



# Wisconsin Public Health Profiles 2017 | FOND DU LAC



Office of Health Informatics  
Division of Public Health  
Wisconsin Department of Health Services

## Table of Contents

- Births
- Deaths
- Hospitalizations
- Population, Employment and Poverty Estimates
- Cancer
- Communicable Disease
- Motor Vehicle Crashes

Technical Notes

### BIRTH OUTCOMES

Normal birthweight babies: (2,500+ grams)	91.8% of live births
	Wisconsin: 92.7% of live births

### ACCESS TO HIGH QUALITY HEALTH SERVICES

Preventable hospitalizations: (For conditions where timely and effective ambulatory care can reduce likelihood of hospitalization)	18.8 per 1,000 population
	Wisconsin: 13.3 per 1,000 population

### SUBSTANCE ABUSE

Deaths related to alcohol and other drugs: (Alcohol, tobacco, or other drugs listed on death certificate as underlying or contributing cause. May reflect mention of multiple substances.)	174.2 per 100,000 population
	Wisconsin: 180.4 per 100,000 population



# BIRTHS

Nativity data are drawn from birth certificates maintained by the Vital Records Section, Division of Public Health. This report presents data from the calendar year 2015.

## DATA DETAILS

These data include characteristics of the infant and pregnancy (birthweight, delivery method, birth order, trimester of first prenatal care visit, and number of prenatal care visits) and attributes of the mother (age, marital status, education, race/ethnicity, and smoking status).

Data include records on all births to state residents, including those that occur outside Wisconsin. Out-of-state records are obtained from the state of occurrence. Thus, county birth data include all births to county residents regardless of where the births occurred.

## TOTAL BIRTHS

Total live births	600
Crude live birth rate (per 1,000)	13.9
General fertility rate (per 1,000)	68.7

## PREGNANCY CHARACTERISTICS

Delivery Type	Births	%
Vaginal after prev. cesarean	20	3.3
Other vaginal	399	66.5
Primary cesarean	82	13.7
Repeat cesarean	69	11.5
Cesarean (unk. repeat/primary)	2	0.3
Vaginal vacuum	23	3.8
Forceps	4	0.7
Other/Unknown	1	0.2
Prenatal Care Visits		
No visits	3	0.5
1-4	21	3.5
5-9	247	41.2
10-12	206	34.3
13+	102	17.0
Unknown	21	3.5
First Prenatal Care Visit		
First trimester	472	78.7
Second trimester	84	14.0
Third trimester	19	3.2
No visits	3	0.5
Unknown	22	3.7

## MATERNAL CHARACTERISTICS

Marital	Births	%
Married	347	58.0
Not	251	42.0
Unknown	2	0.3
Education		
Elementary or less	15	2.5
Some high school	62	10.3
High school graduate	189	31.5
Some college	174	29.0
College graduate	155	25.8
Unknown	5	0.8
Smoking		
Smoker	162	27.0
Nonsmoker	433	72.2
Unknown	5	0.8

## INFANT CHARACTERISTICS

Birthweight	Births	%
< 1,500 gm	5	0.8
1,500-2,499 gm	44	7.3
2,500+	551	91.8
Unknown	0	0.0
Birth Order		
First	204	34.0
Second	213	35.5
Third	99	16.5
Fourth or higher	84	14.0
Unknown	0	0.0
Reported congenital anomalies <sup>1</sup>	3	0.5

## MATERNAL CHARACTERISTICS & BIRTH OUTCOMES

	All Births		LBW		Trimester of First Prenatal Visit					
	Births	%	Births	%	First		Second		Other/Unk.	
Race/Ethnicity	Births	%	Births	%	Births	%	Births	%	Births	%
White	472	78.7	33	7.0	390	83.0	50	11.0	32	7.0
Black/African American	25	4.2	5	20.0	15	60.0	7	28.0	3	12.0
American Indian	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Hispanic/Latino	71	11.8	9	12.7	47	66.0	18	25.0	6	8.0
Asian	19	3.2	1	5.3	11	58.0	6	32.0	2	11.0
Two or more races	11	1.8	1	9.1	9	82.0	1	9.0	1	9.0
Other/unknown	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Fertility rate										
Age	Births	(per 1,000)	Births	%	Births	%	Births	%	Births	%
< 15	0	--	0	0.0	0	0.0	0	0.0	0	0.0
15-17	8	10	0	0.0	4	50	4	50.0	0	0.0
18-19	24	40	4	16.7	16	67	6	25.0	2	8.0
20-24	143	88	13	9.1	104	73	27	19.0	12	8.0
25-29	202	133	11	5.5	168	83	22	11.0	12	6.0
30-34	153	96	15	9.8	125	82	15	10.0	13	8.0
35-39	59	38	6	10.2	47	80	8	14.0	4	7.0
40+	11	10	0	0.0	8	73	2	18.0	1	9.0
Unknown	0	--	0	0.0	0	0.0	0	0.0	0	0.0
Teen Births	32	23								

