



2025 MONTANA OCCUPATIONAL HEALTH INDICATOR REPORT

*Prepared by Andrew Matheison, Occupational Epidemiologist
Montana Occupational Health and Safety Surveillance Program
Montana Department of Labor & Industry*



Montana Department of
LABOR & INDUSTRY

Report Overview.....	3
Montana Employment Demographics	4
High Morbidity Employment.....	10
Non-Fatal Work-Related Injuries and Illnesses	12
Work-Related Hospitalizations	14
Fatal Work-Related Injuries.....	14
Musculoskeletal Disorders.....	16
Pneumoconiosis.....	19
Adult Blood Lead Exposures.....	21
Conclusion.....	22

REPORT OVERVIEW

This report contains information on the occupational health indicators (OHIs) gathered by the Montana Occupational Health and Safety Surveillance Program (MOHSS). These indicators include:

- Employment counts, details, and demographics
- Occupational injuries and illnesses
- Occupational fatalities
- Prevalence and severity of major occupational diseases

Compiling and examining OHI data for the most recent 15 years available (from 2007 to 2021) indicates a general decline in the number and rate of occupational injury, illness, and fatality incidents. It also indicates areas where employers, workers, and other stakeholders in workplace safety should look to build on this trend to further improve outcomes.

Background

The MOHSS program is the product of a cooperative agreement between the Montana Department of Labor & Industry (DLI) and the National Institute of Occupational Safety and Health (NIOSH), an agency located within the U.S. Department of Health and Human Services. NIOSH provides over 20 states with grant funding to monitor and analyze data on occupational injuries, illnesses, and fatalities, as well as to aid in safety awareness outreach and training with the goal of reducing such incidents. The collaboration between NIOSH, MOHSS, and programs found in states helps promote awareness of trends in occupational health to researchers, policymakers, and the public.

OHI Development, Collection, and Analysis Process

OHIs are quantitative data points used to describe qualitative occupational safety realities. In other words, they are designed to answer questions about the hazards existing within workplaces and the consequences of those hazards on the workforce as a means of reducing harm and improving public health outcomes. OHIs are integral to the purpose of the MOHSS grant and are explicitly or implicitly connected to each of the program's grant specific aims.

The annual OHI update process begins when the MOHSS PI, along with other state and federal occupational health researchers, agree on definitions and calculation methods for each element of the OHIs, allowing NIOSH to produce a standardized data set from each individual state. Once a finalized guidance manual is made available, each state begins to collect data.

Data is gathered from a variety of sources, with some data internally available to DLI, but most coming from other agencies. The Montana Department of Public Health and Human Services (DPHHS) is the primary state-level provider of data, as the agency conducts research on hospitalizations and health conditions used for OHIs. Information on employment is gathered from the Bureau of Labor Statistics (BLS) within the U.S. Department of Labor (DOL). Some employment details are also gathered by the Census Bureau.

Once all data is collected, the MOHSS PI conducts calculations to determine counts and/or rates of each condition according to the specifications of the guidance manual. Once OHI calculation is completed, the OHIs are reviewed to ensure data is calculated correctly. The process ends with the submission of all calculated OHIs to NIOSH, which compiles all state data and calculates rates where applicable.

OHIs Included and Excluded in Trend Reporting

While this report strives to maximize the public awareness of trends observed in analysis of the OHIs, this report does not contain all OHI information for trend analysis. There are a few reasons for this:

- Federal agreement to cease data collection: Several OHIs have been discontinued, often because of changes to the way data-gathering agencies report their data.
- Minimum count requirements: Montana DPHHS guidelines for release of public health data recommends suppressing rates based on less than 16 cases in most applications. Several OHIs did not exceed this count and are omitted.
- Lack of historical data: Several excluded OHIs have not been collected for enough time to allow for long-term trend analysis.

The OHIs included in this report are compiled into the following sections:

- Montana Employment Demographics: Informally “OHI #0,” employment demographics are included to provide workforce context that supports other OHIs.
- High Risk Employment: OHI #14 focuses on industries with an elevated risk of injury.
- Non-Fatal Work-Related Injuries and Illnesses: OHI #1 examines the number and rate of injuries and illnesses.
- Work-Related Hospitalizations: This section examines the number and rate of hospitalizations for all work-related injuries, OHI #2.
- Fatal Work-Related Injuries: OHI #3 provides counts and rates of occupational fatality.
- Musculoskeletal Disorders: OHIs #7 and #8 provide estimated and actual numbers of injury due to various musculoskeletal disorders.
- Pneumoconiosis: Hospitalizations and deaths from pneumoconiosis are counted in OHIs #9 and #10.
- Adult Blood Lead: OHI #13 includes reported counts of incident cases with elevated blood lead levels among adults and prevalence rate of elevated blood lead levels per 100,000 employed adults.

MONTANA EMPLOYMENT DEMOGRAPHICS

Understanding the workforce itself is key to understanding the hazards faced by Montana workers. This section examines trends in workforce size and level of involvement, worker demographics, and industry/occupation of employment.

Workforce Size and Level of Involvement

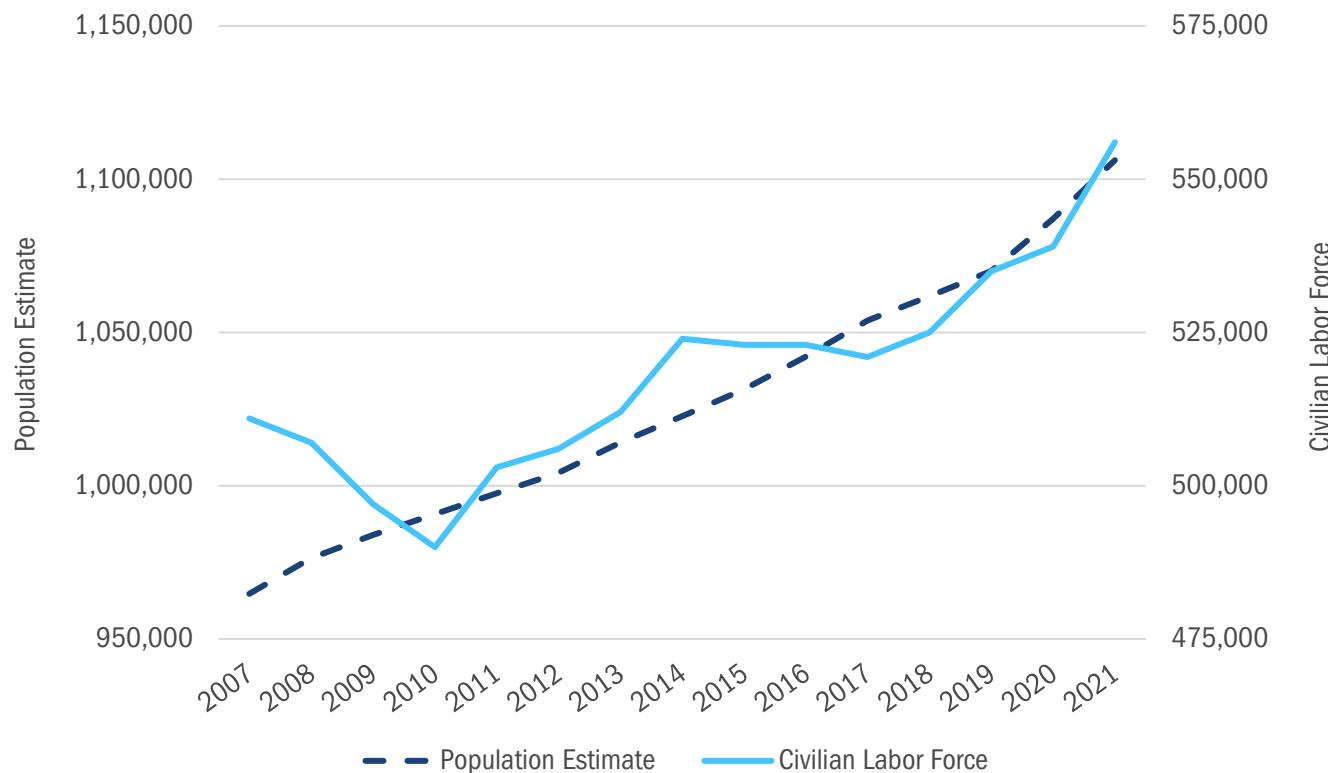
The workforce can be classified in multiple ways. First, it can be understood as the total number of people seeking working. The BLS uses the term “Civilian Labor Force” to categorize all people over the age of 16 who are either working or actively seeking work (excluding military servicemembers). In Montana, roughly 50.5% of all people are included in the civilian labor force from 2007 to 2021. Both the Montana population and the civilian labor force grew during this period (1.1).

The second way to understand the workforce is as a count of people currently employed. In 2021, Montana’s number of employed persons grew to 537,000 (1.2). This was the largest number of workers ever reported in Montana, exceeding the previous record of 516,000 in 2019. It represented a growth of roughly 45,000 workers (8%) from 2007 and a growth of roughly 85,000 workers (16%) from 2010, when the Montana’s employment started to recover from the 2008 Recession.

Subtracting the number of people currently employed from the civilian labor force provides a count of people currently seeking employment, but not working (i.e. unemployed persons). Dividing the number of unemployed persons by the civilian labor force produces the unemployment rate. In 2021, Montana’s unemployment rate fell to 3.3%, the state’s lowest recorded rate (1.3). Montana’s rate varied from 2007 to 2021, rising following the 2008 Recession as well as the economic disruption at the onset of the Covid-19 Pandemic in 2020. Montana’s average unemployment rate also remained lower than the U.S. average unemployment rate during this period.

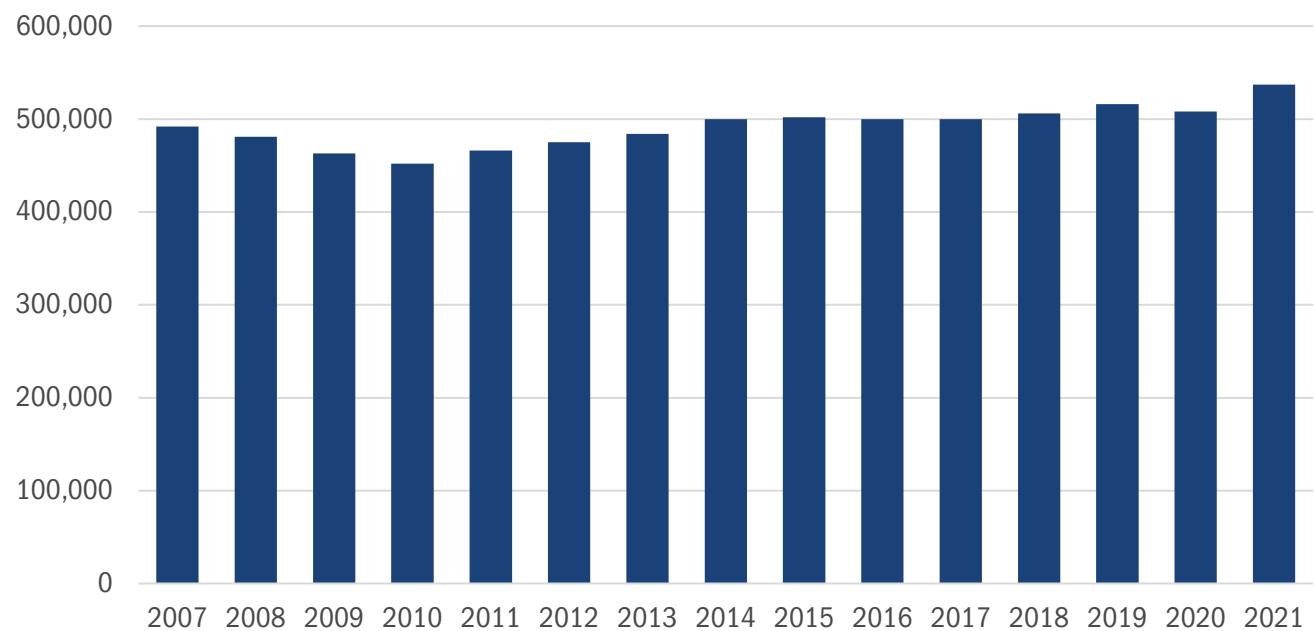
A final metric of workforce involvement is hours worked. A workers’ average number of hours at work indicates whether they are considered a part-time or full-time worker, as well as if they are expected to work overtime. These percentages remained relative static from 2007 to 2021, with roughly full time (40 hour) employment rising slightly while both part time (>40 hour) and overtime (<40 hour) employment fell slightly (1.4).

