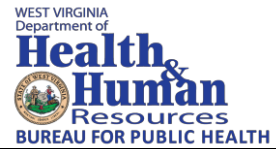


# Hepatitis A

## Surveillance Protocol

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Hepatitis A is a vaccine-preventable, communicable disease of the liver caused by the hepatitis A virus (HAV). It is usually transmitted person-to-person through the fecal-oral route or consumption of contaminated food or water. Hepatitis A is a self-limited disease that does not result in chronic infection. Typical symptoms of the disease include: jaundice, fever, loss of appetite, nausea, malaise and sometimes diarrhea. Globally, individuals living in developing countries with poor sanitation are at the most risk for infection. In non-outbreak years, West Virginia averages less than 10 cases per year. Due to the highly contagious nature of HAV, cases are required to be reported to the local department within 24 hours of test result.

### **Healthcare Provider Responsibilities**

1. Report all cases to your local health department within the timeframe indicated:
  - a. Hepatitis A, positive IgM within 24 hours to the local health department.
  - b. Report suspect or confirmed outbreaks/clusters immediately to the local health department.
2. Because HAV A is easily spread it is recommended that cases be reported as soon as possible after diagnosis. Include the following information:
  - a. Patient's name, date of birth, address and phone number
  - b. Demographic information including race, sex, age, and ethnicity
  - c. Clinical symptoms
  - d. Laboratory results: hepatitis A serology (including IgM), transaminase levels (ALT and AST) and bilirubin levels. Results should also include normal values and range interpretation.
3. Provide education about the disease, its transmission and appropriate control measures (especially if the patient is a food worker or is associated with child care settings).
4. Exclude children and cases that are food handlers from work, if thin 7 days of symptom onset.
5. Refer household and sexual contacts who are still within 2 weeks of exposure to their healthcare provided for post-exposure prophylaxis (PEP) immunization.

### **Laboratory Responsibilities**

1. Report all positive anti-HAV IgM tests to the local health department in the patient's county of residence within 24 hours of result. Send or fax a copy of the laboratory result to the local health department if not already reported by electronic laboratory reporting (ELR).
2. Please include the following information:
  1. Patient's name, date of birth, address and phone number
  2. Demographic information including race, sex, age, and ethnicity

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3. Physician name, address and phone number
4. Laboratory results: hepatitis A serology (including IgM), transaminase levels (ALT and AST) and bilirubin levels. Results should also include normal values and range interpretation.

### **Local Health Responsibilities**

1. Confirm laboratory results and clinical symptoms meet the case definition.
  - a. Look carefully at the laboratory result. Only persons with a positive IgM anti-HAV antibody are acutely infected with hepatitis A. Asymptomatic persons with a positive "total anti-HAV antibody" may have either recent or remote hepatitis A infection and do not need to be investigated or reported.
1. Contact the provider who ordered the test to find out the reason for testing. If the person is not experiencing symptoms of acute hepatitis, there is no need for further investigation. Enter the information into West Virginia Electronic Disease Surveillance System (WVEDSS) and submit as "not a case".
2. If the person is experiencing symptoms of acute hepatitis, complete the Hepatitis A Case Report form and enter the following information WVEDSS.
  - a. Date of onset of symptoms (date of jaundice is considered the most reliable sign) and type of symptoms
  - b. Liver function tests
  - c. IgM antibody to hepatitis A virus (anti-HAV IgM)
  - d. High risk occupation (food handler)
  - e. Travel history
  - f. Important risk factors: illicit drug use, homelessness, recent incarceration and recent contact with hep A positive individual
  - g. Attendance or employment at daycare/childcare facility
  - h. Sexual and other close contacts
4. Calculate the infectious period. Persons with acute hepatitis A are most infectious from two weeks before onset of symptoms to one week after onset. If jaundice is present, use the onset date of jaundice to calculate the infectious period. A hypothetical example follows:

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**Infectious Period for Hypothetical Case of Hepatitis A**  
(Shaded area indicates the infectious period)

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
5	6	7	8	9 (2 weeks before onset)	10	11
12	13	14	15	16	17	18
19	20	21	21	23 <b>ONSET</b>	24	25
26	27	28	29	30 (1 week after onset)	31	1

