

West Virginia

Viral Hepatitis Program

2024 Viral Hepatitis Surveillance Report

Viral Hepatitis Program

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2024 Viral Hepatitis Surveillance Report
January 1, 2024 – December 31, 2024

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2024 Viral Hepatitis Surveillance Report

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This report was funded in part by the Centers for Disease Control and Prevention (CDC) grants, "Integrated Viral Hepatitis Surveillance and Prevention Funding for Health Departments", “Public Health Infrastructure”, and “Epidemiology and Laboratory Capacity – SET-NET”.

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Viral Hepatitis Surveillance Overview

Hepatitis is an inflammation of the liver, most often caused by a virus. In the United States, the most common types of viral hepatitis are hepatitis A, hepatitis B, and hepatitis C. Symptoms of viral hepatitis include jaundice, nausea, stomach pain, fatigue, and loss of appetite. While the various types of hepatitis can produce similar symptoms, each hepatitis virus affects the liver differently and has different routes of transmission and infection. Fortunately, effective vaccines are available to help prevent hepatitis A and hepatitis B. Although no vaccine is available for hepatitis C, safe and effective treatment can cure the virus.

Methods

Viral hepatitis infections are reportable in West Virginia. The reporting process for hepatitis A, hepatitis B, and hepatitis C is required by West Virginia State Code under the West Virginia Reportable Disease Legislative Rule (64CSR7). The Rule establishes procedures for reporting certain diseases and conditions, unusual health events, and clusters or outbreaks of diseases to the Bureau for Public Health. It also establishes the responsibility of various entities and facilities in controlling communicable diseases. Disease information is captured in the West Virginia Electronic Disease Surveillance System (WVEDSS) through laboratory reports, provider reports, and case-patient interviews.

Limitations

Several limitations should be noted regarding the data summarized in this report. Viral hepatitis reports, both laboratory and provider-generated, must be sent to the appropriate receiving entity to be captured in WVEDSS and managed for follow-up public health action. If providers or laboratories are unaware of or do not comply with reporting requirements for hepatitis conditions, cases may be missed for investigation and surveillance classification. In addition to disease reports from laboratories and providers, information captured in the disease case investigation relies on the local health department successfully contacting the case-patient and performing an interview-style investigation. The information collected in disease investigations relies on self-reporting by the case-patient. This can make the completion of case investigations difficult and/or inaccurate if the case-patient has issues with recall, does not wish to complete the interview, or provides false information.

The data presented in this report are provisional, as the information captured in WVEDSS is continuously reviewed for quality assurance purposes and is subject to change as additional laboratory and/or clinical information is received.

Hepatitis A

Background

Hepatitis A is a highly contagious infection caused by the hepatitis A virus (HAV). The most effective way to prevent HAV infection is through vaccination. Hepatitis A is transmitted person-to-person through contact with the stool of an infected person or by the consumption of contaminated food and water. Symptoms of HAV can include jaundice, fever, fatigue, nausea, vomiting, loss of appetite, abdominal pain, dark urine, and clay-colored stools. Infected people generally experience symptom resolution within two months of disease onset, though more severe cases may require hospitalization.

Risk Factors

Exposure to fecal matter, contaminated food and/or drink, and person-to-person contact increase the risk for contracting the Hepatitis A virus. Risk factors for Hepatitis A include international travel, close contact with an infected person, substance use, certain living conditions, sexual behavior, contaminated food or water, and occupational exposure.

Table 1.1. Reported Risk Behaviors or Exposures Among Acute HAV Cases in West Virginia, 2024

Risk Factor*	Yes	No	Unknown
Injection Drug Use	22.2%	66.7%	11.1%
Non-Injection Drug Use	22.2%	66.7%	11.1%
Contact of a Known Case	0.0%	88.9%	11.1%
Unhoused	11.1%	77.8%	11.1%

*Cases may report more than one risk behavior/exposure

Completeness

All nine (9) cases of HAV in West Virginia included complete demographic data for age, sex, race, and ethnicity, exceeding the CDC requirement of 90%. All cases also had complete risk factor data, exceeding the CDC requirement of 70% completeness.

Hepatitis A in West Virginia

In March 2018 (Figure 1.1), West Virginia identified an increase in HAV cases that were later linked to a multistate HAV outbreak. The increase occurred primarily among those who used drugs, were unstably housed, or were recently incarcerated. In 2020, the statewide outbreak, which had included 2,732 cases, ended as case counts returned to baseline.

All reported HAV cases in 2024 were male (Figure 1.2); eight reported their race as White and one as other (Table 1.2). Eight reported their ethnicity as non-Hispanic or Latino and one as Hispanic or Latino (Table 1.3). All cases were observed among adults; 55.6% of cases were aged 60 and older (Table 1.4). Injection drug use, non-injection drug use, and unhoused were risk factors identified through investigation and medical record review among the confirmed cases of HAV in 2024 (Table 1.1). Education was provided on how to prevent the spread of the disease.

Figure 1.1. Acute HAV Incidence Rates in West Virginia, 2017-2024

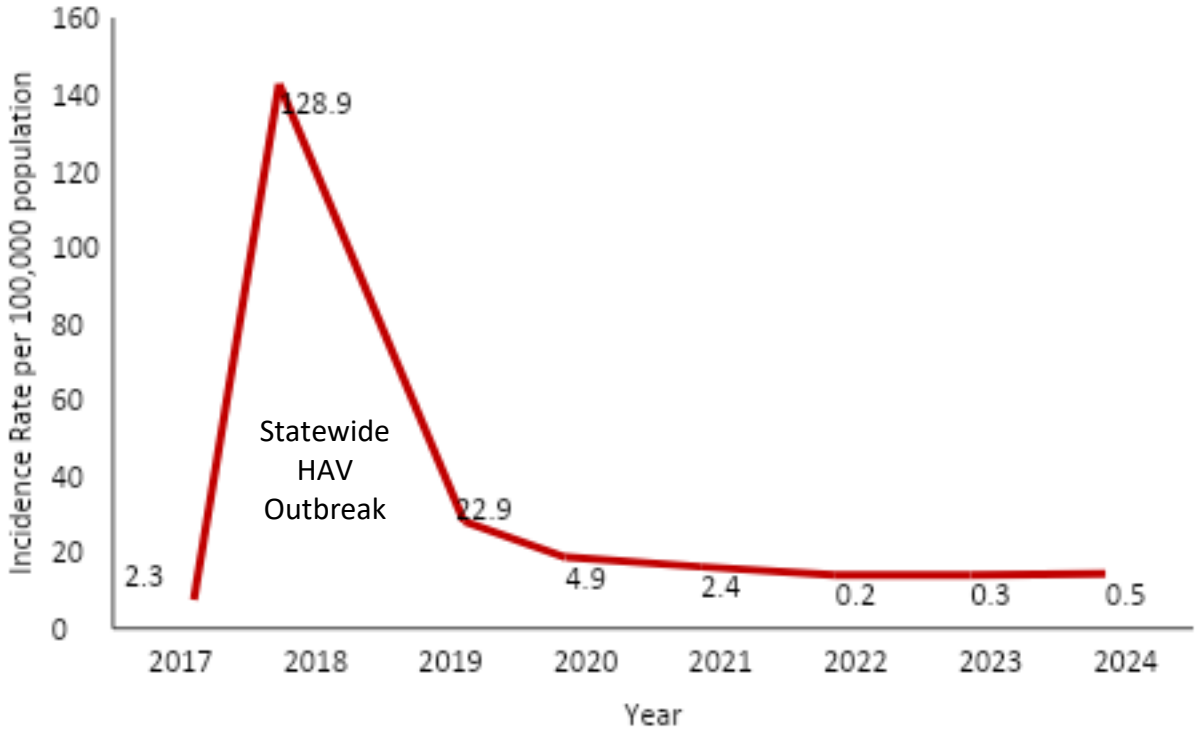


Figure 1.2. Acute HAV Cases by Sex in West Virginia, 2024 (N=9)

