



# Annual Wisconsin Death Report

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November 2015 Release

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

## Foreword

The Department of Health Services provides annual reports on vital statistics as a service to the people of Wisconsin and others interested in the state. *Annual Wisconsin Death Report, 2014*, is one of those reports, containing key findings and descriptive statistics collected by the State Vital Records Office. This report will be published annually beginning with the 2014 data year, and replaces the earlier *Wisconsin Deaths* report series. Technical Notes are published as a separate document.

Additional health-related statistical information for Wisconsin is available through the Internet on the Department of Health Services site at <https://www.dhs.wisconsin.gov/stats/index.htm>. Wisconsin Interactive Statistics on Health (WISH), an online data query system located at <https://www.dhs.wisconsin.gov/wish/index.htm>, includes death data for multiple years and geographic areas in Wisconsin.

This publication was prepared by the Office of Health Informatics, Division of Public Health, in the Wisconsin Department of Health Services. The findings in this report were compiled by Karl Pearson, Joyce Knapton, and Ousmane Diallo in the Office of Health Informatics. Audrey Bruegman from the Vital Records section assisted with the graphic design. Patricia Nametz of the Bureau of Operations edited the report. Draft review was provided by staff in the Bureau of Community Health Promotion, Division of Public Health. The report was prepared under the supervision of Oskar Anderson, Director of the Office of Health Informatics; Lisa Walker, State Registrar of Vital Records; and Milda Aksamitauskas, Section Chief, Health Analytics Section.

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## Introduction

*The Annual Wisconsin Death Report, 2014* presents information about Wisconsin residents' deaths in 2014. Information from previous years is also presented to show changes over time. This report includes information on the number and rate of deaths; demographic characteristics of the decedents, such as age and race/ethnicity; characteristics of deaths by geographic location; and disposition of bodies.

Mortality data presented in this report is based primarily on the underlying cause of death, which the World Health Organization defines as "the disease or injury that initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury."<sup>1</sup> Rates in the report are age-adjusted.

Beginning September 1, 2013, Wisconsin began using a new web-based data entry system to collect death data from funeral directors, medical examiners, coroners, and certifying physicians. The new system adopted the 2003 U.S. Standard Certificate of Death. Accordingly, many changes have been made to the data collection process. Some information is no longer collected, new information has been added, and some information is still collected but uses a different definition. Comparisons between 2014 data and data from years before 2013 should be made only with great caution.

Data used in the report are the resident death certificate data. All data refer to Wisconsin residents unless otherwise noted. Also, all the information is presented according to place of residence. This means that events have been assigned to the area where the person lived (usually legal residence) regardless of where the events occurred.

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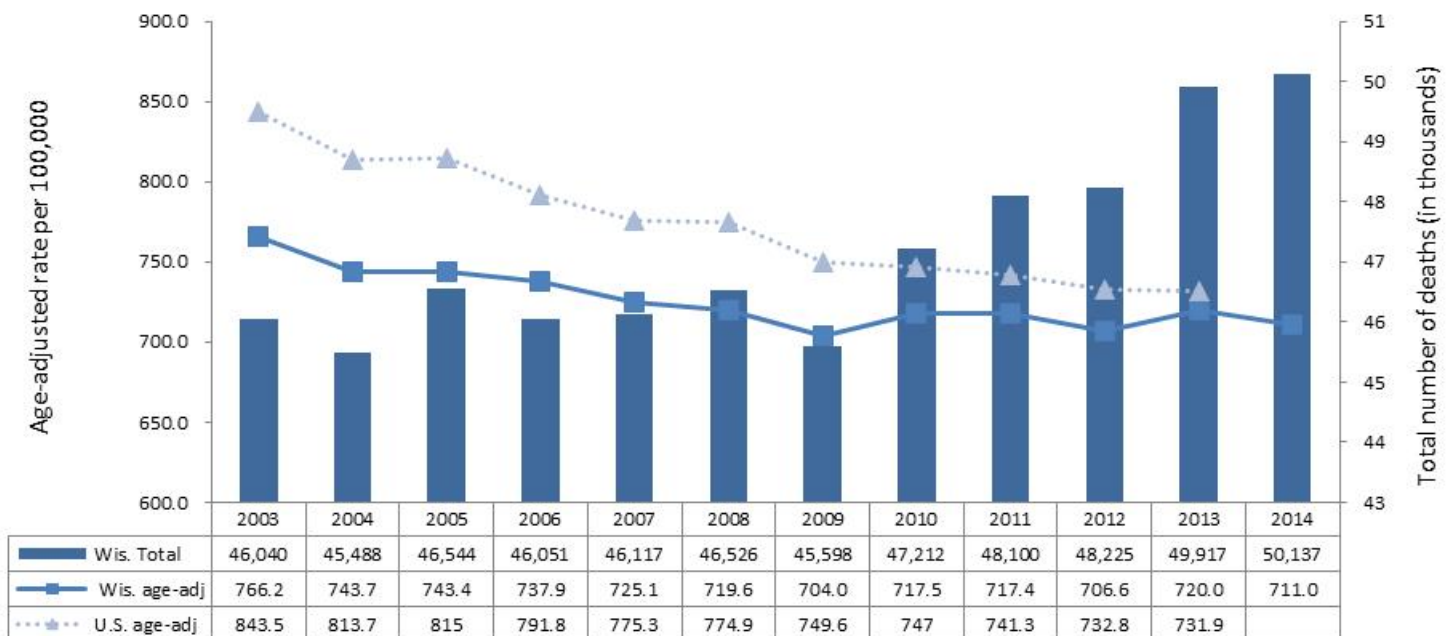
<sup>1</sup> <http://www.who.int/topics/mortality/en/>

