HEPATITIS A

1. **Agent**: Hepatitis A virus (HAV).

2. **Identification:**

   a. **Symptoms**: Onset is usually abrupt. Signs and symptoms consistent with acute hepatitis include fever, headache, malaise, anorexia, nausea, vomiting, diarrhea and abdominal discomfort, which may be followed by jaundice. Recovery is usually complete, without sequelae. Many cases, especially children, will have mild or no symptoms.

   b. **Differential Diagnosis**: Other causes of viral (e.g., EBV, CMV) and non-viral hepatitis (e.g., drugs/toxins/alcohol).

   c. **Diagnosis**:

   Clinical criteria:
   - Presence of a discrete onset of clinical symptoms (see above) **AND**
   - Jaundice or elevated total bilirubin levels ≥ 3.0 mg/dL, **or** b) ALT >200 IU/L, **AND**
   - Absence of a more likely diagnosis

   Laboratory criteria:
   - Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive,
   OR
   - Nucleic acid amplification test (NAAT; such as Polymerase Chain Reaction [PCR] or genotyping) for hepatitis A virus RNA positive

   d. **Case Classification**

   A case is classified as confirmed if
   - Case meets the clinical criteria and is IgM anti-HAV positive, **OR**
   - Case has hepatitis A virus RNA detected by NAAT (such as PCR or genotyping), **OR**
   - Case meets the clinical criteria and occurs in a person who had contact (e.g., household or sexual) with a laboratory-confirmed hepatitis A case 15-50 days prior to onset of symptoms.)

3. **Incubation**: 15 to 50 days; commonly about 28-30 days.

4. **Reservoir**: Human.

5. **Source**: Feces, rarely blood.

6. **Transmission**: Fecal-oral; person-to-person, or through contaminated vehicles such as food. Persons at increased risk for infection include drug sharing partners, sexual partners, and household contacts. Transfusion-associated cases have been reported but are extremely rare.

7. **Communicability**: Most immunocompetent adults shed virus in the stool and are infectious from 2 weeks before through 1 week after the onset of jaundice or elevation of liver enzymes, when concentration of virus in the stool is highest. In absence of jaundice, persons should be considered infectious for 2 weeks before through 2 weeks after the onset of hepatitis symptoms. Children may excrete virus longer than adults.

8. **Specific Treatment**: None.

9. **Immunity**: Lifelong.

REPORTING PROCEDURES

1. Reportable, *California Code of Regulations,* Section 2500 and 2505.

2. **Report Form**:

VIRAL HEPATITIS A CASE REPORT[1]

[1] www.publichealth.lacounty.gov/acd/Diseases/EpiForms/HepatitisARep.pdf

If there are more close contacts than rows available on the Case Report Form, use Hepatitis A Close Contact Worksheet[2] to document persons meeting the close contact criteria.

For sites where many individuals are potentially exposed to a case but may not meet the close contact criteria, maintain a line list of all individuals at the site using the Hepatitis A Exposure Site Contact Worksheet[3].
Note: The Exposure Site Contact Worksheet has separate tabs for congregate versus non-congregate setting exposures; make note to use the appropriate form.

If a prepared commercial food item is the likely source of the infection, a Foodborne Disease Outbreak Report (CDPH 8567)[4] should be filed. For likelihood determination and filing procedures, see Section 16-22; Reporting of a Case or Cluster of Cases Associated with a Commercial Food: Filing of Foodborne Incident Reports[5].

Additional supplemental interview forms during outbreaks may be requested by ACDC and posted on ACDC Epidemiologic Case History Forms webpage.

3. **Epidemiologic/Laboratory Data**:

   a. CFS to conduct initial investigation of cases by obtaining medical records and determining if illness meets case definition for confirmed case.

   b. Obtain appropriate laboratory test results (i.e., ALT, total bilirubin) and medical records to confirm the diagnosis of acute hepatitis A (IgM).

   c. Assess homelessness status.
   Call ACDC (213-240-7941) ASAP if case is in person experiencing homelessness.

   d. Determine if contact had exposure to a confirmed or suspected case of hepatitis A.

   e. Assess for daycare center association (including nursery school or baby-sitting group), either as attendee, employee, or household contact to attendee or employee.

   f. Obtain travel history during incubation period (including dates and places).

   g. Determine if close contacts of a case travelled to regions with inadequate availability of water for hygiene or lack of access to sanitation.

   h. Obtain occupational history, especially individuals in sensitive occupations or situations. For SOS, obtain dates of work and job description.
   Call ACDC (213-240-7941) ASAP if case is SOS (sensitive occupation and/or situation).

   i. Assess for ingestion of raw shellfish (clams, oysters, and mussels), and untreated water during 7 weeks prior to onset.

   j. Obtain hepatitis A vaccine history.

   k. Ask about number of male, female, trans, and non-binary sexual partners.