## DEFINITIONS

**Birthweight** - infant weight at time of delivery (reported here in grams).

**Live birth** - complete expulsion or extraction of an infant from its mother, irrespective of the duration of pregnancy, which after such separation breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.

**Low birthweight (LBW)** - birthweight of a liveborn infant of less than 2,500 gm (5lbs, 8oz) regardless of gestational age.

**Smoking status** - a mother is defined as a smoker if she reports smoking cigarettes at any time during or three months prior to the pregnancy. This is not comparable to Wisconsin data on maternal smoking for births prior to 2011.

**Teen birth** - births in which the mother was less than 20 years old.

## MEASURES

**Crude live birth rate** - number of live births per 1,000 population.

**General fertility rate** - number of live births per 1,000 women of childbearing age (15-44).

**Age-specific fertility rate** - number of births to women in an age category, per 1,000 women of that age.

**Teen fertility rate** - number of live births to females under 20 years of age per 1,000 females age 15-19.

## NOTES

<sup>1</sup> **Live births with reported congenital anomalies.** Due to the change in Wisconsin birth data collection beginning in 2011, the number of live births with reported congenital anomalies in 2011 and subsequent years cannot be compared with the number in 2010 and earlier years.



# DEATHS

Mortality data are drawn from three sources maintained by the Vital Records Section, Division of Public Health: death certificates; infant death certificates matched with the corresponding birth certificates; and fetal death reports (deaths of fetuses of at least 20 weeks of gestation). This report presents data from the calendar year 2015.

### DATA DETAILS

This report presents Wisconsin resident data (deaths of Wisconsin residents). The majority of these deaths occurred in Wisconsin, although death certificated of Wisconsin residents are received from other states and countries as well. Deaths have been assigned to the area where the person lived (usually legal residence), regardless of where the death occurred.

PERINATAL MORTALITY	Deaths	Rate (per 1,000)
Total perinatal mortality	8	.
Neonatal	2	.
Fetal	6	.

INFANT MORTALITY	Deaths	Rate (per 1,000)
Total infant mortality	2	.
Neonatal	2	.
Postneonatal	0	.
<b>Birthweight</b>		
< 1,500 gm	1	.
1,500-2,499 gm	1	.
2,500+ gm	0	.
Unknown	0	.
<b>Race of Mother</b>		
White	1	.
Black	0	.
Hispanic	1	.
Asian	0	.
Other/Unk.	0	.

### TOTAL DEATHS

Total deaths	480
Crude death rate (per 100,000)	1,114.7

### CHILD & ADULT MORTALITY

Age	Deaths	Rate (per 100,000)
1-4	1	.
5-14	0	.
15-19	1	.
20-34	11	.
35-54	26	228.3
55-64	53	987.7
65-74	68	2,141.7
75-84	114	5,491.3
85+	199	14,493.8

### Selected Underlying Causes

Heart disease (total)	133	308.9
Ischemic heart disease	70	162.6
Cancer (total)	96	222.9
Trachea/Bronchus/Lung	22	51.1
Colorectal	10	.
Female breast*	7	.
Cerebrovascular disease	26	60.4
Lower respiratory disease	17	.
Pneumonia and influenza	10	.
Accidents	22	51.1
Motor vehicle	3	.
Diabetes	7	.
Infectious/Parasitic diseases	14	.
Suicide	8	.

### Alcohol and Drug Abuse as Underlying or Contributing Cause of Death

Alcohol	5	.
Tobacco use	70	162.6
Other drugs	0	.

\* Based on female deaths from breast cancer and female population.

### DEFINITIONS

**Cause of death** - reported underlying cause of death, as recorded on death certificates. The categories and ICD-10 codes are listed in the "Documentation" worksheet (see tabs below).

