



**Public Health**  
Prevent. Promote. Protect.

## District 2 Public Health

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Banks, Dawson, Forsyth, Franklin, Habersham, Hall, Hart, Lumpkin, Rabun, Stephens, Towns, Union and White Counties

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The approval code to be used for submitting HCV RNA/PCR (viral load) is **EPI-14-14-4372848**.

The approval code is for use only where a patient qualified for HCV Antibody Rapid testing (Testing Risk Factors) and where the rapid antibody testing result was reactive.

The approval code is not authorized for patients with a previous history of a HCV Antibody positive screening.

If you have questions relating to patient eligibility, please contact David Donalson, Robin Dhonau, or Connee Martin at the District Office.

Complete the “Rapid Hepatitis C Antibody Testing Client Demographic and Risk Assessment Form”.

Each test kit used should have a patient screening form.

Scan the Risk Assessment Form into the patient’s VHN electronic file cabinet of imported documents.

VHN HCV Rapid Testing Lab Code is **HCVR**

Enter the test result in VHN

GPHL Lab Test From - #1490 HCV VIRAL LOAD

# Rapid Hepatitis C Antibody Testing

## Client Demographic and Risk Assessment Form

Agency: \_\_\_\_\_

Agency Contact Person: \_\_\_\_\_

### Demographics:

Client Name \_\_\_\_\_

City of Residence \_\_\_\_\_

Zip Code \_\_\_\_\_

County of Residence \_\_\_\_\_

Birth date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Age: \_\_\_\_\_

Gender: ☐ Male ☐ Female ☐ Transgender (MTF) ☐ Transgender (FTM)

**Ethnicity (mark only one):**

- ☐ Hispanic or Latino  
☐ Non-Hispanic or Latino  
☐ Decline to Answer

**Race (mark all that apply):**

- ☐ Asian  
☐ Black or African American  
☐ Native American or Alaskan Native  
☐ Native Hawaiian or Pacific Islander  
☐ White  
☐ Other \_\_\_\_\_  
☐ Decline to Answer

### Testing Risk Factors:

	Yes	No
Born between 1945 and 1965?	<input type="checkbox"/>	<input type="checkbox"/>
Injection Drug Use (past or present)?	<input type="checkbox"/>	<input type="checkbox"/>
<i>If yes, at what age did they 1<sup>st</sup> inject?</i> _____		
Shared any drug equipment (i.e. straws, filters, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>
HIV-positive?	<input type="checkbox"/>	<input type="checkbox"/>
Blood transfusion prior to 1992?	<input type="checkbox"/>	<input type="checkbox"/>
Clotting factors prior to 1987?	<input type="checkbox"/>	<input type="checkbox"/>
Sexual partner of someone infected with hepatitis C?	<input type="checkbox"/>	<input type="checkbox"/>
Tattoo or body piercing in an unprofessional setting?	<input type="checkbox"/>	<input type="checkbox"/>
Other risk factors? _____		
Did any of these risks occur in the last 6 months?	<input type="checkbox"/>	<input type="checkbox"/>
<i>If yes, please discuss retesting with client.</i>		

### HCV Testing History:


**Self-reported testing history:**

- ☐ Never tested before  
☐ Yes, tested previously  
☐ Don't know  
☐ Decline to answer

**Date of last HCV test:** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Self-reported HCV status at time of test:**

☐ Positive

 *If positive, client does not need to be tested again*

- ☐ Negative ☐ Don't know  
☐ Declined to Answer

### Current HCV Test:

Test Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

**Test Results:** ☐ HCV Rapid Reactive  
☐ Non-Reactive  
☐ Indeterminate

**Client Informed of Results?**

- ☐ Yes  
☐ No *If no, reason?*  
☐ Unable to locate  
☐ Client refused  
☐ Other \_\_\_\_\_

### All referrals made (check all that apply):

☐ Additional hepatitis testing

*Where?* \_\_\_\_\_

☐ Hepatitis Care/Treatment

*Where?* \_\_\_\_\_

☐ Hepatitis Vaccinations

*Where?* \_\_\_\_\_

☐ Mental Health/Substance Abuse Treatment

*Where?* \_\_\_\_\_

☐ Other \_\_\_\_\_

# PATIENT NAME

Last: First: MI.

For Laboratory Use Only

## BACTERIOLOGY

- ☐ Enteric Isolates
- ☐ 1100 *Campylobacter*
  - ☐ 1070 STEC
  - ☐ 1110 *Salmonella*
  - ☐ 1080 *Shigella*
  - ☐ 1160 *Yersinia*
- ☐ Clinical Specimen (Stool/Preserved Stool)
- ☐ 114004 *Campylobacter*
  - ☐ 114006 STEC
  - ☐ 114002 *Salmonella*
  - ☐ 114003 *Shigella*
  - ☐ 114008 *Yersinia*
  - ☐ 114011 *Vibrio*
- ☐ 1120 Stool Culture - Preserved (Para-Pak C&S, Room Temp)
- ☐ Routine (*Salmonella*, *Shigella*, *Campylobacter*, *Aeromonas*, STEC, and *Yersinia*)
  - ☐ *S. aureus* <sup>1</sup>
- ☐ 1140 Stool Culture- Fresh (Refrigerated)
- ☐ *B. cereus* <sup>1</sup>
  - ☐ *C. perfringens* <sup>1</sup>
- ☐ 1130 Special Bacteriology
- ☐ *Neisseria meningitidis*
  - ☐ *Haemophilus influenzae*
  - ☐ *Listeria monocytogenes*
  - ☐ *Vibrio* spp.
  - ☐ Other- Suspected agent
- ☐ 1040 Pertussis Direct Fluorescent Antibody (DFA)
- ☐ 1050 Pertussis Culture
- ☐ 1030 Group A Streptococcus
- ☐ 1010 Gonorrhea Culture
- ☐ Nucleic Acid Amplification Test (Chlamydia/Gonorrhea)
- ☐ 1060 Decatur ☐ W1000 Waycross
- ☐ Nucleic Acid Amplification Test (*Trichomonas vaginalis*)
- ☐ 100100 Decatur ☐ W100100 Waycross
- ☐ 1135 Forward to CDC<sup>1</sup> (Please specify) \_\_\_\_\_
- ☐ *C. botulinum* <sup>1,2</sup>
- ☐ 1180 ENVIRONMENTAL / FOOD (Epidemiology Use Only)
- ☐ *B. cereus*
  - ☐ *Campylobacter*
  - ☐ *C. perfringens*
  - ☐ *Listeria*
  - ☐ STEC / SLT
  - ☐ *Salmonella*
  - ☐ *Shigella*
  - ☐ *S. aureus*

<sup>1</sup> Special arrangement required CALL 404-327-7997

<sup>2</sup> Epidemiology approval required CALL 404-657-2588

## IMMUNOLOGY

- Routine Syphilis**
- ☐ Routine RPR (Choose nearest location)
  - ☐ 1610 Decatur ☐ W2000 Waycross
  - ☐ 1640 TPPA
- Special RPR testing request**
- ☐ 16150 Quantitative (Titer) and Confirmatory even if screening test (RPR) is negative
  - ☐ No Confirmatory Test needed even if screening test (RPR) is positive
- Arbovirus/WNV panel**
- ☐ 1595 Arbo IgG panel
  - ☐ 1600 Arbo IgM panel
  - ☐ 1580 WNV IgG
  - ☐ 1585 WNV IgM
  - ☐ 1590 WNV IgM (CSF)
  - ☐ 16550 Zika IgM
- Hepatitis Testing**
- ☐ 1411 Hep B (Prenatal)
  - ☐ 1410 Hep B (Routine Screen)
  - ☐ 1400 Anti-HAV Total Antibody
  - ☐ 1405 Anti-HAV-IgM
  - ☐ 1470 Anti-HCV (Ab)
  - ☐ 1480 Anti-HCV (Ab) with Reflex to HCV Viral Load
  - ☒ 1490 HCV Viral Load
- Miscellaneous Serology**
- ☐ 15300 Toxoplasmosis IgG
  - ☐ 15350 Toxoplasmosis IgM
  - ☐ 15100 Rubella IgG ☐ W15100 Waycross
  - ☐ 15150 Rubella IgM
  - ☐ 15450 CMV Ig
  - ☐ 15500 CMV IgM
  - ☐ 15600 HSV1
  - ☐ 15650 HSV2
  - ☐ Rubella IgG
  - ☐ 15200 Decatur ☐ W15200 Waycross
  - ☐ 15250 Rubella IgM
  - ☐ Mumps IgG
  - ☐ 15550 Decatur ☐ W15550 Waycross
  - ☐ Varicella Zoster
  - ☐ 15400 Decatur ☐ W15400 Waycross
  - ☐ 14100 MMR Panel (Measles, Mumps, Rubella)
  - ☐ 14101 Torch Panel (CMV, HSV1, HSV2, Rubella, and Toxoplasmosis)
  - ☐ 33900 QuantiFERON-TB Gold (IGRA)
  - ☐ 1570 Refer to CDC

## MYCOBACTERIOLOGY

## VIROLOGY

## MOLECULAR BIOLOGY

- Known TB Patient?** ☐ Yes, current ☐ Yes, former ☐ No
- Clinical Specimens**
- ☐ 30100 Microscopic exam for AFB only
  - ☐ 30000 Smear, culture & susceptibility testing (Susceptibility Performed on MTB only)
  - ☐ 30800 Nucleic Acid Amplification Testing (NAAT). This test is intended for use only with specimens from newly infected patients showing signs and symptoms of active pulmonary tuberculosis.
- AFB Isolates**
- ☐ 34000 Identification
  - ☐ 33950 Susceptibility testing (MTB only)
  - ☐ 30750 Genotyping only

## PARASITOLOGY

(Choose nearest location)