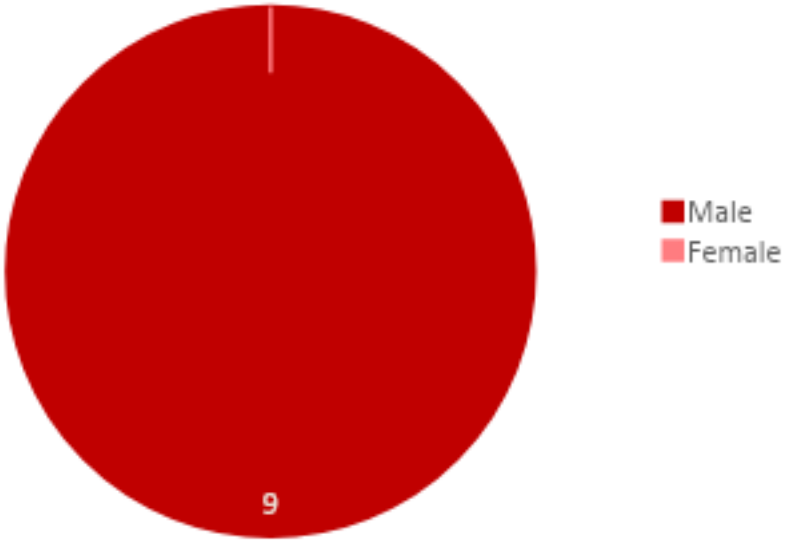


Table 1.2. Acute HAV Cases by-Race in West Virginia, 2024

Race	Count	Percent
White	8	88.9%
Black	0	0.0%
Multi-race	0	0.0%
Other	1	11.1%
Unknown	0	0.0%
Total	9	100%

Table 1.3. Acute HAV Cases by Ethnicity in West Virginia, 2024

Ethnicity	Count	Percent
Not Hispanic or Latino	8	89.9%
Hispanic or Latino	1	11.1%
Unknown	0	0.0%

Total	9	100%

Table 1.4. Acute HAV Cases by Age Group in West Virginia, 2024

Age Group (years)	Counts	Percent
0-19	0	0.0%
20-29	0	0.0%
30-39	1	11.1%
40-49	0	0.0%
50-59	3	33.3%
60+	5	55.6%
Total	9	100%

Hepatitis B

Background

Hepatitis B is a vaccine-preventable liver disease. It is caused by the hepatitis B virus (HBV) and can be transmitted through direct contact with contaminated blood, semen, or other bodily fluids. Transmission of HBV can occur through sexual contact, sharing needles, syringes, or other drug use equipment, or perinatally from mother to baby at birth. Hepatitis B can be short-term (acute) or long-term (chronic), affecting some for a few months and others for years. The long-term effects of chronic hepatitis B can include cirrhosis of the liver, liver cancer, and even death. Although there is no cure, those who are chronically infected with HBV can be treated to reduce the risk of developing more serious liver diseases. The most effective way to prevent HBV infection is to receive the vaccine.

Risk Factors

Exposure to blood and/or any body fluids that may contain blood increases the risk for contracting the Hepatitis B Virus. Risk factors for Hepatitis B include close contact with an infected person, injection and non-injection drug use, sexual behavior, and occupational exposure. In 2024, the most frequently reported risk factors for acute hepatitis B cases were injection and non-injection drug use (Table 2.1).

Table 2.1. Reported Risk Behaviors or Exposures Among Acute HBV Cases in West Virginia, 2024

Risk Factor*	Yes	No	Unknown
Injection Drug Use	42.9%	27.0%	30.2%
Non-Injection Drug Use	44.4%	23.8%	31.7%
Contact of a Case	4.8%	11.1%	84.1%
Recent Tattoo	6.3%	25.4%	68.3%

*Cases may report more than one risk behavior/exposure

Completeness

There were 63 cases of acute hepatitis B in West Virginia in 2024. Of those 63 cases, all included complete demographic data for age, sex, race, and ethnicity, exceeding the CDC requirement of 90% completeness. All cases also had complete data for risk factors, meeting the 70% completeness required by CDC.

There were 200 cases of chronic hepatitis B in West Virginia in 2024. Of those 200 cases, all had complete demographic data for age and sex. Race was documented in 98.5% of cases and ethnicity was documented in 92.5% of cases. These values meet CDC performance measures for completeness of demographic information, 90%. All cases were complete for risk factors, which exceeded the CDC requirement of 70%.

Hepatitis B in West Virginia

For several years, West Virginia reported one of the highest incidence rates of acute hepatitis B in the nation. The rate in West Virginia has steadily declined, to two cases per 100,000 population in 2023 (Figure 2.1); however, the rates from 2020 to 2022 may be artificially low due to the increased demand for public health responses to the COVID-19 outbreak and fewer HBV case-patients being contacted for interviews. In January of 2024, the case definition used to define acute hepatitis B cases changed, making initial identification of hepatitis B acute cases easier (see Appendix A). This led to more investigation of more cases and more acute hepatitis B cases that could be counted. Most acute hepatitis B cases were male (Figure 2.2), and they reported their race as White (Table 2.1). Most acute hepatitis B cases were between the ages of 40-49 and over the age of 60 (Table 2.3). Frequently reported risk factors for acute hepatitis B cases in 2023 were injection and non-injection drug use (Table 2.4). A similar demographic profile was found among chronic hepatitis B cases except for age.

Figure 2.1. Acute HBV Incidence Rates, West Virginia, 2017-2024

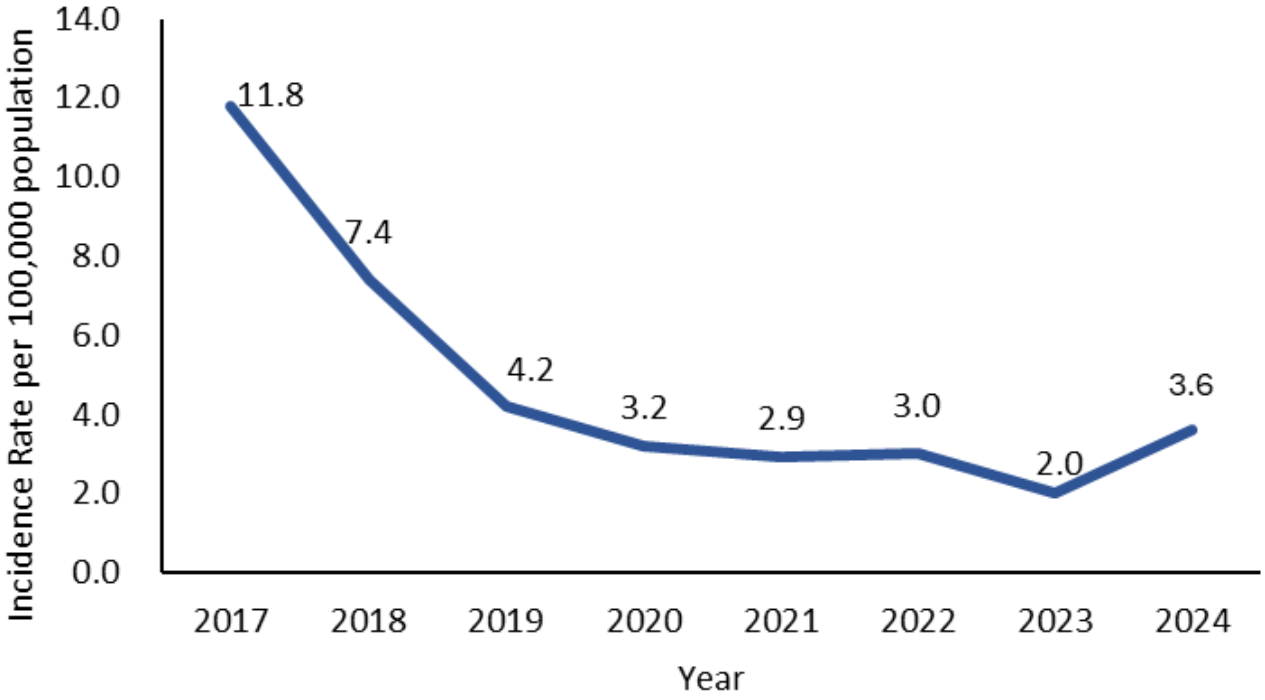


Figure 2.2. Acute HBV Cases by Sex in West Virginia, 2024 (N=63)

