

Perinatal Hepatitis C

Surveillance Protocol

Disease Summary

Effective January 1, 2018, the Council of State and Territorial Epidemiologists (CSTE) created a nationally notifiable condition and public health surveillance case definition for “Hepatitis C, Perinatal,” to capture hepatitis C virus (HCV) infections presumably transmitted from the gestational birth parent to the child immediately before, during, or immediately after childbirth. Perinatal hepatitis C became reportable in West Virginia in April 2022. This surveillance protocol provides public health partners with information regarding reporting requirements, case classification, and recommendations for the management of perinatal HCV infections.

Healthcare Provider Responsibilities

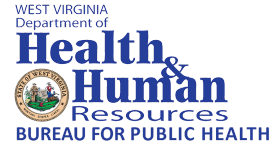
1. Report newly diagnosed persons with perinatal HCV infections within one week of diagnosis to the state health department. Forward the completed Confidential Reportable Disease Case Report and any applicable laboratory evidence to the West Virginia Department of Health and Human Resources, Bureau for Public Health’s Division of STD, HIV, Hepatitis, and Tuberculosis (DSHHT), 350 Capitol Street, Room 125, Charleston, West Virginia 25301. Include the following information:
 - a. Patient’s name, date of birth, address, and phone number
 - b. Legal guardian’s name and relationship to patient
 - c. Patient’s demographic information including sex, age, race, and ethnicity
 - d. Symptoms and onset date if applicable
 - e. Laboratory results, including:
 - i. HCV test for antibody to hepatitis C virus (Anti-HCV) i.e.:
 - Enzyme Immunoassay (EIA)
 - Enhanced Chemiluminescence Immunoassay (CIA)
 - Microparticle Enzyme Immunoassay (MEIA)
 - Chemiluminescent Microparticle Immunoassay (CMIA)
 - ii. Confirmatory testing, i.e.:
 - HCV detection by Nucleic Acid Testing (including quantitative, qualitative and genotype testing);
 - Detection of HCV Antigen;
 - iii. Transaminase levels (ALT and AST)
 - iv. Total Bilirubin levels
2. If the transmission is the result of a possible healthcare associated infection (HAI), it should not be reported as perinatal HCV, and should be reported as an outbreak to the

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local health department immediately. Healthcare associated HCV infection is often recognized in an index case who had an invasive medical procedure during the two weeks to six months prior to onset of hepatitis and no other risk factors for HCV.

3. Educate newly diagnosed patient's legal guardian(s) about HCV infection, especially ways to reduce transmission. Information for the public is available for this purpose.
4. Educate patient's legal guardian(s) about treatment options.

For information and guidance on testing and treatment of HCV, visit the Infectious Diseases Society of America (ISDA) [website](#).

Laboratory Responsibilities

1. Send paper copies of positive laboratory results for HCV infection via fax to (304) 558-6478 or by mail to DSHHT (350 Capitol Street, Room 125, Charleston, West Virginia 25301) within one week, if not already reported via Electronic Laboratory Reports (ELR). For paper or electronic laboratory reports, make sure the following information is included:
 - a. Patient's name, date of birth, address, and phone number;
 - b. Demographic information including sex, age, race and ethnicity;
 - c. Physician name, address, and phone number; and
 - d. Laboratory results, normal values, and interpretation, including:
 - i. HCV test for antibody to hepatitis C virus (Anti-HCV), i.e.:
 - Enzyme Immunoassay (EIA)
 - Enhanced chemiluminescence immunoassay (CIA)
 - Microparticle Enzyme Immunoassay (MEIA)
 - Chemiluminescent Microparticle Immunoassay (CMIA)
 - ii. Confirmatory testing, i.e.:
 - HCV detection by Nucleic Acid Testing (including quantitative, qualitative, and genotype testing);
 - Detection of HCV Antigen;
 - iii. Transaminase levels (ALT and AST)
 - iv. Total Bilirubin levels
2. All laboratories should perform and report results of supplemental testing if the test for anti-HCV is positive.

Local Health Responsibilities

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1. Educate the general public of West Virginia about:
 - a. Prevention of HCV transmission
 - b. Importance of HCV testing among pregnant persons and children exposed perinatally to HCV
2. Educate healthcare providers about:
 - a. Perinatal HCV infections and how to detect them
 - b. Reporting perinatal HCV infections, including the importance of prompt reporting to the state health department (DSHHT) within one week of diagnosis
 - c. Treatment options for patients with perinatal HCV infections
3. Educate laboratories about reporting all positive HCV laboratory results within one week to DSHHT.
4. Inform DSHHT viral hepatitis surveillance staff about any perinatal HCV infections you detect or are notified of by providers or laboratories.
5. Collaborate with DSHHT viral hepatitis surveillance staff to investigate any cases that are identified to not have a perinatal exposure or any other risk factor apart from a healthcare exposure and could be classified as a HAI. A single suspect or confirmed case of HCV infection in association with a healthcare procedure at a single doctor's office or healthcare facility warrants further investigation. Refer to the HAI guide by the Centers for Disease Control and Prevention (CDC) for additional information. Any suspect HAI HCV infection should be reported immediately to DSHHT.

State Health Responsibilities

1. Viral Hepatitis Surveillance Staff:
 - a. Manage all HCV laboratory reports for children aged three and under if perinatal HCV transmission is suspected
 - b. Complete reporting of HCV cases to the CDC through West Virginia Electronic Disease Surveillance System (WVEDSS)
 - c. Provide technical expertise and consultation on surveillance, investigation, disease control and prevention of perinatal HCV
 - d. Summarize surveillance data on an annual basis and share with partners
 - e. Report on perinatal HCV infection rates in West Virginia annually
2. Viral Hepatitis Prevention Coordinator:
 - a. Provide information to all public health partners on the importance of screening and treating cases of perinatal HCV infection in West Virginia

Disease Control Objectives

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1. Decrease transmission of HCV infection.
2. Identification of HCV-positive pregnant person by testing every pregnant person for HCV with each pregnancy.

