

## HEPATITIS A (Infectious Hepatitis)

### REPORTING INFORMATION

- **Class B:** Report by the end of the next business day after the case or suspected case presents and/or a positive laboratory result to the local public health department where the patient resides. If patient residence is unknown, report to the local public health department in which the reporting health care provider or laboratory is located.
- Reporting Form(s) and/or Mechanism: The Ohio Disease Reporting System (ODRS) should be used to report lab findings to the Ohio Department of Health (ODH). For healthcare providers without access to ODRS, you may use the [Ohio Confidential Reportable Disease form](#) (HEA 3334).
- The [Centers for Disease Control and Prevention \(CDC\) Viral Hepatitis Case Report](#) is available for use to assist in local disease investigation and contact tracing activities. Information collected from the form should be entered into ODRS and not sent to the Ohio Department of Health (ODH), unless otherwise requested.
- Key fields for ODRS reporting include: sensitive occupation (e.g. direct patient care, child care provider, food handler), sensitive setting (e.g. day care or preschool attendee, long term care facility resident), is patient symptomatic, is patient jaundiced, and the fields in the Epidemiology Information module.

### AGENT

Hepatitis A virus (HAV) is classified in the Picornaviridae family and is the only member of the *Hepatovirus* genus. HAV is a single-stranded RNA virus, 27-28 nm in diameter.

### CASE DEFINITION

#### Clinical Case Definition

An acute illness with

- Discrete onset of symptoms *and*
- Jaundice **or** elevated serum aminotransferase levels (ALT or AST) >200 IU/L.

#### Laboratory Criteria for Diagnosis

Immunoglobulin M (IgM) anti-HAV positive.

#### Case Classification

##### Suspected\*:

- A case that does not fully meet the clinical case definition but is laboratory confirmed *or*
- A case that meets neither the clinical nor the laboratory components of the case definition.

##### Confirmed:

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

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed it was not a case.

\* This case classification can be used for initial reporting purposes to ODH as CDC has not developed a case definition.

**SIGNS AND SYMPTOMS**

Hepatitis A characteristically has an abrupt onset. Symptoms can include fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal discomfort, dark urine, clay-colored stools and jaundice. Many infections are mild and without jaundice. Infected children, particularly infants and toddlers, are frequently asymptomatic. Illness can last one to two weeks or, rarely, several months. The fatality rate is less than 0.1%.

**DIAGNOSIS**

Hepatitis A virus (HAV) infection is diagnosed by detection of immunoglobulin of classes M and G (IgM and IgG) directed against HAV in serum, not in the stool. Circulating IgM anti-HAV is present at the acute or early convalescent stage of infection up to several months after infection. IgM anti-HAV becomes detectable 5-10 days before the onset of symptoms and can persist for up to six months. IgG Anti-HAV, sometimes referred to as “convalescent,” appears shortly after IgM in the course of infection, remains detectable for the person’s lifetime and confers lifelong protection against the disease. Total anti-HAV (IgG and IgM) detection is useful in determining the immune status of a patient. A positive total anti-HAV result in patient serum or plasma alone cannot differentiate acute from remote hepatitis A or from prior vaccination. The test can be used to assess immune status in naturally infected, vaccinated individuals and for epidemiologic studies.

However, in diagnosing acute hepatitis A infection, the laboratory must be instructed to test for IgM anti-HAV, or else the laboratory may only test for total anti-HAV, which is not useful in the diagnosis of acute infection.

Many laboratories will report both IgM anti-HAV and total anti-HAV test results in one report. The following table will assist in laboratory report interpretation:

<b>Laboratory Findings</b>		<b>Interpretation</b>
<b>Total anti-HAV</b>	<b>IgM anti-HAV</b>	
Positive	Positive	Current or recent hepatitis A infection.
Positive	Not done	Either a previous or current hepatitis A infection; cannot differentiate acute from remote hepatitis A or from prior vaccination.
Positive	Negative	Previous hepatitis A infection or prior vaccination. No current or recent infection with HAV.
Negative	Negative	No previous or current hepatitis A infection; susceptible to infection.

The expense of testing for IgM anti-HAV might be avoided in some situations. For example, household contacts of a serologically-confirmed case who have symptoms clinically compatible with viral hepatitis may be presumed to have hepatitis A and testing might not be necessary.

