



# Viral Hepatitis in West Virginia 2022 Surveillance Summary

September 2024



Division of STD, HIV, Hepatitis and Tuberculosis  
Office of Epidemiology and Prevention Services  
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**Viral Hepatitis in West Virginia**

**2022 Surveillance Summary**

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**Viral Hepatitis in West Virginia  
2022 Surveillance Summary**

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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. While they 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, life-saving treatment can cure the virus.

Viral hepatitis infections are reportable conditions 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 governing the reporting of 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 individuals 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.

There are several limitations that should be noted about 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 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 case investigation completion difficult and/or inaccurate if the case-patient has issues with recall, does not wish to complete the interview, or provides false information. Further, the statewide COVID-19 response began in West Virginia in March 2020, requiring most public health professionals to direct their resources to detect, investigate, and attempt to reduce the spread of COVID-19. This response impacted the completeness of acute hepatitis A, acute and chronic hepatitis B, and acute hepatitis C reports.

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 changes as duplicate profiles are merged and additional laboratory and/or clinical information is received.

## **Hepatitis A Virus**

### **Disease Overview**

Hepatitis A is a self-limiting, vaccine-preventable liver disease caused by the hepatitis A virus (HAV). The best way to prevent HAV infection is through vaccination. It is transmitted person-to-person through contact with the stool of an infected person or 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 persons generally experience symptom resolution within two months of onset, though more severe cases may require hospitalization.

## HAV 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 who were recently incarcerated. In 2020, the statewide outbreak, which included 2,732 cases, was closed.

The majority of the reported HAV cases in 2022 were male (Figure 1.2) and all reported their race as white and their ethnicity as not Hispanic or Latino (Table 1.1 and Table 1.2). Cases were observed among adult age categories, with the highest counts observed among the 40-49 age groups (Table 1.3). No risk factors reported among the confirmed cases of HAV in 2022 (Figure 1.4).

Figure 1.1. Acute HAV Incidence Rates in West Virginia, 2017-2022

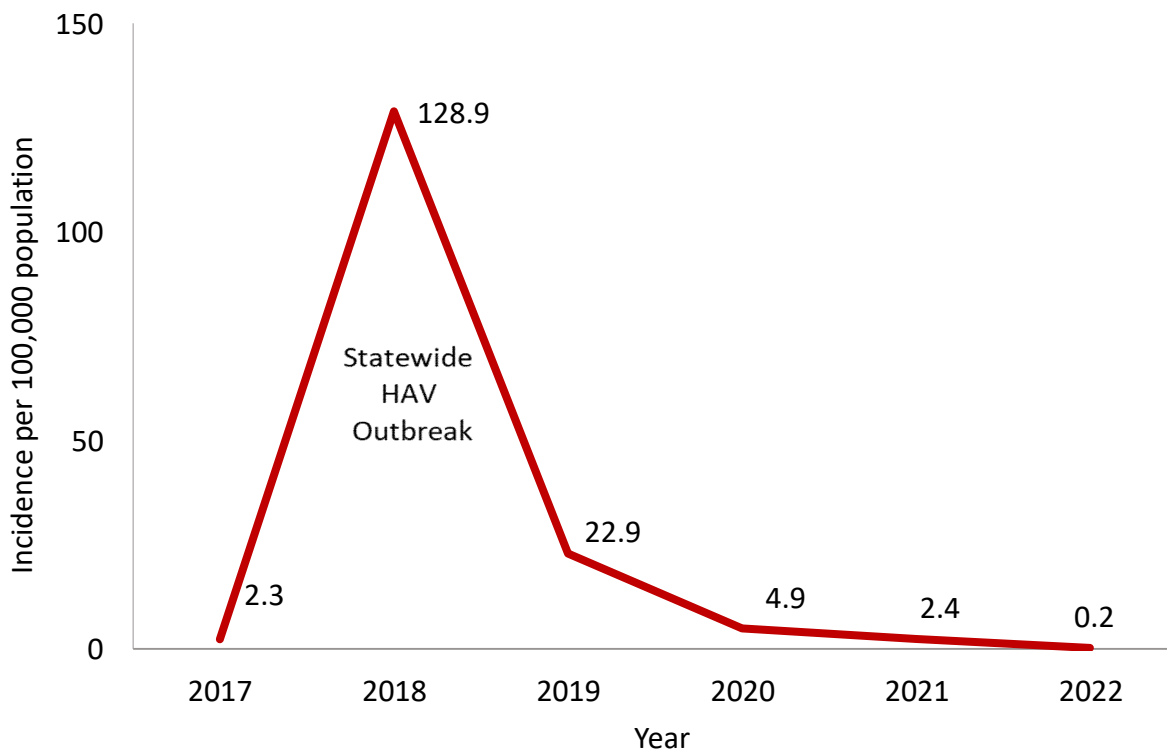


Figure 1.2. Acute HAV Cases by Sex in West Virginia, 2022 (N=3)

