# Hepatitis A

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| **Signs and Symptoms** | • Abrupt onset of fever, headache, malaise, anorexia, vomiting, diarrhea, abdominal pain<br>• Jaundice<br>• Rare fatalities, particularly risk if chronic liver disease including chronic hepatitis B or C<br>• Younger children and very rare adults may have asymptomatic infection |
| **Incubation** | 15–50 days, with an average of 30 days |
| **Case classification** | **Clinical**: acute illness, discrete onset of a consistent symptom (fever, headache, nausea, diarrhea, anorexia, vomiting, abdominal pain) and either jaundice (bilirubin ≥ 3.0) or elevated ALT (≥ 200) |
| | **Confirmed**: Clinical with either IgM or PCR positive **OR** clinical with epi link to a confirmed case |
| **Differential diagnosis** | **Hepatitis B or C** (do tests)**, chemical hepatitis** (e.g., alcohol, some medications, natural products), **autoimmune hepatitis**, **biliary disease** (gallstones), **malignancy**, **metabolic** (e.g., Wilson's) |
| **Treatment** | Supportive |
| **Duration** | Illness may be prolonged, or relapse for months; communicable before onset until asymptomatic although longer excretion in children and during relapses |
| **Exposures** | Contaminated food or water, particularly during travel; contact with a case (household, sexual) |
| **Laboratory Testing** | Serologic testing is available commercially; CDC genotypes for outbreak<br>• Spin serum, separate, freeze, send to PHL. CDE will complete special CDC manifest. See: https://www.cdc.gov/laboratory/specimen-submission/form.html |
| **Public Health Actions** | • Identify potential sources of exposure: close contact with acute hepatitis A case, restaurant or group meals, contact with diapered children or staff in childcare setting, unchlorinated natural water, raw or partially cooked shellfish, travel outside the United States or contact with a recent arrival, poor hygiene (illicit drug use, experiencing homelessness), congregate living<br>• Additional investigation and intervention may be needed if suspected source is a commercial food, food service facility, shellfish, healthcare or childcare facility, or drinking water supply<br>• Exclude from food handling, child care or healthcare, or attending school or child care until diarrhea resolves and it is 7 days from onset of jaundice, unless other restrictions apply<br>• Investigate any symptomatic close contact as a new case<br>• Recommend hepatitis B vaccine if susceptible and if ongoing risk for hepatitis B<br>• Identify persons with risk for exposure to case in communicable period including household and sexual contacts, ate food prepared by case, shared drugs, or childcare contacts<br>• Contacts who are susceptible should receive post-exposure prophylaxis See: https://www.cdc.gov/mmwr/volumes/67/wr/mm6743a5.htm<br>**For persons under 12 months:** immune globulin (0.1 mL/kg). **For other healthy persons**: initiate first hepatitis A vaccine dose (single antigen; **not** hepatitis A/B vaccine) and schedule for second dose; if **age >40 years or chronic illness**: consider immune globulin along with hepatitis A vaccine. Note that IG dose differs for travel pre-exposure prophylaxis (Sec. 7B). Warn contacts receiving PEP they may still develop hepatitis A and need good hand hygiene.<br>• If hepatitis A is suspected based on exposure or other information, educate case about hygiene, particularly if doing food preparation for others, health care, or child care even if no lab confirmation is available<br>• Routine vaccination for risk groups (including persons experiencing homelessness)<br>*Infection Control:*<br>• Standard precautions in hospital plus contact precautions if diapered or incontinent patient<br>• Educate case about hand washing |

# 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 and Health care facilities**: notifiable to **local health jurisdiction** within 24 hours
2. **Laboratories**: notifiable to **local health jurisdiction** within 24 hours; submission on request – specimen associated with positive result, within 2 business days
3. **Local health jurisdictions**: notifiable to the Washington State Department of Health (DOH) Office of Communicable Disease Epidemiology (CDE) 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 including any outbreak investigation (Section 6).
2. Administer appropriate infection control measures (see Section 5).
3. Report all confirmed cases (case definition below) to CDE. Complete the hepatitis A case report form https://www.doh.wa.gov/Portals/1/Documents/5100/210-030-ReportForm-HepA.pdf and enter the data into the Washington Disease Reporting System (WDRS).

## 2. THE DISEASE AND ITS EPIDEMIOLOGY

### A. Etiologic Agent

The hepatitis A virus (HAV) is a picornavirus.

### B. Description of Illness

Onset is usually abrupt with fever, malaise, anorexia, nausea, diarrhea, and abdominal pain, followed within a few days by jaundice. Clinical illness ranges 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 most often in those with chronic liver disease, and may be fatal or require liver transplantation. Children under 6 years are likely to be asymptomatic, while older children and adults will develop symptoms. Diagnostic testing is needed to distinguish hepatitis A from other viral hepatitides.

Chronic infection does not occur. Infection or vaccine results in life-long immunity, demonstrated by detecting IgG antibody to hepatitis A virus (anti-HAV) in serum.

