

Michigan Workers' Compensation (Paid Wage Loss Claims)

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Abstract

Workers' compensation (WC) is the system used to provide wage replacement, medical, and rehabilitation benefits to workers who suffer a work-related injury or illness. A work-related injury is any injury that happens on the job. It can be the result of a specific event or happen over time. Since WC is no-fault insurance, the cause of the injury is not considered. The types of injuries found in the Michigan WC data include:

- Abrasions and cuts
- Amputations
- Burns
- Concussions
- Crushes and contusions
- Fractures and dislocations
- Sprains and strains

A work-related illness is any illness where work caused or significantly contributed to the cause or aggravated the illness. Work-related illnesses are the result of exposure to something at the workplace, whether it is:

- Cold
- Dust
- Fumes
- Gas
- Heat
- Infectious agent
- Stress

Types of work-related illnesses found in the Michigan WC data include:

- Hearing loss
- Respiratory disease from exposure to a toxic fume
- Silicosis
- Tuberculosis

For an illness to be work-related, the workplace must be more likely than not a cause or significant contributor of the illness. In this dataset, all work-related illnesses were combined in a single category because there are so few of them that result in a paid wage loss WC claim.

This dataset contains paid wage loss WC claims for seven or more days in a row (seven days include normal time off such as weekends) of lost work time for Michigan workers. Another category of claims is for specific loss and does not need to have seven or more days off work

to be awarded WC; these include an amputation involving bone loss, loss of vision, total loss of hearing, or death.

The data are aggregated by:

- Age group
- Employer size
- Gender
- Industry type
- Injury categories and one illness category
- Year of injury

The numerators for the rates generated in this dataset come from the Michigan Workers' Compensation Agency (WCA) database of paid wage loss and specific loss claims. The denominators for the rates generated come from the Unemployment Insurance Agency (UIA) Quarterly Census of Employment and Wages (QCEW). For rates by gender and/or age, the U.S. Census Local Employment Dynamics (LED) Extraction Tool – Quarterly Workforce Indicators (QWI) was used. The QWI allows for the generation of age-specific and gender-specific denominators (which the QCEW data does not have), for the Michigan workforce.

All users are recommended to read and fully comprehend the metadata prior to data use. To access these data, please visit the [Michigan Environmental Public Health Tracking \(MiTracking\) data portal](#).

Purpose

In Michigan, there are approximately 20,000 individuals each year who receive WC for a work-related injury or illness to cover their medical treatment costs and wage losses for being off work for seven or more days in a row or for having a specific loss (e.g., amputation with bone loss) (www.michigan.gov/wca). These numbers are down from approximately 27,000 in 2007. The number of new paid claims to cover medical treatment only is much larger. In Michigan in 2022, 834 million dollars were paid for both new claims and previous claims that are still being compensated. This amount does not consider the indirect costs to an individual who cannot work, or to a company's productivity.

Most of the WC paid wage loss claims in Michigan are for injuries, especially sprains and strains, broken bones, and crushes. Specific loss claims include amputations involving loss of bone. The types of workplaces where these injuries occur include factories, schools, hospitals, stores.

This dataset was created to illustrate how often work-related injuries and illnesses occur for various groups of people (for example, construction workers or young workers) in Michigan. These data provide measures for work-related injuries and illnesses on the MiTracking public data portal. The public portal provides public health professionals, researchers, Centers for Disease Control and Prevention (CDC) Tracking grantees, and the public with aggregated

information on paid wage and specific loss claims for work-related injuries and illnesses in Michigan.

Supplemental Information

In 2016, the Michigan State University (MSU) Division of Occupational and Environmental Medicine (OEM) received funding from the National Institute for Occupational Safety and Health (NIOSH) to conduct a study of the paid wage and specific loss workers' compensation claims in Michigan.

Paid wage loss claims are for lost work time of seven or more days in a row, or for a specific loss such as amputation involving loss of bone, loss of vision, total loss of hearing, or death. Paid wage and specific loss claims are the numerator for this project. Medical only claims are not included in this project. Wage and specific loss claims filed that were not paid are also not included in this project. Data on Michigan residents who were injured in another state were included.