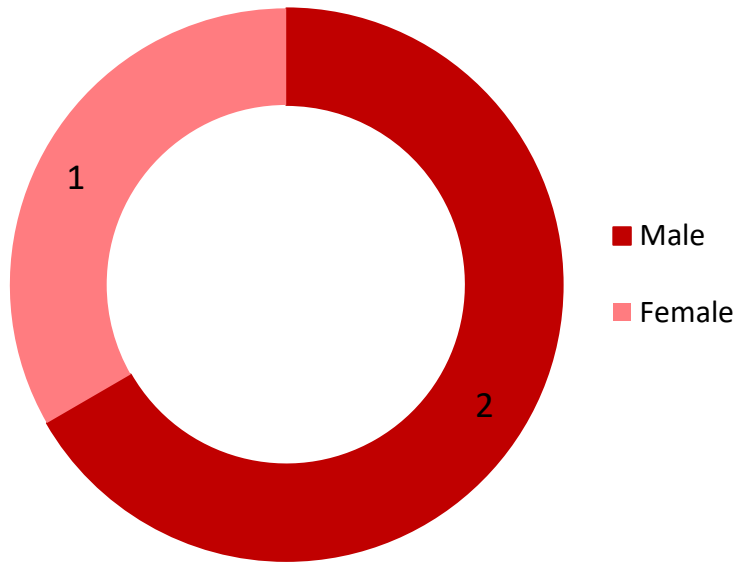


Table 1.1. Acute HAV Cases by Race in West Virginia, 2022

Race	Count	Percent
White	3	100.0%
Black	0	0.0%
Multi-race	0	0.0%
Other	0	0.0%
Unknown	0	0.0%
<b>Total</b>	<b>3</b>	<b>100.0%</b>

Table 1.2. Acute HAV Cases by Ethnicity in West Virginia, 2022

Ethnicity	Count	Percent
Not Hispanic or Latino	3	100.0%
Hispanic or Latino	0	0.0%
Unknown	0	0.0%
<b>Total</b>	<b>3</b>	<b>100.0%</b>

Table 1.3. Acute HAV Cases by Age Group in West Virginia, 2022

Age Group (years)	Counts	Percent*
0-19	0	0.0%
20-29	0	0.0%
30-39	0	0.0%
40-49	2	66.7%
50-59	0	0.0%
60+	1	33.3%
<b>Total</b>	<b>3</b>	<b>100%</b>

Table 1.4. Reported Risk Behaviors or Exposures Among Acute HAV Cases in West Virginia, 2022

Risk Factor*	Yes	No	Unknown
Injection Drug Use	0.0%	100.0%	0.0%
Non-Injection Drug Use	0.0%	100.0%	0.0%
Contact of a known Case	0.0%	33.3%	66.7%
Unhoused	0.0%	100.0%	0.0%

\*Cases may report more than one risk behavior/exposure.

## **Hepatitis B Virus**

### **Disease Overview**

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 disease. The best way to prevent HBV infection is to be vaccinated.

### **HBV 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 changed from declining steadily to remaining stable between 2021 and 2022, at three cases per 100,000 population in 2022 (Figure 2.1); however, the rates in 2020, 2021, and 2022 could be artificially low due to the increased demand for public health response to the COVID-19 outbreak and fewer HBV case-patients being contacted for interview. Most acute hepatitis B cases were male (Figure 2.2), reported their race as white (Table 2.1), and were between the ages of 30-49 (Table 2.3). The most frequently reported risk factors for acute hepatitis B cases in 2022 were injection and non-injection drug use (Table 2.4). A similar demographic profile was found among chronic hepatitis B cases.

Figure 2.1. Acute HBV Incidence Rates, West Virginia, 2017-2022

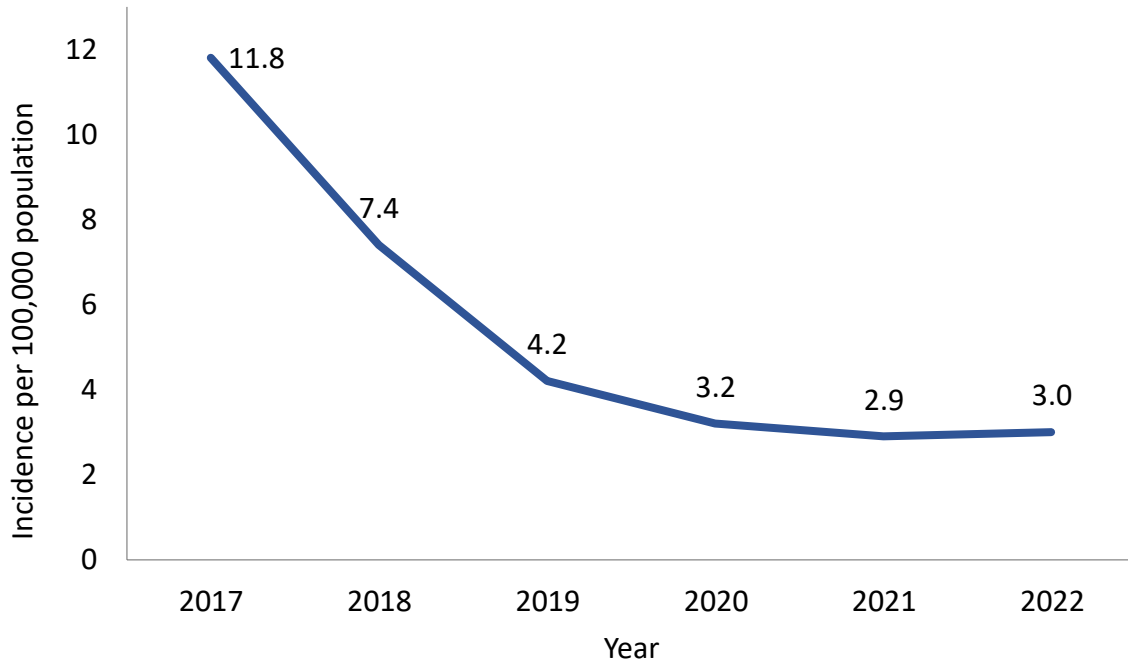


Figure 2.2. Acute HBV Cases by Sex in West Virginia, 2022 (N=54)