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, incidence fell from 70/100,000 to 1 case/100,000 population as pediatric vaccination was provided starting in 2000. Exposures were increasingly during travel to endemic areas (mainly Mexico, Central America, or Asia). Other cases have childcare center or household exposures, oral sexual contact, poor hygiene associated with illicit drug use, restaurant meals, or contaminated food or water. Multiple states had outbreaks beginning 2016-2019 affecting persons with reduced hygiene due to street drug use or experiencing homelessness. Washington's outbreak lasted from April 2019 until September 2021, affecting 21 of the state's counties with 465 cases and nine deaths.

## D. Reservoirs

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

## E. Modes of Transmission

Transmission is mainly person-to-person via the fecal-oral route, or fecal contamination of food or water by an infected food handler or through sewage. Contaminated water can contaminate foods such as produce or shellfish. Special transmission risks include poor sanitation during food handling, children adopted from overseas, and childcare facilities handling diapers. Travel-associated cases are common. US outbreaks have been linked to contaminated produce imported from endemic areas and outbreaks among persons with reduced hygiene due to experiencing homelessness or using street drugs.

The virus can remain infectious for at least one month at room temperature on environmental surfaces, and transfer via fomites is probably important in some settings (e.g., feces on toys in a childcare facility). The virus is inactivated by high temperature (>185$^{o}$F) and by some disinfectants including chlorine (bleach) and formalin. In the past clotting factor concentrates were a risk but parenteral transmission (e.g., needlestick, transfusion) is rare because viremia is brief and virus levels are low [Transfusion-Transmitted Hepatitis A Virus, France, 2018 - Vol 28, No 1—Jan 2022 - EID].

## 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 any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain),

**AND**

a) jaundice or elevated total bilirubin levels ≥ 3.0 mg/dL, **OR** b) elevated serum alanine aminotransferase (ALT) level > 200 IU/L

**AND**

c) the absence of a more likely diagnosis.

### B. Laboratory Criteria for Diagnosis

- 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

### C. Case Definition (2019)

*Confirmed*:

1) a case that meets the clinical case definition (acute onset with either jaundice or elevated aminotransferase level) and is IgM anti-HAV positive[§] **OR**

2) a case that is NAAT positive for hepatitis A (such as through PCR testing) **OR**

3) a case that meets the clinical case definition and occurs in a person with an epidemiologic link to a person with 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).

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

## 4. DIAGNOSIS AND LABORATORY SERVICES

### A. Diagnosis

The diagnosis is confirmed by detecting anti-HAV IgM in serum of a person with a compatible acute illness **and** with either jaundice or an elevated aminotransferase level. IgM can be detected at symptom onset and usually persists for 4–6 months. Since false positives anti-HAV IgM results occur, especially in older persons without consistent symptoms*, IgM tests should be done only for acute illnesses suggestive of hepatitis A.

Anti-HAV IgM can 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: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5418a1.htm

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

Serology for hepatitis A is widely available at commercial laboratories. During an outbreak, Office of Communicable Disease Epidemiology may request a blood specimen from cases for molecular sequencing at the Centers for Disease Control and Prevention (CDC). CDC can also do serologic testing for clinically consistent cases with inconsistent laboratory results or for unusual situations with suspected false positive results. Testing can also be done for cases with suspected local acquisition but no defined risks. Consult with Office of Communicable Disease Epidemiology (206-418-5500 or 877-539-4344). Spin down serum immediately and refrigerate. See: https://www.cdc.gov/hepatitis/hev/pdfs/hrl_pcrsamplehndlgshpg_20080615.pdf.

Note that PHL require all clinical specimens have two patient identifiers, a name **and** a second identifier (e.g., date of birth) both on the specimen label and on the submission form. Due to laboratory accreditation standards, specimens will be rejected for testing if not properly identified. Also include specimen source and collection date.

### C. Specimen Collection

Anti-HAV IgM can be tested from symptom onset to 4–6 months after onset. For cases in special outbreak investigations, after consultation with Office of Communicable Disease Epidemiology (206-418-5500) obtain a serum or EDTA tube, spin promptly, separate the serum into a shipping tube, and ship cold with PHL Virology form: https://www.medialab.com/dv/dl.aspx?d=1615463&dh=e4b87&u=69790&uh=0e2a1.

## 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. If an important risk factor is identified (e.g., international travel) then it may not be necessary to collect detailed food exposures in the United States. Major risk factors include:

1. Close contact (e.g., household member, sex partner, shared a meal) with any person having an illness compatible with hepatitis A. Obtain each person's name and contact information. Investigate anyone with compatible illness the same as a reported case.
2. Travel outside the United States or contact with a recent arrival (e.g., adopted child).
3. Illicit drug use, both injection and non-injection (due to associated poor hygiene).
4. Congregate living (e.g., shelter, corrections). Obtain dates and facility contact.
5. Any restaurant or other food service meals. Obtain the name and location of the restaurant and date of the meal(s).

