



2023

# ANNUAL HEPATITIS C AND HEPATITIS B SURVEILLANCE REPORT

MILWAUKEE COUNTY, WISCONSIN

Epidemiologic Evaluation of Hepatitis C Virus (HCV) and  
Hepatitis B Virus (HBV) in Milwaukee County, Wisconsin



# Background–Hepatitis C Virus (HCV)

This report by the Wisconsin Department of Health Services (DHS) Adult Viral Hepatitis Unit (AVHU) is a high-level summary of the epidemiology of hepatitis C in Milwaukee County, Wisconsin. Milwaukee County has one of the highest burdens of hepatitis C virus (HCV) in the state, indicating the need for enhanced attention and resources to prevent, diagnose, and treat HCV in this region. This report includes data on people whose residence at diagnosis was in Milwaukee County and, therefore, describes hepatitis trends among persons living in the City of Milwaukee and municipalities within Milwaukee County.



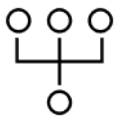
## Rate of new hepatitis C cases was highest in Asian people.

In 2023, the rate of new hepatitis C cases among Asian people was 22 times and 18 times greater than the rate of new hepatitis C cases among white and Black people, respectively.



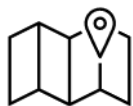
## People who can become pregnant remain a key priority population to prevent perinatal transmission.

50% of all hep C cases that occurred in females were of reproductive age (15–44).



## People aged 40–49 had the highest rate of HCV per 100,000 people in Milwaukee County.

In 2023, approximately 50.1% of all HCV cases were among people aged 30-49. People aged 40-49 had the highest rate of HCV at 55.9 per 100,000 people, followed by people aged 30-39 (54.7), 50-59 (38.8), 60+ (37.3), 20 - 29 (16.6), and 0-19 (0.8).



## Specific Wisconsin ZIP codes remain disproportionately impacted.

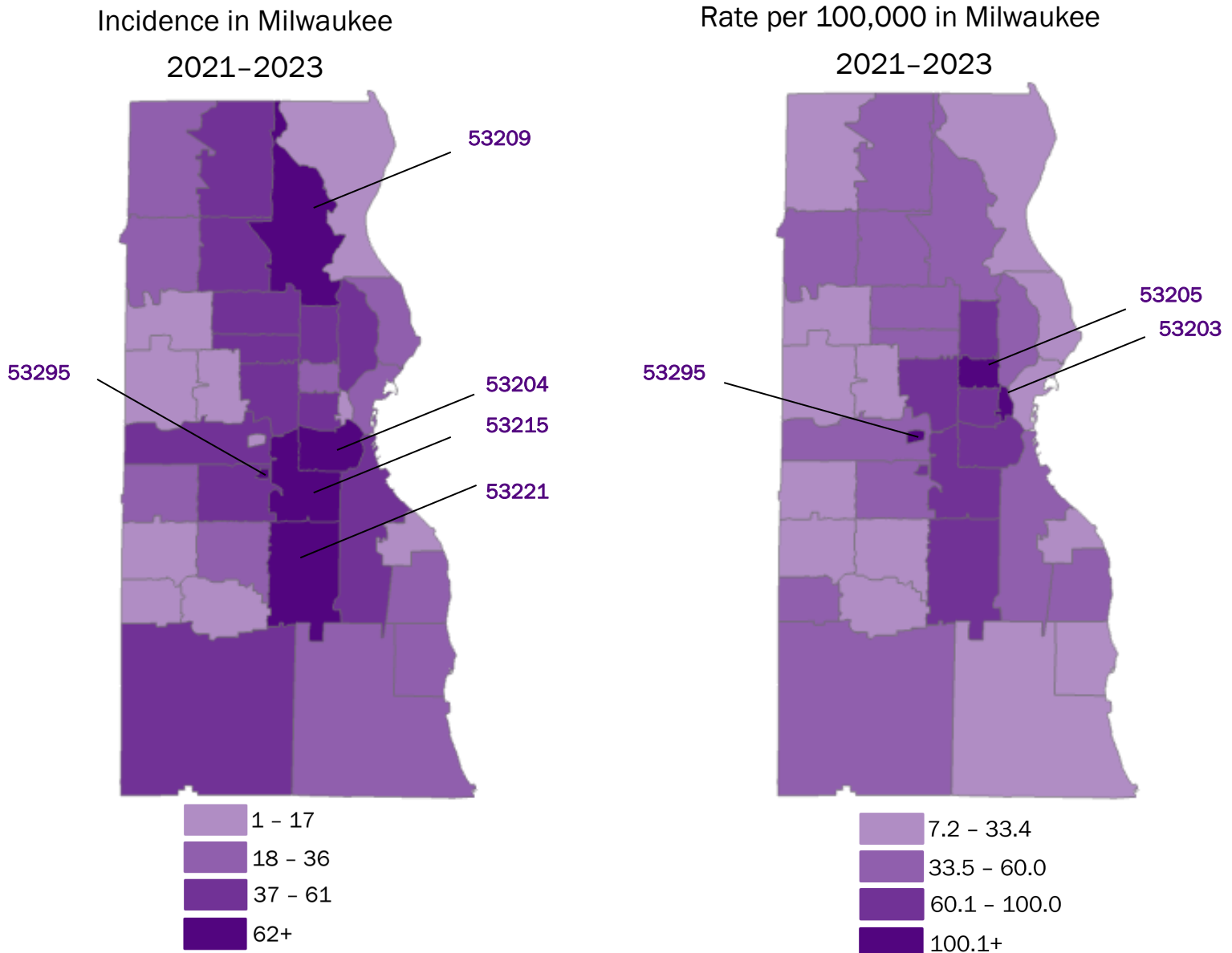
Over the past three years, the highest number of reported cases in Milwaukee county were located in ZIP codes 53215 (119 cases), 53204 (91), 53221 (74), 53209 (71), and 53295 (1 case). The highest rates per 100,000 people were in 53295 (197.2), 53203 (133.9), and 53205 (133.3).

