

PUBLIC HEALTH REFERENCE SHEET

Hepatitis C



Name	Hepatitis C, acute and chronic, hepatitis C virus (HCV)
Reservoir & Transmission	Humans HCV transmission is bloodborne and most often involves exposure to contaminated needles or syringes, or receipt of blood or blood products that have not been screened for HCV. Although infrequent, HCV can be transmitted through other procedures that involve blood exposure.
Incubation Period	Ranges from 2 weeks to 6 months; commonly 6–9 weeks Chronic infection may persist for several decades before the onset of cirrhosis or hepatocellular carcinoma.
Common Symptoms	Most (80%) people with acute HCV infection have no symptoms. When they occur, symptoms are indistinguishable from other forms of acute viral hepatitis and could include abdominal pain, anorexia and nausea, fatigue, jaundice, and dark urine. Most people with chronic HCV infection are asymptomatic or have non-specific symptoms such as chronic fatigue and depression. Many people eventually develop chronic liver disease, which can range from mild to severe, including cirrhosis and liver cancer.
Gold Standard Diagnostic Test	Detection of antibody to the hepatitis C virus (anti-HCV) and HCV RNA; tests that detect antibodies include the enzyme immunoassay (EIA), the enhanced chemiluminescence immunoassay, and the recombinant immunoblot assay.
Risk Groups	Persons who have received injections with non-sterilized needles and syringes in healthcare settings; injection drug users; recipients of unscreened donated blood, blood products, and organs; people who received a blood product for clotting problems made before 1987; hemodialysis patients; people who received body piercing or tattoos done with non-sterile instruments; people with known exposures to the HCV, such as healthcare workers injured by needlesticks and recipients of blood or organs from a donor who tested positive For the HCV, HIV-infected men who have sex with men, and children born to mothers infected with the HCV
Geographic Significance	Worldwide Regions of high prevalence in Africa, central, southern, and eastern Asia, and eastern Europe

What is hepatitis C?

Hepatitis C is a contagious liver disease that ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness that attacks the liver. Hepatitis C virus (HCV) is a spherical, enveloped, positive-strand ribonucleic acid (RNA) virus. Seven distinct HCV genotypes and 67 subtypes have been identified; genotypes 1a, 1b, 2, and 3 are the most common HCV genotypes in the United States. Hepatitis C can be either acute or chronic.

Acute hepatitis C is defined as an acute liver infection accompanied by jaundice, elevated serum alanine aminotransferase (ALT) levels greater than 200 IU/L or peak elevated total bilirubin levels greater or equal to 3.0 mg/dL, and with any HCV nucleic acid (RNA) detected for hepatitis C virus RNA positive or positive HCV antigen and antibody in a patient without a prior diagnosis of HCV infection.

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Hepatitis C



Chronic hepatitis C is defined as chronic liver infection with no clinical signs or symptoms, no record of a test conversion (i.e., no documented lab result of HCV negative antibody, HCV negative antigen, or HCV nucleic acid not detected, followed within 12 months by a positive result of any of these tests) within the past 12 months, and HCV positive results in either HCV RNA detected or HCV positive antigen tests.

What is the occurrence of hepatitis C?

Globally, an estimated 62 million people were living with HCV infection (chronically infected) in 2019. An estimated 2.4 million people in the United States were living with hepatitis C during 2013–2016; in 2019, a total of 4,136 cases of acute hepatitis C were reported to the CDC (CDC, 2023). After adjusting for under-ascertainment and under-reporting, an estimated 57,500 acute hepatitis C cases occurred in 2019. Pakistan, China, India, Egypt, and United States are the top 5 countries with highest total number of infections. Although the quality of epidemiologic data and prevalence estimates vary widely across countries and within regions, the most recent global estimates from 2019 indicate that the viremic prevalence of HCV infection (prevalence of HCV RNA) is <1.0% in most developed countries, including the United States. HCV prevalence is considerably higher in some countries in eastern Europe (3.1% in Ukraine, 2.9% in Russia, 2.9% in Moldova, 2.5% in Romania, 2.1% in Latvia) and certain countries in Africa (5.9% in Gabon, 3.6% in Burundi, 2.1% in Egypt), the Middle East (1.6% in Syria), and the South Caucasus and Central Asia (3.1% in Georgia, 3.0% in Uzbekistan, 2.7% in Tajikistan, 2.7% in Turkmenistan) (CDC 2023).

How is hepatitis C transmitted?

HCV is transmitted primarily through parenteral exposures to infectious blood or body fluids that contain blood. Possible exposures include:

- Injection-drug use (currently the most common mode of HCV transmission in the United States)
- Birth to an HCV infected mother

Although less frequent, HCV can also be spread through—

- Sex with an HCV infected person; it has been reported more often among men who have sex with men.
- Sharing glucose monitors, razors, nail clippers, toothbrushes, and other items that may have come into contact with infected blood.
- Other healthcare procedures that involve invasive procedures, such as injections.
- Unregulated tattooing.
- Receipt of donated blood, blood products, and organs (rare in the United States since blood screening became available in 1992).
- Needlestick injuries in healthcare settings.

Hepatitis C is not spread by sharing eating utensils, breastfeeding, hugging, kissing, holding hands, coughing, or sneezing. It is also not spread through food or water.

Who is at risk for hepatitis C?

The following people are at increased risk for hepatitis C:

- People with HIV infection
- Current or former people who use injection drugs (PWID), including those who injected only once many years ago

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Hepatitis C



- People with selected medical conditions, including those who ever received maintenance hemodialysis
- Prior recipients of transfusions or organ transplants, including people who received clotting factor concentrates produced before 1987, people who received a transfusion of blood or blood components before July 1992, people who received an organ transplant before July 1992, and people who were notified that they received blood from a donor who later tested positive for HCV infection
- Healthcare, emergency medical, and public safety personnel after needle sticks, sharps, or mucosal exposures to HCV-positive blood
- Children born to mothers with HCV infection

What are the signs and symptoms of hepatitis C?