6. Any social gathering or other group setting where the case ate a meal. Obtain the date, location, and sponsor of the event.
7. Contact with diapered children, with children in child care or other setting for preschool children, or with staff of these facilities.
8. Exposure to unchlorinated drinking water at home, at work and during trips. Obtain trip locations and dates.
9. Consumption of any raw or partially cooked shellfish. Obtain name of product(s), date(s) or consumption, how prepared, and source (location of restaurant or retail outlets where purchased, or date and location of harvest).

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

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

1. Household, housing (e.g., shelter with shared bathroom) and sexual contacts
2. Persons who have eaten food prepared or handled by the case
3. Food handling co-worker of an infected food worker
4. Child care contacts – all staff and attendees if diapered children are involved; if no diapered children classroom only
5. Persons who have shared illicit drugs with the case
6. Others with ongoing close personal contact with the case such as babysitter or best friend at school
7. Patrons with specific or recurrent exposure to a food handler.

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

### D. Post-exposure Prophylaxis

Post-exposure prophylaxis within two weeks of last exposure is appropriate for susceptible contacts of hepatitis A cases who are:

- Household members or in the same living setting (e.g., shelter)
- Sexual contacts
- In institutional or healthcare settings
- Consumed food prepared by a contagious case

Based on age and health status, susceptible persons recently exposed to hepatitis A virus should be administered one dose of single-antigen hepatitis A vaccine (**not** hepatitis A/B

combination vaccine) or immune globulin (IG) (0.1 mL/kg body weight with no maximum dose) as soon as possible, within 2 weeks after last exposure. Post-exposure prophylaxis has not been shown to prevent disease when given more than 2 weeks after exposure. Both vaccine and IG may be appropriate for some persons. IG is contraindicated in persons with isolated IgA deficiency. Note that MMR and varicella vaccines, which are live virus vaccines, should be administered at least 2 weeks before or at least 3 months after administering of IG. Educate recipients on good hand hygiene habits because even timely post-exposure prophylaxis may not prevent infection.

- *For healthy persons aged over 6 months:* 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. Children under 12 months should receive 2 additional vaccine doses.
- *For children aged <6 months and persons for whom vaccine is contraindicated*: IG should be used. Note: pregnancy is generally not a contraindication for vaccine.
- *For persons over 40 years, immunocompromised persons (including infected with HIV), those with chronic liver disease, and persons with chronic liver disease*: consider giving IG in addition to a dose of vaccine.

For more information, see:
https://www.cdc.gov/mmwr/volumes/69/rr/rr6905a1.htm?s_cid=rr6905a1_w

*Notes from the Field:* Acute Hepatitis A Virus Infection Among Previously Vaccinated Persons with HIV Infection — Tennessee, 2018.
https://www.cdc.gov/mmwr/volumes/68/wr/mm6814a3.htm?s_cid=mm6814a3_w

## E. Routine Immunization

Completion of the hepatitis A vaccine series according to the licensed schedule is necessary for long-term protection against hepatitis A. The hepatitis A vaccines currently licensed in the United States include single hepatitis A antigen vaccines Havrix® and 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; use Twinrix only for pre-exposure prophylaxis and only if the three dose series is likely to be completed in a timely manner. Only single antigen vaccines, **not** hepatitis A/B combination vaccines, should be used for post-exposure prophylaxis.

Routine vaccination with hepatitis A vaccine is recommended for the following groups:

- All children between their first and second birthdays (12 through 23 months of age).
- All children 2-18 years who were not previously vaccinated (catch-up vaccination).
- All persons ≥ 1 year infected with HIV.
- Persons with chronic liver disease, including but not limited to: hepatitis B virus infection, hepatitis C virus infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, or having an alanine aminotransferase (ALT) or

aspartate aminotransferase (AST) level persistently above twice the upper limit of normal.

- Pregnant women who are identified to be at risk for HAV infection during pregnancy (e.g., international traveler, use illegal drugs, occupational risk for infection, anticipate close personal contact with an international adoptee, or experiencing homelessness) or for having a severe outcome from HAV infection (e.g., chronic liver disease or HIV infection).
- During hepatitis A outbreaks of persons aged ≥1 year who are at risk for HAV infection (e.g., use illegal drugs, experiencing homelessness, or MSM) or who are at risk for severe disease from HAV (e.g., chronic liver disease or infected with HIV); use single antigen vaccine for pre- or post-exposure prophylaxis during an outbreak.
- Settings providing services to adults in which a high proportion having risk factors for HAV infection (e.g., health care setting with a focus on those use illegal drugs, group home, or nonresidential day care facility for developmentally disabled persons); encourage healthcare providers serving the risk population to offer hepatitis A or double antigen (hepatitis A/B combination) vaccine routinely, but only single antigen hepatitis A vaccine for pre- or post-exposure prophylaxis during an outbreak.
- Anyone 6 months of age and older traveling or working in areas with intermediate or high prevalence of hepatitis A, such as Central or South America, Mexico, Africa, Asia (except Japan), or eastern Europe (see: www.cdc.gov/travel). Infants 6-11 months given a vaccine dose should receive 2 additional vaccine doses after age 12 months.
- Members of households planning to adopt or to care for a newly arriving adopted child from a country where hepatitis A is common (see: www.cdc.gov/travel).
- Men who have sex with men
- Persons who use illegal drugs
- Persons experiencing unstable housing or homelessness
- Persons who work with HAV- infected primates or in a HAV research laboratory.

