

**CENSUS OF FATAL OCCUPATIONAL
INJURIES
MICHIGAN 2017**

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PREFACE - CENSUS OF FATAL OCCUPATIONAL INJURIES PROGRAM

The Census of Fatal Occupational Injuries (CFOI) program, part of the U. S. Department of Labor, Bureau of Labor Statistics (BLS) safety and health statistics program, provides the most complete count of fatal work injuries available. The program uses diverse state and federal data sources to identify, verify and profile fatal work injuries. Information about each workplace fatality, including occupation and other worker characteristics, equipment being used, and circumstances of the event, is obtained by cross-referencing source documents, such as death certificates, workers' compensation records, and reports to federal and state agencies. This method assures counts are as complete and accurate as possible.

The Michigan portion of the Census of Fatal Occupational Injuries is conducted by the Michigan Department of Licensing and Regulatory Affairs, MIOSHA, Technical Services Division, Management Information Systems Section in cooperation with the BLS of the U.S. Department of Labor.

INTRODUCTION

The Census of Fatal Occupational Injuries (CFOI), administered by the BLS in conjunction with participating State agencies, compiles detailed information on all work-related fatalities that occur in the 50 states and the District of Columbia. The program is based upon the 1987 recommendations of the National Academy of Sciences and the Keystone Dialogue Group that emphasized the need for a reliable measure of occupational fatalities. In response to these recommendations, the CFOI program was developed to produce accurate, comprehensive, descriptive, timely, and accessible counts of fatal workplace injuries that occur during a given year.

In an effort to compile counts that are complete as possible, the fatality census uses diverse sources to identify, verify, and profile fatal work injuries. Source documents such as death certificates, workers' compensation reports, and Federal and State agency administrative records are cross-referenced to gather key information about each workplace fatality, such as the particular occupation in which the fatality occurred, worker demographics, equipment or machinery involved, and circumstances of the event. Two or more independent source documents are used to verify the work relationship of each fatal work injury.

The Occupational Injury and Illness Classification (OIIC) manual provides a classification system for use in coding the case characteristics of injuries, illnesses, and fatalities in the CFOI program. The manual contains the rules of selection, code descriptions, code titles, and indices, for the following code structures: Nature of Injury or Illness, Part of Body Affected, Source of Injury or Illness, Event or Exposure, and Secondary Source of Injury or Illness.

The 2010 Standard Occupational Classification (SOC) system is used by Federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of 840 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form 461 broad occupations, 97 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together.

Data compiled by the CFOI program are issued annually for the previous calendar year. This data is used by safety and health professionals, policy analysts, and researchers to prevent fatal work injuries in the following six ways:

- Inform workers of life-threatening hazards associated with various jobs.
- Promote safer work practices through enhanced job safety training.
- Develop new safety equipment.
- Assess and improve workplace safety standards.
- Identify new areas for safety research.
- Provide data for policy formation.

OBSERVATION SUMMARY

There were 153 occupational fatalities reported to the Michigan CFOI Program during the year 2017. Various categories related to these fatalities are summarized below.

- Transportation incidents led all fatal events and accounted for 43 (28 percent) of the 153 fatal occupational injuries during 2017. This was followed by Violence and Other Injuries by Persons or Animals with 41 fatalities (27 percent). (Table 1)
- All age groups from 18 to 19 years and 65 years and over reported between 4 and 32 fatalities. The age group of 18-19 reported the least amount of fatalities with 4. (Table 2)
- Based on gender, 91 percent of Michigan's fatally injured workers were men. (Table 2)
- 76 percent of fatalities occurred to persons in the ethnicity category White, non-Hispanic. (Table 2)
- Occupations with the largest number of worker fatalities were reported in the category of Construction and extraction occupations with 34, Transportation and material moving occupations with 23 and Management occupations reporting 22 fatalities. (Table 3)
- Industries reporting the largest number of Michigan fatal work injuries during 2017 were Construction with 33, Agriculture, forestry, fishing and hunting with 22, and all three of Manufacturing, Retail Trade, and Arts, entertainment and recreation industries were at 12 fatalities in each. (Table 4)
- Vehicles were identified as the greatest source of injury with 47 reported during 2017. This was followed by Persons, Plants, Animals & Minerals with 44 and Structures & Surfaces with 23. (Table 5)

