August 2024

Hepatitis A

Surveillance and Investigation Protocol

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Hepatitis A

Surveillance and Investigation Protocol

I. ABOUT THE DISEASE

Hepatitis A is a vaccine-preventable, communicable disease of the liver caused by the hepatitis A virus (HAV). HAV is transmitted person-to-person through the fecal-oral route or through consumption of contaminated food or water. HAV infection typically causes symptoms in adults, whereas an asymptomatic infection in children. Contamination of food and water is more common in developing countries due to poor sanitation practices and personal hygiene. However, in 2016, West Virginia was involved in a multistate outbreak linked to strawberries. Since 2016, the United States has experienced widespread person-to-person outbreaks, including a notable statewide outbreak in West Virginia in 2018. This outbreak predominantly affected individuals who used drugs, were unstably housed, or had recently been incarcerated. In 2020, West Virginia declared the person-to-person outbreak over. In non-outbreak years, West Virginia averages less than ten cases of hepatitis A per year.

Due to the highly contagious nature of HAV, cases are required to be reported to the local health department (LHD) of the patient's county of residence within 24 hours of test result.

A. Clinical Presentation

HAV is a viral illness affecting the liver that causes various symptoms that usually last for several weeks but can last for up to two months. 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, the infection is usually symptomatic. In contrast to hepatitis B and C, fulminant disease or death occurs only rarely, and there is no chronic 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. Although, 10% to 15% of people with hepatitis A might experience a relapse of symptoms during the six months after acute illness.

Symptoms of HAV include:

- Jaundice (yellow skin or eyes)
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Fever
- Dark urine
- Light-colored stool
- Diarrhea
- Fatigue
- Malaise

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Patients usually have elevated levels of serum alanine aminotransferase (ALT), aspartate aminotransferase (AST), and bilirubin which usually resolve in one to six weeks following the onset of symptoms. Extrahepatic complications have occurred but are rare. Such complications include acute kidney injury, acalculous cholecystitis, pancreatitis, pleural or pericardial effusion, hemolysis, hemophagocytosis, pure red-cell aplasia, acute reactive arthritis, skin rash, and neurological manifestations such as mononeuritis, Guillain–Barré syndrome, and transverse myelitis. Fulminant hepatitis is the most severe rare complication, with mortality estimates up to 80%. Overall case-fatality estimates range from 0.3% to 0.6% for all ages and up to 1.8% among adults aged 50 years or older.

B. Etiologic Agent

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

C. Reservoir

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

D. Incubation Period

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

E. Mode of Transmission

The most common mode of transmission is person-to-person through the fecal-oral route by either ingesting contaminated food or water or direct contact with an infectious person.

1. Person-person contact: transmission can occur during close, personal contact with an infected person, such as through certain types of sexual contact (oral-anal sex), caring for someone who is ill, or using drugs with others. This is the most common transmission in the US.
2. Eating contaminated food or drink: Contamination can happen at any point during growing, harvesting, processing, handling, and after cooking. This happens more often in underdeveloped countries where hepatitis A is common. However, foodborne outbreaks have occurred in the US from people eating contaminated fresh and frozen food products.

F. Period of Communicability

The infectious period is two weeks before symptom onset to one week after symptom onset or elevation of liver enzymes. In patients with jaundice, use the date of jaundice onset as the symptom onset date.

II. DISEASE CONTROL AND PREVENTION

A. Disease Prevention and Control Objectives

1. Reduce the incidence of HAV by pre-exposure and post-exposure vaccination of high-risk populations and those who have been exposed.
2. Reduce the incidence of HAV by routine vaccination of children aged 12–23 months and unvaccinated children and adolescents aged 2–18 years.
3. Increase public education regarding prevention and control measures.
4. Increase healthcare provider education on recognition and reporting of disease, and the importance of vaccination.
5. Prevent unnecessary transmission through the early recognition and investigation of outbreaks so that control measures can be instituted in a timely manner.

