Hepatitis C in Wisconsin

Wisconsin Hepatitis C Virus Surveillance Annual Review, 2019

Trends, Newly Reported Cases, Prevalence, and Care Cascades

Wisconsin Department of Health Services
Division of Public Health | Hepatitis C Program
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SUMMARY

Hepatitis C virus infection is the most common blood-borne infection in the U.S., impacting an estimated 1% of the population or 2.4 million people.[1] In the U.S. and Wisconsin, there are two populations most commonly affected by hepatitis C:

- Younger adults who were most likely recently infected through injection drug use.
- Older adults, including baby boomers born during 1945–1965, who were most likely infected many years ago but are only now being diagnosed with hepatitis C.

This report summarizes data reported to the Wisconsin Department of Health Services, Division of Public Health, regarding people with positive hepatitis C test results.

TRENDS

Over the past 10 years, new hepatitis C infections have increased dramatically.

- Most new infections were reported among white people, but rates of new hepatitis C infections are highest and have increased substantially among American Indian people.
- The number of women of childbearing age with hepatitis C has increased. This is especially concerning considering mothers can pass hepatitis C to their infants around the time of birth.

The number of baby boomers diagnosed with hepatitis C increased following the release in 2012 of national recommendations to screen for hepatitis C all people born in this birth cohort. In recent years, however, new diagnoses among baby boomers have decreased.

2019 CASES

In 2019, there were 2,467 hepatitis C cases newly reported: 0 perinatal cases, 119 acute cases, and 2,348 chronic cases.

- Injection drug use was the most commonly reported risk factor among acute cases.
- Although most newly reported cases reside in the urban southeastern part of Wisconsin, the rates of newly reported hepatitis C were highest in many rural counties in northern Wisconsin.

PREVALENCE ESTIMATES

According to surveillance data, 38,831 people (0.67% of Wisconsin residents) have been reported and are assumed to be living with hepatitis C infection in Wisconsin. However, because approximately half of people with hepatitis C do not know their diagnosis, it is estimated that as many as 70,000 Wisconsin residents age 18 and older (1.5% of the population in this age range) have chronic hepatitis C infection.

CARE CASCADES

Among people confirmed with hepatitis C in 2018 or 2019, 20% (850 people) had negative hepatitis C RNA results at their most recent test, suggesting they had cleared the infection either naturally or through treatment. Only 12% of people ages 15–29 had test results indicating infection had cleared, compared to 33% of baby boomers.

DEFINITIONS AND NOTES

Acute hepatitis C case—refers to a case of hepatitis C that included evidence indicating the infection occurred within the past six months. Cases are subclassified as confirmed (hepatitis C RNA detected) or probable. The complete case definition can be found at the National Notifiable Diseases Surveillance System, Hepatitis C, Acute.

Chronic hepatitis C case—refers to a case of hepatitis C that did not include evidence indicating the infection occurred within the past six months. Cases are subclassified as confirmed (hepatitis C RNA detected) or probable (no hepatitis C RNA result reported). The complete case definition can be found at the National Notifiable Diseases Surveillance System, Hepatitis C, Chronic.

Perinatal hepatitis C case—refers to a case of hepatitis C that occurred in a child aged 2 to 36 months and was assumed to have been transmitted from mother to infant. The complete case definition can be found at the National Notifiable Diseases Surveillance System, Hepatitis C, Perinatal Infection.

All hepatitis C cases—refers to all reported cases of hepatitis C, including cases meeting the definition of acute, chronic, and perinatal hepatitis C.

People newly reported with positive hepatitis C test results—refers to people newly reported with a positive hepatitis C antibody result or a positive hepatitis C RNA result or a reported case of confirmed or probable hepatitis C. This definition of hepatitis C occurrence is used for the purpose of monitoring trends because it is not impacted by negative hepatitis C RNA reporting, which began in April 2017.

Baby boomer—refers to a person born during the years 1945 through 1965. Because of the high prevalence of hepatitis C among people in this birth cohort, since 2012, the Centers for Disease Control and Prevention (CDC) recommends all baby boomers be tested for hepatitis C.

Rate or Rate per 100,000 people—refers to the number of people with hepatitis C in a particular group (for example, American Indian people or residents of a particular county) compared to the number of people in that group in Wisconsin. Rates are calculated to compare groups of people of different sizes.

Prevalence—refers to the number of people living with the disease in Wisconsin. Prevalence can also be described as a percentage of the population.

Women of childbearing age—refers to women aged 15–44. Cases among this population are concerning because there is an approximately 6% risk that babies born to women with hepatitis C will become infected around the time of birth.

Addressing health disparities and inequities is a priority for public health. Race or ethnicity alone does not make one more or less likely to acquire hepatitis C. Other factors such as racism, oppression, stigma, poverty, unequal access to health care, limited education, and homelessness affect communities of color disproportionately and can put individuals at greater risk for acquiring hepatitis C.

TRENDS

Trends in New Infections

Today, hepatitis C is most commonly transmitted through the sharing of contaminated equipment used to prepare or inject drugs. Since 2010, as a result of increased injection drug use related to the opioid epidemic, the number of people newly infected with hepatitis C has increased nationwide and in Wisconsin.[2]

Monitoring trends in new hepatitis C infections is challenging for several reasons. Only 1 in 5 people newly infected with hepatitis C develops symptoms of acute hepatitis C infection. As a result, many people newly infected with hepatitis C are not immediately diagnosed or reported to public health. The CDC estimates that for every one case of acute hepatitis C reported to public health, another 14 cases go unreported.[3]

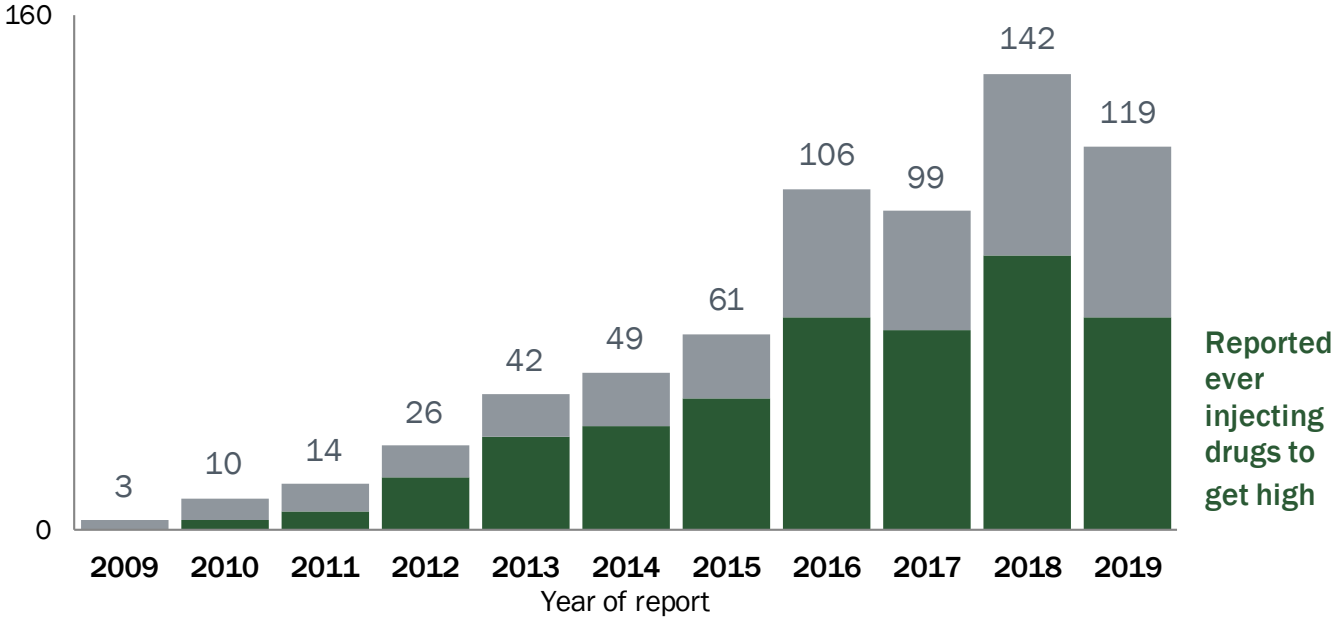
Trends in new hepatitis C infections are monitored using several methods. Trends in reported acute hepatitis C cases are monitored. In addition, because local and national data suggest that the majority of hepatitis C infections among young people in recent years have been associated with injection drug use,[2, 4, 5] trends in newly reported positive test results among younger adults are also monitored.

Overall, hepatitis C surveillance data indicate **the number and rate of new hepatitis C infections have increased substantially in the past 10 years**, and both rural and urban areas of Wisconsin have been affected. **Rates of hepatitis C are highest and have increased the most among American Indian people.**

FIGURE 1

During the past 10 years, the number of acute hepatitis C cases has increased substantially, and most people reported injecting drugs.

Number of reported acute hepatitis C cases, by year of report, Wisconsin, 2009–2019

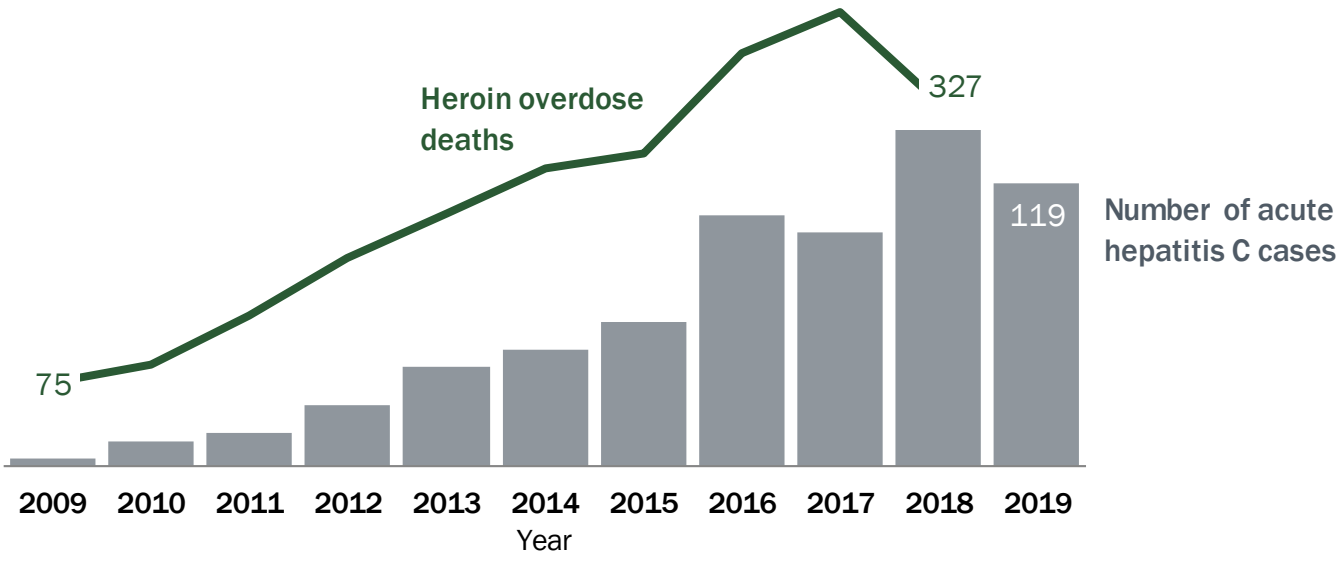


Notes: In 2016, the case definition of acute hepatitis C changed. In 2017, the surveillance system began receiving negative RNA results allowing more acute cases to be detected in subsequent years. In 2018, surveillance procedures changed to identify more acute cases.

FIGURE 2

The increase in the number of acute hepatitis C cases mirrors the increase in heroin overdose deaths in Wisconsin.

