



Washington State Department of
Labor & Industries

Work-Related Immediate Inpatient Hospitalizations in Washington State

2024 Annual Report to the Legislature

August 2024

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Executive Summary

In 2019, the Washington State Legislature first provided funding to the Department of Labor & Industries' (L&I) Safety & Health Assessment & Research for Prevention (SHARP) program to develop a tracking system for work-related immediate inpatient hospitalizations and their likely causes. This is the fifth annual report updating the governor and legislature on the program's progress.

SHARP uses the work-related immediate inpatient hospitalization surveillance system to identify workplace injuries and illnesses that result in inpatient hospital admission within one day of the incident by linking hospital discharge data from the Washington State Department of Health's Comprehensive Hospital Abstract Reporting System (CHARS) with workers' compensation claim information from L&I.

Preliminary surveillance system data analysis found that 579 Washington workers suffered work-related immediate inpatient hospitalizations in 2023.¹ Other key takeaways include:

- Construction industry workers again experienced the highest number and rate of hospitalization, but both were lower in 2023 than in the previous year.
- Falls from elevation remain the leading cause of worker hospitalizations.
- Among women, more than half of those hospitalized were age 55 or older.
- 19% of hospitalized workers requested to receive claim information in Spanish.

This surveillance system was used to develop industry-focused injury-prevention publications in the last year with the goal of reducing work-related hospitalizations. Injury-prevention "Hazard Alerts" were published regarding:

- agriculture injuries caused by rotating machinery;
- preventing saw kickback injuries in construction work; and
- explosion risk from tire overinflation.

In addition, L&I published a technical report providing more detail about work-related immediate inpatient hospitalizations in 2022.²

L&I's priorities for the coming year will be to publish a technical report further detailing work-related immediate inpatient hospitalizations for 2023; continue analyzing specific hospitalized injuries in the manufacturing and construction industries; and identifying at-risk worker groups. The goal of this work is to help decrease both the number and rate of work-related immediate inpatient hospitalizations by using information to empower workers and employers.

¹ Based on date of hospital discharge.

² Work-Related Immediate Inpatient Hospitalizations-Washington State, 2022: https://lni.wa.gov/safety-health/safety-research/files/2024/96_10_2024_WorkRelatedImmediateInpatientHospitalizations_2022_Final.pdf

Introduction

A work-related immediate inpatient hospitalization is defined as a workplace injury or illness that results in inpatient hospital admission within one day of the incident (hereinafter referred to as ‘hospitalizations’). Work-related injuries that require immediate hospitalization are severe and costly, and can cause permanent disability. These injuries are preventable.

The work-related immediate inpatient hospitalization surveillance system links CHARS hospital discharge data to Washington workers’ compensation State Fund and Self-Insured claim information to identify work-related injuries resulting in immediate hospital admission.³ These records provide valuable insight — from worker demographics to industry, occupation, and injury/illness classification codes.

Preliminary information about worker hospitalizations that occurred in 2023 are included in this report. A more detailed analysis will be published in a technical report in 2025.

Prevention activities for 2023–2024 focused on hospitalization hazards identified through the work-related immediate inpatient hospitalization surveillance system, including injuries caused by equipment or machinery in the agriculture and construction industries, and explosion risks during tire inflation.