1.1: Montana Population and Civilian Labor Force



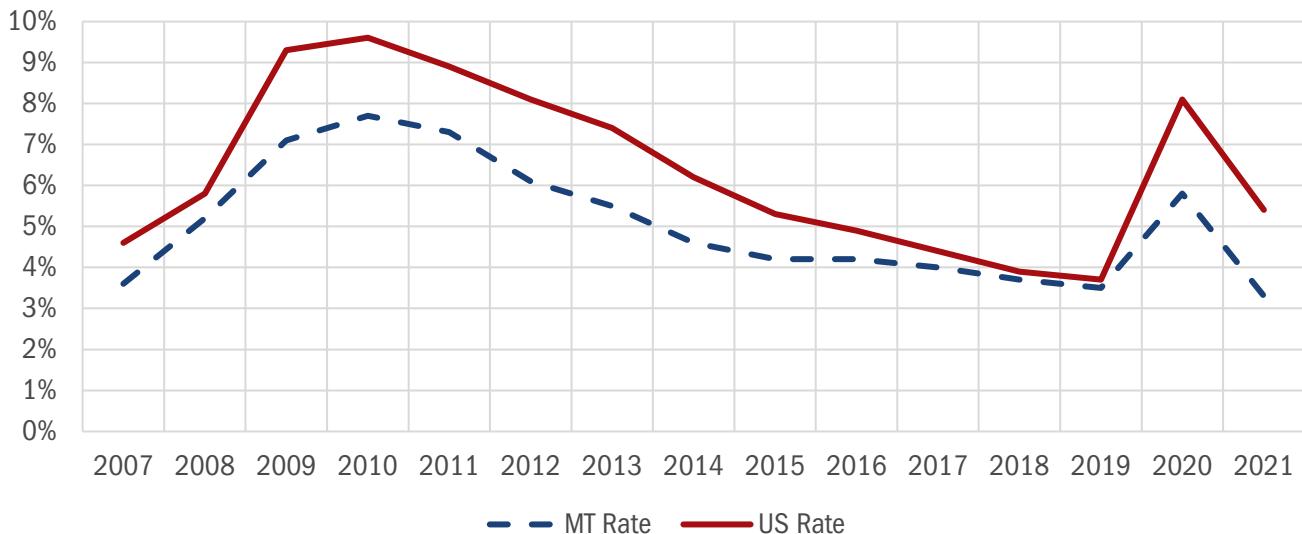
Source: U.S. Census Bureau (Population Estimate); U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment (Civilian Labor Force)

1.2: Total Employment



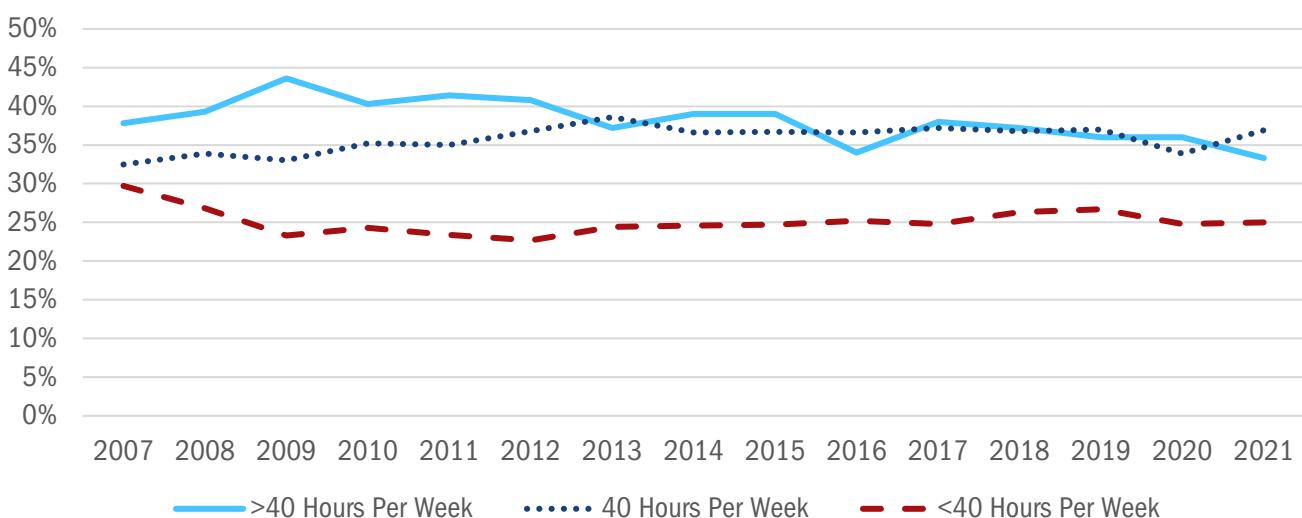
Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

1.3: Average Unemployment Rates, Montana & U.S. Average



Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

1.4: Percentage of Total Workforce by Average Hours Worked



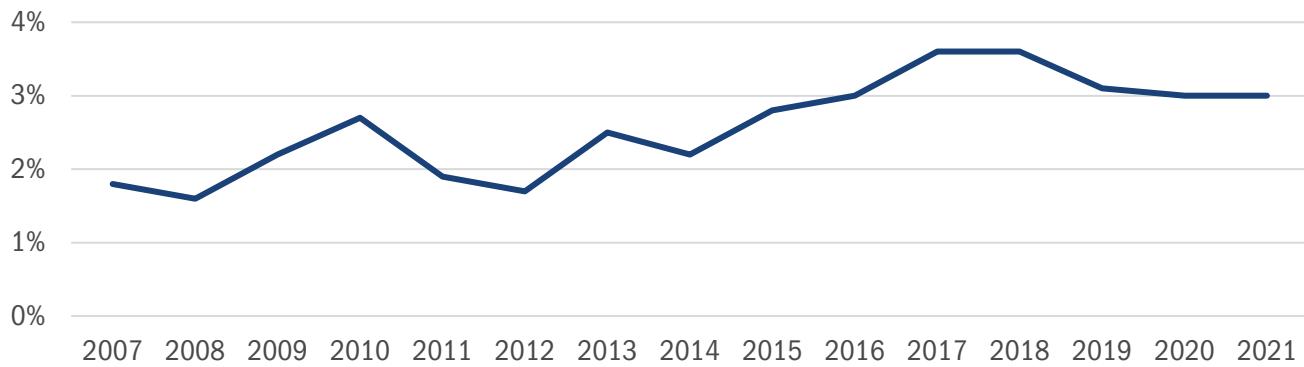
Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

Worker Demographics

The half-million-strong Montana workforce is a representation of the state's demographic groups, resembling the percentages of different races, sexes, and age groups. In the past 15 years, several noteworthy trends have been observed:

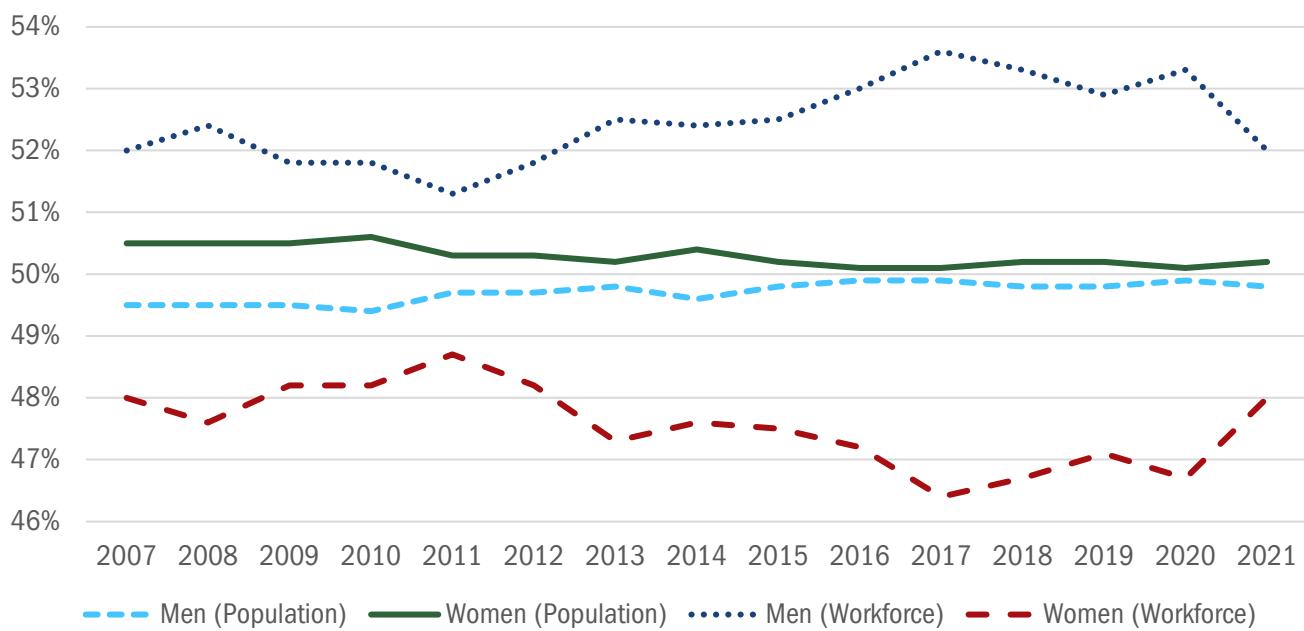
- The racial and ethnic composition of the Montana workforce is difficult to accurately observe due to BLS data limitations. Racially, the state saw a slight decrease in workers identified as white and a slight increase in other unidentified races, but white workers continued to compose over 90% of the workforce in 2021. Ethnically, Hispanic and Latino workers increased in workforce presence from 1.8% in 2007 to 3% in 2021 (1.5).
- The ratio of men to women in the workforce oscillated from 2007 to 2021 but ultimately remained slightly male-favored. It also differed from the ratio of men to women in the state's overall population, which was almost evenly split (1.6).
- When observing select age groups, over 90% of the Montana workforce was between the ages of 18 and 65. However, this percentage fell from 2007 to 2021 as the percentage of working adults over age 65 doubled from 4.5% in 2007 to 9% in 2021 (1.7).

1.5: Percentage of the Workforce Identified as Hispanic or Latino



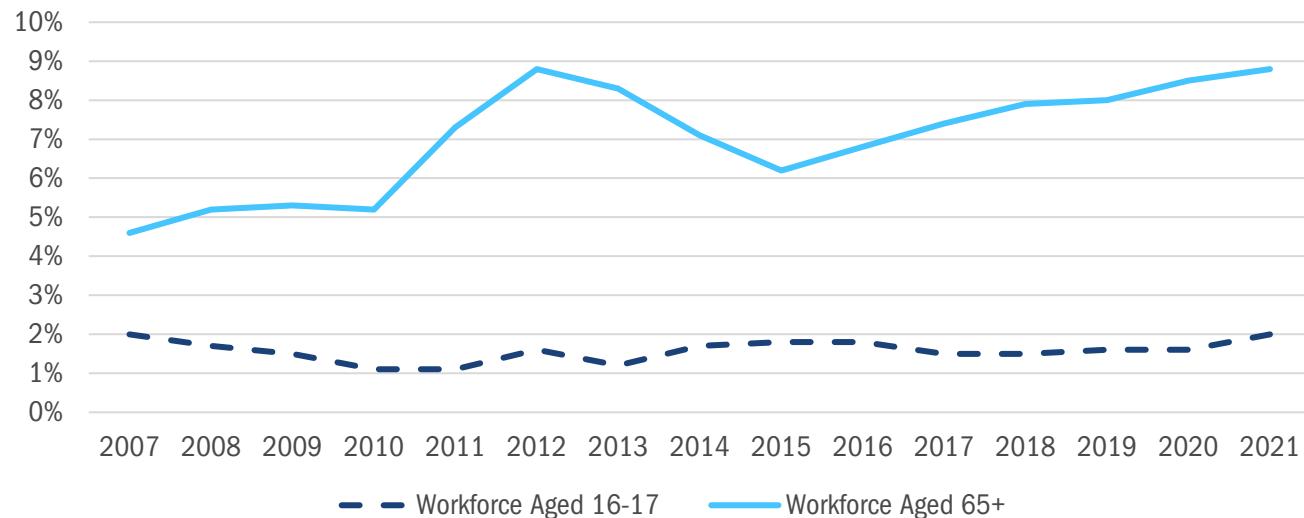
Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

1.6: Percentage of Men and Women Overall and in the Workforce



Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

1.7: Percentage of Workforce Belonging to Select Age Groups



Source: NIOSH Employed Labor Force Estimates

Industry/Occupation of Employment

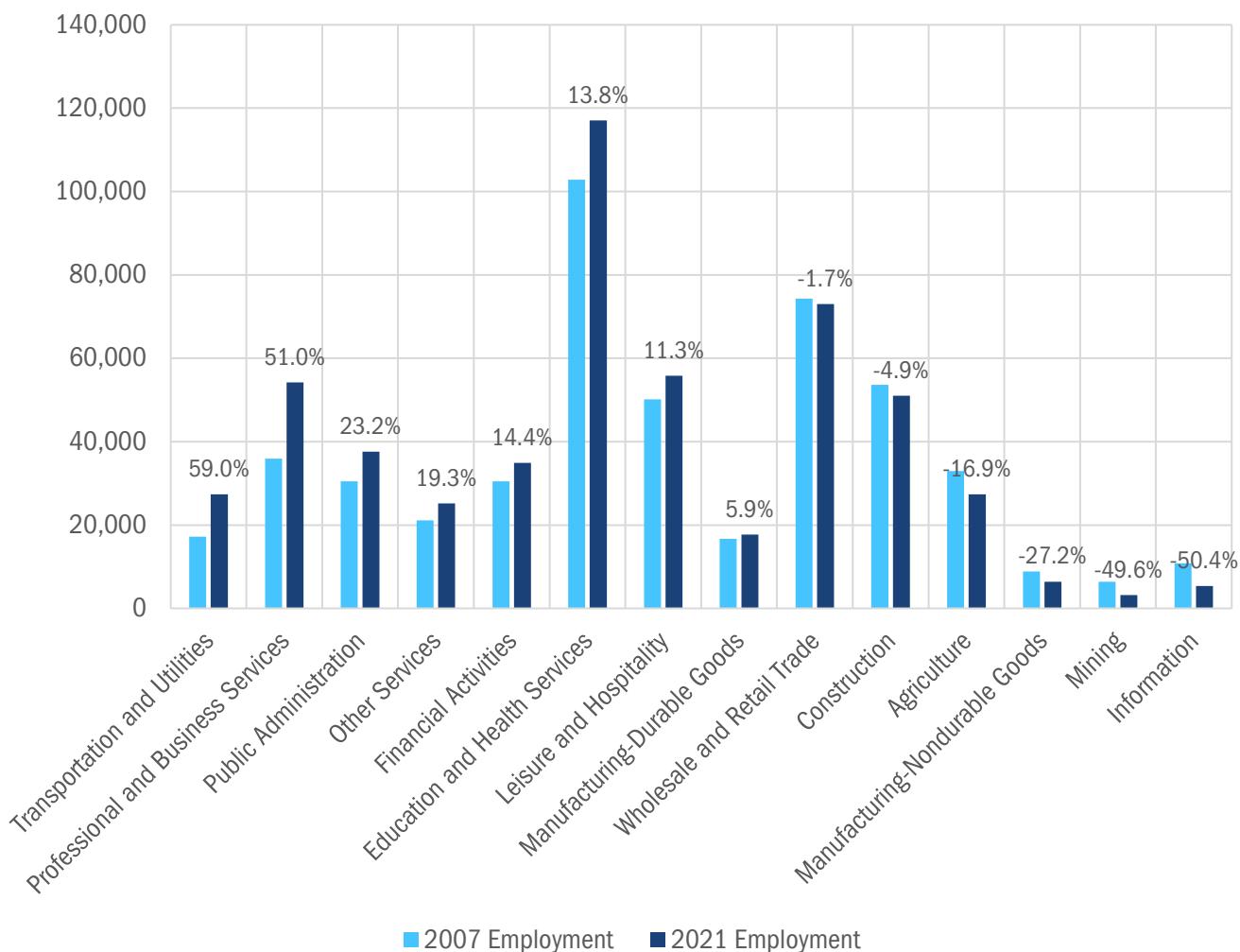
One of the most common ways to characterize the workforce is by the type of work being performed. This can be classified according to the industry of employment (which defines overall work objectives) as well as the occupation of the worker (which defines the nature of work being performed). A final consideration is self-employment, in which a worker acts as the owner and sole operator of their business.