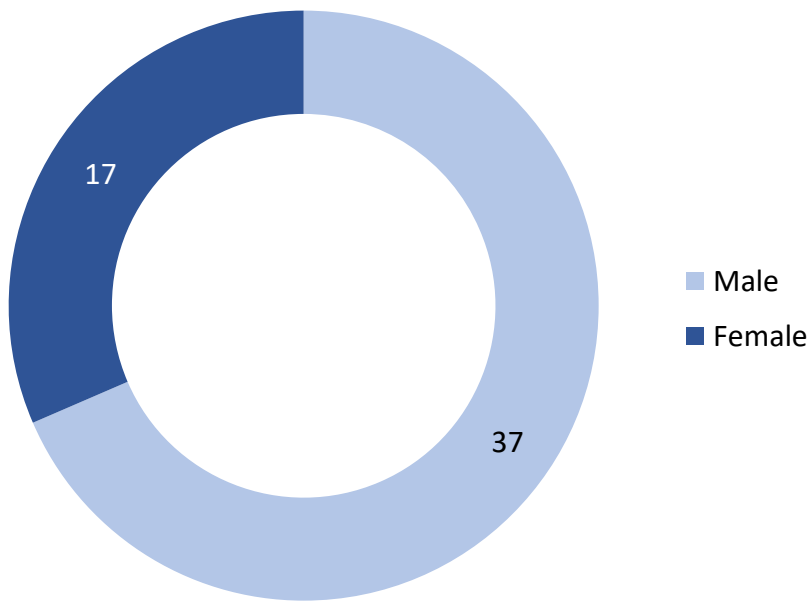


Table 2.1. Acute HBV Cases by Race in West Virginia, 2022

Race	Count	Percent
White	49	90.7%
Black	2	3.7%
Multi-race	0	0.0%
Other	3	5.6%
Unknown	0	0.0%
Total	54	100%

Table 2.2. Acute HBV Cases by Ethnicity in West Virginia, 2022

Ethnicity	Count	Percent
Not Hispanic or Latino	51	94.4%
Hispanic or Latino	1	1.9%
Unknown	2	3.7%
Total	54	100%

Table 2.3. Acute HBV Cases by Age Group in West Virginia, 2022

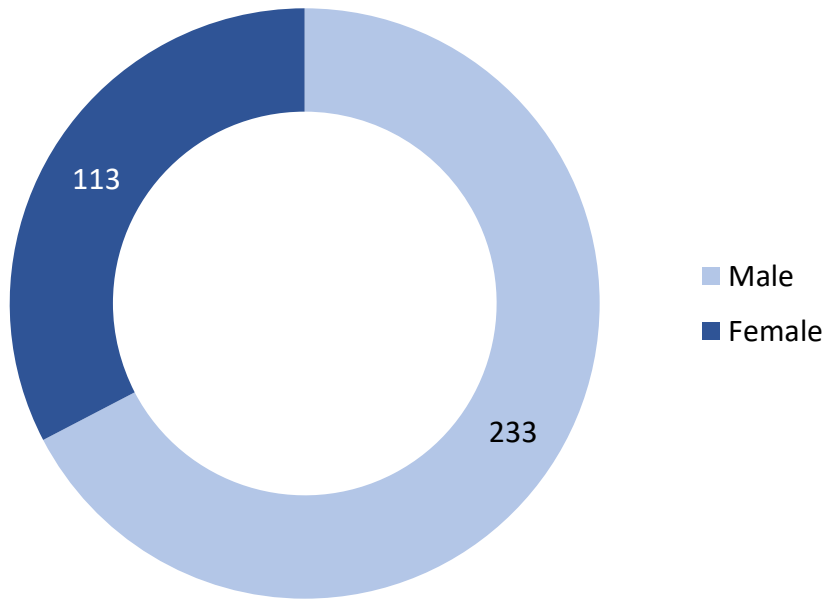
Age Group (years)	Count	Percent
0-19	0	0.0%
20-29	4	7.4%
30-39	12	22.2%
40-49	18	33.3%
50-59	15	27.8%
60+	5	9.3%
Total	54	100%

Table 2.4. Reported Risk Behaviors or Exposures Among Acute HBV Cases in West Virginia, 2022

Risk Factor*	Yes	No	Unknown
Injection Drug Use	46.3%	42.6%	11.1%
Non-Injection Drug Use	48.1%	35.2%	16.7%
Contact of a Case	11.1%	25.9%	63.0%
Tattoo	11.1%	55.6%	33.3%

\*Cases may report more than one risk behavior/exposure.

Figure 2.3. Chronic HBV Cases by Sex in West Virginia, 2022 (N=346)



Note: Includes 180 confirmed and 166 probable chronic HBV cases.