# Key Findings

**There were 50,137 deaths of Wisconsin residents in 2014. The age-adjusted death rate (711.0 per 100,000) decreased slightly.**

- In 2014, there were 50,137 deaths of Wisconsin residents, 220 more than in 2013. The annual number of deaths increased 10 percent from 2009 to 2014.
- In 2014, the Wisconsin crude death rate (deaths per 1,000 population) was 8.7, unchanged from 2013. The age-adjusted death rate was 711.0 per 100,000 U.S. standard population. From 2003 to 2009, age-adjusted mortality rates decreased annually in Wisconsin. During that time, Wisconsin had a lower age-adjusted mortality rate than the national rate. However, the Wisconsin mortality rate began to increase in 2009 while the national rate was decreasing. As a result, the age-adjusted Wisconsin death rate for 2013, the most recent comparable rate, was about the same as the national rate (Figure 1).

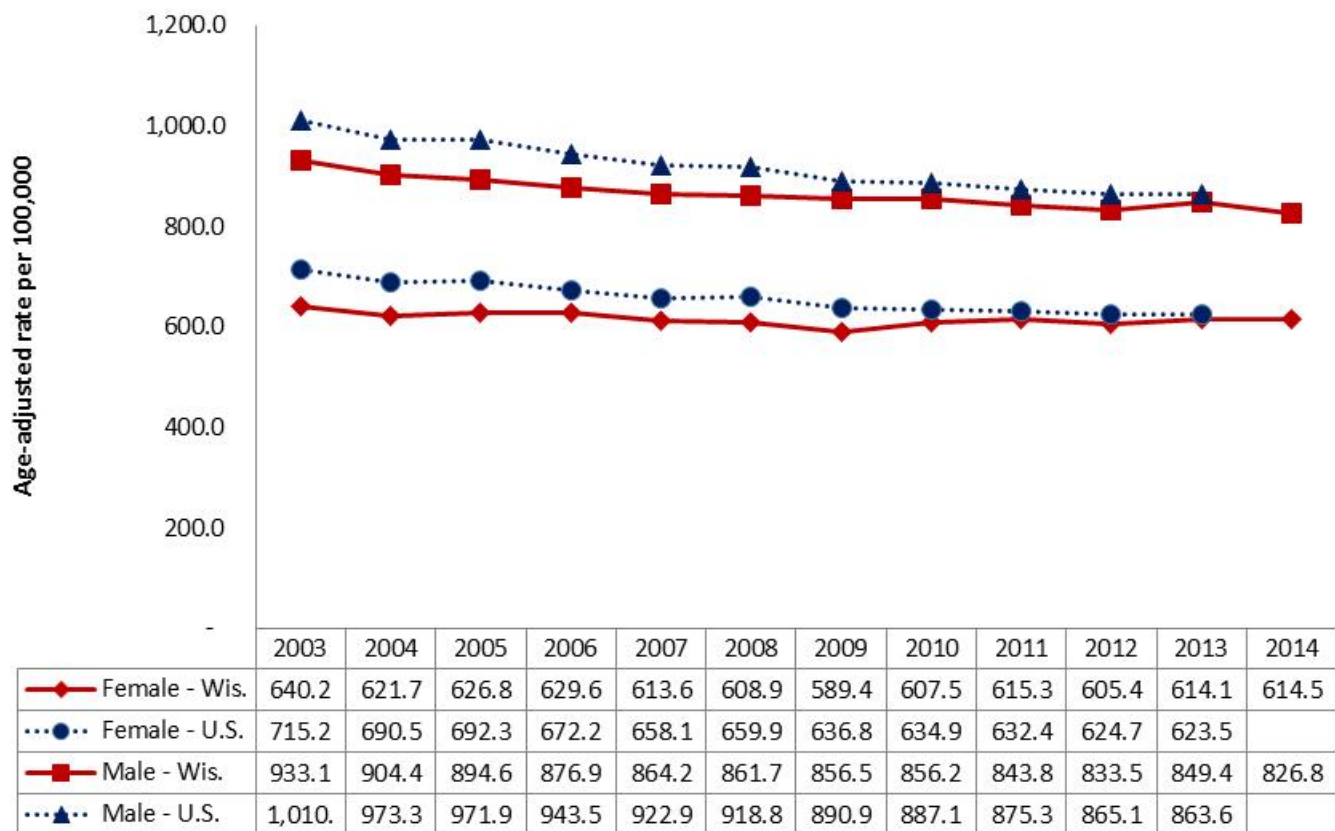
Figure 1. Total number of Wisconsin deaths and age-adjusted death rates for Wisconsin and the United States, 2003-2014. Office of Health Informatics, Division of Public Health, Department of Health Services.