Additionally, false positive IgM anti-HAV test results do occur. Elderly persons over 70 years in age are known to have more false positive serologic tests in general, and

may test positive for IgM anti-HAV without a recent infection with hepatitis A virus. In the process of aging, the immune system develops responses to many non-specific antigens that can cross-react in serologic testing. Older patients are more likely to develop monoclonal proteins that may also interfere with serologic tests. Also, people who have been previously transfused or pregnant may have developed antibodies to human leukocyte antigen (HLA) that can interfere with some serologic tests.

## **EPIDEMIOLOGY**

### **Source**

The source for transmission of HAV is the stool of infected persons.

### **Occurrence**

Hepatitis A rates vary cyclically, with nationwide increases every 10–15 years. The last peak was in 1995; since that time, rates of hepatitis A generally declined until 2011. In 2014, a total of 1,239 cases of hepatitis A were reported from 50 states to CDC, a 30.4% decrease from 2013.

Historically, incidence of hepatitis A has varied by race/ethnicity with the highest rates among American Indians/Alaska Natives, and Hispanics. Rates among Hispanics continue to remain higher than among non-Hispanics.

Hepatitis A outbreaks can be associated with child care centers, babysitting settings and households with young children.

### **Mode of Transmission**

Infection is acquired by ingestion of the virus; the mode of transmission is via the fecal-oral route. HAV is spread primarily by close person-to-person contact or through contaminated food. Transmission of HAV among children is facilitated by the high incidence of unapparent illness in infants and toddlers, the fecal-oral mode of spread and the close personal contact and poor hygiene skills exhibited by children. Household members, babysitters and child care staff can be exposed to HAV during diapering or toileting activities. Children play a critical role in sustaining hepatitis A virus transmission in community-wide epidemics due to their asymptomatic or unrecognized infections. Common source outbreaks from contaminated water supplies are extremely rare in Ohio.

### **Period of Communicability**

Infected persons shed virus in their stool from approximately two weeks prior to onset of symptoms through the tenth day after onset. A chronic carrier state has not been demonstrated, and hepatitis A does not cause chronic liver disease. 10 to 15 percent of patients experience a relapse of symptoms during the first 6 months after acute illness.

### **Incubation Period**

The incubation period ranges from 15-50 days, with an average of 28-30 days.

## **PUBLIC HEALTH MANAGEMENT**

### **Case**

#### Investigation

All cases reported to the local health department should initially be followed up with a telephone call to obtain demographic, food history and epidemiologic data. If neither the case nor any household member works in a sensitive occupation

(food handler, health care worker child care center worker or attendee), no further work-up is recommended beyond completion of the Viral Hepatitis Case Report and contact prophylaxis, unless the case is part of an outbreak.

All positive IgM anti-HAV test results should be investigated to determine if the case meets the clinical case definition. If an investigation concludes that there were no symptoms of acute hepatitis, determine if the case was recently vaccinated. Up to 20% of people recently vaccinated for hepatitis A may demonstrate positive IgM anti-HAV when measured 2 weeks after hepatitis A immunization.

### Treatment

There is no specific treatment for hepatitis A infection. The patient's sense of well-being is the best guide for the amount of bed rest required; a simple guide is avoidance of fatigue. A normal diet should be prescribed and some patients prefer frequent small, light meals. A low-fat diet is unnecessary. Corticosteroids are of no benefit in the treatment of hepatitis A and should be avoided.

### Isolation

Ohio Administrative Code (OAC) 3701-3-13 (L) states: "Hepatitis A: a person with hepatitis A who attends a child care center or works in a sensitive occupation shall be excluded from the child care center or work in the sensitive occupation until ten days after initial onset of symptoms."

In the hospital setting, enteric precautions should be used until 10 days after the onset of symptoms.

### **Contacts: Post-exposure Prophylaxis with IG or Hepatitis A Vaccine**

Contacts who recently have been exposed to hepatitis A virus and who previously have not received hepatitis A vaccine should be administered a single dose of single-antigen vaccine or immune globulin (IG) (0.02 mL/kg) as soon as possible, **within 2 weeks after exposure**. Information about the relative efficacy of vaccine compared with IG post-exposure is limited, and no data are available for persons aged >40 years or those with underlying medical conditions. Therefore, decisions to use vaccine or IG should take into account patient characteristics associated with more severe manifestations of hepatitis A, including older age and chronic liver disease.