Industry-level employment changes from 2007 to 2021 differed widely from various industries (1.8). Some, like Transportation and Utilities or Professional and Business Services, saw total employment rise by over 50% during this period. Others, including Mining or Information Services, saw 2021 employment fall to half of 2007 numbers. Compared to the average growth of 8% during this period, 7 of 14 Montana industries exceeded this rate.

When looking at occupation data, similar trends of mixed growth and decline are evident for the various occupational classifications (1.9). The highest percent growth was reported in the small farming, forestry, and fishing occupation group, while occupations in production, construction and extraction, and office/administrative support each fell by about 20%.

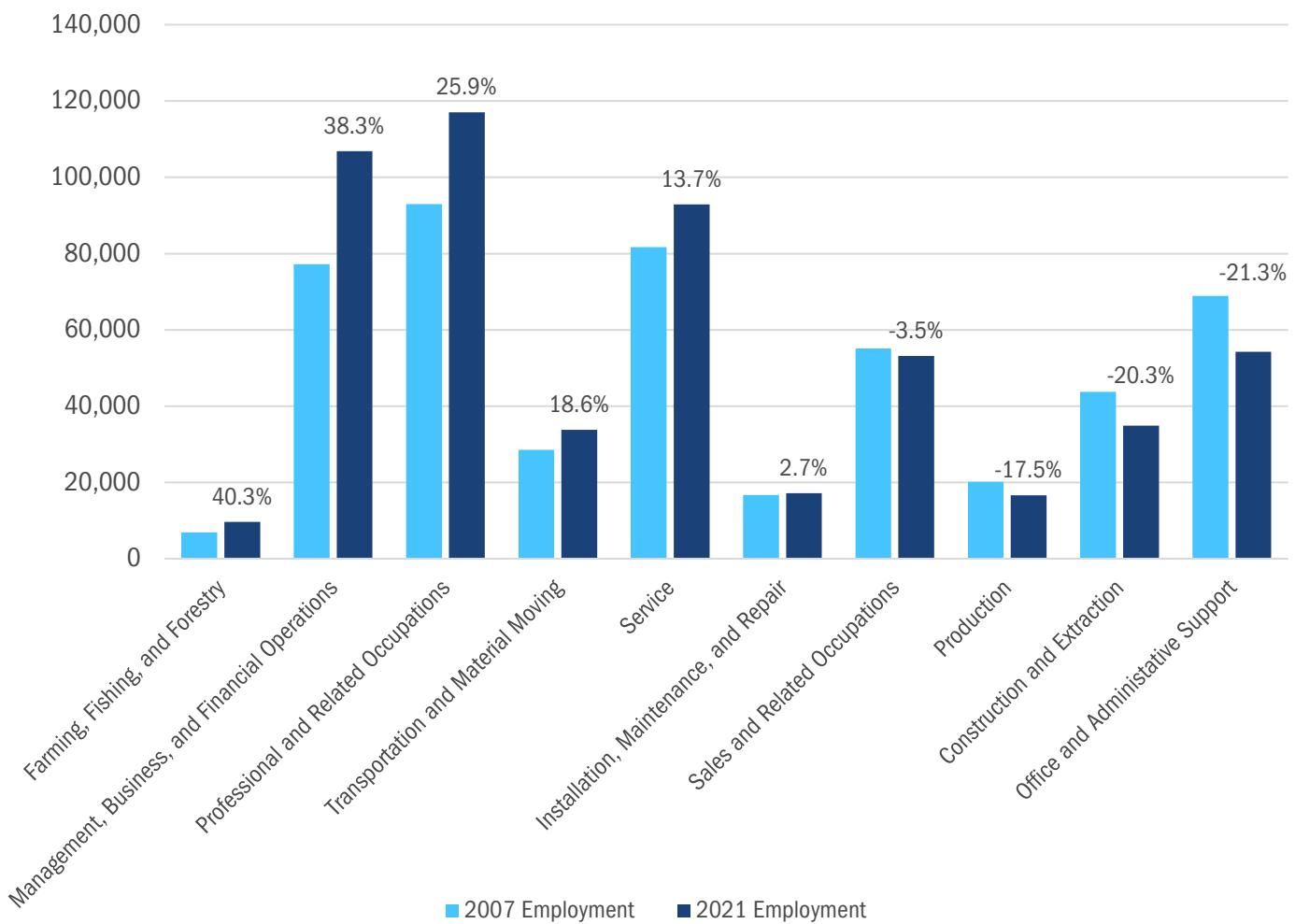
Finally, self-employment declined for the Montana workforce from 13% in 2007 to about 10% in 2021 (1.10). Montana's self-employment rate remained above the U.S. self-employment rate of roughly 6% during this period.

1.8: Percent Change in Employment by Industry, 2007 - 2021



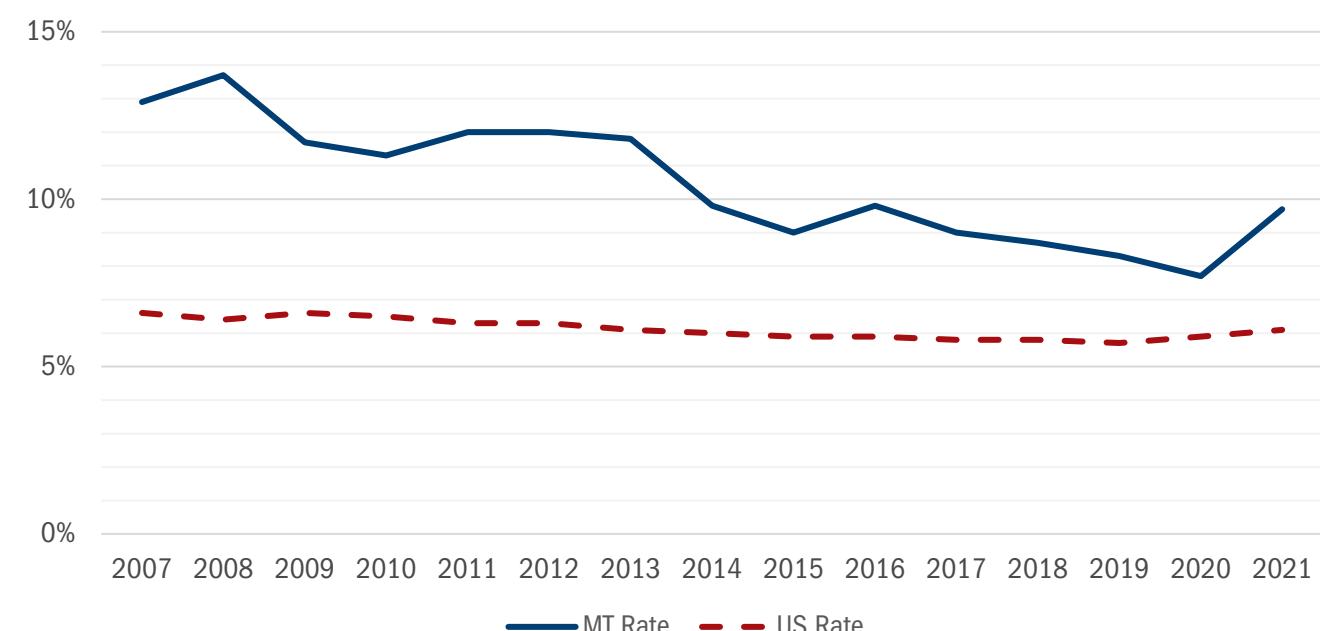
Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

1.9: Percent Change in Employment by Occupation, 2007 - 2021



Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

1.10: Self Employment Rates, Montana & U.S. Average



Source: U.S. Bureau of Labor Statistics Geographic Profile of Employment and Unemployment

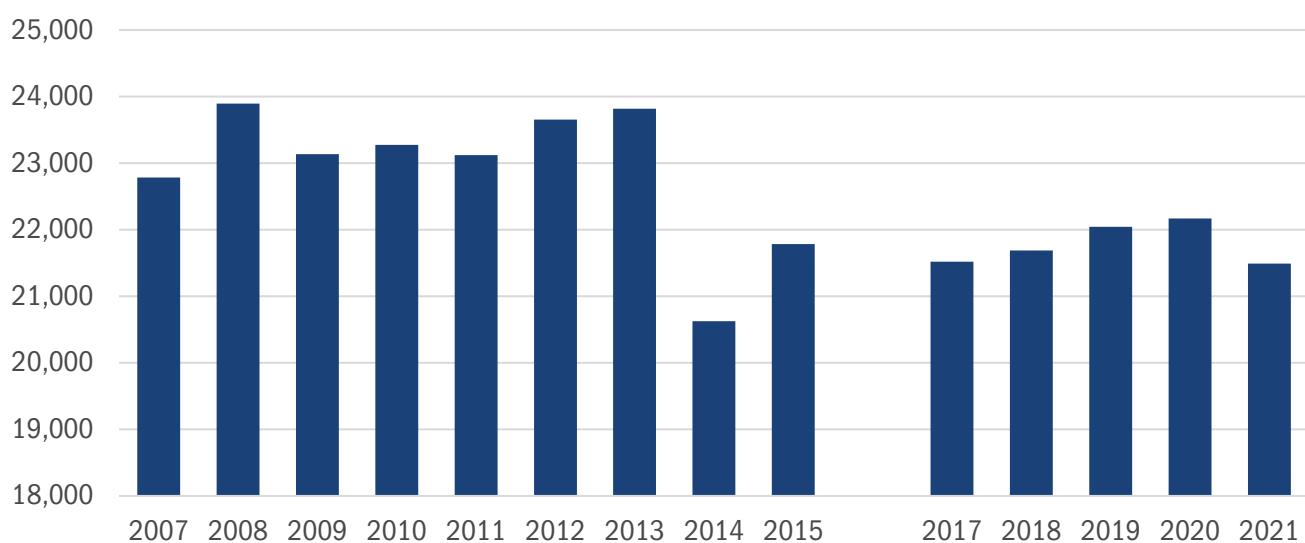
HIGH MORBIDITY EMPLOYMENT

Every job carries its own unique purpose, expectations, and duties. The specific working conditions of a job can include various hazards, and the presence of those hazards increases a workers' risk of injury, illness, or death. In 2014, the BLS calculated the rate of injury for every private-sector non-farm employment environment (or "industry" within the 6-digit North American Industry Classification System, also known as NAICS). Of these, 54 reported at least 6.4 injuries per 100 full-time workers, twice the national average (full list in Data Tables section). At the time, 6.3 million workers (5.3% of U.S. employment) was working in these industries. In the years since, employment within these industries is tracked at the state level.

Number & Percent of Employees in High-Morbidity NAICS Industries in Montana

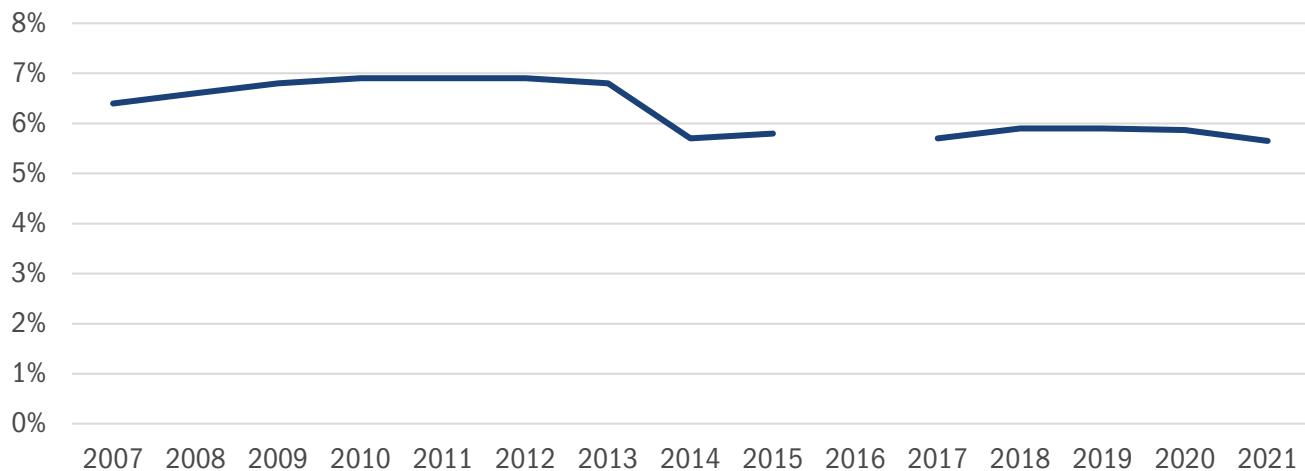
From 2007 to 2021, Montana's number of workers in high-morbidity employment declined slightly, from about 22,750 to 21,500 (2.1). The percentage of Montana workers in high-morbidity industries also declined from 6.5% to 5.7% during this period, as the increase in overall employment contrasted with the decrease in high-morbidity work (2.2). Note that while the Census Bureau's County Business Patterns Survey did not gather exact employment data for 2016, it did gather information on the number of establishments in high-morbidity industries from 2012 on, suggesting 2016 employment was most likely close to counts observed in 2015 and 2017 (2.3).