2024 Progress

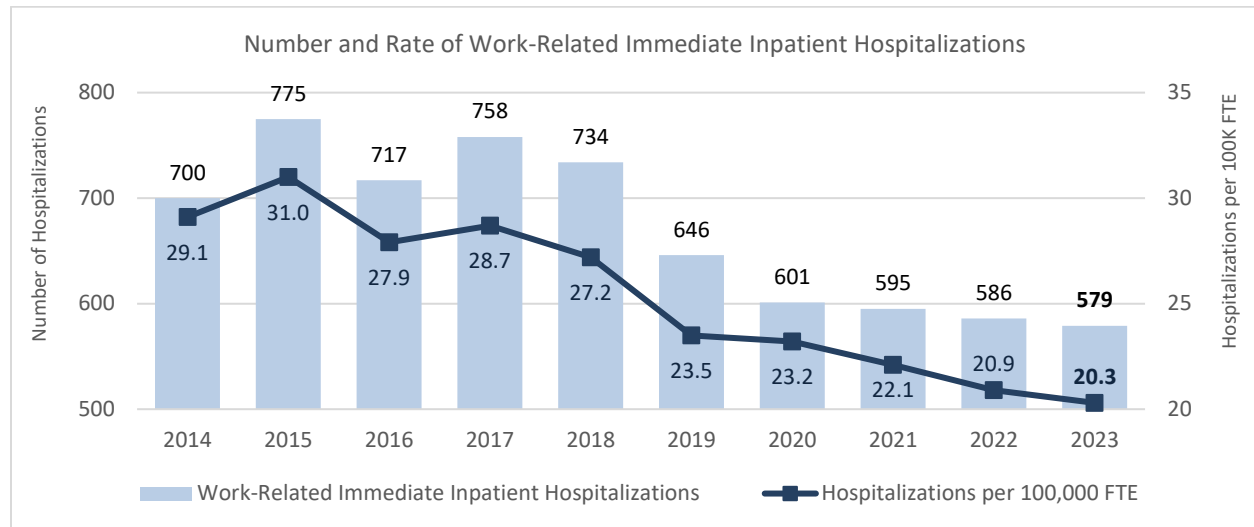
WORK-RELATED IMMEDIATE INPATIENT HOSPITALIZATIONS, 2023

In 2023, 579 Washington workers suffered work-related injuries or illnesses that required immediate hospitalization, a rate of 20.3 hospitalizations per 100,000 full-time equivalents (FTE) (Figure 1).⁴ Overall, both the annual number and rate of hospitalizations continue to decline and were the lowest observed in the last decade.

³ Washington employers are required to obtain workers’ compensation insurance through L&I’s State Fund unless they meet requirements to self-insure or are covered by an alternative system. Approximately 70% of Washington workers are covered through the State Fund. L&I administrative data collected for Self Insured claims is limited, including hospital admission and discharge information.

⁴ The data in this report are preliminary and may be revised due to updated information.

Figure 1. Number and Rate of Work-Related Immediate Inpatient Hospitalizations, Washington State, 2014–2023.



Workers

In 2023, men accounted for over three-quarters of hospitalized workers (n=455, 78.6%). Women accounted for 124 hospitalizations.

Among men, the four industry sectors with the highest numbers of worker hospitalizations were Construction (n=121, 26.6%); Manufacturing (n=48, 10.5%); Agriculture, Forestry, Fishing and Hunting (n=40, 8.8%); and Administrative and Support and Waste Management and Remediation Services (n=40, 8.8%).

Among women, the four industry sectors with the highest numbers of worker hospitalizations were Health Care and Social Assistance (n=19, 15.3%); Retail Trade (n=17, 13.7%); Manufacturing (n=12, 9.7%); and Accommodation and Food Services (n=12, 9.7%).

Overall, more than one-third of hospitalized workers were age 55 or older. More than half of hospitalized women were age 55 or older (Figure 2).

Figure 2. Work-Related Immediate Inpatient Hospitalizations by Age Group and Gender, 2023.

Age Group	All Worker Hospitalizations (%)	Women (% Women)	Men (% Men)
24 and under	51 (8.8%)	11 (8.9%)	40 (8.8%)
25–54	314 (54.2%)	46 (37.1%)	268 (58.9%)
55 and over	214 (37.0%)	67 (54.0%)	147 (32.3%)

Industry

In 2023, workers in Washington’s construction industry sector (NAICS 23) again experienced the highest number and rate of hospitalizations (n=128, 66.4 hospitalizations per 100,000 FTE), accounting for more than one-fifth of hospitalizations overall (Figure 3).⁵ Both the number and rate of construction industry hospitalizations were lower than in 2022, and the lowest annually in the last decade (Figure 4).

The three detailed Construction industries with the most worker hospitalizations in 2023 were residential remodelers, framing contractors, and roofing contractors.

The three industry sectors with the next highest hospitalization case numbers were: Manufacturing, NAICS 31–33 (n=60); Retail Trade, NAICS 44-45 (n=56); and Administrative and Support and Waste Management and Remediation Services, NAICS 56 (n=50).