Disease Surveillance Objectives

1. Determine the incidence of perinatal HCV infections in West Virginia.
2. Identify demographic characteristics of persons with perinatal HCV infections.

Public Health Significance

HCV can be transmitted from a pregnant person to their infant during pregnancy or at birth. These infants have a 4-7% risk of developing the infection. The risk of infection may increase if the mother is co-infected with HIV. There is currently no postexposure prophylaxis to prevent the infection. There has been a reported increase of HCV infection among women of childbearing age in numerous jurisdictions in the United States, and there would be an expected rise in perinatal transmission as a result. While there are no measures currently recommended for prevention of HCV transmission by pregnant persons to their infants, HCV in pediatric populations can lead to significant illness and it is important for those children to be appropriately assessed and in clinical care for HCV infection. Available curative HCV therapies are not currently recommended for pediatric patients under the age of three, but that may change as data become available on the use of recently approved medications in younger pediatric populations.

Guidelines by American Association for the Study of Liver Diseases (AASLD) and Infectious Diseases Society of America (IDSA) recommend that all children born to HCV-infected persons should be tested for HCV infection. Testing is recommended using an antibody-based test at or after 18 months of age. Testing with an HCV-RNA assay can be considered in the first year of life, but optimal timing of such testing is unknown. Testing with an HCV-RNA assay can be considered as early as two months of age. Children who are anti-HCV positive after 18 months of age should be tested with an HCV-RNA assay after age three to confirm chronic HCV infection. The siblings of children with vertically-acquired HCV should be tested for HCV infection, if born from the same mother.

Several provider groups and government agencies now recommend universal HCV screening in pregnancy, including CDC, AASLD, IDSA, and the American College of Obstetricians and Gynecologists.

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Clinical Description

Perinatal HCV in pediatric patients may range from asymptomatic to fulminant hepatitis. Classic symptoms of hepatitis include malaise, anorexia, abdominal pain, jaundice, nausea, vomiting, diarrhea, and dark urine.

Etiologic Agent

HCV is an enveloped RNA virus classified as a separate genus (Hepacivirus) in the Flaviviridae family. At least six different genotypes and approximately 100 subtypes of HCV exist. Genotype 1 (subtype 1a and 1b) is the most common (60 to 70%) in the United States.

Reservoir

This virus is found only in humans. Chimpanzees and mice have been infected experimentally, but they play no known role in transmission to humans.

Mode of Transmission

The HCV is efficiently transmitted by the parenteral route mainly through percutaneous exposure of infectious blood. Perinatal HCV infection occurs through vertical transmission when the infant is exposed to HCV in utero, during childbirth or after birth.

Transmission does not occur through casual contact (kissing, hugging, touching, coughing, sneezing, food, water, sharing eating utensils or drinking glasses, or other contact without exposure to blood etc.) Breastfeeding does not appear to transmit HCV.

Incubation Period

Among those who develop symptoms following exposure to HCV, the average period from exposure to the onset of symptoms is 2-12 weeks (ranges 2-26 weeks).

Period of Communicability

Persons with HCV are infectious or viremic from about two weeks after exposure to an indefinite period of time. Persons who test positive for HCV should be assumed to be infectious unless repeated testing for HCV RNA is documented to be negative.

Case Definition

Hepatitis C, Perinatal Infection 2018 Case Definition

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This CSTE case definition is intended solely for public health surveillance purposes and does not recommend criteria for clinical partners to utilize in diagnosing patients with potential perinatal hepatitis C infections.

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 2 to 36 months of age; **OR**
- HCV genotype test results for infants between 2 to 36 months of age or greater; **OR**
- HCV antigen test results for infants between 2 to 36 months of age or greater.

Epidemiologic Linkage

Maternal infection with HCV of any duration, if known. 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 prior to two months of age should not be used for classification. Test results after 36 months of age should be reported under the most recent 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 also be reported under the most recent Acute and Chronic HCV Infection case classification and not as perinatal HCV infection. Event date should be based on the earliest relevant laboratory test date within the 2-36 month window.

Case Classification

Confirmed

Infant who has a positive test for HCV RNA nucleic acid amplification test (NAAT), HCV antigen, or detectable HCV genotype at ≥ 2 months and ≤ 36 months of age and is not known to have been exposed to HCV via a mechanism other than perinatal.

Probable*

Any infant who has a positive HCV test HCV RNA nucleic acid amplification test (NAAT), HCV antigen, detectable HCV genotype, or HCV antibody test at < 2 months of age and are not known to have been exposed to HCV via a mechanism other than perinatal, **OR**

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Any infant who is ≥ 2 months and ≤ 36 months of age and only has a positive HCV antibody test and does not meet confirmatory laboratory criteria (HCV RNA nucleic acid amplification test (NAAT), HCV antigen, or detectable HCV genotype).

*West Virginia state specific case classification

Preventive and Treatment

See Hepatitis C prevention and treatment guidance: www.hcvguidelines.org/.

Surveillance Indicators

1. Proportion of perinatal cases of hepatitis C with complete demographic information.
2. Percent increase in the number of facilities that conduct hepatitis testing and submit reports to the state health department.

References

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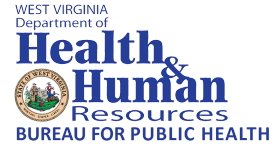
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May 2022

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