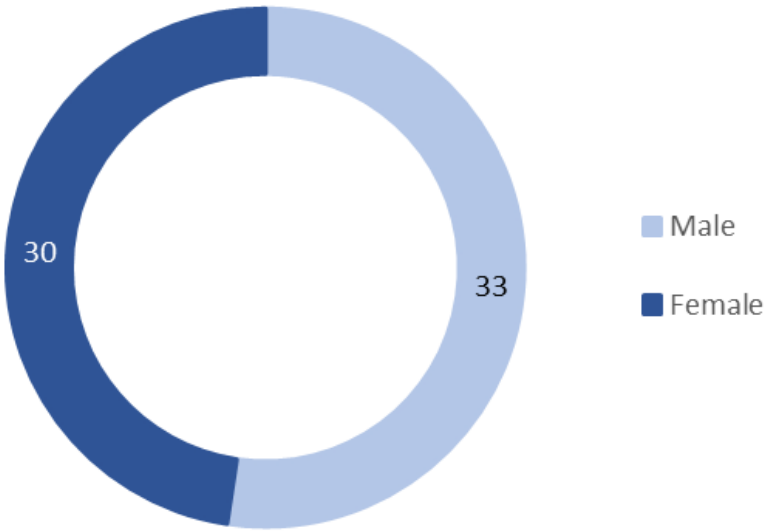


Table 2.2. Acute HBV Cases by Race in West Virginia, 2024

Race	Count	Percent
White	55	87.3%
Asian or Pacific Islander	2	3.2%
Multi-race	6	9.5%
Total	63	100%

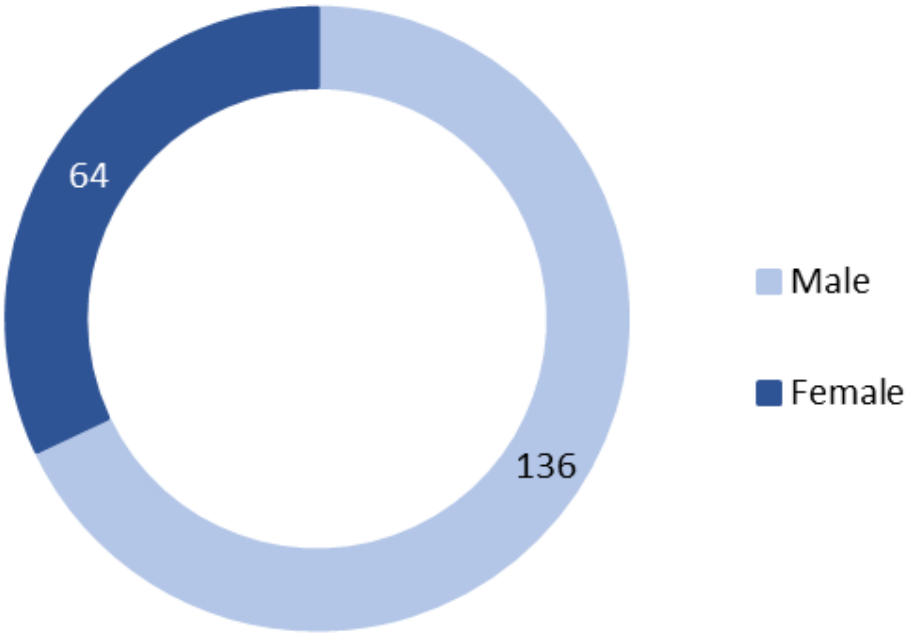
Table 2.3. Acute HBV Cases by Ethnicity in West Virginia, 2024

Ethnicity	Count	Percent
Not Hispanic or Latino	63	100%
Hispanic or Latino	0	0.0%
Total	63	100%

Table 2.4. Acute HBV Cases by Age Group in West Virginia, 2024

Age Group (years)	Count	Percent
0-19	0	0.0%
20-29	3	4.8%
30-39	10	15.9%
40-49	22	34.9%
50-59	12	19.0%
60+	16	25.4%
Total	63	100%

Figure 2.3. Chronic HBV Cases by Sex in West Virginia, 2024 (N=200)



Note: Includes 108 confirmed and 92 probable chronic HBV cases

Table 2.5. Chronic HBV Cases by Race in West Virginia, 2024

Race	Count*	Percent
White	140	70.0%
Black	19	9.5%
Multi-race	20	10.0%
Asian	13	6.5%
Other	5	2.5%
Unknown	3	1.5%
Total	200	100%

*Includes 108 confirmed and 92 probable cases

Table 2.6. Chronic HBV Cases by Ethnicity in West Virginia, 2024

Ethnicity	Count*	Percent
Not Hispanic or Latino	182	91.0%
Hispanic or Latino	3	1.5%
Unknown	15	7.5%
Total	200	100%

*Includes 108 confirmed and 92 probable cases

Table 2.7. Chronic HBV Cases by Age Group in West Virginia, 2024

Age Group (years)	Count*	Percent
0-19	3	1.5%
20-29	17	8.5%
30-39	40	20.0%
40-49	60	30.0%
50-59	46	23.0%
60+	34	17.0%
Total	200	100%

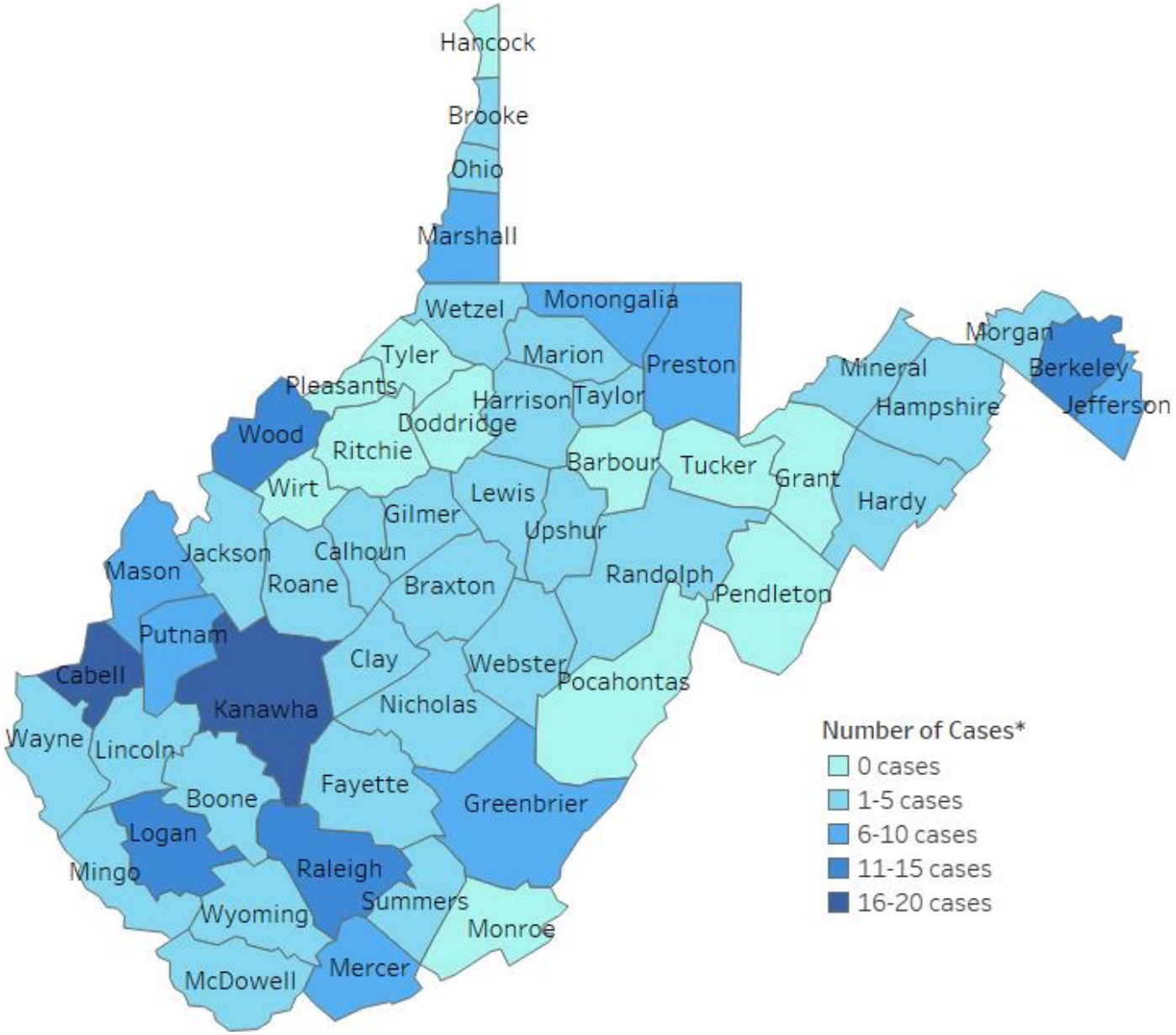
*Includes 108 confirmed and 92 probable cases