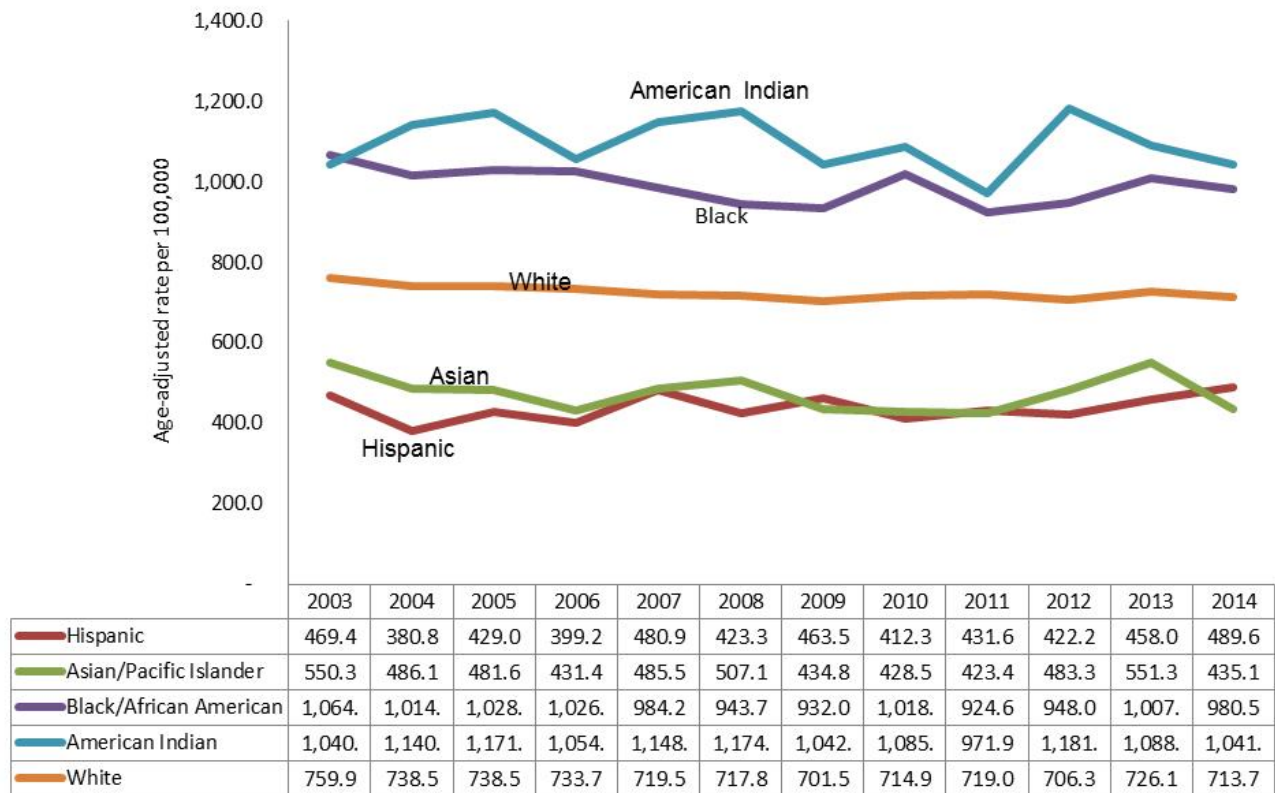
- Age-adjusted mortality rates by sex in Wisconsin are similar to national rates. Males have higher mortality rates than females. In Wisconsin, the risk of dying, when adjusted for age, was 38 percent higher in 2014 among males than females. A similar difference by sex was seen at the national level (Figure 2).

Figure 2. Age-adjusted mortality rates by sex, 2003-2014, Wisconsin and the United States.  
Office of Health Informatics, Division of Public Health, Department of Health Services.



- Age-adjusted mortality rates were higher among Non-Hispanic American Indian/Alaska Native and Non-Hispanic Black/African American population, compared to White. Asian and Hispanic groups had lower age-adjusted mortality rates than White (Figure 3).

Figure 3. Age-adjusted mortality rates by race/ethnicity, 2003-2014, Wisconsin.  
Office of Health Informatics, Division of Public Health, Department of Health Services.



- The southeastern region had a higher age-adjusted mortality rate than other regions in the state (Table 1).

Table 1. Total number of deaths and age-adjusted rates per 100,000 by DHS Region, 2014, Wisconsin.  
Office of Health Informatics, Division of Public Health, Department of Health Services.

| DHS Region   | Total Number of Deaths | Percent of Deaths | Age-adjusted rate per 100,000 population |
|--------------|------------------------|-------------------|--|
| Northeastern | 11,063                 | 22.1%             | 693.6                                    |
| Northern     | 4,912                  | 9.8%              | 692.9                                    |
| Southeastern | 18,075                 | 36.1%             | 736.6                                    |
| Southern     | 9,207                  | 18.4%             | 698.9                                    |
| Western      | 6,852                  | 13.7%             | 703.4                                    |