B. Disease Prevention and Control Intervention

1. Reduce the incidence of HAV by pre-exposure vaccination for those who are at a risk for a more severe infection or at high-risk for infection:
   a. International travelers to countries that have high or intermediate endemicity of hepatitis A.
   b. Persons who use drugs (PWUD).
   c. Persons experiencing unstable housing or homelessness.
   d. Persons who are currently or recently incarcerated. *
   e. Men who have sex with men (MSM).
   f. Persons with chronic liver disease, including cirrhosis, hepatitis B, or hepatitis C.
   g. Persons with HIV.
   h. Persons at risk for occupational exposure (e.g., those who work with hepatitis A-infected nonhuman primates or with clinical or nonclinical material containing hepatitis A virus in a research laboratory setting).
   i. People who anticipate close personal contact with an international adoptee.
   j. Pregnant women at risk for hepatitis A infection or severe outcome.
   k. People in settings that provide services to adults in which a high proportion of those persons have risk factors for HAV infection.
   l. Persons living in group settings for those with developmental disabilities.
   m. Older adults (Aged >40 years).
2. Prevent further person-to-person transmission by giving post-exposure prophylaxis (PEP) to:
   a. Household or sexual contact of a case.
   b. Contacts of the case in high-risk settings such as in childcare centers, common-source food exposure and food handlers, settings providing services to children and adults, and health care institutions.
   c. Persons using injection or non-injection drugs with the HAV-infected person.
   d. Caregivers not using appropriate personal protective equipment.

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e. Newborn infants of HAV-infected mothers.

3. Practice good hand hygiene which includes thoroughly washing hands with soap and warm water after using the bathroom, changing diapers, and before preparing or eating food.

**Incarceration is not currently considered an independent risk factor for hepatitis A according to the Advisory Committee on Immunization Practices (ACIP); however, because incarcerated individuals have high reported rates of drug use, Centers for Disease Control and Prevention (CDC) recommends vaccinating this population during an outbreak.*

C. Treatment

Supportive care and management of complications as needed for dehydration and electrolyte abnormalities.

D. PEP Recommendations

PEP with hepatitis A vaccine or immune globulin (IG) effectively prevents infection with HAV when administered within 14 days of exposure. For PEP and in outbreak situations, a single dose of HAV vaccine is enough for short-term immunity. However, for long-term immunity, the hepatitis A vaccine series should be completed with a second dose at least six months after the first dose. A second dose should not be administered any sooner than six months after the first dose, regardless of HAV exposure risk.

1. For persons recently exposed to HAV (within 14 days) and who have **NOT** previously completed the two-dose hepatitis A vaccination series:
   a. **Infants aged <12 months and persons for whom vaccine is contraindicated** (those having had a life-threatening allergic reaction after a dose of hepatitis A vaccine, or who have a severe allergy to any component of this vaccine) should receive GamaSTAN S/D human IG (0.1 mL/kg) instead of hepatitis A vaccine as soon as possible and within two weeks of exposure. Measles, Mumps and Rubella (MMR) and varicella vaccines should not be administered sooner than three months after IG administration because antibody-containing products such as IG can inhibit the immune response to measles and rubella vaccines.
   b. **Healthy persons aged ≥12 months** should receive a single dose of hepatitis A vaccine as soon as possible. In addition to hepatitis A vaccine, GamaSTAN S/D human IG (0.1 mL/kg) may be administered to persons aged >40 years depending on the healthcare provider's risk assessment of patient comorbidities and other health factors.
   c. **Persons aged ≥12 months who are immunocompromised or have chronic liver disease** should receive both GamaSTAN S/D human IG (0.1 mL/kg) and hepatitis A vaccine

simultaneously in a different anatomic site (e.g., separate limbs) as soon as possible after exposure.