Keywords

Work-related injuries, work-related illnesses, industry, MSU, workers' compensation, Workers' Comp, WCA, Workers' Compensation Agency

Bounding Coordinates

West Bounding Coordinate: -90.41813399999995

East Bounding Coordinate: -82.418394000000006

North Bounding Coordinate: 48.189534000000002

South Bounding Coordinate: 41.696088000000003

Other Information on Data

Level of Geographic Detail: State, County

Currentness Reference (when data were last updated): 8/21/2023

Frequency at which the data are updated: Every two years

Data Status: Complete

Completeness Report

Data are complete as of August 21, 2023.

Included in this dataset are paid wage loss and specific loss claims for:

- Abrasions and cuts

- Burns
- Concussions
- Crushes and contusions
- Fractures and dislocations
- Sprains and strains
- Work-related amputations
- Other diseases

Data do not include:

- Michigan workers who did not file a workers' compensation claim
- Michigan workers who had less than seven consecutive days off work
- Michigan workers who had a medical-only workers' compensation claim
- Michigan workers whose workers' compensation wage loss or specific loss claim was denied/not paid

Limitations of these data:

- Not all work-related injuries and illnesses in Michigan will be identified. The data do not include:
 - Workers who are not covered by the state workers' compensation program (self-employed such as independent contractors, if two or fewer employees in a company, federal employees such as postal workers, and railroad or merchant marine or ship loading/unloading workers)
 - Workers who did not file a WC wage loss claim, despite being eligible, for a lost time claim
 - Workers who had medical-only claims
 - Workers with injuries or illnesses who are assigned a different job at work while they are recovering from their injury or illness
 - Workers with wage loss or specific loss claims that were denied
- The number of paid wage loss and specific loss claims for injuries or illnesses may be high in a given category just because there are many workers in that category.
- A rate that is listed for an industry provides the average rate for companies in that industry, some companies in that industry grouping will have lower rates and some will have higher rates.
- If an individual worked at two different companies during the same time period, they will be counted twice in the denominator. The full time equivalent (FTE) weights help to equalize the effect of this issue.
- Counts and rates for employers with multiple locations are included in the overall state data but not the individual county-level data.

- For companies whose employees work out of a single location but were potentially injured in another part of the state (e.g., the trucking industry), their counts and rates were assigned to the county where the company headquarters are located.
- The data do not include workers not covered under the Michigan Workers' Disability Compensation Act (WDCA):
 - Employers with fewer than three employees and the self-employed
 - Federal employees
 - Longshoremen
 - Railroad employees
 - Seamen
- The data cannot tell us the events and root cause of what led to the injury or illness.

COVID-19 Pandemic Impact on 2020 WDCA Rates

The COVID-19 pandemic affected WDCA rates in two ways. First, unlike previous years, occupational injury and illness workers' compensation claims in 2020 include individuals who received workers' compensation for COVID-19. This was a new work-related condition and the total number of paid workers' compensation claims increased in 2020 to 24,494 from 17,025 in 2018 and 17,300 in 2019. Second, in 2020, because of sampling and data acquisition issues and bias in the collected responses related to the COVID-19 pandemic, the U.S. Census Bureau used a different methodology for the American Community Survey Public Use Microdata Sample (ACS PUMS) data to generate the weights, which was used to identify the denominator for number of individuals working. As such, the U.S. Census Bureau does not recommend comparing results from the 2020 ACS PUMS with PUMS data from other years.

You can find more information about the 2020 ACS data at the [census website](#).

MSU OEM used Poisson regression with total number of employees in each year as an offset to check whether the 2020 WDCA rates were significantly higher than the rest of the years. They found that 2020 rates were 60% higher ($P < 0.001$) (shown in Fig. 1) than the combined rate for years 2014-2019 and 2021 due to: 1) a higher number of paid claims in 2020 (shown in Fig. 2); and 2) a lower number of employees in 2020 (shown in Fig. 3).