Number of reported acute hepatitis C cases and number of heroin overdose deaths, by year, Wisconsin, 2009–2019

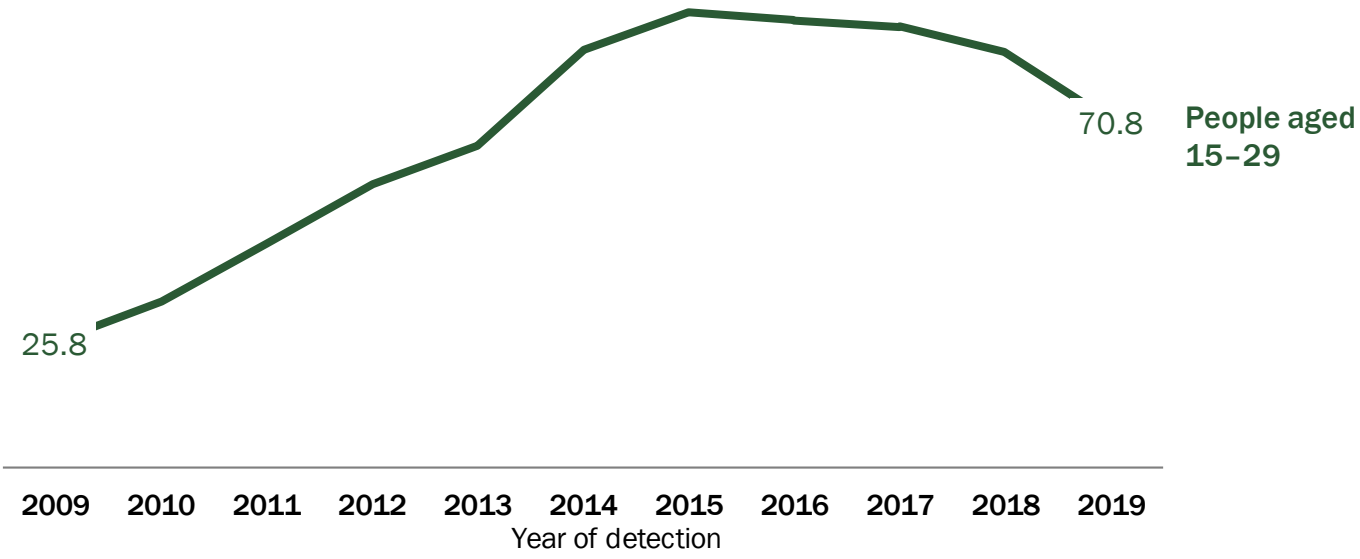


Notes: Heroin overdose deaths data are from the Wisconsin Interactive Statistics on Health opioids data.

FIGURE 3

During the last 10 years, the rate of new positive hepatitis C test results among people aged 15–29 increased substantially and has continued at a high rate.

Rate per 100,000 of people newly reported with positive hepatitis C test results* among people aged 15–29, Wisconsin, 2009–2019



Notes: *The numerator includes people with positive hepatitis C antibody or positive hepatitis C RNA results or a confirmed or probable case of hepatitis C.

FIGURE 4

Compared to 10 years ago, the annual number of cases of hepatitis C among people aged 15–29 nearly doubled and more counties are reporting cases.

Number of acute and chronic hepatitis C cases among people aged 15–29, Wisconsin, 2009 and 2019

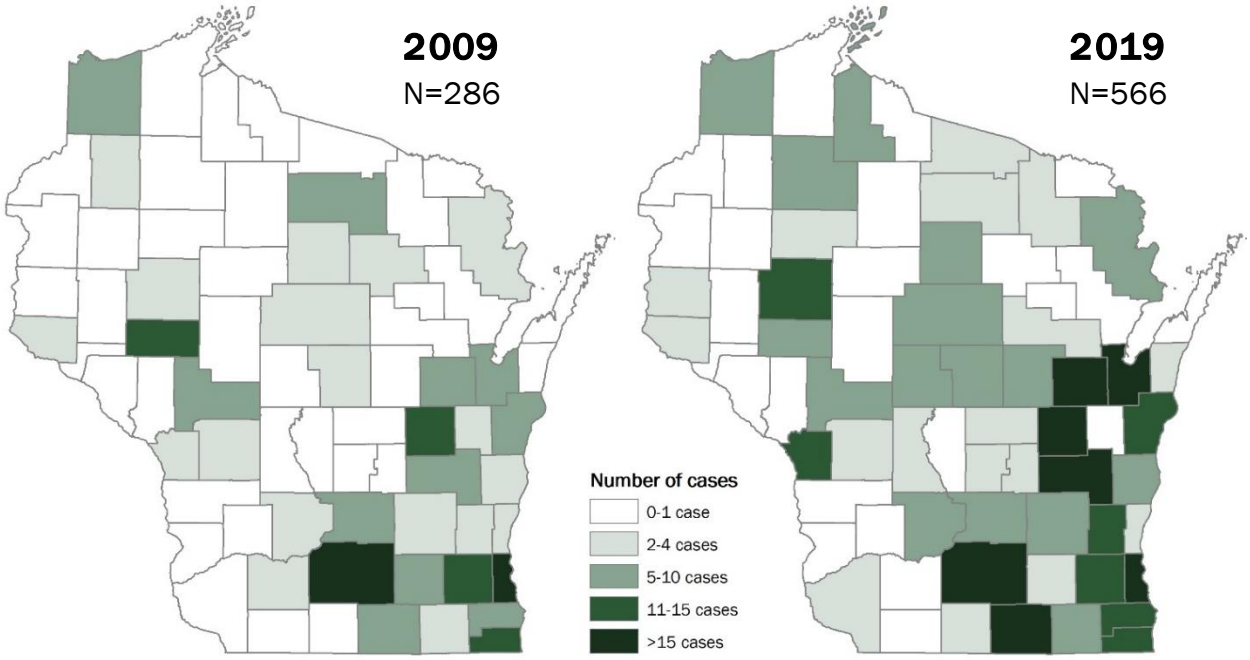
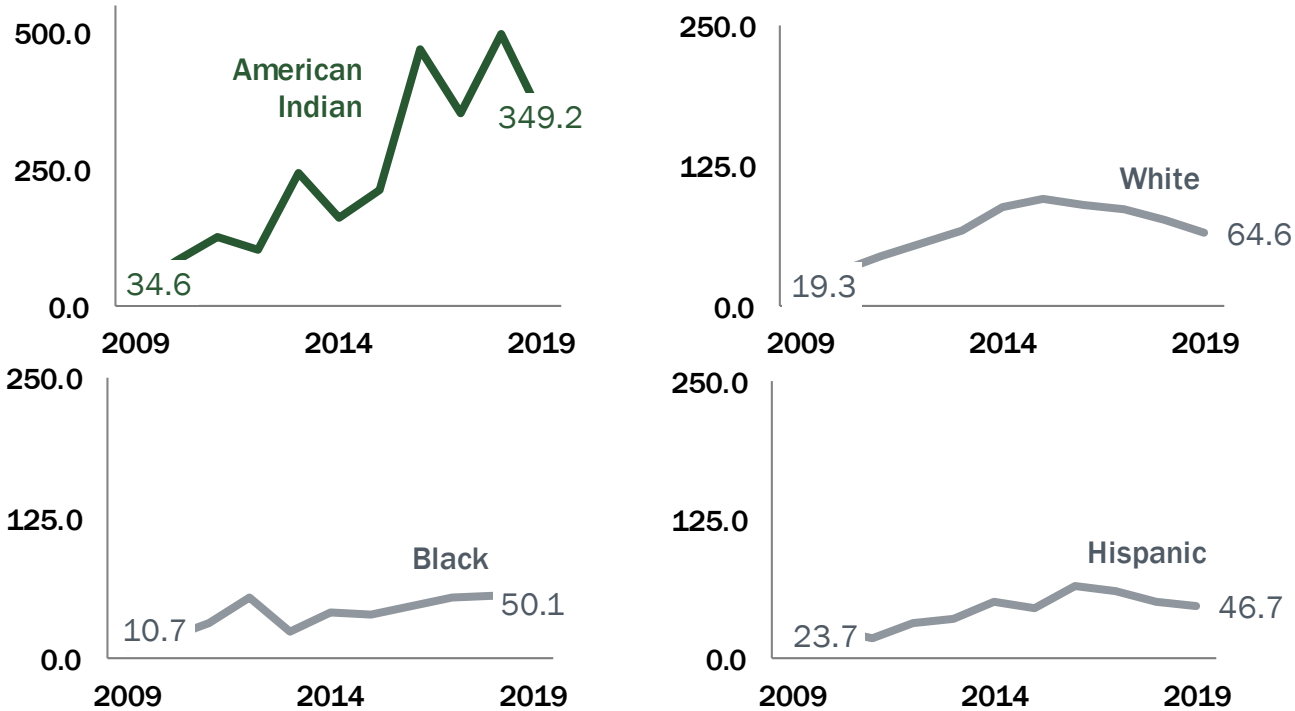


FIGURE 5

During the last 10 years, the annual rate of new positive hepatitis C test results among American Indian people aged 15–29 increased more than 900%.

Rate per 100,000 of people newly reported with positive hepatitis C test results* among people aged 15–29, by race/ethnicity, Wisconsin, 2009–2019



Notes: *The numerator includes people with positive hepatitis C antibody or positive hepatitis C RNA results or a confirmed or probable case of hepatitis C.

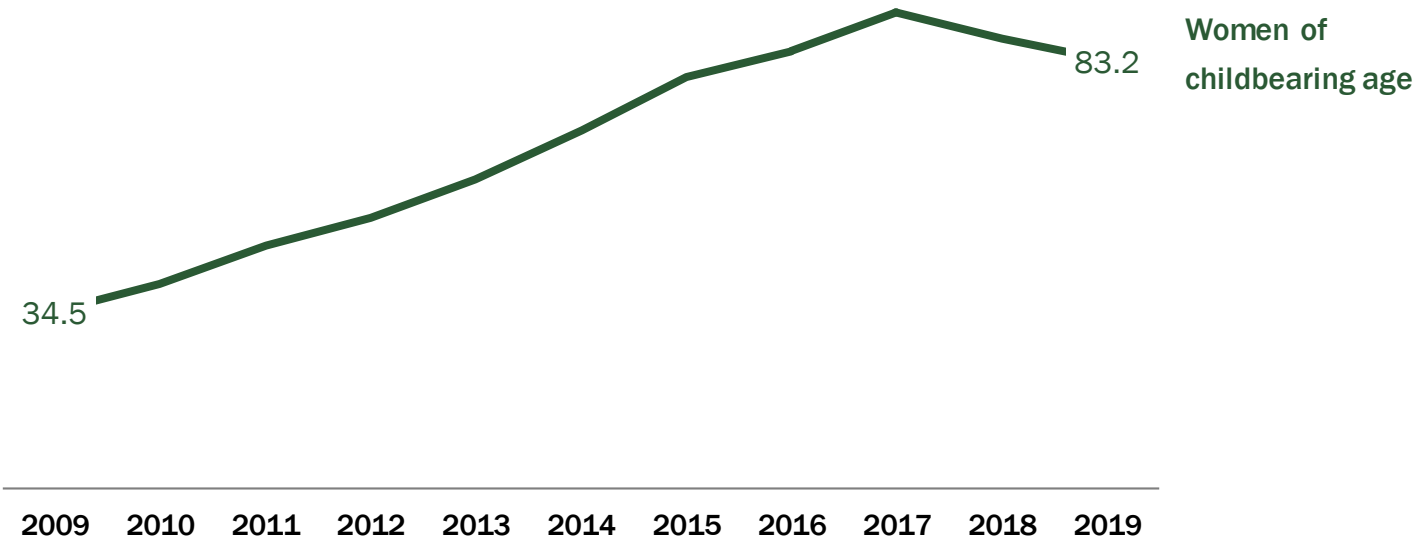
It is important to consider differences in trends in hepatitis C by race and ethnicity to understand which communities are being impacted and where attention is needed to improve health equity. Race or ethnicity alone does not make one more or less likely to acquire hepatitis C. Other factors such as racism, oppression, stigma, poverty, unequal access to health care, limited education, and homelessness affect communities of color disproportionately and can put individuals at greater risk for acquiring hepatitis C.

The increasing trend of new hepatitis C infections among women of childbearing age is concerning because infants born to women with hepatitis C are at risk for perinatal hepatitis C infection. Approximately 6% of infants born to women with hepatitis C will become infected, and the risk is higher among women with a high hepatitis C viral load and women with HIV.