**Table 1. Number and Percent Distribution of Fatal Occupational Injuries
by Event or Exposure, Michigan 2017**

Event or Exposure ¹	Fatalities	
	Number	Percent
Total	153	100
Transportation incident	43	28
Pedestrian vehicular incident	6	4
Water vehicular incident	--	--
Roadway incident involving motorized land vehicle	27	18
Non-roadway incident involving motorized land vehicle	8	5
Violence and other injuries by persons or animals	41	27
Intentional injury by other person	40	26
Injury by person—unintentional or intent unknown	--	--
Contact with objects and equipment	23	15
Struck by object or equipment	17	11
Caught in or compressed by equipment or objects	3	2
Falls, slips, trips	27	18
Falls on same level	3	2
Fall to lower level	20	13
Exposure to harmful substances or environments	11	7
Exposure to electricity	5	3
Exposure to other harmful substances	--	--
Fires and explosions	7	5
Explosions	--	--
Event categories that did not meet publication criteria	--	--

¹Based on the BLS Occupational Injury/Illness Classification System (OIICS) 2.01.

NOTE: Totals for major categories may include subcategories not shown separately. Due to confidentiality concerns, minimum publication criteria have been established. For this reason, data that does not meet publication criteria are excluded. Data for 2017 are preliminary.

SOURCE: U.S. Dept. of Labor, Bureau of Labor Statistics, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

Table 2. Number and Percent Distribution of Fatal Occupational Injuries by Selected Characteristics, Michigan 2017

Worker Characteristics	Fatalities	
	Number	Percent
Total	153	100
Employee Status		
Wage and salary workers	102	67
Self-employed	51	33
Sex		
Men	139	91
Women	14	9
Age		
Both sexes:		
Under 16 years	--	--
16 to 17 years	--	--
18 to 19 years	4	3
20 to 24 years	9	6
25 to 34 years	26	17
35 to 44 years	22	14
45 to 54 years	32	21
55 to 64 years	30	20
65 years and over	28	18
Race¹		
White (non-Hispanic)	116	27
Black or African American (non-Hispanic)	25	16
Hispanic or Latino	10	7
American Indian or Alaska Native (non-Hispanic)	--	--
Asian (non-Hispanic)	--	--
Native Hawaiian or Pacific Islander (non-Hispanic)	--	--

¹Persons identified as Hispanic or Latino may be of any race. The race categories shown exclude data for Hispanics and Latinos.

NOTE: Totals for major categories may include subcategories not shown separately. Dashes indicate no data reported or data that do not meet publication criteria. Due to confidentiality concerns, minimum publication criteria have been established. For this reason, data that does not meet publication criteria are excluded. Data for 2017 are preliminary.

SOURCE: U.S. Dept. of Labor, Bureau of Labor Statistics, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

Table 3. Number and Percent Distribution of Fatal Occupational Injuries by Occupation, Michigan 2017

Occupation ¹	Number	<u>Fatalities</u>	Percent
Total	153		100
Management Occupations	22		14
Top executives	2		1
Advertising, marketing, promotions, public relations, and sales managers	1		1
Other management occupations	18		12
Community and social services occupations	1		1
Counselors, social workers, and other community and social service specialists	1		1
Arts, design, entertainment, sports, and media occupations	5		3
Art and design workers	1		1
Entertainers and performers, sports and related workers	4		3
Healthcare practitioners and technical occupations	1		1
Health diagnosing and treating practitioners	1		1
Healthcare support occupations	2		1
Nursing, psychiatric, and home health aides	2		1
Protective service occupations	7		5
Supervisors of protective service workers	1		1
Law enforcement workers	4		3
Other protective service workers	--		--
Food preparation and serving related occupations	4		3
Supervisors of food preparation and serving workers	1		1
Food and beverage serving workers	2		1
Other food preparation and serving related workers	1		1
Building and grounds cleaning and maintenance occupations	8		5
Supervisors of building and grounds cleaning and maintenance workers	4		3
Grounds maintenance workers	4		3
Personal care and service occupations	3		2
Other personal care and service workers	1		1

Table 3. Number and Percent Distribution of Fatal Occupational Injuries by Occupation, Michigan 2017 (Continued)

Occupation ¹	Number	<u>Fatalities</u>	Percent
Sales and related occupations	9		6
Supervisors of sales workers	3		2
Retail sales workers	5		3
Other sales and related workers	1		1
Office and administrative support occupations	2		1
Material recording, scheduling, dispatching, and distributing workers"	2		1
Farming, fishing, and forestry occupations	6		4
Agricultural workers	6		4
Construction and extraction occupations	34		22
Supervisors of construction and extraction workers	5		3
Construction trades workers	27		18
Other construction and related workers	2		1
Installation, maintenance, and repair occupations	17		11
Electrical and electronic equipment mechanics, installers, and repairers	1		1
Vehicle and mobile equipment mechanics, installers, and repairers	10		7
Other installation, maintenance, and repair occupations	6		4
Production occupations	6		4
Metal workers and plastic workers	5		3
Other production occupations	1		1
Transportation and material moving occupations	23		15
Motor vehicle operators	16		10
Material moving workers	7		5

¹Occupation data are based on the Standard Occupational Classification System, 2010.