### Healthy persons aged 12 months – 40 years

Single-antigen hepatitis A vaccine at the age-appropriate dose is preferred to IG because of vaccine advantages that include long-term protection and ease of administration. For persons aged >40 years, IG is preferred because of the absence of information regarding vaccine performance and the more severe manifestations of hepatitis A in this age group; vaccine can be used if IG cannot be obtained. The magnitude of the risk for HAV transmission from the exposure should be considered in decisions to use IG or vaccine. IG should be used for children aged <12 months, immunocompromised persons, persons who have had chronic liver disease diagnosed, and persons for whom vaccine is contraindicated.

### Persons administered IG for whom hepatitis A vaccine also is recommended for other reasons

Persons administered IG for whom hepatitis A vaccine is also recommended for other reasons should receive a dose of vaccine simultaneously with IG. For

persons who receive vaccine, the second dose should be administered according to the licensed schedule to complete the series. The efficacy of IG or vaccine when administered >2 weeks after exposure has not been established.

#### Close personal contact

Hepatitis A vaccine or IG should be administered to all previously unvaccinated household and sexual contacts of persons with serologically confirmed hepatitis A. In addition, persons who have shared illicit drugs with a person who has serologically confirmed hepatitis A should receive hepatitis A vaccine, or IG and hepatitis A vaccine simultaneously. Consideration also should be given to providing IG or hepatitis A vaccine to persons with other types of ongoing, close personal contact (e.g. regular babysitting) with a person with hepatitis A.

#### Child care centers

Hepatitis A vaccine or IG should be administered to all previously unvaccinated staff members and attendees of child care centers or homes if 1) one or more cases of hepatitis A are recognized in children or employees or 2) cases are recognized in two or more households of center attendees. In centers that do not provide care to children who wear diapers, hepatitis A vaccine or IG need be administered only to classroom contacts of the index patient. When an outbreak occurs (i.e. hepatitis A cases in three or more families), hepatitis A vaccine or IG also should be considered for members of households that have children (center attendees) in diapers.

#### Common-source exposure

If a food handler receives a diagnosis of hepatitis A, vaccine or IG should be administered to other food handlers at the same establishment. Because common-source transmission to patrons is unlikely, hepatitis A vaccine or IG administration to patrons typically is not indicated but may be considered if 1) during the time when the food handler was likely to be infectious, the food handler both directly handled uncooked or cooked foods and had diarrhea or poor hygienic practices and 2) patrons can be identified and treated <2 weeks after the exposure. In settings in which repeated exposures to HAV might have occurred (e.g. institutional cafeterias), stronger consideration of hepatitis A vaccine or IG use could be warranted. In the event of a common-source outbreak, post-exposure prophylaxis should not be provided to exposed persons after cases have begun to occur because the 2-week period after exposure during which IG or hepatitis A vaccine is known to be effective will have been exceeded.

#### Schools, hospitals, and work settings

Hepatitis A post-exposure prophylaxis is not routinely indicated when a single case occurs in an elementary or secondary school or an office or other work setting, and the source of infection is outside the school or work setting. Similarly, when a person who has hepatitis A is admitted to a hospital, staff members should not routinely be administered hepatitis A post-exposure prophylaxis; instead, careful hygienic practices should be emphasized. Hepatitis A vaccine or IG should be administered to persons who have close contact with index patients if an epidemiologic investigation indicates HAV transmission has occurred among students in a school or among patients or between patients and staff members in a hospital.

#### Immune Globulin for Post-Exposure Prophylaxis

Use of immune globulin (IG) should be reserved for those persons actually at risk

of acquiring hepatitis A from contact with the stool of an infected person. Often a non-exposed individual's request for prophylaxis is based on a misconception of the method of spread of HAV. In these instances, an explanation of the mode of transmission of hepatitis A should be provided instead of IG. It should not be administered to reduce unfounded anxiety.

Immune globulins used in medical practice are sterile solutions of antibodies from human plasma. Immune globulin contains antibodies against the hepatitis A virus, among others. No adverse effects in pregnant women or the fetus have been documented after IG administration, and IG prophylaxis is not contraindicated in pregnancy. There is no evidence to suggest any risk of transmission of hepatitis B virus (HBV) or the Human Immunodeficiency Virus (HIV) through immune globulin.

Immune globulin is given by intramuscular injection in a dosage of 0.02 ml/kg of body weight. There is no maximum dosage. There is no need to test for immunity before giving IG. Immune globulin is not a vaccine and provides only temporary protection which lasts for approximately three months.