[2] http://publichealth.lacounty.gov/acd/Diseases/EpiForms/HEP_ACloseContactSheet.xlsx
[3] http://publichealth.lacounty.gov/acd/Diseases/EpiForms/HEP_AExposSiteContactSheet.xlsx
[4] www.publichealth.lacounty.gov/acd/Diseases/EpiForms/OBFoodborneRep.pdf
[5] www.publichealth.lacounty.gov/acd/Diseases/EpiForms/OBFoodborneRepInstruc.pdf

l. Ask about street drug use, injection or otherwise.

m. Ask about new food items/products connected with multi-state outbreaks.

CONTROL OF CASE, CONTACTS & CARRIERS

Contact suspected cases within 24 hours to determine if a sensitive occupation or situation is involved and the need for hepatitis A vaccine or immune globulin (IG) for post-exposure prophylaxis (PEP) for contacts; otherwise, investigate suspected case within 3 days.

CASE

Sensitive Occupation or Situation:
Remove from sensitive occupation or situation until 7 days after onset of jaundice. If jaundice is not present, then remove for 14 days after the onset of clinical symptoms of hepatitis A.

CONTACTS:

Household Members or Others Who Have Intimate Contact (sexual contacts, sharing of illicit drugs, regular babysitters or caretakers):

1. If contact is in a sensitive occupation or situation and did not receive the Hepatitis A vaccine, check for immunity. If not immune, or if unable to receive PEP in time, exclude from food handling for 50 days after last day of contact with index case during the index case's infectious period.

2. No restrictions for contacts in non-sensitive occupation or situation.

3. Emphasize education on hand washing and potential for shedding of virus prior to onset.

4. Advise PEP for contacts who have not already been vaccinated.

Childcare Center Staff, Attendees, and Attendees' Household Members:

In addition to standard infection control education, PEP should be administered to all previously unvaccinated childcare center staff, child care center attendees, or household members of attendees if:

1) Hepatitis A cases are identified in one or more staff member(s) or attendee(s) of a childcare center, or

2) Hepatitis A cases are identified in two or more households of childcare center attendees.

In centers that provide care only to older children who no longer wear diapers, only contacts in the same classroom as the hepatitis A case require PEP administration (i.e., not to children or staff in other classrooms).

Infected Food Handler
Call ACDC (213-240-7941) ASAP

If a food handler receives a diagnosis of hepatitis A, vaccine or IG should be administered to other food handlers at the same establishment.

Public Notification Food Handler

Because common-source transmission to patrons is unlikely, hepatitis A vaccine or IG administration to patrons typically is not indicated but may be considered under the following circumstances:

1) During the time when the food handler was likely to be infectious, the food handler both directly handled uncooked or cooked foods and had diarrhea or poor hygienic practices; and

2) Patrons can be identified and treated ≤2 weeks after the exposure.

In settings in which repeated exposures to HAV might have occurred (e.g., institutional cafeterias), stronger consideration of hepatitis A vaccine or IG use could be warranted.

Schools, Hospitals, and Work Settings

PEP is not routinely indicated when a single case occurs in an elementary or secondary school or an office or other work setting, and the source of infection is outside the school or work setting.

When a person who has hepatitis A is admitted to a hospital, staff should not routinely be administered PEP; instead, careful hygienic practices should be emphasized.

If the case is a healthcare worker, inquire about the nature of the person's work – specifically if the person was involved in feeding meals to patients while infectious. Also inquire about whether the case was involved in sharing meals or had communal meals with other staff members. Then consult with ACDC regarding further management.

Outbreaks (Consult with ACDC)

If it is determined that there is hepatitis A transmission, for example, among students in a school or among patients and staff in a hospital, in addition to standard infection control education, PEP should be administered to unvaccinated persons who have had close contact with an infected person.

If an outbreak occurs in association with a childcare center (i.e., Hepatitis A cases in three or more families), standard infection control education should be provided, and PEP should be considered for members of households that have diaper-wearing children attending the center.

In the event of a common-source outbreak, PEP should not be offered if exposed persons start to experience symptoms of hepatitis A illness because the 2-week period after exposure during which IG or hepatitis A vaccine is known to be effective will have been exceeded.