2.1: Number of Workers Employed in High Morbidity Risk NAICS Industries



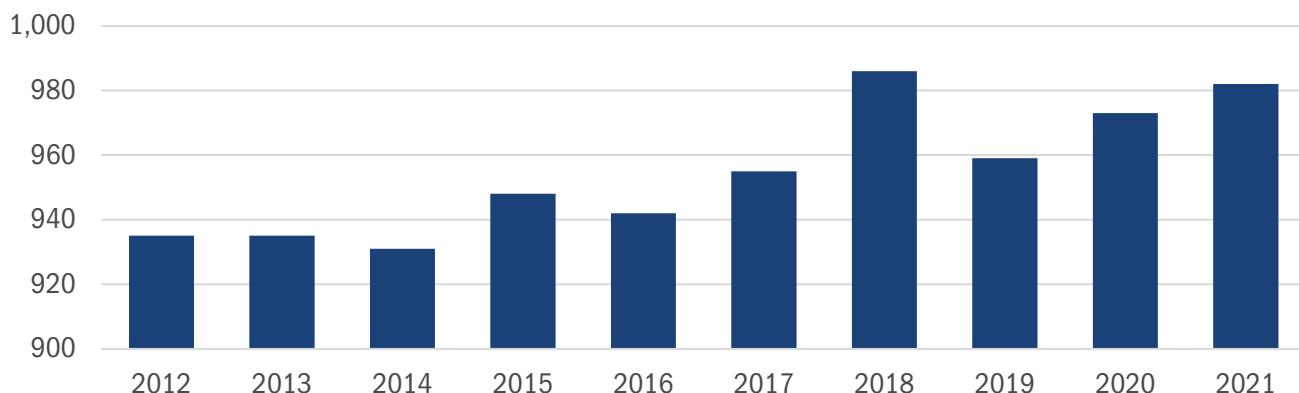
Source: U.S. Census Bureau County Business Patterns

2.2: Percentage of Workers Employed in High Morbidity NAICS Industries



Source: U.S. Census Bureau County Business Patterns

2.3: Number of Establishments in High Morbidity NAICS Industries

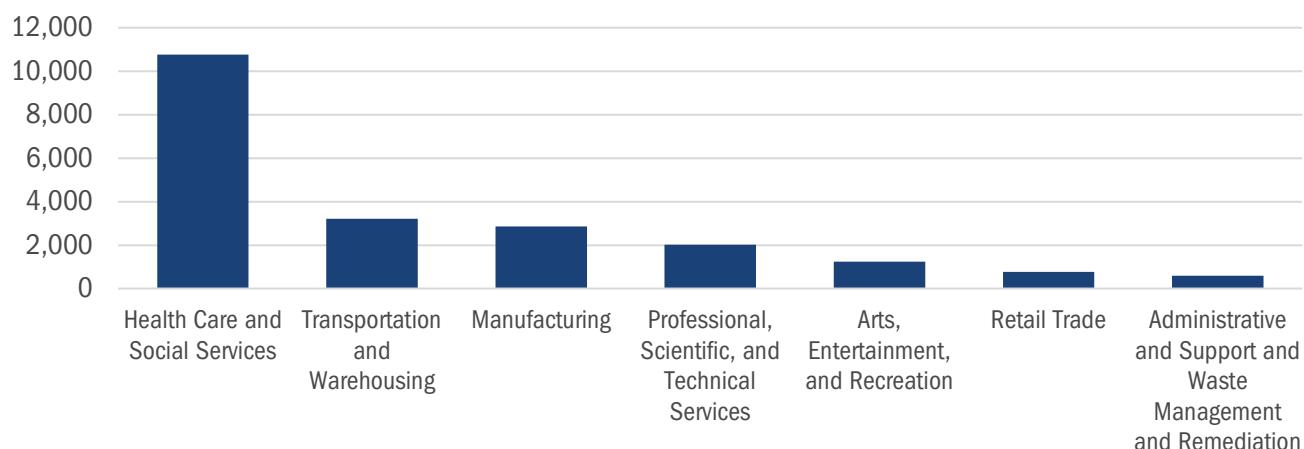


Source: U.S. Census Bureau County Business Patterns

Montana's Share of High-Morbidity Employment

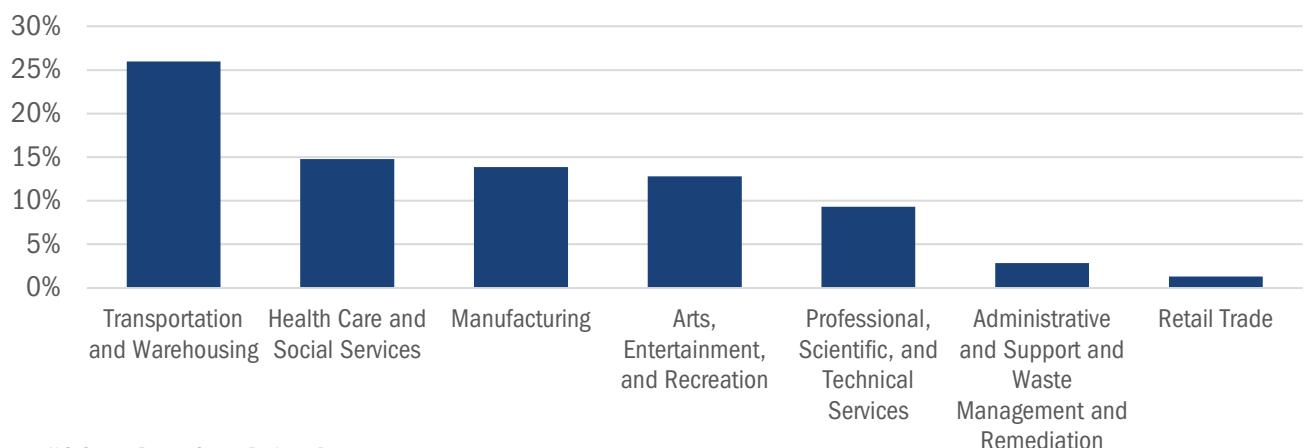
Of the 54 high-morbidity industries identified by the BLS, only 29 existed in Montana in 2021. When combining specific industries within overarching industry groups used by NAICS, over half of workers in high-morbidity employment were working in Health Care and Social Services jobs (2.4). As a percent of industry employment, transportation and warehousing stood out with over 25% of its employees working in high-morbidity industries, compared to under 15% of employees in all other industries (2.5).

2.4: Number of Workers Employed in High Morbidity NAICS Industries, 2021



Source: U.S. Census Bureau County Business Patterns

2.5: Percentage of Industry Workforce in High-Morbidity Industry, 2021



Source: U.S. Census Bureau County Business Patterns

NON-FATAL WORK-RELATED INJURIES AND ILLNESSES

Every year, thousands of Montana workers report injury or illness while at work. Injuries and illnesses vary in nature, source, and severity, but all negatively impact public health, create financial and economic costs, and are often easily preventable. Historically, awareness of the consequences of unchecked occupational hazards prompted both government and businesses to monitor injuries and illnesses, isolate their underlying causes, and seek to mitigate hazards to the greatest possible extent. Specifically, these combined interests were responsible for the creation of state workers' compensation systems in the early 20th century (passed in 1915 in Montana), the creation of the Occupational Safety and Health Administration in 1970, and the passage of the Montana Safety Culture Act in 1995, all of which aim to promote workplace safety and reduce the harm from occupational injury and illness to workers.

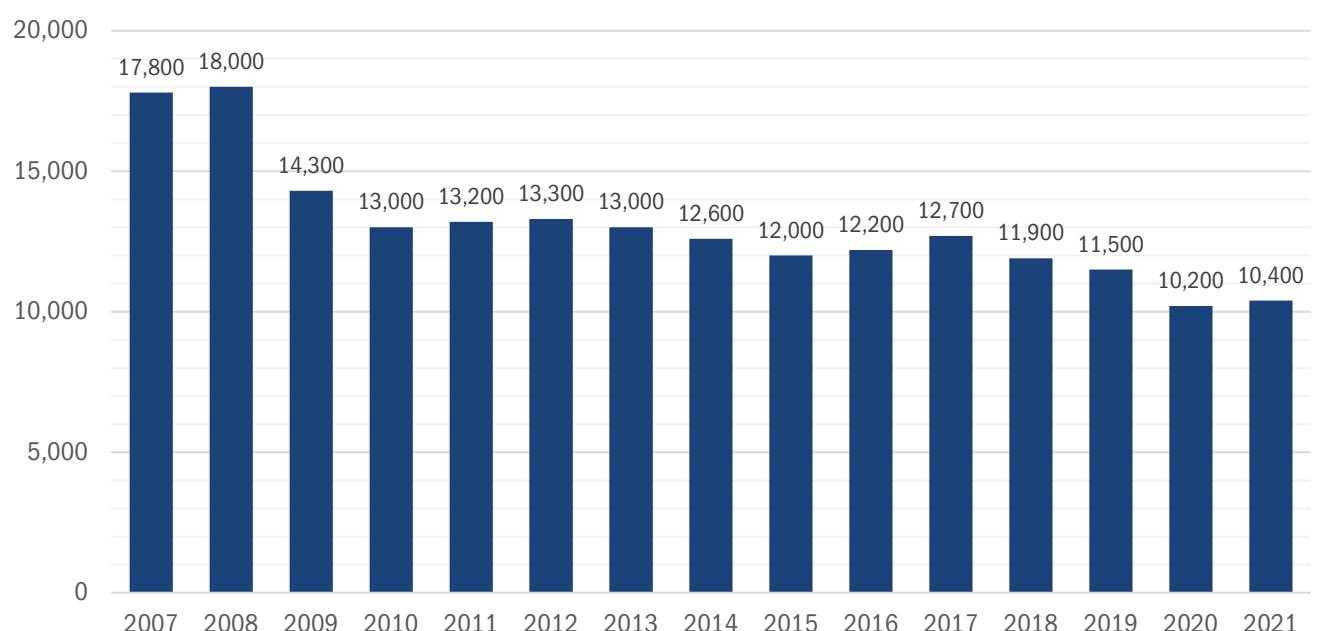
Trends in occupational injury and illness in Montana are continuously monitored by several state and government agencies, specifically the Montana Department of Labor & Industry through its oversight of workers' compensation claims data and the U.S. Bureau of Labor Statistics through its Survey of Occupational Injuries and Illnesses (SOII). Both produce annual reporting available online detailing trends. Because OHIs are designed for interstate observations and SOII methods are consistent throughout the country, this section will examine SOII data.

Trends in Occupational Injury and Illness in Montana and the U.S.

From 2007 to 2021, the number of work-related injuries and illnesses reported to the BLS fell by over 40% (3.1). This downward trend was most acute in 2009 but was relatively consistent over the period. The rate of injury per 100 full-time equivalent workers has fallen even more dramatically, from 6.3 in 2007 to 3.4 in 2021 (3.2). While the Montana injury and illness rate remained higher than the U.S. average injury and illness rate during this period, the difference between the two rates decreased, especially from 2017 to 2021.

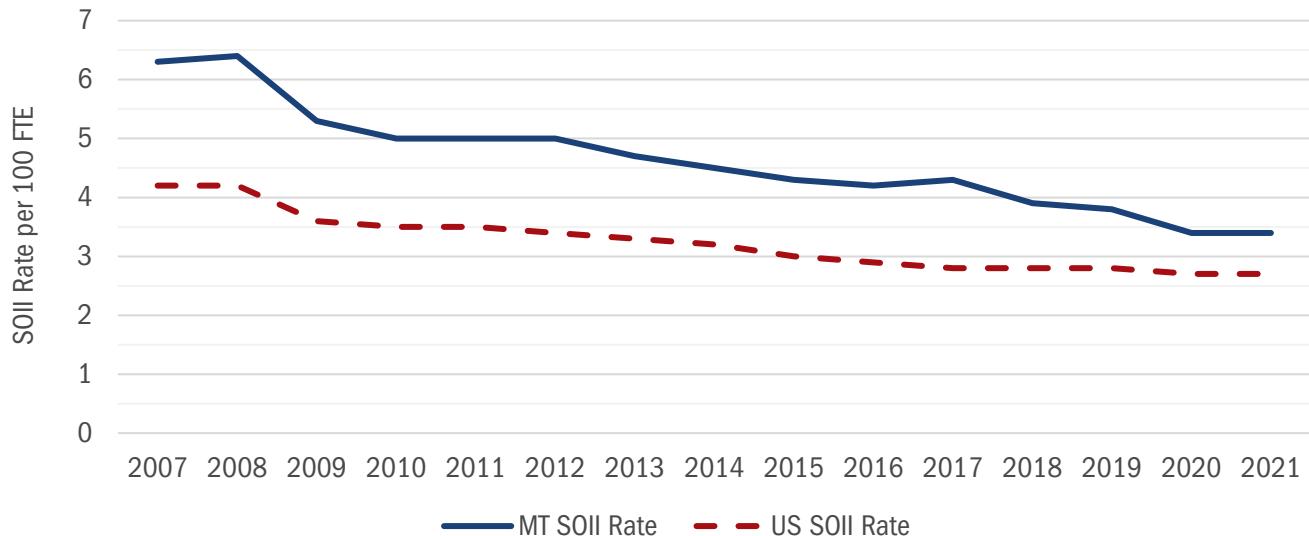
Of the injuries and illnesses reported to the BLS, fewer than half were severe enough to result in a worker taking time away from work to recover. Serious injuries and illnesses declined in Montana from 2007 to 2021, although the count changed little between 2013 and 2021 (3.3). Rates of injury and illness resulting in days away from work for both Montana and the U.S. average resembled overall injury and illness rates, with Montana reporting a slightly higher rate than the national average but rapidly approaching the U.S. average rate (3.4). The Montana rate was the same as the U.S. average rate in 2020, but this was likely due to the U.S. rate increasing during the height of the Covid-19 pandemic and may only be a temporary observation.