Together, these four industry sectors accounted for approximately half of worker hospitalizations in 2023 (50.8%).

The two industry sectors with the next highest rates of worker hospitalizations, following Construction, were Agriculture, Forestry, Fishing and Hunting (45.5 hospitalizations per 100,000 FTE), and Transportation and Warehousing (42.9 hospitalizations per 100,000 FTE).

Figure 3. Work-Related Immediate Inpatient Hospitalizations by NAICS Industry Sector, 2023.

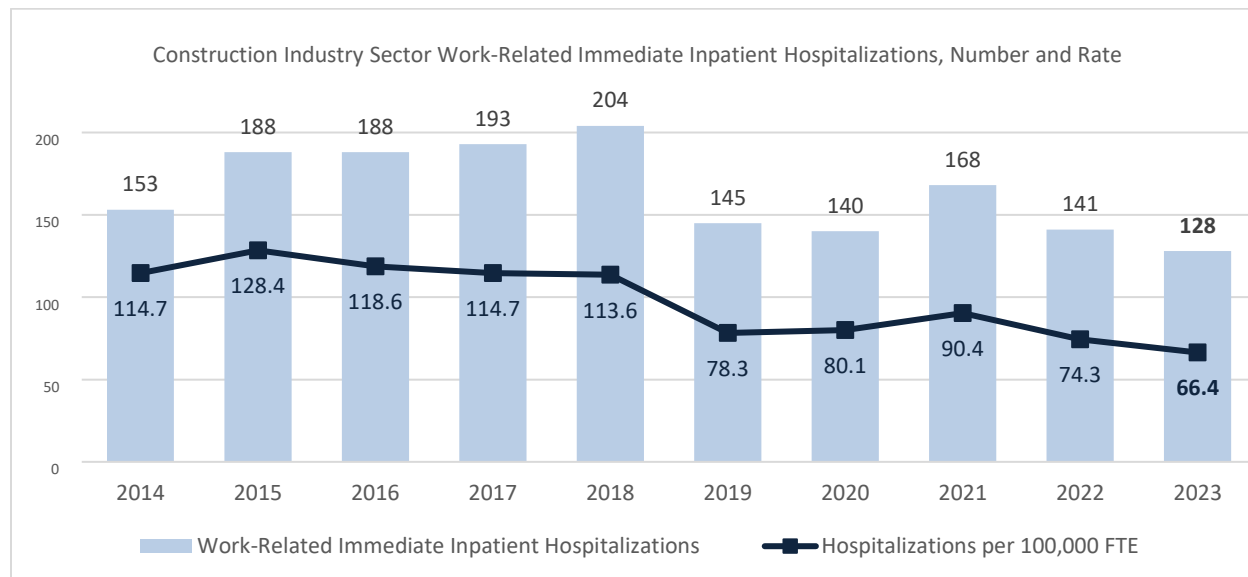
NAICS Industry Sector Code and Description *	Hospitalizations [‡] (%)	Rate per 100,000 FTE
23: Construction	128 (22.1%)	66.4
31-33: Manufacturing	60 (10.4%)	24.8
44-45: Retail Trade	56 (9.7%)	20.1
56: Administrative and Support and Waste Management and Remediation Services	50 (8.6%)	23.9
11: Agriculture, Forestry, Fishing and Hunting	42 (7.3%)	45.5
48-49: Transportation and Warehousing	41 (7.1%)	42.9
92: Public Administration	33 (5.7%)	21.4
72: Accommodation and Food Services	32 (5.5%)	17.5
42: Wholesale Trade	31 (5.4%)	23.2
62: Health Care and Social Assistance	27 (4.7%)	6.6
81: Other Services (except Public Administration)	22 (3.8%)	21.2
61: Educational Services	16 (2.8%)	9.6
54: Professional, Scientific, and Technical Services	15 (2.6%)	6.2

* Only industry sectors with 10 or more hospitalizations are listed.

‡ Excludes three claims that were not assigned to an employer account.

⁵ Industries designated using the North American Industry Classification System (NAICS) code assigned to the employer account. <https://www.census.gov/naics/>.