- ☐ Ova and Parasites Exam (Includes Formalin and PVA)
- Formalin** ☐ 2100 Decatur ☐ W5000 Waycross
- PVA** ☐ 2300 Decatur ☐ W5020 Waycross
- Pinworm Slide** ☐ 2200 Decatur ☐ W5030 Waycross
- ☐ 2150 PCR
  - ☐ 2610 Tissue/tissue smear for parasites
  - ☐ 2700 Whole blood/blood smear for parasites - Malaria
  - ☐ 2710 Whole blood/blood smear for parasites - Filaria
  - ☐ 300 Miscellaneous Identification
- For Epidemiology Use Only:**
- ☐ Cryptosporidium (O&P) ☐ 2400 Decatur ☐ W50100 Waycross
  - ☐ Cyclospora (O&P) ☐ 2500 Decatur ☐ W50800 Waycross

- HIV**
- CTS# \_\_\_\_\_
- ☐ 13700 HIV Ag/Ab Combo
  - ☐ 1340 HIV-1 Viral Load
- For Epidemiology Use Only:**
- ☐ 1360 HIV-1 Ab WB (dried blood spot only)

- Viral Culture**
- ☐ 62050 CMV Culture/IFA
  - ☐ 60300 Measles Culture/IFA
  - ☐ 60000 Mumps Culture/IFA
  - ☐ 1385 Enterovirus Culture / IFA
  - ☐ 1330 Herpes Culture / ELVIS
  - ☐ 62000 VZV Culture / IFA
  - ☐ 6100 Respiratory Culture / IFA
  - ☐ 60040 Viral Culture / Identification (Please specify): \_\_\_\_\_
- ☐ Gastrointestinal Outbreak Investigation
- ☐ 60030 Rotavirus

- Virology-Molecular**
- (Consultation with district epidemiologist required)
- ☐ 17100 Respiratory Viral Pathogen Panel
  - ☐ 13750 Enterovirus RT-PCR

- Miscellaneous Virology**
- ☐ 60160 Virology CDC Sendout (Please specify): \_\_\_\_\_

## Consultation with district epidemiologist required

- ☐ **BT Agent Rule Out (RT-PCR) Isolate:**
- ☐ BTC01005 *Bacillus anthracis*
  - ☐ BTC02005 *Brucella* spp.
  - ☐ BTC03005 *Burkholderia mallei/pseudomallei*
  - ☐ BTC04005 *Francisella tularensis*
  - ☐ BTC06005 *Yersinia pestis*
- ☐ **BT Rule Out (RT-PCR) Clinical Specimen:**
- ☐ BTC01000 - *Bacillus anthracis*
  - ☐ BTC02000 - *Brucella* spp.
  - ☐ BTC03000 - *Burkholderia* spp.
  - ☐ BTC04000 - *Francisella tularensis*
  - ☐ BTC06000 - *Yersinia pestis*
- ☐ 414000 *Bordetella pertussis* (RT-PCR)
  - ☐ 400050 Influenza Panel (rRT-PCR)
  - ☐ 413000 Mumps (RT-PCR)
  - ☐ 416000 Measles (RT-PCR)
  - ☐ 411100 Norovirus (RT-PCR)
  - ☐ BTC05000 Rash Illness Panel (RT-PCR)
  - ☐ 421000 VZV (RT-PCR)
  - ☐ 16600 Molecular Arbovirus (RT-PCR)
  - ☐ 16800 Ebola (RT-PCR)
  - ☐ 17300 MERS (RT-PCR)
  - ☐ 49100 Miscellaneous Molecular
- ☐ 499100 Refer to CDC

## **Hepatitis C (HCV) Q & A and Recommendations**

### **What is the incidence of HCV infection in the United States?**

In 2014, a total of 2,194 cases of acute hepatitis C were reported to CDC from 40 states. The overall incidence rate for 2014 was 0.7 cases per 100,000 population, an increase from 2010–2012. After adjusting for under-ascertainment and under-reporting, an estimated 30,500 acute hepatitis C cases occurred in 2014.

### **What is the prevalence of chronic HCV infection in the United States?**

An estimated 2.7-3.9 million people in the United States have chronic hepatitis C.

### **Who is at risk for HCV infection?**

The following persons are at known to be at increased risk for HCV infection:

- Current or former injection drug users, including those who injected only once many years ago
- Recipients of clotting factor concentrates made before 1987, when more advanced methods for manufacturing those products were developed
- Recipients of blood transfusions or solid organ transplants before July 1992, when better testing of blood donors became available
- Chronic hemodialysis patients
- Persons with known exposures to HCV, such as
  - health care workers after needlesticks involving HCV-positive blood
  - recipients of blood or organs from a donor who tested HCV-positive
- Persons with HIV infection
- Children born to HCV-positive mothers

### **Is it possible for someone to become infected with HCV and then spontaneously clear the infection?**

Yes. Approximately 15%–25% of persons clear the virus from their bodies without treatment and do not develop chronic infection; the reasons for this are not well known.

### **How likely is HCV infection to become chronic?**

HCV infection becomes chronic in approximately 75%–85% of cases.

## Why do most persons remain chronically infected with HCV?

A person infected with HCV mounts an immune response to the virus, but replication of the virus during infection can result in changes that evade the immune response. This may explain how the virus establishes and maintains chronic infection.

## What are the chances of someone developing chronic HCV infection, chronic liver disease, cirrhosis, or liver cancer or dying as a result of hepatitis C?

Of every 100 persons infected with HCV, approximately

- 75–85 will go on to develop chronic infection
- 60–70 will go on to develop chronic liver disease
- 5–20 will go on to develop cirrhosis over a period of 20–30 years
- 1–5 will die from the consequences of chronic infection (liver cancer or cirrhosis)

## Can persons become infected with a different strain of HCV after they have cleared the initial infection?

Yes. Prior infection with HCV does not protect against later infection with the same or different genotypes of the virus. This is because persons infected with HCV typically have an ineffective immune response due to changes in the virus during infection. For the same reason, no effective pre- or postexposure prophylaxis (i.e., immune globulin) is available.

## Is hepatitis C a common cause for liver transplantation?

Yes. Chronic HCV infection is the leading indication for liver transplants in the United States.

## How many deaths can be attributed to chronic HCV infection?

CDC estimates that there were 19,659 deaths with HCV as an underlying or contributing cause of death in 2014. Current information indicates these represent a fraction of deaths attributable in whole or in part to chronic hepatitis C.

## Is there a hepatitis C vaccine?

No vaccine for hepatitis C is available. Research into the development of a vaccine is under way.

## Transmission and Symptoms

### How is HCV transmitted?

HCV is transmitted primarily through large or repeated percutaneous (i.e., passage through the skin) exposures to infectious blood, such as

- Injection drug use (currently the most common means of HCV transmission in the United States)
- Receipt of donated blood, blood products, and organs (once a common means of transmission but now rare in the United States since blood screening became available in 1992)
- Needlestick injuries in health care settings
- Birth to an HCV-infected mother

HCV can also be spread infrequently through

- Sex with an HCV-infected person (an inefficient means of transmission)
- Sharing personal items contaminated with infectious blood, such as razors or toothbrushes (also inefficient vectors of transmission)
- Other health care procedures that involve invasive procedures, such as injections (usually recognized in the context of outbreaks)

**What is the prevalence of HCV infection among injection drug users (IDUs)?**

The most recent surveys of active IDUs indicate that approximately one third of young (aged 18–30 years) IDUs are HCV-infected. Older and former IDUs typically have a much higher prevalence (approximately 70%–90%) of HCV infection, reflecting the increased risk of continued injection drug use. The high HCV prevalence among former IDUs is largely attributable to needle sharing during the 1970s and 1980s, before the risks of bloodborne viruses were widely known and before educational initiatives were implemented.

**Is cocaine use associated with HCV transmission?**

There are very limited epidemiologic data to suggest an additional risk from non-injection (snorted or smoked) cocaine use, but this risk is difficult to differentiate from associated injection drug use and sex with HCV-infected partners.

**What is the risk of acquiring HCV infection from transfused blood or blood products in the United States?**

Now that more advanced screening tests for HCV are used in blood banks, the risk is considered to be less than 1 chance per 2 million units transfused. Before 1992, when blood screening for HCV became available, blood transfusion was a leading means of HCV transmission.



## Can HCV be spread during medical or dental procedures?

As long as Standard Precautions and other infection control practices are used consistently, medical and dental procedures performed in the United States generally do not pose a risk for the spread of HCV. However, HCV has been spread in health care settings when injection equipment, such as syringes, was shared between patients or when injectable medications or intravenous solutions were mishandled and became contaminated with blood. Health care personnel should understand and adhere to Standard Precautions, which includes Injection Safety practices aimed at reducing bloodborne pathogen risks for patients and health care personnel. If health care-associated HCV infection is suspected, this should be reported to state and local public health authorities.

## Can HCV be spread within a household?

Yes, but this does not occur very often. If HCV is spread within a household, it is most likely a result of direct, through-the-skin exposure to the blood of an infected household member.

## What are the signs and symptoms of acute HCV infection?

Persons with newly acquired HCV infection usually are asymptomatic or have mild symptoms that are unlikely to prompt a visit to a health care professional. When symptoms occur, they can include:

- Fever
- Fatigue
- Dark urine
- Clay-colored stool
- Abdominal pain
- Loss of appetite
- Nausea
- Vomiting
- Joint pain
- Jaundice

## What percentage of persons infected with HCV develop symptoms of acute illness?

Approximately 20%–30% of those newly infected with HCV experience fatigue, abdominal pain, poor appetite, or jaundice.

## How soon after exposure to HCV do symptoms appear?



In those persons who do develop symptoms, the average time period from exposure to symptom onset is 4–12 weeks (range: 2–24 weeks).