Parents of children who receive IG should be informed that the use of live virus vaccines, such as MMR, should be deferred for three months after IG administration because the antibodies in IG render these vaccines ineffective. If a live virus vaccine was given within two weeks prior to IG administration, the vaccination should be repeated in three months.

Immune globulin for intramuscular injection (IGIM) can be obtained directly from the following distributors:

- FFF Enterprises 800-843-7477
- Alternative Site Distributors (ASD) 800-837-5403
- BioCare Division, Blood Systems, Inc., 800-304-3064,
- Health Coalition 800-456-7283
- Chapin Medical 800-221-7180
- National Hospital Specialties (NHS) 800-344-6087
- Nationwide Medical 800-997-8846

Product Name <sup>2</sup>	Manufacturer <sup>3</sup>
GamaSTAN® S/D Immune Globulin (Human)	Grifols

1. GamaSTAN® is the only available hepatitis A immune globulin product in the United States, as of June 5, 2013.
2. GamaSTAN® prescribing information and distributor list can be found at [http://www.grifolsusa.com/portal/en/US/products/ctnt/s9\\_1/ / /7gs4/348340.html#p15341](http://www.grifolsusa.com/portal/en/US/products/ctnt/s9_1/ / /7gs4/348340.html#p15341) and <http://www.grifolsusa.com/portal/en/US/bioscience?div=8883>
3. Grifols' Medical Information Department can be reached at 1-800-520-2807

Some local health departments might stock IGIM. The ODH Outbreak Response and Bioterrorism Investigation Team 614-995-5599 (ORBIT) can also assist in locating supplies of IMIG.

## **Prevention and Control**

Hepatitis A vaccine, inactivated, is now available and licensed in the United States for use in persons 12 months of age and older. The hepatitis A vaccine has been demonstrated to be safe, immunogenic and efficacious. Protection against clinical hepatitis A begins in some persons as soon as 14-21 days after a single dose of vaccine; nearly all immunized persons have protective antibody by 30 days after the initial dose of vaccine.

Based on the successful implementation of childhood hepatitis A vaccination programs in high incidence areas, the Advisory Committee on Immunization Practices (ACIP) recommended in 2005 that all children should receive hepatitis A vaccine at 12-23 months of age. Vaccination should be integrated into the routine childhood vaccination schedule.

The vaccine is recommended for the following groups who are at increased risk of infection:

- All children over one year of age.
- Travelers to regions with intermediate or high rates of hepatitis A.
- Men who have sex with men.
- Illegal drug users (both injecting and non-injecting illegal drugs).
- Persons who have occupational risk for infection (i.e. work with HAV-infected primates or with HAV in a research laboratory).
- Persons who have clotting-factor disorders (i.e. who receive clotting factor concentrates).
- Persons with chronic liver disease, including HBV- and HCV-infected persons with chronic liver disease.
- Anyone else seeking long-term protection.
- Household members and other close contacts of adopted children newly arriving from countries with high or intermediate hepatitis endemicity.

Groups for whom hepatitis A vaccine is not routinely recommended are as follows:

- Food service workers.
- Sewage workers.
- Healthcare workers.
- Children under 12 months of age.
- Child care center attendees.
- Residents of institutions for developmentally disabled persons.

Further information can be found in "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>. Specific vaccine information can also be found in the ODH Vaccine Protocol Manual.

## **SPECIAL INFORMATION**

### **Isolates**

Molecular virology methods such as polymerase chain reaction (PCR)-based assays can be used to amplify and sequence viral genomes. These assays are helpful to investigate common-source outbreaks of hepatitis A. Local health departments who have identified a hepatitis A cluster or outbreak are requested to secure any leftover serum samples for possible molecular virology methods at

the CDC Division of Viral Hepatitis.

### **Managing/Controlling an Outbreak**

#### The Role of the Local Health Department in Outbreak Investigation

The main objectives in managing hepatitis A are timely identification of contacts and prompt initiation of prophylaxis. When surveillance indicates an increase above the "usual" number of cases, rapid initiation of control measures by the local health department can make the difference between a short-lived outbreak and an expensive, protracted epidemic.

It must be recognized that person-to-person contact is the way that hepatitis A remains viable in the community. Although, historically, much of the published information concerning the epidemiology of hepatitis A has mentioned water as a potential source of infection, municipal water supplies are actually rarely contaminated with fecal material due to modern treatment techniques. There is no procedure available to detect the hepatitis A virus in water, and investigation into these areas often wastes time that is better spent on more productive control measures. When investigation suggests a "common source" of infection, it is much more likely that transmission is of a foodborne nature.

