.01, U.S. Department of Labor, Bureau of Labor Statistics: <https://www.cdc.gov/Wisards/oiics/default.aspx>

For this report, work-related immediate inpatient hospitalization rates were calculated using two sources of employment data. Hospitalizations rates by year and employer characteristics were calculated using payroll hours reported by employers to L&I converted to full-time equivalent (FTE). Employers do not report worker demographic information with payroll hours. Hospitalization rates by worker age and gender were calculated using U.S. Census Bureau Quarterly Workforce Indicators Data.