Table 2.5. Chronic HBV Cases by Race in West Virginia, 2022

Race	Count*	Percent
White	261	75.4%
Black	15	4.3%
Multi-race	22	6.4%
Other	17	4.9%
Unknown	31	9.0%
<b>Total</b>	<b>346</b>	<b>100%</b>

\*Includes 180 confirmed and 166 probable cases.

Table 2.6. Chronic HBV Cases by Ethnicity in West Virginia, 2022

Ethnicity	Count*	Percent
Not Hispanic or Latino	247	71.4%
Hispanic or Latino	0	0.0%
Unknown	99	28.6%
<b>Total</b>	<b>346</b>	<b>100%</b>

\*Includes 180 confirmed and 166 probable cases.

Table 2.7. Chronic HBV Cases by Age Group in West Virginia, 2022

Age Group (years)	Count*	Percent
0-19	6	1.7%
20-29	22	6.4%
30-39	80	23.1%
40-49	102	29.5%
50-59	73	21.1%
60+	63	18.2%
<b>Total</b>	<b>346</b>	<b>100%</b>

\*Includes 180 confirmed and 166 probable cases.

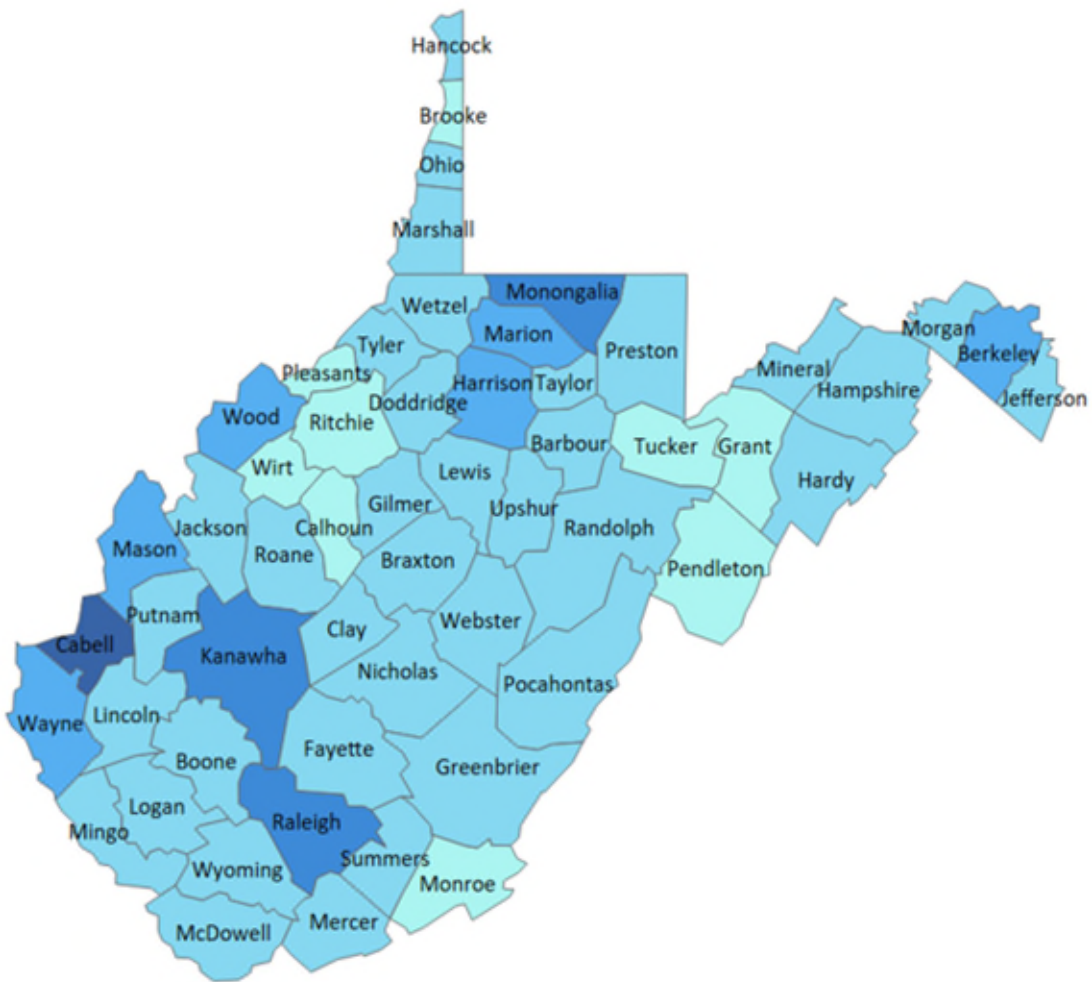
Table 2.8. Chronic HBV Case Counts in West Virginia by County, 2022