Other people might get hepatitis A vaccine in certain situations:

- Unvaccinated people who have been exposed to hepatitis A virus.
- Anyone 1 year of age or older who wants protection from hepatitis A.

In an outbreak setting, one dose of single-antigen hepatitis A vaccine can control an outbreak. Combination hepatitis A and hepatitis B vaccine (TWINRIX©) should be used as pre-exposure prophylaxis for outbreak control only if all three doses can be given on schedule. Combination vaccine should not be used for post-exposure prophylaxis. See: https://www.cdc.gov/hepatitis/outbreaks/InterimOutbreakGuidance-HAV-VaccineAdmin.htm

Routine hepatitis A vaccination is no longer recommended for persons who receive blood products for clotting disorders (e.g., hemophilia). For more information about hepatitis A vaccination, see:

Prevention of Hepatitis A Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2020
https://www.cdc.gov/mmwr/volumes/69/rr/rr6905a1.htm
and Hepatitis A Q&As for Health Professionals | CDC

For the vaccine information statement see: https://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-a.html

**Immunoglobulin pre-exposure prophylaxis** for travel to areas with high or intermediate hepatitis A endemicity is appropriate for:

- Children < 6 months and persons for whom vaccine is contraindicated (e.g., allergic)
- Unvaccinated people with travel beginning in ≤ 2 weeks; for those who are eligible, also administer hepatitis A vaccine at a separate anatomic site
- Adults > 40 years, persons with immunocompromising conditions, and persons with chronic liver disease or other chronic medical conditions should be vaccinated if traveling to an area with high or intermediate HAV endemicity. If travel is less than two weeks the person may also receive IG at a separate anatomic injection site

Due to concerns about decreased potency of IG to protect against hepatitis A, in September 2017 CDC updated IG dosing recommendations for hepatitis A prophylaxis. IG is contraindicated in persons with isolated IgA deficiency. Note that MMR and varicella vaccines, which are live virus vaccines, should be administered at least 2 weeks before or at least 3 months after administering IG.

Pre-exposure IG dosing depends on duration of travel:

- Up to one months of travel: 0.1 mL/kg
- Up to two months of travel: 0.2 mL/kg
- Over two months of travel: 0.2 mL/kg repeated every 2 months or until a dose of vaccine is given (6 months or older)

If an unvaccinated child receives IG for travel, initiate a hepatitis A vaccine series when the child reaches the appropriate age**.**

## F. 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. In a congregate setting, if feasible consider cohorting patients with acute hepatitis A, including a separate toilet. Hand hygiene is essential, using soap and water (alcohol-based gel is not effective against hepatitis A).
3. Consider post exposure prophylaxis for susceptible patients who share a room or bathroom with an acute hepatitis A case and for susceptible healthcare personnel providing care to hepatitis A patients with diarrhea or who need assistance with toileting.

4. Until 7 days after the onset of jaundice (third week of illness) the case should not prepare food for others or handle food to be eaten by others. The case should be educated regarding effective hand washing, particularly after using the toilet, changing diapers, and before preparing or eating food. Hand cleaning should be done with soap and water, since alcohol-based gels are not effective against hepatitis A virus. All persons exposed to the case or to 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 and that vaccine or IG post-exposure prophylaxis may not always prevent infection.
5. Also recommend hepatitis B vaccination for any susceptible person at ongoing risk for hepatitis B exposure (e.g., report illicit drug use or multiple sexual partners).
6. School restrictions: Children should not attend school if they have diarrhea.
7. Work and Child Care Restrictions: Persons should not work as food handlers, child care or healthcare workers, or attend child care during while infectious (until diarrhea has resolved **and** 7 days have passed since onset of jaundice). Restrictions can be modified or lifted at the discretion of the local health jurisdiction. See Section 6 for further guidance on management of food workers and child care attendees infected with hepatitis A virus.

### G. Environmental Evaluation

No evaluation, unless a commercial food or food service facility, child care center, or public water supply appears to be implicated as the source of infection.

1. Commercial food or food service facility (see Section 6: Managing Special Situations)
2. Child care facility (see Section 6: Managing Special Situations)
3. 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.
4. Sewage disposal: If the case's home is served by a failing sewage or septic system, notify local or state environmental health personnel to prevent exposure of others to sewage.
5. Shellfish exposure suspected: Obtain name of product(s), date(s) or consumption, how prepared, and source (location of restaurant or retail outlets where purchased, or date and location of harvest).