2. Special PEP recommendations for high-risk settings for transmission of hepatitis A:
   a. Daycare centers:
      i. PEP should be administered to all unvaccinated staff and attendees of daycare 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.
   b. Food handlers:
      i. PEP should be administered to other food handlers at the same location where a case worked. PEP administration to patrons is unlikely needed but 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.
      ii. Contact the Division of Infectious Disease Epidemiology (DIDE) immediately for consultation.
      iii. Complete the Hepatitis A High-Risk Occupations Questionnaire to accurately document the above criteria, especially if considering administering PEP to patrons.
      iv. In settings where repeated exposures to HAV may have occurred (e.g., institutional cafeterias), stronger consideration of PEP use may be warranted.
      v. PEP should not be administered to exposed persons after additional cases have begun to occur in a common-source outbreak, since the two-week effective period for PEP will have passed.
      vi. In a setting containing multiple enclosed units or sections (e.g., prison ward), PEP administration should be limited only to persons in the area with risk for exposure.
   c. Settings providing services to children and adults:
      i. PEP should be administered to persons who have close contact with the case if an investigation indicates HAV transmission has occurred (e.g., among students in a school).
      ii. PEP should be considered for all previously unvaccinated residents and employees when a confirmed hepatitis A case occurs in a setting where close personal contact occurs regularly and hygiene standards are difficult to maintain (e.g., correctional facility, homeless shelter, psychiatric facility, or group home or residential facility for persons with developmental disabilities).
   d. Healthcare institutions:
      i. PEP within the healthcare setting may be considered on a case-by-case basis if the risk for exposure to HAV is considered high (e.g. sharing food or beverages between patients, families, and healthcare personnel).

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1. Host-specific factors to consider when assessing for increased risk for HAV transmission in the healthcare setting include healthcare personnel with hepatitis A working during the infectious period or working with symptoms including diarrhea, and patients with hepatitis A who are diapered or incontinent and symptomatic, including diarrhea.

ii. Outbreaks of hepatitis A caused by transmission from patients to healthcare personnel are typically associated with fecal incontinence and inadequate hand hygiene.

III. DISEASE INVESTIGATION

A. Criteria for Case Ascertainment

Clinical Criteria for Reporting

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, abdominal pain, or dark urine)

and

a. Jaundice or elevated total bilirubin levels ≥ 3.0 mg/dL, **or**

b. Elevated serum alanine aminotransferase (ALT) levels >200 IU/L,

and

c. The absence of a more likely diagnosis.

Laboratory/Imaging Criteria for Reporting

Confirmatory laboratory evidence:

- 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.

Epidemiologic Linkage Criteria for Reporting

Contact (e.g., household or sexual) with a laboratory-confirmed hepatitis A case 15-50 days prior to onset of symptoms.

Criteria to Distinguish a New Case from an Existing Case

Hepatitis A is usually self-limiting and does not result in chronic infection. However, up to 10% of persons with hepatitis A may experience a relapse during the six months after acute illnesses. Cases of relapsing hepatitis A should not be enumerated as new cases. In addition, a case should not be counted as a hepatitis A case if there is an alternate, more likely diagnosis.

B. Case Classification (2019)
ndc.services.cdc.gov/case-definitions/hepatitis-a-acute-2019/

Confirmed:
- A case that meets the clinical criteria and is IgM anti-HAV positive §, **or**
- A case that has hepatitis A virus RNA detected by NAAT (such as PCR or genotyping), **or**
- A case that 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.

§ And not otherwise ruled out by IgM anti-HAV or NAAT for hepatitis A virus testing performed in a public health laboratory.

C. Reporting Timeframe to Public Health
Cases of hepatitis A should be reported to the LHD within 24 hours. Reports should include results of hepatitis A and B serologies, transaminase levels and bilirubin. Outbreaks of hepatitis A should be reported immediately.

D. Outbreak Recognition
- An increase in reported hepatitis A cases above baseline (one standard deviation or more) over a four-week period within a common geographic area or population.
- Two or more cases during a 50-day period that are epidemiologically, socially, or behaviorally linked [e.g., grocery store, restaurant, or unusual food source/food item, food handler, injection or non-injection drug use, homelessness, male-to-male sex, or time spent in congregate living facility (jail, substance use treatment, group home, homeless shelter, etc.)].