County	Population*	Count**	County	Population*	Count**
Barbour	15,391	5	Mineral	26,902	2
Berkeley	129,379	19	Mingo	22,445	7
Boone	20,907	6	Monongalia	106,978	22
Braxton	12,170	3	Monroe	12,322	0
Brooke	21,694	0	Morgan	17,435	3
Cabell	92,485	47	Nicholas	24,309	4
Calhoun	6,069	0	Ohio	41,463	5
Clay	7,840	2	Pendleton	6,067	0
Doddridge	7,712	2	Pleasants	7,570	0
Fayette	39,388	6	Pocahontas	7,797	1
Gilmer	7,330	3	Preston	34,222	9
Grant	10,938	0	Putnam	57,603	2
Greenbrier	32,375	4	Raleigh	72,801	22
Hampshire	23,457	3	Randolph	27,552	3
Hancock	28,254	1	Ritchie	8,230	0
Hardy	14,168	2	Roane	13,833	2
Harrison	64,752	15	Summers	11,702	3
Jackson	27,667	4	Taylor	16,410	4
Jefferson	59,001	5	Tucker	6,620	0
Kanawha	175,864	27	Tyler	8,090	1
Lewis	16,674	2	Upshur	23,705	3
Lincoln	19,851	4	Wayne	37,980	12
Logan	31,206	8	Webster	8,141	3
Marion	55,784	15	Wetzel	13,994	3
Marshall	29,667	4	Wirt	5,092	0
Mason	24,911	13	Wood	83,388	16
McDowell	17,806	0	Wyoming	20,572	2
Mercer	58,612	10	West Virginia	1,774,035	346

\*Population estimates obtained from the U.S. Census Bureau, year: 2022.

\*\*Includes 180 confirmed and 166 probable cases.

Figure 2.4. Chronic HBV Case Counts\* in West Virginia by County, 2022



Number of Cases\*  
 0 cases  
 1-10 cases  
 11-20 cases  
 21-30 cases  
 41-50 cases

\*Includes confirmed and probable cases

## **Hepatitis C Virus**

### **Disease Overview**

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

### **HCV 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 and then experienced a decrease in 2019 (Figure 3.1). In 2022, most acute hepatitis C cases in West Virginia were male (Figure 3.2) and reported their race as white (Table 3.1). Of the 109 cases reported in 2022, 31.2% were between the ages of 30-39 years (Table 3.3). Drug use, either injection or non-injection drug use, was the most frequently reported risk factor (Table 3.4).

Cases of chronic HCV are not individually investigated by the local health department. In most cases the demographic information is automatically populated by the laboratory report, and risk factor information is not obtained. Like acute HCV, more than half of the reported chronic cases of HCV were among males (Figure 3.2.). Of the 3,854 cases of chronic HCV, 33.2% were between the ages of 30-39 years (Table 3.7).

Figure 3.1. Acute HCV Incidence Rates, West Virginia, 2017-2022

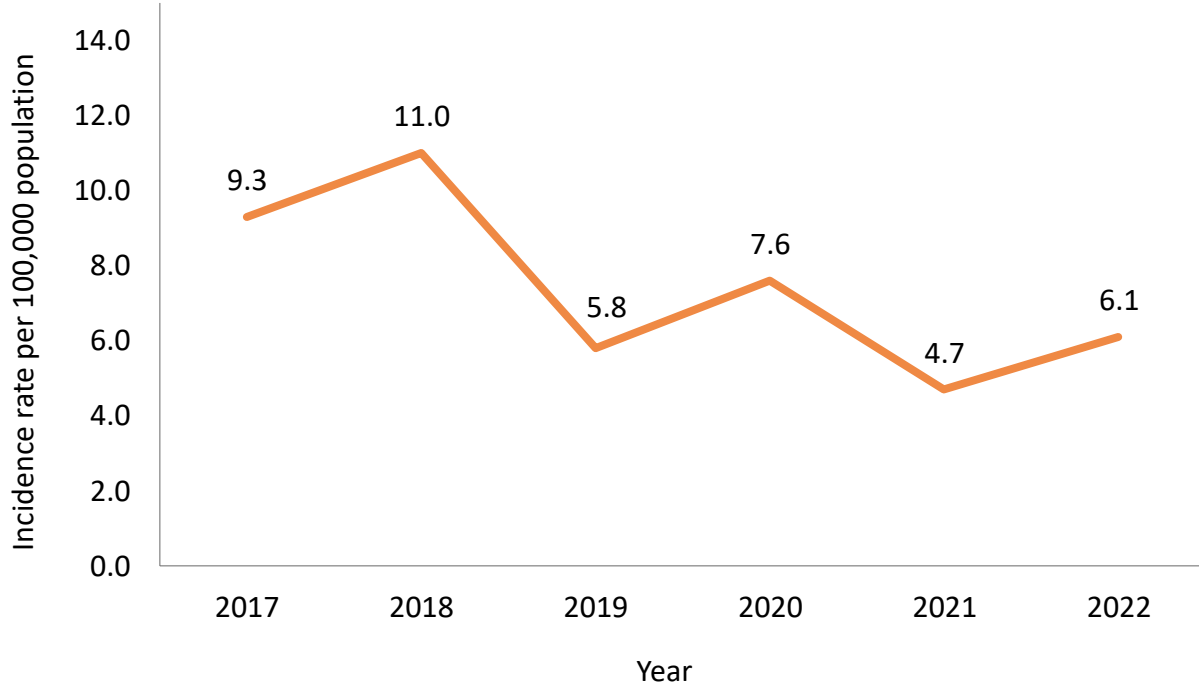
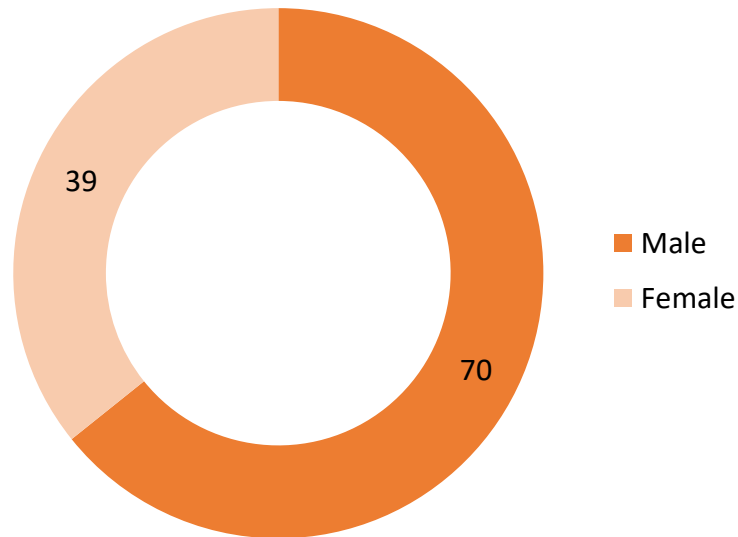