**Fetal death** - death occurring prior to the complete expulsion or extraction from its mother of a product of conception; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles. Only deaths of fetuses of at least 20 weeks of gestation must be reported in Wisconsin. Fetal death reports do not include induced abortions.

**Infant death** - death of a live-born individual less than one year of age.

**Neonatal death** - death of a live-born infant less than four weeks (28 days) of age.

**Perinatal deaths** - neonatal deaths plus all reported fetal deaths of 20 or more weeks of gestation.

**Postneonatal death** - death of an infant between four weeks (28 days) and one year of age.

### MEASURES

**Crude death rate** - number of deaths per 100,000 population.

**Crude cause-specific death rate** - number of deaths from a cause per 100,000 population.

**Death rate by age** - number of deaths in an age group per 100,000 population in that age group.

**Neonatal, postneonatal, and infant death rates** - number of deaths per 1,000 live births.

**Fetal and perinatal death rates** - number of deaths per 1,000 live births and fetal deaths.

**Race-specific and age-specific infant death rates** - deaths per 1,000 live births in that race or weight category.

### NOTES

**Alcohol and Drug Abuse as Underlying or Contributing Cause of Death** provides a count of deaths with any mention of alcohol, tobacco use, or other drugs on the death certificate. A death with more than one of these causes mentioned is counted for each one. For instance, a death that mentions both alcohol and tobacco will be counted in both categories.



# Hospitalizations

Hospitalization data are obtained from hospital inpatient discharge files prepared by the Health Analytics Section, Division of Public Health (DPH), from data collected by the Wisconsin Hospital Association Information Center. This report presents data from the calendar year 2015.

### DATA DETAILS

Diagnostic definitions used for the categories are based on the principal diagnosis. Hospitalizations are measured as inpatient discharges. Hospitalizations for an individual can occur more than once due to multiple admissions and transferring between hospitals. The diagnoses most affected by transfers are malignant neoplasms, mental disorders, cerebrovascular disease, coronary heart disease, and injury-related diagnoses.

Between 2011 and 2013, the Public Health Profiles include records for Wisconsin residents treated in Minnesota hospitals. From 2014 on, the Public Health Profiles include records for Wisconsin residents treated in both Minnesota and Iowa hospitals. Therefore, counts and rates of hospitalizations in the affected counties changed substantially and caution is advised when comparing across data years. Counts and rates remain underestimated for those counties whose residents receive a significant amount of care in Michigan or Illinois hospitals.

From Quarter 4, 2015, the hospital inpatient discharge data starts to report all diagnoses with ICD-10 code. The Wisconsin Hospital Association Information Center provided the translation of the ICD-10 code for Quarter 4, 2015 to ICD-9 codes to get the data for the whole year. They used the CMS standard described at <http://www.nber.org/gem/GEMs-CrosswalksBasicFAQ.pdf>. This report used their translated codes. Due to definition changes for some diagnoses between ICD-9 and ICD-

TOTAL HOSPITALIZATIONS		Rate	Average	Charge
	Cases	(per 1,000)	charge	per capita
Total	6,693	155.4	\$30,077	\$4,675
<b>Age</b>				
<18	1,016	83.3	\$11,920	\$993
18-44	1,650	103.8	\$20,047	\$2,081
45-64	1,680	151.5	\$38,235	\$5,794
65+	2,347	354.3	\$39,148	\$13,871
<b>Cause by selected age group</b>				
	Cases	Rate	Average	Charge
		(per 1,000)	charge	per capita
<b>INJURY-RELATED</b>				
<b>Injury: All</b>				
Total	500	11.6	\$43,602	\$506
<18	16	.	.	.
18-44	90	5.7	\$39,543	\$224
45-64	159	14.3	\$46,304	\$664
65+	235	35.5	\$44,584	\$1,582
<b>Injury: Hip Fracture</b>				
Total	60	1.4	\$45,444	\$63
65+	41	6.2	\$46,774	\$290
<b>Injury: Poisonings</b>				
Total	63	1.5	\$23,024	\$34
18-44	35	2.2	\$21,011	\$46
<b>DRUG and ALCOHOL USE</b>				
<b>Alcohol-Related</b>				
Total	212	4.9	\$9,084	\$45
18-44	74	4.7	\$6,344	\$30
45-64	126	11.4	\$10,365	\$118
<b>Drug-related</b>				
Total	55	1.3	\$6,903	\$9
18-44	39	2.5	\$5,105	\$13
<b>MENTAL DISORDERS</b>				
Total	534	12.4	\$10,883	\$135
<18	121	9.9	\$11,985	\$119
18-44	282	17.7	\$8,515	\$151
45-64	95	8.6	\$14,475	\$124
65+	36	5.4	\$16,240	\$88
<b>PREVENTABLE HOSPITALIZATIONS</b>				
Total	809	18.8	\$33,311	\$626
<18	48	3.9	\$25,214	\$99
18-44	75	4.7	\$35,696	\$168
45-64	231	20.8	\$43,115	\$898
65+	455	68.7	\$28,795	\$1,978