## **What are the signs and symptoms of chronic HCV infection?**

Most persons with chronic HCV infection are asymptomatic. However, many have chronic liver disease, which can range from mild to severe, including cirrhosis and liver cancer. Chronic liver disease in HCV-infected persons is usually insidious, progressing slowly without any signs or symptoms for several decades. In fact, HCV infection is often not recognized until asymptomatic persons 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.

## **Testing and Diagnosis**

### **Who should be tested for HCV infection?**

HCV testing is recommended for anyone at increased risk for HCV infection, including:

- Persons born from 1945 through 1965
- Persons who have ever injected illegal drugs, including those who injected only once many years ago
- Recipients of clotting factor concentrates made before 1987
- Recipients of blood transfusions or solid organ transplants before July 1992
- Patients who have ever received long-term hemodialysis treatment
- Persons with known exposures to HCV, such as
  - health care workers after needlesticks involving HCV-positive blood
  - recipients of blood or organs from a donor who later tested HCV-positive
- All persons with HIV infection
- Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme tests)
- Children born to HCV-positive mothers (to avoid detecting maternal antibody, these children should not be tested before age 18 months)

### **What blood tests are used to detect HCV infection?**

Several blood tests are performed to test for HCV infection, including:

- Screening tests for antibody to HCV (anti-HCV)
  - enzyme immunoassay (EIA)

- enhanced chemiluminescence immunoassay (CIA)
- Qualitative tests to detect presence or absence of virus (HCV RNA polymerase chain reaction [PCR])
- Quantitative tests to detect amount (titer) of virus (HCV RNA PCR)

### **How do I interpret the different tests for HCV infection?**

A table on the interpretation of results of tests for hepatitis C Virus (HCV) infection and further actions is available at [http://www.cdc.gov/hepatitis/HCV/PDFs/hcv\\_graph.pdf](http://www.cdc.gov/hepatitis/HCV/PDFs/hcv_graph.pdf) [PDF - 1 page].

### **Is an algorithm for HCV diagnosis available?**

A flow chart that outlines the serologic testing process beginning with anti HCV testing is available at [http://www.cdc.gov/hepatitis/HCV/PDFs/hcv\\_flow.pdf](http://www.cdc.gov/hepatitis/HCV/PDFs/hcv_flow.pdf) [PDF - 1 page].

### **How soon after exposure to HCV can anti-HCV be detected?**

HCV infection can be detected by anti-HCV screening tests (enzyme immunoassay) 4–10 weeks after infection. Anti-HCV can be detected in >97% of persons by 6 months after exposure.

### **How soon after exposure to HCV can HCV RNA be detected by PCR?**

HCV RNA appears in blood and can be detected as early as 2–3 weeks after infection.

### **Under what circumstances is a false-positive anti-HCV test result likely?**

False-positive anti-HCV tests appear more often when persons at low risk for HCV infection (e.g., blood donors) are tested. Therefore, it is important to follow-up all positive anti-HCV tests with a RNA test to establish current infection.

### **Under what circumstances might a false-negative anti-HCV test result occur?**

Persons with early HCV infection might not yet have developed antibody levels high enough that the test can measure. In addition, some persons might lack the (immune) response necessary for the test to work well. In these persons, further testing such as PCR for HCV RNA may be considered.

### **Can a patient have a normal liver enzyme (e.g., ALT) level and still have chronic hepatitis C?**

Yes. It is common for patients with chronic hepatitis C to have liver enzyme levels that go up and down, with periodic returns to normal or near normal levels. Liver enzyme levels can remain normal for over a year despite chronic liver disease.

## Where can I learn more about hepatitis C serology?

CDC offers an online training that covers the serology of acute and chronic hepatitis C and other types of viral hepatitis, available

at <http://www.cdc.gov/hepatitis/resources/professionals/training/serology/training.htm>.

## Management and Treatment

### What should be done for a patient with confirmed HCV infection?

HCV-positive persons should be evaluated (by referral or consultation, if appropriate) for presence of chronic liver disease, including assessment of liver function tests, evaluation for severity of liver disease and possible treatment, and determination of the need for Hepatitis A and Hepatitis B vaccination.

### When might a specialist be consulted in the management of HCV-infected persons?

Any physician who manages a person with hepatitis C should be knowledgeable and current on all aspects of the care of a person with hepatitis C; this can include some internal medicine and family practice physicians as well as specialists such as infectious disease physicians, gastroenterologists, or hepatologists.

### What is the treatment for acute hepatitis C?

Treatment for acute hepatitis C is similar to treatment for chronic hepatitis C. This issue was addressed in the [2009 AASLD Practice Guidance](#), the response rate to treatment is higher among persons with acute than with chronic HCV infection. However, the optimal treatment regimen and when it should be initiated remains uncertain.

### What is the treatment for chronic hepatitis C?

The treatment for hepatitis C virus (HCV) infection has evolved substantially since the introduction of highly effective HCV protease inhibitor therapies in 2011. Since that time new drugs with different mechanisms of action have become and continue to become available. For a complete list of currently approved FDA therapies to treat hepatitis C, please visit <http://www.hepatitisc.uw.edu/page/treatment/drugs>.

To provide healthcare professionals with timely guidance as new therapies are available and integrated into HCV 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: <http://www.hcvguidelines.org>.

## How many different genotypes of HCV exist?

At least six distinct HCV genotypes (genotypes 1–6) and more than 50 subtypes have been identified. Genotype 1 is the most common HCV genotype in the United States.

## Is it necessary to do viral genotyping when managing a person with chronic hepatitis C?

Yes. Because there are at least six known genotypes and more than 50 subtypes of HCV, genotype information is helpful in defining the epidemiology of hepatitis C and in making recommendations regarding appropriate treatment regimen. In the United States, HCV genotype 1 is most common, accounting for 74% of prevalent cases. Once the genotype is identified, it need not be tested again; genotypes do not change during the course of infection.

## Can superinfection with more than one genotype of HCV occur?

Superinfection is possible if risk behaviors (e.g., injection drug use) for HCV infection continue, but it is believed to be very uncommon.

## Does chronic hepatitis C affect only the liver?

A small percentage of persons with chronic HCV infection develop medical conditions due to hepatitis C that are not limited to the liver. These conditions are thought to be attributable to the body's immune response to HCV infection. Such conditions can include:

- Diabetes mellitus, which occurs three times more frequently in HCV-infected persons
- Glomerulonephritis, a type of kidney disease caused by inflammation of the kidney
- Essential mixed cryoglobulinemia, a condition involving the presence of abnormal proteins in the blood
- Porphyria cutanea tarda, an abnormality in heme production that causes skin fragility and blistering
- Non-Hodgkins lymphoma, which might occur somewhat more frequently in HCV-infected persons

## Counseling Patients

## **What topics should be discussed with patients who have HCV infection?**

- Patients should be informed about the low but present risk for transmission with sex partners.
- Sharing personal items that might have blood on them, such as toothbrushes or razors, can pose a risk to others.
- Cuts and sores on the skin should be covered to keep from spreading infectious blood or secretions.
- Donating blood, organs, tissue, or semen can spread HCV to others.
- HCV is not spread by sneezing, hugging, holding hands, coughing, sharing eating utensils or drinking glasses, or through food or water.
- Patients may benefit from a joining support group.

## **What should HCV-infected persons be advised to do to protect their livers from further harm?**

- HCV-positive persons should be advised to avoid alcohol because it can accelerate cirrhosis and end-stage liver disease.
- Viral hepatitis patients should also check with a health professional before taking any new prescription pills, over-the counter drugs (such as non-aspirin pain relievers), or supplements, as these can potentially damage the liver.

### ***Recommendation for HCV Testing Those with Ongoing Risk Factors***

- **Annual HCV testing is recommended for persons who inject drugs and for HIV-seropositive men who have unprotected sex with men. Periodic testing should be offered to other persons with ongoing risk factors for exposure to HCV.**

### ***Recommendations for Follow-up of Initial Testing***

- **An anti-HCV test is recommended for HCV testing, and if the result is positive, current infection should be confirmed by a sensitive HCV RNA test.**
- **Among persons with a negative anti-HCV test who are suspected of having liver disease, testing for HCV RNA or follow-up testing for HCV antibody is recommended if exposure to HCV occurred within the past six months; testing for HCV RNA can also be considered in persons who are immunocompromised.**
- **Among persons at risk of reinfection after previous spontaneous or treatment-related viral clearance, initial HCV-RNA testing is recommended because an anti-HCV test is expected to be positive.**
- **Quantitative HCV-RNA testing is recommended prior to the initiation of antiviral therapy to document the baseline level of viremia (ie, baseline viral load).**
- **Testing for HCV genotype is recommended to guide selection of the most appropriate antiviral regimen.**
- **If found to have positive results for anti-HCV test and negative results for HCV RNA by polymerase chain reaction (PCR), persons should be informed that they do not have evidence of current (active) HCV infection.**

### ***Recommendations for Counseling Those with Current (Active) HCV Infection***

- **Persons with current (active) HCV infection should receive education and interventions aimed at reducing progression of liver disease and preventing transmission of HCV.**
1. *Abstinence from alcohol and, when appropriate, interventions to facilitate cessation of alcohol consumption should be advised for all persons with HCV infection.*
  2. *Evaluation for other conditions that may accelerate liver fibrosis, including HBV and HIV infections, is recommended for all persons with HCV infection.*
  3. *Evaluation for advanced fibrosis using liver biopsy, imaging, and/or noninvasive markers is recommended for all persons with HCV infection, to facilitate an appropriate decision regarding HCV treatment strategy and to determine the need for initiating additional measures for the management of cirrhosis (eg, hepatocellular carcinoma screening) (see When and in Whom to Initiate HCV Therapy).*
  4. *Vaccination against hepatitis A and hepatitis B is recommended for all susceptible persons with HCV infection.*
  5. *Vaccination against pneumococcal infection is recommended to all patients with cirrhosis (Marrie, 2011).*
  6. *All persons with HCV infection should be provided education on how to avoid HCV transmission to others.*

### ***Recommendation for Linkage to Care***

- **All persons with current active HCV infection should be linked to a practitioner who is prepared to provide comprehensive management.**





Brenda Fitzgerald, MD, Commissioner | Nathan Deal, Governor

Peachtree Street NW, 15th Floor  
Atlanta, Georgia 30303-3142  
[www.health.state.ga.us](http://www.health.state.ga.us)

October 13, 2016

The enclosed shipping labels are to be used for overnight shipping of HCV RNA/PCR (viral load) specimens to the Georgia Public Health Laboratory. Please ensure that specimens are drawn and shipped according to the enclosed guidance. Note that specimens shipped overnight do not need to be sent frozen on dry ice, but should be sent with freeze packs.