FIGURE 6

Over the last 10 years, the annual rate of new positive hepatitis C test results among women of childbearing age more than doubled.

Rate per 100,000 of people newly reported with positive hepatitis C test results* among women aged 15–44, Wisconsin, 2009–2019



Notes: *The numerator includes people with positive hepatitis C antibody or positive hepatitis C RNA results or a confirmed or probable case of hepatitis C.

Trends in New Diagnoses Among Baby Boomers

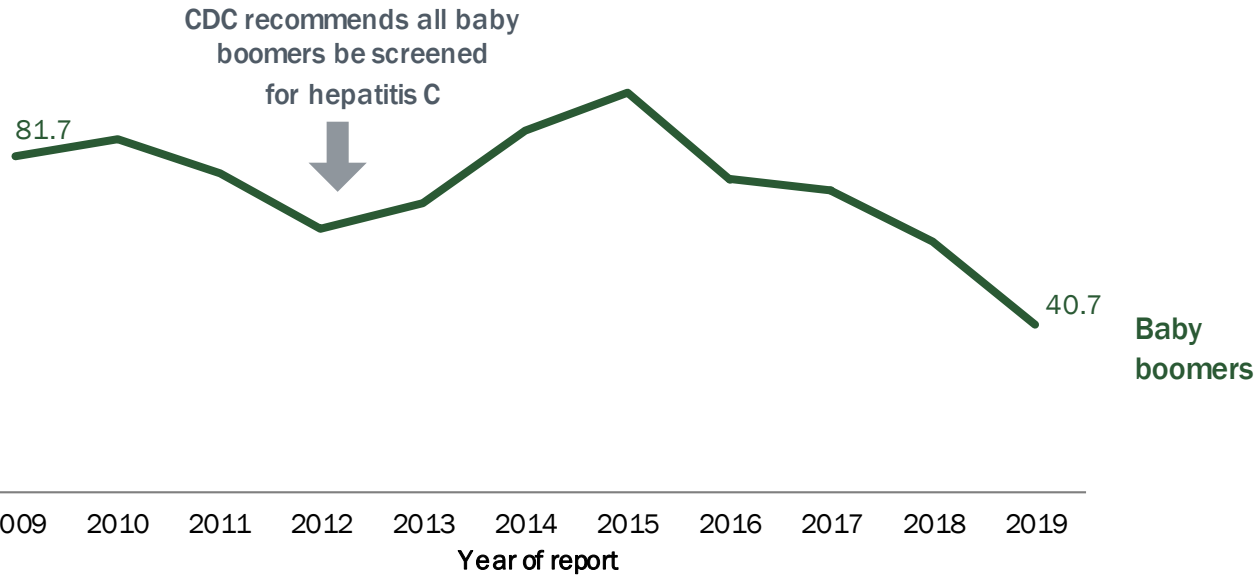
National prevalence data indicate that people born during 1945–1965, so called **"baby boomers," are five times more likely than other adults to have hepatitis C infection.**[6] The reason that baby boomers have high rates of hepatitis C is not completely understood. Most baby boomers are believed to have become infected during the 1960s through the 1980s when transmission of hepatitis C was highest, and before routine screening of the blood supply for hepatitis C started in 1992.

It has been estimated that approximately half of people with hepatitis C do not know they are infected. To identify and treat hepatitis C among baby boomers, since 2012, CDC has recommended all adults born during 1945–1965 receive one-time testing for hepatitis C, regardless of history of risk.[6]

FIGURE 7

New diagnoses among baby boomers increased after CDC recommended one-time screening for all people in this age cohort, but in recent years the rate of new diagnoses has declined.

Rate per 100,000 of confirmed hepatitis C infections among people born during 1945–1965, by year of report, Wisconsin, 2009–2019



Notes: The numerator includes people with a confirmed case of hepatitis C or positive hepatitis C RNA or genotype results.

Reasons for the decline in diagnoses among baby boomers are not understood. Other states have reported decreasing rates of hepatitis C screening among this age cohort and speculate it may be a result of decreasing awareness among providers about the recommendation to screen all baby boomers.[7] Additionally, baby boomers who have not yet been screened might not be engaged in the health care system.[7]

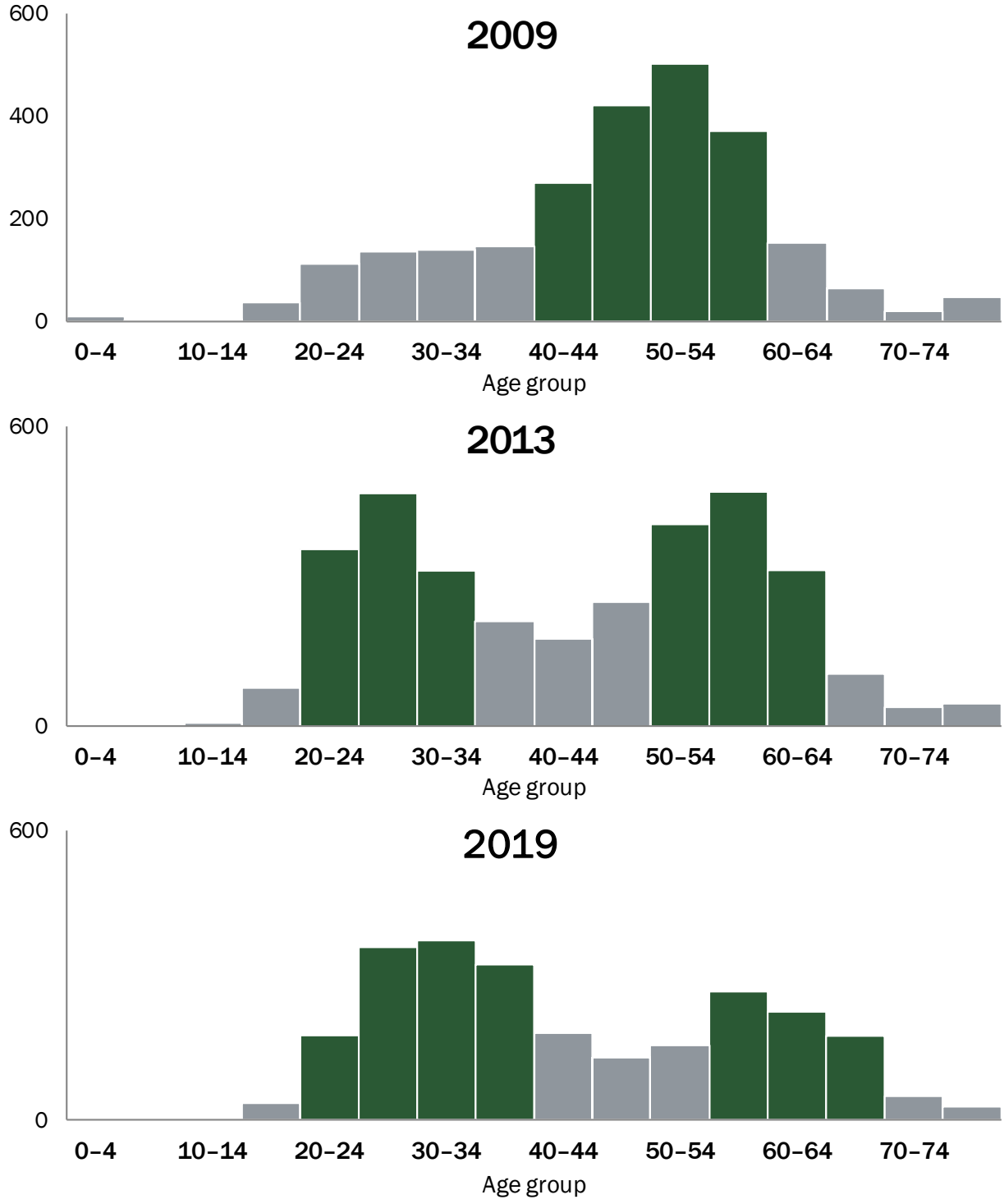
Trends in the Age Distribution of Newly Reported Cases

As baby boomers continue to be diagnosed with hepatitis C and as more young adults become newly infected with hepatitis C, the age distribution of cases newly reported to public health has shifted from one peak among baby boomers to two peaks among baby boomers and younger adults.

FIGURE 8

Over the past 10 years, the age distribution of people newly reported with hepatitis C has shifted.

Number of reported hepatitis C cases, by age group, Wisconsin, 2009, 2014, 2019



2019 CASES

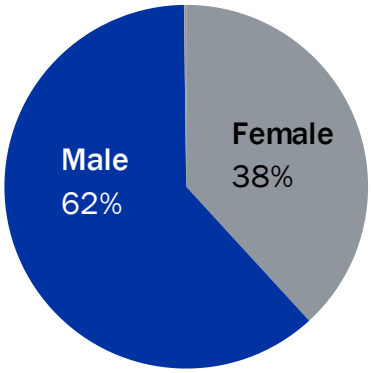
All Cases, 2019

In 2019, there were 2,467 hepatitis C cases newly reported: none met the definition of perinatal hepatitis C, 119 (115 confirmed, 4 probable) met the definition of acute hepatitis C, and 2,348 (1,874 confirmed, 474 probable) met the definition of chronic hepatitis C. This section summarizes all 2,467 cases.

FIGURE 9

In 2019, 62% of people newly reported with hepatitis C were male.

Percent of newly reported hepatitis C cases by gender, Wisconsin, 2019

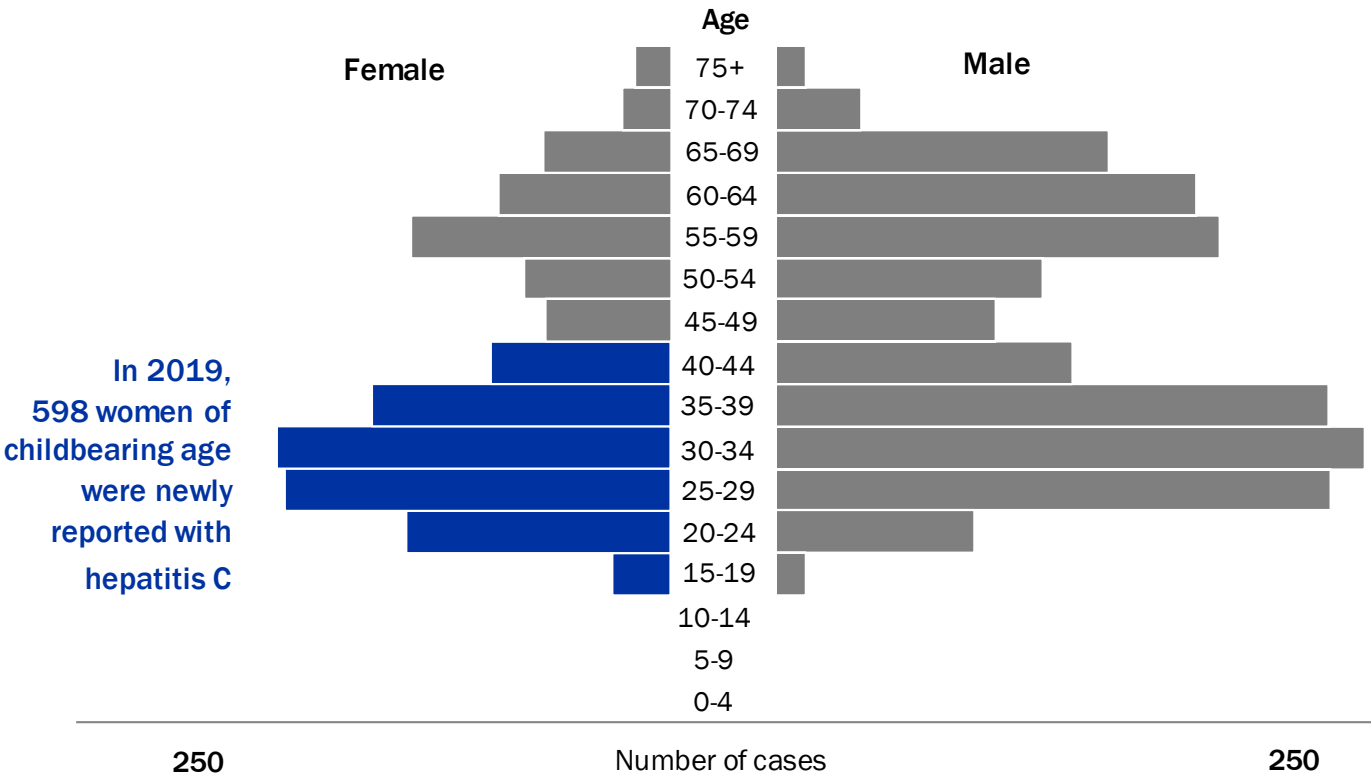


Notes: One person (<1%) newly reported with hepatitis C identified as transgender and four persons (<1%) had unknown gender.