Figure 1: Rate of total Paid Workers' Compensation in Michigan, 2014-2021

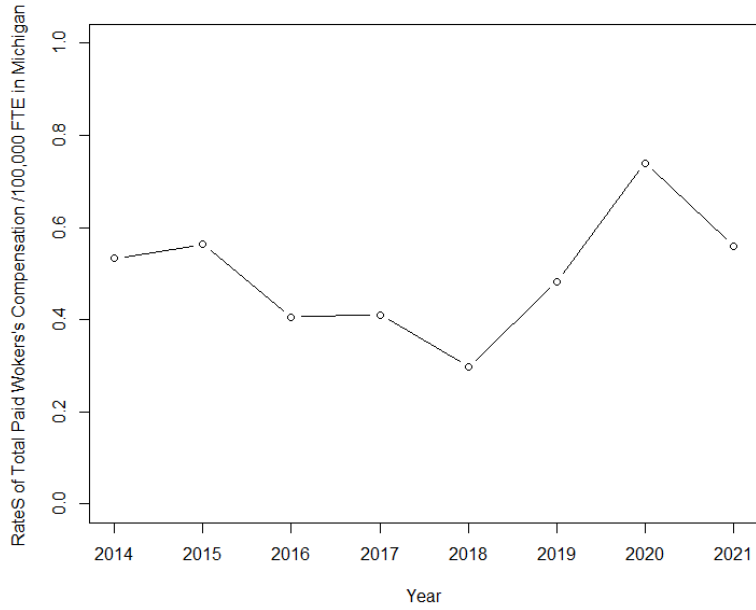


Figure 2: Number of Paid WDCA Claims Michigan, 2014-2021

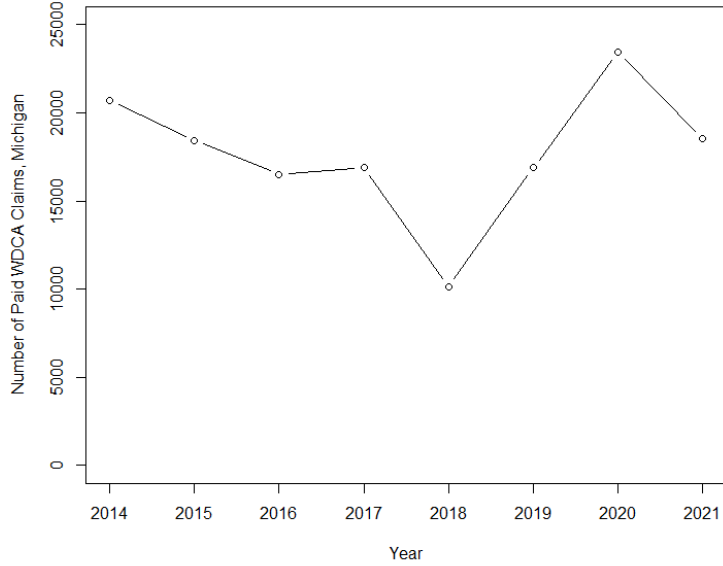
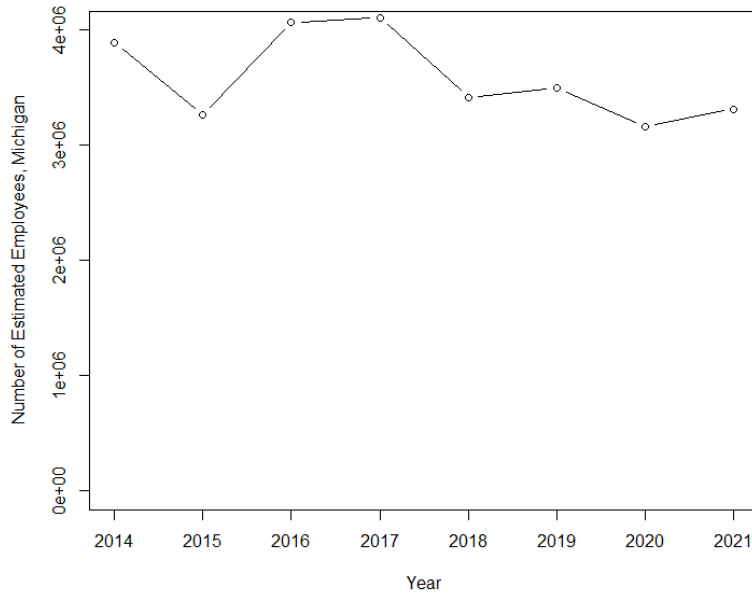