Table 2.8. Chronic HBV Case Counts in West Virginia by County, 2024

County	Population*	Count**	County	Population*	Count**
Barbour	15,336	0	Mineral	26,751	3
Berkeley	135,990	11	Mingo	21,680	4
Boone	20,448	2	Monongalia	107,931	9
Braxton	12,054	1	Monroe	12,516	0
Brooke	21,294	2	Morgan	17,806	1
Cabell	91,455	17	Nicholas	23,955	3
Calhoun	5,931	1	Ohio	40,969	5
Clay	7,693	1	Pendleton	5,906	0
Doddridge	7,642	0	Pleasants	7,352	0
Fayette	38,554	4	Pocahontas	7,640	0
Gilmer	7,117	1	Preston	33,987	6
Grant	10,962	0	Putnam	56,922	6
Greenbrier	31,832	6	Raleigh	72,185	13
Hampshire	23,768	3	Randolph	27,130	4
Hancock	27,977	0	Ritchie	8,122	0
Hardy	14,435	2	Roane	13,508	1
Harrison	64,426	4	Summers	11,584	3
Jackson	27,496	3	Taylor	16,486	1
Jefferson	61,289	6	Tucker	6,549	0
Kanawha	173,423	17	Tyler	7,896	0
Lewis	16,478	1	Upshur	23,658	1
Lincoln	19,369	1	Wayne	37,503	3
Logan	30,615	11	Webster	7,933	1
Marion	17,186	3	Wetzel	13,812	2

Marshall	55,685	1	Wirt	4,908	0
Mason	29,284	6	Wood	82,650	13
McDowell	24,765	6	Wyoming	20,007	1
Mercer	57,552	10	West Virginia	1,767,402	200

*Population estimates obtained from the U.S. Census Bureau, Vintage 2025, Year 2024.
**Includes 108 confirmed and 92 probable cases


Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Tyler
Marion
Preston
Pleasants
Harrison
Taylor
Wood
Doddridge
Ritchie
Barbour
Tucker
Wirt
Lewis
Gilmer
Upshur
Grant
Hardy
Jackson
Calhoun
Mason
Roane
Braxton
Randolph
Pendleton
Putnam
Clay
Webster
Cabell
Pocahontas
Kanawha
Nicholas
Wayne
Lincoln
Fayette
Greenbrier
Boone
Logan
Raleigh
Mingo
Summers
Wyoming
Monroe
Mercer
McDowell
Morgan
Berkeley
Mineral
Hampshire
Jefferson
Number of Cases*
0 cases
1-5 cases
6-10 cases
11-15 cases
16-20 cases

Perinatal Hepatitis B in West Virginia

Hepatitis B may also be spread from mother to infant via vertical or perinatal transmission. Infants born to HBV-positive mothers face serious health risks if appropriate post-exposure prophylaxis (PEP) is not administered within the recommended timeframe. Unlike adults who are infected with HBV, the chronicity rate of perinatally transmitted HBV is much higher, around 90%. If hepatitis B infections are not prevented, these children may experience severe, lifelong health impacts such as cirrhosis and liver cancer.

The Perinatal Hepatitis B Prevention Program (PHBPP) was created in 1990 by the CDC and later adopted by WV in the mid-2000s. The goal of this program is to prevent transmission of hepatitis B from infected mothers to their infants through identification of positive mothers and case management efforts to ensure their infants receive proper PEP at delivery through post-vaccination serological testing.

Despite having the highest rate of acute HBV infections in the US, WV has reported only one perinatal hepatitis B infection since 2017. This can be attributed to the implementation and ongoing adherence to the universal hepatitis B vaccine birth dose, diligent hospital delivery personnel, and local and state public health partners working together to ensure the goal of hepatitis elimination.

Figure 2.5 Mothers Enrolled in PHBPP and Perinatal HBV Cases in West Virginia, 2017-2024

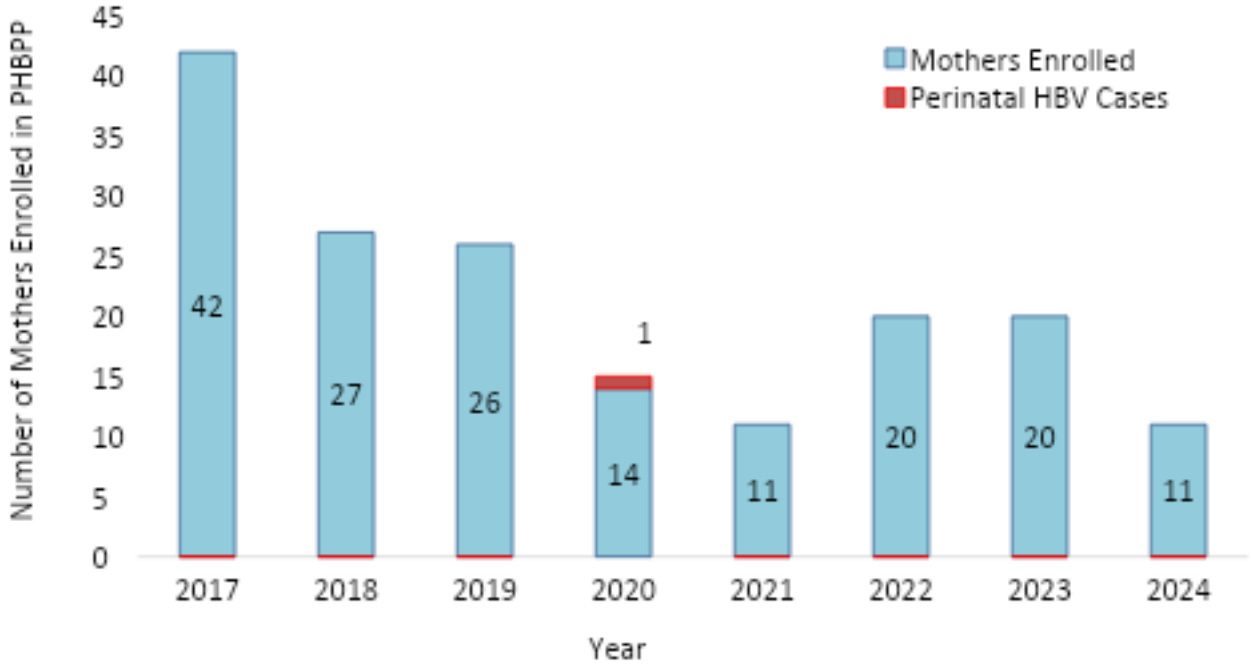


Table 2.9. Race of Mothers Enrolled in the PHBPP in West Virginia, 2024

Race	Count	Percent**
White	5	45.5%
Asian	5	45.5%
Black	1	9.1%
Multi-Race	0	0.0%
Total	11	100%

**Percent may not add to 100% due to rounding

Table. 2.10 Ethnicity of Mothers Enrolled in the PHBPP in West Virginia, 2024

Ethnicity	Count	Percent
Not Hispanic or Latino	11	100%
Hispanic or Latino	0	0.0%
Total	11	100%

Table 2.11 Age Range of Mothers Enrolled in the PHBPP in West Virginia, 2024

Age Group (years)	Count	Percent
0-19	0	0.0%
20-29	4	36.4%
30-39	7	63.6%
40-49	0	0.0%
50-59	0	0.0%
60+	0	0.0%
Total	11	100%

Hepatitis C

Background

Hepatitis C is a liver infection caused by the hepatitis C virus (HCV). It is spread through contact with blood from an infected person. Hepatitis C infection may be an acute, short-term illness; however, for more than half of the people who become infected with HCV, it develops into a long-term, chronic infection. Chronic hepatitis C can result in serious health issues like cirrhosis and liver cancer. Most new infections with HCV are the result of sharing needles to inject drugs. There is no HCV vaccine; however, getting tested for HCV is vital because it is curable, and treatments exist that can clear the infection in eight to 12 weeks for most. The best way to prevent hepatitis C is by avoiding behaviors that can spread the virus.