# Introduction

Over the past five years, 36% of hepatitis C virus (HCV) cases reported in Milwaukee County were classified as 'Probable,' indicating incomplete testing during the year they were reported to public health. CDC recommends that all samples needed to diagnose hepatitis C be collected in a single visit, and HCV RNA testing be performed automatically when the HCV antibody is reactive. Information on operational guidance when testing for hepatitis C can be found in the [Updated Operational Guidance for Implementing CDC's Recommendations on Testing for Hepatitis C Virus Infection | MMWR](#).<sup>1</sup>

All adults should receive at least one-time screening for HCV, based on the 2020 revision of hepatitis C testing recommendations from the [U.S. Preventive Services Task Force](#)<sup>2</sup> and the [CDC](#).<sup>3</sup>

**Figure 1.** Over the past three years, incidence of HCV in Milwaukee County was highest in ZIP codes 53209, 53204, 53215, 53221, and 53295, but the **rate was highest in ZIP codes 53295, 53205, and 53203.**



# Hepatitis C Surveillance, Milwaukee County

## 2023 Key Points



270 cases



40-49 year-olds had the highest rate of HCV per 100,000 people

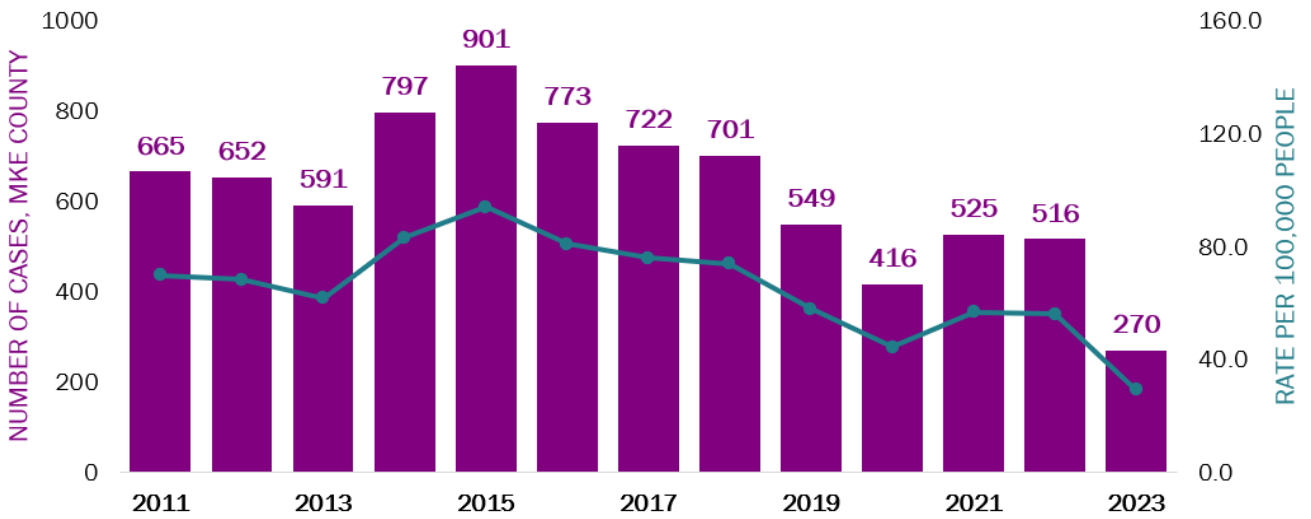


19% of new HCV cases reported in Wisconsin reside in Milwaukee County



Rate of new HCV infections were highest in Asian people

**Figure 2.** Between January 2011 to December 2023, **8,078 total hepatitis C cases** were reported in Milwaukee County residents. The number of reported hepatitis C cases in Milwaukee has decreased 62% over the last 10 years.



**Figure 3.** Over the past 5 years, the rate of HCV cases per 100,000 has decreased among all age groups. In 2023, **people aged 40-49 (55.9)** had the highest rate of HCV infection per 100,000 people within the county, followed by **people aged 30-39 (54.7)**.