Figure 3: Number of Estimated Employees, Michigan, 2014-2021



Data Processing Description

The datasets used to generate counts and rates of work-related injuries and illnesses were from the WCA's database of paid wage loss and specific loss claims (numerator) and the Michigan UIA QCEW (denominator). The files were temporarily merged in order to assign the companies in the WCA dataset with an industry code, the North American Industry Classification System (NAICS), which is contained in the QCEW but not the WCA datasets. Once the match to obtain NAICS codes for the companies associated with paid claims of seven or more days was completed, the datasets were separated and the files de-identified.

The number of paid wage loss and specific loss claims for work-related injuries and illnesses for Michigan were calculated by:

- Age group (14-24, 25-54 and 55 and older) of employee
- County of the employer
- Gender (male, female) of employee
- Industry type (all, and the 10 NIOSH National Occupational Research Agenda [NORA] sectors: agriculture, forestry & fishing; construction; public safety; healthcare & social assistance; manufacturing; oil & gas extraction; mining; services; transportation, warehousing & utilities; and wholesale & retail trade) in which the individual had worked

The following NORA Sector Groups and associated NAICS codes are listed below:

NIOSH NORA Sector Group	NAICS Code
Agriculture, Forestry & Fishing (except Wildland Firefighting)	11
Construction	23
Healthcare & Social Assistance	62, 54194, 81291
Manufacturing	31-33
Mining (except Oil & Gas Services)	21
Oil & Gas Extraction	211, 213111, 213112
Public Safety (including Wildland Firefighting)	92212, 92214, 92216, 62191
Services (except Public Safety)	51, 52, 53, 54, 55, 56, 61, 71, 72, 81, 92
Transportation, Warehousing & Utilities	48-49, 22
Wholesale & Retail Trade	42, 44-45

- Employer size:
 - Small 1-10 employees
 - Medium 11-249 employees
 - Large 250+ employees

- Injury or illness type:
 - Amputation
 - Burn
 - Chemical
 - Electrical
 - Heat
 - Concussion
 - Crush or contusion
 - Cut
 - Abrasion
 - Human or animal bites
 - Laceration
 - Scratch
 - Disease
 - Allergic dermatitis
 - Aluminosis
 - Anthracosis
 - Anthrax
 - Asbestosis
 - Blood disease
 - Brucellosis
 - Byssinosis
 - Cancer

- Cerebrovascular
- Conjunctivitis
- Dermatitis
- Dysentery
- Equilibrium
- Eye diseases
- Flu
- Freezing
- Gastrointestinal disease
- Hearing loss
- Heart attack
- Heatstroke
- Hemorrhoids
- Hepatitis
- Infectious disease
- Insanity
- Isotopes
- Lung disease
- Microwave
- Paralysis
- Parasitic
- Pneumoconiosis
- Pneumonia
- Poisoning
- Prosthetic damage
- Radiation effects
- Respiratory disease
- Rhinitis
- Siderosis
- Silicosis.
- Skin infections and conditions
- Stress
- Suffocation
- Sunburn
- Tetanus
- Toxic hepatitis
- Toxic material exposure
- Toxic poisoning
- Toxic respiratory exposure
- Tuberculosis
- Tumors

- Welder's flash
 - X-ray
 - Fracture or dislocation
 - Sprain or strain
 - Carpal tunnel
 - Central nervous system
 - Hernia
 - Inflammation of joints
 - Nerves
 - Nervous system
 - Other disease
- Year of injury or illness

The rate of paid wage loss and specific loss claims for work-related injuries and illnesses for Michigan and by county was calculated using the following steps:

1. For the entire state of Michigan, the rates were calculated by dividing the number of paid wage loss and specific loss claims for work-related injuries and illnesses by the number of workers in Michigan in a specific year. This number was then multiplied by 100.
2. For each county, the rates were calculated by dividing the number of paid wage loss and specific loss claims for work-related injuries and illnesses by the number of workers in the county of the employer in a specific year. This number was then multiplied by 100.
3. For age-specific and gender-specific rates, a QWI modifier was applied to the denominator to allow for calculation of rates by age categories and gender since this information is not available in the QCEW data.