NOTE: Totals for major categories may include subcategories not shown separately. Due to confidentiality concerns, minimum publication criteria have been established. For this reason, data that does not meet publication criteria are excluded. Data for 2017 are preliminary.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with State and Federal Agencies, Census of Fatal Occupational Injuries.

Table 4. Number and Percent Distribution of Fatal Occupational Injuries by Industry, Michigan 2017

Industry ¹	Fatalities	
	Number	Percent
Total	153	100
Private Industry	90	59
Government Workers	12	8
Self-employed Workers	51	33
Agriculture, forestry, fishing and hunting	22	14
Crop production	16	10
Animal production and aquaculture	5	3
Support activities for agriculture and forestry	1	1
Construction	33	22
Construction of buildings	7	5
Heavy and civil engineering construction	3	2
Specialty trade contractors	22	14
Manufacturing	12	8
Wood product manufacturing	1	1
Plastics and rubber products manufacturing	1	1
Nonmetallic mineral product manufacturing	1	1
Fabricated metal product manufacturing	4	3
Transportation equipment manufacturing	3	2
Furniture and related product manufacturing	1	1
Wholesale trade	6	4
Merchant wholesalers, durable goods	--	--
Merchant wholesalers, nondurable goods	4	3
Retail trade	12	8
Motor vehicle and parts dealers	3	2
Building material and garden equipment and supplies dealers	1	1
Food and beverage stores	--	--
Health and personal care stores	1	1
Gasoline stations	2	1
Clothing and clothing accessories stores	1	1
Miscellaneous store retailers	1	1
Non-store retailers	1	1
Arts, entertainment, and recreation	12	8
Performing arts, spectator sports, and related industries	5	3
Museums, historical sites, and similar institutions	--	--
Amusement, gambling, and recreation industries	5	3

Table 4. Number and Percent Distribution of Fatal Occupational Injuries by Industry, Michigan 2017 (Continued)

Industry ¹	Fatalities	
	Number	Percent
Transportation and warehousing	11	7
Air transportation	1	1
Truck transportation	5	3
Transit and ground passenger transportation	1	1
Support activities for transportation	2	1
Postal service	1	1
Couriers and messengers	1	1
Information	--	--
Telecommunications	1	1
Finance and insurance	1	1
Insurance carriers and related activities	1	1
Professional and technical services	2	1
Professional, scientific, and technical services	2	1
Administrative and waste services	10	7
Administrative and support services	7	5
Waste management and remediation services	3	2
Educational services	2	1
Educational services	2	1
Health care and social assistance	5	3
Ambulatory health care services	2	1
Nursing and residential care facilities	3	2
Accommodation and food services	7	5
Accommodation	1	1
Food services and drinking places	6	4
Other services, except public administration	10	7
Repair and maintenance	9	6
Religious, grantmaking, civic, professional, and similar organizations	1	1
Public administration	6	4
Justice, public order, and safety activities	6	4

¹Industry data based on the North American Industry Classification System, 2007

NOTE: Totals for major categories may include subcategories not shown separately. Due to confidentiality concerns, minimum publication criteria have been established. For this reason, data that does not meet publication criteria are excluded. Data for 2017 are preliminary.

SOURCE: U. S. Dept. of Labor, Bureau of Labor Statistics, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