Please feel free to contact me at [Ami.Gandhi@dph.ga.gov](mailto:Ami.Gandhi@dph.ga.gov) or 404-463-6254 with any questions.

Thank you.

A handwritten signature in dark ink, appearing to read 'APGL', is positioned above the printed name.

Ami Gandhi, MPH  
Viral Hepatitis Prevention Coordinator



***We Protect Lives.***

## **Hepatitis C Viral Load (HCV viral RNA) Specimen Collection Guidance:**

- Collect specimens in a SST tube.
- Freshly drawn specimens may be held at 2 to 30°C for up to 6 hours prior to centrifugation.
- Centrifuge the SST tube and transfer at least 2.5 ml serum/ plasma into transfer tube.
  - SST and transfer tubes are available at no additional cost from GPHL upon request
- Serum or plasma specimens may be stored:
  - At 15 to 30°C for up to 24 hours
  - At 2 to 8°C for up to 3 days
  - At -10 to -30°C for up to 60 days
  - At -70°C or colder for up to 60 days
- Exposure of plasma or serum samples to elevated room temperature for 24 hours or longer should be avoided.
- Multiple freeze/thaw cycles should be avoided and should not exceed three freeze/thaw cycles.
- Ship specimens frozen on dry ice. Specimens should be packaged and labeled in compliance with applicable state and federal regulations covering the transport of clinical specimens and etiologic agents/infectious substances.
- If rapid HCV antibody assay has already been performed, please order 1490 HCV Viral Load

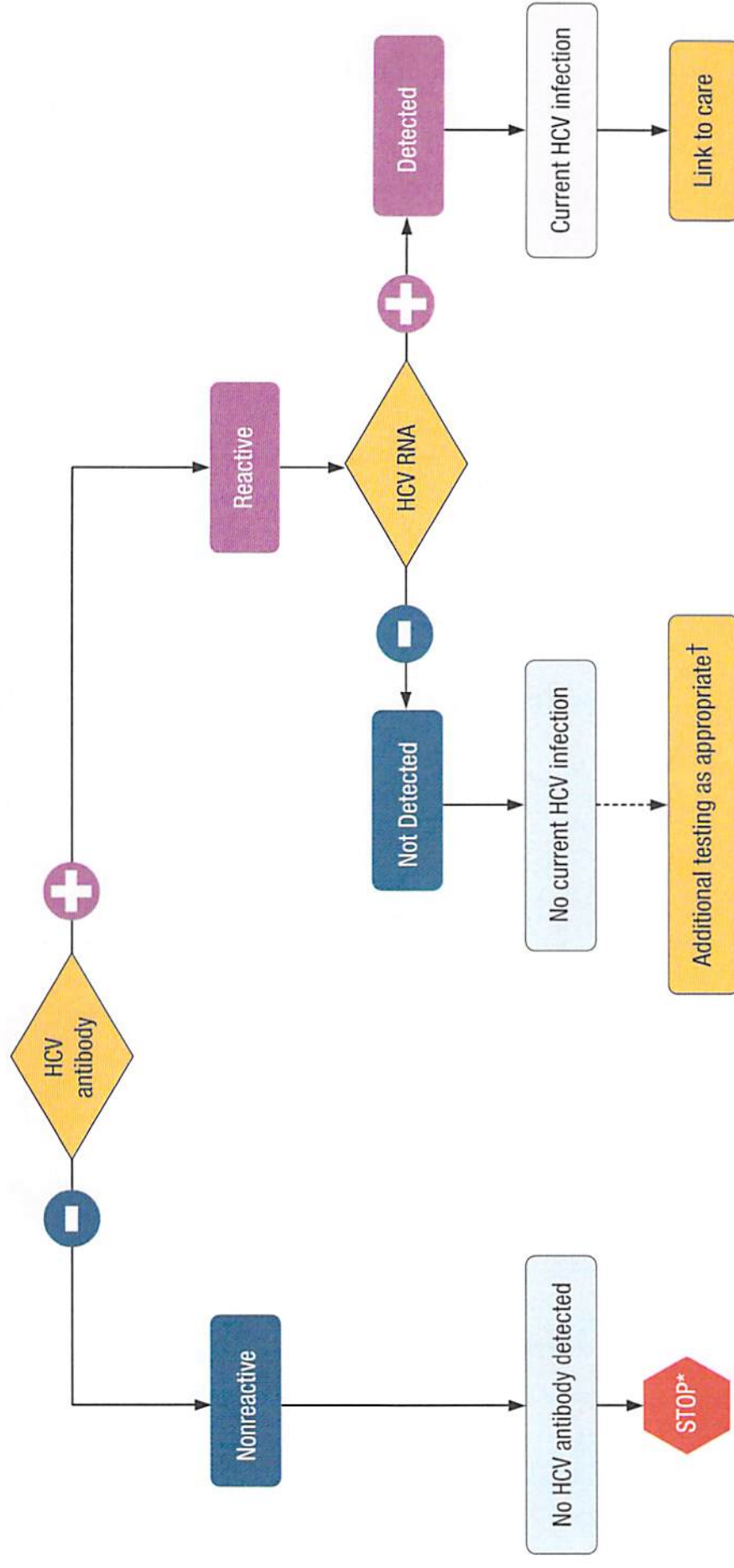
### **Notes:**

- RNA integrity can only be maintained by ensuring appropriate temperature requirements.
- Cryopreservation is the most effective of achieving excellent RNA integrity.
- It is recommended that all specimens are frozen upon collection and kept frozen throughout transport and delivery in order to ensure the best results.
- Once the samples are frozen by each facility, dry ice must be used as a refrigerant during transport.

# Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection



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\* For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

† To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

Source: CDC. Testing for HCV infection: An update of guidance for clinicians and laboratories. *MMWR* 2013;62(18).

# Interpretation of Results of Tests for Hepatitis C Virus (HCV) Infection and Further Actions



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TEST OUTCOME	INTERPRETATION	FURTHER ACTIONS
<b>HCV antibody nonreactive</b>	No HCV antibody detected	Sample can be reported as nonreactive for HCV antibody. No further action required.  If recent exposure in person tested is suspected, test for HCV RNA.*
<b>HCV antibody reactive</b>	Presumptive HCV infection	A repeatedly reactive result is consistent with current HCV infection, or past HCV infection that has resolved, or biologic false positivity for HCV antibody. Test for HCV RNA to identify current infection.
<b>HCV antibody reactive, HCV RNA detected</b>	Current HCV infection	Provide person tested with appropriate counseling and link person tested to care and treatment.†
<b>HCV antibody reactive, HCV RNA not detected</b>	No current HCV infection	No further action required in most cases.  If distinction between true positivity and biologic false positivity for HCV antibody is desired, and if sample is repeatedly reactive in the initial test, test with another HCV antibody assay.  In certain situations,‡ follow up with HCV RNA testing and appropriate counseling.

\* If HCV RNA testing is not feasible and person tested is not immunocompromised, do follow-up testing for HCV antibody to demonstrate seroconversion. If the person tested is immunocompromised, consider testing for HCV RNA.

† It is recommended before initiating antiviral therapy to retest for HCV RNA in a subsequent blood sample to confirm HCV RNA positivity.

‡ If the person tested is suspected of having HCV exposure within the past 6 months, or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.



## MEMORANDUM

TO: Public Health Submitters

FROM: Dr. Elizabeth Franko, DrPH, HCLD  
Director, Georgia Public Health Laboratory

RE: Change in HCV testing algorithm

DATE: October 14, 2016

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Effective November 1 2016, the Georgia Public Health Laboratory Decatur, in support of the CDC HCV recommended algorithm to identify current HCV infection <http://www.cdc.gov/mmwr/pdf/wk/mm62e0507a2.pdf>, will offer reflex testing for all specimens testing positive for HCV antibody. This is a modification from our current algorithm in which reflex testing was performed only on specimens where the HCV antibody signal to cut-off ratio was <10.

To obtain reflex testing, please mark 1480 Anti-HCV (Ab) with Reflex to HCV Viral Load on the GPLH specimen submission form. If reflex testing is indicated, test code 1490, HCV Viral Load will automatically be ordered and performed.

The fee for this testing is as follows:

1480 Anti-HCV (AB) with Reflex to HCV Viral load .....	\$10.00
1490 HCV Viral Load.....	\$50.75

You will not be charged the fee for 1490 HCV Viral Load until the test is ordered, performed, and resulted.

Please note the following specimen requirements:

- Please use serum separator tubes (SST for collection).
- Freshly drawn specimens (whole blood) may be held at 2 to 30°C for up to 6 hours prior to centrifugation.
- Serum may be stored at:
  - 2 to 8°C for up to 3 days
  - -10 to -30°C for up to 60 days



- Exposure of samples to elevated room temperature for 24 hours or longer should be avoided. Multiple freeze/thaw cycles should be avoided and should not exceed three freeze/thaw cycles. Therefore, if you freeze the samples they must be shipped on Dry Ice.

Questions regarding the new test methodologies or results may be directed to the Immunology Unit 404-327-7971 (Decatur).

# HEPATITIS C

## General Information

### What is hepatitis?

"Hepatitis" means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflamed or damaged, its function can be affected.