Figure 4. Number and Rate of Work-Related Immediate Inpatient Hospitalizations, Construction Industry, Washington State, 2014–2023.



Injury Event

Across industries, falls from elevation were again the leading cause of worker hospitalizations in 2023. Preliminary information shows that falls from ladders and falls from roofs were the most frequent hospitalized fall incident types.

Employers

In 2023, 472 claims (81.5%) for hospitalizations were among workers whose employers received workers’ compensation coverage through L&I’s industrial insurance State Fund, and 107 (18.5%) were among self-insured employers.

Workers employed by smaller employers again experienced higher hospitalization rates than those with larger employers. The smallest employers — those with 10 or fewer FTEs — had a hospitalization rate of 35.9 per 100,000 FTEs, over three times that of the largest employers (Figure 5).

Figure 5. Work-Related Immediate Inpatient Hospitalizations by Employer Size, 2023.

Employer Size	Hospitalizations	Percent	Rate per 100,000 FTE
Less than or equal to 10 FTE	136	23.5%	35.9
11–49 FTE	136	23.5%	28.8
50–249 FTE	130	22.5%	23.4
250–999 FTE	69	11.9%	15.7
1000 or more FTE	107	18.5%	10.6

* One claim did not include employer size information.

PREVENTION PUBLICATIONS

Data from the work-related immediate inpatient hospitalization surveillance system identifies high-hazard industries, equipment, and tasks that frequently lead to worker hospitalization. From this information, SHARP creates industry-focused injury-prevention alerts: Worker Hazard Alerts and Hospitalization Hazard Alerts.

Worker Hazard Alerts and Hospitalization Hazard Alerts are developed by a Certified Safety Professional, and are available on the L&I website and distributed to over 2,800 email subscribers.^{6,7} The alerts tell the stories of real-life, on-the-job injuries that required immediate hospitalization, list safety requirements, offer injury-prevention recommendations, and provide further resources for workers and employers.

English is often not the preferred language of workers in high-hazard industries in Washington. In 2023, 19.2% of hospitalized workers requested to receive information about their workers' compensation claim in Spanish, and an additional 3.1% requested another language other than English. For this reason, project prevention material is also published in Spanish.

SHARP also asks industry and other safety and health partners to determine if the translation of specific alerts would increase accessibility to at-risk workers, and will also publish prevention material in other languages when appropriate.

In the past year, SHARP developed the following industry-focused Worker Hospitalization Alerts, which are designed to be used interactively in safety training sessions or tool box talks.

Agriculture

In the past year, SHARP published Agriculture industry prevention material focused on injury hazards from rotating parts of equipment or machinery in which workers may become caught or entangled if not properly guarded.

Foreman's Leg Crushed in Power Takeoff Shaft

SHARP developed a Worker Hospitalization Alert that told of an experienced dairy foreman whose leg was severely injured when it became entangled in a tractor's rotating power takeoff shaft.⁸

The foreman was using an older-model tractor with a sawdust-throwing trailer attached to the tractor's power takeoff (PTO). The belt in the front of the trailer was not working properly, and the foreman stood on the front of the trailer above the rotating PTO shaft to check it. The PTO shaft

⁶ Board of Certified Safety Professionals: <https://www.bccsp.org/CSP>

⁷ Work-Related Immediate Inpatient Hospitalization Prevention Resources: <https://lni.wa.gov/safety-health/safety-research/ongoing-projects/immediate-inpatient-hospitalizations#prevention-resources>

⁸ Worker Hospitalization Alert: [Foreman's Leg Crushed in Power Takeoff Shaft](#)

caught hold of the foreman's rain pant and his leg became entangled. He needed surgery to repair multiple broken bones in his leg. More than a year and a half after the incident, he still had not been able to return to work.

In this case, several factors contributed to create the hazardous situation that led to the worker's injury. First, the PTO shaft was left unguarded. The guard had broken more than a year earlier, and the employer had not replaced it. In addition, the worker stood directly over the rotating shaft as he performed maintenance on the belt. The employer also did not conduct regular safety meetings or safety walks or inspections, which could have alerted workers and the employer to hazards, such as missing equipment guards and unsafe work practices.

