HEPATITIS C

1. **Agent:** Hepatitis C virus (HCV).

2. **Identification:**
   
a. **Symptoms:** Onset is usually insidious with anorexia, abdominal discomfort, nausea and vomiting (20-30%) with progression to jaundice. More than 90% of cases are typically asymptomatic or have mild disease. 70-80% develop chronic liver disease and of those with chronic infection: 5-20% develop cirrhosis after 20-30 years, and 1-5% 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:**
      
      1) **Acute:**
         
         a) **Confirmed:**
            - Evidence of illness with discrete onset of symptoms;
            - Jaundice OR serum alanine aminotransferase (ALT) levels > 200;
            - Positive HCV antibody (anti-HCV) AND positive Hepatitis C virus test: nucleic acid test (NAT) for HCV RNA (including qualitative, quantitative or genotype) or HCV antigen test1.

         b) **Probable:**
            - Evidence of illness with discrete onset of symptoms;
            - Jaundice OR serum alanine aminotransferase (ALT) levels >200;
            - Positive HCV antibody (anti-HCV) but no report of a positive Hepatitis C virus test: nucleic acid test (NAT) for HCV RNA (including qualitative, quantitative or genotype) or HCV antigen test1.

      2) **Chronic/Carrier**
         
         a) **Confirmed:**
            - A case that does not meet clinical criteria AND
            - No seroconversion within 12 months AND
            - Positive HCV NAT (PCR) or positive HCV antigen test1.

         b) **Probable:**
            - A case that does not meet clinical criteria AND
            - No seroconversion within 12 months AND
            - Positive anti-HCV but no report of positive HVC NAT (PCR) or positive HCV antigen test1.

3) **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:** Multiple antiviral combinations are currently being used for treatment.

9. **Immunity:** Unknown.

**REPORTING PROCEDURES**


2. **Report Form:** VIRAL HEPATITIS B or C CASE REPORT1. In addition, for the rare case associated with administration of blood

1 http://publichealth.lacounty.gov/acd/Diseases/EpiForms/HepatitisBCRep.pdf
or blood products during the 6-month period prior to onset use Supplemental Data Sheet, TRANSFUSION-ASSOCIATED HEPATITIS CASE RECORD (CDPH 8376) 07/07.\(^2\)

Chronic carriers of anti-HCV are not investigated with these forms; submit CMR only.

3. Epidemiologic Data:

a. Record results of laboratory tests: HAV IgM, HBsAg, IgM anti-HBc, anti-HCV, HCV PCR, and ALT levels.

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 including colonoscopy/endoscopy.

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. The VIRAL HEPATITIS B or C CASE REPORT\(^1\) is for acute cases only. For chronic carriers submit a CMR only.

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.).
etc.) as well as possible sexual and perinatal transmission.

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 as 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 a positive anti-HCV screening test and verified by a supplemental test-HCV-PCR (HCV NAT).

**Container:** Serum separator tube (SST, a red-gray top vacutainer tube)

**Laboratory Form:** TEST REQUISITION FORM (H-3021)³

**Examination Requested:** Hepatitis C (indicate if previously positive).

**Material:** Whole clotted blood.

**Amount** 8-10 ml.

**Storage:** Refrigerate.

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), HBsAg (MYSYS test code: HBSAG) Hepatitis C EIA test (MYSYS test code HCVAB), and HCV PCR, but IgM anti-HBc test (unless asked for specifically) is not offered at the Public Health Laboratory.

³ [http://www.publichealth.lacounty.gov/lab/docs/H-3021%20Test%20Request%20Form.pdf](http://www.publichealth.lacounty.gov/lab/docs/H-3021%20Test%20Request%20Form.pdf)
Hepatitis C Acute Case Investigation Algorithm

Contact Provider and/or Lab, Obtain:
- Acute Hepatitis Panel
- HCV RNA (NAT) (if available)
- ALT, AST, T-bili

- Anti-HCV Positive and
- ALT >200 IU/L

HCV RNA pos

NO

Closed as
Probable
CHRONIC

Turn in to PHNS

NO/Unknown

YES

Close as
Confirmed
CHRONIC

Ask Provider and/or patient:
- Symptoms
- Onset date
- Reason for testing

Hepatitis Symptoms

NO

YES

Interview patient
- Complete Epi Form including risk factors

-Provide education

HCV RNA positive

NO/Unknown

YES

Close case as Probable Acute
Close case as Confirmed Acute

Turn in to PHNS