Cause by selected age group		Rate	Average	Charge
	Cases	(per 1,000)	charge	per capita
<b>DIABETES</b>				
Total	59	1.4	\$26,130	\$36
65+	18	.	.	.
<b>CARDIOVASCULAR DISEASE</b>				
<b>Coronary Heart Disease</b>				
Total	136	3.2	\$68,337	\$216
45-64	40	3.6	\$63,491	\$229
65+	86	13.0	\$71,836	\$933
<b>Cerebrovascular Disease</b>				
Total	180	4.2	\$42,814	\$179
45-64	40	3.6	\$49,460	\$178
65+	134	20.2	\$41,425	\$838
<b>CHRONIC PULMONARY DISEASE</b>				
<b>Asthma</b>				
Total	16	.	.	.
<18	1	.	.	.
18-44	3	.	.	.
45-64	8	.	.	.
65+	4	.	.	.
<b>Other Chronic Obstructive Pulmonary Disease</b>				
Total	84	2.0	\$18,867	\$37
45-64	29	2.6	\$18,109	\$47
65+	52	7.9	\$17,789	\$140
<b>PNEUMONIA and INFLUENZA</b>				
Total	191	4.4	\$28,076	\$125
<18	6	.	.	.
45-64	55	5.0	\$30,608	\$152
65+	118	17.8	\$27,401	\$488
<b>NEOPLASMS</b>				
<b>Malignant Neoplasms (Cancers): All</b>				
Total	183	4.2	\$69,724	\$296
18-44	18	.	.	.
45-64	74	6.7	\$71,499	\$477
65+	91	13.7	\$54,939	\$755
<b>Neoplasms: Female Breast (rates for female population)</b>				
Total	7	.	.	.
<b>Neoplasms: Colo-rectal</b>				
Total	22	0.5	\$49,287	\$25
65+	15	.	.	.
<b>Neoplasms: Lung</b>				
Total	16	.	.	.

### DEFINITIONS

**Length of stay (LOS)** - average duration, in days, of a single episode of hospitalization for an individual with the specified condition.

**Preventable Hospitalizations** - Hospitalizations for conditions where timely and effective ambulatory care can reduce the likelihood of hospitalization (see technical notes).

### MEASURES

**Average charge** - total charges within a particular diagnostic category and age group divided by the number of discharges with reported charges in that group.

**Charge per capita** - total charges divided by the estimated total population (within age groups: age-specific charges divided by the estimated age-specific population).

**Rate of discharge** - number of discharges in that diagnostic category and age group per 1,000 population in that age group.

**Rate of discharge for female breast neoplasms** - number of discharges in that diagnostic category per 1,000 women.

### NOTES

**Length of stay and charge outliers** were defined as values below the first percentile or above the 99th percentile (i.e., the highest one percent and the lowest one percent). In these cases, the length of stay or charge was set to the first or 99th percentile value. Since reporting of charges is optional for lengths of stay over 100 days, the charges for those cases with a missing charge and length of stay over 100 days were also set to the 99th percentile value.



## Population

The population by age, sex, race, and ethnicity was estimated for July 1, 2015, by the Health Analytics Section, Division of Public Health. Estimates of poverty and median household income in Wisconsin were obtained from the U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program website. Employment statistics (civilian labor force, unemployment rate, and average wage) were obtained from the Division of Workforce Solutions, Wisconsin Department of Workforce Development.