## 6. MANAGING SPECIAL SITUATIONS

### A. General

When a case of acute hepatitis A is diagnosed in a risk setting (see below for specific situations), the public health goal is to identify the source and others exposed with or to the case(s). Post-exposure prophylaxis may prevent infection if given within two weeks of last exposure. Pre-exposure prophylaxis may be appropriate if there is an ongoing outbreak in a community or an identifiable group.

When a case is identified associated with a risk setting (childcare, healthcare, corrections), obtain case information:

- Dates entered and left the setting and dates of first symptom and jaundice onsets
- From date of first symptom onset and date of jaundice onset determine:

- First potential date of exposure = date of onset – 50 days
- Last potential date of exposure = date of onset – 15 days
- First potential communicable date = date of onset – 14 days
- Last potential communicable date = date of jaundice onset + 7 days

- From symptoms determine the risk of communicability (e.g., diarrhea occurred)
- If the person worked or volunteered in a risk setting, determine all shifts during their communicable period and during that time their exact duties including part-time or occasional tasks (e.g., fed children, handled ready to eat foods, prepared beverages with garnishes, served ice water, etc.)

If available, obtain vaccination or immunity status of any close contacts e.g., coworkers, attendees at a facility.

**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 patient from the food service facility until diarrhea has resolved *and* one week has passed after the onset of jaundice. If the case patient does not have symptoms, exclude for one week from collection date of first specimen testing positive. Obtain an acute serum specimen from the case to save for possible genomic testing.
2. Inspect the facility and interview the manager. Evaluate: toileting and hand washing stations; use of gloves for preparing ready-to-eat foods (e.g., salads, sandwiches, frosted desserts), garnishes, and beverages; availability and use of an ice scoop at an ice machine; and general sanitation. Destroy any prepared food remaining that the case patient could have handled while infectious.
3. A food employee must report to the person in charge if they have a notifiable condition: https://app.leg.wa.gov/wac/default.aspx?cite=246-215-02205. Working with the facility manager or owner, evaluate all food handlers at the facility for current or recent symptoms or diagnosis of hepatitis A.
4. Administer hepatitis A vaccine or immune globulin (IG) prophylaxis to all susceptible food handlers at that facility if administration can be within two weeks of last exposure (see Section 5D).
5. 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 even if vaccine or IG was administered.
6. Consider a public announcement for post-exposure hepatitis A vaccination or IG prophylaxis for patrons of a food service facility if:
   - During their infectious period the food handler directly handled food served uncooked or food after it was cooked (e.g., added garnish), AND
   - The food handler had diarrhea or poor hygiene practices, AND
   - Post-exposure prophylaxis can be given to patrons within two weeks of last exposure

7. Educate the manager regarding the epidemiology of hepatitis A infection. Emphasize the importance of hand hygiene and avoiding bare hand contact with ready-to-eat foods through glove use in addition to thorough hand washing with soap and water (alcohol-based gels are not effective against hepatitis A).

### C. Foodborne or Waterborne Outbreaks

Call Office of Communicable Disease Epidemiology immediately (206-418-5500 or 877-539-4344) if you suspect a common-source outbreak, such as a commercial food product, restaurant, or water exposure. Standard foodborne or waterborne outbreak investigation protocols apply to identify the initial source of the outbreak. With a point-source outbreak, such as a single meal at an event, most persons initially exposed are likely beyond the 2-week window for post-exposure prophylaxis.

Exclude case patients in sensitive occupations or settings (e.g., food handling, child care, health care) until diarrhea has resolved *and* one week has passed after the onset of jaundice. If the case patient does not have symptoms, exclude for one week from collection date of first specimen testing positive. Obtain an acute serum specimen from the case to save for possible genomic testing.

A major public health effort may be offering post-exposure prophylaxis to non-immune contacts of cases if it can be administered within two weeks of last exposure. Contacts could include household members, close friends, and sexual partners (see Section 5D). All persons receiving vaccine or prophylaxis should be warned that they could still develop hepatitis A and should adhere to hand hygiene and safe food handling.

With an outbreak due to a widely distributed source, such as a commercial product with a long shelf-life (e.g., self-stable or frozen product) there will be ongoing persons exposed to the source as well as contacts of such cases. Each new case should be interviewed and any susceptible contacts offered post-exposure prophylaxis. Investigation may involve Environmental Public Health as well as Washington State Department of Agriculture, US Department of Agriculture, or US Food and Drug Administration.

Consider a public announcement if product may still be available for use, such as a contaminated shelf-stable or frozen product, or if exposed persons may be able to receive post-exposure prophylaxis within two weeks of their last exposure.

### D. Community-wide Outbreaks

A community-wide hepatitis A outbreak can be considered to occur when the number of reported hepatitis A cases in a jurisdiction increases ≥3 standard deviations above that jurisdiction's baseline in a four-week period. Baseline is determined by calculating a state's 5-year monthly average number of cases reported to the National Notifiable Diseases Surveillance System (NNDSS) during non-outbreak years (2011–2015), which for Washington was 2.6 cases per month with a standard deviation of 0.66, so that five cases per month statewide would be in excess. Case occurrence should be determined, in order of decreasing preference, by: symptom onset date, date of collection of first positive specimen, or date of report to public health.