5. Ensure appropriate control measures are implemented:
  - a. Routine hand washing with soap and warm water especially: before preparing, handling or eating any food, after going to the bathroom, after changing a diaper, and after caring for someone with diarrhea.
  - b. Get the HAV vaccine as recommended.
  - c. PEP is available for close contacts.
  - d. Patients infected with HAV should adhere to strict hand hygiene for the first two weeks of symptom and up to one week after the onset of jaundice and should not handle food for other people for one week after onset of jaundice.
6. Identify close contacts. Investigate *backward*:
  - a. Determine the incubation period for the case of hepatitis A. The incubation period is two to six weeks prior to onset of symptoms.
  - b. Identify any potential source. Symptomatic persons identified during contact investigation should be tested for anti-HAV IgM. Persons found to be positive for anti-HAV IgM should be investigated and reported as cases of hepatitis A according to the steps above.
  - c. Risk factors for HAV infection during the two to six-week incubation period include:
    - Close contact with a person with confirmed or suspected hepatitis A
    - Employment or attendance in a nursery, day care center, or preschool
    - Travel outside of the United States or Canada
    - Injection or non-injection illicit drug use

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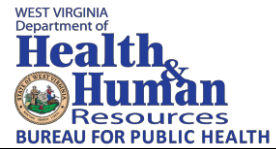
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- Men who have sex with men
7. Provide close contact notification and administer appropriate PEP to close contacts within two weeks of exposure.
    - a. Household contacts
    - b. Sexual partners
    - c. Injection or non-injection illicit drug sharing contacts

### **POST EXPOSURE PROPHYLAXIS RECOMMENDATIONS**

Persons recently exposed to HAV (within 14 days) and who previously have not received hepatitis A vaccine:

- For healthy persons aged 12 months to 40 years: 1 age-appropriate dose of single antigen hepatitis A vaccine.
- Persons aged > 40 years: IG is preferred (recommended dosage of GamaSTAN S/D is 0.1 mL/kg)\*; vaccine can be used if IG is not available
- Children < 12 months, immunocompromised persons, persons with chronic liver disease, or persons for whom vaccine is contraindicated, IG should be used.

#### **Special PEP recommendations for high-risk settings for transmission of hepatitis A:**

**Day care centers:** PEP should be administered to all staff and attendees of day care centers or homes if...

1. one or more cases of hepatitis A are recognized in children or employees, or
2. cases are recognized in two or more households of center attendees.

In centers that do not provide care to children who wear diapers, PEP need be given only to classroom contacts of an index case-patient. If an outbreak is identified in a facility (i.e. hepatitis cases in two or more families), PEP also should be considered for members of households that have children (center attendees) in diapers.

**Food handlers:** PEP should be administered to other food handlers at the same location.

Because common-source transmission to patrons is unlikely, PEP administration to patrons may be considered if:

1. the food handler directly handled ready to eat foods or foods after cooking during the infectious period and
2. had diarrhea or poor hygienic practices and
3. patrons can be identified and treated within two weeks after the exposure.

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Contact DIDE immediately for consultation. Complete the HAV Supplemental Worksheet for Food handlers to accurately document the above criteria. Especially if considering administering PEP to patrons. The worksheet will be provided by DIDE.

In settings where repeated exposures to HAV may have occurred (e.g. institutional cafeterias), stronger consideration of PEP use may be warranted. In the event of a common-source outbreak, PEP should not be administered to exposed persons after cases have begun to occur because the two-week period during which PEP is effective will have been exceeded.