3.1: Montana Count of Work-Related Injuries and Illnesses



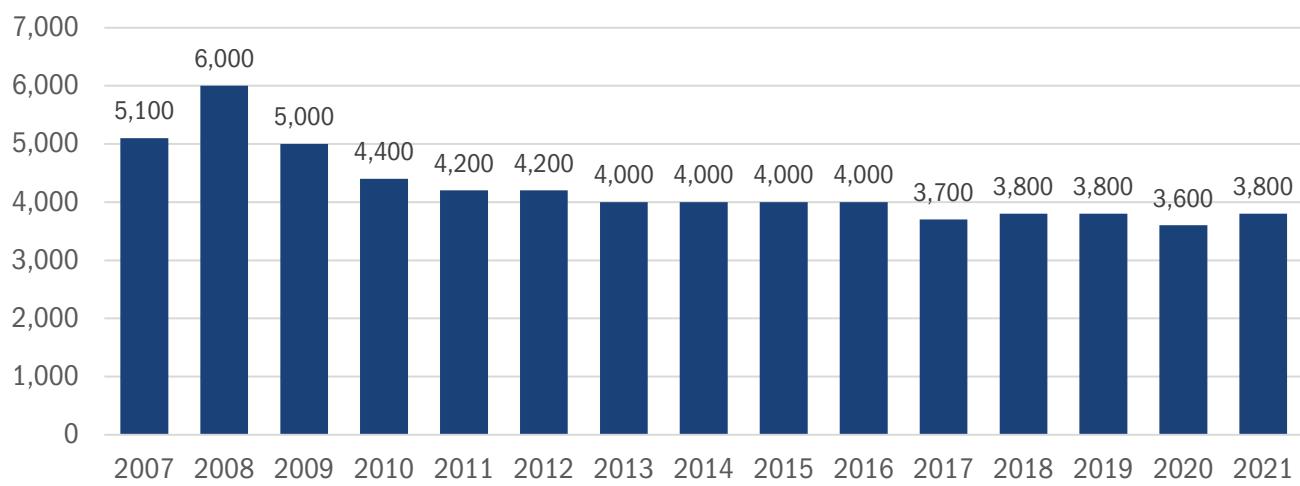
Source: U.S. BLS Injury, Illness, and Fatality Data

3.2: Montana and U.S. Rates of Work-Related Injuries and Illnesses



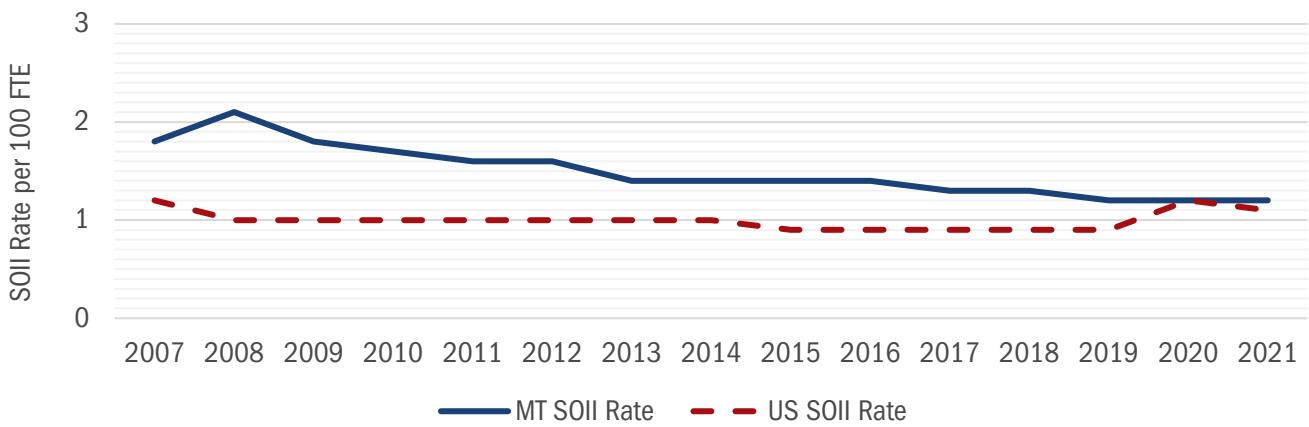
Source: U.S. BLS Injury, Illness, and Fatality Data

3.3: Montana Count of Work-Related Injuries and Illnesses Resulting in Days Away From Work



Source: U.S. BLS Injury, Illness, and Fatality Data

3.4: Rate of Work-Related Injuries and Illnesses Resulting in Days Away From Work, Montana & U.S. Average



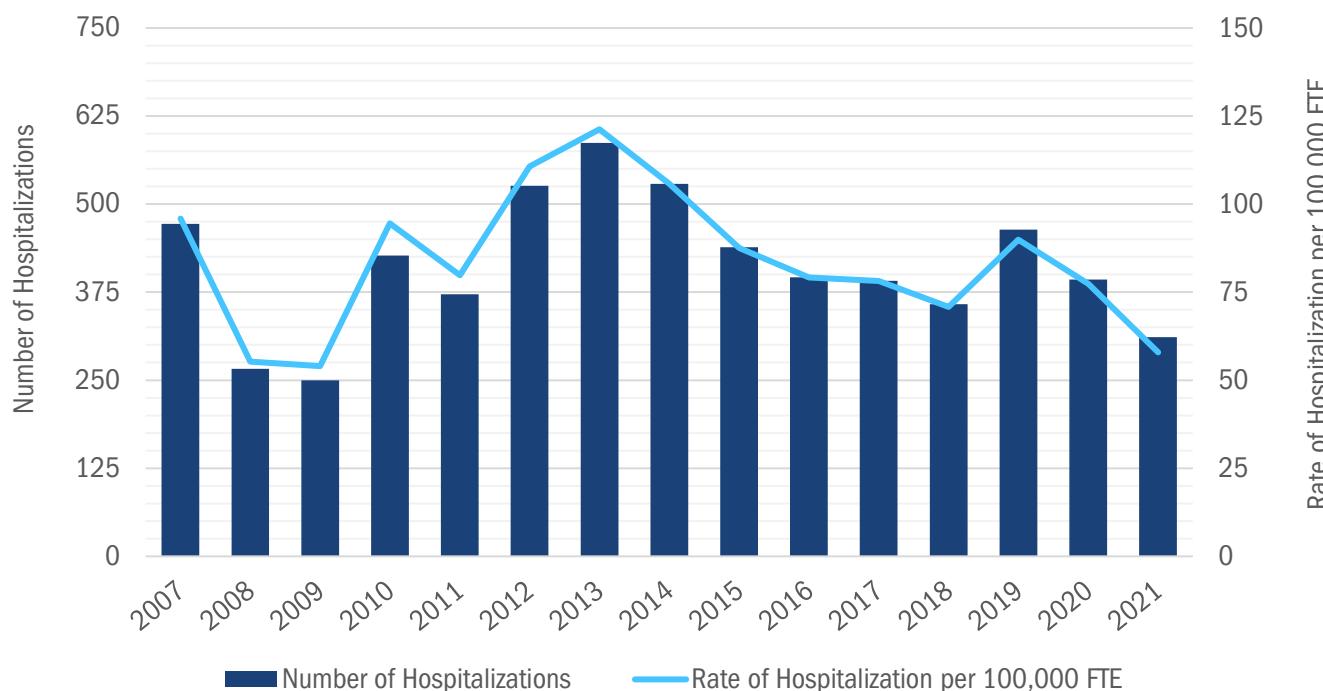
Source: U.S. BLS Injury, Illness, and Fatality Data

WORK-RELATED HOSPITALIZATIONS

Of the thousands of workplace injuries and illnesses reported every year in Montana, only a few hundred are serious enough to result in hospitalization. This data is collected in the Montana Hospital Discharge Data System managed by the Montana Department of Public Health and Human Services. For hospital admissions where the primary payer is a workers' compensation insurer, DPHHS considers the case a work-related hospitalization and provides the data to the MOHSS program. The MOHSS program reports this as both a count and as a rate per 100,000 full-time equivalent workers.

Both the number of work-related hospitalizations and the rate of work-related hospitalizations per 100,000 full-time equivalent workers fell from 2007 to 2021 (4.1). The number of hospitalizations fell by roughly 34%, while the rate fell by 40% as the workforce grew substantially during this time period. Note that this decline was more pronounced from 2013 on, as workplace hospitalizations increased in the early 2010s before beginning their observed decline.

4.1: Number and Rate of Work-Related Hospitalization



Source: MT DPHHS Hospital Data Discharge System

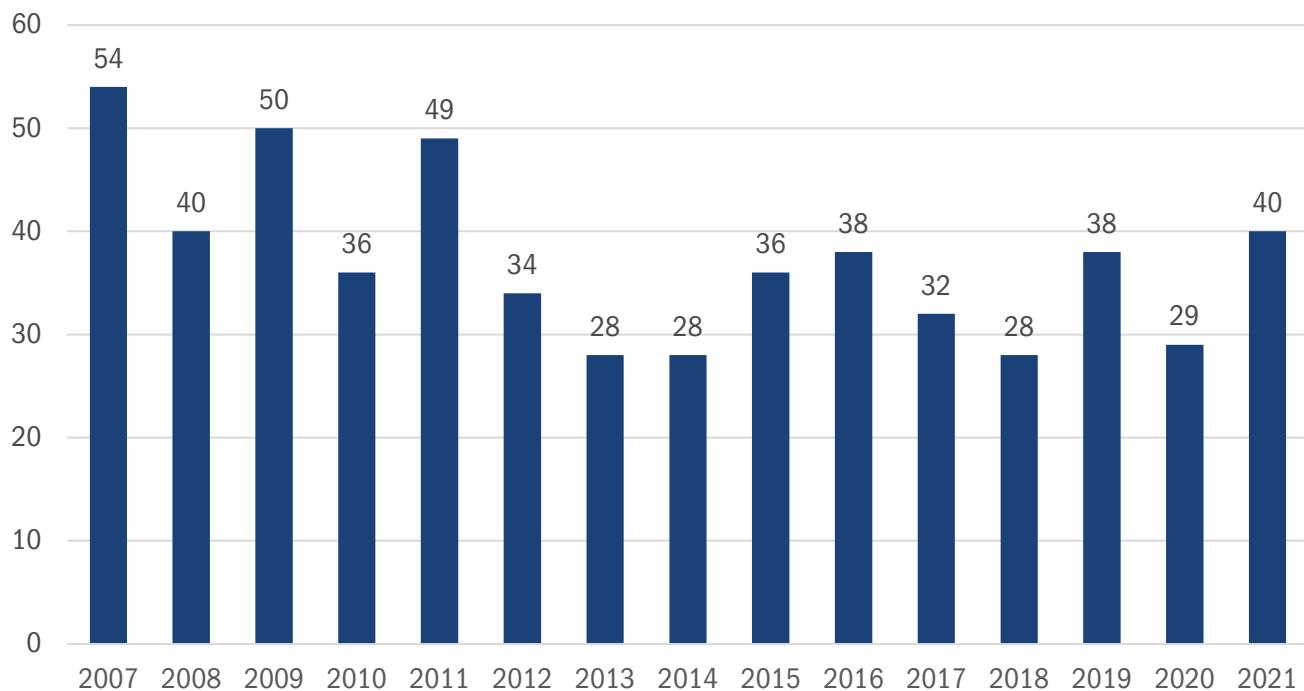
FATAL WORK-RELATED INJURIES

Death is the most serious consequence of unmitigated workplace hazards. In the past, high-profile industrial accidents (including several explosions or fires in Montana mines) ended the lives of hundreds of workers and drove public support to significantly minimize occupational hazards or prevent them altogether. The combined efforts of government agencies, labor unions, industry management, and other stakeholders achieved substantial progress toward this goal, and while workplace fatalities still occur, they are far rarer than any prior point in recorded history and almost never occur from large multi-fatality accidents. While this progress is cause for celebration, the continued incidents of occupational fatality are a reminder that there is still work to do.

The U.S. Bureau of Labor Statistics and Montana Department of Labor & Industry jointly collect information on workplace fatalities in the Census of Fatal Occupational Injuries, or CFOI. Using a combination of OSHA post-fatality reports and other post-accident death reporting, investigators determine if the deceased was engaged in work, either as an employee or as the owner-operator of their own company, at the time of a fatal occupational accident. Note that CFOI is limited to injuries and does not account for fatalities resulting from either acute or chronic disease resulting from workplace exposures. Details on the accident and the workers' demographics are compiled and published every year by both the BLS and DLI and will be used in this section's examination as well.