Heavy alcohol use, toxins, some medications, and certain medical conditions can cause hepatitis. However, hepatitis is 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.



Most people who get infected with the Hepatitis C virus develop a chronic, or lifelong, infection.

### What is Hepatitis C?

Hepatitis C is an infection of the liver that results from the Hepatitis C virus. **Acute** Hepatitis C refers to the first several months after someone is infected. Acute infection can range in severity from a very mild illness with few or no symptoms to a serious condition requiring hospitalization. For reasons that are not known, about 20% of people are able to clear, or get rid of, the virus without treatment in the first 6 months.

Unfortunately, most people who get infected are not able to clear the Hepatitis C virus and develop a chronic, or lifelong, infection. Over time, **chronic** Hepatitis C can cause serious health problems including liver disease, liver failure, and even liver cancer.

### How is Hepatitis C spread?

Hepatitis C is usually spread when blood from a person infected with the Hepatitis C virus enters the body of someone who is not infected. Today, most people become infected with Hepatitis C by sharing needles, syringes, or any other equipment to inject drugs. Before widespread screening of the blood supply in 1992, Hepatitis C was also spread through blood transfusions and organ transplants. While uncommon, poor infection control has resulted in outbreaks in healthcare settings.

While rare, sexual transmission of Hepatitis C is possible. Having a sexually transmitted disease or HIV, sex with multiple partners, or rough sex appears to increase a person's risk for Hepatitis C. Hepatitis C can also be spread when getting tattoos and body piercings in unlicensed facilities, informal settings, or with non-sterile instruments. Also, approximately 6% of infants born to infected mothers will get Hepatitis C. Still, some people don't know how or when they got infected.

### What are the symptoms of Hepatitis C?

Many people with Hepatitis C do not have symptoms and do not know they are infected. If symptoms occur, they can include: fever, feeling tired, not wanting to eat, upset stomach, throwing up, dark urine, grey-colored stool, joint pain, and yellow skin and eyes.

### When do symptoms occur?

If symptoms occur with acute infection, they can appear anytime from 2 weeks to 6 months after infection. If symptoms occur with chronic Hepatitis C, they can take decades to develop. When symptoms appear with chronic Hepatitis C, they often are a sign of advanced liver disease.

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## How would you know if you have Hepatitis C?

The only way to know if you have Hepatitis C is to get tested. Doctors use a blood test, called a Hepatitis C Antibody Test, which looks for antibodies to the Hepatitis C virus. Antibodies are chemicals released into the bloodstream when someone gets infected. Antibodies remain in the bloodstream, even if the person clears the virus.

A positive or reactive Hepatitis C Antibody Test means that a person has been infected with the Hepatitis C virus at some point in time. However, a positive antibody test **does not** necessarily mean a person still has Hepatitis C. An additional test called a RNA test is needed to determine if a person is currently infected with Hepatitis C.

## Who should get tested for Hepatitis C?

Testing for Hepatitis C is recommended for certain groups, including people who:

- Were born from 1945 – 1965
- Received donated blood or organs before 1992
- Have ever injected drugs, even if it was just once or many years ago
- Have certain medical conditions, such as chronic liver disease and HIV or AIDS
- Have abnormal liver tests or liver disease
- Have been exposed to blood from a person who has Hepatitis C
- Are on hemodialysis
- Are born to a mother with Hepatitis C

## Can Hepatitis C be treated?

Yes. However, treatment depends on many different factors, so it is important to see a doctor experienced in treating Hepatitis C. New and improved treatments are available that can cure Hepatitis C for many people.



Testing is the only way to know if you have Hepatitis C.

## How can Hepatitis C be prevented?

Although there is currently no vaccine to prevent Hepatitis C, there are ways to reduce the risk of becoming infected with the Hepatitis C virus.

- Avoid sharing or reusing needles, syringes or any other equipment to prepare and inject drugs, steroids, hormones, or other substances.
- Do not use personal items that may have come into contact with an infected person's blood, even in amounts too small to see, such as razors, nail clippers, toothbrushes, or glucose monitors.
- Do not get tattoos or body piercings from an unlicensed facility or in an informal setting.

## For more information

Talk to your health professional, call your health department, or visit [www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis).

# HEPATITIS C

## What to Expect When Getting Tested

### Getting tested for Hepatitis C

- A blood test, called a Hepatitis C Antibody Test, is used to find out if someone has ever been infected with Hepatitis C.
- The Hepatitis C Antibody Test, sometimes called the Anti-HCV Test, looks for antibodies to the Hepatitis C virus. Antibodies are chemicals released into the bloodstream when someone gets infected.
- Test results can take anywhere from a few days to a few weeks to come back. New rapid tests are now available in some health clinics and the results of these tests are available in 20 to 30 minutes.
- Most people who get infected with the Hepatitis C virus develop a chronic, or lifelong, infection. This is known as chronic Hepatitis C.
- However, some people are able to get rid of, or "clear," the virus.

### What does a non-reactive Hepatitis C Antibody Test result mean?

- A **non-reactive** or negative antibody test means that you are not currently infected with the Hepatitis C virus.
- However, if you think you might have been exposed to Hepatitis C in the last 6 months, you will need to be tested again.

### What does a reactive Hepatitis C Antibody Test result mean?

- A **reactive** or positive antibody test means you have been infected with the Hepatitis C virus at some point in time.
- Once people have been infected, they will always have antibodies in their blood. This is true if they have cleared the virus or still have the virus in their blood.
- A reactive antibody test **does not** necessarily mean that you currently have Hepatitis C and a follow-up test is needed.

### What to do if the Hepatitis C Antibody Test is reactive

- If the antibody test is reactive, you need an additional test to see if you currently have Hepatitis C. This test is called a RNA test. Another name used for this test is a PCR test.
- If the RNA or follow-up test is:
  - Negative** - this means you were infected with Hepatitis C, but the virus has now been cleared from your body.
  - Positive** - this means you currently have the virus in your blood.
- If you have a **reactive** antibody test and a **positive** follow-up test, you will need to talk to a doctor experienced in diagnosing and treating Hepatitis C.

### For more information

Talk to your doctor, call your health department, or visit [www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis).



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[www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis)

October 2013  
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# HEPATITIS C

## Information on Testing & Diagnosis

### What is Hepatitis C?

Hepatitis C is a serious liver disease that results from infection with the Hepatitis C virus. Hepatitis C has been called a silent disease because people can get infected and not know it. Some people who get infected with Hepatitis C are able to clear, or get rid of the virus, but most people who get infected develop a chronic, or lifelong, infection. Over time, chronic Hepatitis C can cause serious health problems including liver damage, liver failure, and even liver cancer.

### How is Hepatitis C spread?

Hepatitis C is spread when blood from a person infected with the Hepatitis C virus enters the body of someone who is not infected. This can happen through different ways including:

**Injection drug use.** Most people become infected with Hepatitis C by sharing needles or other equipment to inject drugs. It is possible to have gotten Hepatitis C from injecting drugs, even if it was just once or many years ago.

**Blood transfusions and organ transplants.** Before widespread screening of the blood supply began in 1992, Hepatitis C was spread through blood transfusions and organ transplants.

**Outbreaks.** While uncommon, poor infection control has resulted in outbreaks in health care facilities and residential care facilities.

While rare, spreading Hepatitis C through sex is possible. Having a sexually transmitted disease (STD) or HIV, sex with multiple partners, or rough sex appears to increase a person's risk for Hepatitis C. Hepatitis C can also be spread when getting tattoos and body piercings in informal settings or with non-sterile instruments. Some people don't know how or when they got infected.

### Who should get tested for Hepatitis C?

- Anyone who has injected drugs, even just once or many years ago
- Anyone with certain medical conditions, such as chronic liver disease and HIV or AIDS
- Anyone who has received donated blood or organs before 1992
- Anyone born from 1945 through 1965
- Anyone with abnormal liver tests or liver disease
- Health and safety workers who have been exposed to blood on the job through a needlestick or injury with a sharp object
- Anyone on hemodialysis
- Anyone born to a mother with Hepatitis C

The only way to know if you have Hepatitis C is to get tested. Early detection can save lives.

### Why is it important to get tested for Hepatitis C?

- Millions of Americans have Hepatitis C, but most don't know it.
- About 8 in 10 people who get infected with Hepatitis C develop a chronic, or lifelong, infection.
- People with Hepatitis C often have no symptoms. Many people can live with an infection for decades without feeling sick.
- Hepatitis C is a leading cause of liver cancer and the leading cause of liver transplants.
- New treatments are available for Hepatitis C that can get rid of the virus.



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## Getting tested for Hepatitis C

Doctors use a blood test, called a Hepatitis C Antibody Test, to find out if a person has ever been infected with Hepatitis C. The Hepatitis C Antibody Test, sometimes called the Anti-HCV Test, looks for antibodies to the Hepatitis C virus. Antibodies are chemicals released into the bloodstream when someone gets infected.

## Hepatitis C Antibody Test Results

When getting tested for Hepatitis C, ask your doctor when and how you will find out your results. The test results usually take anywhere from a few days to a few weeks to come back. A new rapid test is available in some health clinics.

### Non-Reactive or Negative Hepatitis C Antibody Test

- A **non-reactive** or negative antibody test means that a person does not have Hepatitis C.
- However, if a person has been exposed to the Hepatitis C virus in the last 6 months, he or she will need to be tested again.

### Reactive or Positive Hepatitis C Antibody Test

- A **reactive** or positive antibody test means that Hepatitis C antibodies were found in the blood and a person has been infected with the Hepatitis C virus at some point in time.
- Once people have been infected, they will always have antibodies in their blood. This is true if even if they have cleared the Hepatitis C virus.
- A reactive antibody test does not necessarily mean that you have Hepatitis C. A person will need an additional, follow-up test.