Outbreaks can occur by either point or propagated transmission. Propagated outbreaks are those that involve person-to-person transmission and result in two or more generations of cases. Hepatitis A outbreaks of this nature are generally recognized when more than one case occurs in an institution (e.g., prison or daycare), or links are recognized between cases in the living community (e.g., homeless community). Cases in these outbreaks usually have widely spaced onset dates (three to six weeks) with little clustering in time. Propagated outbreaks of HAV have also occurred from foodborne transmission through ingestion of contaminated food.

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 hepatitis A are reported within a limited time period. 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 shellfish.

When you suspect an outbreak:

- Contact the DIDE epidemiologist on-call at (304) 558- 5353, ext. 2 to report the outbreak. Also notify the regional epidemiologist and district sanitarian (if foodborne related) as early as possible in the investigation.
- Conduct interviews and case findings, compile line lists and record onset dates and times as well as other important epidemiological data. All cases should be evaluated for risk factors. Depending on the outbreak, more active case finding methods may be used. This can include notifying local clinicians, hospitals, emergency departments, and locations where cases have been identified.
- Conduct contact tracing for cases and prevent continued transmission by arranging PEP for unvaccinated contacts.
- Obtain clinical specimens from symptomatic individuals. Consult the Office of Laboratory Services (OLS) for appropriate collection, handling, and shipping of specimens.
- Provide education on appropriate prevention and control measures.
- Assist with outreach, prevention, and vaccination activities.
- Assist with or develop a final outbreak report and forward a copy with all supporting documentation to DIDE.
- For more information, see the Outbreak Investigation Protocol.

Additional actions if a foodborne outbreak is suspected:

- Conduct a complete environmental investigation of the facility or site of a suspected outbreak. Request assistance from district sanitarian and/or OEHS to complete in a timely manner.
- Collect food, water, and other specimens as needed.
- Provide education to food workers regarding proper food handling and personal hygiene.
- For more information, see the Foodborne Disease Investigation Manual.

Line Lists for both person-to-person and foodborne outbreaks can be found at: oeps.wv.gov/toolkits/Pages/toolkits_hav.aspx.

Cases should not be part of a community outbreak associated with person-to-person transmission if any of the following apply:

- Any case in a person who reports travel to a country or US territory with endemic hepatitis during the 15–50 days before symptom onset AND does not report other known risk factors, OR

- Any case in a person who is linked to a hepatitis A foodborne outbreak by related HAV RNA sequencing, OR
- Any case in a person who is epidemiologically linked to a foodborne outbreak AND does not report other known risk factors.
- Any case with a serum or plasma specimen collected within four weeks of symptom onset that has undetectable HAV RNA (CDC staff are available for consultation about how to interpret laboratory results).

E. Healthcare Provider Responsibilities

1. Report all cases of hepatitis A to the LHD of the patient's county of residence within 24 hours by telephone followed by a written report using the Confidential Reportable Disease Case Report.
2. Because HAV is easily spread, cases should 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. Physician name, address, and phone number.
   e. Laboratory results: hepatitis A IgM or HAV RNA (if done), transaminase and bilirubin levels. Results should also include normal values and range interpretation.
3. Report outbreaks/clusters immediately to the LHD by phone.
4. Assist the LHD and/or Office of Epidemiology and Prevention Services (OEPS) with obtaining additional information or specimen collection if needed.
5. Limit patient testing for acute HAV infection for those with clinical findings typical of hepatitis A or to persons who have been exposed to settings where HAV transmission is suspected. Providers are discouraged from using IgM anti-HAV as a screening tool or as part of testing panels in workups of non-acute liver function abnormalities due to a high percentage of false positive IgM results.
6. Provide education about the disease, its transmission and appropriate control measures (especially if the patient is a food service worker or is associated with childcare settings).
7. Exclude children from daycare, and individuals employed as food handlers from work for one week after onset of symptoms.
8. Provide PEP (or refer to LHD) to those who are recommended to receive PEP within 14 days of exposure. See PEP Recommendations on page 5. The Provider Guidance on Risk Assessment for Hepatitis A Postexposure Prophylaxis can be helpful.
9. Provide routine vaccination for children aged 12–23 months and unvaccinated children and adolescents aged 2–18 years.
10. Provide pre-exposure vaccination to high-risk populations.