FIGURE 10

There were a high number of cases among young adults and older adults in 2019.

Number of newly reported hepatitis C cases by age group and gender, Wisconsin, 2019

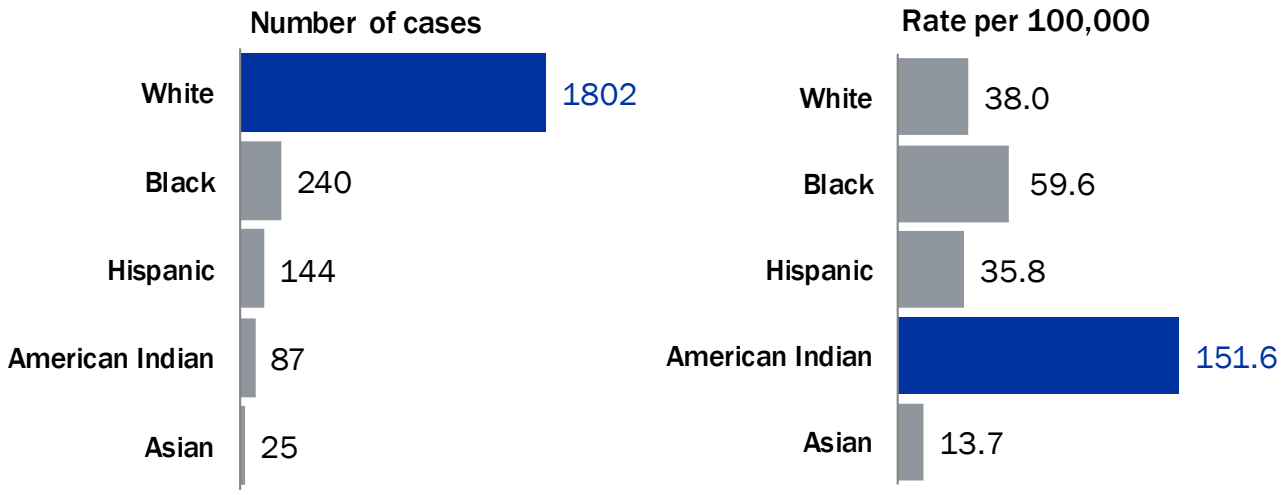


In 2019, most (73%) of the newly reported cases of hepatitis C were among white people. However, the rate was highest among American Indian people. This indicates that hepatitis C is being reported more often among American Indian people than among other racial and ethnic groups in Wisconsin.

FIGURE 11

Most newly reported cases of hepatitis C were among white people, but the rate of hepatitis C was highest among American Indian people.

Number and rate per 100,000 of hepatitis C cases by race/ethnicity, Wisconsin, 2019

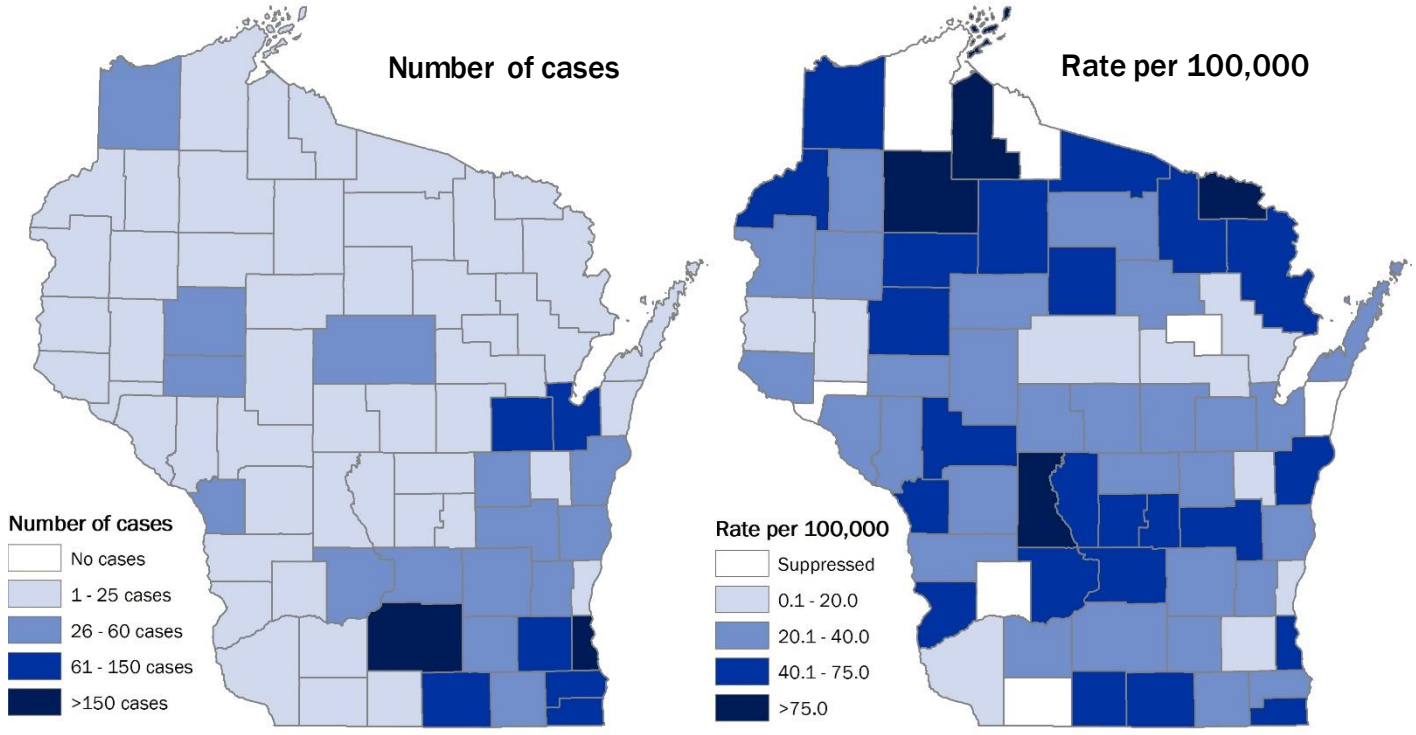


Notes: Data are not shown for 169 people (7% of cases) with multiple, other, or unknown race/ethnicity.

FIGURE 12

Most newly reported cases resided in the urban southeast, but the highest rates were among counties in the rural north.

Number and rate of newly reported hepatitis C cases, by county of residence, Wisconsin, 2019



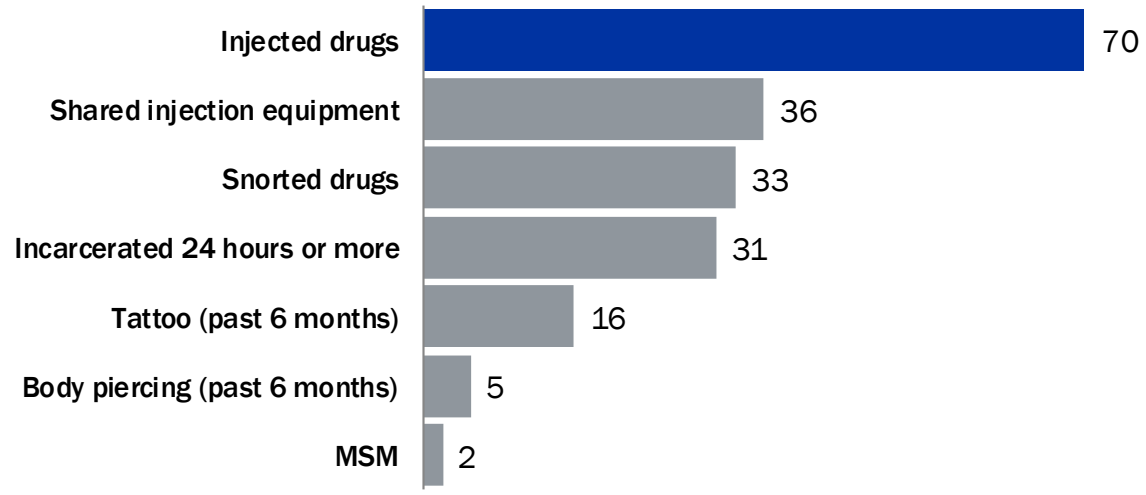
Acute Cases, 2019

Among the 2,467 cases reported in 2019, 119 (5%) met the definition of acute hepatitis C. This section summarizes these 119 cases. Among the 119 acute cases, 94 (79%) had risk information available.

FIGURE 13

Injection drug use was the most commonly reported risk factor among people with acute hepatitis C.

Number of acute hepatitis C cases that reported each risk behavior, Wisconsin, 2019



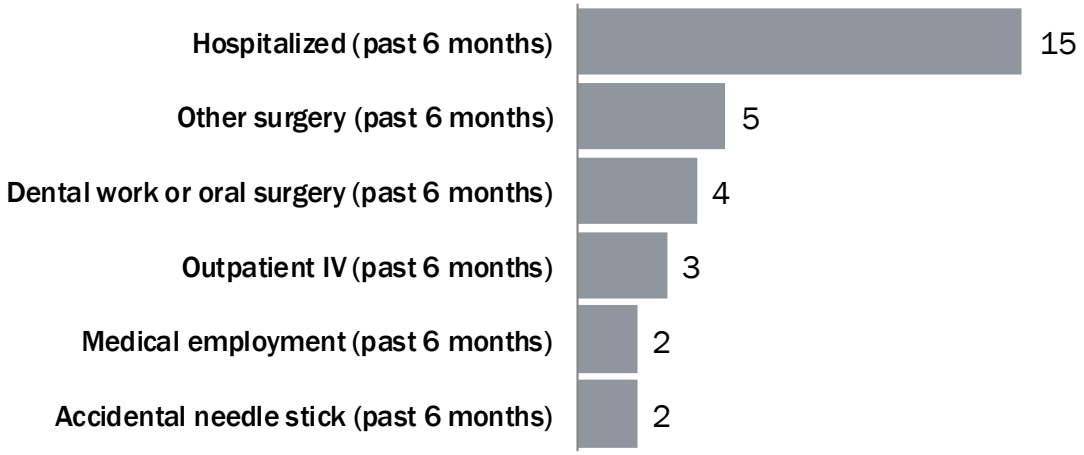
Notes: The numbers of people who reported not having the risk behavior or for which the response is unknown are not shown.

The spread of hepatitis C in health care settings in Wisconsin is rare, but can occur through contaminated needles, syringes, or other sharp instruments. Of 119 people with acute hepatitis C, 15 reported recent hospitalization in the last six months. Since more than one risk or exposure may be indicated, this may represent overlapping risk and not necessarily the source of exposure.

FIGURE 14

Health care settings are possible sources of exposure to hepatitis C.

Number of acute hepatitis C cases that reported each risk exposure, Wisconsin, 2019

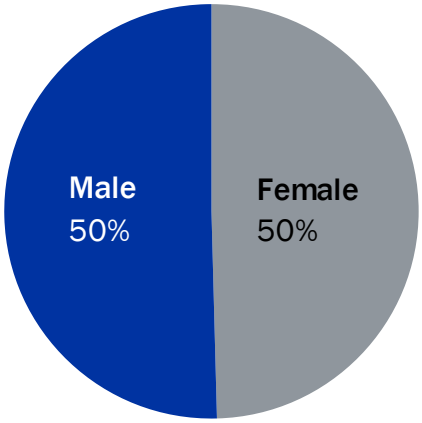


Notes: The numbers of people who reported not having the exposure or for whom the response is unknown are not shown.

FIGURE 15

In 2019, reported cases of acute hepatitis C were evenly distributed among males and females.