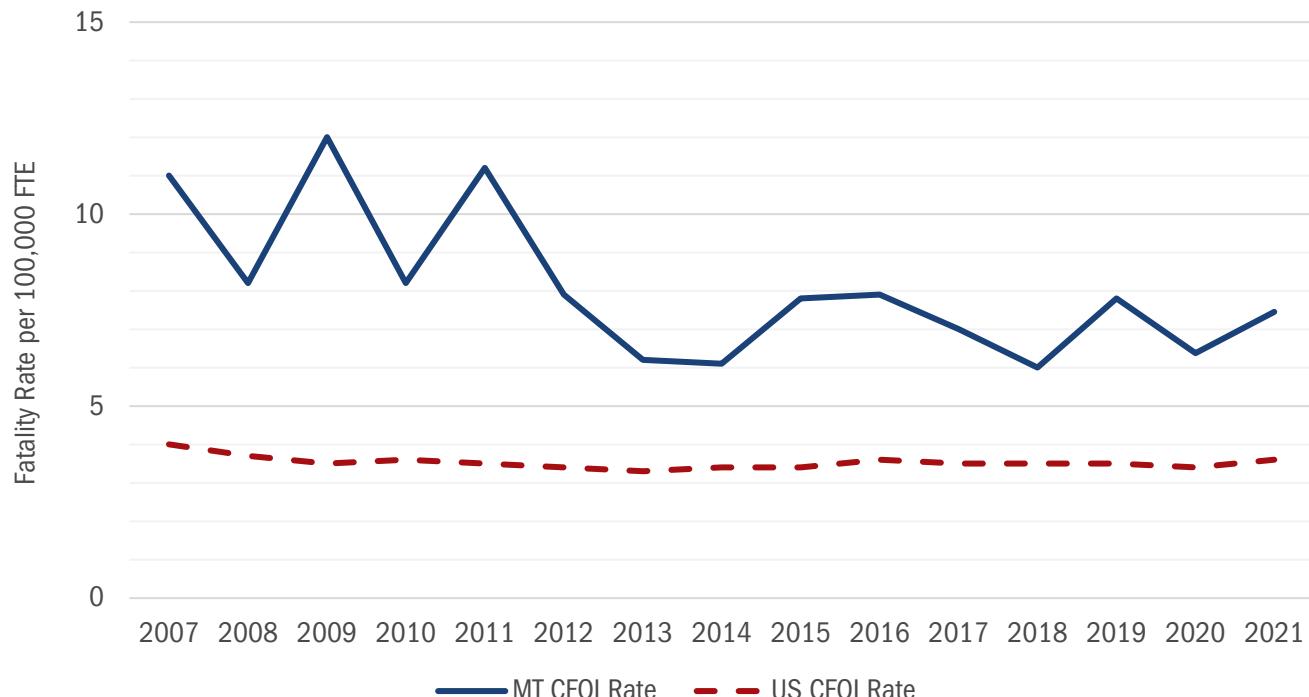
From 2007 to 2021, the number of fatal work-related injuries in Montana fell by about 25% (5.1). While the number of workplace fatalities is volatile when comparing adjacent years, the downward trend is observable. The state's rate of injury per 100,000 full-time equivalent employees fell as well, with just over 7 deaths per 100,000 FTE in 2021 (5.2). Montana's rate of fatal work-related injury remained nearly twice as high as the national average in 2021, but has made significant progress in falling from observed levels in prior years.

5.1: Number of Fatal Work-Related Injuries



Source: U.S. BLS Injury, Illness, and Fatality Data

5.2: Rate of Fatal Work-Related Injury, Montana & U.S. Average



Source: U.S. BLS Injury, Illness, and Fatality Data

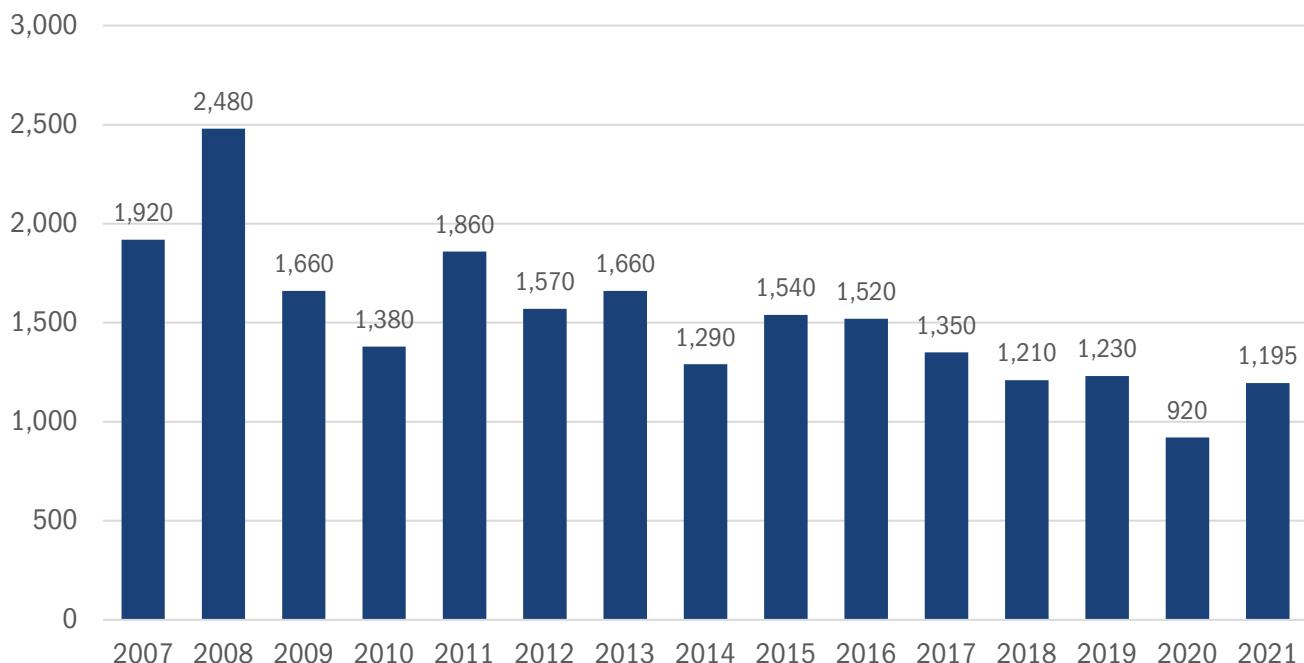
MUSCULOSKELETAL DISORDERS

The final three sections of this report examines specific occupational injuries or illnesses of interest to NIOSH. The first are musculoskeletal disorders (MSDs), which include injuries or conditions caused by repetitive motion or awkward posture and movement. NIOSH and its state partners examine data on the prevalence, nature, and severity of MSDs for two primary reasons. First, these conditions impact workers in most industrial sectors, as the ergonomics and weight lifting/handling are present in nearly every occupation. Second, MSDs are considered highly preventable, as proper training and equipment can reduce a worker's likelihood of injury. BLS SOII data on private-sector employment has been used for most of this analysis, with DLI workers' compensation data added for the analysis of carpal tunnel syndrome. Please note that the BLS moved to a biannual count in 2021, so MSD count and rate data in that year is a calculated estimate. NIOSH examines MSDs according to the following injury classifications:

- Overall Musculoskeletal Disorder Counts and Rates: The number of injuries from MSDs fell by almost 40% from 2007 to 2021 (6.1). As a rate per 100,000 employees, MSD injuries fell by about 45% (6.2).
- Disorders of the Neck, Shoulder, and Upper Extremities: The number of MSD injuries to workers' upper appendages fell by 25% from 2007 to 2021 (6.3). As a rate per 100,000 employees, MSD injuries fell by about 35% (6.4).
- Disorders of the Back: The number of MSD injuries to workers' backs fell by over 55% from 2007 to 2021 (6.5). As a rate per 100,000 employees, MSD injuries fell by over 60% (6.6).
- Carpal Tunnel Syndrome Counts and Rates from Multiple Sources: The BLS data on carpal tunnel syndrome indicates there were fewer than 20 cases reported in 2021. Because the number of cases is below the reporting threshold, the number and rate cannot be calculated, although any number below 20 cases would mean carpal tunnel syndrome cases declined by over 60% from 2007 to 2021. However, carpal tunnel syndrome cases resulting in more than 4 days missed from work is provided by Montana's Department of Labor & Industry. This data indicates that carpal tunnel syndrome cases resulting in over 4 days away from work fell by over 65% from 2007 to 2021 (6.7). As a rate, these cases fell by over 70% (6.8).

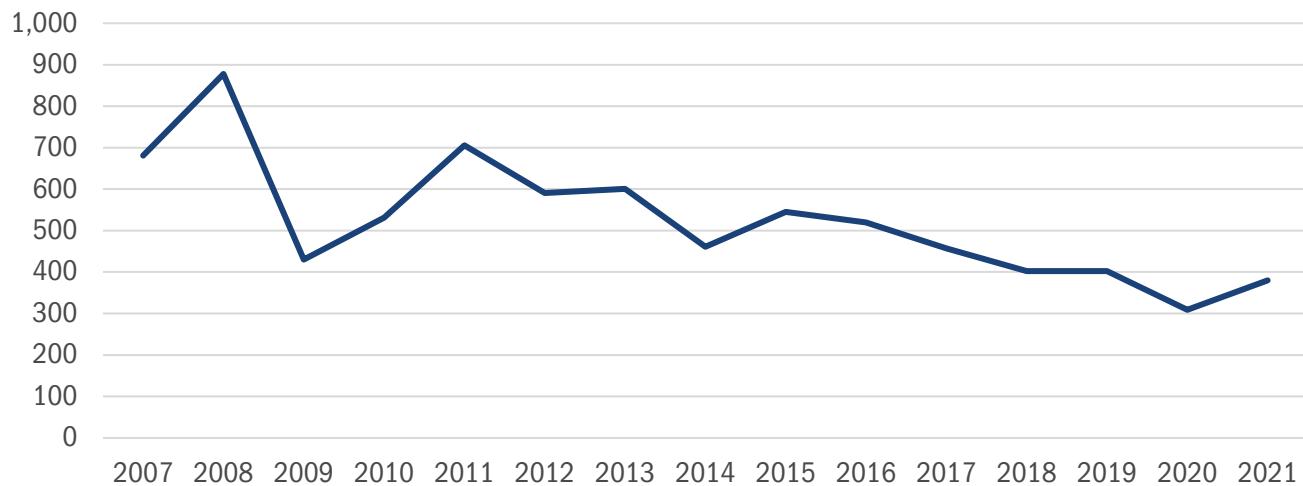
All of these indicators suggest MSDs are becoming increasingly less common.

6.1: Number of MSD Injuries



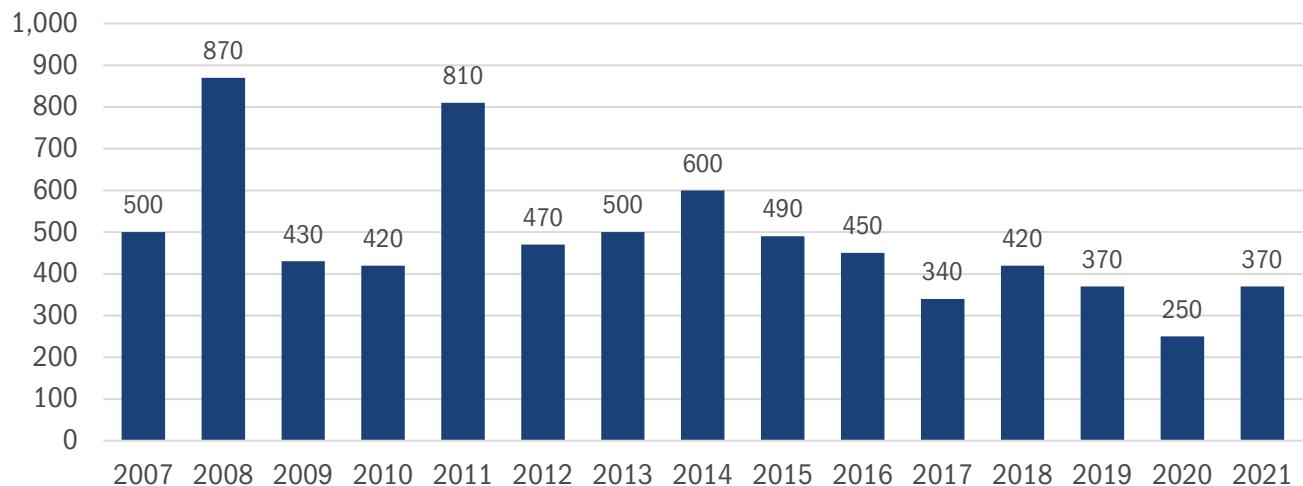
Source: U.S. BLS Injury, Illness, and Fatality Data

6.2: Rate of MSD Injuries per 100,000 FTE



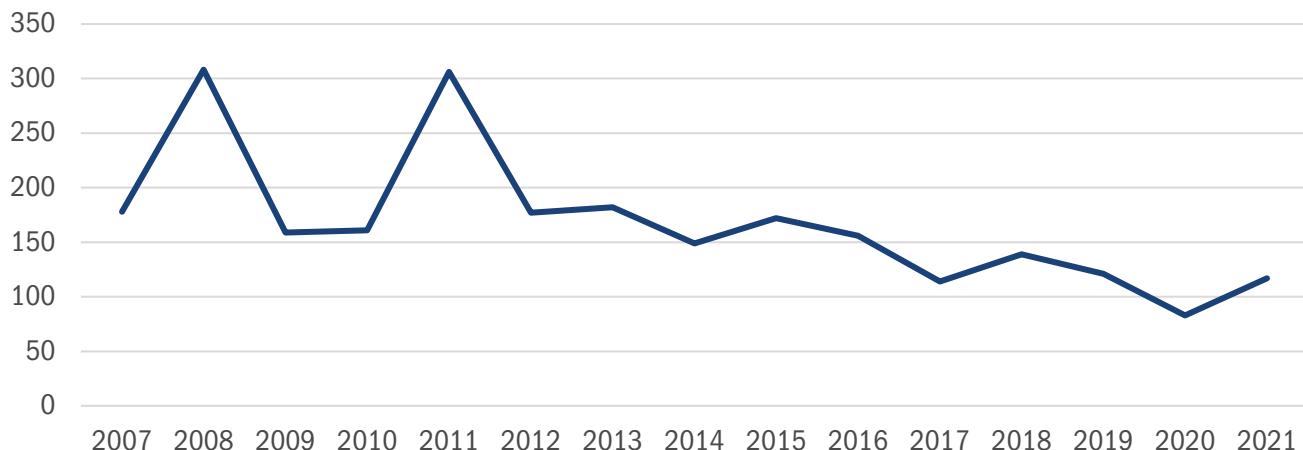
Source: U.S. BLS Injury, Illness, and Fatality Data