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F. Laboratory Responsibilities

1. Report all positive anti-HAV IgM or HAV RNA by phone to the LHD in the patient's county of residence within 24 hours of result. Send or fax a copy of the laboratory result to the LHD if not already reported by electronic laboratory reporting.
2. Please 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. Physician name, address, and phone number.
   d. Laboratory results: hepatitis A IgM, HAV RNA (if done), transaminase and bilirubin levels. Results should also include normal values and range interpretation. Include hepatitis B serologies if performed.
   e. Name of person or agency submitting the specimen for testing.
   f. Specimen source.
   g. Date of specimen collection.
   h. Date of result.
   i. Name of the test.
   j. Name, address, phone, and fax number of the laboratory.
3. In the event of an outbreak or investigation, assist the OEPS with filling out the hepatitis test request submission form and in submitting samples to the OLS. Prior approval by the OEPS is required.

G. Local Health Responsibilities

1. Confirm laboratory results and clinical symptoms meet the case definition. For case ascertainment guidance, please see Appendix A.
   a. Look carefully at the laboratory results. Only persons with a positive IgM anti-HAV antibody or HAV RNA 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. Persons with a positive IgG anti-HAV may have immunity and don't need to be investigated either.
2. Contact the provider who ordered the test to obtain 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 the West Virginia Electronic Disease Surveillance System (WVEDSS) and submit as "not a case."
3. If the person is experiencing symptoms of acute hepatitis, interview the case using the Hepatitis A Case Report form and enter the following information in WVEDSS. In addition to the case report form, If the person has a high-risk occupation, interview the patient using the High-Risk Occupations Questionnaire to determine any risk to the public.
   a. Date of onset of symptoms (date of jaundice is considered the most reliable sign) and type of symptoms.

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b. Liver function tests.
c. IgM antibody to HAV (anti-HAV IgM).
d. HAV RNA (if done).
e. Hepatitis B serologies (if done).
f. High-risk occupation (e.g. food handler, daycare worker, healthcare worker).
g. Travel history.
h. Important risk factors: illicit drug use, homelessness/unstable housing, and high-risk sexual practices.
i. Recent contact with hepatitis A positive individual (epi-linkage).
j. Attendee or resident of a congregate setting.
k. Attendance at daycare/childcare facility.
l. Sexual and other close contacts.
m. Vaccination status.

4. A food history should be obtained for cases who deny known risk factors or exposures for infection. If a food history is obtained, a case report form should be uploaded as an attachment in WVEDSS.
5. Calculate the infectious period. Persons with acute hepatitis A are 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:

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 (Two weeks before onset)	10	11
12	13	14	15	16	17	18
19	20	21	21	23 ONSET	24	25
26	27	28	29	30 (One week after onset)	31	1

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6. Close contacts of the case during the infectious period should be investigated.
    a. Notify contacts of the case of a possible hepatitis A exposure during the infectious period. Contacts can be defined as:
        i. Household or sexual contact of a case.
        ii. Contacts of the case in high-risk settings such as in childcare centers, common-source food exposure and food handlers, settings providing services to children and adults, and health care institutions.
        iii. Persons using injection or non-injection drugs with the HAV-infected person.
        iv. Caregivers not using appropriate personal protective equipment.
        v. Newborn infants of HAV-infected mothers.
    b. Provide education about the disease, its transmission and appropriate control measures.
    c. Obtain hepatitis A vaccination history and administer PEP, if appropriate. See PEP recommendations on page 5 for more information. Please record whether the contact was given PEP, has documentation of being previously vaccinated, symptomatic or a confirmed case in WVEDSS.
    d. Symptomatic persons should be tested for anti-HAV IgM.
    e. Persons found to be positive for anti-HAV IgM should be investigated and reported as cases in WVEDSS according to the steps above.
7. Ensure appropriate control measures are implemented:
    a. Use information obtained during the case investigation to identify a potential source.
    b. Proper hand-hygiene practice – 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. Alcohol-based hand sanitizers are not as effective against HAV as handwashing. Most brands do not kill HAV.
    c. Hand-hygiene adherence during the infectious period should be strictly enforced for patients infected with HAV.
    d. Exclude children and cases who work or attend childcare settings for one week after onset of symptoms.
    e. Exclude food handlers who are jaundiced for seven days after onset and food handlers who have symptoms other than jaundice for 14 days after onset. If the employee provides written documentation from a healthcare provider stating that the employee is free from hepatitis A infection, the employee can be reinstated. The facility must obtain prior approval from the LHD. Please see the 2022 Food Code for more information.
8. Assess whether the patient needs medical follow-up services, including hepatitis B vaccination.

