

Hepatitis A

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To identify individual cases, disease outbreaks and potential sources of ongoing transmission to prevent further spread of hepatitis A.
2. To identify contacts and assure timely prevention measures.
3. To educate contacts about signs and symptoms of disease, to facilitate early diagnosis.
4. To educate cases and contacts about transmission of hepatitis A and how to reduce their risk of infection.

B. Legal Reporting Requirements

1. Health care providers: notifiable to local health jurisdiction within 24 hours.
2. Health care facilities: notifiable to local health jurisdiction within 24 hours.
3. Laboratories: Hepatitis A virus (acute) by IgM positivity notifiable to local health jurisdiction within 2 work days (hepatocellular enzyme levels to accompany report).
4. Local health jurisdictions: notifiable to the Washington State Department of Health (DOH) Communicable Disease Epidemiology Section (CDES) within 7 days of case investigation completion or summary information required within 21 days.

C. Local Health Jurisdiction Investigation Responsibilities

1. Begin investigation as soon as possible.
2. Administer appropriate infection control measures (see Section 6).
3. Report all confirmed cases (see case definition below) to CDES. Complete the hepatitis A case report form (<http://www.doh.wa.gov/notify/forms/hepa.pdf>) and enter the data into the Public Health Issues Management System (PHIMS).

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

The hepatitis A virus (HAV) is a picornavirus.

B. Description of Illness

The onset of hepatitis A is usually abrupt with fever, malaise, anorexia, nausea, diarrhea, and abdominal pain, followed within a few days by jaundice. The clinical course of infection may range from asymptomatic to a disabling illness lasting weeks to several months. Rate of hospitalization is 11-22%. Up to 15% of cases are prolonged or relapsing for up to 6 months. Virus may be excreted during relapses. Fulminant hepatitis is rare, occurring more commonly in those with chronic liver disease, and may be fatal or require liver transplantation. Children under 6 years of age are likely to be asymptomatic, while most older children and adults will develop symptoms. Chronic infection does not occur. Infection results in life-long immunity, which can be demonstrated by detecting IgG

antibody to hepatitis A virus (anti-HAV) in serum. Hepatitis A cannot be distinguished from other viral hepatitises without specific diagnostic testing.

Hepatitis A is endemic in many developing countries; the incidence has been decreasing in the United States as routine use of childhood hepatitis A vaccine increases.

C. Hepatitis A in Washington

From 1989 to 2005, the State's incidence of hepatitis A infection decreased from 70 to 1 case/100,000 population, primarily as a result of the introduction of hepatitis A vaccine. Sources of exposure identified in Washington have included travel to an endemic area (particularly developing countries), contact with an infected person in a household or child care center, sexual contact (oral contact with genitals or anus), poor hygiene associated with injection and non-injection drug use (especially methamphetamine), restaurant meals, and ingestion of contaminated food or water.

D. Reservoirs

Reservoirs for hepatitis A virus are acutely infected humans (with or without symptoms).

E. Modes of Transmission

Transmission is most often person-to-person via the fecal-oral route, but can also occur through fecal contamination of food or water, either directly by a food handler or through sewage contamination. Certain foods such as produce and shellfish can become contaminated when they come in contact with hepatitis A-containing water. Special risk situations for hepatitis A virus transmission include food service facilities with poor sanitation and child care facilities serving diapered children. Recent outbreaks in the United States have been associated with contaminated produce imported from endemic areas and infected children adopted from overseas. Travel-associated cases are common.

Parenteral transmission (e.g., needlestick, transfusion of blood products) is rare for hepatitis A virus, because viremia is brief and blood virus levels are low, but may be a risk for persons receiving clotting factor concentrates.

Virus can remain infectious for at least one month at room temperature on environmental surfaces, and transfer on fomites is probably important in some settings (e.g., on toys in a child care facility). The virus is inactivated by high temperature (>185°F) and by some disinfectants including chlorine and formalin.

F. Incubation Period

15–50 days, with an average of 30 days.