Risk Factors

Exposure to blood and/or any body fluids that may contain blood increases the risk for contracting the hepatitis C virus. Risk factors for hepatitis C include close contact with an infected person, substance use, sexual behavior, occupational exposure, healthcare procedures, and birth to an infected mother.

Table 3.1. Reported Risk Behaviors or Exposures Among Acute HCV Cases in West Virginia, 2024

Risk Factor*	Yes	No	Unknown
Non-injection Drug Use	50.4%	6.9%	42.7%
Injection Drug Use	48.1%	12.2%	39.7%
Tattoos	19.8%	14.5%	65.6%
Contact of a Known Case	0.0%	0.0%	0.0%

*Cases may report more than one risk behavior/exposure

**Percent may not add to 100% due to rounding

Completeness

There were 131 cases of acute hepatitis C in West Virginia in 2024. Of those 131, all had complete demographic data for age, sex, and race. Seven (7) cases were missing information about ethnicity of the patient, or 94.7% completeness for that demographic indicator. This value is within CDC recommendations for completeness. All cases also had complete data for risk factors, meeting the 70% completeness required by CDC.

There were 2,654 cases of chronic hepatitis C in West Virginia in 2024. Of these cases, 99.9% were complete for age, 100% complete for gender, 96.5% were complete for race, and 90.8% were complete for ethnicity. These values meet CDC performance measure requirements. There are no requirements for risk factor completeness for chronic hepatitis C.

Hepatitis C in West Virginia

West Virginia has one of the highest incidence rates of acute HCV infection in the nation. The incidence of acute HCV infection steadily increased from 2017 to 2018, followed by a decrease in 2019 (Figure 3.1). The incidence rate increased again in 2020, followed by a drop in 2021, and continued to rise through 2024. In 2024, the majority of acute Hepatitis C cases in West Virginia were reported in males (Figure 3.2) and identified as White (Table 3.1). Of the 131 acute cases reported in 2024, 32.1% were between the ages of 30-39 years (Table 3.3). Drug use, either injection or non-injection, was the most frequently reported risk factor (Table 3.4).

The local health department does not individually investigate cases of chronic HCV. Information included in the case is obtained through the laboratory report or provider case report form and does not often include risk factor information. Like acute HCV, more than half of the reported chronic cases of HCV were among males (Figure 3.2). Of the 2,660 cases of chronic HCV, 32.8% were between the ages of 30-39 years (Table 3.7).

Figure 3.1. Acute HCV Incidence Rates, West Virginia, 2017-2024

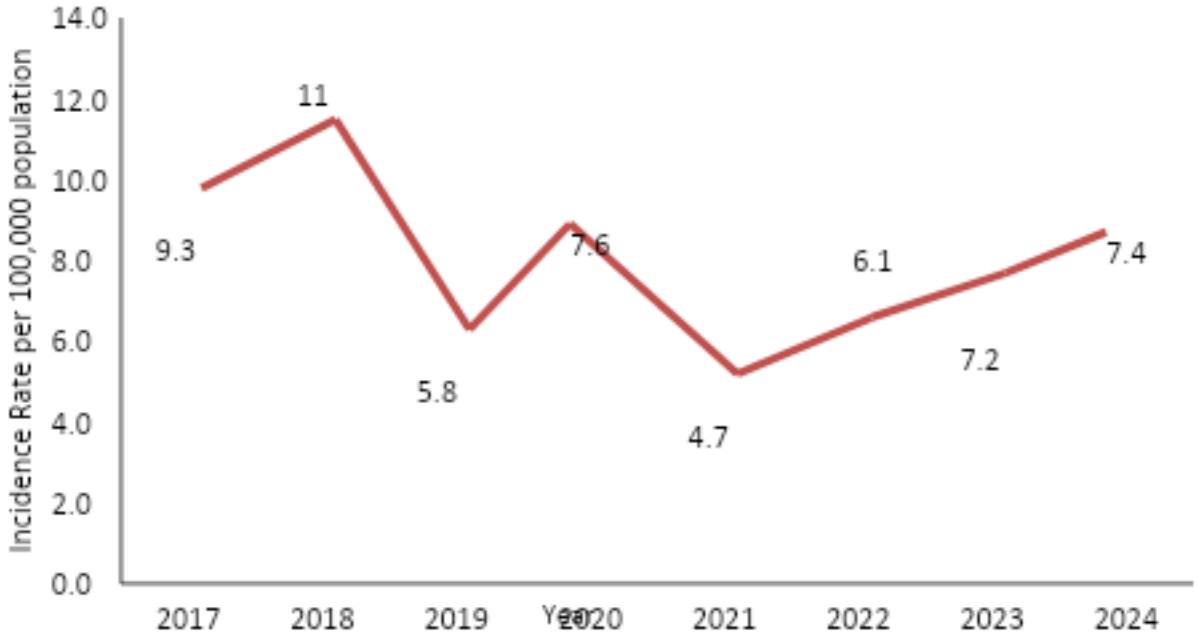


Figure 3.2. Acute HCV Cases by Sex in West Virginia, 2024 (N=131)



Note: Includes 123 confirmed and eight probable cases

Table 3.1. Acute HCV Cases by Race in West Virginia, 2024

Race	Count*	Percent
White	119	90.8%
Black	2	1.5%
Multi-race	9	6.9%
Other	1	0.8%
Unknown	0	0.0%
Total	131	100%

*Includes 123 confirmed and eight probable cases

Table 3.2. Acute HCV Cases by Ethnicity in West Virginia, 2024

Ethnicity	Count*	Percent
Not Hispanic or Latino	125	95.4%
Hispanic or Latino	2	1.5%
Unknown	4	3.1%
Total	131	100%

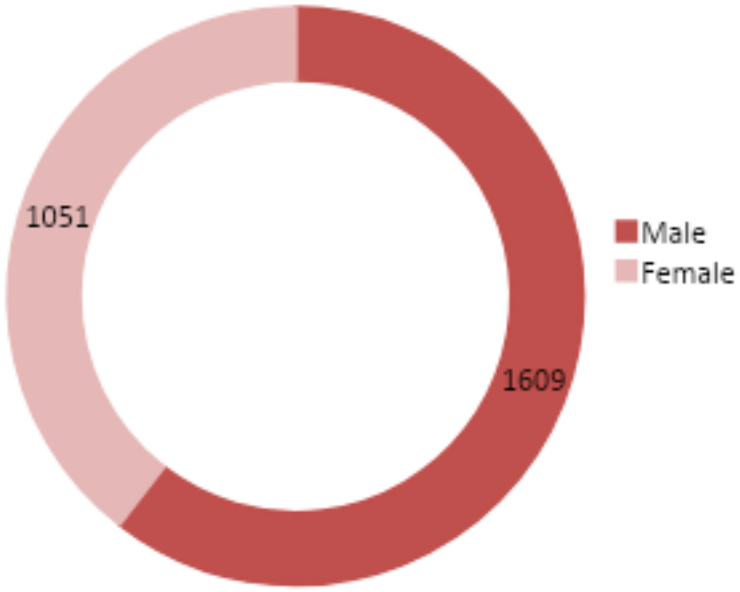
*Includes 123 confirmed and eight probable cases

Table 3.3. Acute HCV Cases by Age Group in West Virginia, 2024

Age Group (years)	Count*	Percent**
0-19	3	2.3%
20-29	27	20.6%
30-39	42	32.1%
40-49	34	26.0%
50-59	9	6.9%
60+	16	12.2%
Total	131	100%

*Includes 123 confirmed and eight probable cases
**Percent may not add to 100 due to rounding

Figure 3.3. Chronic HCV Cases by Sex in West Virginia, 2024 (N=2,660)