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9. If the case is lost to follow-up (LTFU), obtain medical records, or contact the provider to confirm the diagnosis, inform case classification, and determine if there is a need for additional public health action. The following information should be obtained:
    a. Test results including liver function tests (LFTs) and bilirubin.
    b. Clinical features including reason for testing, illness onset date, signs and symptoms, coinfections, hospitalization status, date of death, and if an alternate diagnosis is suspected.
    c. Demographic information.
    d. Risk behaviors or exposures.
    e. Occupation.
    f. Vaccination information.
10. Provide outreach and education to appropriate audiences (e.g., providers, infection preventionists, general public, etc.) on disease prevention, reporting, appropriate laboratory testing, etc.
11. Provide pre-exposure vaccination to high-risk populations.
12. Report outbreaks/clusters to DIDE within one hour of notification and assist with outbreak investigations.

H. State Health Responsibilities

1. Prompt and complete reporting of HAV cases to the 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 LHD's in obtaining HAV vaccine and IG for contacts of cases and outbreaks.
8. Offer laboratory testing of HAV through the OLS for contacts.
9. Assist with difficult investigations including:
    a. Interface with providers on behalf of LHD's as necessary.
    b. Investigation of possible exposures in unusual settings.

I. Occupational Health

The CDC does not recommend vaccination for any occupational group, other than individuals who work directly with primates. Standard precautions should be followed while working with individuals with possible HAV infection.

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IV. DISEASE SURVEILLANCE

A. Public Health Significance

Contamination of food or water is more likely to occur in developing countries where hepatitis A is common due to poor sanitary conditions or poor personal hygiene. In developed countries, sporadic infections most commonly occur among travelers with recent travel to countries where the disease is endemic, and among PWUD, those experiencing homelessness or unstable housing and MSM. Disease transmission is most frequent among household and sexual contacts of acute cases.

In the US, chlorination of water kills HAV that enters the water supply. Foodborne outbreaks of hepatitis A have occurred; in 2016, a large, multistate outbreak involving nine states, including West Virginia, was linked to frozen strawberries.

Since 2016, there have been widespread person-to-person outbreaks across the US among people who use illicit drugs and people experiencing homelessness. As of December 2023, 44, 926 cases including 27.457 hospitalizations (61%) and 404 deaths were reported from 37 states. West Virginia declared a hepatitis A outbreak in March 2018; as of August 2020, 2,732 cases including 1,338 (50%) hospitalizations and 23 deaths were reported. Nearly 70% of these cases reported illicit drug use and almost 10% reported homelessness.

B. Cases and Clusters of Potential Public Health Importance

1. Cases in people who are in higher risk groups or who live in congregate settings to assure that interventions to prevent further spread are implemented in a timely manner.
2. Cases who were previously vaccinated to characterize possible vaccine failures.
3. Case of hepatitis A in people born after 2005 to distinguish between failure of vaccine and failure to vaccinate.
4. Cases without common risk behaviors or exposures.
5. Two or more cases among patrons at the same store or food service establishment within a 50-day period.

C. 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.
4. Assessing missed opportunities for prevention.
5. Assessing the impact of vaccination programs.