Percent of acute hepatitis C cases, by gender, Wisconsin, 2019

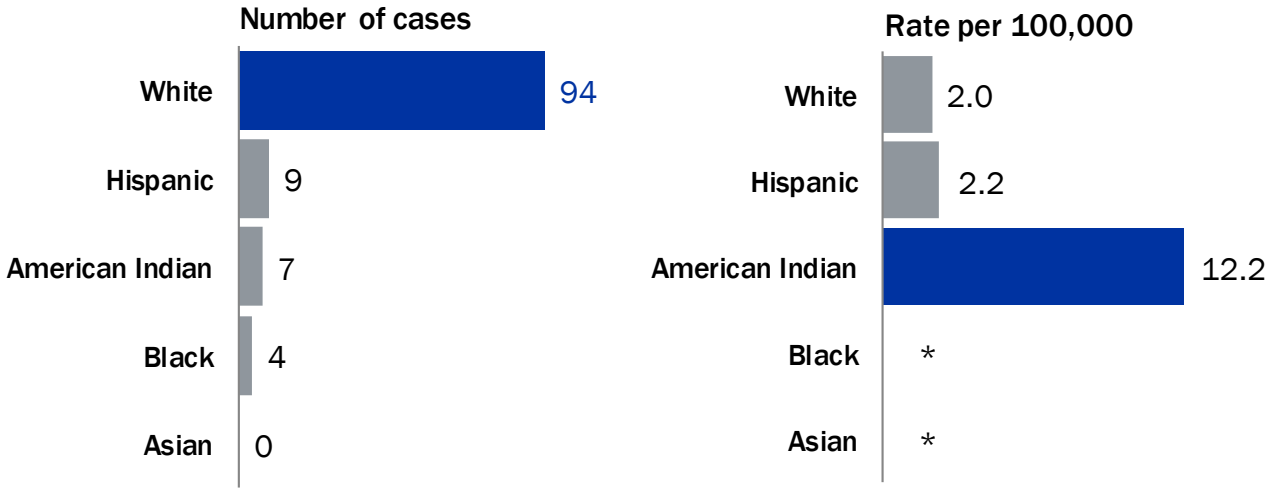


In 2019, most (79%) reported cases of acute hepatitis C were among white people. However, the rate of reported acute hepatitis C was highest among American Indian people. This indicates that acute hepatitis C is being reported more often among American Indian people than among other racial and ethnic groups in Wisconsin.

FIGURE 16

Most reported cases of acute hepatitis C were among white people, but the rate was highest among American Indian people.

Number and rate per 100,000 of acute hepatitis C cases by race/ethnicity, Wisconsin, 2019



Notes: *Rates were suppressed for categories with fewer than five cases. Data for five people with unknown or other race/ethnicity are not shown.

In 2019, the median age of people newly reported with acute hepatitis C was 32 years, and 74% (88 people) were under age 40.

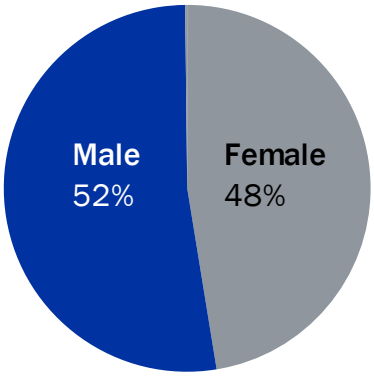
Cases Among People Aged 15–29, 2019

Among the 2,467 cases newly reported in 2019, 566 (23%) were among people aged 15–29. This section summarizes these 566 cases.

FIGURE 17

In 2019, 52% of people aged 15–29 newly reported with hepatitis C were male.

Percent of newly reported hepatitis C cases among people aged 15–29, by gender, Wisconsin, 2019



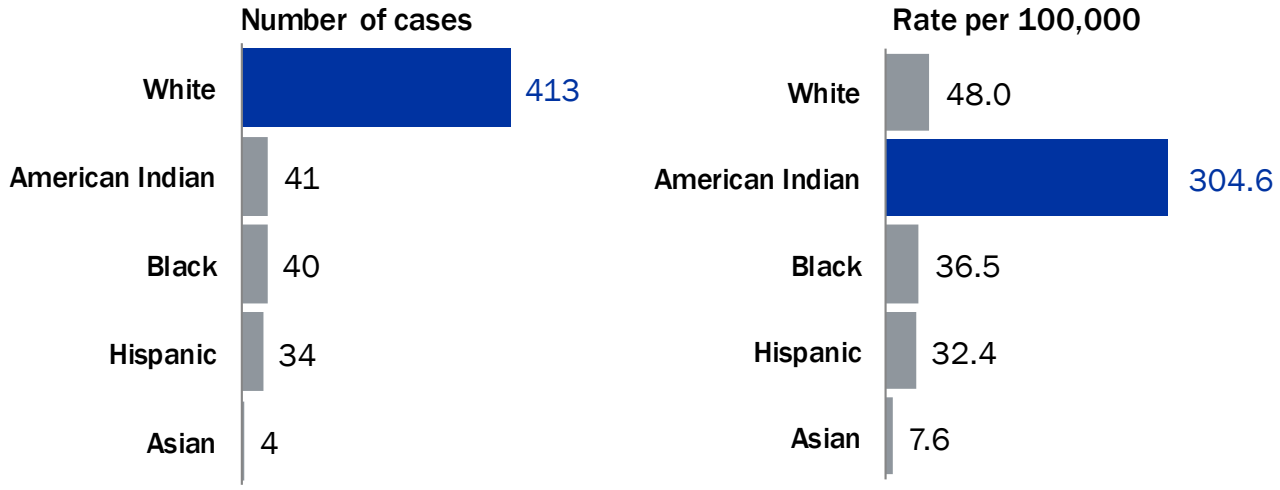
Notes: One person (<1%) newly reported with hepatitis C identified as transgender and one person (<1%) had unknown gender.

Among people aged 15–29, most (73%) newly reported cases of hepatitis C were among white people. However, the rate was highest among American Indian people. This indicates that, in this age group, hepatitis C is being reported more often among American Indian people than among other racial and ethnic groups in Wisconsin.

FIGURE 18

Among people aged 15–29, most cases of hepatitis C were among white people, but the rate was highest among American Indian people.

Number and rate per 100,000 of hepatitis C cases among people aged 15–29, by race/ethnicity, Wisconsin, 2019

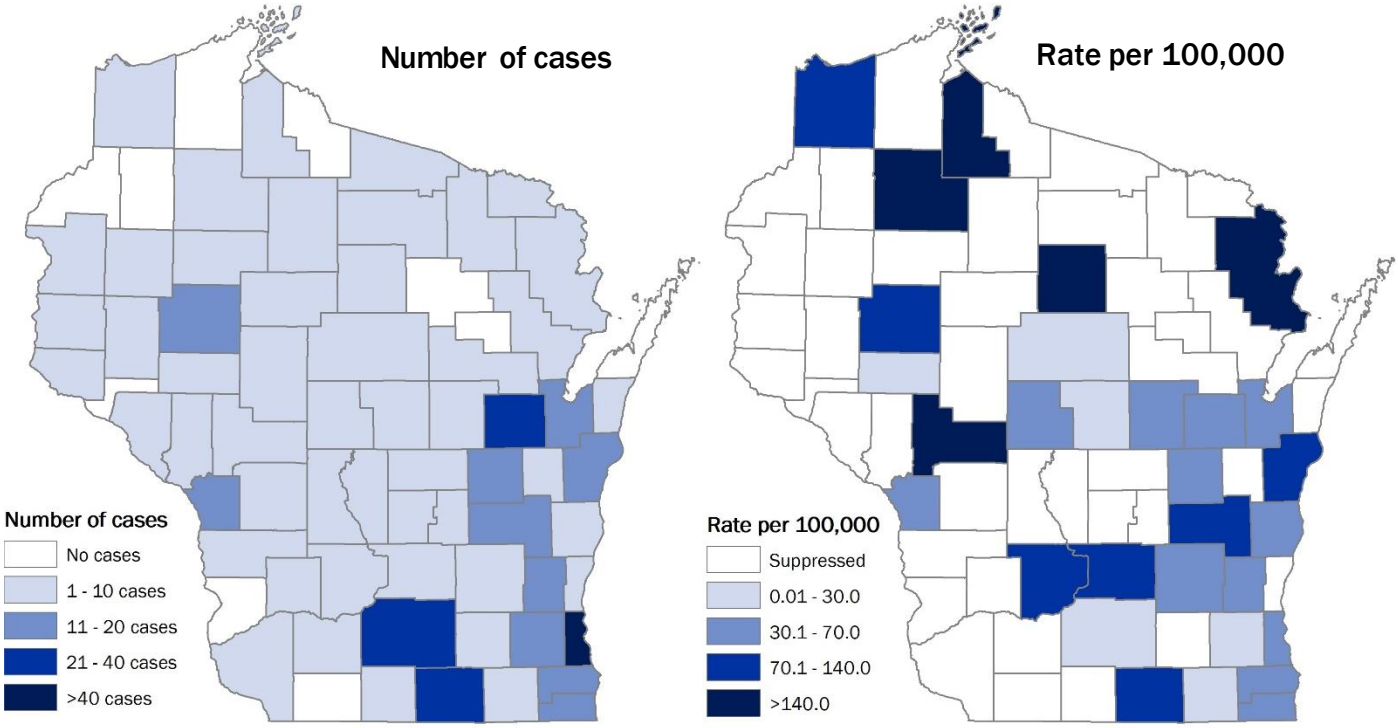


Notes: Excludes 34 people (6% of cases in this age range) with multiple, other, or unknown race/ethnicity.

FIGURE 19

Most newly reported cases among people aged 15–29 resided in the southeast, but counties with the highest rates were in rural areas.

Number and rate of newly reported hepatitis C cases among people aged 15–29, by county of residence, Wisconsin, 2019



Notes: Maps exclude cases reported from the Department of Corrections.

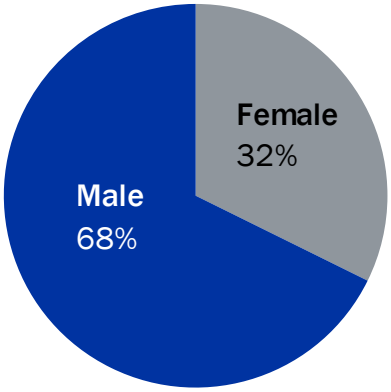
Cases Among Baby Boomers, 2019

Among the 2,467 cases newly reported in 2019, 777 (31%) were among people born during 1945–1965. This section summarizes these 777 cases.

FIGURE 20

In 2019, 68% of baby boomers newly reported with hepatitis C were male.

Percent of newly reported hepatitis C cases among people born during 1945–1965, by gender, Wisconsin, 2019

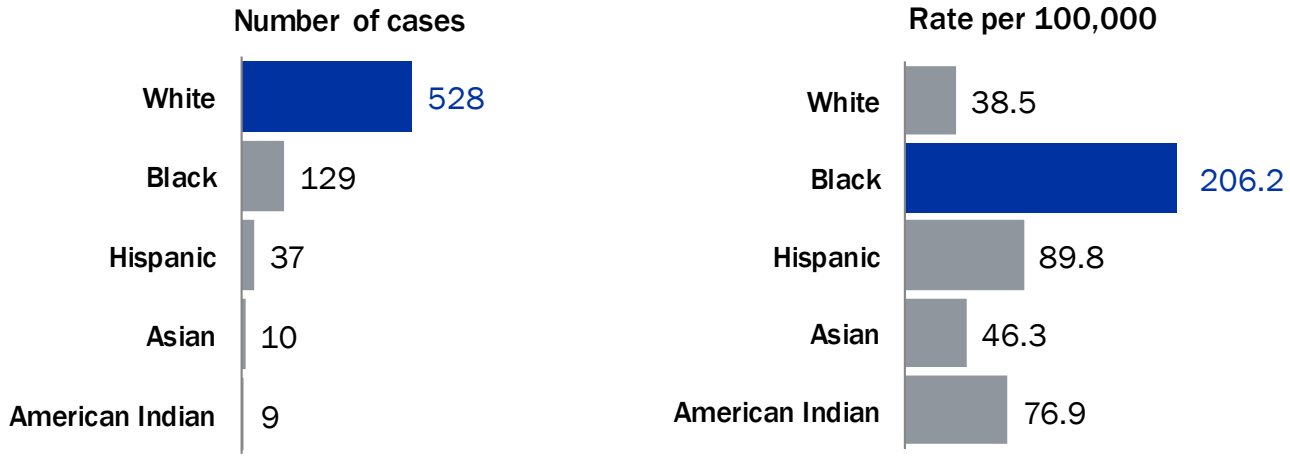


Among baby boomers, the majority (68%) of newly reported cases of hepatitis C were among white people. However, the rate was highest among black people. This indicates that, in this cohort, hepatitis C was reported more often among black people than among other racial and ethnic groups in Wisconsin.