G. Period of Communicability

The highest levels of hepatitis A virus are present in feces from 1–2 weeks before the onset of symptoms until about 7 days after the patient becomes jaundiced (third week of illness). Children may excrete for longer periods than adults and if asymptomatic may not be recognized as having an infection. Virus may be excreted during illness relapses.

H. Treatment

No specific therapy is available, treatment is supportive.

3. CASE DEFINITIONS

A. Clinical Description

An acute illness with a) discrete onset of symptoms **and** b) jaundice or elevated serum aminotransferase levels (ALT > 200 IU/L).

B. Laboratory Criteria for Diagnosis

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

C. Case Definition (2011)

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 infection (i.e., household or sexual contact with an infected person during the 15–50 days before the onset of symptoms).

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

The diagnosis is confirmed by detecting anti-HAV IgM in serum of a person with an acute illness compatible with hepatitis A. IgM can be detected at the onset of symptoms and commonly persists for 4–6 months. False positives anti-HAV IgM results can occur, especially in older persons without consistent symptoms*, therefore IgM testing should be done only when evaluating a patient with an acute illness suggestive of hepatitis A.

Anti-HAV IgM can also be detected after receipt of hepatitis A vaccine. Approximately 10–20% of adults will have detectable anti-HAV IgM 2–3 weeks after a dose of vaccine. Anti-HAV IgG is evidence of immunity, from either past infection or vaccination.

*Centers for Disease Control and Prevention. Positive Test Results for Acute Hepatitis A Virus Infection Among Persons With No Recent History of Acute Hepatitis --- United States, 2002–2004. MMWR 2005;54(18):453-456. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5418a1.htm>

B. Services Available at the Washington State Public Health Laboratories (PHL)

PHL does not perform serology for hepatitis A, but the test is widely available at commercial laboratories. During an outbreak, Communicable Disease Epidemiology Section may request a specimen from a case for molecular sequencing at the Centers for Disease Control and Prevention.

C. Specimen Collection

Serum for anti-HAV IgM testing can be collected from patients from the onset of symptoms until 4–6 months after onset.

5. ROUTINE CASE INVESTIGATION

Interview the case and/or others who may be able to provide pertinent information.

A. Evaluate the Diagnosis

Confirm that the illness is consistent with acute hepatitis A infection. False positive IgM results are common, particularly in older persons without acute illness (see Section 4A).

B. Identify Potential Sources of Infection

Ask the case about potential exposures 15–50 days before onset of illness, including:

1. Close contact (e.g., household member, sex partner, shared a meal) with any person who had an illness compatible with hepatitis A. Any person with compatible illness should be reported and investigated in the same manner as the index case. Obtain each person's name and contact information.
2. Any restaurant or other food service meals. Obtain the name and location of the restaurant and date of the meal(s).
3. Any social gathering or other group setting where the case ate a meal. Obtain the date, location, and sponsor of the event.
4. Contact with diapered children, with children in child care or other setting for preschool children, or with staff of these facilities.
5. Exposure to unchlorinated drinking water at home, at work and during trips (obtain trip locations and dates).
6. Sources and dates of consumption of any raw or partially cooked shellfish (obtain name and location of restaurant or retail outlets).
7. Travel outside the United States.
8. Illicit drug use [due to associated poor hygiene].
9. Sex partners.

C. Identify Exposed, Susceptible Contacts and Potential Sites of Transmission

Identify persons with significant opportunity for fecal-oral exposure during the period of communicability (1–2 weeks before the onset of symptoms until about 7 days after the patient becomes jaundiced), including:

1. Household and sexual contacts;
2. Persons who have eaten food prepared or handled by the case;
3. Child care contacts;
4. Persons who have shared illicit drugs with the case;
5. Others with ongoing close personal contact with the case.

Determine whether the contacts of the case are immune or susceptible to hepatitis A. Persons are considered immune to hepatitis A if they have received at least one dose of hepatitis A vaccine at least 28 days prior to the exposure, or if they have a history of laboratory confirmed hepatitis A. Serologic testing of contacts to determine immune status is generally not recommended because screening would result in delay of post-exposure prophylaxis.