Note: Includes 1,826 confirmed and 834 probable cases

Table 3.5. Chronic HCV Cases by Race in West Virginia, 2024

Race	Count*	Percent
American Indian or Alaska Native	4	0.2%
Asian	7	0.3%
Black	104	3.9%
Multi-race	76	2.9%
Native Hawaiian	2	0.1%
Other	31	1.2%
Unknown	86	3.2%
White	2,350	88.3%
Total	2,660	100%

*Includes 1,826 confirmed and 834 probable cases

Table 3.6. Chronic HCV Cases by Ethnicity in West Virginia, 2024

Ethnicity	Count*	Percent
Not Hispanic or Latino	2,401	90.3%
Hispanic or Latino	16	0.6%
Unknown	243	9.1%
Total	2,660	100%

*Includes 1,826 confirmed and 834 probable cases

Table 3.7. Chronic HCV Cases by Age Group in West Virginia, 2024

Age Group (years)	Count*	Percent
0-19	22	0.8%
20-29	300	11.3%
30-39	873	32.8%
40-49	706	26.5%
50-59	382	14.4%
60+	377	14.2%
Total	2,660	100%

*Includes 1,826 confirmed and 834 probable cases

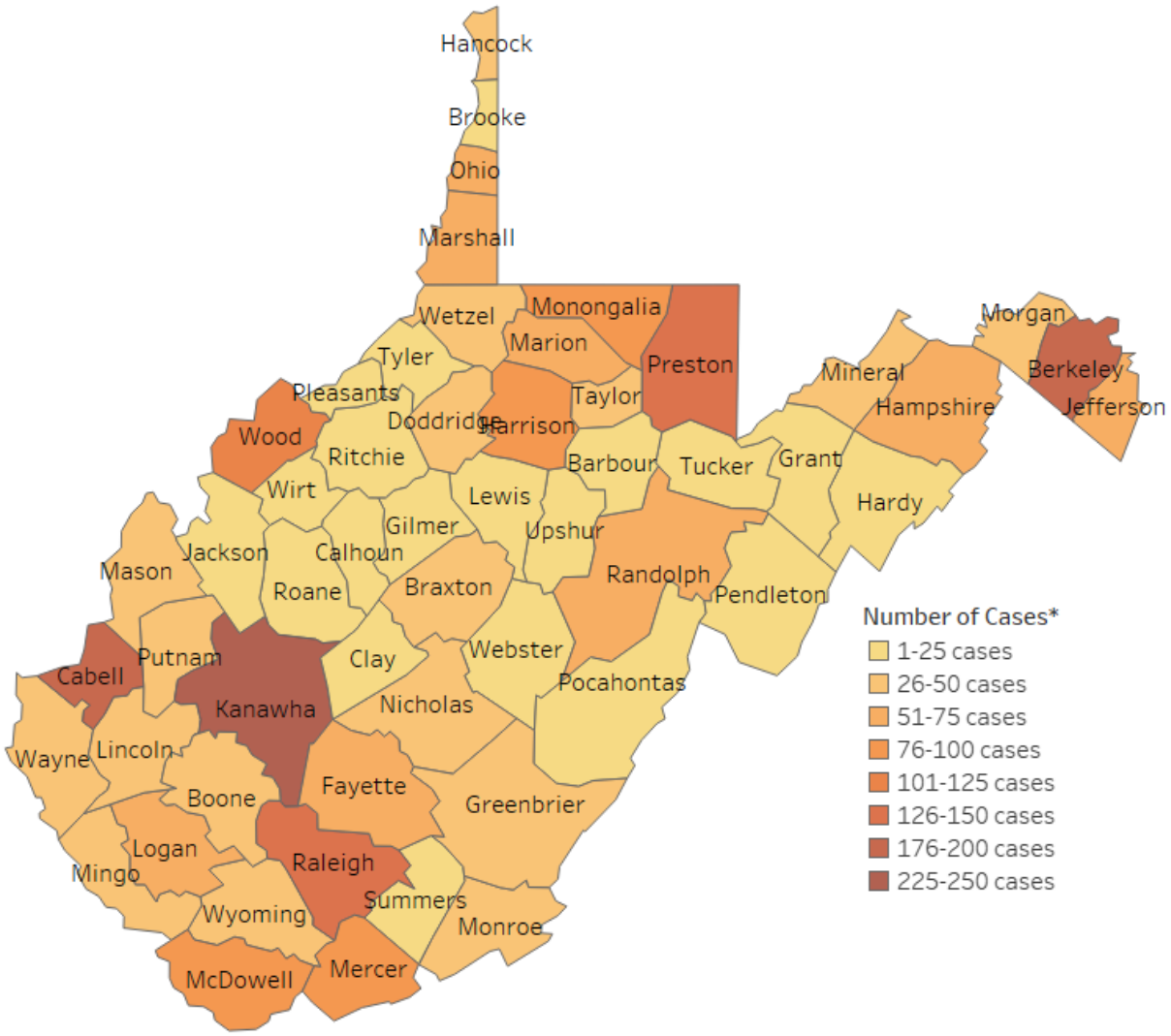
Table 3.8. Chronic HCV Case Counts in West Virginia by County, 2024

County	Population*	Count**	County	Population*	Count**
Barbour	15,336	9	Mineral	26,751	30
Berkeley	135,990	195	Mingo	21,680	37
Boone	20,448	33	Monongalia	107,931	88
Braxton	12,054	32	Monroe	12,516	28
Brooke	21,294	23	Morgan	17,806	27
Cabell	91,455	195	Nicholas	23,955	32
Calhoun	5,931	3	Ohio	40,969	67
Clay	7,693	12	Pendleton	5,906	7
Doddridge	7,642	41	Pleasants	7,352	13
Fayette	38,554	56	Pocahontas	7,640	9
Gilmer	7,117	25	Preston	33,987	137
Grant	10,962	12	Putnam	56,922	32
Greenbrier	31,832	38	Raleigh	72,185	129
Hampshire	23,768	55	Randolph	27,130	54
Hancock	27,977	29	Ritchie	8,122	7
Hardy	14,435	13	Roane	13,508	9
Harrison	64,426	90	Summers	11,584	16
Jackson	27,496	24	Taylor	16,486	29
Jefferson	61,289	71	Tucker	6,549	8
Kanawha	173,423	230	Tyler	7,896	11
Lewis	16,478	19	Upshur	23,658	17
Lincoln	19,369	26	Wayne	37,503	47
Logan	30,615	58	Webster	7,933	8
Marion	55,685	52	Wetzel	13,812	28
Marshall	29,284	57	Wirt	4,908	3
Mason	24,765	49	Wood	82,650	123

McDowell	17,186	95	Wyoming	20,007	27
Mercer	57,552	95	West Virginia	1,767,402	2,660

*Population estimates obtained from the U.S. Census Bureau, year: 2024

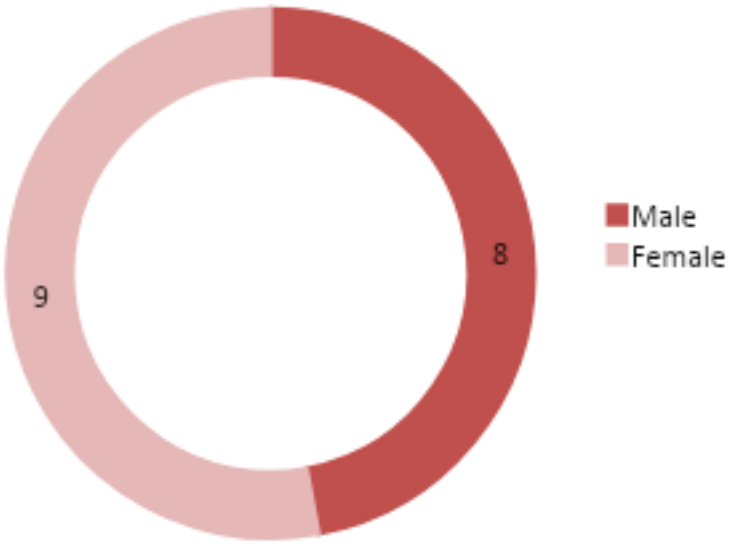
**Includes 1,826 confirmed and 834 probable cases



Perinatal Hepatitis C in West Virginia

Perinatal hepatitis C infections occur when hepatitis C passes from mother to infant in utero or during childbirth. This is known as vertical transmission and can lead to significant illness in pediatric populations. As West Virginia has the highest rate of acute HCV infection in the United States, especially among women of childbearing age, children born to hepatitis C-positive mothers must be tested and treated if they are infected. Perinatal HCV infection became reportable in West Virginia in 2022 and has been nationally reportable since 2018. Surveillance for perinatal hepatitis C infection relies on the receipt of positive hepatitis C test results for perinatally exposed infants and provider reports. In 2024, perinatal hepatitis C cases in West Virginia were nearly even between male and female children (Figure 3.5), with 94.1% of cases reported as White (Table 3.9). Sixteen cases reported Not Hispanic or Latino and one unknown (Table 3.10).