## Diagnosing Hepatitis C

If the antibody test is reactive, an additional blood test is needed to determine if a person is currently infected with Hepatitis C. This test is called a RNA test. Another name used for this test is a PCR test. If the RNA test is negative, this means a person does not have Hepatitis C. If the RNA test is positive, this means a person currently has Hepatitis C and should talk to a doctor experienced in diagnosing and treating the disease.

## For more information

Talk to your doctor, call your health department, or visit [www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis).



# HEPATITIS C & INJECTION DRUG USE

## What is Hepatitis C?

Hepatitis C is a serious liver disease caused by the Hepatitis C virus. Some people get only a short term, or acute, infection and are able to clear the virus without treatment. If someone clears the virus, this usually happens within 6 months after infection. However, about 80% of people who get infected develop a chronic, or lifelong, infection. Over time, chronic Hepatitis C can cause serious health problems including liver damage, liver failure, and even liver cancer.

## What are the symptoms?

Symptoms of Hepatitis C can include: fever, feeling tired, not wanting to eat, upset stomach, throwing up, dark urine, grey-colored stool, joint pain, and yellow skin and eyes. However, many people who get Hepatitis C do not have symptoms and do not know they are infected. If symptoms occur with acute infection, they can appear anytime from 2 weeks to 6 months after infection. Symptoms of chronic Hepatitis C can take decades to develop, and when symptoms do appear, they often are a sign of advanced liver disease.

## Should I get tested?

Yes. If you have ever injected drugs, you should get tested for Hepatitis C. If you are currently injecting, talk to your doctor about how often you should be tested.

The Hepatitis C Antibody Test is a blood test that looks for antibodies to the Hepatitis C virus. A reactive or positive Hepatitis C Antibody Test means that a person has been infected at some point in time. Unlike HIV, a reactive antibody test **does not** necessarily mean a person still has Hepatitis C. An additional blood test called a RNA test is needed to determine if a person is currently infected with Hepatitis C.



All equipment used to prepare and inject drugs can spread Hepatitis C when contaminated and shared.

## How is Hepatitis C spread among people who inject drugs?

The Hepatitis C virus is very infectious and can easily spread when a person comes into contact with surfaces, equipment, or objects that are contaminated with infected blood, even in amounts too small to see. The virus can survive on dry surfaces and equipment for up to 6 weeks. People who inject drugs can get Hepatitis C from:

- **Needles & Syringes.** Sharing or reusing needles and syringes increases the chance of spreading the Hepatitis C virus. Syringes with detachable needles increase this risk even more because they can retain more blood after they are used than syringes with fixed-needles.
- **Preparation Equipment.** Any equipment, such as cookers, cottons, water, ties, and alcohol swabs, can easily become contaminated during the drug preparation process.
- **Fingers.** Fingers that come into contact with infected blood can spread Hepatitis C. Blood on fingers and hands can contaminate the injection site, cottons, cookers, ties, and swabs.
- **Surfaces.** Hepatitis C can spread when blood from an infected person contaminates a surface and then that surface is reused by another person to prepare injection equipment.



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## Are there other ways Hepatitis C can spread?

Hepatitis C can also spread when tattoo, piercing, or cutting equipment is contaminated with the Hepatitis C virus and used on another person. Although rare, Hepatitis C can be spread through sex. Hepatitis C seems to be more easily spread through sex when a person has HIV or a STD. People who have rough sex or numerous sex partners are at higher risk of getting Hepatitis C. Hepatitis C can also be spread from a pregnant woman to her baby.

## Can Hepatitis C be prevented?

Yes. The best way to prevent Hepatitis C is to stop injecting. Drug treatment, including methadone or buprenorphine, can lower your risk for Hepatitis C since there will no longer be a need to inject.

However, if you are unable or unwilling to stop injecting drugs, there are steps you can take to reduce the risk of becoming infected.

- **Do not** share any equipment used to inject drugs with another person.
- **Always** use new, sterile needles, syringes and preparation equipment—cookers, cottons, water, ties, and alcohol swabs—for each injection.
- Set up a clean surface **before** placing down your injection equipment.
- **Do not** divide and share drug solution with equipment that has already been used.
- Avoid using syringes with detachable needles to reduce the amount of blood remaining in the syringe after injecting.
- Thoroughly wash hands with soap and water **before and after** injecting to remove blood or germs.
- Clean injection site with alcohol or soap and water **prior** to injecting.
- Apply pressure to injection site with a sterile pad to stop any bleeding after injecting.
- Only handle your own injection equipment. If you do inject with other people, separate your equipment from others to avoid accidental sharing.

## Use new syringes and equipment with every injection.

The Hepatitis C virus is difficult to kill. The best way to prevent Hepatitis C is to use new, sterile syringes and equipment with every injection. If using a new syringe is not possible, bleach has been found to kill the Hepatitis C virus in syringes when used as a solution of one part bleach to 10 parts water for two minutes. Bleach, however, may not be effective when used to clean other types of equipment used to prepare or inject drugs. Although boiling, burning, or using common cleaning fluids, alcohol, or peroxide can reduce the amount of virus, this **may not** prevent you from getting infected. Cleaning previously used equipment and syringes should only be done if new, sterile equipment is not available.

## Can Hepatitis C be treated?

Yes. New and improved treatments are available that can cure most people with Hepatitis C. Most of the new treatments are taken as pills and do not require interferon injections. However, treatment for Hepatitis C depends on many different factors, so it is important to talk to a doctor about options.

## Can someone get re-infected with Hepatitis C?

Yes. Someone who clears the virus, either on their own or from successful treatment, can become infected again.

## Does injecting put you at risk for other types of hepatitis?

Yes. People who inject are more likely to get Hepatitis A and Hepatitis B. Getting vaccinated for Hepatitis A and B will prevent these types of hepatitis. There is currently no vaccine for Hepatitis C.

## For More Information

Talk to your health professional, call your health department, or visit [www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis).



# The ABCs of Hepatitis

	<b>HEPATITIS A</b> is caused by the Hepatitis A virus (HAV)	<b>HEPATITIS B</b> is caused by the Hepatitis B virus (HBV)	<b>HEPATITIS C</b> is caused by the Hepatitis C virus (HCV)
<b>U.S. Statistics</b>	<ul style="list-style-type: none"> <li>Estimated 2,500 new infections in 2014</li> </ul>	<ul style="list-style-type: none"> <li>Estimated 19,200 new infections in 2014</li> <li>Estimated 850,000–2.2 million people with chronic HBV infection</li> </ul>	<ul style="list-style-type: none"> <li>Estimated 30,500 new infections in 2014</li> <li>Estimated 2.7–3.9 million people with chronic HCV infection</li> </ul>
<b>Routes of Transmission</b>	<p>Ingestion of fecal matter, even in microscopic amounts, from:</p> <ul style="list-style-type: none"> <li>Close person-to-person contact with an infected person</li> <li>Sexual contact with an infected person</li> <li>Ingestion of contaminated food or drinks</li> </ul>	<p>Contact with infectious blood, semen, and other body fluids primarily through:</p> <ul style="list-style-type: none"> <li>Birth to an infected mother</li> <li>Sexual contact with an infected person</li> <li>Sharing of contaminated needles, syringes, or other injection drug equipment</li> <li>Needlesticks or other sharp instrument injuries</li> </ul>	<p>Contact with blood of an infected person primarily through:</p> <ul style="list-style-type: none"> <li>Sharing of contaminated needles, syringes, or other injection drug equipment</li> </ul> <p>Less commonly through:</p> <ul style="list-style-type: none"> <li>Sexual contact with an infected person</li> <li>Birth to an infected mother</li> <li>Needlestick or other sharp instrument injuries</li> </ul>
<b>Persons at Risk</b>	<ul style="list-style-type: none"> <li>Travelers to regions with intermediate or high rates of Hepatitis A</li> <li>Sex contacts of infected persons</li> <li>Household members or caregivers of infected persons</li> <li>Men who have sex with men</li> <li>Users of certain illegal drugs (injection and non-injection)</li> <li>Persons with clotting-factor disorders</li> </ul>	<ul style="list-style-type: none"> <li>Infants born to infected mothers</li> <li>Sex partners of infected persons</li> <li>Persons with multiple sex partners</li> <li>Persons with a sexually transmitted disease (STD)</li> <li>Men who have sex with men</li> <li>Injection drug users</li> <li>Household contacts of infected persons</li> <li>Healthcare and public safety workers exposed to blood on the job</li> <li>Hemodialysis patients</li> <li>Residents and staff of facilities for developmentally disabled persons</li> <li>Travelers to regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of <math>\geq 2\%</math>)</li> </ul>	<ul style="list-style-type: none"> <li>Current or former injection drug users</li> <li>Recipients of clotting factor concentrates before 1987</li> <li>Recipients of blood transfusions or donated organs before July 1992</li> <li>Long-term hemodialysis patients</li> <li>Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV)</li> <li>HIV-infected persons</li> <li>Infants born to infected mothers</li> </ul>
<b>Incubation Period</b>	15 to 50 days (average: 28 days)	45 to 160 days (average: 120 days)	14 to 180 days (average: 45 days)
<b>Symptoms of Acute Infection</b>	<p><b>Symptoms of all types of viral hepatitis are similar and can include one or more of the following:</b></p> <ul style="list-style-type: none"> <li>Fever</li> <li>Fatigue</li> <li>Loss of appetite</li> <li>Nausea</li> <li>Vomiting</li> <li>Abdominal pain</li> <li>Gray-colored bowel movements</li> <li>Joint pain</li> <li>Jaundice</li> </ul>		
<b>Likelihood of Symptomatic Acute infection</b>	<ul style="list-style-type: none"> <li>&lt; 10% of children &lt; 6 years have jaundice</li> <li>40%–50% of children age 6–14 years have jaundice</li> <li>70%–80% of persons &gt; 14 years have jaundice</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 1% of infants &lt; 1 year develop symptoms</li> <li>5%–15% of children age 1–5 years develop symptoms</li> <li>30%–50% of persons &gt; 5 years develop symptoms</li> </ul> <p><b>Note:</b> Symptoms appear in 5%–15% of newly infected adults who are immunosuppressed</p>	<ul style="list-style-type: none"> <li>20%–30% of newly infected persons develop symptoms of acute disease</li> </ul>
<b>Potential for Chronic Infection</b>	None	<ul style="list-style-type: none"> <li>Among unimmunized persons, chronic infection occurs in &gt;90% of infants, 25%–50% of children aged 1–5 years, and 6%–10% of older children and adults</li> </ul>	<ul style="list-style-type: none"> <li>75%–85% of newly infected persons develop chronic infection</li> <li>15%–25% of newly infected persons clear the virus</li> </ul>
<b>Severity</b>	Most persons with acute disease recover with no lasting liver damage; rarely fatal	<ul style="list-style-type: none"> <li>Most persons with acute disease recover with no lasting liver damage; acute illness is rarely fatal</li> <li>15%–25% of chronically infected persons develop chronic liver disease, including cirrhosis, liver failure, or liver cancer</li> <li>1,800 persons in the United States die with HBV-related liver disease as documented from death certificates</li> </ul>	<ul style="list-style-type: none"> <li>Acute illness is uncommon. Those who do develop acute illness recover with no lasting liver damage.</li> <li>60%–70% of chronically infected persons develop chronic liver disease</li> <li>5%–20% develop cirrhosis over a period of 20–30 years</li> <li>1%–5% will die from cirrhosis or liver cancer</li> <li>19,600 deaths in 2014</li> </ul>