As possible, conduct case and contact tracing. In addition, address vaccination, sanitation, and education for the general public as well as target populations. Improve access to hygiene options for populations at risk (e.g., experiencing homelessness).

Promote routine vaccinations at locations servicing the populations at risk, including free or low cost general or sexually transmitted infection clinics and if available local health jurisdiction clinics. Consider mass vaccination campaigns targeting individuals at risk. Include sites where services are received, such as meal sites for persons experiencing homelessness or syringe services for persons using drugs. When planning a mass vaccination campaign, include plans to enter data into Washington Immunization Information System (IIS). Direct outreach on streets with a pair of staff providing onsite vaccinations have been conducted in some locations for communitywide outbreaks.

For persons experiencing homelessness, access to adequate sanitation may be difficult. Where possible, they should be provided access to handwashing stations with soap and water (alcohol-based gels are not effective against hepatitis A) and portable toilets.

A community-wide hepatitis A outbreak can be considered to have ended with a return to baseline (within 3 standard deviations of the 5-year monthly average) of the number of hepatitis A cases reported in the state lasting for a minimum of three consecutive, four-week periods.

For CDC resources including posters see:
https://www.dhhs.nh.gov/dphs/cdcs/hepatitisa/hepa-nh.htm

Posters in multiple languages are available elsewhere:
https://health.hawaii.gov/docd/disease_listing/hepatitis-a/

WHO has developed a toolkit: https://www.who.int/docs/default-source/outbreak-toolkit/latest-update---11-october/hepatitis-a-outbreak-toolbox---250919.pdf?sfvrsn=2a4711ed_2

San Diego Count after action report:
https://www.sandiegocounty.gov/content/dam/sdc/cosd/SanDiegoHepatitisAOutbreak-2017-18-AfterActionReport.pdf

## E. Management of Hepatitis A in a Person in a Correctional Setting

If acute hepatitis A is diagnosed in a correctional resident, the following actions should be taken:

1. Isolate the resident in a single cell with a separate sink and toilet. Hand cleaning should be done with soap and water, since alcohol-based gels are not effective against hepatitis A virus. Use standard and contact enteric precautions such as using protective equipment if exposure to body fluids is anticipated (e.g., cleaning toilets). After isolation has ended, clean the cell routinely followed by disinfection with a 1:10 bleach solution (1⅔ cups of bleach to 1 gallon of water) OR with an EPA disinfectant effective against norovirus, (List G) available at: https://www.epa.gov/sites/default/files/2018-04/documents/list_g_disinfectant_list_3_15_18.pdf
2. Exclude the case patient from food service duties until diarrhea has resolved *and* one week has passed after the onset of jaundice. If the case patient does not have symptoms, exclude for one week from collection date of first specimen testing positive. Obtain an acute serum specimen from the case to save for possible genomic testing.
3. Determine if the case was a food service worker or if several cases occur that suggest the facility food service is the source. Staff may eat food from the food service. Note that a

correctional facility may prepare food for external locations. As appropriate initiate an outbreak investigation, facility inspection, or alert to external locations receiving food (Sections 6 B and C).

4. Administer hepatitis A vaccine or immune globulin (IG) prophylaxis within two weeks of last exposure to all susceptible close contacts including cell or dormitory mates, sexual contacts, those sharing drugs, or anyone who shares toilet facilities. For persons over 40 years, immunocompromised persons (including infected with HIV), those with chronic liver disease, and persons with chronic liver disease: consider giving IG in addition to a dose of vaccine. See Section 5D.
5. Halt movement out of the facility for identified contacts for 50 days after last case is identified.
6. All symptomatic contacts should be tested for acute hepatitis A infection and followed as suspected cases.
7. Isolate the case and any symptomatic contacts to their own cells (space permitting), the infirmary or other medical unit until considered no longer infectious.
8. Provide education about hand washing and hygiene, and make certain that cases and suspected cases have adequate access to soap and water – alcohol based hand rubs are **not** effective against hepatitis A. Control access to ice machines and microwaves.
9. Monitor for cases in the facility two incubation periods. If a new case is identified, the entire process begins again.
10. During a community-wide outbreak, residents entering the facility who in the affected community within the prior 60 days should be evaluated for symptoms and excluded from food service work for 60 days.