FIGURE 21

Among baby boomers, the majority of cases of hepatitis C were among white people, but the rate was highest among black people.

Number and rate per 100,000 of hepatitis C cases among people born during 1945–1965, by race/ethnicity, Wisconsin, 2019

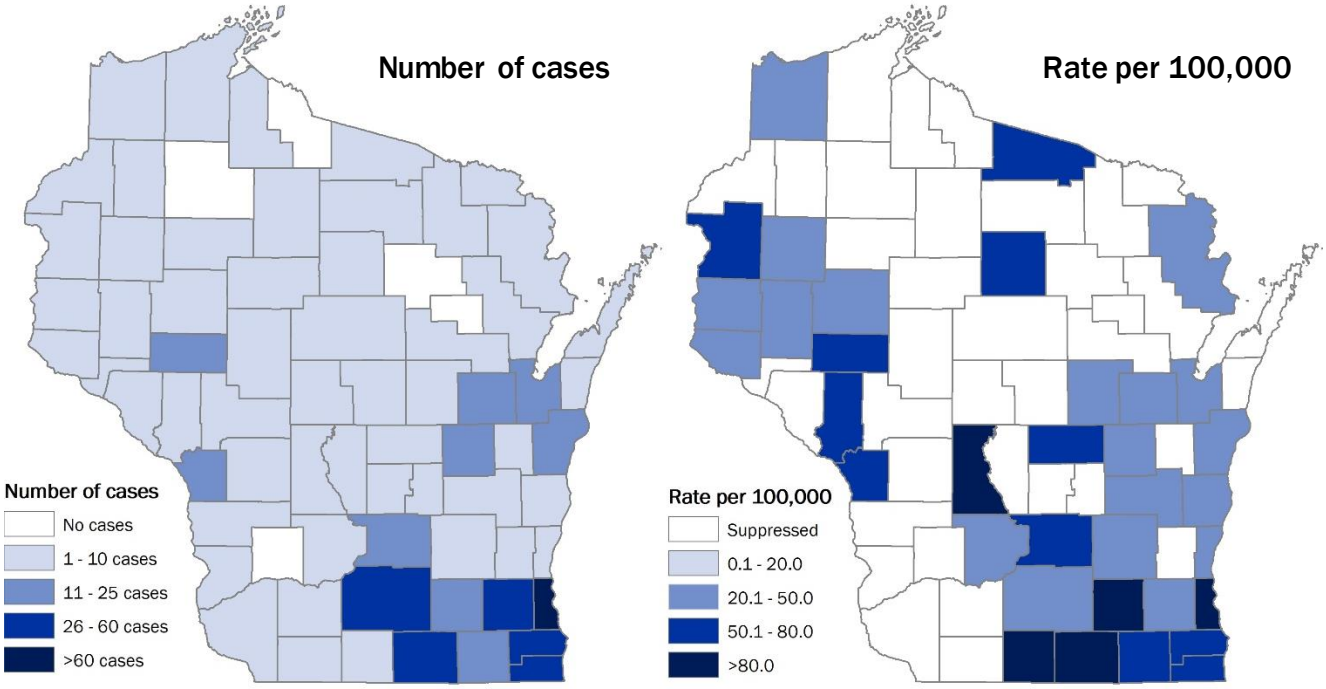


Notes: Data not shown for 64 people with multiple, other, or unknown race/ethnicity.

FIGURE 22

Most newly reported cases among baby boomers resided in southeastern counties.

Number and rate of newly reported hepatitis C cases among people born during 1945-1965, by county of residence, Wisconsin, 2019



Notes: Maps exclude cases reported from the Department of Corrections.

Cases Identified by the Department of Corrections, 2019

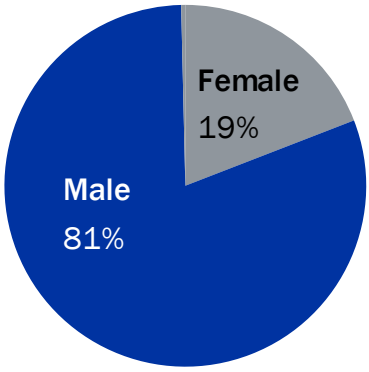
Among the 2,467 cases newly reported in 2019, 272 (11%) were reported from the Wisconsin Department of Corrections. This section summarizes these 272 cases.

Rates of hepatitis C in correctional institutions are much higher than the general U.S. population. One reason for this is that some populations affected by incarceration, such as people who inject drugs, are also more likely to have hepatitis C infection. Before October 2019, the Wisconsin Department of Corrections offered hepatitis C testing to incoming inmates with a risk factor and to people born during 1945–1965. Starting in October 2019, all inmates are offered hepatitis C testing.

FIGURE 23

Among people newly reported with hepatitis C from the Department of Corrections, 81% were male.

Number of newly reported hepatitis C cases from the Department of Corrections, by gender, Wisconsin, 2019



Notes: One person (<1%) had unknown gender.

FIGURE 24

Among people newly reported with hepatitis C from the Department of Corrections, 83% of females and 73% of males were under age 40.

Number of newly reported hepatitis C cases from the Department of Corrections, by gender and age group, Wisconsin, 2019

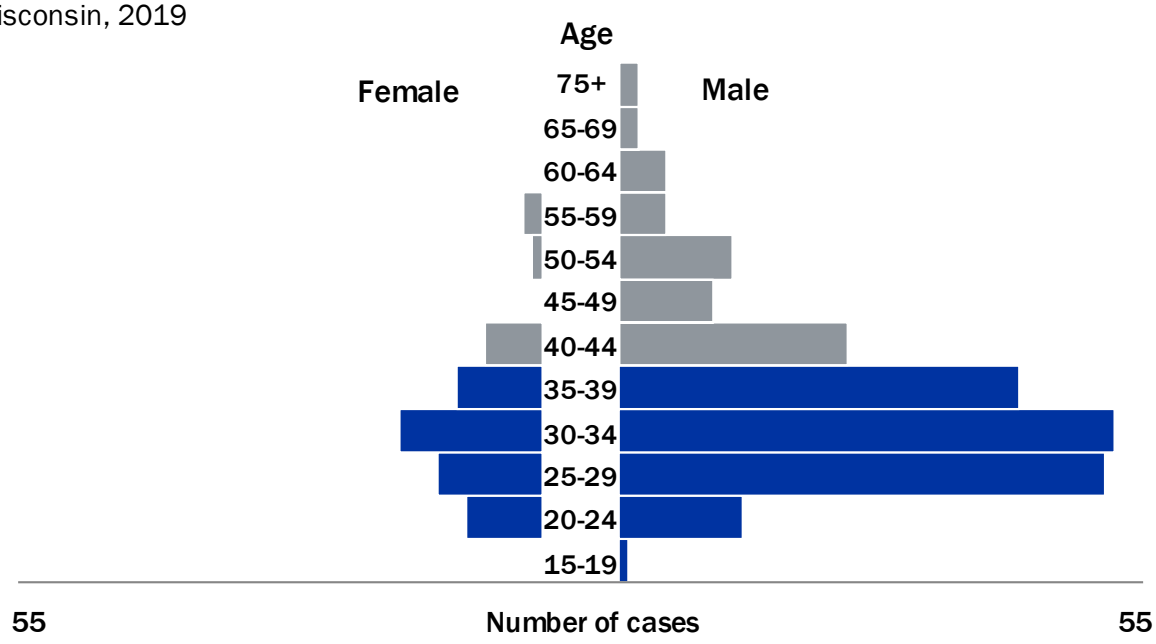
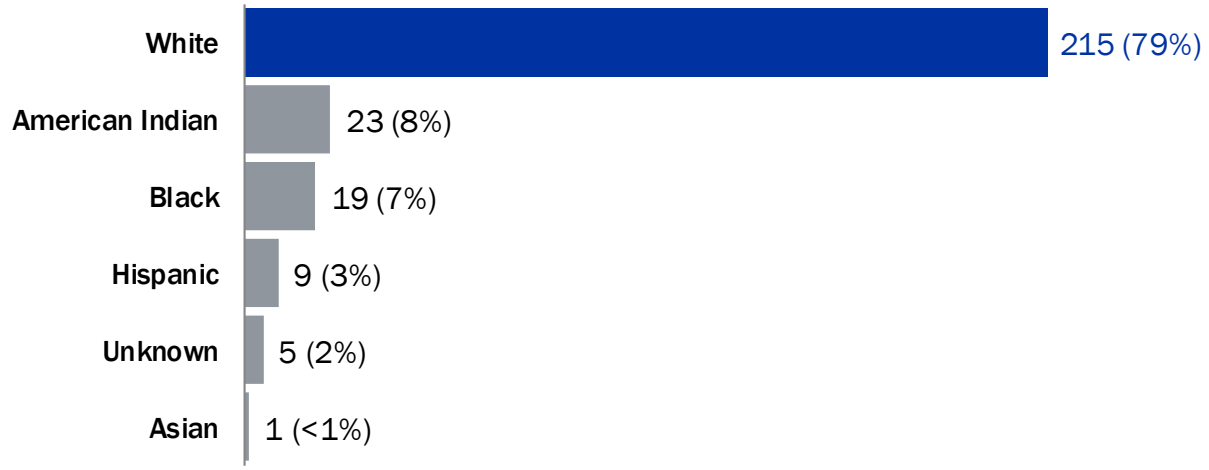


FIGURE 25

Most newly reported cases of hepatitis C from the Department of Corrections were among white people.

Number and percent of newly reported hepatitis C cases from the Department of Corrections, by race/ethnicity, Wisconsin, 2019



Perinatal Cases, 2019

Beginning in 2018, perinatal hepatitis C infection is a condition that is required to be reported to public health in Wisconsin. As the number of women of childbearing age with hepatitis C has increased, the number of infants at risk of perinatal hepatitis C infection has also increased. An estimated 6% of infants born to women with hepatitis C will be infected around the time of birth.

Because pregnant women were not routinely screened for hepatitis C during 2019 and because infants born to women with hepatitis C often do not receive the appropriate testing needed to determine if they have been infected perinatally,[8] the number of perinatal cases reported to public health is an extreme underestimation of the number of true perinatal cases each year. In 2019, no children met the case definition of having perinatal hepatitis C infection.

