



HEPATITIS C

1. **Agent:** Hepatitis C virus (HCV).
2. **Identification:**
 - a. **Symptoms:** Cases are typically asymptomatic or have mild disease. 20-30% have jaundice. 10-20% have vague symptoms such as anorexia, malaise, or abdominal pain. 70% develop chronic liver disease, 15% develop cirrhosis after 20-30 years, and 5% die from liver cancer or cirrhosis. Fulminant hepatic failure following infection is rare.
 - b. **Differential Diagnosis:** Other causes of viral and non-viral hepatitis.
 - c. **Diagnosis:**

Acute:

 - Serum alanine aminotransferase (ALT) levels > 400;
 - Exclusion of hepatitis A and B on a serological basis;
 - Positive serology for HCV antibody (anti-HCV) with an adequate signal to cutoff ratio (>3.8) or verified by supplemental test such as recombinant immunoblot assay (RIBA) or detection of viral antigen by polymerase chain reaction (PCR)
 - Evidence of illness with discrete onset of symptoms

Chronic/Carrier: positive serology for HCV antibody (anti-HCV) with an adequate signal to cutoff ratio (>3.8) or verified by supplemental test such as recombinant immunoblot assay (RIBA) or detection of viral antigen by polymerase chain reaction (PCR).

All others: close as False
3. **Incubation:** Variable, 2 weeks to 6 months; average 40 days.
4. **Reservoir:** Human.
5. **Source:** Blood or blood products.
6. **Transmission:** By parenteral inoculation or mucous membrane, exposure to human blood or blood products.
7. **Communicability:** From one or more weeks prior to onset; may persist indefinitely. Carrier state is common. Viremia appears to be relatively low.
8. **Specific Treatment:** Interferon, alone or in combination with ribavirin may be helpful in some cases of chronic disease.
9. **Immunity:** Unknown.

REPORTING PROCEDURES

1. Reportable, *California Code of Regulations*, Section 2500, 2505, 2508.
2. **Report Form: VIRAL HEPATITIS CASE REPORT (acd-hep).** In addition, for the rare case associated with administration of blood or blood products during the 6-month period prior to onset, use Supplemental Data Sheet, **TRANSFUSION-ASSOCIATED HEPATITIS CASE RECORD (CDPH 8376).**

Chronic carriers of anti-HCV are not investigated with these forms; submit CMR only.
3. **Epidemiologic Data:**
 - a. Record results of laboratory tests: HBsAg, IgM anti-HBc, HAV IgM, anti-HCV, RIBA, PCR, ALT levels etc. For more information see Guidelines for Laboratory Testing and Result Reporting of Antibody to Hepatitis C Virus <http://www.cdc.gov/mmwr/PDF/rr/rr5203.pdf>.
 - b. Reason for medical visit leading to diagnosis. This may be helpful in determining if case is acute or chronic hepatitis C.
 - c. Contact with confirmed or suspected acute or chronic hepatitis C infection



- d. Patient was treated for a sexually transmitted disease.
- e. Patient or employee of a renal dialysis unit.
- f. Resident of a long term facility (e.g. nursing home).
- g. Receive fingersticks.
- h. Contact with or injection of contaminated blood; accidental inoculation by needle (laboratory), accidental splash into the eye.
- i. Transfusions of blood or blood products: places, dates, lot numbers, manufacturer.
- j. Patient has received any IV infusions and/or injections in the outpatient setting.
- k. Medical or dental treatment within past 6 months, including types of injections, surgical procedures performed or any diagnostic medical procedure.
- l. Occupational history, especially medical-dental personnel, workers or public safety worker (law enforcement/correctional officer) and those involved in handling blood or blood products.
- m. Blood donation, date, and location of last donation.
- n. Patient has undergone acupuncture.
- o. Percutaneous exposure: self-injections (admitted or suspected), tattooing, ear piercing, acupuncture, electrolysis, skin-piercing procedures, etc.
- p. Use of injection or non-injection street drugs.
- q. For infant or child case, status of mother and other sibling should be evaluated. If pertinent, testing of mother's long-term sexual partner may be considered at the discretion of the mother's physician and child's mother.
- r. Number of sexual partners of either gender.

CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 3 days.

CASE: No restrictions.

CONTACTS:

1. For persons exposed to blood or sexual secretions of infected person, use of immune globulin has no protective benefit and is not appropriate.
2. No restrictions.

PREVENTION-EDUCATION

1. Refer to appropriate personal health care provider for long term follow-up.
2. Advise the patient that disease may be transmitted by shared articles that become contaminated with blood (needles, syringes, etc.) as well as possibly sexually and perinatally transmitted.
3. Individuals should be counseled about the risk of sexual transmission of HCV if they have multiple sexual partners, and should be advised to use barrier precautions such latex condoms. Since long-term sexual partners are at low risk for acquiring HCV infection, use of barrier precautions should be discussed between the patient and his/her physician.
4. Emphasize sanitary disposal of blood and other body secretions.
5. Advise patient that people with a history of viral hepatitis are excluded from blood donor programs.
6. Advise patient to abstain from alcohol and not to start any new medications, including over-the-counter and herbal medicines, without first checking with their doctor.
7. For all cases advise vaccination against hepatitis A and hepatitis B.
8. HCV-positive mothers may breast feed, but should abstain if nipples become cracked or bleed.



DIAGNOSTIC PROCEDURES

Clinical and epidemiologic history required to aid laboratory in test selection.

Serology:

Diagnosis is made by the exclusion of hepatitis A (IgM anti-HAV negative) and hepatitis B (IgM anti-HBc negative or HBsAg negative), and a strong positive anti-HCV screening test or an anti-HCV test verified by a supplemental test (otherwise known as confirmation test). The EIA signal-to-cut-off ratio (S/CO) >3.8 is highly predictive of a true positive result and means that an additional confirmatory test is not required. For any EIA with a S/CO <3.8 or unknown level, a positive result is needed on either the recombinant immunoblot assay (RIBA), which confirms HCV antibodies, or the polymerase chain reaction (PCR) which detects HCV nucleotides (DNA or RNA) in serum or blood.

These serological tests are performed by the Public Health Laboratory, as well as by many clinical laboratories and require 10 ml of clotted blood or 5 ml of serum. The Public Health Laboratory performs IgM anti-HAV (MYSYS test code: HAVM) and HBsAg (MYSYS test code: HBSAG) tests and also performs Hepatitis C EIA tests (MYSYS test code HCVAB), but IgM anti-HBc test (unless asked for specially) and HCV PCR is not offered at the Public Health Laboratory.