#### Contact Prophylaxis

The local health department should make arrangements to provide immune globulin (IG) prophylaxis to case contacts either for no charge or at a nominal fee. The agency should not require a prescription from the contact's physician for IG or hepatitis A vaccine administration. To facilitate rapid prophylaxis, the health department's medical director should assume the responsibility of signing standing orders for immune globulin or hepatitis A vaccine. See guidelines above for contacts.

#### Food Handlers Diagnosed with Hepatitis A – The Decision to Prophylax Patrons

If a food handler is diagnosed as having hepatitis A, common source, foodborne transmission is possible. IG should be administered to other restaurant employees and may be considered for patrons if the food handler has a positive anti-HAV IgM and:

- The food handler prepared, without gloves, cold foods that were not cooked before consumption,
- The food handler has a history of inadequate personal hygiene, especially failure to wash hands after defecation,
- The patrons have had repeated exposures to these foods,
- IG can be administered within two weeks of the last possible exposure and
- The patrons can be easily notified.

#### Reporting

Prompt reporting of known and suspect cases, with associated timely prophylaxis, can significantly reduce the extent of morbidity from hepatitis A. During an outbreak, alerting area physicians, hospitals, outpatient clinics, etc., to the increased incidence of disease in the community can facilitate reporting. A letter or telephone call to these medical facilities can enhance control efforts.

Information on where to report cases and educational materials on hepatitis A epidemiology should be shared. Reporting can also be expedited through direct reporting from hospital and private laboratories. Ohio law states that laboratories must report known and suspect cases of reportable diseases to local health districts. Communication with local laboratories facilitates investigation of



"new" cases and results in timely, effective contact management.

#### Education of Physicians

Local health department personnel need to have a complete understanding of the epidemiology of hepatitis A and be thoroughly familiar with the recommended control measures, including vaccine and immune globulin recommendations. Not all community physicians will be well-informed regarding current vaccine recommendations, diagnostic tests and public health management of hepatitis A. Inappropriate recommendations regarding patient isolation, contact prophylaxis and work and/or school restrictions often occur due to a lack of information. A knowledgeable public health official can do much to reduce excessive morbidity in the community by sharing information with community medical practitioners. Local physicians should be advised of appropriate diagnostic procedures and contact management, and reminded that hepatitis A is a class B reportable disease under Ohio law. (See "Sample Letter to Community Healthcare Providers", example 1 below.)

#### Education of the Public

Educational pamphlets may be formulated for distribution to schools, child care centers, doctors' offices, etc., regarding hepatitis A disease and vaccine. A simply worded pamphlet could also contain information on whom to contact for more information and where to call to report suspect cases.

## SAMPLE LETTER TO COMMUNITY HEALTHCARE PROVIDERS

Dear Doctor:

Over the past (weeks, months,) \_\_\_\_\_ (City/County) has experienced a substantial increase in the number of reported cases of hepatitis A. The \_\_\_\_\_ (City/County) Health Department is concerned about the potential for a widespread outbreak unless control measures are undertaken immediately. The cooperation of the entire medical community is essential.

The key factors in controlling the spread of hepatitis A virus (HAV) are rapid diagnosis of cases and timely identification and prophylaxis of contacts.

Hepatitis A is confirmed serologically by detection of acute-phase (IgM) antibody against hepatitis A antigen (anti-HAV IgM). IgM antibody appears in the serum of infected persons in high titers for a short time and is followed by the appearance in serum of antibody of the IgG class. Anti-HAV IgG persists for life, conferring immunity to reinfection.

The total antibodies test (anti-HAV) does not differentiate between IgM and IgG antibodies. A positive result does not distinguish a current infection from a past illness. In order to confirm the diagnosis of acute hepatitis A, the anti-HAV IgM must be positive. Some laboratories refer to IgG antibody as "convalescent" antibody, a term which may be confusing. While IgG antibody can become detectable in serum while IgM antibody is still present, the presence of IgG antibody in the absence of IgM antibody does not mean the patient is convalescing or "recovering" from a recent hepatitis A infection. Rather, the presence of IgG antibody alone indicates the patient had hepatitis A months or years in the past or has been vaccinated. This is especially relevant in the patient over age fifty, as many older adults have pre-existing antibodies to hepatitis A. During an outbreak, a clinically compatible illness after contact with a confirmed case may suffice for diagnosis. There is no carrier state associated with hepatitis A.