PREVALENCE ESTIMATES

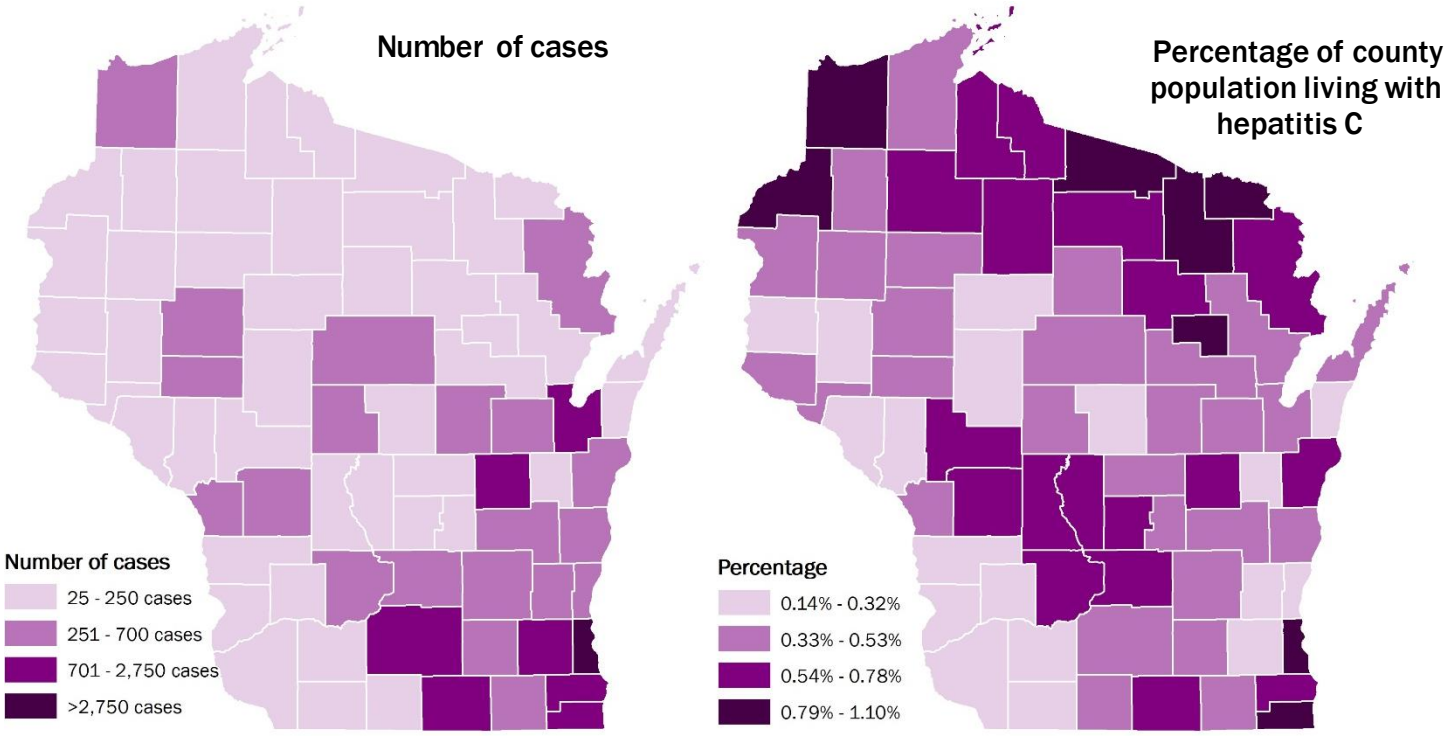
National prevalence estimates suggest that 2.4 million people in the U.S. (1% of the population) are living with chronic hepatitis C infection.[1] In Wisconsin, hepatitis C prevalence is estimated by adding together all of the cases reported to public health during 2000 through 2019, subtracting people matched to Wisconsin death records, and subtracting people whose last reported hepatitis C RNA result was negative, indicating they had cleared the infection naturally or through treatment. Using this method, 38,831 people (0.67% of Wisconsin residents) were estimated to be living with hepatitis C in Wisconsin as of the end of 2019. These data are presented below by the county of residence when the case was first reported and might not reflect the county where the person currently resides.

CDC estimates that approximately half of people with hepatitis C have not been tested or identified, so the true number of Wisconsin residents with hepatitis C is unknown. Based on state and national estimates of the prevalence of hepatitis C during 2013–2016, as many as 70,000 Wisconsin residents age 18 and older (1.5% of the Wisconsin population in this age range) are living with chronic hepatitis C.

FIGURE 26

Most hepatitis C cases reside in southeastern Wisconsin, but prevalence rates are also high in northern Wisconsin.

Number of prevalent hepatitis C cases and percentage of county residents living with hepatitis C, by county of residence, Wisconsin, 2019



Notes: A total of 5,909 cases who had unknown county of residence or were detected by the Department of Corrections are not depicted in the maps above.

HEPATITIS C CARE CASCADES

Care cascades describe how many people received appropriate hepatitis C confirmatory testing and can also estimate how many people with hepatitis C infection cleared the infection, either naturally or through treatment. Among 8,313 people with positive hepatitis C test results first reported to public health in 2018 or 2019, 89% (7,437 people) had a confirmatory RNA test conducted. Of these, 58% (4,283 people) had positive RNA results confirming the diagnosis of hepatitis C. Among people with positive RNA results, 55% (2,338 people) had a subsequent RNA test possibly indicating linkage to care. Among people with posititve RNA results, 20% (850 people) had negative hepatitis C RNA results at their most recent test, suggesting the person had cleared the infection either naturally or through treatment. Only 12% of people aged 15–29 had test results indicating the infection had cleared compared to 33% of baby boomers. This information suggests that only a small percentage of people newly reported with hepatitis C in 2018 or 2019 received hepatitis C treatment, and younger people received treatment less often.

Negative RNA results have been reportable to the Wisconsin Department of Health Services since April 2017. Nevertheless, a small number of laboratories still do not routinely report negative HCV RNA results. As a result, the data shown here underestimate the number and percentage of people who received RNA confirmatory testing, subsequent RNA testing, and negative RNA results at last test.

FIGURE 27

Among people with positive hepatitis C RNA test results first reported in 2018 or 2019, only 20% had test results indicating infection had cleared through treatment or naturally.

Number and percent of people in each step of the care cascade among people newly reported with positive hepatitis C test results, 2018–2019

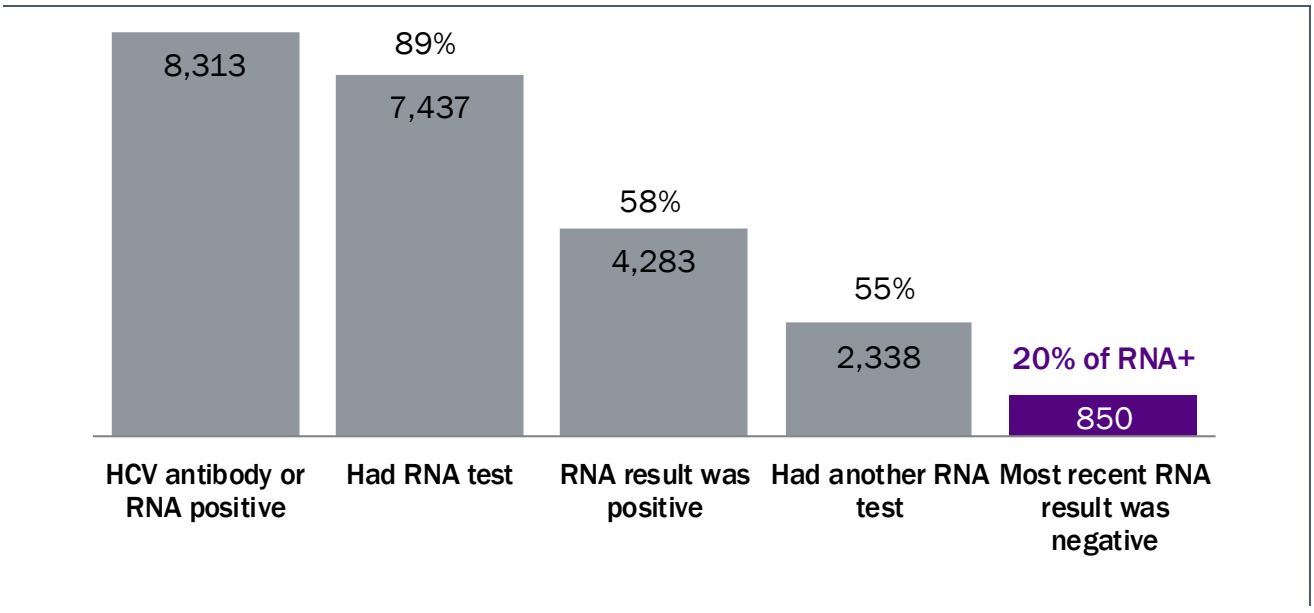


FIGURE 28

Among people aged 15–29 with positive hepatitis C RNA test results first reported in 2018 or 2019, only 12% had test results indicating infection had cleared through treatment or naturally.

Number and percent of people in each step of the care cascade among people aged 15–29 newly reported with positive hepatitis C test results, 2018–2019

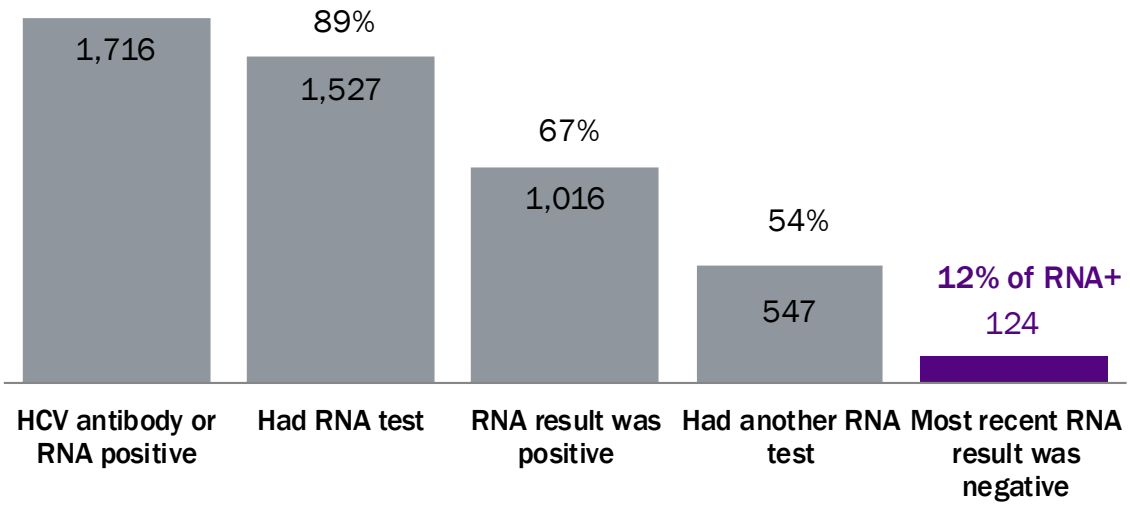
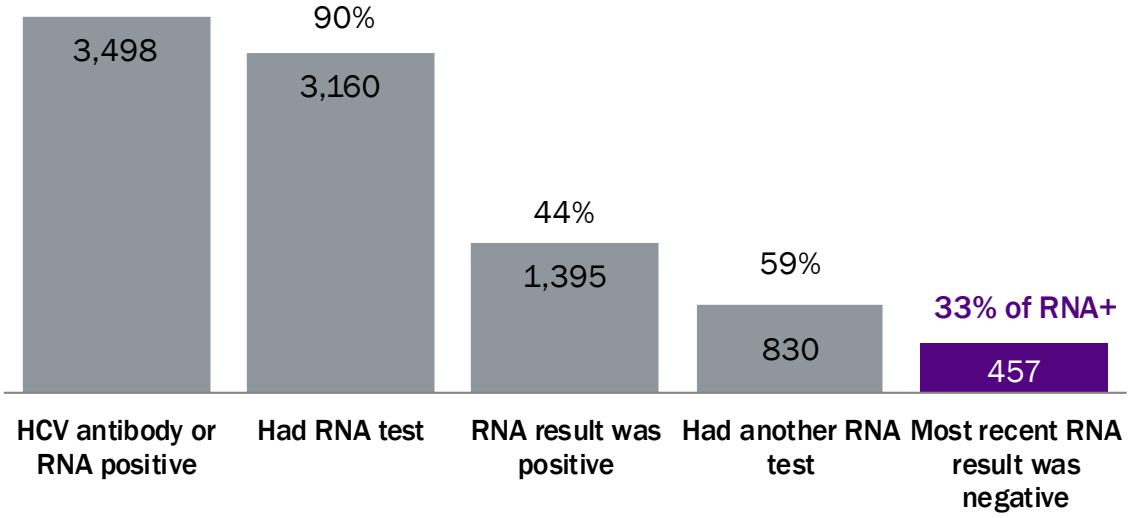


FIGURE 29

Among baby boomers with positive hepatitis C RNA test results first reported in 2018 or 2019, 33% had test results indicating infection had cleared through treatment or naturally.