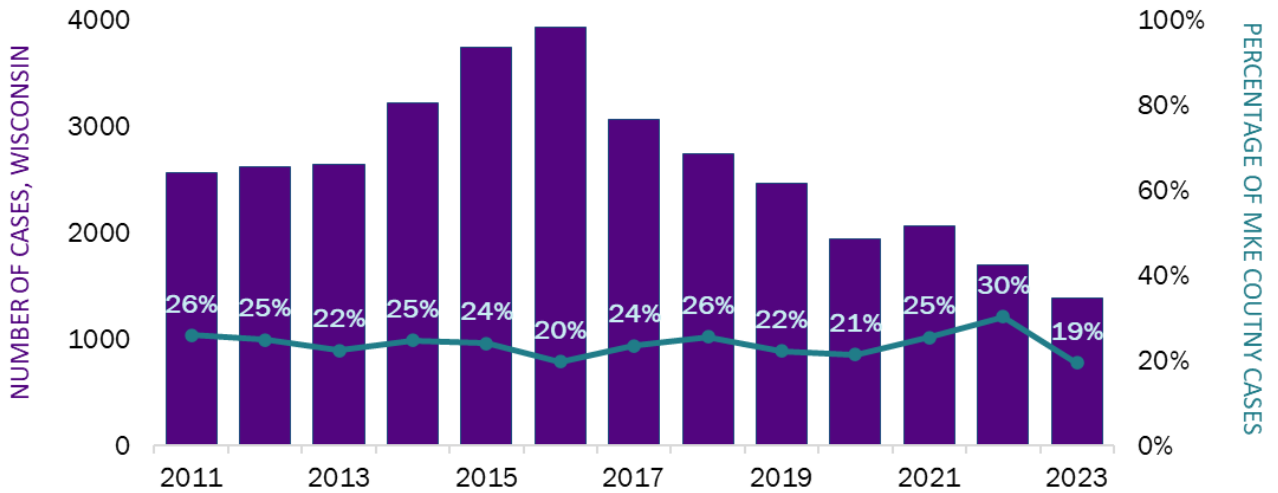


# Hepatitis C Surveillance, Milwaukee County

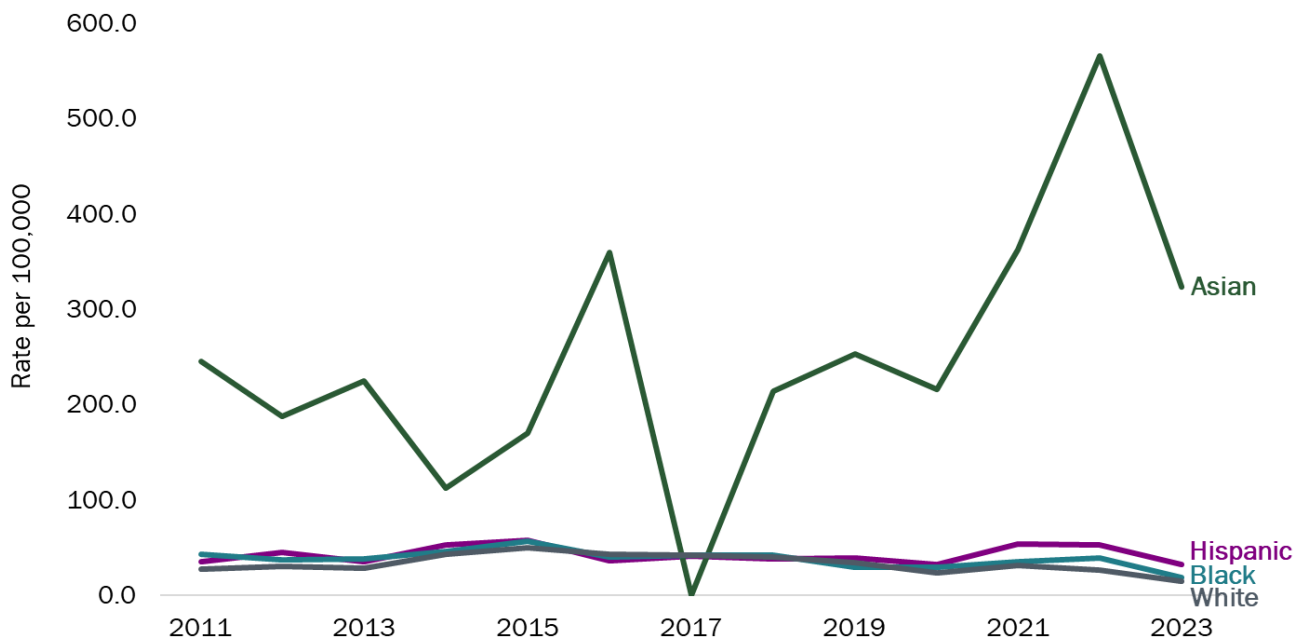


## Trends

**Figure 4.** On average, people diagnosed with hepatitis C in Milwaukee County represent **19-30% of all new cases** reported across the state of Wisconsin.



**Figure 5.** The rate of HCV cases per 100,000 across race and ethnicity in the county has been **highest in Asian people** for over the past decade, which is gradually increasing over time. In contrast, the rate of HCV cases has been decreasing among white and Black people.



\*No HCV cases reported among Native American people.

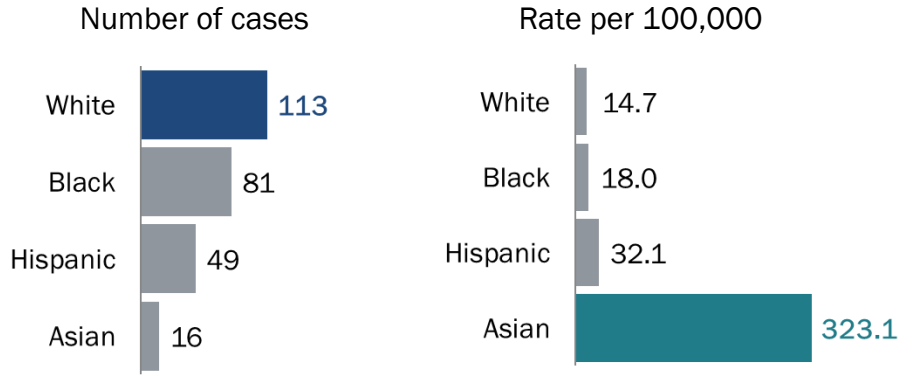


# Hepatitis C Surveillance, Milwaukee County



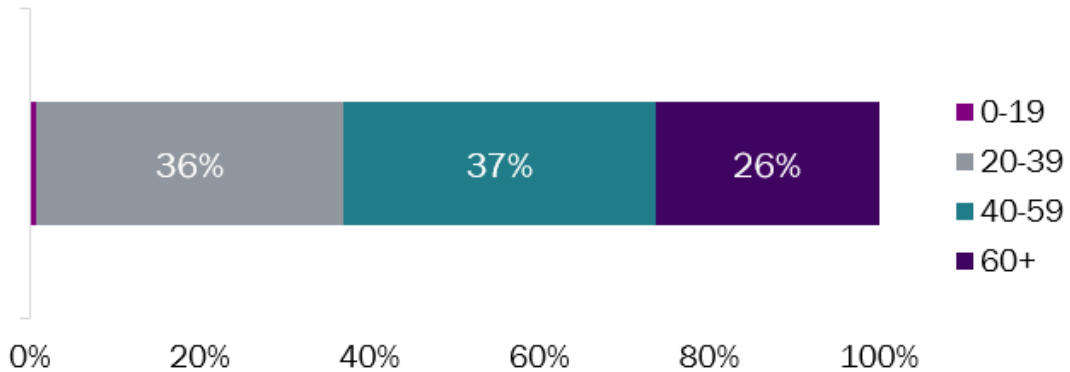
## Demographics

**Figure 6.** In 2023, most newly reported cases of hepatitis C from Milwaukee County were among **white people**, but the rate was **22 times higher** among **Asian people**.



\*Due to data suppression rules, counts not shown for racial or ethnic groups with less than five diagnoses. Rates derived from numerators less than 20 may be unreliable.

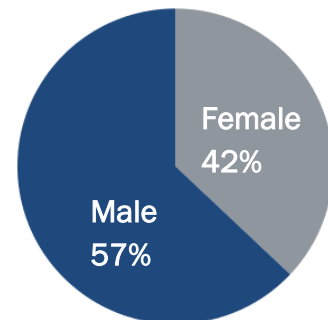
**Figure 7.** For Milwaukee County in 2023, the majority of HCV cases (63%) occurred in people aged 40 years and older.



**Figure 8.** In 2023, **50%** of all females in Milwaukee County diagnosed with HCV were of **childbearing age (15–44 years)**. The estimated rate of **mother-to-child transmission is approximately 6%**, and the only preventive intervention is to treat HCV prior to becoming pregnant.