Hepatitis A vaccination maybe considered for persons who have not been directly exposed to hepatitis A if they belong to a clearly defined group at increased risk for infection, such as persons living in a clearly defined setting with ongoing hepatitis A transmission. Consult with ACDC in these situations to determine if hepatitis A vaccination is indicated.

OPTIONS FOR PEP:

Susceptible persons exposed to HAV and have not been previously infected or vaccinated should receive a dose of single antigen hepatitis A vaccine or immune globulin (IG) (0.1mL/kg) or both as soon as possible within 14 days after last exposure.

PEP Recommendations:

- Persons ≥12 months of age, **should** receive 1 dose of single-antigen HepA vaccine as soon as possible. In addition to HepA vaccine, IG (0.1 mL/kg) **may** be administered to persons aged >40 years depending on the provider's risk assessment. When the dose of HepA vaccine administered for PEP is the first dose the exposed person has received, a second dose should be administered 6 months after the first for long-term immunity; however, the second dose is not necessary for PEP.

- Persons ≥12 months of age who are immunocompromised or have chronic liver disease **should** receive both IG (0.1 mL/kg) and HepA vaccine as soon as possible after exposure. When the dose of HepA vaccine administered for PEP is the first dose the exposed person has received, a second dose should be administered 6 months after the first for long-term immunity; however, the second dose is not necessary for PEP.
    - CDC does not have official guidance to define all subgroups of persons recommended to receive IG. Further clinical

guidance should be obtained for patients whose immune status is unclear.

- Immunocompromised persons can include patients with:
  - HIV/AIDS;
  - Combined primary immunodeficiency disorder (e.g., severe combined immunodeficiency);
  - Undergoing hemodialysis;
  - Received solid organ, bone marrow or stem cell transplant;
  - Receiving high dose steroids (>2mg/kg/day);
  - Receiving chemotherapy or biologics;
  - Persons otherwise less capable of normal response to immunization.

- Infants aged <12 months should receive IG (0.1 mL/kg) instead of HepA vaccine as soon as possible within 2 weeks of exposure. MMR vaccine should not be administered <6 months after IG administration.

- Persons for whom vaccine is contraindicated should receive IG (0.1 mL/kg) instead of HepA vaccine as soon as possible within 2 weeks of exposure. MMR and varicella vaccines should not be administered <6 months after IG administration.

- The efficacy of combined HAV/HBV vaccine (Twinrix) for PEP has not been studied and it is not recommended for PEP.

- Exposed susceptible pregnant women:
  - Pregnant women who become infected with hepatitis A have an increased risk of gestational complications and preterm labor. Pregnant women should receive PEP for the same indications as nonpregnant women. It may be reasonable to offer IG in addition to vaccine for PEP, particularly if the woman is a household or sexual contact of a case.

- Incompletely immunized people:
  - Most persons have protective levels of antibody after one dose of HAV vaccine. Persons who have had one prior dose of vaccine may receive their second dose if it has been at least 6 months since their first dose.

See California Department of Health- Hepatitis A Quicksheet at: CDPH Hepatitis A Quicksheet[6]

For specific PEP details refer to: *MMWR July 3, 2020, volume 69. Prevention of Hepatitis A Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2020*[7]

Vaccines:
Vaccines are available as a 2-dose series and a 3-dose combined HepA and HepB series.

Havrix: 2 doses HAV antigen.

Vaqta: 2 doses HAV antigen.

Twinrix: 3 doses combined HAV and HBV antigens. Not recommended for PEP.

CARRIERS: Not applicable.

PREVENTION-EDUCATION

1. Emphasize to the patient the importance of hand washing after using the bathroom and before handling food. Feces are not infectious 1 week after onset of jaundice.

2. Sanitary disposal of fecal matter.

[6] https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/HepatitisA-Quicksheet.pdf
[7] https://www.cdc.gov/mmwr/volumes/69/rr/rr6905a1.htm

3. Advise patient that persons with a history of viral hepatitis are excluded from blood donor program.

DIAGNOSTIC PROCEDURES

Clinical and epidemiological history is required to aid laboratory in test selection.

SEROLOGY:

Container: Serum separator tube (SST, a red-gray top vacutainer tube) and test request form.

Laboratory Form: **TEST REQUISITION FORM (H-3021)**[8]

Examination Requested: Hepatitis A, Anti-HAV IgM.

Material: Whole clotted blood.

Amount: 8-10 ml.

Storage: Refrigerate

PCR AND GENOTYPING:
Please notify ACDC as soon as possible about any hepatitis A PCR testing that is being requested.

[8] www.publichealth.lacounty.gov/lab/docs/H-3021%20Test%20Request%20Form.pdf

Hepatitis A Case Classification Algorithm