6.3: Number of MSD Injuries to Neck, Shoulder, and Upper Extremities



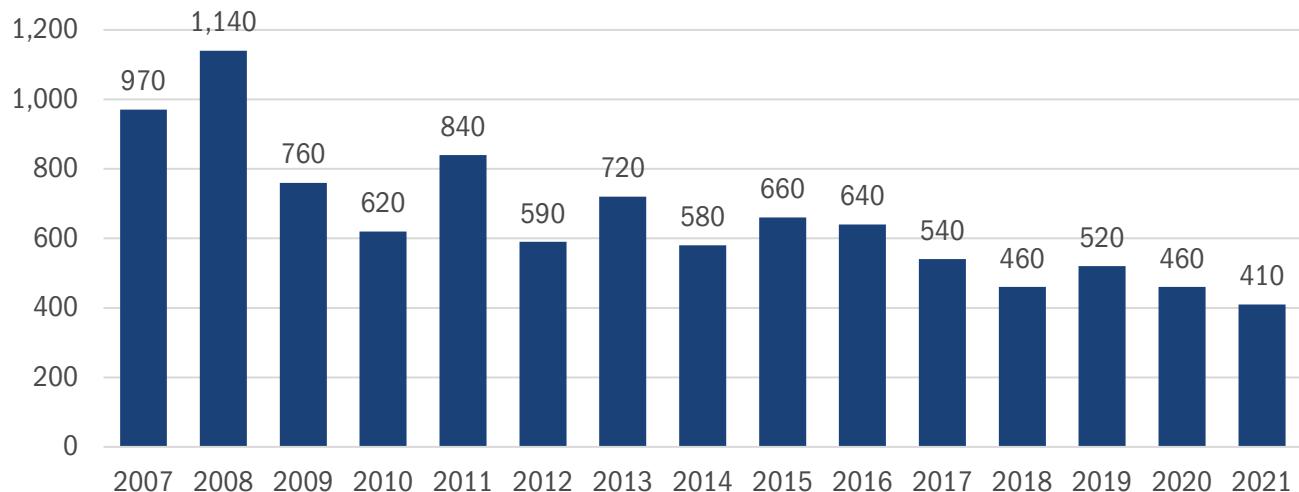
Source: U.S. BLS Injury, Illness, and Fatality Data

6.4: Rate of MSD Injuries to Neck, Shoulder, and Upper Extremities per 100,000 FTE



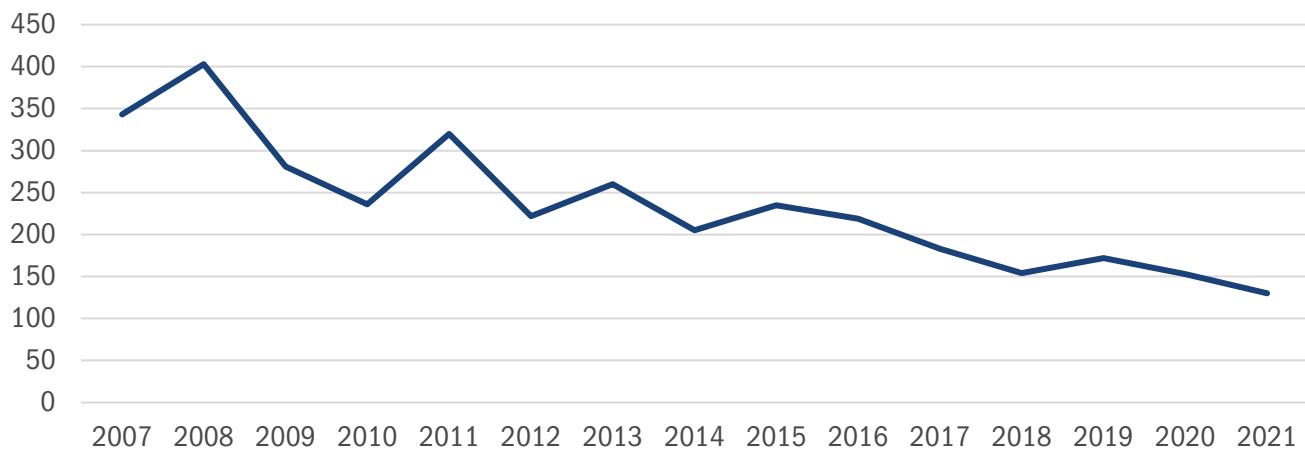
Source: U.S. BLS Injury, Illness, and Fatality Data

6.5: Number of MSD Injuries of the Back



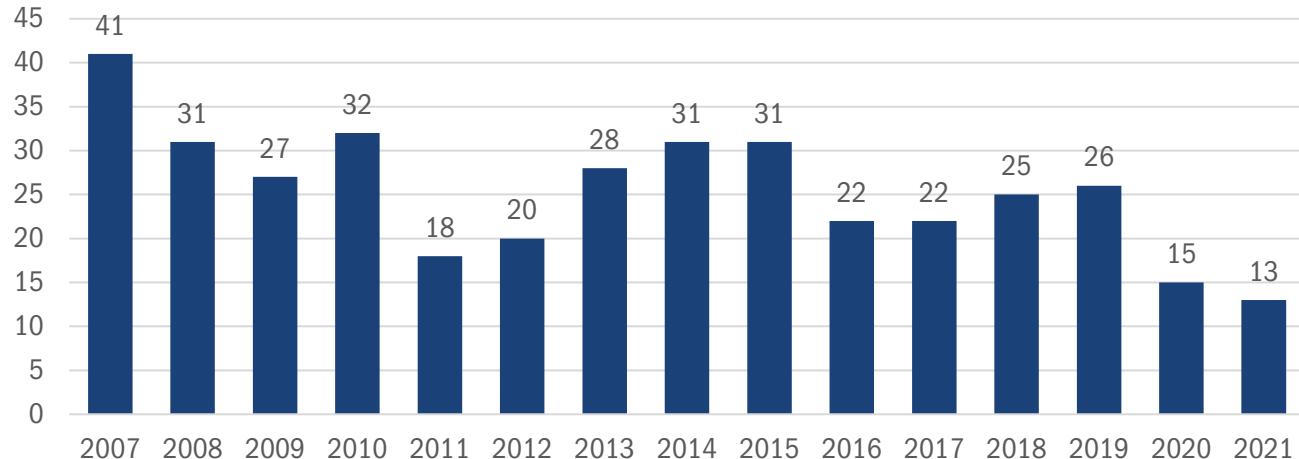
Source: U.S. BLS Injury, Illness, and Fatality Data

6.6: Rate of Musculoskeletal Disorders of the Back per 100,000 FTE



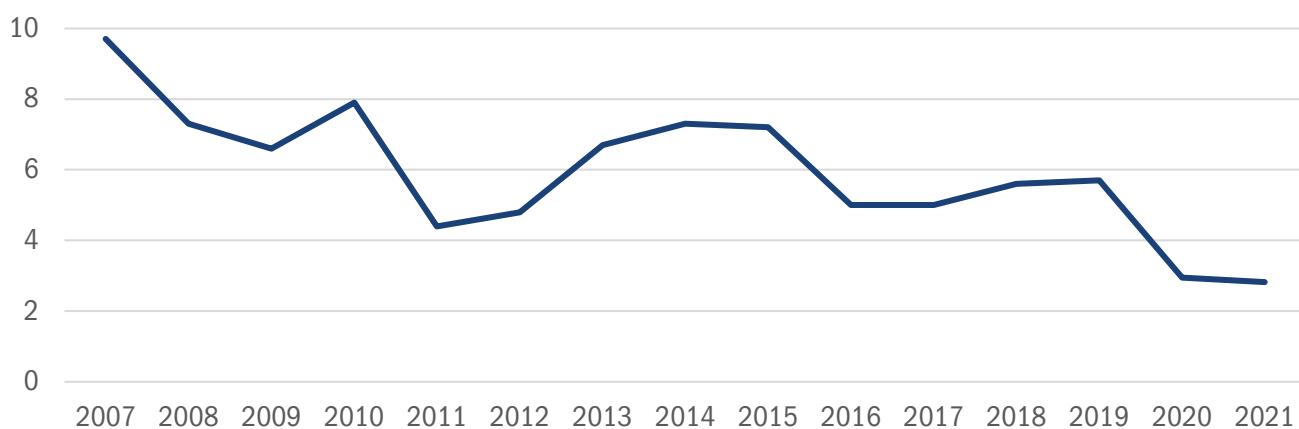
Source: U.S. BLS Injury, Illness, and Fatality Data

6.7: Number of Carpal Tunnel Syndrome Workers' Compensation Claims with >4 Days Away from Work



Source: MT DLI Workers Compensation Administrative Network

6.8: Rate of Carpal Tunnel Syndrome Workers' Compensation Claims with >4 Days Away from Work per 100,000 FTE



Source: MT DLI Workers Compensation Administrative Network

PNEUMOCONIOSIS

The second occupational health condition monitored by NIOSH and provided in this trend report is pneumoconiosis, or lung conditions related to the inhalation of harmful substances. Pneumoconiosis primarily consists of three distinct diseases:

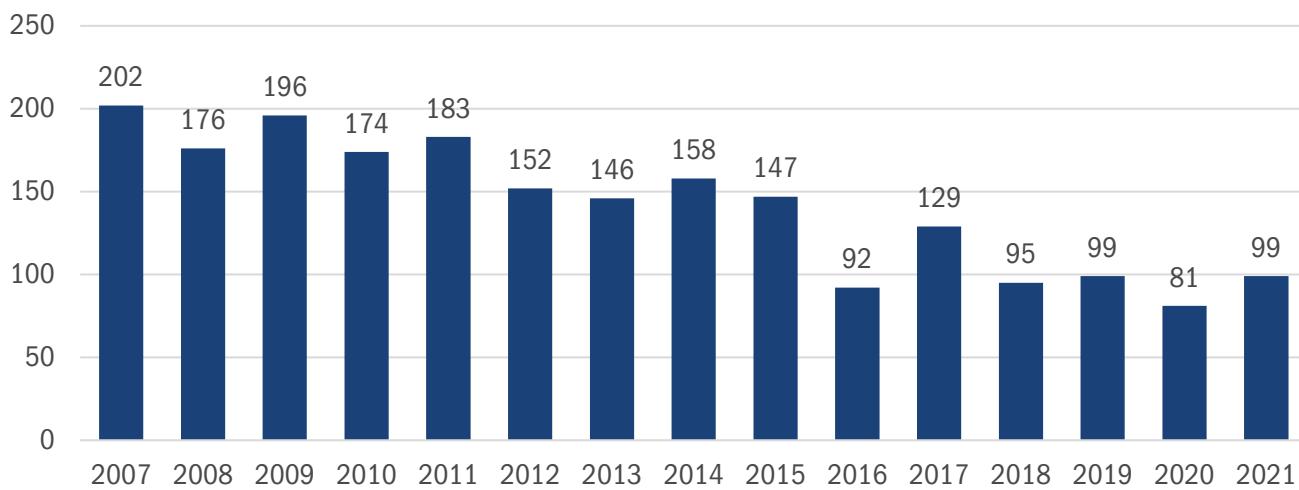
- Asbestosis: A disease caused by the inhalation of asbestos fibers. Asbestos is a carcinogen historically used in a variety of construction components.
- Silicosis: A disease caused by the inhalation of crystalline silica dust, a byproduct of stone mining or manufacturing.
- Coal Miner's Lung: A disease caused by the inhalation of coal dust.

Each year, Montana hospitals report admissions for pneumoconiosis, some of which contribute to the death of the patient. This section examines the counts of hospitalization and death for all forms of pneumoconiosis and for asbestosis specifically, since asbestosis was identified as the source of nearly all pneumoconiosis hospitalizations and deaths in Montana.

Total Pneumoconiosis Hospitalization and Mortality Counts

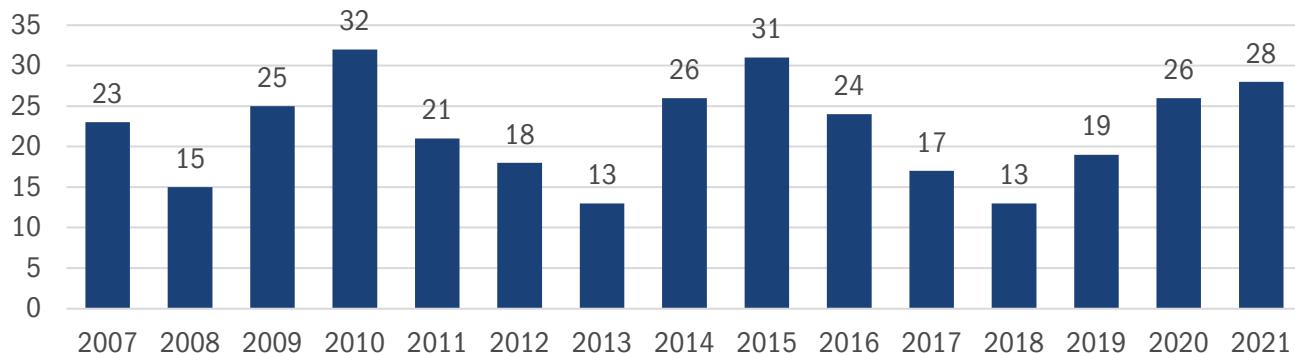
From 2007 to 2021, pneumoconiosis hospitalizations fell by 50% (7.1). The number of deaths from pneumoconiosis remained relatively unchanged, with an average of 22 patients dying from pneumoconiosis every year (7.2).