### POPULATION ESTIMATES

Total 2014 population	43,060
Population per square mile	2,288
Population growth 2011-2015	41

	Female	Male	Total
Total	22,370	20,690	43,060

#### Age

0-14	3,850	4,230	8,080
15-17	780	590	1,370
18-19	610	420	1,030
20-24	1,620	1,490	3,110
25-44	5,730	6,030	11,760
45-64	5,750	5,330	11,090
65-84	3,000	2,250	5,250
85+	1,030	340	1,370

#### Race/Ethnicity

White	19,180	17,980	37,150
African American	480	360	830
American Indian	140	90	230
Hispanic	1,650	1,540	3,190
Asian	500	330	830

### POVERTY ESTIMATES

This data available at county level only

All ages
Ages 0-17

### EMPLOYMENT

This data available at county level only

Average wage for jobs covered by unemployment compensation (place of work)
--

### LABOR FORCE

	Annual Average
Civilian labor force	23,111
Unemployment rate	4.4
5-year avg. unemployment rate (2010-2014)	6.7

### DEFINITIONS

**Civilian labor force** - includes all persons 16 years of age or over who are either working or looking for work. This statistic does **not** include members of the armed forces; "discouraged workers" who are not either actively seeking employment, about to start a new job, or waiting to be called back from a layoff; or other people (such as students or retired persons) not working or looking for work.

**Employed persons** - individuals 16 years or older who worked for pay anytime during the week that includes the 12th day of the month, or who worked unpaid for 15 hours or more in a family-owned business, or who were temporarily absent from their jobs due to illness, bad weather, vacation, labor dispute, or personal reasons.

**Unemployed persons** - individuals 16 years or older who had no employment, were available for work, and either actively seeking employment, about to start a new job, or waiting to be called back from a layoff.

### NOTES

**Estimated populations** are reported rounded to the nearest 10.

The **race/ethnicity categories** are mutually exclusive (racial categories exclude Hispanics). Estimated populations are reported rounded to the nearest 10.

Cancer incidence data are compiled from reports submitted by Wisconsin hospitals, clinics, and physicians to the Wisconsin Cancer Reporting System (WCRS), Health Analytics Section, Division of Public Health, as mandated under Wis. Stat. § 255.04. This report presents cancer incidence data for cases diagnosed in the calendar year 2014 (the latest data available).

#### DATA DETAILS

Hospitals report all cases seen with active cancers. Clinics and physicians report all treated cases and any non-treated cases that have not been referred to a Wisconsin hospital. Central cancer registries in 19 other states and several Minnesota hospitals that diagnose and/or treat Wisconsin resident cancer patients report voluntarily to WCRS.

All reports sent to WCRS include patient demographics, tumor-specific characteristics, and type of treatment. WCRS reportable cancers include all malignant invasive and noninvasive neoplasms (except basal cell and squamous cell carcinomas that arise in the skin and noninvasive cervical cancers) plus in situ (pre-malignant) bladder cancers and (since January 1, 2004) benign tumors of the brain and central nervous system.

PRIMARY SITE	Cases	Crude incidence rate (per 100,000)
Female breast	31	137.3
Colorectal	23	53.3
Lung and bronchus	38	88.1
Prostate	26	126.3
Other sites	124	287.4
Total	256	593.3

\*Rates include cases per 100,000 sex-specific population

#### MEASURES

**Crude incidence rate** - cases per 100,000 unadjusted population.

#### NOTES

Totals include only invasive cancers and are thus not comparable to any previous publications that included both invasive and noninvasive cancers.



## Communicable Diseases

Data for communicable diseases are shown for selected reportable diseases. Numbers of confirmed cases were obtained from the Bureau of Communicable Diseases, Division of Public Health. Wisconsin Stat. ch. 252 and Wis. Admin. Code ch. DHS 145 require the surveillance and control of certain communicable diseases. This report presents data from the calendar year 2015.

### DATA DETAILS

Completeness of reporting varies by disease. The figures for a county or region refer to reported cases among residents of that county or region, regardless of where the disease was contracted.

Specific counts for a year are subject to some slight changes over time as medical tests reveal previously unidentified cases or change previous diagnoses.

### NOTES

The symbol "<5" denotes that the number of reported cases is between 1 and 4. The exact number is suppressed to maintain confidentiality.