**Figure 9.** In 2023, **57%** of people living in Milwaukee County newly diagnosed with HCV were male.



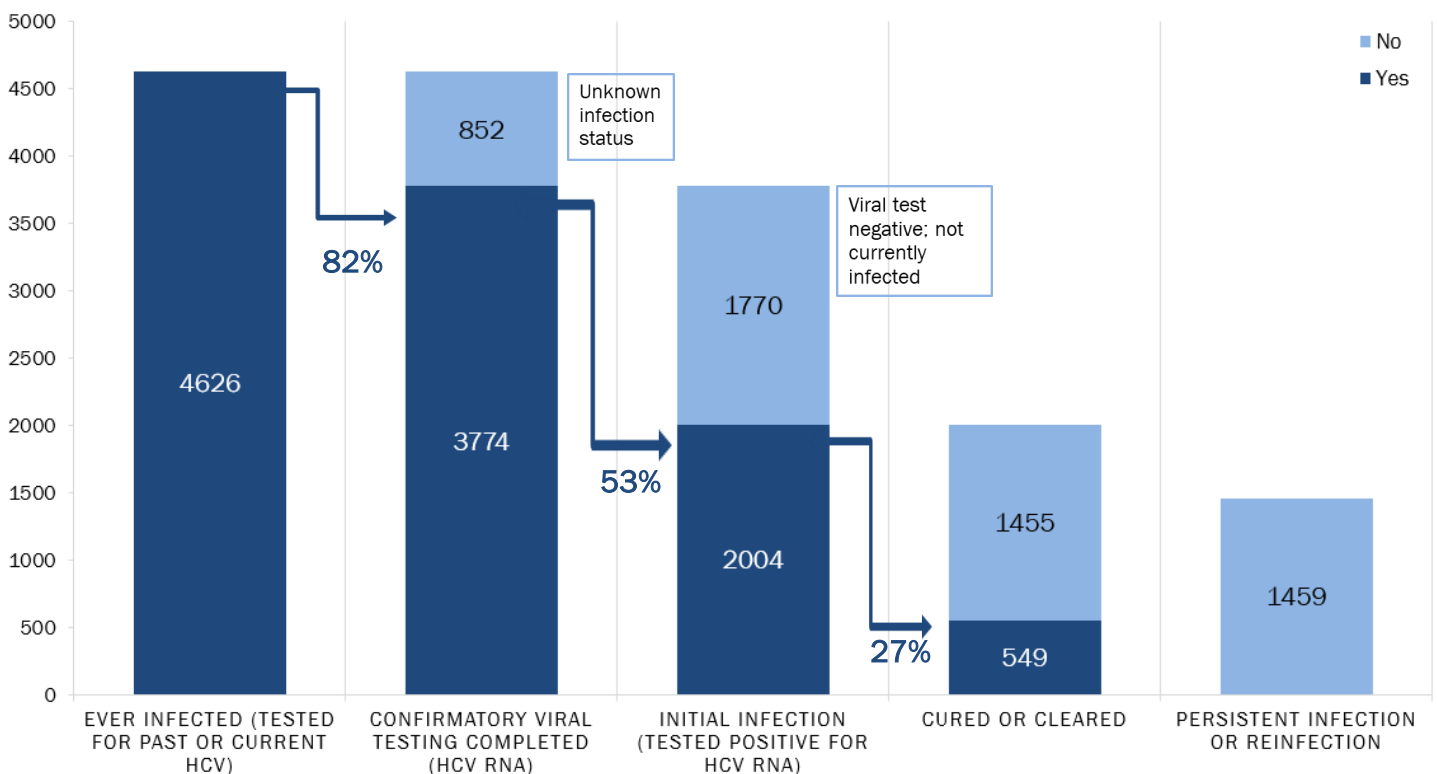
# HCV Continuum of Care–Milwaukee, 2018–2023

The laboratory-based hepatitis C continuum of care is a way to visualize the progress of people through each step in accessing care—from diagnosis to viral clearance.

Direct-acting antivirals (DAAs) have been available since 2014, yet few people receive treatment in a timely manner. Timely treatment is crucial to prevent liver damage and saves lives. In 2022, CDC released new findings from a [Vital Signs report](#) showing that only about 1 in 3 people with insurance get treatment.<sup>4</sup>

Negative RNA results have been reportable to the Wisconsin Department of Health Services since April 2017, so all data in the care cascade reflects data from January 2018 - December 2023. 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 10. HCV Continuum of Care**



What the cascade shows	Opportunities for intervention
Most (82%) of the 4,626 people in Milwaukee county who were ever infected with hepatitis C since January 2018 were virally tested to determine current infection status.	852 people in Milwaukee county have not completed hepatitis C RNA viral diagnostic testing.
Of the 2,004 people whose first RNA test was positive, 27% are no longer infected with hepatitis C.	More than 1,450 people in Milwaukee do not have evidence of being cured or cleared of infection (73%), which is higher than the national average.
Of the 549 people who have been cured or cleared of the virus in Milwaukee County, 4 people were reinfected.	There are 1,459 known individuals in Milwaukee County who are in need of medical services to cure their HCV infection.

# Background–Hepatitis B Virus (HBV)

This report by the Wisconsin Department of Health Services (WI DHS) Adult Viral Hepatitis Unit (AVHU) is a high-level summary of the epidemiology of hepatitis B in Milwaukee County, Wisconsin. Milwaukee County has one of the highest burdens of hepatitis B in the state, indicating the need for enhanced attention and resources to prevent, diagnose, and treat HBV in Milwaukee County.



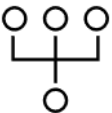
## Rate of new hepatitis B cases is highest among Asian people.

In 2023, the rate of new hepatitis B among Asian people was 523 times and 217 times greater than the rate of new hepatitis B cases among white and Black people, respectively.



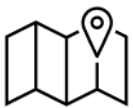
## People who may become pregnant remain a key priority population to combat perinatal transmission.

**63% of HBV cases in females were of reproductive age (15-44 years).** In the absence of preventive interventions, the **estimated rate of mother-to-child HBV transmission is approximately 40% when a mother is HBsAg-positive.**



## People aged 30-39 have the highest incidence of HBV in Milwaukee County.

In 2023, approximately 37% of all HBV cases were among people aged 30-39, followed by people aged 60+ (18%), 20-29 (16%), 40-49 (15%), 50-59 (13%), and 0-19 (2%).



## Specific Wisconsin ZIP codes remain disproportionately impacted.

Over the past 3 years, the highest number of reported cases in Milwaukee were located in **ZIP codes 53221 (38 cases), 53215 (30), 53218 (28), and 53208 (28).** The highest rates per 100,000 people were in **53205 (36.6), 53208 (32.0), 53221 (32.0), and 53130 (25.7).**