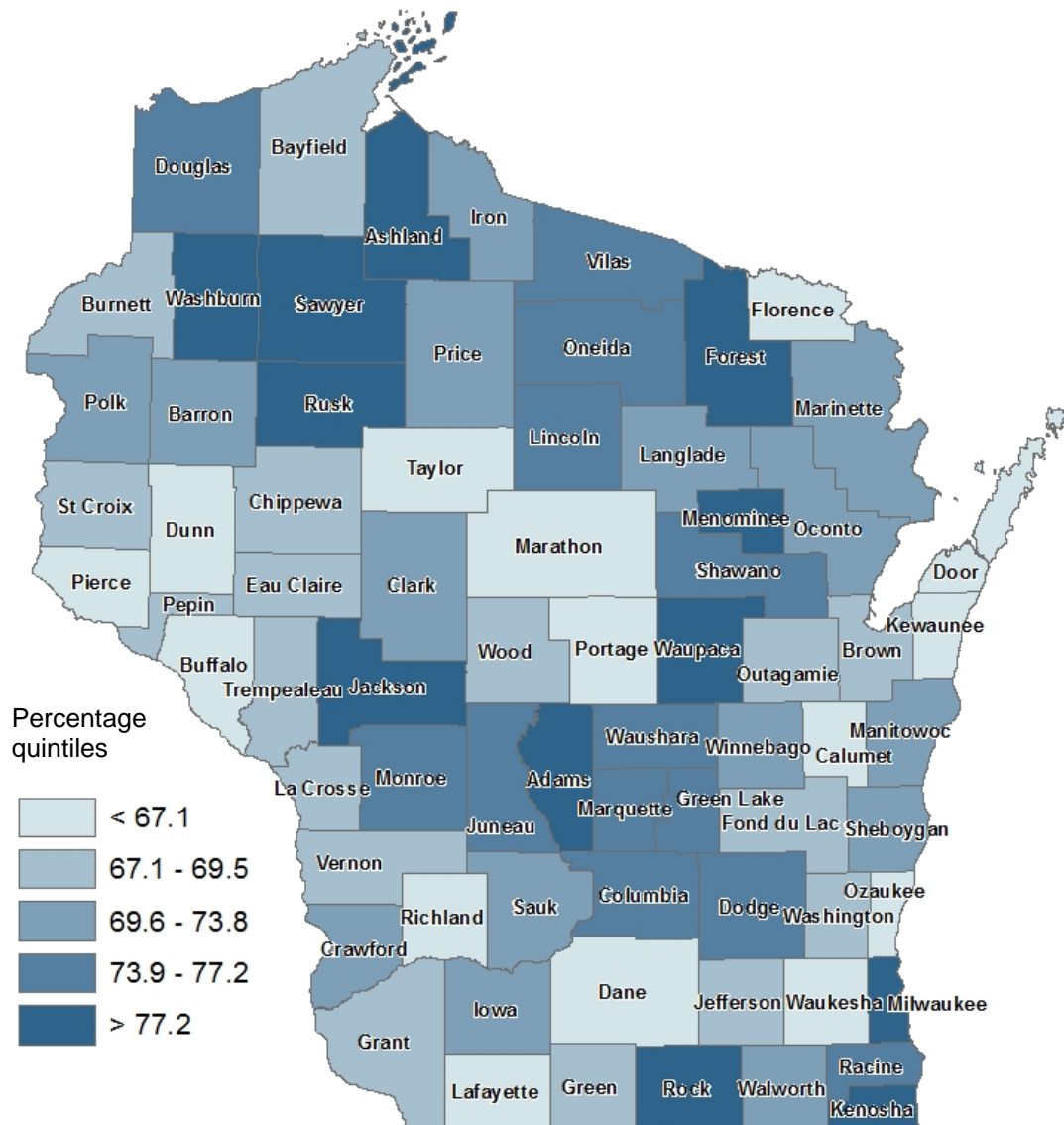
- Table 2 shows the total number of deaths, crude death rates, and age-adjusted death rates by age, sex, and race/ethnicity. The table demonstrates the effect of age on mortality. People aged 65 and older had a higher mortality rate than working-age adults and younger people. Males tended to die at younger ages than females. American Indians and Blacks tended to die at younger ages than Whites.

*Table 2. Total number of deaths and age-adjusted rates per 100,000 by demographic characteristics, 2014, Wisconsin. Office of Health Informatics, Division of Public Health, Department of Health Services.*

| Demographics            | Total Number of Deaths | Percent of Deaths | Crude Death Rate | Age-adjusted Death Rate |
|-------------------------|------------------------|-------------------|------------------|-------------------------|
| <b>Age</b>              |                        |                   |                  |                         |
| Less than 5             | 437                    | 0.9%              | 142.5            | n/a                     |
| 5 to 17                 | 157                    | 0.3%              | 20.6             | n/a                     |
| 18 to 25                | 487                    | 1.0%              | 77.2             | n/a                     |
| 26 to 64                | 10,358                 | 20.7%             | 327.9            | n/a                     |
| 65 and older            | 38,698                 | 77.2%             | 4,711.3          | n/a                     |
| <b>Total</b>            | <b>50,137</b>          | <b>100.0%</b>     | <b>n/a</b>       | <b>n/a</b>              |
| <b>Sex</b>              |                        |                   |                  |                         |
| Female                  | 25,437                 | 51.0%             | 879.2            | 614.4                   |
| Male                    | 24,700                 | 49.0%             | 865.2            | 826.7                   |
| <b>Total</b>            | <b>50,137</b>          | <b>100%</b>       | <b>n/a</b>       | <b>n/a</b>              |
| <b>Race/Ethnicity</b>   |                        |                   |                  |                         |
| White                   | 45,929                 | 91.6%             | 916.2            | 696.6                   |
| Black/African American  | 2,377                  | 4.7%              | 586.3            | 960.3                   |
| American Indian         | 400                    | 0.8%              | 653.6            | 1,028.5                 |
| Asian                   | 304                    | 0.6%              | 199.2            | 416.9                   |
| Hispanic                | 711                    | 1.4%              | 161.3            | 467.3                   |
| Other, Unknown, Missing | 416                    | 0.8%              |                  | n/a                     |
| <b>Total</b>            | <b>50,137</b>          | <b>100.0%</b>     | <b>n/a</b>       | <b>n/a</b>              |

- When age-adjusted county mortality rates are categorized in quintiles, several counties stand out as having higher mortality, particularly in the Southern and Northern DHS regions (Map 1). Some counties have population of less than 10,000; therefore this map shows age-adjusted rates per 10,000 population.