Figure 3.2. Acute HCV Cases by Sex in West Virginia, 2022 (N=109)



Note: Includes 86 confirmed and 23 probable cases.

Table 3.1. Acute HCV Cases by Race in West Virginia, 2022

Race	Count*	Percent**
White	93	85.3%
Black	3	2.8%
Multi-race	5	4.6%
Other	3	2.8%
Unknown	5	4.6%
<b>Total</b>	<b>109</b>	<b>100%</b>

\*Includes 86 confirmed and 23 probable cases.

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

Table 3.2. Acute HCV Cases by Ethnicity in West Virginia, 2022

Ethnicity	Count*	Percent
Not Hispanic or Latino	88	80.7%
Hispanic or Latino	4	3.7%
Unknown	17	15.6%
<b>Total</b>	<b>109</b>	<b>100%</b>

\*Includes 86 confirmed and 23 probable cases.

Table 3.3. Acute HCV Cases by Age Group in West Virginia, 2022

Age Group (years)	Count*	Percent**
0-19	1	0.9%
20-29	33	30.3%
30-39	34	31.2%
40-49	25	22.9%
50-59	9	8.3%
60+	7	6.4%
<b>Total</b>	<b>109</b>	<b>100%</b>

\*Includes 86 confirmed and 23 probable cases.

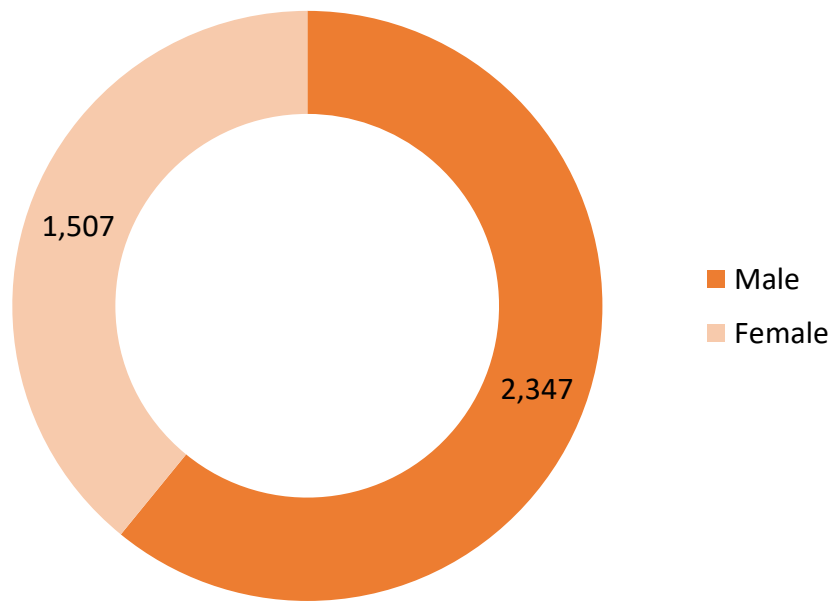
\*\*Percent may not add to 100 due to rounding.

Table 3.4. Reported Risk Behaviors or Exposures Among Acute HCV Cases in West Virginia, 2022

Risk Factor*	Yes	No	Unknown
Non-injection Drug Use	34.9%	9.1%	56.0%
Injection Drug Use	35.8%	12.8%	51.4%
Tattoos	14.7%	17.4%	67.9%
Contact of a Known Case	9.2%	14.7%	76.1%

\*Cases may report more than one risk behavior/exposure.

Figure 3.3. Chronic HCV Cases by Sex in West Virginia, 2022 (N=3,854)



Note: Includes 2,314 confirmed and 1,540 probable cases.

Table 3.5. Chronic HCV Cases by Race in West Virginia, 2022

Race	Count*	Percent
Asian	1	0.0%
Black	128	3.3%
Multi-race	324	8.4%
Other	142	3.7%
Unknown	665	17.3%
White	2,592	67.3%
<b>Total</b>	<b>3,854</b>	<b>100%</b>

\*Includes 2,314 confirmed and 1,540 probable cases.

Table 3.6. Chronic HCV Cases by Ethnicity in West Virginia, 2022

Ethnicity	Count*	Percent
Not Hispanic or Latino	2,115	54.9%
Hispanic or Latino	21	0.5%
Unknown	1,718	44.6%
<b>Total</b>	<b>3,854</b>	<b>100%</b>

\*Includes 2,314 confirmed and 1,540 probable cases.