D. Environmental Evaluation

None, unless a commercial food service facility, child care center, or public water supply appears to be implicated as the source of infection. In such situations notify the appropriate local or state environmental health office.

6. CONTROLLING FURTHER SPREAD

A. Infection Control Recommendations / Case Management

1. Hospitalized patients should be treated using standard precautions. In addition, contact precautions should be used for diapered or incontinent persons. These contact precautions should be maintained in infants and children less than 3 years of age for the duration of the hospitalization; for children 3–14 years of age for 2 weeks after onset of symptoms; and for persons over 14 years of age for 1 week after the onset of symptoms.
2. The case should be educated regarding effective hand washing, particularly after using the toilet, changing diapers, and before preparing or eating food.
3. Hepatitis B vaccination should be recommended for any susceptible person at ongoing risk for exposure to hepatitis B (e.g., reports illicit drug use or multiple sexual partners).
4. School restrictions: Children should not attend school if they have diarrhea.
5. Work and Child Care Restrictions: Persons should not work as food handlers, child care or healthcare workers, or attend child care during their infectious period (until diarrhea has resolved and 7 days have passed since the onset of jaundice). Restrictions can be modified or lifted at the discretion of the local health department. See Section 7 for further guidance on management of food workers and child care attendees infected with hepatitis A.

B. Contact Management

1. Symptomatic Contacts

Symptomatic household and other close contacts of a confirmed case should be referred to a healthcare provider and tested for acute hepatitis A.

2. Post-exposure Prophylaxis¹⁻²

Susceptible persons recently been exposed to hepatitis A virus should be administered a single dose of single-antigen vaccine or immune globulin (IG) (0.02 mL/kg body weight) as soon as possible, within 2 weeks after exposure. Post-exposure prophylaxis has not been shown to prevent disease when given more than 2 weeks after exposure.

- ***For healthy persons aged 12 months–40 years***: single-antigen hepatitis A vaccine at the age-appropriate dose is preferred to IG because of the vaccine's advantages, including long-term protection and ease of administration, and the equivalent efficacy of vaccine to IG.
- ***For healthy persons aged >40 years***: IG is preferred because of the absence of information regarding vaccine performance in this age group and because of the more severe manifestations of hepatitis A in older adults. Vaccine can be used if IG cannot be obtained. The magnitude of the risk of hepatitis A virus transmission from the exposure should be considered in decisions to use vaccine or IG in this age group.
- ***For children aged <12 months, immunocompromised persons, persons with chronic liver disease, and persons for whom vaccine is contraindicated***: IG should be used.

Completion of the hepatitis A vaccine series according to the licensed schedule is necessary for long-term protection against hepatitis A. Consider initiating hepatitis A vaccination simultaneously for any person receiving IG post-exposure prophylaxis who has ongoing risk for exposure to hepatitis A virus. In addition, consider initiating hepatitis B vaccination for any susceptible person at risk for exposure to hepatitis B virus.

¹Centers for Disease Control and Prevention. Update: Prevention of Hepatitis A After Exposure to Hepatitis A Virus and in International Travelers. Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2007;56(41):1080–1084.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5641a3.htm> Summary available at:
<http://www.cdc.gov/hepatitis/HAV/HAVfaq.htm#D1>

²Victor JC, Monto AS, Surdina TY, et al. Hepatitis A vaccine versus immune globulin for postexposure prophylaxis. N Engl J Med 2007;357:1685–94.

3. Education

All persons exposed to the case or the same source as the case should be educated about symptoms of hepatitis A infection in both children and adults, and methods to prevent transmission. They should be informed that persons may be infectious without being ill.

C. Environmental Measures

1. Water supply: If a contaminated public or private water supply is implicated as the source of infection, contact local or state environmental health personnel for assistance.
2. Sewage disposal: If the case's home is served by a failing sewage system, contact local or state environmental health personnel to prevent exposure of others to the sewage effluent.
3. Shellfish exposure suspected: Notify Communicable Disease Epidemiology Section.
4. Food service facility (see Section 7: Managing Special Situations)
5. Child care facility (see Section 7: Managing Special Situations)

7. MANAGING SPECIAL SITUATIONS

A. Possible Foodborne or Waterborne Outbreaks

Call Communicable Disease Epidemiology Section immediately if you suspect a common-source outbreak.