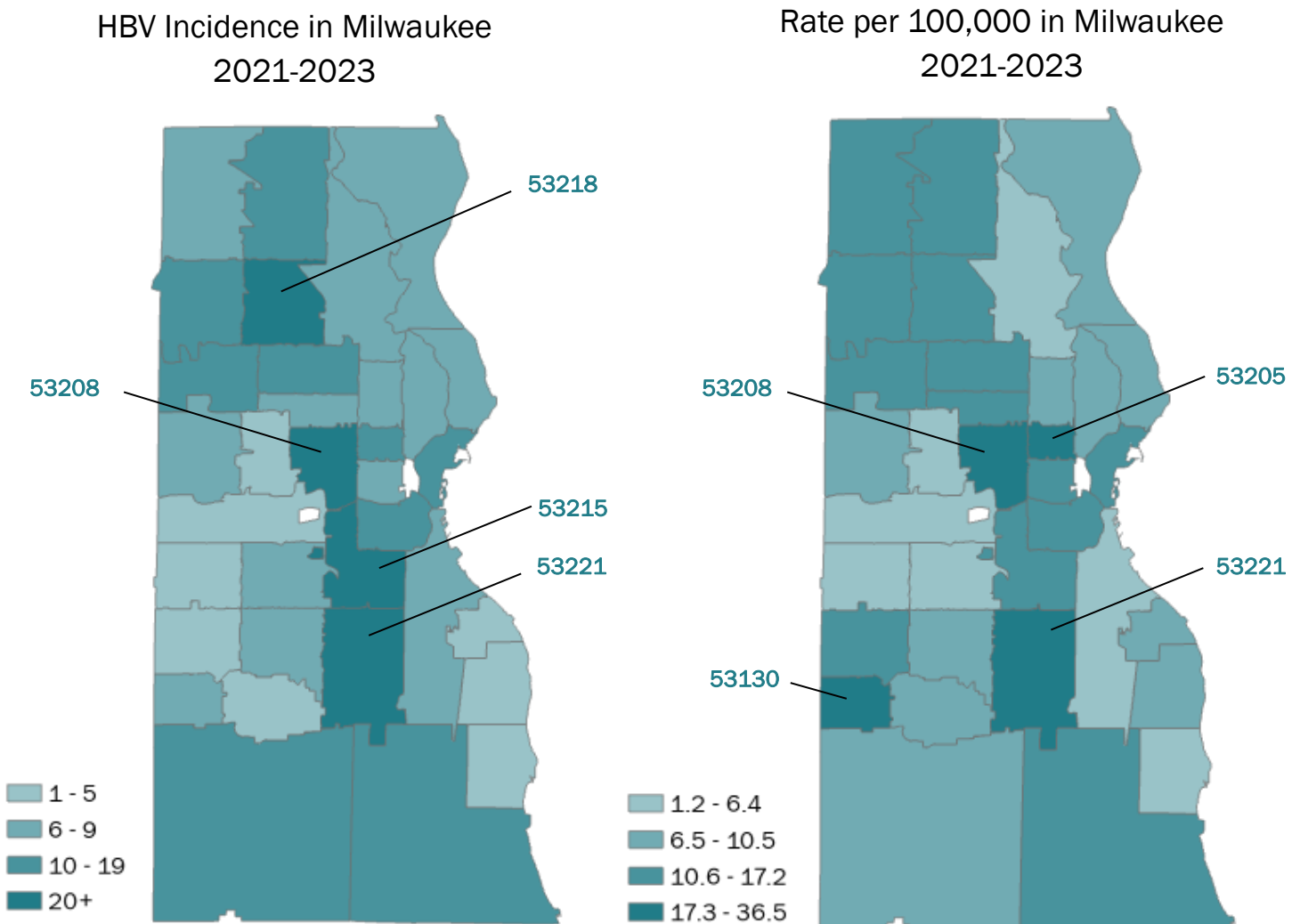
# Introduction

Over the past five years, 68% of cases presented in Milwaukee County were classified as ‘Probable,’ demonstrating incomplete testing within the diagnosis year. As of March 2023, [CDC recommends one-time HBV screening of adults utilizing the triple panel \(HBsAg, anti-HBc, anti-HBs\)](#).<sup>5</sup>

Hepatitis B virus infection can lead to substantial morbidity and mortality. While treatment is not curative, effective vaccines are widely available to prevent hepatitis B infection. Despite reductions in hepatitis B incidence during the past four decades due to immunization, vaccination coverage among adults has been suboptimal, and Wisconsin continues to manage and investigate hundreds of cases annually.

[ACIP recommends universal HBV vaccination to all adults aged 19-59](#) in order to increase vaccination coverage and decrease incidence.<sup>6</sup>

**Figure 11.** Over the past three years, incidence of HBV in Milwaukee County was highest in ZIP codes 53218, 53215, 53221, and 53208. The rate per 100,000 people was highest in ZIP codes 53208, 53205, 53221, and 53130.