See: https://www.bop.gov/resources/pdfs/hepatitis_a_cpg_112019.pdf and https://nicic.gov/preventing-and-controlling-hepatitis-jails-and-prisons-webinar

**F. Management of Hepatitis A in a Person Under Care in a Healthcare Setting**

1. The facility should place the person in a private room if possible with a private toilet, and restrict from any food handling or sharing food, beverages, cigarettes, etc. until diarrhea has resolved and one week has passed after the onset of jaundice. If the case patient does not have symptoms, exclude for one week from collection date of first specimen testing positive. The facility should:
   - Use Standard precautions **plus** added Contact precautions if there are diapered or incontinent patients
   - Institute strict hand hygiene with soap and water (alcohol-based gels are **not** effective against hepatitis A)
   - Notify appropriate licensing or regulatory agency
2. Based on the exposure range and dates in the facility, if the case could have been exposed in the facility or exposed others in the facility:
   - Inspect or obtain description of the facility
   - Assess risk of fecal transmission (e.g., shared bathrooms; residents share cigarettes or food items)

- Assess access to hand washing before meals
- Determine any food prep by residents (whether or not authorized)

3. Have heightened awareness of hepatitis A during next 4-6 weeks (e.g., consider testing person with symptoms preceding the known case[s])
4. Assess source of exposure for case
   - Usually can't retrospectively identify the likely source for the case
   - Identify others co-exposed with the case and determine if any persons are symptomatic (or possibly still incubating) – include visitors, staff, and other residents including those discharged
5. Assess those exposed to case during communicable period
   - Identify those likely exposed to case – include visitors, all staff, and other residents including those already discharged but present during communicable period
6. Provide facility with prophylaxis recommendations for susceptible persons (see Section 5), and as necessary assist with looking up HAV vaccination for exposed persons in IIS:
   - Post-exposure prophylaxis for susceptible persons within 14 days of last exposure
   - Pre-exposure prophylaxis for susceptible staff if population includes high risk residents and any exposure risk occurs
   - Pre-exposure prophylaxis for incoming residents on the assumption that additional cases could occur in the facility among exposed persons
   - All persons receiving vaccine or prophylaxis should be warned that they could still develop hepatitis A and should adhere to hand hygiene and safe food handling
   - Educate susceptible exposed persons for whom it is too late for prophylaxis that they should adhere to hand hygiene recommendations and not prepare food for others.
   - Use disinfection with a 1:10 bleach solution (1⅔ cups of bleach to 1 gallon of water) OR with an EPA disinfectant effective against norovirus, (List G) available at: https://www.epa.gov/sites/default/files/2018-04/documents/list_g_disinfectant_list_3_15_18.pdf
7. If suspecting healthcare-associated transmission (e.g., resident of long-term care who does not leave the facility) or transmission in another high-risk environment, obtain an acute serum specimen from the case to save for possible genomic testing. For a cluster of healthcare-associated cases, obtain specimens on as many individuals as possible.

## G. Management of Hepatitis A in a Childcare 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 childcare facility. Two hepatitis A cases within an incubation period in attendees or household members of child attendees without alternative explanation indicates an outbreak. For facilities with multiple rooms, determine if there are diapered children in the facility, if staff move between the rooms, and if bathroom areas are shared among the rooms.

1. Interview the operator and inspect the written attendance records to identify other possible cases among staff or attendees during the previous month. Note: WAC 110-300A-3030 specifies that a child care facility operator keep a routine log of illnesses.

2. Review food handling, hand washing techniques, and diaper changing practices with the operator and staff. Personal hygiene (especially handwashing for staff and children) and proper hygiene while changing diapers should be reviewed with child care staff. Remind staff that hand cleaning should be done with soap and water, since alcohol-based gels are not effective against hepatitis A virus.
3. If other cases are suspected, refer those currently ill to a health care provider for assessment including testing.
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. If the case patient does not have symptoms, exclude for one week from collection date of first specimen testing positive. Obtain an acute serum specimen from the case to save for possible genomic testing.
5. If there are no diapered children or if the diapered children are in a room or section strictly separated from other children, then each room or section is considered a child care group. If there are diapered children who are not strictly separated from other children (i.e., staff do not move between rooms, no shared bathrooms or meals, etc.) then the entire facility is considered a child care group.
6. 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. Facility operators are required to notify these parents that their child was exposed to a communicable disease through a letter or posted notification (WAC 110-300A-3030). Hepatitis A is often asymptomatic in young children, but the local health jurisdiction (LHJ) may use this notification to ask parents about consistent symptoms (especially diarrhea) in their children and instruct the child care facility to include in the notification that the parents should:
    - Know about the illness and how transmission can be prevented.
    - Monitor children carefully for signs of hepatitis A infection such as diarrhea.
    - Seek medical care if such symptoms occur and inform the provider of the occurrence of hepatitis A in the facility.
    - Notify the child care facility operator or LHJ should symptoms occur.
    - Not bring symptomatic children to the child care facility nor place them in another group of children.
7. If more than one case is suspected among attendees or workers, inspect the facility. Diaper changing areas should receive particular attention.
8. Provide education about adequate hygiene.
    - Staff should use gloves and wash hands with soap and water after changing any diapers or handling stool-soiled material from any person – alcohol based hand rubs are **not** effective against hepatitis A
    - All children and staff should wash hands with soap and water after each trip to the bathroom and before eating. Staff should observe children washing their hands with soap and water. Alcohol based hand rubs are **not** effective against hepatitis A

- Diaper changing surface areas should be cleaned after each diaper change with an appropriate disinfectant (1:10 dilution of bleach to water or ½ cup of bleach per gallon of water).
- Food handling/feeding duties should be done in a separate area from diaper changing and toilet cleaning responsibilities, and if possible done by different staff members.
- During an outbreak, washable shared fabric items including toys should be washed daily. Hard plastic and similar surfaced items including toys should be disinfected with diluted bleach solution once a day. Hard-to-clean items should be limited in use.