Contacts who recently have been exposed to HAV and who previously have not received hepatitis A vaccine should receive post-exposure prophylaxis with a single dose of single-antigen hepatitis A vaccine or immune globulin (IG) (0.02 mL/kg) as soon as possible.

Hepatitis A is spread only through fecal-oral transmission and requires close personal contact. Occasional transmission occurs through contaminated food.

Candidates for prophylaxis are basically household contacts and classmates and teachers in child care settings. The \_\_\_\_\_ (City/County) Health Department may expand the usual recommendations and prophylax more remote contacts following individual case investigations. Immune globulin is not indicated for cases; it is prophylaxis, not treatment.

Due to the time involved, the cost of antibody tests and the relative safety of IG, serologic screening for anti-HAV in contacts is NOT recommended. Hepatitis A is a Class B reportable disease under Ohio law. Both confirmed and suspect cases must be reported to the local health department by the end of the next business day after identification of a case.

Please do not wait for confirmation from an IgM test before reporting a suspect case. The health department can save a great deal of valuable time by conducting a preliminary investigation while laboratory results are pending.

Your cooperation in this matter is greatly appreciated.

Sincerely,

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SAMPLE LETTER TO PARENTS OF CHILDREN IN CHILD CARE CENTERS

Dear Parents:

A case of hepatitis A has occurred in our child care center. Hepatitis A is an infection of the liver. It is caused by a virus. This virus is present in the bowel movement of infected persons. Persons get infected only by swallowing the virus. Spread occurs easily among groups of small children because of their close contact and poor personal hygiene skills. Hepatitis A usually begins about two to six weeks after the virus is swallowed. Some persons, usually small children, can be infected and not appear to be sick; however, they can still spread the virus. Older children and adults will often have symptoms such as fever, tiredness, loss of appetite, upset stomach, pain in the right side and yellowing of the skin and whites of the eyes. Symptoms can last up to several weeks. If symptoms do occur, your doctor and the child care center should be notified.

Persons who have been in very close contact with someone who has hepatitis A can be given an injection (shot) of hepatitis A vaccine or immune globulin (IG) which, if given within two weeks after contact, might prevent the disease. People who need the shot include persons who live in the same house with the infected person and classmates and teachers in child care centers. Hepatitis A is usually not spread among persons at school or at work or in other places where there is very little close contact. Transmission can be prevented by administering hepatitis A vaccine or IG. An additional way to prevent the spread of hepatitis A is for everyone to wash his/her hands with soap and running water, especially after using the bathroom or changing a diaper and before preparing food.

We have made arrangements with the \_\_\_\_\_ (City/County) Health Department) to have the immune globulin shot given here at (name of CCC) on \_\_\_\_\_(date). Children who receive IG should not receive MMR (measles, mumps, rubella) vaccine for at least three months. If your child received the MMR shot less than two weeks before getting IG, the MMR must be re-administered in three months.

The center will stay open for business. After getting the hepatitis A vaccine or immune globulin shots, the risk of getting hepatitis A drops. In fact, there could be less risk involved in keeping children in a center where children have had hepatitis A vaccine or IG than in transferring them to a center where children have not had hepatitis A vaccine or IG.

**Please Sign and Return this Form as Soon as Possible**

I hereby give permission for my child \_\_\_\_\_ to receive immune globulin from the \_\_\_\_\_ (City/County) Health Department. I understand that hepatitis A vaccine and immune globulin are 80%-90% effective in preventing or modifying the disease hepatitis A. I understand that local reaction (redness, soreness) at the injection site might occur.

\_\_\_\_\_  
Signature of Parent/Guardian

\_\_\_\_\_  
Date

Sincerely,

\_\_\_\_\_

SAMPLE LETTER TO PARENTS OF CHILDREN IN SCHOOLS

Dear Parents:

Recently a (teacher/student) in our school has been diagnosed with hepatitis A. This case has been reported to the \_\_\_\_\_ (City/County) Health Department. The Health Department has evaluated the situation and supplied the following information and recommendations.

Hepatitis A is caused by a virus that is passed in the stool (bowel movement) of infected persons. Once infected, a person is capable of passing the virus from approximately two weeks before s/he becomes ill through ten days after onset. Transmission requires close personal contact and the infection is most commonly spread among household members. The virus can also be transmitted through food prepared by an infected person who fails to wash his/her hands after using the bathroom.

Because students and staff do not have direct contact with each other's stool, transmission of hepatitis A in the school setting is extremely unlikely.