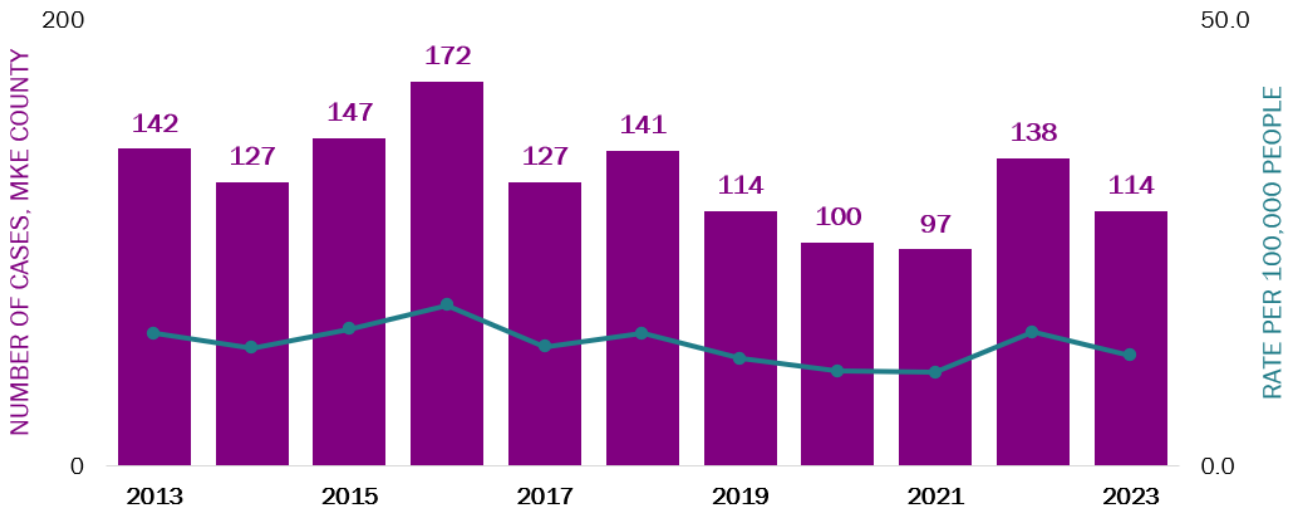


# Hepatitis B Surveillance, Milwaukee County

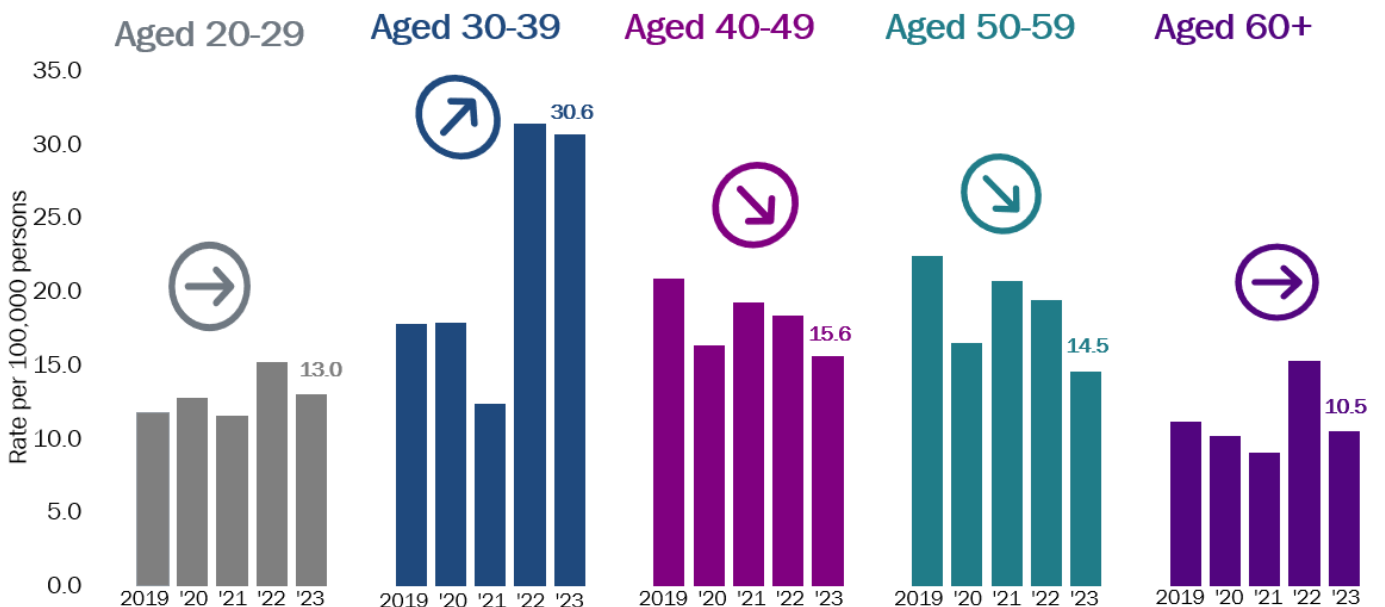
## 2023 Key Points

-  114 cases
-  30-39-year-olds had the highest rate of HBV per 100,000
-  33% of new HBV cases reported in Wisconsin reside in Milwaukee County
-  Rate of new HBV infections were highest in Asian people

**Figure 12.** From January 2013 to December 2023, **1,419 total hepatitis B cases** have been reported in Milwaukee County residents. The number of reported hepatitis B cases in Milwaukee County remained largely unchanged in 2023, decreasing only 3.5 percent from the five-year average.



**Figure 13.** The rate of HBV per 100,000 people has been increasing in people age **30-39 years** since 2019. In 2023, the rate of HBV in this age group was more than two times higher than other age groups.

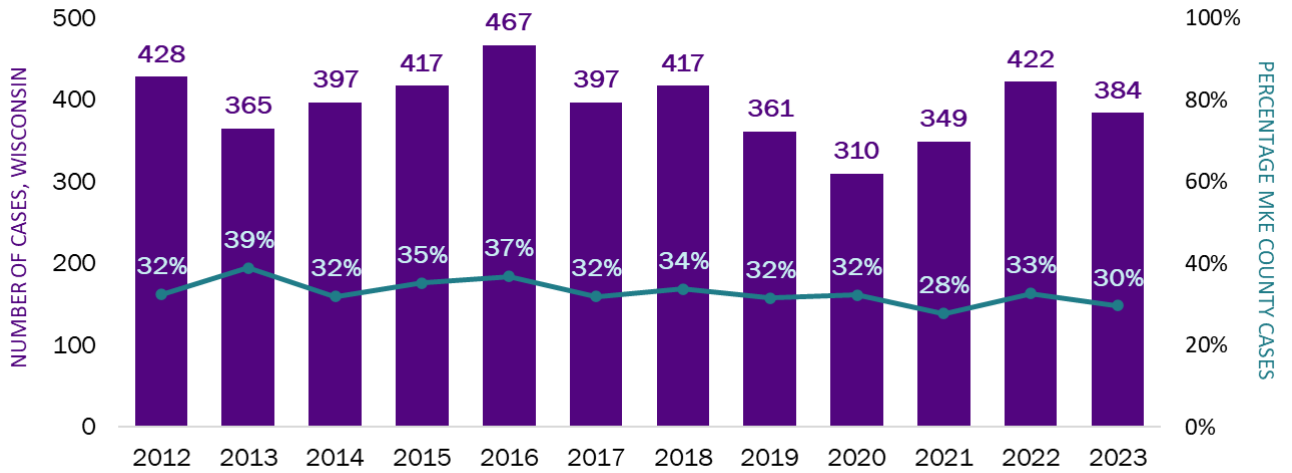


# Hepatitis B Surveillance, Milwaukee County



## Trends

**Figure 14.** On average, **33%** of all people newly diagnosed with hepatitis B in Wisconsin reside in Milwaukee County.



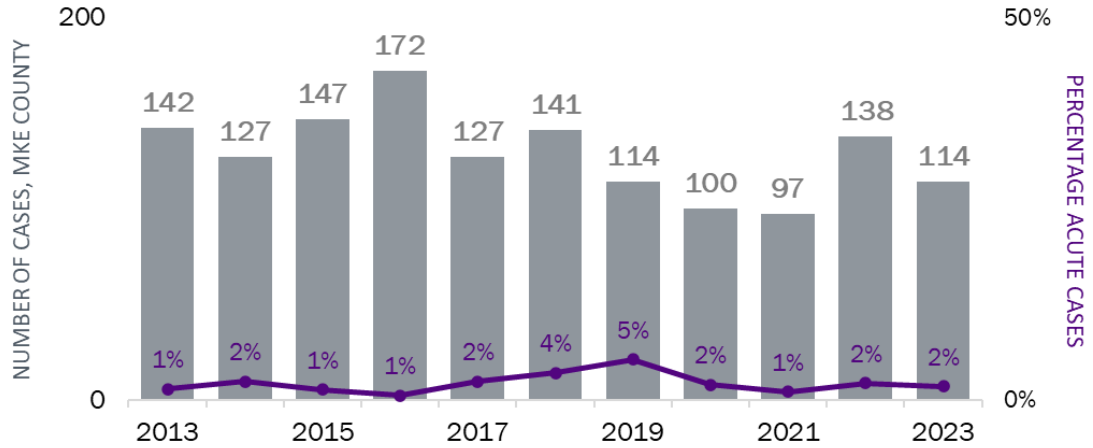
**Figure 15.** The burden of HBV disproportionately affects Asian people at a rate 303 times and 115 times higher than in white and Black people, respectively.