7.1: Number of Pneumoconiosis Hospital Discharges



Source: MT DPHHS Hospital Data Discharge System

7.2: Number of Pneumoconiosis Deaths



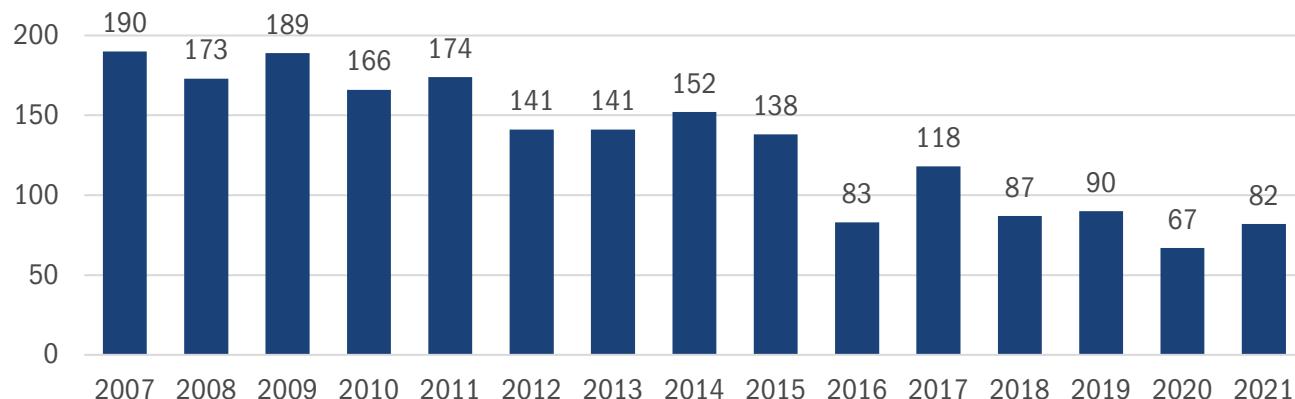
Source: MT DPHHS Vital Statistics

Asbestosis Hospitalization and Mortality Counts

From 2007 to 2021, over 90% of all pneumoconiosis hospitalizations and deaths in Montana were connected to asbestosis. The prevalence of asbestosis cases within Montana's pneumoconiosis case data is the result of both vermiculite mining in the state and the prevalence of asbestos in workplace and consumer products in past decades.

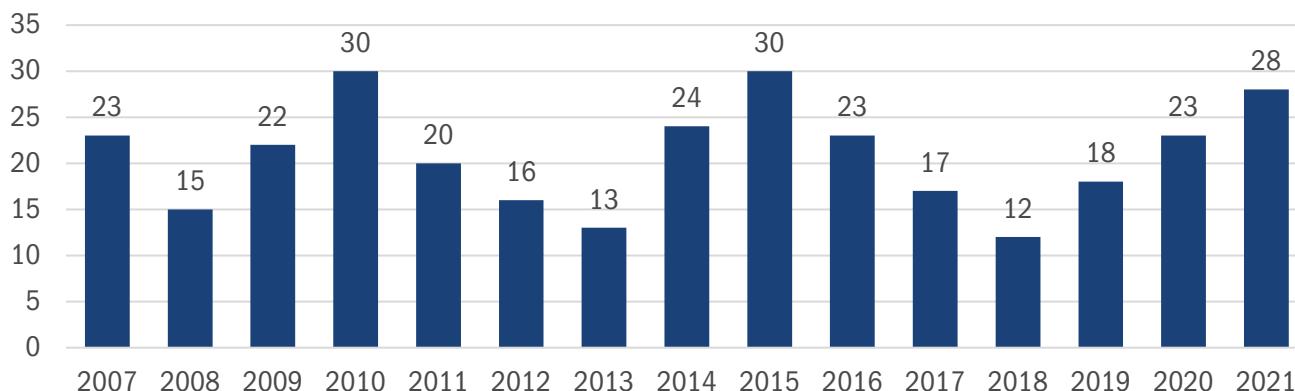
Generally, asbestosis trends resemble pneumoconiosis trends. The number of hospitalizations for asbestosis has decreased by over 55% from 2007 to 2021 (7.3). The number of deaths for asbestosis remained level with an average of 21 deaths per year (7.4).

7.3: Number of Asbestosis Hospital Discharges



Source: MT DPHHS Hospital Data Discharge System

7.4: Number of Asbestosis Deaths



Source: MT DPHHS Vital Statistics

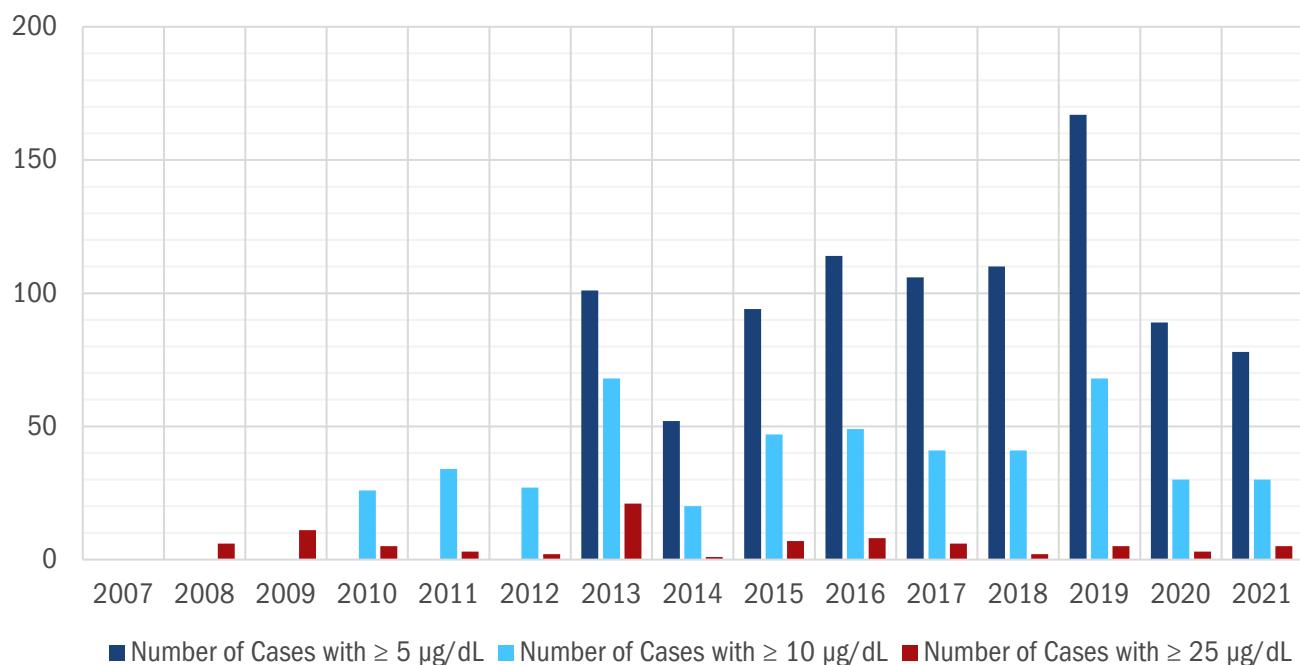
ADULT BLOOD LEAD EXPOSURES

The third and final occupational health condition examined in this trend analysis is lead exposure as indicated by blood testing. Lead is a toxic metal used in numerous current and past workplace products, including batteries, weights, ammunition, piping, paint, and fuel. Workers involved in mining or refining lead, as well as those manufacturing products with lead, run the risk of inhaling or ingesting lead, which can enter their bloodstream and cause numerous health problems. To monitor the rate of lead exposure and provide guidance to workers at risk of lead exposure, NIOSH leads a series of Adult Blood Lead Epidemiology and Surveillance (ABLES) programs around the country, including a program in Montana.

Montana's ABLES program collects information on the number of cases of elevated blood lead among adults age 16 and older and the prevalence rate of elevated blood lead at multiple levels of exposure. The program has case count and prevalence rate information for blood lead levels at or above 25 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$) since 2008 and added reporting for two other levels ($\geq 10 \mu\text{g}/\text{dL}$ in 2010 and $\geq 5 \mu\text{g}/\text{dL}$ in 2013). When compiling ABLES program data from around the country, NIOSH calculates an overall average prevalence rate, allowing Montana to be compared to the national average at each exposure level.

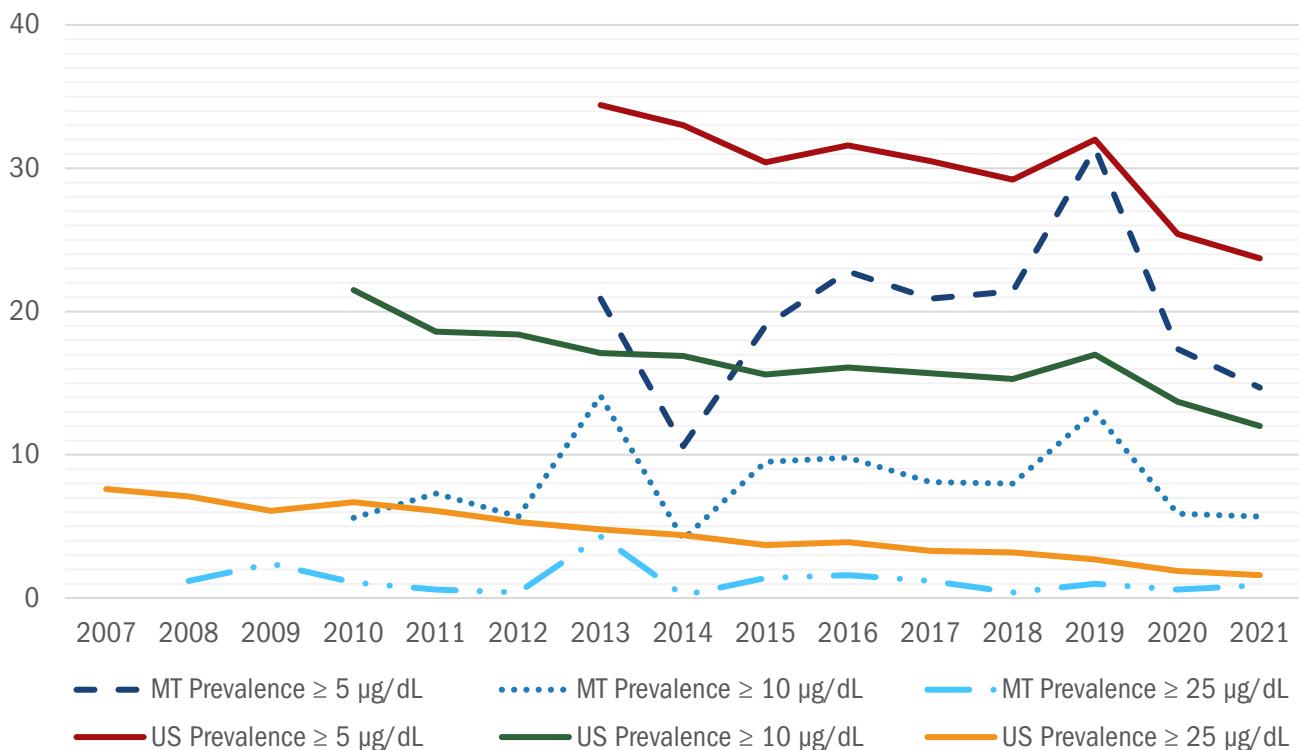
From 2008 to 2021, Montana saw a slight average decrease in the number of cases of elevated blood lead at all exposure levels (8.1). Numbers varied widely from year to year as resources for testing varied. Montana's prevalence rates remained mostly steady from 2008 to 2021 for exposure levels $\geq 10 \mu\text{g}/\text{dL}$ and $\geq 25 \mu\text{g}/\text{dL}$ and decreased slightly from 2019 to 2021 for $\geq 5 \mu\text{g}/\text{dL}$ (8.2). Montana's prevalence rate was below the national average for all prevalence rate exposure levels and all years reported.

8.1: Number of Cases of Elevated Blood Lead in Adults by BLL



Source: MT DPHHS Adult Blood Lead Epidemiology and Surveillance System

8.2: Prevalence Rate per 100,000 Full-Time Employed Adults of Elevated Blood Lead in Adults by BLL, Montana & U.S. Participating States Average



Source: MT DPHHS Adult Blood Lead Epidemiology and Surveillance System

CONCLUSION

The data from the occupational health indicators examined in this report provides several valuable insights on trends in workplace safety within Montana in recent years. These include:

The Montana workforce is growing rapidly and experiencing fundamental changes, with industry and occupation sizes fluctuating to meet changing labor force demands. While these changes have reduced the size of some high-morbidity industries, the challenge of promoting safety in these industries and others remains for safety stakeholders.

Most forms of occupational injury and illnesses, along with work-related hospitalizations and fatalities, declined in Montana between 2007 and 2021.

While Montana's rates of occupational injury and illness and occupational fatality were higher than the national average rates from 2007 to 2021, the state is catching up to the national average rates and could meet those if workplace safety stakeholders continue their work.

These general observations are supported by the OHI findings as well as other research within Montana, including DLI's annual workers' compensation report and topic-specific studies from DLI and MOHSS researchers.

This OHI trends report presents an optimistic outlook for the future of occupational safety and health, in which proactive examination of hazards and careful steps toward mitigation, driven by workers and industry and guided by data-driven government oversight, results in the near-total elimination of occupational injury, illness, and death. Achieving this goal will require continuous engagement by all safety partners and ongoing discussion of the costs and benefits of such efforts.