Figure 3.5. Perinatal HCV Cases by Sex in West Virginia, 2024 (N=17)



Note: Includes 14 confirmed and three probable cases

Table 3.9. Perinatal HCV Cases by Race in West Virginia, 2024

Race	Count*	Percent
White	16	94.1%
Black	1	5.9%
Multi-race	0	0.0%
Other	0	0.0%
Unknown	0	0.0%
Total	17	100%

*Includes 14 confirmed cases and three probable cases

Table 3.10. Perinatal HCV Cases by Ethnicity in West Virginia, 2024

Ethnicity	Count*	Percent
Not Hispanic or Latino	16	94.1%
Hispanic or Latino	0	0.0%
Unknown	1	5.9%
Total	17	100%

*Includes 14 confirmed cases and three probable cases

Conclusion

Viral hepatitis infections can lead to serious health impacts, especially for those who develop chronic infections, including liver cancer and death. It is imperative to prevent or detect these infections to reduce disease transmission and improve health outcomes. West Virginia has some of the highest rates of acute hepatitis B and C infections in the nation. This presents a significant challenge for health professionals to adequately screen and treat these conditions. Public health surveillance can support these efforts by receiving hepatitis laboratory reports and collaborating with local health departments to ensure case-patients who test positive for hepatitis are educated, their close contacts at risk for exposure are identified, and connected to care.

Appendix A: Surveillance Case Definitions

Acute HAV 2019 Case Definition

Clinical Criteria

An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain, or dark urine)

AND

a) jaundice or elevated total bilirubin levels ≥ 3.0 mg/dL, OR b) elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

AND

c) the absence of a more likely diagnosis

Laboratory Criteria for Diagnosis

Confirmatory laboratory evidence:

- Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive,

OR

- Nucleic acid amplification test (NAAT, such as Polymerase Chain Reaction [PCR] or genotyping) for hepatitis A virus RNA positive

Epidemiologic Linkage

Contact (e.g., household or sexual) with a laboratory-confirmed hepatitis A case 15-50 days prior to onset of symptoms.

Criteria to Distinguish a New Case from an Existing Case

Hepatitis A is typically self-limiting and does not lead to chronic infection. However, up to 10% of people with hepatitis A may experience a relapse during the six months after acute illness. Cases of relapsing hepatitis A should not be enumerated as new cases. In addition, a case should not be counted as a hepatitis A case if there is an alternate, more likely diagnosis.

Case Classification

Confirmed

- A case that meets the clinical criteria and is IgM anti-HAV positive[§], **OR**
- A case that has hepatitis A virus RNA detected by NAAT (such as PCR or genotyping), **OR**
- A case that meets the clinical criteria and occurs in a person who had contact (e.g., household or sexual) with a laboratory-confirmed hepatitis A case 15-50 days prior to onset of symptoms.

§ And not otherwise ruled out by IgM anti-HAV or NAAT for hepatitis A virus testing performed in a public health laboratory.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-a-acute-2019/

Acute HBV 2024 Case Definition

Clinical Description

An acute illness with a discrete onset of any sign or symptom* consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain), and either a) jaundice, or b) elevated serum alanine aminotransferase (ALT) levels >100 IU/L.

*A documented negative hepatitis B surface antigen (HBsAg) laboratory test result within six months before a positive test (either HBsAg, hepatitis B "e" antigen (HBeAg), or HBV nucleic acid testing (HBV NAT) including genotype) result does not require an acute clinical presentation to meet the surveillance case definition.

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence:

Tier 1

- Detection of HBsAg **AND** detection of IgM anti-HBc, **OR**
- Detection of HBeAg **AND** detection of IgM anti-HBc, **OR**
- Detection of HBV DNA **AND** detection of IgM anti-HBc, **OR**
- Detection of HBsAg, HBeAg, or HBV DNA within 12 months (365 days) of a negative HBsAg test result (i.e., HBsAg seroconversion).

Tier 2

- Detection of HBV surface antigen (HBsAg) **AND** IgM antibody to HBV core antigen (IgM anti-HBc) test not done or result not available, **OR**
- Detection of HBV DNA **AND** IgM anti-HBc test not done or result not available.

Presumptive Laboratory Evidence:

- Detection of IgM anti-HBc, **AND**
- Negative or test not done for HBsAg, HBV DNA, or HBeAg.

Case Classification

Probable

- A case that meets clinical criteria **AND** presumptive laboratory evidence of acute HBV infection.

Confirmed

- A case that meets Tier 1 confirmatory laboratory evidence of acute HBV infection, **OR**
- A case that meets clinical criteria **AND** Tier 2 confirmatory laboratory evidence of acute HBV infection.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-b-acute-2024/

Chronic HBV 2024 Case Definition

Clinical Description
No symptoms are required. People with chronic hepatitis B may have no evidence of liver disease or may have a spectrum of disease ranging from chronic hepatitis to cirrhosis or liver cancer.

Laboratory Criteria for Diagnosis:

Confirmatory Laboratory Evidence:

- Detection of HBsAg in two clinical specimens taken ≥ 6 months apart, **OR**
- Detection of HBeAg in two clinical specimens taken ≥ 6 months apart, **OR**
- Detection of [HBsAg **OR** HBeAg] **AND** total anti-HBc, **OR**
- Detection of HBsAg **AND** HBeAg, **OR**
- Detection of HBV DNA.

Presumptive Laboratory Evidence:

- Detection of [HBsAg **OR** HBeAg] **AND** IgM anti-HBc test negative, not done, or result not available.

Case Classification

Probable
- A case that meets presumptive laboratory evidence of chronic HBV infection.

Confirmed
- A case that meets confirmatory laboratory evidence of chronic HBV infection.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-b-chronic-2024/

HBV Perinatal 2017 Case Definition

Clinical Criteria
Perinatal HBV infection in a child ≤ 24 months of age may range from asymptomatic to fulminant hepatitis.

Laboratory Criteria For Diagnosis
Laboratory evidence of HBV infection in an infant consists of one or more of the following:

- positive hepatitis B surface antigen (HBsAg) test (only if at least four weeks after last dose of Hep B vaccine
- positive hepatitis B e antigen (HBeAg) test
- detectable HBV DNA

Epidemiologic Linkage
Born to a HBV-infected mother.

Case Classification
Probable
Child born in the US and positive for HBsAg at ≥ one month of age and ≤ 24 months of age **OR** positive for HBeAg or HBV DNA ≥9 months of age and ≤ 24 months of age, but whose mother's hepatitis B status is unknown (i.e. epidemiologic linkage not present).
Confirmed
Child born in the US to a HBV-infected mother and positive for HBsAg at ≥ one month of age and ≤ 24 months of age **OR** positive for HBeAg or HBV DNA ≥9 months of age and ≤ 24 months of age.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-b-perinatal-virus-infection-2017

Acute HCV 2020 Case Definition

Clinical Criteria:
All hepatitis C cases in each classification category should be 36 months of age or older, unless it is known that they were exposed non-perinatally.
One or more of the following:

- Jaundice, **OR**
- Peak elevated total bilirubin levels ≥ 3.0 mg/dL, **OR**
- Peak elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

AND
The absence of a more likely diagnosis (which may include evidence of acute liver disease due to other causes or advanced liver disease due to pre-existing chronic hepatitis C infection or other causes, such as alcohol exposure, other viral hepatitis, hemochromatosis, etc.)