Occasionally, concern is expressed over the possibility of transmission of the virus in a restroom used by an infected person. Please remember that infection results from swallowing the virus, and oral contact with stool in a restroom does not commonly occur.

It is recommended that individuals who have close personal contact with an infected person, such as household members, receive an injection of hepatitis A vaccine or immune globulin (gamma globulin) which might prevent hepatitis A. The local health department can best determine who needs preventive hepatitis A vaccine or immune globulin.

Possible symptoms of hepatitis A include fatigue, loss of appetite, diarrhea, dark urine, light-colored stools and yellowing of the skin and whites of the eyes. Many people infected with the virus do not develop all of the above symptoms, especially preschool children who can have few or no symptoms at all. If your child or any member of your family should develop symptoms of hepatitis A, contact your family physician.

The \_\_\_\_\_(City/County) Health Department will answer any questions you may have concerning hepatitis A. The phone number is \_\_\_\_\_.

Sincerely,

\_\_\_\_\_

**What is hepatitis A?**

Hepatitis A is a contagious liver disease caused by hepatitis A virus (HAV).

**What are the signs and symptoms of hepatitis A?**

Persons with hepatitis A virus infection might not have any signs or symptoms of the disease. Older persons are more likely to have symptoms than children. If symptoms are present, they usually occur abruptly and can include fever, tiredness, loss of appetite, nausea, vomiting, abdominal discomfort, dark urine, clay-colored bowel movements, joint pain and jaundice (yellowing of the skin and eyes). Symptoms usually last less than 2 months; a few persons are ill for as long as 6 months. Symptoms of hepatitis A usually occur 2-6 weeks after exposure to the virus.

**How soon do symptoms occur?**

Symptoms usually occur 15-50 days after exposure.

**Can persons become re-infected with HAV after recovering from hepatitis A?**

No. IgG antibodies to HAV, which appear early in the course of infection, provide lifelong protection against the disease.

**How is hepatitis A diagnosed?**

A blood test (IgM anti-HAV) is needed to diagnose hepatitis A. Talk to your doctor or someone from your local health department if you suspect that you have been exposed to hepatitis A or any type of viral hepatitis.

**How is hepatitis A virus transmitted?**

Hepatitis A is usually spread when a person ingests fecal matter — even in microscopic amounts — from contact with objects, food, or drinks contaminated by the feces, or stool, of an infected person.

**I think I have been exposed to hepatitis A. What should I do?**

If you have any questions about potential exposure to hepatitis A, call your health care provider or your local or state health department.

If you were recently exposed to hepatitis A virus and have not been vaccinated against hepatitis A, you might benefit from an injection of either immune globulin or hepatitis A vaccine. However, the vaccine or immune globulin must be given within the first 2 weeks after exposure to be effective. A health professional can decide what is best on the basis of your age and overall health.

**What should I do if I ate at a restaurant that had an outbreak of hepatitis A?**

Talk to your healthcare provider or a local health department official for guidance. Outbreaks usually result from one of two sources of contamination: an infected food handler or an infected food source. Your health department will investigate the cause of the outbreak.

Keep in mind that most people do not get sick when someone at a restaurant has hepatitis A. However, if an infected food handler is infectious and has poor hygiene, the risk goes up for patrons of that restaurant. In such cases, health officials might try to identify patrons and provide hepatitis A vaccine or immune globulin if they can

find them within 2 weeks of exposure.

On rare occasions, the source of the infection can be traced to contaminated food. Foods can become contaminated at any point along the process: growing, harvesting, processing, handling, and even after cooking. In these cases, health officials will try to determine the source of the contamination and the best ways to minimize health threats to the public.

### **What products are available to prevent hepatitis A virus infection?**

Two products are used to prevent hepatitis A virus infection: immune globulin and hepatitis A vaccine.

- Immune globulin is a substance made from human blood plasma that contains antibodies that protect against infection. It is given as a shot and provides short-term protection (approximately 3 months) against hepatitis A. Immune globulin can be given either before exposure to the hepatitis A virus (such as before travel to a country where hepatitis A is common) or to prevent infection after exposure to the hepatitis A virus. Immune globulin must be given within 2 weeks after exposure for the best protection.
- Hepatitis A vaccine has been licensed in the United States for use in persons 12 months of age and older. The hepatitis A vaccine is a shot of inactive hepatitis A virus that stimulates the body's natural immune system. After the vaccine is given, the body makes antibodies that protect a person against the virus. An antibody is a substance found in the blood that is produced in response to a virus invading the body. These antibodies are then stored in the body and will fight off the infection if a person is exposed to the virus in the future.