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D. 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 in high-risk or sensitive occupations (e.g., food handler, healthcare worker).
4. Proportion of investigations with complete exposure and risk information (from two to six weeks before onset of symptoms). These include:
   a. Travel history.
   b. Contact of confirmed hepatitis A case.
   c. History of drug use (IV and/or non-IV).
   d. Sexual history.
   e. Homeless.
5. Proportion of investigations with date of public health action (disease education) recorded.
6. Proportion of investigations that identify contacts.
7. Proportion of investigations with vaccination data.

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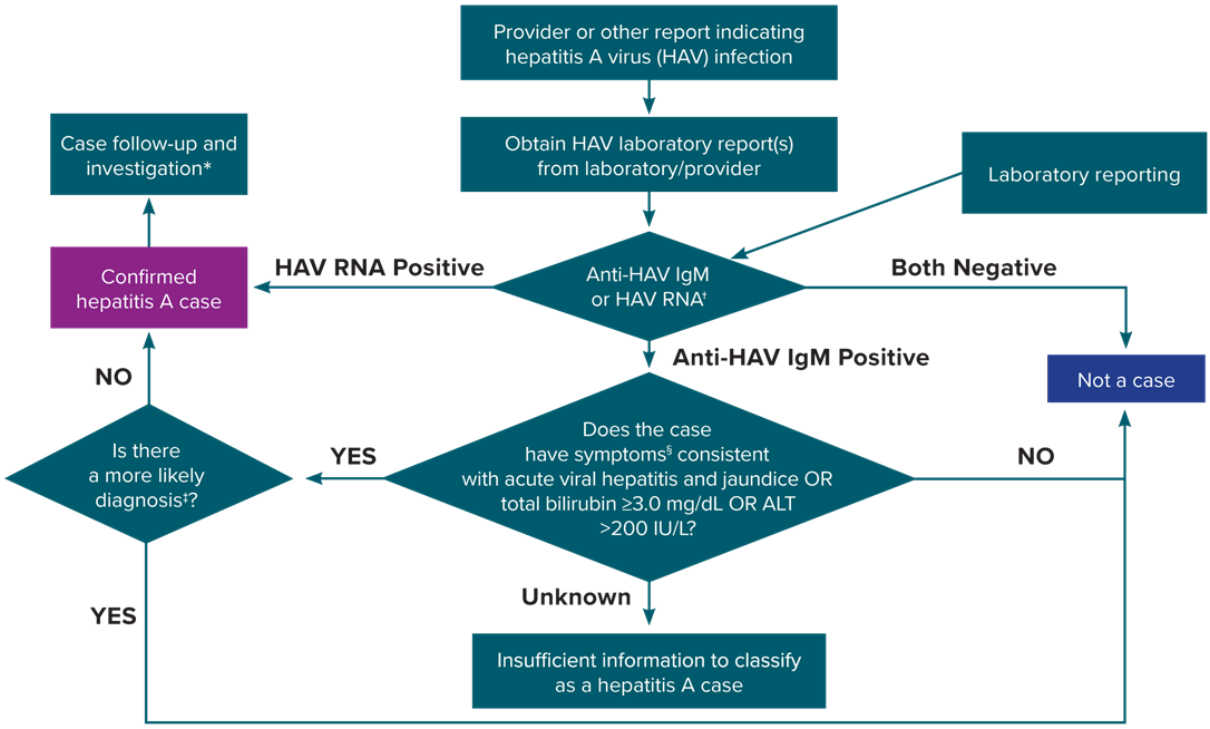
Hepatitis A

Surveillance and Investigation Protocol

Appendix A

Figure 1. Process for hepatitis A case ascertainment and classification



*A person who had contact with a laboratory-confirmed hepatitis A case 15–50 days prior to onset of symptoms AND meets the clinical criteria should be classified as a confirmed hepatitis A case.

†Surveillance programs should provide prevention programs with information on people who have positive test outcomes for post-test counseling, as appropriate.

‡May include evidence of acute liver injury from infectious, autoimmune, metabolic, drug or toxin exposure, neoplastic, circulatory, or thromboembolic, or idiopathic causes.

§Clinical symptoms include fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain, or dark urine.

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