Map 1. Age-adjusted mortality rates by county per 10,000 population, 2014, Wisconsin.  
Office of Health Informatics, Division of Public Health, Department of Health Services.



## Cancer and heart disease were the top two causes of death in 2014, accounting for 45 percent of all deaths.

- Table 3 shows the 10 leading causes of death in Wisconsin by age groups in 2014. Overall, cancer and heart disease were the leading causes of death, each accounting for more than 11,000 deaths (and 22 percent of the total). Unintentional injuries were the third leading cause (6 percent), followed by chronic lower respiratory diseases (5 percent) and stroke (5 percent).
- Leading causes of death vary by age group. Disorders related to short gestation and low birthweight were the leading cause of death for infants. Unintentional injuries were the leading cause among people aged 1-44, while cancer was the leading cause for those aged 45-64. Heart disease was the leading cause of death for people aged 65 and older.
- In Wisconsin, 380 infants under the age of one year died in 2014. The 2014 infant mortality rate was 5.7 infant deaths per 1,000 live births, compared to 6.2 in 2013 and 6.0 in 2004. *The Annual Wisconsin Birth and Infant Mortality Report, 2014* has more information about infant deaths.
- Cancer is the leading non-injury related cause of death for children and adolescents ages 1 to 24. Unintentional injuries, suicides, and homicides were the overall leading causes of death for young people ages 15 to 24.
- Unintentional injuries, cancer, and heart disease were the top three leading causes of death for adults aged 25-54.



Table 3. 10 leading causes of death by age groups, 2014, Wisconsin.

Leading causes of death are highlighted in different colors to demonstrate changes over age groups in population.

Office of Health Informatics, Division of Public Health, Department of Health Services.

| Leading Causes of Death by age | Infants under 1                        | 1 to 4                     | 5 to 14                       | 15 to 24                      | 25 to 34                      | 35 to 44                     | 45 to 54                       | 55 to 64                        | 65 and older                      | All ages                          |
|--------------------------------|--|----------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|--------------------------------|---------------------------------|-----------------------------------|-----------------------------------|
| <b>1st</b>                     | Short Gestation/ Low birth weight (92) | Unintentional Injuries (9) | Unintentional Injuries (23)   | Unintentional Injuries (209)  | Unintentional Injuries (301)  | Unintentional Injuries (256) | Malignant Neoplasms (767)      | Malignant Neoplasms (2,091)     | Heart Disease (9,215)             | Malignant Neoplasms (11,278)      |
| <b>2nd</b>                     | Congenital Malformations (87)          | Malignant Neoplasms (7)    | Malignant Neoplasms (12)      | Suicide (116)                 | Suicide (111)                 | Malignant Neoplasms (165)    | Heart Disease (491)            | Heart Disease (1161)            | Malignant Neoplasms (8,160)       | Heart Disease (11,066)            |
| <b>3rd</b>                     | Unintentional Injuries (23)            | Pneumonia/ Influenza (7)   | Suicide (10)                  | Homicide (47)                 | Malignant Neoplasms (51)      | Heart Disease (143)          | Unintentional Injuries (317)   | Unintentional Injuries (346)    | Chronic Lower Respiratory (2,390) | Unintentional Injuries (2,891)    |
| <b>4th</b>                     | SIDS (21)                              | Homicide (7)               | Chronic Lower Respiratory (5) | Malignant Neoplasms (24)      | Homicide (46)                 | Suicide (125)                | Liver Disease (159)            | Chronic Lower Respiratory (263) | Stroke (2,168)                    | Chronic Lower Respiratory (2,742) |
| <b>5th</b>                     | Placenta/ Cord/ Membrane (17)          | Congenital (*)             | Homicide (*)                  | Heart Disease (14)            | Heart Disease (36)            | Chronic Liver Disease (43)   | Suicide (159)                  | Chronic Liver Disease (262)     | Alzheimer's (1,857)               | Stroke (2,468)                    |
| <b>6th</b>                     | Maternal Pregnancy Complication (14)   | Septicemia (*)             | Heart Disease (*)             | Congenital (6)                | Chronic Liver Disease (11)    | Diabetes (37)                | Stroke (95)                    | Diabetes (197)                  | Unintentional Injuries (1,407)    | Alzheimer's (1,864)               |
| <b>7th</b>                     | Neonatal Hemorrhage (10)               | In Situ Neoplasm (*)       | Congenital (*)                | Chronic Lower Respiratory (5) | Stroke (10)                   | Stroke (23)                  | Diabetes (81)                  | Stroke (165)                    | Diabetes (1,009)                  | Diabetes (1,331)                  |
| <b>8th</b>                     | Respiratory Distress (*)               | Heart Disease (*)          | Cerebro-Vascular (*)          | HIV (*)                       | In Situ Neoplasm (9)          | Pneumonia/ Influenza (20)    | Chronic Lower Respiratory (64) | Suicide (120)                   | Nephritis (864)                   | Pneumonia/ Influenza (981)        |
| <b>9th</b>                     | Bacterial Sepsis (*)                   | Pneumonitis/ Asp. (*)      | Septicemia (*)                | Pneumonia/ Influenza (*)      | Chronic Lower Respiratory (7) | Homicide (16)                | Pneumonia/ Influenza (43)      | Septicemia (67)                 | Pneumonia/ Influenza (834)        | Nephritis (964)                   |
| <b>10th</b>                    | Necrotizing Enterocolitis (*)          | --                         | Diabetes (*)                  | Pregnancy Related (*)         | Septicemia (6)                | HIV (10)                     | Nephritis (22)                 | Pneumonia/ Influenza (66)       | Parkinson's (600)                 | Suicide (755)                     |

\*Not shown ( less than 5 deaths)



## Cremations continue to outnumber burials. Autopsies were performed for 7.6 percent of deaths.

- For the 50,137 Wisconsin resident deaths that occurred in 2014, nearly 55 percent of body dispositions were cremations and 40 percent were burials.
- Autopsies were performed for 33.4 percent of infants, 55.4 percent of people ages 1 to 44, 18.3 percent for ages 45 to 64, and 1.9 percent for 65 and older (Table 4).