**Table 5. Number and Percent Distribution of Fatal Occupational Injuries
by Source of Injury, Michigan 2017**

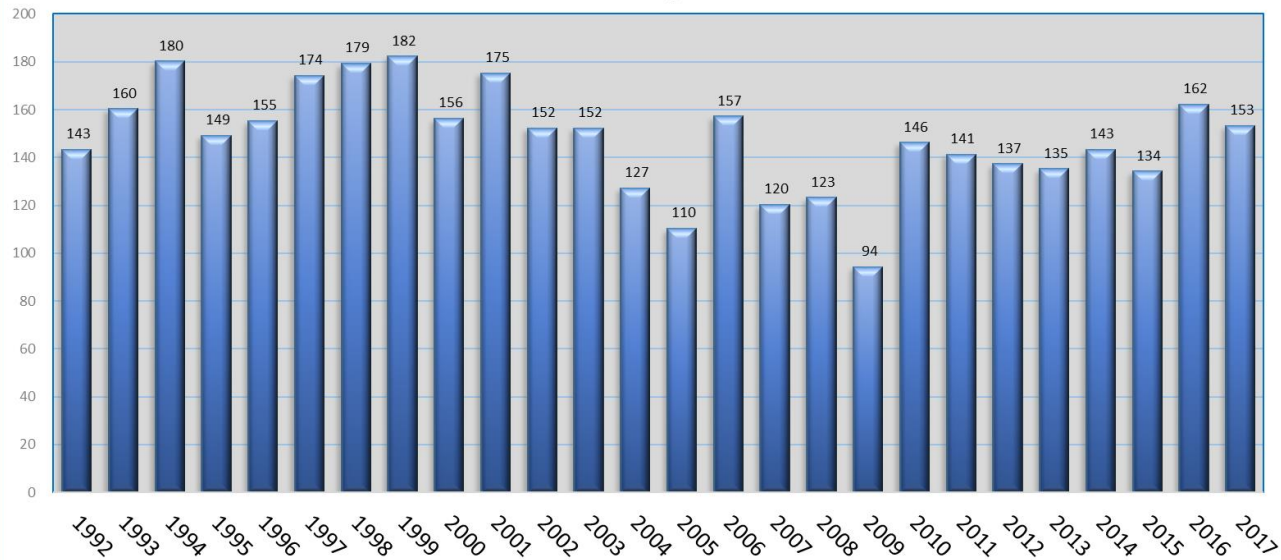
Source of Injury¹	Fatalities	
	Number	Percent
Total	153	100
Persons, plants, animals and minerals	44	29
Plants, trees, vegetation-not processed	3	2
Person-other than injured or ill worker	25	16
Vehicles	47	31
Highway vehicles, motorized	38	25
Off-road or industrial vehicles, powered	7	5
Structures and surfaces	23	15
Buildings—office, plant, residential	--	--
Structures other than buildings	3	2
Other structural elements	10	7
Machinery	9	6
Agriculture and garden machinery	5	3
Construction, logging, and mining machinery	2	1
Material and personnel handling machinery	1	1
Tools, instruments and equipment	6	4
Ladders	4	3
Parts and materials	10	7
Machine, tool and electric parts	5	3
Chemicals and chemical products	5	3
Containers, furniture and fixtures	4	3
Other sources	--	--
Source of injury categories that did not meet publication criteria	--	--

¹The primary source of a fatal occupational injury is the object, substance, person, bodily motion, or exposure which most directly led to, produced, or inflicted the injury or illness.

NOTE: Totals for major categories may include subcategories not shown separately. Due to confidentiality concerns, minimum publication criteria have been established. For this reason, data that does not meet publication criteria are excluded. Data for 2017 are preliminary.

SOURCE: U. S. Department of Labor, Bureau of Labor Statistics, in cooperation with the State and Federal Agencies, Census of Fatal Occupational Injuries

Michigan Historical CFOI Data 1992 through 2017



SOURCE: Bureau of Labor Statistics, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

TECHNICAL NOTES ON THE CFOI PROGRAM

Identification and verification of work-related fatalities

Federal/State agency coverage

The Census of Fatal Occupational Injuries includes data for all fatal work injuries, whether the decedent was working in a job covered by the Occupational Safety and Health Administration (OSHA) or other federal or state agencies or was outside the scope of regulatory coverage. Thus, any comparison between the BLS fatality census counts and those released by other agencies should take into account the different coverage requirements and definitions being used by each agency. Several federal and state agencies have jurisdiction over workplace safety and health. OSHA and affiliated agencies in states with approved safety programs cover the largest portion of the nations' workers. However, injuries and illnesses occurring in certain industries or activities, such as coal, metal, and nonmetal mining, and highway, water, rail, and air transportation, are excluded from OSHA coverage because they are covered by other federal agencies, such as the Mine Safety and Health Administration and various agencies within the Department of Transportation.

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Michigan and BLS appreciates the efforts of all federal, state, local, and private sector entities that submitted source documents used to identify fatal work injuries. Among these agencies are the Occupational Safety and Health Administration; the National Transportation Safety Board; the U.S. Coast Guard; the Mine Safety and Health Administration; the Employment Standards Administration (Federal Employees' Compensation and Longshore and Harbor Workers' divisions); the Federal Railroad Administration; the Department of Energy; state vital statistics registrars, coroners, and medical examiners; state departments of health, labor and industries, workers' compensation agencies, state and local police reports; and state farm bureaus.