B. Management of Hepatitis A in a Food Handler

If acute hepatitis A is diagnosed in a food handler (including paid and unpaid work), the following actions should be taken:

1. Exclude the case from the food service facility until diarrhea has resolved *and* one week has passed after the onset of jaundice.
2. Evaluate all food handlers at the facility for current or recent hepatitis A infection.
3. Administer hepatitis A vaccine or immune globulin (IG) to all susceptible food handlers at that establishment (see Section 6B2).
4. Ask the facility manager or other designee to monitor all food handlers at risk for hepatitis A infection for one full incubation period (50 days) after the last exposure to the index case.

5. Consider post-exposure hepatitis A vaccination or IG for patrons if:
 - The food handler directly handled uncooked food or food after cooking during the infectious period, and had diarrhea or poor hygiene practices, AND
 - Post-exposure prophylaxis can be administered to patrons within two weeks of the exposure
6. Educate the manager regarding the epidemiology of hepatitis A and the importance of hand hygiene and glove use.

C. Management of Hepatitis A in a Child Care Setting

Because most hepatitis A virus infections in young children are asymptomatic, illness among adult staff members or household contacts is often the first (and only) indication of an outbreak in a child care facility.

1. Interview the operator and inspect the written attendance records to identify other possible cases among staff or attendees during the previous month. Note: WAC170-295-3030 specifies that the operator keep a log of illnesses.
2. Review food handling, hand washing techniques, and diaper changing practices with the operator and staff. The critical role of good personal hygiene (especially handwashing for staff and children) and proper hygiene while changing diapers should be reviewed with child care staff.
3. If other cases are suspected, refer those currently ill to a health care provider for assessment.
4. Exclude persons with hepatitis A infection from child care facilities until diarrhea has resolved and one week has passed after the onset of jaundice.
5. Parents of children in the same child care group as a hepatitis A case should be notified of the occurrence of hepatitis A in the group. Day care operators are required to notify these parents that their child was exposed to a communicable disease through a letter or posted notification (WAC 170-295-3030). Hepatitis A is often asymptomatic in young children, but the local health jurisdiction may use this notification as an opportunity to ask parents about consistent symptoms (especially diarrhea) in their child and add the following elements to the notification:
 - Children should be monitored carefully for signs of illness such as diarrhea.
 - Medical care should be sought if such symptoms occur and the provider informed of the occurrence of hepatitis A in the facility.
 - The daycare operator or local health jurisdiction should be notified should symptoms occur.
 - A symptomatic child should not be brought to the daycare facility nor placed in any other group of children.
 - Information on the illness and how transmission can be prevented
6. If more than one case is suspected among attendees or workers, LHJs should inspect the facility.

7. Instruct the day care operator to call the LHJ immediately if new cases of diarrhea occur.
8. LHJs should follow-up with the child care center to ensure that surveillance and appropriate prevention measures are being carried out. Manage newly symptomatic children as outlined above.
9. Closure of the facility should be considered if it has been shown that transmission is occurring within the facility and if exclusion and sanitation controls are not adequate to stop ongoing transmission. Before closing a facility, the LHJ should assess the potential for spread to other day care settings in the community by dispersal of the children. Parents should be cautioned regarding placing their children in other child care groups, since asymptomatic shedding of the organism may occur.
10. Post-exposure prophylaxis
 - Administer hepatitis A vaccine or IG to all susceptible staff and attendees in the following situations:
 - Acute hepatitis A occurs in ≥ 1 attendee or staff or
 - Acute hepatitis A occurs in ≥ 2 households of attendees at a child-care facility
 - Post-exposure prophylaxis needs to be recommended only to contacts in the same classroom as the case if the center does not provide care to diapered children.
 - If acute hepatitis A occurs in ≥ 3 families at any child care facility, post-exposure prophylaxis should also be considered for household members of children in diapers who attends the facility.
11. To identify new infections quickly, the local health jurisdiction should begin surveillance for hepatitis-like illness among households connected to the facility for 50 days after onset of the last case.