*Table 4. Autopsies performed by age of decedent, Wisconsin, 2014.*

*Office of Health Informatics, Division of Public Health, Department of Health Services.*

| Age Group       | Total Deaths for the Age Group | Was Autopsy Done? | Number of Deaths | Percent of Autopsy |
|-----------------|--------------------------------|-------------------|------------------|--------------------|
| Under 1         | 380                            | No                | 253              | 66.6               |
|                 |                                | Unknown           | -                | 0                  |
|                 |                                | Yes               | 127              | 33.4               |
| 1 to 44         | 2,434                          | No                | 1,078            | 44.3               |
|                 |                                | Unknown           | 8                | 0.3                |
|                 |                                | Yes               | 1,348            | 55.4               |
| 45 to 64        | 8,625                          | No                | 7,042            | 81.6               |
|                 |                                | Unknown           | 8                | 0.1                |
|                 |                                | Yes               | 1,575            | 18.3               |
| 65 older        | 38,698                         | No                | 37,931           | 98.0               |
|                 |                                | Unknown           | 26               | 0.1                |
|                 |                                | Yes               | 741              | 1.9                |
| <b>All ages</b> | <b>50,137</b>                  | <b>Yes</b>        | <b>3,791</b>     | <b>7.6</b>         |

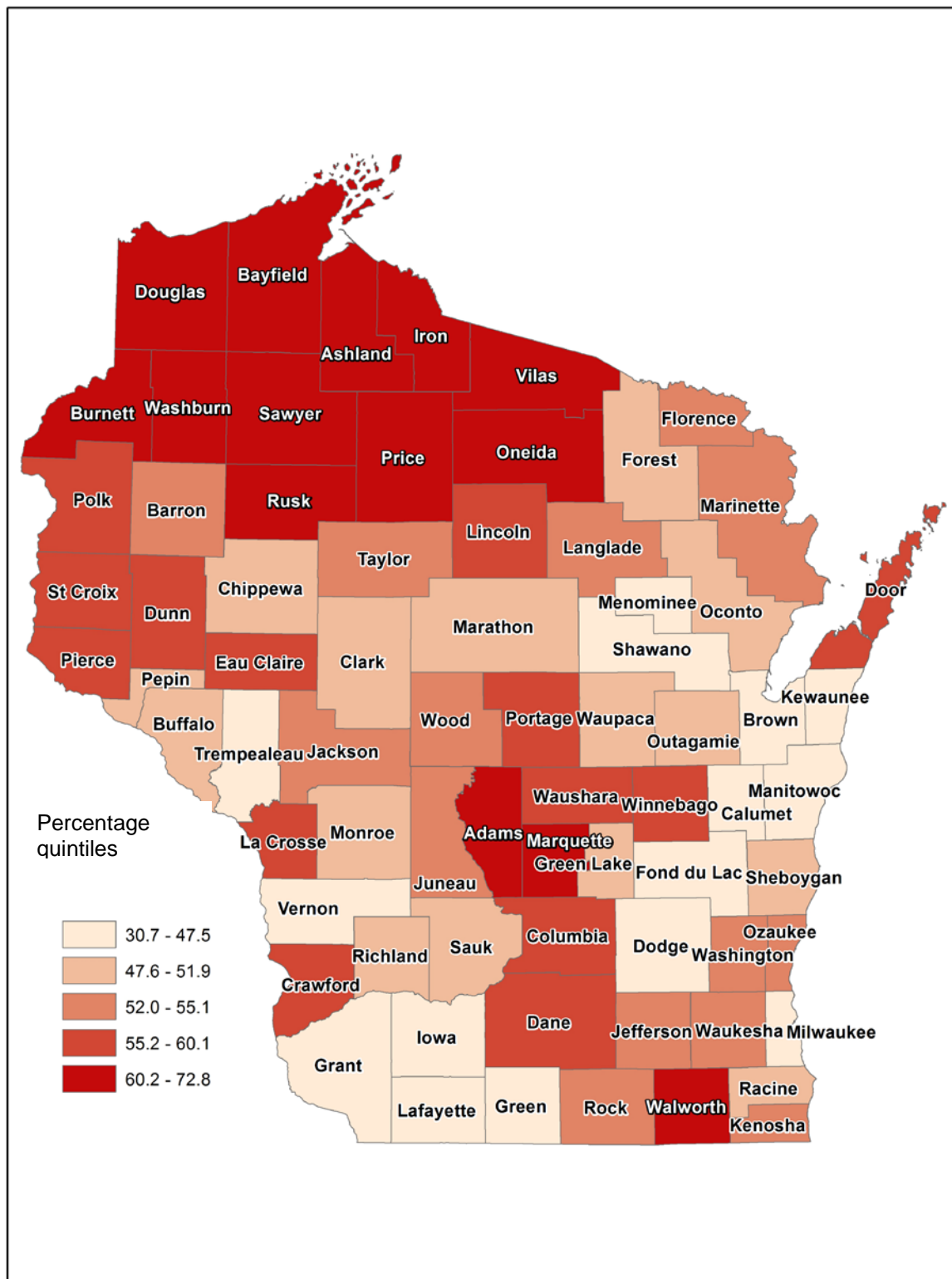
- Table 5 shows the total number and percent of body disposition by decedent demographics, education, marital status, and region of residence. The proportion cremated was highest among decedents aged 18 to 64. About 59 percent of male decedents were cremated, compared to 50 percent of female decedents. White decedents were most likely to be cremated, compared to decedents of other races/ethnicities. Non-Hispanic Black decedents had the lowest proportion cremated.
- Decedents with an education level higher than high school were more likely to be cremated compared to decedents with less than a high school education. No major differences in body disposition were found by region of residence. However, northern counties had a somewhat higher proportion of cremations (Map 2).
- Almost 300 bodies were donated for organs, eyes, or other tissues in 2014. Most donations occurred in the Southeastern region of the state (Table 4) proportionally to population density in the state. Approximately 2,800 body dispositions were entombments (above ground burials). There are some new technologies in the field of human disposition, which are included in the “other” category. Some of these include plasticization and alkaline hydrolysis (liquefaction).