Most (80%) people with acute HCV infection have no symptoms or have mild symptoms that are unlikely to prompt a visit to a healthcare professional. In those people who do develop symptoms, the average period from exposure to symptom onset is 2–12 weeks (range: 2–26 weeks). Symptoms are indistinguishable from other forms of acute viral hepatitis and could include fever, abdominal pain, anorexia and nausea, fatigue, joint-pain, jaundice, dark urine, or clay-colored stools.

Chronic liver disease in HCV-infected people is usually insidious, progressing slowly without any signs or symptoms for several decades. HCV infection is often not recognized until asymptomatic people are identified as HCV-positive when screened for blood donation or when elevated alanine aminotransferase (ALT, a liver enzyme) levels are detected during routine examinations. Chronic HCV infection is a major cause of cirrhosis (cirrhosis develops in approximately 10%–20% of people after 20–30 years of chronic infection) and liver cancer and is the leading reason for liver transplantation in the United States.

What are the potential complications of hepatitis C?

Of every 100 people infected with HCV, approximately 5–25 will develop cirrhosis within 10–20 years. Patients who develop cirrhosis have a 1%–4% annual risk of developing hepatocellular carcinoma and a 3%–6% annual risk of hepatic decompensation; for the latter patients, the risk of death in the following year is 15%–20%.

Some people with chronic HCV infection also develop medical conditions due to hepatitis C that are not limited to the liver, such as diabetes mellitus, glomerulonephritis, essential mixed cryoglobulinemia, and non-Hodgkin's lymphoma. Chronic liver disease and liver cancer caused by chronic HCV infection are common reasons for liver transplants in the United States. In 2018, a total of 15,713 U.S. death certificates had hepatitis C recorded as an underlying or contributing cause of death (CDC 2023).

How is hepatitis C diagnosed?

In the U.S., hepatitis C is a nationally notifiable disease. Hepatitis C testing is required for diagnosis. Testing is not routinely performed in many countries; however, most HCV-infected people are unaware of their infection. Two types of tests are available: IgG assays for HCV antibodies, and nucleic acid amplification tests (NAAT) to detect HCV RNA in blood (viremia). Both tests are commercially available in the United States and most countries. IgM assays, to detect early or acute infection, are not available. Because a positive HCV antibody test cannot discriminate between a previously infected person who resolved or cleared the infection and

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Hepatitis C



someone with current infection, be certain that HCV RNA testing follows a positive HCV antibody test to identify people with current (recent and chronic) HCV infection.

In 2020, CDC updated recommendations to include ≥ 1 hepatitis C screening test for all adults ≥ 18 years of age during a lifetime, and hepatitis C screening for all pregnant people during each pregnancy. See information on how to obtain hepatitis C diagnostic support at <https://www.cdc.gov/hepatitis/hcv/hcvfaq.htm#c3> including contact information, which samples to send, and how to send samples are also available at the above website or by calling 800-CDC-INFO (800-232-4636).

How is hepatitis C treated?

Over 90% of people infected with hepatitis C virus (HCV) can be cured of their infection, regardless of HCV genotype, with 8–12 weeks of oral therapy. With the exception of pregnant women and children under 3 years of age, people with acute hepatitis C (i.e., those with measurable HCV RNA) should be treated for their infection. There is no need to wait for potential spontaneous viral resolution. To provide healthcare professionals with timely guidance as new therapies are available and integrated into hepatitis C treatment regimens, the Infectious Diseases Society of America (IDSA) and American Association for the Study of Liver Diseases (AASLD), in collaboration with the International Antiviral Society–USA (IAS–USA), developed evidence-based, expert-developed recommendations for hepatitis C management. These recommendations are endorsed by CDC and available at <http://www.hcvguidelines.org>.

How can hepatitis C be prevented?

No vaccine or postexposure prophylaxis is available to prevent HCV infection, nor does immune globulin provide protection. The best way to prevent hepatitis C is by avoiding behaviors that can spread the disease, especially injecting drugs. Avoiding occupational exposure to blood is the primary way to prevent transmission of bloodborne illnesses among healthcare personnel.

What are some Public Health considerations?

- When reporting HSV infections in the Disease Reporting System internet (DRSi), specify the clinical form (acute or chronic) of the disease, if known.
- An acute case of hepatitis C should be reported as a chronic case of hepatitis C, if a positive NAAT for HCV RNA or a positive HCV antigen is reported 1 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 RNA NAAT or antigen status).
- A chronic hepatitis C case that has already been reported in the past should not be reported again.
- No one should be excluded from work, school, play, childcare, or other settings on the basis of their infection status. There is no evidence that hepatitis C can be transmitted from food handlers, teachers, or other service providers in the absence of blood-to-blood contact.

References:

Defense Health Agency. 2022. *Armed Forces Reportable Medical Events: Guidelines and Case Definitions*.

<https://www.health.mil/Reference-Center/Publications/2022/11/01/Armed-Forces-Reportable-Medical-Events-Guidelines>

Heymann, David L. ed. 2022. *Control of Communicable Diseases Manual*. 21st Edition. Washington, DC: APHA Press.

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PUBLIC HEALTH REFERENCE SHEET

Hepatitis C



“Viral Hepatitis – Hepatitis C,” Centers for Disease Control and Prevention (CDC), last reviewed April 11, 2023.

<https://www.cdc.gov/hepatitis/hcv/index.htm>

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