### **Who should get vaccinated against hepatitis A?**

Hepatitis A vaccination is recommended for:

- All children at age 1 year,
- Travelers to countries that have high rates of hepatitis A,
- Men who have sexual contact with other men,
- Users of injection and non-injection illegal drugs,
- People with chronic (lifelong) liver diseases, such as infection with hepatitis B or hepatitis C,
- People who are treated with clotting-factor concentrates,
- People who work with hepatitis A infected animals or in a hepatitis A research laboratory.

### **How is the hepatitis A vaccine given?**

The hepatitis A vaccine is given as 2 shots, 6 months apart. The hepatitis A vaccine also comes in a combination form, containing both hepatitis A and B vaccine, that can be given to persons 18 years of age and older. This form is given as 3 shots, over a period of 6 months.

### **Is the hepatitis A vaccine effective?**

Yes, the hepatitis A vaccine is highly effective in preventing hepatitis A virus infection. Protection begins approximately 2 to 4 weeks after the first injection. A second injection results in long-term protection.

### **Is the hepatitis A vaccine safe?**

Yes, the hepatitis A vaccine is safe. No serious side effects have resulted from the hepatitis A vaccine. Soreness at the injection site is the most common side effect

reported. As with any medicine, there are very small risks that a serious problem could occur after someone gets the vaccine. However, the potential risks associated with hepatitis A are much greater than the potential risks associated with the hepatitis A vaccine. Before the hepatitis A vaccine became available in the United States, more than 250,000 people were infected with hepatitis A virus each year. Since the licensure of the first Hepatitis A vaccine in 1995, millions of doses of hepatitis A vaccine have been given in the United States and worldwide.

**Who should not receive the hepatitis A vaccine?**

People who have ever had a serious allergic reaction to the hepatitis A vaccine or who are known to be allergic to any part of the hepatitis A vaccine should not receive the vaccine. Tell your doctor if you have any severe allergies. Also, the vaccine is not licensed for use in infants under age 1 year.

**Why is the hepatitis A vaccine recommended before traveling?**

Traveling to places where Hepatitis A virus is common puts a person at high risk for hepatitis A. The risk exists even for travelers to urban areas, those who stay in luxury hotels, and those who report that they have good hygiene and are careful about what they eat and drink. Travelers can minimize their risk by avoiding potentially contaminated water or food, such as drinking beverages (with or without ice) of unknown purity, eating uncooked shellfish, and eating uncooked fruits or vegetables that are not peeled or prepared by the traveler personally. Risk for infection increases with duration of travel and is highest for those who live in or visit rural areas, trek in back-country areas, or frequently eat or drink in settings with poor sanitation. Since a simple, safe vaccine exists, experts recommend that travelers to certain countries be vaccinated.

**How soon before travel should the hepatitis A vaccine be given?**

The first dose of hepatitis A vaccine should be given as soon as travel is planned. Two weeks or more before departure is ideal, but any time before travel will provide some protection.

**I'm leaving for my trip in a few days. Can I still get the hepatitis A vaccine?**

Experts now say that the first dose of hepatitis A vaccine can be given at any time before departure. This will provide some protection for most healthy persons.

**Will the hepatitis A vaccine protect someone from other forms of hepatitis?**

Hepatitis A vaccine will only protect someone from hepatitis A. A separate vaccine is available for hepatitis B. There is also a combination vaccine that protects a person from hepatitis A and hepatitis B. No vaccine is available for hepatitis C at this time.

**Can hepatitis A vaccine be given to immunocompromised persons, such as hemodialysis patients or persons with AIDS?**

Yes. Because hepatitis A vaccine is inactivated (not "live"), it can be given to people with compromised immune systems.

**Is it harmful to have an extra dose of hepatitis A vaccine or to repeat the entire hepatitis A vaccine series?**

No, getting extra doses of hepatitis A vaccine is not harmful.

**What should be done if the last dose of hepatitis A vaccine is delayed?**

The second or last dose should be given by a health professional as soon as possible. The first dose does not need to be given again.



**Where can I get the hepatitis A vaccine?**

Speak with your health professional or call your local public health department; they may offer free or low-cost vaccines for adults. For children, check out <http://www.cdc.gov/vaccines/programs/vfc/parents/qa-detailed.html>