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

*Continued on next page*



	HEPATITIS A	HEPATITIS B	HEPATITIS C
<b>Serologic Tests for Acute Infection</b>	<ul style="list-style-type: none"> <li>IgM anti-HAV</li> </ul>	<ul style="list-style-type: none"> <li>HBsAg in acute and chronic infection</li> <li>IgM anti-HBc is positive in acute infection only</li> </ul>	<ul style="list-style-type: none"> <li>No serologic marker for acute infection</li> </ul>
<b>Serologic Tests for Chronic Infection</b>	<ul style="list-style-type: none"> <li>Not applicable—no chronic infection</li> </ul>	<ul style="list-style-type: none"> <li>HBsAg (and additional markers as needed)</li> </ul>	<ul style="list-style-type: none"> <li>Screening assay (EIA or CIA) for anti-HCV</li> <li>Verification by an additional, more specific assay (e.g., nucleic acid testing (NAT) for HCV RNA)</li> </ul>
<b>Screening Recommendations for Chronic Infection</b>	<ul style="list-style-type: none"> <li>Not applicable—no chronic infection</li> </ul> <p>Note: Screening for past acute infection is generally not recommended</p>	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> <li>All pregnant women</li> <li>Persons born in regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of <math>\geq 2\%</math>)</li> <li>U.S.—born persons not vaccinated as infants whose parents were born in regions with high rates of Hepatitis B (HBsAg prevalence of <math>\geq 8\%</math>)</li> <li>Infants born to HBsAg-positive mothers</li> <li>Household, needle-sharing, or sex contacts of HBsAg-positive persons</li> <li>Men who have sex with men</li> <li>Injection drug users</li> <li>Patients with elevated liver enzymes (ALT/AST) of unknown etiology</li> <li>Hemodialysis patients</li> <li>Persons needing immunosuppressive or cytotoxic therapy</li> <li>HIV-infected persons</li> <li>Donors of blood, plasma, organs, tissues, or semen</li> </ul>	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> <li>Persons born from 1945–1965</li> <li>Persons who currently inject drugs or who have injected drugs in the past, even if once or many years ago</li> <li>Recipients of clotting factor concentrates before 1987</li> <li>Recipients of blood transfusions or donated organs before July 1992</li> <li>Long-term hemodialysis patients</li> <li>Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV)</li> <li>HIV-infected persons</li> <li>Children born to infected mothers (do not test before age 18 mos.)</li> <li>Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme tests)</li> <li>Donors of blood, plasma, organs, tissues, or semen</li> </ul>
<b>Treatment</b>	<ul style="list-style-type: none"> <li>No medication available</li> <li>Best addressed through supportive treatment</li> </ul>	<ul style="list-style-type: none"> <li>Acute: No medication available; best addressed through supportive treatment</li> <li>Chronic: Regular monitoring for signs of liver disease progression; some patients are treated with antiviral drugs</li> </ul>	<ul style="list-style-type: none"> <li>Acute: Antivirals and supportive treatment</li> <li>Chronic: Regular monitoring for signs of liver disease progression; new direct acting antiviral medications offer shorter durations of treatment and increased effectiveness, including over 90% of patients who complete treatment are cured</li> </ul>
<b>Vaccination Recommendations</b>	<p>Hepatitis A vaccine is recommended for:</p> <ul style="list-style-type: none"> <li>All children at age 1 year</li> <li>Travelers to regions with intermediate or high rates of Hepatitis A</li> <li>Men who have sex with men</li> <li>Users of certain illegal drugs (injection and non-injection)</li> <li>Persons with clotting-factor disorders</li> <li>Persons who work with HAV-infected primates or with HAV in a research laboratory</li> <li>Persons with chronic liver disease, including HBV- and HCV-infected persons with chronic liver disease</li> <li>Family and care givers of recent adoptees from countries where Hepatitis A is common</li> <li>Anyone else seeking long-term protection</li> </ul>	<p>Hepatitis B vaccine is recommended for:</p> <ul style="list-style-type: none"> <li>All infants at birth</li> <li>Older children who have not previously been vaccinated</li> <li>Susceptible sex partners of infected persons</li> <li>Persons with multiple sex partners</li> <li>Persons seeking evaluation or treatment for an STD</li> <li>Men who have sex with men</li> <li>Injection drug users</li> <li>Susceptible household contacts of infected persons</li> <li>Healthcare and public safety workers exposed to blood on the job</li> <li>Persons with chronic liver disease, including HCV-infected persons with chronic liver disease</li> <li>Persons with HIV infection</li> <li>Persons with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients</li> <li>Residents and staff of facilities for developmentally disabled persons</li> <li>Travelers to regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of <math>\geq 2\%</math>)</li> <li>Unvaccinated adults with diabetes mellitus 19–59 (for those aged <math>\geq 60</math> years, at the discretion of clinician)</li> <li>Anyone else seeking long-term protection</li> </ul>	<p>There is no Hepatitis C vaccine</p>
<b>Vaccination Schedule</b>	<p>2 doses given 6 months apart</p>	<ul style="list-style-type: none"> <li>Infants and children: 3 to 4 doses given over a 6- to 18-month period depending on vaccine type and schedule</li> <li>Adults: 3 doses given over a 6-month period (most common schedule)</li> </ul>	<p>No vaccine available</p>

# VIRAL HEPATITIS CASE REPORT



The following questions should be asked for every case of viral hepatitis

Form Approved OMB No. 0920-0728 Exp. Date 01/31/2019

Prefix: (Mr. Mrs. Miss Ms. etc) _____ Last: _____ First: _____ Middle: _____			
Preferred Name (nickname): _____ Maiden: _____			
Address: Street: _____			
City: _____		Phone: ( _____ ) _____ - _____ Zip Code: _____ - _____	
SSN # (optional) _____ - _____ - _____			
----- Only data from lower portion of form will be transmitted to CDC -----			
State: _____		County: _____ Date of Public Health Report <u>MM/DD/YYYY</u>	
Case ID: _____			
Legacy Case ID: _____			

## DEMOGRAPHIC INFORMATION

<b>RACE: (check all that apply)</b> <input type="checkbox"/> Amer Indian or Alaska Native <input type="checkbox"/> Black or African American <input type="checkbox"/> White <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or Pacific Islander <input type="checkbox"/> Other Race, specify _____		<b>ETHNICITY:</b> Hispanic..... <input type="checkbox"/> Non-hispanic..... <input type="checkbox"/> Other/Unknown..... <input type="checkbox"/>
<b>SEX:</b> Male <input type="checkbox"/> Female <input type="checkbox"/> Unk <input type="checkbox"/> <b>PLACE OF BIRTH:</b> <input type="checkbox"/> USA <input type="checkbox"/> Other: _____ <b>DATE OF BIRTH:</b> <u>MM/DD/YYYY</u> <b>AGE:</b> ____ (years) (00 = <1yr, 999 = Unk)		