8. ROUTINE PREVENTION

A. Immunization Recommendations

The hepatitis A vaccines currently licensed in the United States include HAVRIX®, VAQTA®, and the combination vaccine TWINRIX® which contains both hepatitis A and hepatitis B viral antigens. HAVRIX® and VAQTA® are licensed for persons 12 months of age or older and are given as a two dose series separated by 6–12 months and 6–18 months respectively. TWINRIX® is licensed for persons 18 years and older and is given as a three dose series at 0, 1, and 6 months.

Vaccination with hepatitis A vaccine is recommended for the following groups:

- All children at age 1 year (i.e., 12–23 months). Children who are not vaccinated by 2 years of age can be vaccinated at subsequent visits.
- Children and adolescents ages 2–18 who live in states or communities where routine hepatitis A vaccination has been implemented because of high disease incidence.
- Persons traveling to or working in countries that have high or intermediate endemicity of infection. (Immune globulin can be given prior to departure for short term travel but vaccination is preferred.)

- Persons who anticipate close personal contact (e.g., household contact or regular babysitting) with an international adoptee from a country of high or intermediate endemicity during the first 60 days following arrival of the adoptee in the country. (Ideally administer the first dose 2 or more weeks before arrival of the adoptee.)
- Men who have sex with men.
- Users of illegal injection and noninjection drugs.
- Persons who have occupational risk for infection.
- Persons with clotting-factor disorders who receive clotting factor concentrates.
- Persons with chronic liver disease.

For more information, see:

Centers for Disease Control and Prevention. Prevention of hepatitis A through active or passive immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-7):1–23. <http://www.cdc.gov/mmwr/pdf/rr/rr5507.pdf>

Centers for Disease Control and Prevention. Updated Recommendations from the Advisory Committee on Immunization Practices (ACIP) for Use of Hepatitis A Vaccine in Close Contacts of Newly Arriving International Adoptees. MMWR 2009;1006-7
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5836a4.htm>

B. Prevention Recommendations

In addition to vaccination and immunoglobulin, persons should always wash hands after using the bathroom, changing a diaper, or before preparing or eating food. Persons with diarrhea should not prepare food for others.

ACKNOWLEDGEMENTS

This document is a revision of the Washington State Guidelines for Notifiable Condition Reporting and Surveillance published in 2002 which were originally based on the Control of Communicable Diseases Manual (CCDM), 17th Edition; James Chin, Ed. APHA 2000. We would like to acknowledge the Oregon Department of Human Services for developing the format and select content of this document.

UPDATES

Minor revisions in October 2009 with updated recommendation for hepatitis A vaccination related to adoption.

January 2011:

The Legal Reporting Requirements section has been revised to reflect the 2011 Notifiable Conditions Rule revision. Case definition updated to specify ALT level.

APPENDIX: SAMPLE PRESS RELEASE AND COMMENTS

Target the announcement as specifically as possible. Itemize implicated foods, dates and times served, etc. Keep in mind that foods prepared by a certain worker are not necessarily served during the worker's shift hours. Local health jurisdictions may decide that there is no reason to run your own prophylaxis clinic. Find out if the restaurant plans to pay for prophylaxis up front. If they are, say so in the announcement. Alert exposed people who are too late for prophylaxis to signs and symptoms of hepatitis. Encourage them to seek medical attention promptly should illness develop.

This kind of alert does not indicate that a hepatitis outbreak has occurred. It indicates the health department is taking action to prevent one. Make sure the difference is clear. Provide "boilerplate" background information about hepatitis A last.

Alert Version 1: (Name) County Announces Hepatitis A Alert

The (Name) County Health Department announced today that recent patrons of the (Name) Restaurant, (address) in (City), may have been exposed to hepatitis A. "On July 3 (change date), a case of hepatitis A in a restaurant worker was reported to the Health Department," said (Admin name), Madison County Health Department Administrator.