To prevent similar injuries, we recommended that employers: promptly repair or replace broken or missing guarding; train workers how to recognize caught-in hazards; conduct regular safety walks or inspections; avoid allowing employees to work alone; and to plan for safety by including worker input when establishing safety programs.

Grain Auger Amputations

SHARP developed a Hospitalization Hazard Alert about two similar incidents in which workers suffered foot amputations from subfloor augers in grain handling facilities.⁹

The first case describes an incident in which a seasonal worker was cleaning in a dark, dusty grain silo. There were a number of six-inch openings in the floor leading to an auger below that transported grain out of the silo. The openings were supposed to be covered with protective grates when workers were in the silo while the auger was running, but they had been left open. As the worker was sweeping grain, he stepped backward into one of the unguarded openings. His right foot was pulled into the rotating auger blade, which amputated his leg below the knee.

The second incident involved a worker tasked with transferring grain from a storage building. He was initially using a skid steer loader to move the grain, but after realizing that he did not have enough room to maneuver, he backed it out of the building and went back in to shovel the grain by hand. Steel plates had been placed over the opening to the running subfloor auger, but they were covered with grain and not visible. As he shoveled around a large tube, he stepped backward into an unseen gap between two of the steel plates. His foot was pulled in to the auger and amputated at the ankle by the rotating blade.

In these cases, recommended prevention methods included ensuring that lockout/tagout procedures for work around augers are detailed and specific, and that employers frequently check to ensure that these safety procedures are well understood and consistently followed by workers. Other recommendations for employers were to explore ways to increase lighting for work done inside grain storage facilities that could enable workers to better identify hazards; train workers to use situational

⁹ Hospitalization Hazard: [Grain Auger Amputations](#)

awareness at all times when working in grain storage units; and develop a Job Hazard Analysis for each operation to identify potential hazards.

Construction

Framer Nearly Amputates Toes with Circular Saw

Construction workers are also frequently exposed to serious injury hazards from machinery and tools on the job. SHARP developed a Worker Hospitalization Alert about a framer who nearly amputated his toes when the circular saw he was using kicked back and struck his foot.¹⁰

A newly hired framer placed a 2” x 6” board on a two-foot-high block to make a cut with a circular saw. He held the saw in his right hand and the board with his left. He was not using a clamp to hold down the board or using both hands on the saw as instructed by the manufacturer. As the framer started the cut, the saw blade stuck in the board. The saw kicked back and struck the framer’s right foot. The blade went through his boot and nearly severed his toes.

In this case, the employer had provided the worker with incomplete training, which contributed to the hazardous situation. The worker received some equipment safety training specific to using the circular saw, but it did not include the manufacturer’s instructions, which included using both hands during operation and how to control saw kickback.

To prevent similar incidents, safety recommendations included following the manufacturer’s instructions when using power tools, setting up a proper cutting station, and taking precautions to prevent saw kickback.

Tire Dealers

Technician Injured when Overinflated Tire Explodes

SHARP developed a Worker Hospitalization Alert about an inexperienced technician at a tire shop who was severely injured after the tire he was inflating exploded.¹¹

The tire technician was changing an irrigation system tire mounted on a 24.5-inch single-piece wheel. The employer’s standard procedure was to inflate tires in a metal safety cage to protect workers if the tire or rim failed or exploded. The worker began filling the tire with a hose fitted with a larger air chuck than he usually used that delivered air more rapidly than he expected. To save time, he did not use the metal safety cage and instead inflated the tire on the ground. The tire became dangerously overinflated and exploded. The worker was struck by the metal wheel and tire, breaking both of his hands and a wrist. He needed multiple surgeries to repair his injuries.

¹⁰ Worker Hospitalization Alert: [Framer Nearly Amputates Toes with Circular Saw](#)

¹¹ Worker Hospitalization Alert: [Technician Injured when Overinflated Tire Explodes](#)

Contributing factors to this incident included that the employer did not ensure the technician used a safety cage while he was inflating a tire on a single-piece wheel, and that the employer failed to train the technician properly for the type of tire he was changing and the tools he was using.

Prevention recommendations included providing workers with comprehensive hands-on training, and having them demonstrate proficiency with all types of tires they will work on and all of the tools and equipment available for them to use. Managers or supervisors should conduct regular safety walks or inspections to ensure that workers consistently follow all safety procedures.