DISEASE	Cases
Babesiosis	0
Blastomycosis	<5
Campylobacter enteritis	12
Cryptosporidiosis	7
E.coli, shiga toxin-producing (STEC)	<5
Ehrlichiosis/Anaplasmosis	<5
Giardiasis	6
Haemophilus influenzae, invasive	<5
Hepatitis B*	<5
Hepatitis C	94
Influenza-associated hospitalization	24
Legionnaires'	0
Lyme	<5
Measles	0
N. meningitidis (Meningococcal disease)	0
Meningitis, other bacterial	<5
Mumps	0
Pertussis	<5
Salmonellosis	7
Shigellosis	0
Streptococcus pneumoniae, invasive	7
Streptococcal diseases, all other	16
Tuberculosis	<5
<b>Sexually Transmitted Disease</b>	
Chlamydia trachomatis	223
Gonorrhea	21
Syphilis	0

\*Includes all positive HBsAg test results.



# Motor Vehicle Crashes

Data on injuries and fatalities in motor vehicle crashes are obtained from the WisDOT-DMV Traffic Accident Database of the Wisconsin Department of Transportation (DOT). This report presents data from the calendar year 2015

### DATA DETAILS

These data are based on location of crash, not on residence.

Motor vehicle crash data are occurrence data from the county in which the crash took place. (Most other data in the Profiles are based on the county of residence.) County statistics on persons injured and killed therefore do not include county residents who were injured or killed outside the county, and may include persons who are residents of other counties or other states.

TYPE OF MOTOR VEHICLE CRASH	Persons Injured	Persons Killed
All crashes	352	1
Alcohol-related	12	0
With citation for OWI	8	0
With citation for speeding	18	0
Motorcyclist	14	0
Bicyclist	12	0
Pedestrian	6	0

### DEFINITIONS

**Persons injured** - persons who were physically harmed or complained of physical harm from injuries received in the crash, but did not die within 30 days of the crash.

**Persons killed** - were all persons who died within 30 days from injuries received in the crash.

**Alcohol-related crash** - a crash in which either a driver, bicyclist, or pedestrian is listed on a police or coroner report as drinking alcohol before the crash.

**Crashes with a citation for OWI** - crashes in which a law enforcement official has issued a citation for violation of Wis. Stat. § 346.63, "operating under influence of intoxicant or other drug."

### NOTES

These data are reported by state and local law enforcement agencies. Because crash data are from a different source, the number of "Persons Killed" in motor vehicle crashes will not match the number of deaths from "Accidents, Motor Vehicle" in the profile's Child and Adult Mortality section.



## ABOUT THE DATA: DOCUMENTATION

Public Health Profiles, Wisconsin 2016, presents selected data on population characteristics, births, deaths, morbidity, local health departments, long-term care, and hospitalizations in Wisconsin for calendar year 2015. The data were select to profile important aspects of public health for the state as a whole, each of the 72 counties, the five Division of Public Health (DPH) regions, the seven perinatal regions, as well as 34 additional sub-county local health departments and municipalities. Local public health professionals and others seeking general information about the health of Wisconsin's population use these data to establish yearly goals, conduct community health assessments, write grant proposals, and develop education and outreach programs.

The Wisconsin Department of Health Services (DHS) provided funds for developing and disseminating this report. This report is produced by the Health Analytics Section.

Most of the statistics included in this report came from data systems maintained in DPH. The DPH Health Analytics section provided mortality, birth, and infant mortality data; 2014 population estimates; cancer incidence for 2013 (latest available); and prepared hospitalization data from the inpatient discharge files, with data collected by the Wisconsin Hospital Association Information eEnter. The DPH Office of Policy and Practice Alignment compiled Local Health Department Survey data for 2014 collected online via Select Survey. The Bureau of Communicable Diseases provided morbidity data and immunization data. The Bureau of Community Health Promotion, Special Supplemental Nutrition Program for Women, Infants and Children (WIC), provided WIC participant data. The Bureau of Environmental and Occupational Health provided licensed establishment data.

Nursing home data were provided by the Division of Quality Assurance. Community Options Program data and Medicaid Waiver data were provided by the Bureau of Long-Term Support, Division of Long Term Care. Data for eligible and waiting clients were also provided by this bureau. Family Care data were derived from the Wisconsin Managed Care database. All of these entities are in the Department of Health Services.

Employment data were provided by the Bureau of Workforce Information, Division of Workforce Solutions, Wisconsin Department of Workforce Development.

Motor vehicle crash data are maintained by the Wisconsin Department of Transportation (DOT), Division of Motor Vehicles, Traffic Accident Section. Figures were compiled from that source by the Bureau of Transportation Safety in DOT's Division of State Patrol.