Table 5. Deaths by disposition of body and decedent characteristics, 2014. Wisconsin. Office of Health Informatics, Division of Public Health, Department of Health Services.

| Characteristic        | Burial |         | Cremation |         | Donation |         | Entombment |         | Other  |         | Total<br>number |
|-----------------------|--------|---------|-----------|---------|----------|---------|------------|---------|--------|---------|-----------------|
|                       | number | percent | number    | percent | number   | percent | number     | percent | number | percent |                 |
| Age                   |        |         |           |         |          |         |            |         |        |         |                 |
| Less than 5           | 207    | 47.4    | 223       | 51      | 0        | 0       | *          | 0.5     | 5      | 1.1     | 437             |
| 5 to 17               | 86     | 54.8    | 71        | 45.2    | 0        | 0       | 0          | -       | 0      | -       | 157             |
| 18 to 25              | 164    | 33.7    | 314       | 64.5    | *        | -       | *          | -       | 5      | -       | 487             |
| 25 to 64              | 2,768  | 26.7    | 7,361     | 71.1    | 41       | 0.4     | 160        | 1.5     | 28     | 0.3     | 10,358          |
| 65 and older          | 16,730 | 43.2    | 18,995    | 49.1    | 242      | 0.6     | 2,668      | 6.9     | 63     | 0.2     | 38,698          |
| Sex                   |        |         |           |         |          |         |            |         |        |         |                 |
| Female                | 11,126 | 43.7    | 12,515    | 49.2    | 138      | 0.5     | 1,615      | 6.4     | 43     | 0.2     | 25,437          |
| Males                 | 8,829  | 35.7    | 14,449    | 58.5    | 146      | 0.6     | 1,218      | 4.9     | 58     | 0.2     | 24,700          |
| Race/Ethnicity        |        |         |           |         |          |         |            |         |        |         |                 |
| White                 | 17,574 | 38.3    | 25,314    | 55.1    | 2,693    | 5.9     | 276        | 0.6     | 72     | 0.2     | 45,929          |
| Black                 | 1,507  | 63.4    | 762       | 32.1    | 102      | 4.3     | 8          | 0.1     | *      | 0.2     | 2,377           |
| American Indian       | 208    | 52      | 187       | 46.8    | *        | -       | *          | 0.3     | 0      | 0       | 400             |
| Asian                 | 182    | 59.9    | 114       | 37.5    | 7        | 2.3     | 0          | 0       | *      | 0.3     | 304             |
| Hispanic              | 349    | 49.1    | 335       | 47.1    | 21       | 3       | *          | 0.4     | *      | 0.4     | 711             |
| Education             |        |         |           |         |          |         |            |         |        |         |                 |
| High school or less   | 14,670 | 42.7    | 17,344    | 50.5    | 141      | 0.4     | 2110       | 6.2     | 64     |         | 34,329          |
| College/undergraduate | 4354   | 33.4    | 7,942     | 60.8    | 113      | 0.9     | 619        | 4.7     | 27     | 0.2     | 13,055          |
| Graduate school       | 716    | 31.6    | 1,422     | 62.8    | 28       | 1.2     | 92         | 4.1     | 8      | 0.4     | 2,266           |
| Unknown               | 215    | 44.2    | 256       | 52.6    | *        | 0.4     | 12         | 2.5     | *      | 0.4     | 487             |
| Marital status        |        |         |           |         |          |         |            |         |        |         |                 |
| Single                | 2,482  | 39.7    | 3,609     | 57.7    | 19       | 0.3     | 125        | 2       | 22     | 0.4     | 6,257           |
| Married               | 6,617  | 35.7    | 10,732    | 57.9    | 115      | 0.6     | 1,040      | 5.6     | 30     | 0.2     | 18,534          |
| Divorced              | 1,654  | 24.7    | 4,827     | 72.2    | 56       | 0.8     | 136        | 2       | 13     | 0.2     | 6,686           |
| Widowed               | 9,159  | 49.4    | 7,718     | 41.6    | 94       | 0.5     | 1,531      | 8.3     | 34     | 0.2     | 18,536          |
| Unknown               | 43     | 34.7    | 78        | 62.9    | -        | -       | *          | 0.8     | *      | 1.6     | 124             |
| DHS Region            |        |         |           |         |          |         |            |         |        |         |                 |
| Northeastern          | 4,333  | 39.2    | 5,777     | 52.2    | 44       | 0.4     | 894        | 8.1     | 15     | 0.1     | 11,063          |
| Northern              | 1,818  | 37.0    | 2,930     | 59.7    | 13       | 0.3     | 141        | 2.9     | 10     | 0.2     | 4,912           |
| Southeastern          | 7,127  | 39.4    | 9,238     | 51.1    | 142      | 0.8     | 1,535      | 8.5     | 33     | 0.2     | 18,075          |
| Southern              | 3,963  | 43.0    | 5,005     | 54.4    | 50       | 0.5     | 175        | 1.9     | 14     | 0.2     | 9,207           |
| Western               | 2,706  | 39.5    | 3,997     | 58.3    | 35       | 0.5     | 87         | 1.3     | 27     | 0.4     | 6,852           |
| Unknown               |        |         |           |         |          |         |            |         |        |         | 28              |
| Total                 | 19,947 |         | 26,947    |         | 284      |         | 2,832      | 5.6     | 99     |         | 50,137          |