### **State Health Responsibilities**

1. Prompt and complete reporting of HAV cases to the Centers for Disease Control (CDC) through WVEDSS.
2. Report cases of HAV to the CDC within 30 days of notification.
3. Provide technical expertise and consultation regarding surveillance, investigation, control measures and prevention of HAV.
4. Notify the CDC of suspected outbreaks identified in West Virginia and assist local health jurisdictions in obtaining the knowledge and resources necessary for investigations of a HAV outbreak.
5. Summarize surveillance data for HAV annually.
6. Provide training and consultation to local public health staff.
7. Assist local health departments in obtaining HAV vaccine and IG for contacts of cases and in outbreaks.
8. Offer laboratory testing of HAV through the Office of Laboratory Services (OLS) for contacts.
9. Assist with difficult investigations including:
  - a. Interface with providers on behalf of local health departments as necessary
  - b. Investigation of possible exposures in unusual settings

### **Disease Control Objectives**

1. Reduce the incidence of the HAV by Pre-exposure PEP vaccination of the following people.
  - a. People traveling internationally
  - b. Men who have sex with men
  - c. User of injection and non-injection drugs
  - d. People with chronic liver disease
  - e. Patients with clotting-factor disorders

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- f. People at risk for occupational exposure
2. Prevent further person-to-person transmission by giving PEP to:
  - a. Household or sexual contact of a case
  - b. Contacts of the case in a high-risk setting such as in day care or a commercial food establishment
3. Prevent unnecessary transmission through the early recognition and investigation of outbreaks so that control measures can be instituted in a timely fashion.

### **Disease Prevention Objectives**

1. Reduce the incidence of HAV through education of:
  - a. Public: appropriate handwashing
  - b. Food service workers: appropriate handwashing and not working while sick
  - c. Day care operators: appropriate handwashing and exclusion of ill children and staff
2. Reduce the incidence of HAV through appropriate use of the HAV vaccine for:
  - a. All children at age 1 year
  - b. Travelers to countries that have high rates of HAV
  - c. Family members and caregivers of recent adoptees from countries where HAV is common
  - d. Men who have sexual contact with other men
  - e. People who use injection and non-injection illegal drugs
  - f. People with chronic (lifelong) liver diseases, such as hepatitis B or hepatitis C
  - g. People who are treated with clotting-factor concentrates
  - h. People who work with HAV infected animals or in a research laboratory

### **Disease Surveillance Objectives**

1. Determine the incidence of HAV in West Virginia
2. Identify demographic characteristics of persons with HAV
3. Detect any increase in the incidence of HAV or any change in the usual pattern of disease transmission

### **Occupational Health**

CDC does not recommend vaccination for any occupational group, other than individuals who work directly with non-human primates. If one has a known exposure to HAV while investigating a case or an outbreak, PEP may be used to prevent infection. Standard Precautions should be followed while investigating a possible hepatitis A virus infection.

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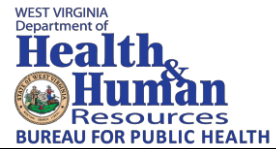
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Standard precautions include:

1. Use of PEP when in proximity of blood and other bodily fluids. PEP includes:
  - a. Gloves
  - b. Face masks
  - c. Protective eye wear
2. Keep wounds covered at all times in health care settings
3. Wash hands regularly after being in contact with blood, other bodily fluids or possible contaminated objects or surfaces
4. Follow safe injection practices
5. Dispose of contaminated objects properly and timely

### **Public Health Significance**

Worldwide, levels of endemicity are related to hygienic and sanitary conditions of geographic areas. In some southeastern Asian areas over 90% of the general population has serologic evidence of prior HAV infection. Age at infection varies with socioeconomic status and associated living conditions. In developing countries, where infection is endemic, most people are infected during the first decade of life. In industrialized countries, disease transmission is most frequent among household and sexual contacts of acute cases and occurs sporadically in day care centers with diapered children, among travelers to countries where the disease is endemic, among injecting drug users and among men who have sex with men. Because most children have asymptomatic or unrecognized infections, they play an important role in HAV transmission and serve as a source of infection for others.

### **Clinical Description**

HAV is a viral illness that results in jaundice, fever, loss of appetite, nausea, malaise, and sometimes diarrhea. Affected individuals may have abdominal pain, an enlarged liver, dark urine, and light stool. Most infected infants and preschool children have no signs or symptoms of the disease; however, they are just as infectious as adults. Among older children and adults, infection usually is symptomatic and typically lasts several weeks, with jaundice occurring in 70% or more of these cases. Signs and symptoms typically last less than 2 months. In contrast to hepatitis B and C, fulminant disease or death occurs only rarely, and there is no carrier state. Severe disease is more likely to occur in the elderly or in persons with underlying liver disease (including hepatitis C). Chronic disease does not occur.