Comments, suggestions, and requests for information may be addressed to:

Health Analytics Section

Division of Public Health

P.O. Box 2659

Madison, WI 53701-2659

Email: [dhshealthstats@wisconsin.gov](mailto:dhshealthstats@wisconsin.gov)

**Suggested citation:**

Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics, Health Analytics Section. Public Health Profiles, Wisconsin 2017 (P-45358-17). August 2017.

## Formulas for Birth and Death Rates

### Births

Crude live birth rate	= 1,000	x	$\frac{\text{Number of resident live births}}{\text{Total resident population}}$
General fertility rate	= 1,000	x	$\frac{\text{Number of resident live births}}{\text{Number of females ages 15-44}}$
Age-specific fertility rate	= 1,000	x	$\frac{\text{Number of resident live births in age category}}{\text{Number of females in age category}}$
Teen fertility rate	= 1,000	x	$\frac{\text{Number of resident live births to females under 20 years of age}}{\text{Number of females under 20 years of age}}$

### Deaths

Crude death rate	= 100,000	x	$\frac{\text{Number of resident deaths}}{\text{Total resident population}}$
Crude cause-specific death rate	= 100,000	x	$\frac{\text{Number of resident deaths from cause}}{\text{Total resident population}}$
Fetal death rate	= 1,000	x	$\frac{\text{Number of resident fetal deaths}}{\text{Total resident live births and fetal deaths}}$
Neonatal death rate	= 1,000	x	$\frac{\text{Number of resident neonatal deaths}}{\text{Total resident live births}}$
Postneonatal death rate	= 1,000	x	$\frac{\text{Number of resident postneonatal deaths}}{\text{Total resident live births}}$
Perinatal death rate	= 1,000	x	$\frac{\text{Number of resident fetal and neonatal deaths}}{\text{Total resident live births and fetal deaths}}$
Infant death rate	= 1,000	x	$\frac{\text{Number of resident infant deaths}}{\text{Total resident live births}}$
Race-specific infant death rate	= 1,000	x	$\frac{\text{Number of infant deaths to mothers in race category}}{\text{Number of live births to mothers in race category}}$
Weight-specific infant death rate	= 1,000	x	$\frac{\text{Number of infant deaths in birthweight category}}{\text{Number of live births in birthweight category}}$

## Rates

Most rates per population included in the Public Health Profiles were calculated using 2013 population data. A crude rate is the number of events per 1,000 (or 10,000 or 100,000) people. It is called "crude" because its magnitude may be affected by the population's age distribution. In contrast, an age-specific or age-standardized rate considers age distribution, and would be preferred over a crude rate for comparisons between populations with different age distributions.

Rates for some events were not calculated. For most measures numerators of fewer than 20 events (indicated by ".") were judged to be too small to calculate rates that are meaningful; such rates would be misleadingly unstable over time because small annual fluctuations in the number of events can create large changes in a rate. Calculation of other rates was not done for other reasons (indicated by "--"); for example, the population base for a fertility rate for females under 15 years old cannot be estimated accurately.

## Categories of Underlying Cause of Death

Description	ICD-10 CODE
Infectious and Parasitic Diseases	A00-B99
Total Malignant Neoplasms	C00-C97
Trachea, bronchus, lung cancer	C33-C34
Breast cancer	C50
Colorectal cancer	C18-C21
Diabetes	E10-E14
Diseases of the Heart	I00-I09, I11, I13, I20-I51
Ischemic heart disease	I20-I25
Cerebrovascular Disease	I60-I69
Pneumonia and Influenza	J09-J18
Chronic Lower Respiratory Disease	J40-J47
Total Accidents	V01-X59, Y85-Y86
Motor vehicle accidents (crashes)	V02-V04, V09.0-V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
Intentional self-harm (suicide)	U-03, X60-X84, Y87.0

## Drugs Listed as Underlying or Contributory Cause of Death

Alcohol	F10-F10.9, G31.2, G62.1, I42.6, K29.2, K70, R78.0, X45, X65, Y15
Tobacco	F17.9
Other Drugs	F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.8, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9, X40-X44, X60-X64, X85, Y10-Y14