Table 3.7. Chronic HCV Cases by Age Group in West Virginia, 2022

Age Group (years)	Count*	Percent
0-19	36	0.9%
20-29	582	15.1%
30-39	1,278	33.2%
40-49	933	24.2%
50-59	497	12.9%
60+	528	13.7%
<b>Total</b>	<b>3,854</b>	<b>100%</b>

\*Includes 2,314 confirmed and 1,540 probable cases.

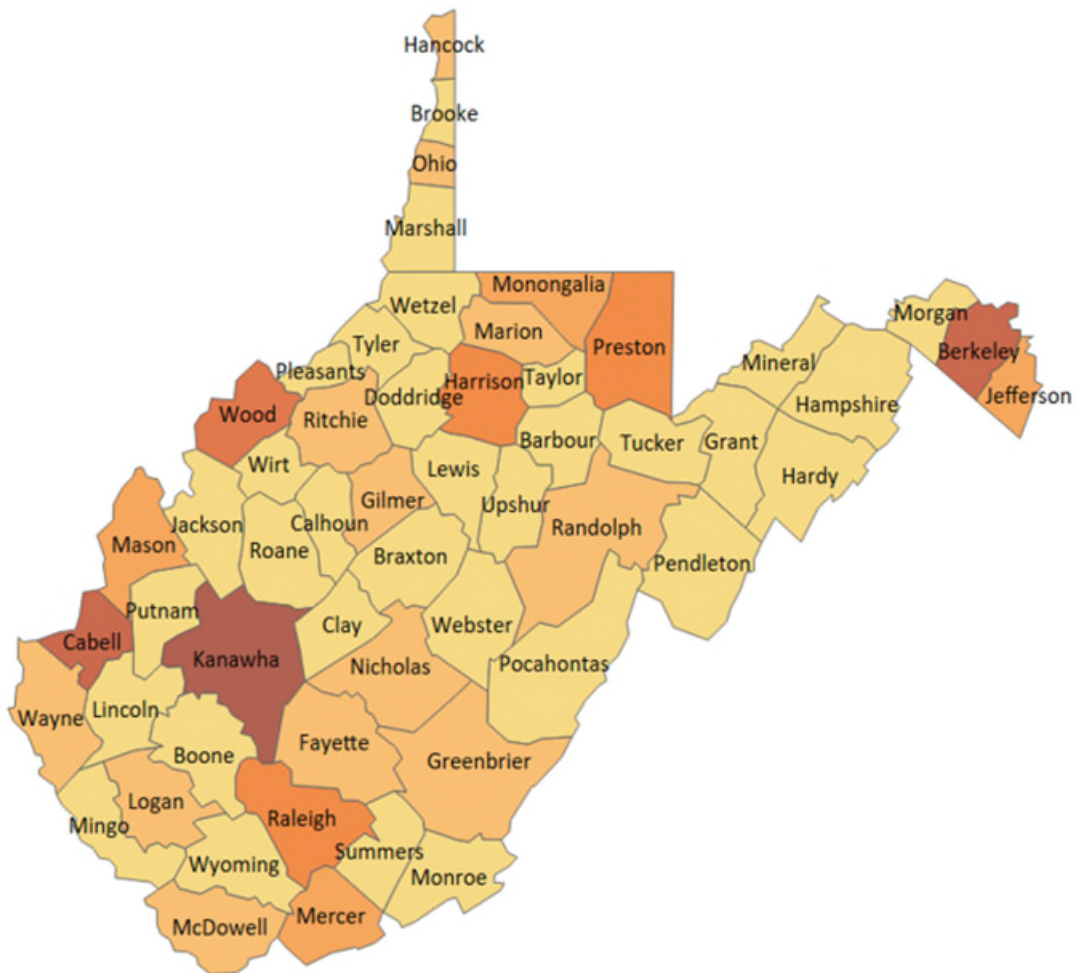
Table 3.8. Chronic HCV Case Counts in West Virginia by County, 2022

County	Population*	Count**	County	Population*	Count**
Barbour	15,391	39	Mineral	26,902	40
Berkeley	129,379	252	Mingo	22,445	48
Boone	20,907	44	Monongalia	106,978	147
Braxton	12,170	28	Monroe	12,322	14
Brooke	21,694	12	Morgan	17,435	26
Cabell	92,485	296	Nicholas	24,309	55
Calhoun	6,069	4	Ohio	41,463	77
Clay	7,840	19	Pendleton	6,067	7
Doddridge	7,712	5	Pleasants	7,570	20
Fayette	39,388	69	Pocahontas	7,797	16
Gilmer	7,330	55	Preston	34,222	164
Grant	10,938	11	Putnam	57,063	41
Greenbrier	32,375	87	Raleigh	72,801	200
Hampshire	23,457	36	Randolph	27,552	71
Hancock	28,254	60	Ritchie	8,230	59
Hardy	14,168	16	Roane	13,833	7
Harrison	64,752	185	Summers	11,702	12
Jackson	27,667	43	Taylor	16,410	39
Jefferson	59,001	103	Tucker	6,620	7
Kanawha	175,864	409	Tyler	8,090	14
Lewis	16,674	30	Upshur	23,705	26
Lincoln	19,851	39	Wayne	37,980	96
Logan	31,206	90	Webster	8,141	9
Marion	55,784	81	Wetzel	13,994	31
Marshall	29,667	48	Wirt	5,092	8
Mason	24,911	103	Wood	83,388	217
McDowell	17,806	88	Wyoming	20,572	38
Mercer	58,612	113	West Virginia	1,774,065	3,854

\*Population estimates obtained from the U.S. Census Bureau, year: 2022.