Ongoing Priorities

In the coming years, L&I will continue to use data from the work-related immediate inpatient hospitalization surveillance system to identify hazards that put workers at risk for severe injuries. The goal remains to help decrease both the number and rate of work-related immediate inpatient hospitalizations by using information to empower workers and employers.

Ongoing, multi-year priorities for the work-related immediate inpatient hospitalization surveillance system include:

- **Analyzing specific industry hazards, including:**
 - Hospitalized injuries in manufacturing — specifically those that occur when workers are caught in or compressed by equipment or objects, and identifying machinery or equipment frequently involved in worker injury.
 - Hospitalized falls from elevation in construction — to determine common causes of falls, including identifying fall-restraint system use, specifically for roofers and other exterior building construction contractors.
- **Analyzing hospitalization risk among specific worker groups, including** hospitalized fall injuries among women age 55 and older.
- **Improving case ascertainment for out-of-state hospitalizations of Washington workers.** Initial evaluations suggest that a small portion of Washington workers' compensation State Fund claims for immediate inpatient hospitalizations are those for out-of-state hospitalizations and therefore ineligible for reporting in Washington State CHARS. SHARP will explore how best to modify the data collection system to incorporate these claims into the surveillance system.
- **Using surveillance system data to evaluate mandatory employer reporting.** Employers are required to report certain injuries, including those that require immediate in-person hospitalization, to the Division of Occupational Safety and Health (DOSH). SHARP will compare employer reports to DOSH with the surveillance system to evaluate the completeness of mandatory reporting of worker hospitalizations. From this comparison, SHARP will develop

recommendations for DOSH to improve employer reporting of immediate inpatient hospitalizations and track enforcement actions with employers.

- **Enhancing prevention publication outreach and accessibility.** Educational materials developed as a result of this surveillance must be understandable and accessible. SHARP will seek input from experts and advocates to improve accessibility of prevention materials on an array of topics. In addition, SHARP will extend the surveillance system information by publishing program material in select industry trade journals, through direct mailing, and at safety outreach events.

Conclusion

The work-related immediate inpatient hospitalization surveillance system is a valuable tool to identify industries, tasks, and worker populations at risk of severe occupational injuries. L&I continues to monitor and report on trends in work-related immediate hospitalizations to empower employers and workers to reduce work-related injuries. SHARP's research continues to inform injury prevention priorities to *keep Washington safe and working*.

List of Publications

Published September 2023 through August 2024

Technical Report

- **Work-Related Immediate Inpatient Hospitalizations, Washington State, 2022:** https://www.lni.wa.gov/safety-health/safety-research/files/2024/96_10_2024_WorkRelatedImmediateInpatientHospitalizations_2022_Final.pdf

Resources for Prevention

- **Grain Auger Amputations:** https://www.lni.wa.gov/safety-health/safety-research/files/2024/100_20_2024_GrainBinAugers.pdf
 - Spanish: https://www.lni.wa.gov/safety-health/safety-research/files/2024/100_20_2024SP_GrainBinAugers_Spanish.pdf
- **Foreman's Leg Crushed in Power Takeoff Shaft:** https://www.lni.wa.gov/safety-health/safety-research/files/2023/100_18_2023_DairyFarmCaughtIn.pdf
 - Spanish: https://www.lni.wa.gov/safety-health/safety-research/files/2023/100_18_2023SP_DairyFarmCaughtIn_Spanish.pdf
- **Framer Nearly Amputates Toes with Circular Saw:** https://lni.wa.gov/safety-health/safety-research/files/2024/100_21_2024_CircularSawInjury.pdf
 - Spanish: https://lni.wa.gov/safety-health/safety-research/files/2024/100_21_2024SP_CircularSawInjury_Spanish.pdf
- **Technician Injured when Overinflated Tire Explodes:** https://www.lni.wa.gov/safety-health/safety-research/files/2024/100_19_2024_TireExplosion.pdf
 - Spanish: https://www.lni.wa.gov/safety-health/safety-research/files/2024/100_19_2024SP_TireExplosion_Spanish.pdf