# First-Listed Diagnoses Associated With Hospitalizations

Description	ICD-9-CM CODE
Malignant neoplasms	140.0-208.9, 230.0-234.9
Lung cancer	162.0-162.9
Female breast cancer	174.0-174.9
Colorectal cancer	153.0-154.8
Diabetes	250.0-250.9
Alcohol-related	
Alcohol psychoses	291.0-291.9
Alcohol dependence syndrome	303.0-303.03
Alcohol abuse	305.00-305.03
Alcoholic polyneuropathy	357.5
Alcoholic cardiomyopathy	425.5
Alcoholic gastritis	535.3
Chronic liver disease and cirrhosis	571.0-571.3
Excessive blood level of alcohol	790.3
Drug-related	
Drug psychoses	292.0-292.9
Drug dependency	304.00-304.93
Nondependent abuse of drugs	305.10-305.93
Mental Disorders (excluding those related to alcohol or drugs)	290.0-319
Coronary heart disease	
Ischemic heart disease	410.0-414.9
Unspecified cardiovascular disease	429.2
Cerebrovascular disease	430-438
Pneumonia and influenza	480.0-487.8
Other chronic obstructive pulmonary disease	490-492, 494-496
Asthma	493
Osteoporosis	733.00-733.09
All injuries	800-999
Hip fracture	820.00-820.9
Poisonings	960.0-989.9

# Diagnoses Defining Preventable Hospitalizations

(Principal Diagnosis only except where noted)

The list of conditions included in preventable hospitalizations was adapted with some modification from a study done between 1991 and 1994 by the United Hospital Fund of New York (Billings J., Anderson G.M. and Newman L.S. "Recent Findings on Preventable Hospitalizations." Health Affairs, 15(3): 239–249, 1996). The diagnoses were defined by a medical panel of internists and pediatricians, and included conditions where timely and effective ambulatory care can reduce the likelihood of hospitalization by preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition. The descriptions and ICD-9-CM diagnostic codes for each preventable hospitalization category are listed below.

Description	ICD-9-CM CODE
Congenital syphilis	090.0-090.9 (includes secondary diagnosis for newborns)
Immunization-preventable conditions	033.0-033.9, 390, 391.0-391.9, 037, 045.00-045.93, (320.0 - age 1-5)
Grand mal status and other epileptic convulsions	345.0-345.9
Convulsions	780.3 (age >5)
Severe ear, nose, and throat infections	382.0-382.9, 462, 463, 465.0-465.9, 472.1 (except with a procedure of 20.01)
Pulmonary tuberculosis	011.00-011.96
Other tuberculosis	012.00-018.96
Chronic obstructive pulmonary disease	491.0-492.8, 494, 496, (466.0 with secondary diagnosis of 491.0-492.8, 494, 496)
Bacterial pneumonia	481, 482.2, 482.3, 482.9, 483, 485, 486 (except when there is a secondary diagnosis of 282.6 or patient is less than two months old)
Asthma	493.00-493.91
Congestive heart failure	428.0-428.9, 402.01, 402.11, 402.91, 518.4 (except with a procedure of 36.01-36.02, 36.05, 36.1, 37.5, 37.7)
Hypertension	401.0, 401.9, 402.00, 402.1, 402.90 (except with a procedure 36.01-36.02, 36.05, 36.1, 37.5, 37.7)
Angina	411.1, 411.8, 413.0-413.9 (except with any procedure 01.01-86.99)
Cellulitis	681.00-683, 686.0-686.9 (except with any procedure 01.01-86.99 unless only listed procedure is 86.0)
Skin grafts with cellulitis	DRG 263 and 264 (except if admitted from an SNF)
Diabetes A	250.10-250.31
Diabetes B	250.80-250.91
Diabetes C	250.00-250.01
Hypoglycemia	251.2
Gastroenteritis	558.9
Kidney/urinary infection	590.0-590.9, 599.0, 599.9
Dehydration–volume depletion	276.5
Iron deficiency anemia	280.1, 280.8, 280.9 (age 0-5 only; either principal or secondary diagnosis)
Nutritional deficiencies	260-262, 268.0, 268.1 (either principal or secondary diagnosis)
Failure to thrive	783.4 (age <1)
Pelvic inflammatory disease	614.0-614.9 (except with a procedure 68.3-68.8)
Dental conditions	521.0-523.9, 525.0-525.9, 528.0-528.9
Cancer of the cervix	180.0-180.9