## CLINICAL & DIAGNOSTIC DATA

<b>REASON FOR TESTING: (check all that apply)</b> <input type="checkbox"/> Year of birth (1945-1965) <input type="checkbox"/> Symptoms of acute hepatitis <input type="checkbox"/> Prenatal screening <input type="checkbox"/> Screening of asymptomatic patient with reported risk factors <input type="checkbox"/> Blood/organ donor screening <input type="checkbox"/> Unknown <input type="checkbox"/> Screening of asymptomatic patient with no risk factors (e.g., patient requested) <input type="checkbox"/> Evaluation of elevated liver enzymes <input type="checkbox"/> Follow-up testing for previous marker of viral hepatitis <input type="checkbox"/> Other: specify: _____																																																							
<b>CLINICAL DATA:</b> Diagnosis date: <u>MM/DD/YYYY</u> Yes     No     Unk Is patient symptomatic? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> if yes, onset date: <u>MM/DD/YYYY</u> At diagnosis, was the patient • Jaundiced? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> • Hospitalized for hepatitis? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Was the patient pregnant? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Due date: <u>MM/DD/YYYY</u> Did the patient die from hepatitis? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> • Date of death: <u>MM/DD/YYYY</u> Was the patient aware they had viral hepatitis prior to lab testing? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Does the patient have a provider of care for hepatitis? ... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Does the patient have diabetes? ..... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Diabetes diagnosis date: <u>MM/DD/YYYY</u>		<b>DIAGNOSTIC TESTS: (CHECK ALL THAT APPLY)</b> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Pos</th> <th>Neg</th> <th>Unk</th> </tr> </thead> <tbody> <tr><td>• Total antibody to hepatitis A virus [total anti-HAV].....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• IgM antibody to hepatitis A virus [IgM anti-HAV].....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Hepatitis B surface antigen [HBsAg] .....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Total antibody to hepatitis B core antigen [total anti-HBc].....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Hepatitis B "e" antigen [HBeAg] .....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• IgM antibody to hepatitis B core antigen [IgM anti-HBc] .....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Nucleic Acid Testing for hepatitis B [Hep B NAT].....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Antibody to hepatitis C virus [anti-HCV].....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>    - anti-HCV signal to cut-off ratio _____</td><td></td><td></td><td></td></tr> <tr><td>• Supplemental anti-HCV assay [e.g., RIBA] .....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Antibody to hepatitis D virus [anti-HDV] .....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>• Antibody to hepatitis E virus [IgM anti-HEV].....</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>			Pos	Neg	Unk	• Total antibody to hepatitis A virus [total anti-HAV].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• IgM antibody to hepatitis A virus [IgM anti-HAV].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Hepatitis B surface antigen [HBsAg] .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Total antibody to hepatitis B core antigen [total anti-HBc].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Hepatitis B "e" antigen [HBeAg] .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• IgM antibody to hepatitis B core antigen [IgM anti-HBc] .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Nucleic Acid Testing for hepatitis B [Hep B NAT].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Antibody to hepatitis C virus [anti-HCV].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- anti-HCV signal to cut-off ratio _____				• Supplemental anti-HCV assay [e.g., RIBA] .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Antibody to hepatitis D virus [anti-HDV] .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Antibody to hepatitis E virus [IgM anti-HEV].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pos	Neg	Unk																																																				
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• Antibody to hepatitis C virus [anti-HCV].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																				
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• Antibody to hepatitis E virus [IgM anti-HEV].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																				
<b>LIVER ENZYME LEVELS AT TIME OF DIAGNOSIS</b> • ALT [SGPT] Result _____ Upper limit normal _____ • Date of ALT result <u>MM/DD/YYYY</u> • AST [SGOT] Result _____ Upper limit normal _____ • Date of AST result <u>MM/DD/YYYY</u>		If this case has a diagnosis of hepatitis A that has not been serologically confirmed, is there an epidemiologic link between this patient and a laboratory-confirmed hepatitis A case? Yes     No     Unk <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																																																					
<b>DIAGNOSIS: (check all that apply)</b> <input type="checkbox"/> Acute hepatitis A <input type="checkbox"/> Acute hepatitis C <input type="checkbox"/> Chronic HBV infection <input type="checkbox"/> Perinatal HBV infection <input type="checkbox"/> Acute hepatitis B <input type="checkbox"/> Acute hepatitis E <input type="checkbox"/> HCV infection (Past or Present)																																																							

## Case ID: \_\_\_\_\_

VACCINATION HISTORY				
	Yes	No	Unk	
• Has the patient ever received the hepatitis A vaccine?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	1	>2		
If yes, how many doses?.....	<input type="checkbox"/>	<input type="checkbox"/>		• In what year was the last dose received?..... (year)
	Yes	No	Unk	
• Has the patient ever received immune globulin?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• If yes, when was the last dose received?..... (mo/year)



## Case ID: \_\_\_\_\_

3

# Perinatal Hepatitis B Virus Infection

Case ID: \_\_\_\_\_

<b>RACE OF MOTHER:</b> <input type="checkbox"/> Amer Ind or Alaska Native <input type="checkbox"/> Black or African American <input type="checkbox"/> White <input type="checkbox"/> Unknown <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or Pacific Islander <input type="checkbox"/> Other Race, specify: _____				<b>ETHNICITY OF MOTHER:</b> Hispanic..... <input type="checkbox"/> Non-hispanic ..... <input type="checkbox"/> Other/Unknown..... <input type="checkbox"/>	
Was Mother born outside of United States?..... <input type="checkbox"/> Yes    No    Unk Was the Mother confirmed HBsAg positive prior to or at time of delivery?.. <input type="checkbox"/> • If no, was the mother confirmed HBsAg positive after delivery?..... <input type="checkbox"/> Date of earliest HBsAg positive test result..... _____				If yes, what country? _____	
How many doses of hepatitis B vaccine did the child receive ? ..... • When? • Dose 1 ____/____/_____ • Dose 2 ____/____/_____ • Dose 3 ____/____/_____ 0    1    2    3+ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					
Did the child receive hepatitis B immune globulin (HBIG)?..... • If yes, on what date did the child receive HBIG? ..... _____ Yes    No    Unk <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					

# Patient History — Acute Hepatitis C

Case ID: \_\_\_\_\_

	Yes	No	Unk
During the 2 weeks – 6 months prior to onset of symptoms was the patient a contact of a person with confirmed or suspected acute or chronic hepatitis C virus infection?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, type of contact			
Sexual.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Household (non-sexual).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During the 2 weeks – 6 months prior to onset of symptoms Did the patient:	Yes	No	Unk
• undergo hemodialysis?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• have an accidental stick or puncture with a needle or other object contaminated with blood?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• receive blood or blood products (transfusion).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, when?			
• receive any IV infusions and/or injections in the outpatient setting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• have other exposure to someone else's blood.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
specify: _____			
During the 2 weeks – 6 months prior to onset of symptoms			
• Was the patient employed in a medical or dental field involving direct contact with human blood?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, frequency of direct blood contact?			
<input type="checkbox"/> Frequent (several times weekly) <input type="checkbox"/> Infrequent			
• Was the patient employed as a public safety worker (fire fighter, law enforcement or correctional officer) having direct contact with human blood?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, frequency of direct blood contact?			
<input type="checkbox"/> Frequent (several times weekly) <input type="checkbox"/> Infrequent			
• Did the patient receive a tattoo?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where was the tattooing performed? (select all that apply)			
<input type="checkbox"/> commercial parlor/shop			
<input type="checkbox"/> correctional facility <input type="checkbox"/> other _____			
What is the sexual preference of the patient?			
<input type="checkbox"/> Heterosexual <input type="checkbox"/> Homosexual			
<input type="checkbox"/> Bisexual <input type="checkbox"/> Unknown			
Ask both of the following questions regardless of the patient's gender.			
In the 6 months before symptom onset, how many	0	1	2-5
• male sex partners did the patient have?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• female sex partners did the patient have?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the patient EVER treated for a sexually-transmitted disease?.....	Yes	No	Unk
• If yes, in what year was the most recent treatment? _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During the 2 weeks – 6 months prior to onset of symptoms			
• inject drugs not prescribed by a doctor?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• use street drugs but not inject?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the patient have a negative HCV antibody test within 6 months to a positive test?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verified test date _____			
During the 2 weeks – 6 months prior to onset of symptoms			
• Did the patient have any part of their body pierced (other than ear)?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where was the piercing performed? (select all that apply)			
<input type="checkbox"/> commercial parlor/shop			
<input type="checkbox"/> correctional facility			
<input type="checkbox"/> other _____			
• Did the patient have dental work or oral surgery?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Did the patient have surgery? (other than oral surgery).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the patient – (check all that apply)			
• hospitalized?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• a resident of a long term care facility?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• incarcerated for longer than 24 hours.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, what type of facility (check all that apply)			
prison.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
jail.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
juvenile facility.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During his/her lifetime, was the patient EVER incarcerated for longer than 6 months?.....	Yes	No	Unk
• If yes,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
what year was the most recent incarceration? _____			
for how long? _____ (mos)			
Has the patient recieved medication for the type of hepatitis being reported?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Patient History — Chronic Hepatitis B Infection

Case ID: \_\_\_\_\_

The following questions are provided as a guide for the investigation of lifetime risk factors for HBV infection. Routine collection of risk factor information for persons who test HBV positive is not required. However, collection of risk factor information for such persons may provide useful information for the development and evaluation of programs to identify and counsel HBV-infected persons.

	Yes	No	Unk		Yes	No	Unk
Did the patient receive clotting factor concentrates produced prior to 1987? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Was the patient ever employed in a medical or dental field involving direct contact with human blood?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the patient ever on long-term hemodialysis? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	What is the birth country of the mother ? _____			
Has the patient ever injected drugs not prescribed by a doctor even if only once or a few times?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the patient recieved medication for the type of hepatitis being reported? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How many sex partners has the patient had (approximate lifetime)? _____							
Was the patient ever incarcerated?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Was the patient ever treated for a sexually transmitted disease? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Was the patient ever a contact of a person who had hepatitis?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
If yes, type of contact							
• Sexual.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• Household [Non-sexual].....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• Other.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



# Patient History — Hepatitis C Infection (past or present)

Case ID: \_\_\_\_\_

The following questions are provided as a guide for the investigation of lifetime risk factors for HCV infection. Routine collection of risk factor information for persons who test HCV positive is not required. However, collection of risk factor information for such persons may provide useful information for the development and evaluation of programs to identify and counsel HCV-infected persons.

	Yes	No	Unk		Yes	No	Unk
Did the patient receive a blood transfusion prior to 1992? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Was the patient ever employed in a medical or dental field involving direct contact with human blood? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the patient receive an organ transplant prior to 1992? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the patient recieved medication for the type of hepatitis being reported? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did the patient receive clotting factor concentrates produced prior to 1987? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Was the patient ever on long-term hemodialysis? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Has the patient ever injected drugs not prescribed by a doctor even if only once or a few times? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
How many sex partners has the patient had (approximate lifetime)? _____							
Was the patient ever incarcerated? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Was the patient ever treated for a sexually transmitted disease? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Was the patient ever a contact of a person who had hepatitis? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
If yes, type of contact							
• Sexual .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• Household [Non-sexual] .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
• Other .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				