# Hepatitis B Surveillance, Milwaukee County

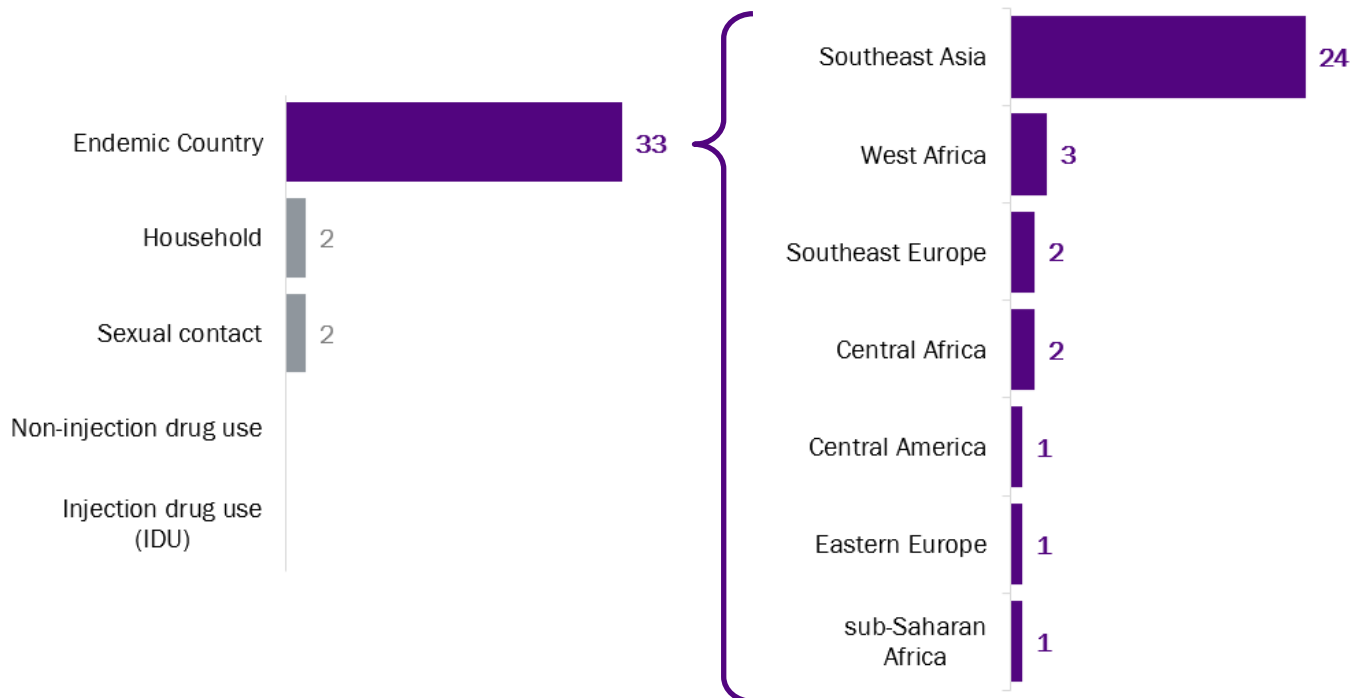


**Figure 16.** In Milwaukee County, **2%** of people who were newly diagnosed with hepatitis B in 2023, were found to have **acute infection**.



**Figure 17.** In 2023, 89% of people with hepatitis B in Milwaukee County had an exposure related to country of origin. The global burden of hepatitis B disproportionately affects sub-Saharan Africa and East Asia due to lack of access to universal infant vaccination, antiviral prophylaxis, underdiagnosis, and low screening and treatment rates in these regions.

Among risk behaviors and exposures identified in Milwaukee county in 2023, country of origin was most commonly reported (71% of the 48 cases for which endemic country information was available), followed by household contact (8% of the 25 cases for which information was available) and sexual contact (8% of the 24 cases for which information was available).

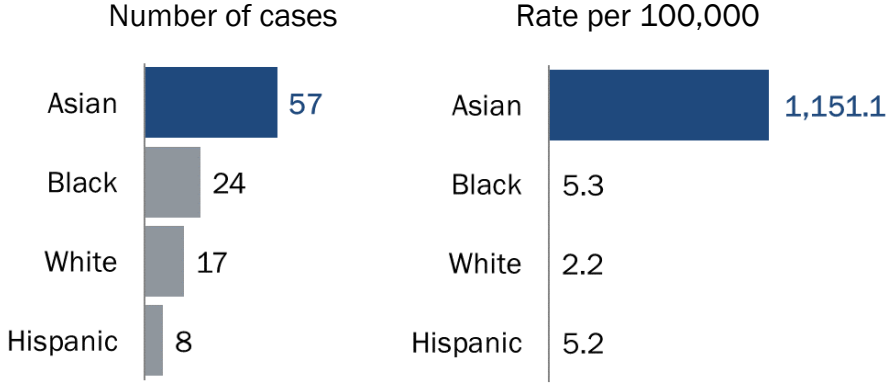


# Hepatitis B Surveillance, Milwaukee County



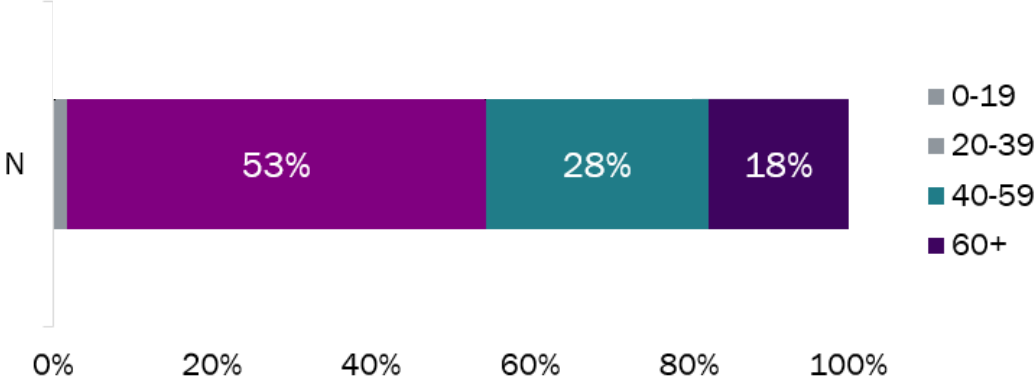
## Demographics

**Figure 18.** In 2023, the HBV incidence and rate per 100,000 were both highest among Asian people, representing a **523x higher rate** than in white people.

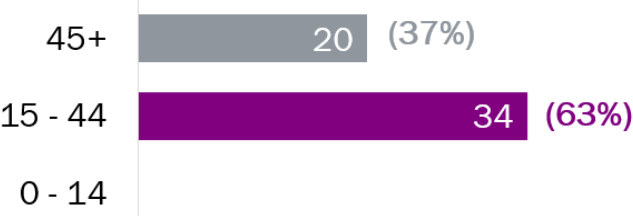


\*No HBV cases reported among Native American people.

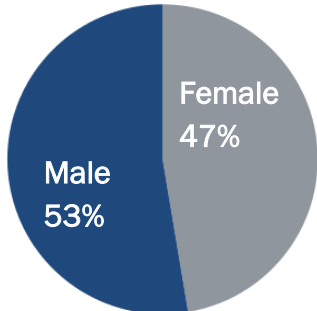
**Figure 19.** People aged **20-39 (60 cases)** had the highest HBV incidence (**53%**) in Milwaukee County in 2023.