\*\*Includes 2,314 confirmed and 1,540 probable cases.

Figure 3.4. Chronic HCV Case Counts\* in West Virginia by County, 2022



Number of Cases\*  
 1-50 cases  
 51-100 cases  
 101-150 cases  
 151-200 cases  
 201-250 cases  
 251-300 cases  
 401-450 cases

\*Includes confirmed and probable

## References

1. U.S. Census Bureau at [www.census.gov/data/tables/time-series/demo/popest/2020s-counties-total.html#v2021](http://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-total.html#v2021) accessed 5/17/2024.
2. Centers for Disease Control and Prevention. Viral Hepatitis Surveillance Report, US, 2019 at [www.cdc.gov/hepatitis/statistics/2019surveillance/index.htm](http://www.cdc.gov/hepatitis/statistics/2019surveillance/index.htm) accessed 05/17/2024.
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## **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  $\geq 3.0$  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 usually self-limiting and does not result in chronic infection. However, up to 10% of persons with hepatitis A may experience a relapse during the 6 months after acute illnesses. 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<sup>§</sup>, **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 2012 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, and 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 6 months prior to 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

- HBsAg positive, **AND**
- Immunoglobulin M (IgM) antibody to hepatitis B core antigen (IgM anti-HBc) positive (if done)

## Case Classification

### Confirmed

- A case that meets the clinical case definition, is laboratory confirmed, and is not known to have chronic hepatitis B.

CDC Link: <https://ndc.services.cdc.gov/case-definitions/hepatitis-b-acute-2012/>

## **Chronic HBV 2012 Case Definition**

### **Clinical Description**

No symptoms are required. Persons with chronic hepatitis B infection 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:**

Immunoglobulin M (IgM) antibodies to hepatitis B core antigen (IgM anti-HBc) negative **AND** a positive result on one of the following tests: hepatitis B surface antigen (HBsAg), hepatitis B e antigen (HBeAg), or nucleic acid test for hepatitis B virus DNA (including qualitative, quantitative and genotype testing), **OR**

HBsAg positive or nucleic acid test for HBV DNA positive (including qualitative, quantitative and genotype testing) or HBeAg positive two times at least six months apart (Any combination of these tests performed six months apart is acceptable)

### **Case Classification**

#### Probable

A person with a single HBsAg positive or HBV DNA positive (including qualitative, quantitative and genotype testing) or HBeAg positive lab result and does not meet the case definition for acute hepatitis B.

#### Confirmed

A person who meets either of the above laboratory criteria for diagnosis.

CDC Link: <https://ndc.services.cdc.gov/case-definitions/hepatitis-b-chronic-2012/>

## Acute HCV 2020 Case Definition

### Clinical Criteria:

All hepatitis C cases in each classification category should be > 36 months of age, unless known to have been exposed non-perinatally.

One or more of the following:

- Jaundice, **OR**
- Peak elevated total bilirubin levels  $\geq 3.0$  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 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 or sustained viral response to HCV treatment. Cases that have evidence of having cleared the infection at time of initial report or are considered false positive should not be reported to CDC.

Acute cases determined via anti-HCV test conversion do not need to have a positive HCV viral detection test 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. prior to CDC closing reporting for the calendar year).

Collection of risk history data is recommended for probable and confirmed acute HCV cases. Timing of risk history data to collect ranges from two weeks to 12 months prior to 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 2 weeks to 6 months prior to onset should be used; for a case classified via anti-HCV test conversion or HCV RNA test conversion, two weeks to 12 months prior to onset should be considered).

If evidence indicating resolution of infection is received after a confirmed acute case has been reported to CDC, the case report does not need to be modified as it was a confirmed case at the time of initial report. However, negative HCV viral detection test results received on confirmed acute case, subsequent to an initial positive result, should be appended to case reports, as feasible, and considered for the purpose of 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 acute case onset. 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 acute and chronic HCV cases 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, unless known to have been exposed non-perinatally.

One or more of the following:

- Jaundice, **OR**
- Peak elevated total bilirubin levels  $\geq 3.0$  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 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 time of initial report or are considered false positive should not be reported to CDC.

If evidence indicating resolution of infection is received after a confirmed chronic case has been reported to CDC, the case report does not need to be modified as it was a confirmed case at the time of initial report. However, negative HCV viral detection test results received on confirmed chronic cases, subsequent to an initial positive result, should be appended to case reports, as feasible, and considered for the purpose of data analysis 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. Under current treatment recommendations, those two negative tests should be at least three months apart, however, the timing may change as standard of care for HCV treatment evolves. Other evidence of reinfection should be considered, including a report of a new genotype on 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 that it can be determined. Jurisdictions tracking re-infection should also consider collecting data on prior treatment completion (when relevant and possible to document), treatment failure, change in reported genotype if that applies, and the known time frame 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 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 acute case onset. 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 CDC as a confirmed or probable chronic HCV infection case. Jurisdictions tracking re-infection should also consider collecting data on prior treatment completion (when relevant and possible to document), treatment failure, change in reported genotype if that applies, and the known time frame 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/>