Number and percent of people in each step of the care cascade among people born during 1945–1965 newly reported with positive hepatitis C test results, 2018–2019



APPENDICES

Data Tables

TABLE 1

Number and rate per 100,000 of reported hepatitis C cases, by case classification and year of report, Wisconsin, 2009–2019

Year	Past/Present and Chronic		Acute		Perinatal		Total	
	N	Rate per 100,000	N	Rate per 100,000	N	Rate per 100,000	N	Rate per 100,000
2009	2,435	42.9	3	--	--	--	2,438	42.9
2010	2,453	43.1	10	0.2	--	--	2,463	43.3
2011	2,549	44.7	14	0.2	--	--	2,563	44.9
2012	2,589	45.3	26	0.5	--	--	2,615	45.8
2013	2,596	45.3	42	0.7	--	--	2,638	46.0
2014	3,168	55.1	49	0.9	--	--	3,217	56.0
2015	3,684	63.9	61	1.1	--	--	3,745	64.9
2016	3,821	66.2	106	1.8	--	--	3,927	68.1
2017	2,968	51.4	99	1.7	--	--	3,067	53.1
2018	2,600	45.0	142	2.5	2	--	2,744	47.5
2019	2,348	40.6	119	2.1	0	--	2,467	42.7

Notes: Cases were classified according to the National Notifiable Diseases Case Classifications. Case counts include both confirmed and probable cases. Starting in 2016, the case definitions for chronic hepatitis C and acute hepatitis C changed. Starting in 2017, negative RNA results were reportable to DPH, which reduced the number of reports classified as probable chronic hepatitis C. This change also allowed more acute cases to be detected. In 2018, surveillance procedures changed to identify more acute cases. Reporting for the perinatal case definition began in 2018. For years with numbers of cases less than 5, rates have been suppressed.

N = Number of cases

Rate per 100,000 = Number of cases divided by the population of Wisconsin and multiplied by 100,000

TABLE 2
Number and rate per 100,000 of newly reported hepatitis C cases, by county, Wisconsin, 2019

County	All cases N	All cases Rate per 100,000	Cases age 15-29 N	Cases age 15-29 Rate per 100,000	Baby boomers N	Baby boomers Rate per 100,000
Adams	10	48.8	1	--	4	--
Ashland	15	94.6	6	210.7	1	--
Barron	12	26.2	1	--	6	42.9
Bayfield	4	--	0	--	1	--
Brown	67	25.7	20	38.5	20	32.1
Buffalo	5	37.0	1	--	2	--
Burnett	9	58.3	0	--	3	--
Calumet	10	19.4	1	--	3	--
Chippewa	28	43.6	11	100.4	7	40.0
Clark	7	20.1	1	--	3	--
Columbia	26	45.5	8	84.0	11	68.7
Crawford	7	42.3	0	--	2	--
Dane	160	30.3	32	25.9	59	49.0
Dodge	33	37.0	10	66.5	9	37.1
Door	6	21.4	0	--	3	--
Douglas	31	70.7	10	123.8	5	40.7
Dunn	8	17.9	1	--	5	44.9
Eau Claire	33	32.1	7	25.1	13	53.8
Florence	6	135.7	1	--	1	--
Fond du Lac	58	56.1	18	96.9	9	31.7
Forest	5	54.5	2	--	1	--
Grant	8	15.3	2	--	3	--
Green	21	57.0	3	--	10	95.5
Green Lake	10	52.4	2	--	1	--
Iowa	8	33.6	1	--	4	--
Iron	1	--	0	--	0	--
Jackson	12	58.1	5	151.3	1	--
Jefferson	32	37.8	2	--	18	82.3
Juneau	21	78.0	3	--	7	82.2
Kenosha	80	47.6	15	42.7	32	79.9
Kewaunee	3	--	2	--	1	--
La Crosse	52	43.9	12	40.6	19	65.4
Lafayette	3	--	0	--	1	--
Langlade	5	25.3	0	--	0	--
Lincoln	18	63.3	7	157.4	5	53.8
Manitowoc	44	54.8	13	98.8	12	49.8
Marathon	27	20.0	5	21.0	2	--
Marinette	19	46.4	10	157.3	5	37.2
Marquette	11	71.5	2	--	2	--

County	All cases		Cases age 15-29		Baby boomers	
	N	Rate per 100,000	N	Rate per 100,000	N	Rate per 100,000
Menominee	2	--	0	--	0	--
Milwaukee	549	58.1	89	40.2	223	109.6
Monroe	10	21.7	2	--	1	--
Oconto	7	18.4	1	--	1	--
Oneida	10	27.8	2	--	3	--
Outagamie	65	35.4	22	63.2	14	30.8
Ozaukee	15	17.0	4	--	7	27.1
Pepin	1	--	0	--	1	--
Pierce	11	26.4	3	--	5	48.7
Polk	14	31.9	1	--	9	68.9
Portage	16	22.6	5	27.2	4	--
Price	6	43.5	1	--	3	--
Racine	72	36.9	12	33.8	31	59.8
Richland	3	--	1	--	0	--
Rock	95	59.3	24	77.8	36	90.1
Rusk	9	61.9	2	--	4	--
Saint Croix	17	19.3	2	--	8	38.6
Sauk	37	59.0	9	83.3	7	41.1
Sawyer	13	78.5	10	439.4	0	--
Shawano	6	14.5	2	--	2	--
Sheboygan	30	26.2	8	39.7	8	25.4
Taylor	7	34.0	1	--	2	--
Trempealeau	10	34.1	1	--	6	75.4
Vernon	11	36.3	1	--	3	--
Vilas	13	60.0	4	--	6	70.8
Walworth	36	35.1	6	28.4	16	57.9
Washburn	6	37.8	0	--	2	--
Washington	27	20.1	11	48.7	4	--
Waukesha	76	19.1	14	20.2	34	29.9
Waupaca	19	36.7	5	62.9	5	32.0
Waushara	9	37.0	2	--	5	60.7
Winnebago	54	31.9	17	46.5	15	35.2
Wood	15	20.3	5	41.0	4	--
Federal Corrections	3	--	0	--	1	--
State Corrections	272	--	84	--	16	--
Wisconsin	2,467	42.7	566	49.6	777	51.5

Notes: Case counts include all cases meeting the definition of acute, chronic/past or present, or perintatal hepatitis C. Cases were classified according to the National Notifiable Diseases Case Classifications. For counties with numbers of cases less than 5, rates have been suppressed. County of residence was unknown for 6 cases.

N = Number of cases

Rate per 100,000 = Number of cases divided by the population of the jurisdiction and multiplied by 100,000

TABLE 3
Number of reported prevalent hepatitis C cases, as a rate per 100,000, and as a percentage of the population, by county, Wisconsin, as of 2019

County	N	Rate per 100,000	Percent
Adams	157	766.0	0.77
Ashland	99	624.1	0.62
Barron	189	411.9	0.41
Bayfield	63	414.4	0.41
Brown	1,132	434.8	0.43
Buffalo	39	288.7	0.29
Burnett	123	796.3	0.80
Calumet	126	244.8	0.24
Chippewa	273	425.1	0.43
Clark	91	261.9	0.26
Columbia	313	547.9	0.55
Crawford	45	271.8	0.27
Dane	2,727	516.0	0.52
Dodge	352	394.6	0.39
Door	108	385.0	0.39
Douglas	475	1,082.6	1.08
Dunn	134	299.3	0.30
Eau Claire	537	521.9	0.52
Florence	40	904.8	0.90
Fond du Lac	497	480.8	0.48
Forest	80	871.3	0.87
Grant	108	206.2	0.21
Green	133	360.8	0.36
Green Lake	89	466.3	0.47
Iowa	77	323.5	0.32
Iron	40	684.5	0.68
Jackson	130	629.1	0.63
Jefferson	354	418.1	0.42
Juneau	195	724.7	0.72
Kenosha	1,435	853.0	0.85
Kewaunee	51	247.0	0.25
La Crosse	517	436.9	0.44
Lafayette	33	195.5	0.20
Langlade	114	576.4	0.58
Lincoln	134	471.1	0.47
Manitowoc	452	563.2	0.56
Marathon	465	345.1	0.35
Marinette	306	747.5	0.75

County	N	Rate per 100,000	Percent
Marquette	100	650.3	0.65
Menominee	37	844.4	0.84
Milwaukee	10,398	1,100.9	1.10
Monroe	302	656.6	0.66
Oconto	130	342.4	0.34
Oneida	196	545.8	0.55
Outagamie	676	367.8	0.37
Ozaukee	251	284.1	0.28
Pepin	25	340.2	0.34
Pierce	144	345.9	0.35
Polk	182	414.6	0.41
Portage	214	302.6	0.30
Price	77	557.6	0.56
Racine	1,287	659.2	0.66
Richland	43	242.8	0.24
Rock	1,145	714.4	0.71
Rusk	58	399.1	0.40
Saint Croix	218	247.3	0.25
Sauk	406	647.7	0.65
Sawyer	119	718.2	0.72
Shawano	165	399.9	0.40
Sheboygan	494	431.4	0.43
Taylor	28	136.1	0.14
Trempealeau	81	276.1	0.28
Vernon	77	254.2	0.25
Vilas	195	900.4	0.90
Walworth	491	478.5	0.48
Washburn	79	498.3	0.50
Washington	381	283.3	0.28
Waukesha	1,121	281.2	0.28
Waupaca	263	508.4	0.51
Waushara	90	370.4	0.37
Winnebago	920	543.3	0.54
Wood	296	399.9	0.40
Wisconsin	38,831	671.7	0.67

Notes: Hepatitis C prevalence is estimated by adding together all of the cases reported to public health during 2000 through 2018 and subtracting people matched to Wisconsin death records and subtracting people whose last reported hepatitis C RNA result was negative, indicating they had cleared the infection naturally or through treatment. The Wisconsin state total includes 5,909 cases who had unknown county of residence or were detected by the Department of Corrections.

N = Number of cases

Rate per 100,000 = Number of cases divided by the population of the jurisdiction and multiplied by 100,000

Technical Notes

This report was compiled by the Wisconsin Viral Hepatitis Program and is based on reports of hepatitis C infection submitted by laboratories and local health departments to the Wisconsin Electronic Disease Surveillance System. Per Wis. Admin. Code ch. DHS 145, hepatitis C is a reportable communicable disease. When cases are reported, local health departments contact people with hepatitis C infection to provide health education, risk reduction counseling, hepatitis A and B vaccine, and medical referral as needed.

Many cases of hepatitis C infection are reported by laboratories. Since laboratories do not generally report demographic data, such as region, race, or age, surveillance summary data by demographic characteristics are often incomplete.

Most reported cases of hepatitis C infection represent chronic disease in people who were infected years ago. People with acute infection are often unaware of their infection because it presents with few if any symptoms.

Changes in numbers and rates in a county or statewide may be due to an increase in new hepatitis C infections, changes in provider hepatitis C screening practices from year to year, differences in the amount of resources each jurisdiction has dedicated to hepatitis C surveillance, or differences in reporting of positive and negative hepatitis C test results to the Wisconsin Electronic Disease Surveillance System.

Starting in April 2017, negative RNA results became reportable to the Wisconsin Electronic Disease Surveillance System. Because of this change, the number of probable chronic hepatitis C cases has decreased. In addition, the surveillance system can now identify acute cases that had test conversion from negative RNA to positive RNA; therefore, the number of acute hepatitis C cases has increased. This change to the surveillance system was described in detail in the 2017 annual report.

This report is based on hepatitis C surveillance data from the Wisconsin Electronic Disease Surveillance System as of March 26, 2020. Because the Wisconsin Electronic Disease Surveillance System is not a static database and cases can be updated daily, hepatitis C case numbers used in other reports or individual county reports may vary depending on the date data are accessed.

Rates for 2019 are expressed as the number per 100,000 population in Wisconsin in 2018.

Prevalence estimates exclude Wisconsin residents who had death records reported to the Wisconsin Vital Records registry of deaths through 2018. The prevalence estimates also exclude people whose last hepatitis C RNA results reported to the Wisconsin Electronic Disease Surveillance System were negative, indicating the infection had cleared. The numbers of people with hepatitis C who have moved out of Wisconsin or who had negative RNA results that were not reported to Wisconsin Electronic Disease Surveillance System are not known and have not been subtracted from the prevalence estimate.

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For more information

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