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### **Etiologic Agent**

Hepatitis A is member of the Picornaviridae family of viruses, which includes Enteroviruses and Rhinoviruses. HAV is an RNA virus that is very hardy and can survive outside the body for several months depending on environmental conditions.

### **Reservoir**

Humans, rarely chimpanzees, and certain other non-human primates are the reservoir for the virus.

### **Mode of Transmission**

1. Person-to-person transmission through the fecal-oral route (i.e., ingestion of something that has been contaminated with the feces of an infected person) is the primary means of HAV transmission in the United States.
2. Common-source transmission outbreaks are rare but have been linked to contaminated water, food contaminated by infected persons where the food was not properly cooked or handled after cooking, raw or undercooked mollusks harvested from contaminated waters, and contaminated produce.

### **Incubation Period**

The average incubation period for HAV is 28 days (range: 15–50 days).

### **Period of Communicability**

The infectious period of the disease is from two weeks before the onset of symptoms to one week after onset. If jaundice is present, use the date of the onset of jaundice as the date of symptom onset.

### **Outbreak Recognition**

Two or more cases of HAV that are epidemiologically linked are considered an outbreak of HAV. Outbreaks of hepatitis A occur in either point source or propagated form. Point source outbreaks are those that result from one common exposure or infected person. Hepatitis A outbreaks of this nature are generally recognized after a larger than expected number of cases of HAV are reported within a limited time. Since the incubation period of HAV is long, 15 to 50 days, and the infectious period can be as long as three weeks, the onset dates for cases with a common source are usually spread over several weeks. Examples include community-based outbreaks due to a single infected food handler or due to contaminated food items such as produce and shell fish.

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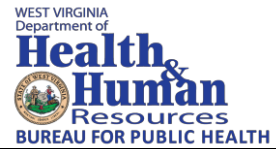
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Consult the Foodborne Disease Investigation Manual for the complete protocol for investigating HAV foodborne disease outbreaks.

### **Case Definition (Hepatitis A, Acute 2012 Case Definition)**

#### **Clinical Description**

An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain), and either a) jaundice, or b) elevated serum alanine aminotransferase (ALT) or aspartate aminotransferase (AST) levels.

#### **Laboratory Criteria for Diagnosis**

Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive

#### **Case Classification**

Confirmed

1. A case that meets the clinical case definition and is laboratory confirmed, **OR**
2. A case that meets the clinical case definition and occurs in a person who has an epidemiologic link with a person who has laboratory-confirmed hepatitis A (i.e., household or sexual contact with an infected person during the 15-50 days before the onset of symptoms).

Case definitions can be found here: <https://wwwn.cdc.gov/nndss/conditions/hepatitis-a-acute/>

### **Preventive Interventions**

The major methods of disease prevention are improved sanitation and personal hygiene and immunization.

1. Always wash your hands after using the bathroom
2. Always wash your hands after cleaning the toilet
3. Always wash your hands after changing diapers
4. Always wash your hands after handling soiled towels or linens
5. Always wash your hands before fixing food or eating
6. If exposed to HAV, ask your doctor about post exposure PEP

### **Treatment**

Supportive care as needed for dehydration and electrolyte abnormalities.

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### **Exclusion**

Food handlers should be excluded according to the 2005 FDA Food Code ([www.fda.gov/FoodCode](http://www.fda.gov/FoodCode)). For questions or assistance in determining the exclusion status of a food handler, contact the Office of Environmental Health Services at 304-558-2198.

Children and employees in daycare and school settings should be excluded for 7 days after the onset of any symptoms.

### **Surveillance Indicators**

1. Proportion of investigations with complete demographic information.
2. Proportion of investigations with complete severity information (hospitalization and death)
3. Proportion of investigations with complete information on high-risk occupations.
4. Proportion of cases with complete risk factor investigation from two to six weeks before onset of symptoms.

### **References**

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