**Figure 20.** In 2023, **63%** of females in Milwaukee County affected by HBV were of **childbearing age**. In the absence of preventive interventions, the estimated **rate of mother-to-child HBV transmission is approximately 40%** when a mother is HBsAg-positive.<sup>7</sup>



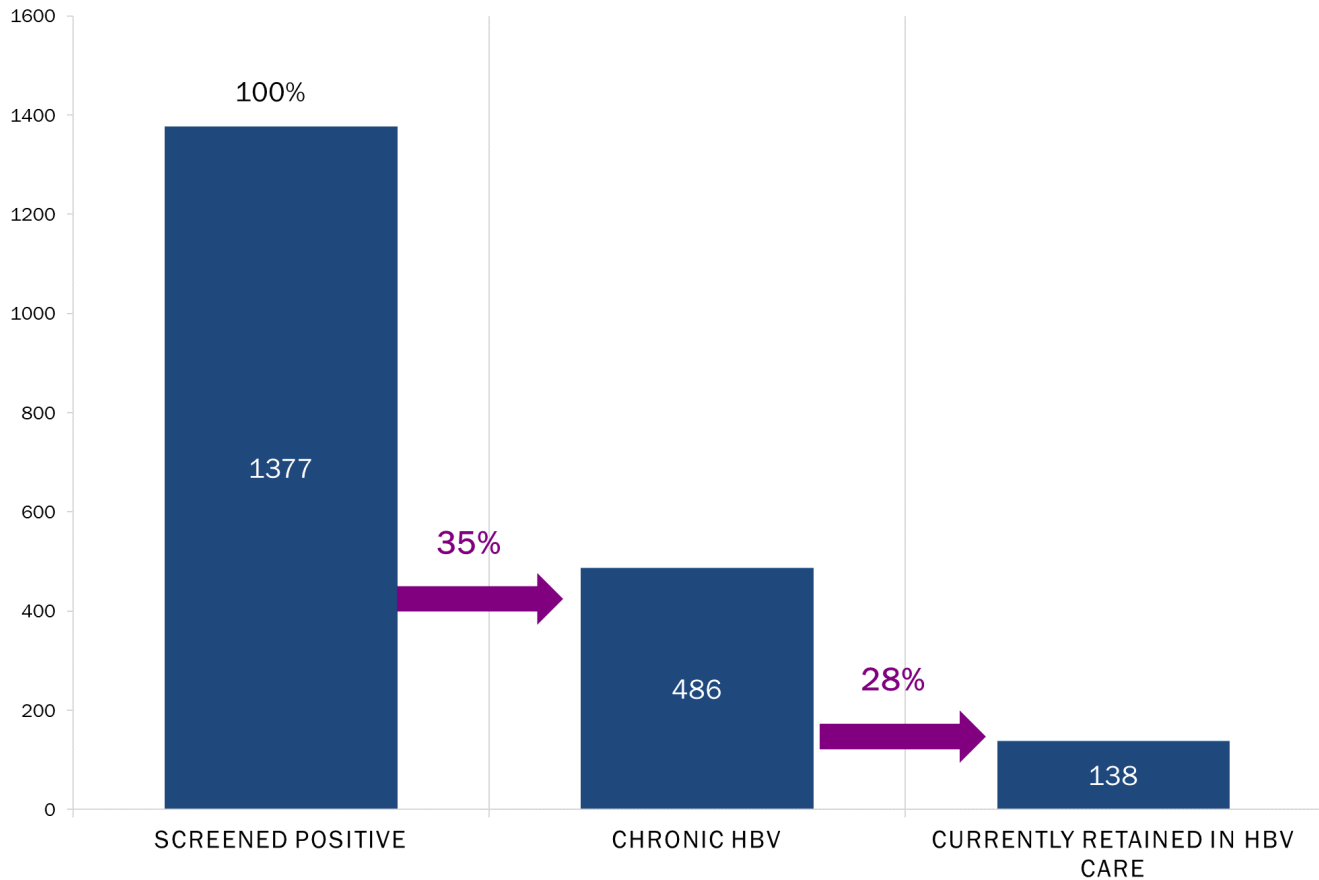
**Figure 21.** In 2023, **53%** of people in Milwaukee County who were affected by HBV were male.



# HBV Continuum of Care–Milwaukee, 2012–2023

The chronic hepatitis B continuum of care (CoC) is a way to demonstrate a standardized approach to measure HBV care engagement and management based on laboratory reporting. The chronic HBV CoC visualizes gaps in care, highlighting the need to improve access to and retention in specialized HBV care management.

**Figure 22.** HBV Continuum of Care



## Definition

<b>Screened positive</b>	All individuals who have tested positive for HBV DNA, HBsAg, or HBV Genotype from 01/01/2012–12/31/2023 and meets the acute confirmed, chronic probable, or chronic confirmed CSTE case definition <b>and</b> are still alive through 12/31/2023
<b>Chronic HBV</b>	CSTE chronic confirmed case definition
<b>Currently retained in care</b>	HBV testing occurring during the follow-up period of 07/01/2022 - 12/31/2023

# References

1. Cartwright EJ, Patel P, Kamili S, Wester C. Updated Operational Guidance for Implementing CDC's Recommendations on Testing for Hepatitis C Virus Infection. *MMWR Morb Mortal Wkly Rep* 2023;72:766–768. DOI: <http://dx.doi.org/10.15585/mmwr.mm7228a2>
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3. Schillie S, et al. CDC Recommendations for Hepatitis C Screening Among Adults — United States, 2020. *MMWR Recomm Rep* 2020;69(No. RR-2):1–17.
4. Thompson WW, Symum H, Sandul A, et al. *Vital Signs*: Hepatitis C Treatment Among Insured Adults — United States, 2019–2020. *MMWR Morb Mortal Wkly Rep* 2022;71:1011–1017. DOI: <http://dx.doi.org/10.15585/mmwr.mm7132e1>
5. Conners EE, Panagiotakopoulos L, Hofmeister MG, et al. Screening and Testing for Hepatitis B Virus Infection: CDC Recommendations — United States, 2023. *MMWR Recomm Rep* 2023;72(No. RR-1):1–25. DOI: <http://dx.doi.org/10.15585/mmwr.rr7201a1>
6. Weng MK, Doshani M, Khan MA, et al. Universal Hepatitis B Vaccination in Adults Aged 19–59 Years: Updated Recommendations of the Advisory Committee on Immunization Practices — United States, 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:477–483. DOI: <http://dx.doi.org/10.15585/mmwr.mm7113a1>
7. Center for Disease Control and Prevention. Perinatal Transmission. CDC, 2022. [Perinatal Transmission of Hepatitis B virus | CDC](#)

# Acknowledgments

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Please visit the following links for more information:

[WI Hepatitis B Immunization](#)

[WI Hepatitis C Program](#)