Calculation of rates: The rate of paid wage and specific loss WC claims was calculated by dividing the number of paid wage and specific loss claims by the number of employees derived from the UIA QCEW which was multiplied by the American Community Survey (ACS) Full-Time Equivalent (FTE) estimate. A threshold of 15 must be attained per numerator for calculations.

Calculation of FTEs: FTEs were calculated by applying a percentage that represents the number of hours worked by an individual in that particular industry. For this project, the ACS estimates of the FTEs per Michigan industry were used because the ACS is state-specific and allows for a more precise estimate of the industries in Michigan.

To calculate an FTE-based rate (number of claims per 100,000 FTE): we applied the following formula: $(N/EH) * 200,000,000$ where N = the number of paid wage and specific loss claims for injuries/illnesses; EH = total hours worked by employees in the industry sector in the calendar year (number of hours * 50 weeks per year); 200,000,000 = base for 100,000 equivalent full-time workers (working 40 hours per week, 50 weeks per year).

Calculation of age-specific and gender-specific denominators: The U.S. Census QWI LED Extraction Tool was used to obtain the proportion of the workforce who were male, female, and by age categories (<24 years, 25-55 years, and 56+ years). Yearly average employment data by the gender and age categories were calculated by averaging the quarterly employment data for each year in these categories. These percentages were then applied to the denominators used to calculate rates by these indicators.

Access Constraints

There are no access constraints for data available through the MiTracking data portal.

Use Constraints

It is recommended that all users read and fully comprehend metadata prior to data use.

These data cannot be used for commercial purposes and shall not be used to engage in any method, act, or practice to conduct the solicitation or advertisement of goods, services, or real estate to Michigan consumers without first obtaining written permission from the MSU OEM.

Data users are prohibited from attempting to learn the identity of any person included in the data and from linking these data with any other data for the purpose of matching records to identify individuals or entities (such as places of work).

The MSU OEM research team and its data partners have applied appropriate cell suppression rules imposed by the data providers and/or using guidance from the CDC. Even at the county level it can be expected that the measures generated will often be based upon numbers too small to report or present without violating state and federal privacy guidelines and regulations. Staff have adhered to the cell suppression rules by suppressing all counts greater than 0 and less than 6 along with their corresponding rates.

Complementary suppression was not necessary for this dataset since there are many unknowns and therefore, the smaller groups do not equal the total. For some data, it was necessary to increase cell sizes by combining data across time (e.g., years) and geographic areas (statewide instead of county-level data).

Security Handling Description

If data are distributed, the use constraints specified in this metadata apply to all recipients of the data.

Distribution Liability

The MiTracking Network is maintained, managed, and operated by the Division of Environmental Health (DEH) within the Michigan Department of Health and Human Services

(MDHHS). In preparation of these data, every effort has been made to offer the most current, correct, complete, and clearly expressed information possible. Nevertheless, some errors in the data may exist. In particular, but without limiting anything here, MDHHS disclaims any responsibility for source data, compilation and typographical errors and accuracy of the information that may be contained in these data.

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If errors or otherwise inappropriate information is brought to our attention, a reasonable effort will be made to fix or remove it. Such concerns should be addressed to the Michigan Tracking Program (See Contact Information below).

Custom Order Process

For access to unrestricted or public use Michigan-specific data, please see:

www.oem.msu.edu or call 517-353-1846.

For access to restricted or secure data, please contact the Michigan Workers' Compensation Agency or the Michigan Unemployment Insurance Agency.

Contact Information

Michigan Department of Health and Human Services Division of Environmental Health

P.O. Box 30195

Lansing, MI 48913

PHONE: 1-800-648-6942

MDHHS-MiTracking@michigan.gov