9. Instruct the facility operator to call the LHJ immediately if new cases of diarrhea occur.
10. LHJs should follow up with the facility to ensure that surveillance and appropriate prevention measures are done. Manage newly symptomatic children as outlined above.
11. If an outbreak is suspected, any new attendees or staff should have documented immunity before joining the facility.
12. 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 child 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.
13. Post-exposure prophylaxis for contacts (staff and attendees) in the child care group
    - Administer single antigen hepatitis A vaccine or IG (see Section 7B for dosing) to all susceptible staff and attendees in the child care group when:
        - Acute hepatitis A occurs in $\geq$1 attendee or staff OR
        - Acute hepatitis A occurs in $\geq$2 households of attendees
    - If the center does not provide care to diapered children, post-exposure prophylaxis needs to be recommended only to contacts in the same care group as the case.
    - If acute hepatitis A occurs in $\geq$3 families at any child care facility, post-exposure prophylaxis should also be considered for household members of children in diapers who attend the facility.
14. To identify new infections quickly, the local health jurisdiction should begin surveillance for hepatitis-like illness among households connected to the facility for at least 50 days after onset of the last case.

## H. General Prevention Recommendations

In addition to routine vaccination and any applicable post-exposure prophylaxis for hepatitis A, all persons should always wash hands after using the bathroom or changing a diaper, and 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.

November 2011: Updated Immunization Recommendations under Routine Prevention

February 2012: In Section 3 Case definition updated to no longer has a specified ALT level

February 2014: Controlling Further Spread section combined with Routine Case Investigation section.

April 2016: Front page added

October 2017: Added section 7B for updated prophylaxis with IG

March 2018: Update for WDRS and national outbreaks

December 2018:

Post-exposure prophylaxis use of vaccine expanded to all ages > 12 months
Routine vaccination recommended for persons experiencing homelessness
Double antigen vaccine (A,B) recommended as appropriate.

January 2019:

Case definition includes a) bilirubin level ≥ 3.0 or jaundice, b) ALT ≥ 200, absence of more likely diagnosis, PCR as confirming laboratory test
Post-exposure prophylaxis use of vaccine expanded to all ages > 12 months
Expanded pre-travel recommendations
Routine vaccination recommended for persons experiencing homelessness
Double antigen vaccine (A,B) recommended as appropriate.

June 2019: Single antigen vaccine should be used for pre-exposure or post-exposure prophylaxis during an outbreak

August 2020: Updated case definition language to classify a NAAT positive case as confirmed.

Hand hygiene recommendations for healthcare and childcare settings emphasize that alcohol-based gels are not sufficient.
Hospitalized patients should be cohorted when possible, and post-exposure prophylaxis considered for potentially exposed patients or staff.
Recommendations given for case in healthcare facility (6C).
Vaccination recommendations updated to include:
Catch-up vaccination for adolescents
Risk factors including chronic liver disease, HIV positive, pregnant woman at risk for infection or severe disease, persons at risk during outbreaks, settings serving those at risk, children 6-11 months prior to international travel to risk area but the children should receive two more doses after 12 months of age
Removed receipt of clotting factor as a risk for vaccination

May 2021: Section 6E added with definition of community-wide outbreak

February 2022: End of 2019-2021outbreak summarized Section 2C; outbreak response expanded in Section 6

December 2022: For 2023 WAC revision combined provider and facility reporting requirement (Section 1B2), updated laboratory submission (Section 1B3)

## 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. For text copies of the two alert versions below contact Office of Communicable Disease Epidemiology (206 418-5500 or 877-539-4344).

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

The (*Name of local health jurisdiction*) 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 (*Jurisdiction*)," said (*Person name*), *(person's Title in county*).

"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 (*Person name*). Your health care provider or the (*Jurisdiction*) 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 (*Jurisdiction*), (*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 (*$##)* 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-XXX-XXXX

FOR MORE INFORMATION
Call: (name) XXX-XXX-XXXX

The (*Name of local health jurisdiction*) 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 (*Jurisdiction*) 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 over 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 for *$##* charge from (*Jurisdiction*) clinics. ***IF TRUE:*** (*Name*) Restaurant has agreed to pay for shots received at (*Jurisdiction*) clinics.

Prophylaxis must be received no later than 14 days after exposure to be effective in preventing illness. For example, someone who ate on (*date*) should receive prophylaxis no later than today, (*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 shots are 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 of hepatitis should not work, and should be seen by a health care provider. Persons with questions should contact their personal health care provider or the (*Jurisdiction*) at XXX-XXX-XXXX.