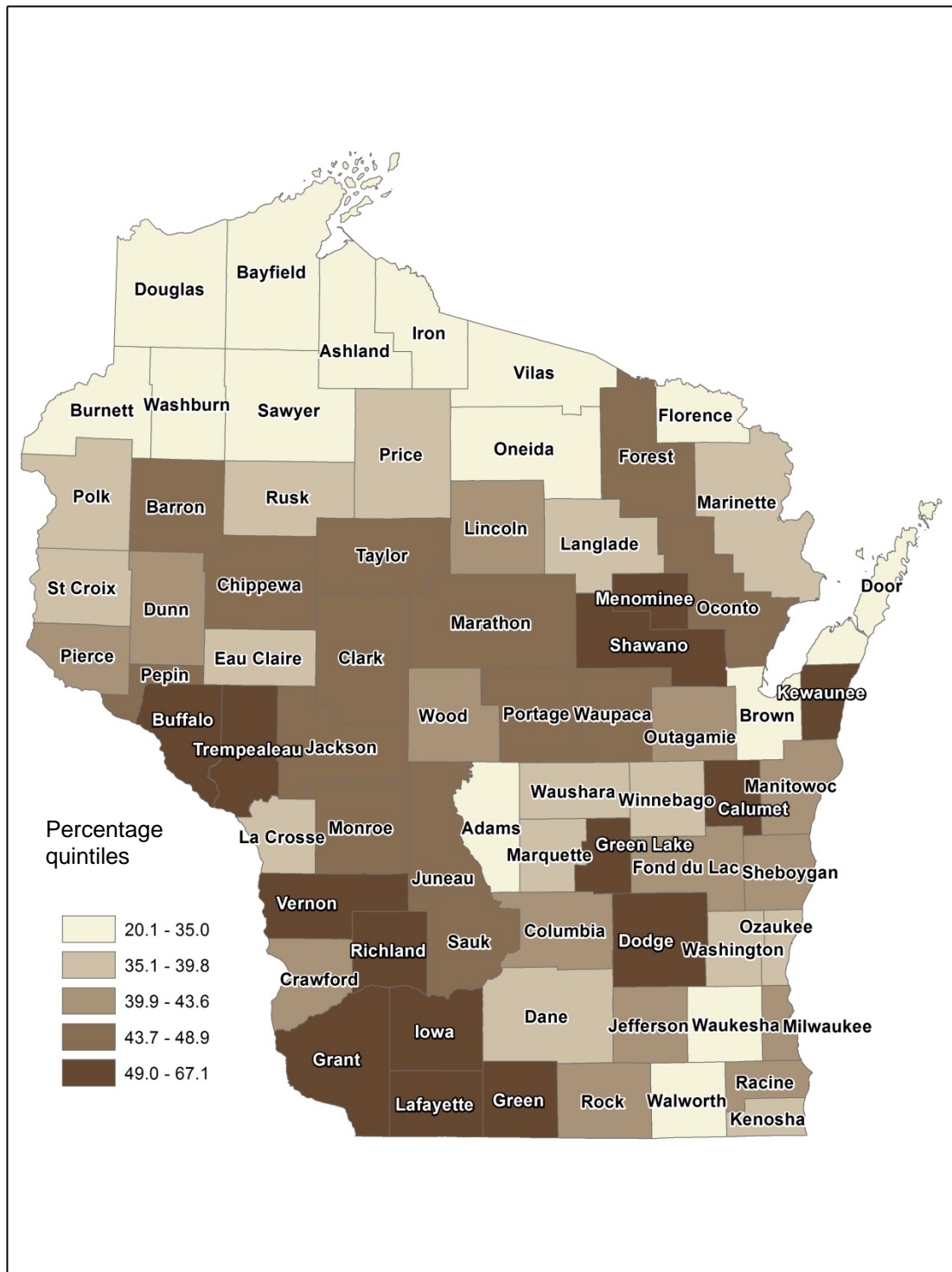
\* Not shown (fewer than 5 deaths)

Map 2. Cremations as a percent of body dispositions by county, 2014, Wisconsin.  
Office of Health Informatics, Division of Public Health, Department of Health Services





Map 3. Burials as a percent of body dispositions by county, 2014, Wisconsin.  
Office of Health Informatics, Division of Public Health, Department of Health Services.



**Suggested citation:**

Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics. ***Annual Wisconsin Death Report, 2014*** (P-01170-15). November 2015.



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