Laboratory Criteria
Confirmatory laboratory evidence:

- Positive hepatitis C virus detection test: Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative, or genotype testing), **OR**
- A positive test indicating the presence of hepatitis C viral antigen(s) (HCV antigen)

Presumptive laboratory evidence:

- A positive test for antibodies to hepatitis C virus (anti-HCV)

Epidemiologic Linkage
No epidemiologic linkage is required for case classification.

Criteria to Distinguish a New Case from an Existing Case
A new acute case is an incident case that is over the age of 36 months and has not previously been reported meeting case criteria for chronic hepatitis C, or for whom there is laboratory evidence of re-infection. Cases under the age of 36 months should be classified under the Perinatal HCV Position Statement (17-ID-08) unless the exposure mode is not perinatal (e.g., healthcare-acquired).

All jurisdictions are encouraged to track negative HCV viral detection tests to document both spontaneous clearance of infection and sustained viral response to HCV treatment. Cases that have evidence of having cleared the infection at the time of the initial report or are considered false positives should not be reported to the CDC.

Acute cases determined via anti-HCV test conversion do not require a positive HCV viral detection test to be reported to be considered confirmed acute cases.

A new probable acute case may be reclassified as confirmed acute if a positive HCV viral detection test is reported in the same reporting year (e.g., before CDC closes reporting for the calendar year).

Collection of risk history data is recommended for probable and confirmed cases of acute HCV. Timing of risk history data collection ranges from two weeks to 12 months before symptom onset or diagnosis. The time frame to employ depends on the method of classification (e.g., if a case meets clinical criteria and has a positive HCV detection test, a risk history time frame of two weeks to six months before onset should be used; for a case classified via anti-HCV test conversion or HCV RNA test conversion, two weeks to 12 months before onset should be considered).

Suppose evidence indicating resolution of infection is received after a confirmed acute case has been reported to the CDC. In that case, the case report does not need to be modified as it was a confirmed case at the time of the initial report. However, negative HCV viral detection test results received on confirmed acute cases, after an initial positive result, should be appended to case reports, as feasible, and considered for data analysis by each jurisdiction.

For probable acute cases, the presence of a negative HCV viral detection test result, in the absence of criteria that would allow for confirmation, indicates that a case should not be classified as probable acute and should not be reported to CDC.

A confirmed acute case may be classified as a confirmed chronic case if a positive HCV viral detection test is reported one year or longer after the onset of the acute case. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV viral detection test). For incidence and prevalence calculations, confirmed cases of acute and chronic HCV should be counted.

Case Classification

Probable

- A case that meets clinical criteria and has presumptive laboratory evidence, **AND**
- Does not have a hepatitis C virus detection test reported, **AND**
- Has no documentation of anti-HCV or HCV RNA test conversion within 12 months,

Confirmed

- A case that meets clinical criteria and has confirmatory laboratory evidence, **OR**
- A documented negative HCV antibody followed within 12 months by a positive HCV antibody test (anti-HCV test conversion) in the absence of a more likely diagnosis, **OR**
- A documented negative HCV antibody **OR** negative hepatitis C virus detection test (in someone without a prior diagnosis of HCV infection) followed within 12 months by a positive hepatitis C virus detection test (HCV RNA test conversion) in the absence of a more likely diagnosis.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-c-acute-2020/

Chronic HCV 2020 Case Definition

Clinical Criteria

All hepatitis C virus cases in each classification category should be 36 months of age or older, unless it is known that they were exposed non-perinatally.

One or more of the following:

- Jaundice, **OR**
- Peak elevated total bilirubin levels ≥ 3.0 mg/dL, **OR**
- Peak elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

AND

The absence of a more likely diagnosis (which may include evidence of acute liver disease due to other causes or advanced liver disease due to pre-existing chronic HCV infection or other causes, such as alcohol exposure, other viral hepatitis, hemochromatosis, etc.)

Laboratory Criteria

Confirmatory laboratory evidence:

- Positive hepatitis C virus detection test: Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative, or genotype testing), **OR**
- A positive test indicating the presence of hepatitis C viral antigen(s) (HCV antigen)

Presumptive laboratory evidence:

- A positive test for antibodies to hepatitis C virus (anti-HCV)

Epidemiologic Linkage

No epidemiologic linkage is required for case classification.

Criteria to Distinguish a New Case from an Existing Case

All jurisdictions are encouraged to track negative HCV viral detection tests to document both spontaneous clearance of infection or sustained viral response to HCV treatment. Cases that have evidence of having cleared the infection at the time of the initial report or are considered false positives should not be reported to the CDC.

Suppose evidence indicating resolution of infection is received after a confirmed chronic case has been reported to the CDC. In that case, the case report does not need to be modified as it was a confirmed case at the time of the initial report. However, negative HCV viral detection test results received for confirmed chronic cases, following an initial positive result, should be appended to case reports, as feasible, and considered for data analysis purposes by each jurisdiction.

Evidence for re-infection may include a case of confirmed chronic HCV infection that has at least two sequential negative HCV viral detection tests reported, indicative of treatment initiation and sustained virologic response, followed by a positive HCV viral detection test. According to current treatment recommendations, the two negative tests should be at least three months apart; however, the timing may change as the standard of care for HCV treatment evolves. Other evidence of reinfection should be considered, including a report of a new genotype in a case that

has previously cleared a different genotype. Jurisdictions are encouraged to ensure that cases of HCV treatment failure are not classified as new cases of HCV infection to the extent possible. Jurisdictions tracking reinfection should also consider collecting data on prior treatment completion (when relevant and possible to document), treatment failure, changes in reported genotype (if applicable), and the known timeframe for reinfection.

For probable chronic cases, the presence of a negative HCV viral detection test result, in the absence of criteria that would allow for confirmation, indicates that a case should not be classified as probable chronic and should not be reported to the CDC.

A new chronic case is a newly reported case that does not have evidence of being an acute case of HCV infection. A confirmed acute case may be classified as a confirmed chronic case if a positive HCV viral detection test is reported one year or longer after the onset of the acute case. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV viral detection test). For purposes of incidence and prevalence calculations, confirmed chronic HCV cases should be counted.

Jurisdictions are also encouraged to track and classify possible re-infection cases that may have been previously submitted to the CDC as a confirmed or probable chronic HCV infection case. Jurisdictions tracking reinfection should also consider collecting data on prior treatment completion (when relevant and possible to document), treatment failure, changes in reported genotype (if applicable), and the known timeframe for reinfection.

Case Classification

Probable

- A case that does not meet OR has no report of clinical criteria, **AND**
- Has presumptive laboratory evidence, **AND**
- Has no documentation of anti-HCV or RNA test conversion within 12 months, **AND**
- Does not have an HCV RNA detection test reported.

Confirmed

- A case that does not meet OR has no report of clinical criteria, **AND**
- Has confirmatory laboratory evidence, **AND**
- Has no documentation of anti-HCV or HCV RNA test conversion within 12 months.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-c-chronic-2020/

HCV Perinatal 2018 Case Definition

Clinical Criteria

Perinatal hepatitis C in pediatric patients may range from asymptomatic to fulminant hepatitis.

Laboratory Criteria for Diagnosis

- HCV RNA positive test results for infants between two and 36 months of age; **OR**
- HCV genotype test results for infants between two and 36 months of age or older; **OR**
- HCV antigen test results for infants between two and 36 months of age or older.

Epidemiologic Linkage

Maternal infection with HCV of any duration, if known and not known to have been exposed to HCV via a mechanism other than perinatal (e.g., not acquired via healthcare).

Criteria to Distinguish a New Case from an Existing Case

Test results obtained before two months of age should not be used for classification purposes. Test results after 36 months of age should be reported under the 2015 Acute and Chronic HCV Infection case classification and not as perinatal HCV infection. Cases in the specified age range that are known to have been exposed to HCV via healthcare and not perinatally should be reported under the 2015 position statement. The event date should be based on the earliest relevant laboratory test date within the two–36-month window.

Case Classification

Confirmed

An infant who has a positive test for HCV RNA nucleic acid amplification test (NAAT), HCV antigen, or detectable HCV genotype at ≥two months and ≤36 months of age, and is not known to have been exposed to HCV via a mechanism other than perinatal.

CDC Link: https://ndc.services.cdc.gov/case-definitions/hepatitis-c-perinatal-infection-2018/

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