"To prevent illness, persons who have not been vaccinated against hepatitis A and ate at the salad bar or had any sandwich with lettuce between 11 a.m. and 4 p.m. (change time) on June 24, 26, 29, 30 (change date), or July 1 (change date) should get an injection of immune globulin or hepatitis A vaccine as soon as possible, but not more than two weeks after their exposure," said (Admin name). Your health care provider or the (Name) County Health Department can determine which preventive measure is best for you. Immune globulin and hepatitis A vaccine are available from most health care provider offices, emergency rooms, and urgent care clinics, but you should call ahead to ensure availability. Immune globulin and hepatitis A vaccine will also be given at the (Name) County Health Department, (address), on Wednesday and Thursday, July 5 and 6 (change date), from 3-7 p.m. (change time). No appointment is necessary. A donation of \$15 is requested, but no one will be refused immunization because of inability to pay.

Persons who ate foods suspected to carry risk on June 19 or 20 (change date) may also have been exposed, but it is now too late for immune globulin or hepatitis A vaccine to prevent illness. If you ate at the restaurant and develop symptoms of hepatitis A (see below), contact your physician.

The purpose of this alert is preventive; no cases resulting from exposure at the restaurant have been reported. The restaurant has been inspected and is believed to be safe at the present time. This alert concerns the (address or city) restaurant only—not other restaurants in the (Name) chain.

Hepatitis A is a viral disease of the liver. It is spread from person to person by the "fecal-oral" route, often by inadequate handwashing after using the toilet or changing diapers. Typical symptoms of hepatitis A include fatigue, fever, malaise, loss of appetite, abdominal pain, nausea, vomiting, and jaundice (yellowing of the skin or eyes). Symptoms usually develop 2–6 weeks after exposure. Some infections may be very mild or even asymptomatic.

Alert Version 2: HEPATITIS A ALERT, (DATE)

COMMUNICABLE DISEASE CONTACT
FOR THE PUBLIC: XXX-XXXX

FOR MORE INFORMATION
Call: (name) XXX-XXXX

The (*Name*) County Department of Health has confirmed hepatitis A in a foodhandler working at the (*Name*) Restaurant, located at (*address*) in (*City*). The foodhandler worked during a period in which hepatitis A infection could have been transmitted through food. The Department of Health makes the following recommendations for persons who ate food at the restaurant:

1. Persons who ate any (*list risk food items*) on (*dates within 14 days*) should receive prophylaxis.
2. Persons eating these items before (*date 14 days ago*) may have been exposed, but it is too late for prophylaxis to be effective. Such persons should consult with the Department of Health for information about hepatitis A symptoms and ways to prevent transmission or see information provided below.
3. Persons having ONLY (*list safe food items*) do NOT need to receive immune globulin or vaccine.

Any person who received immune globulin within the past three months, ever received hepatitis A vaccine, or ever had laboratory confirmed hepatitis A infection does not need prophylaxis.

Prophylaxis shots can be obtained from personal health care providers or from (*Name*) County Department of Health clinics. (*Name*) Restaurant has agreed to pay for shots received at Department of Health clinics.

Prophylaxis must be received no later than 14 days after exposure to be effective in preventing illness. For example, someone who ate on March 18th (*change date*) should receive prophylaxis no later than today, April 1st (*change date*). Persons eating the implicated foods more than two weeks ago should watch for the following:

Symptoms of hepatitis A: nausea, loss of appetite, vomiting, fatigue, fever, abdominal cramps, dark-colored urine, light or whitish-colored stools, and jaundice (a yellow color to the eyes or skin).

Incubation period: two to six weeks from exposure to symptoms.

Transmission: hepatitis A virus is passed in the stools (not saliva or other body fluids). The virus infects another person when it is eaten.

Prevention: Thorough handwashing with soap and hot water after using the toilet and before handling food is the most important factor in preventing spread. Prophylaxis is highly effective if received within 14 days of exposure.

Persons suspecting that they have symptoms of hepatitis should contact their health care provider. Persons working as foodhandlers who experience symptoms should not work, and should be seen by a health care provider. Persons with questions should contact their personal health care provider or the (*Name*) Department of Health at XXX-XXXX.