

# Hepatitis G

## PROTOCOL CHECKLIST

- Enter available information into Merlin upon receipt of initial report
- Review background on disease, case definition, and laboratory testing
- Contact provider
- Interview patient
  - Review disease facts
    - Modes of transmission (see page 3)
    - Incubation period
    - Symptoms
    - Risk of co-infection with hepatitis B and C
      - Provide information on obtaining hepatitis B vaccine
  - Ask about exposure to relevant risk factors
    - Blood to blood contact
    - Occupational exposure
    - Drug use
    - Tattoos/body piercings
    - Sexual contact
    - HIV/AIDS co-infection
    - Co-infection with hepatitis B or C
    - History of hemodialysis or blood transfusions
  - Identify contacts
    - Refer symptomatic contacts to a health care provider
    - Refer close contacts for testing and vaccination
  - Determine if patient can be epi-linked to an existing patient meeting case definition and if patient is part of an outbreak
  - Provide information on how to prevent further transmission (see page 3)
  - Address patient's questions or concerns
- Follow-up on special situations, including outbreaks or patients in sensitive situations
- Enter additional data obtained from interview into Merlin

## Hepatitis G

### 1. DISEASE REPORTING

#### A. Purpose of reporting and surveillance

1. To identify those persons who are carriers and may still be infectious to educate and prevent further transmission.
2. To identify carriers so that they may seek treatment to prevent long term complications due to hepatitis G infection or co-infection with hepatitis G and hepatitis C or B.
3. To identify outbreaks and other undiagnosed cases.
4. To determine if there is a source of infection of public health concern and to stop transmission from such a source.

#### B. Legal reporting requirements

Laboratories and physicians are required to report hepatitis G to the county health department (CHD) within one working day of identification/diagnosis.

#### C. County health department investigation responsibilities

1. Begin investigation within one business day of receiving report from a provider or laboratory.
2. Contact patient and/or provider to complete case interview.
3. Report all confirmed and probable cases in Merlin.
4. Report liver enzyme results for all cases where these are available.

### 2. THE DISEASE AND ITS EPIDEMIOLOGY

#### A. Etiologic agent

Two novel blood-borne viruses were discovered independently in the 1990s. The hepatitis GB virus C (HGBV-C) and the hepatitis G virus (HGV) are both positive, single-stranded RNA viruses containing approximately 9,400 nucleotides. They have a genomic organization similar to those of the Flaviviridae family, and are thus distantly related to the hepatitis C virus (HCV). The two viruses share 86 percent of their nucleotides and 96 percent of their deduced amino acid sequences. They are different isolates of the same virus and are together referred to as HGV.

#### B. Description of illness

Hepatitis G infections can cause mild clinical disease with symptoms associated with acute viral hepatitis, but most HGV infections are asymptomatic. Hepatitis G virus is detected more

often among patients who are infected with the hepatitis B virus (HBV) or HCV. When it accompanies chronic hepatitis C, HGV infection does not affect the severity of liver disease. Hepatitis G infections may persist indefinitely in immunocompromised persons, but frequently resolves in immunocompetent persons.

### **C. Reservoirs**

Experimental studies have shown that HGV can be transmitted by infected serum to various nonhuman primates, including chimpanzees and macaque monkeys.

### **D. Modes of transmission**

Hepatitis G is a blood-borne pathogen. The HGV virus can be spread by:

- Sexual contact
- Contact with blood
- Contact with contaminated needles, especially injection drug equipment; other items such as tattoo and body piercing instruments, razors, and toothbrushes may be contaminated with infected blood
- An infected mother to her infant during delivery
- Occupational exposure through accidental needle stick
- Lack of infection control in the health care setting

### **E. Incubation period**

The incubation period for hepatitis G is unknown, but evidence shows that HGV RNA can be isolated from the blood two weeks after exposure.

### **F. Period of communicability**

The period of communicability has not been clearly determined.

### **G. Treatment**

In patients co-infected with HCV and HGV, interferon has similar efficacy with regard to both, but the responses of the two viruses are independent.

### **H. Prophylaxis**

There is no immunoglobulin available for pre- or post-exposure prophylaxis.

### **I. Vaccination**

Currently, there is no FDA-approved vaccine for hepatitis G.

### **J. Hepatitis G in Florida**

Hepatitis G became a reportable disease in Florida in 2001. Since that time, a total of three cases of hepatitis G have been reported in the state, one in 2008 and two in 2011. One of the three cases was acquired outside of the United States. Hepatitis G is more prevalent in association with HBV and HCV infections, as well as in people infected with HIV or other

auto-immune disorders. Hepatitis G has been reported in adults and children throughout the world and is found in about 1.5% of blood donors in the United States. Infection has been reported in 10% to 20% of adults with chronic HBV or HCV infection, indicating that co-infection is a common occurrence.

### 3. CASE DEFINITION

#### A. Clinical description

Persons with hepatitis G may or may not have evidence of the disease.

#### B. Laboratory criteria for diagnosis

Hepatitis G RNA positive

#### C. Case classification

Confirmed: A case that meets the clinical case definition and is laboratory confirmed.

#### Comment

The pathogenic role of HGV remains under investigation. Hepatitis G is mainly transmitted via blood. Infection has been documented in individuals who have received multiple blood transfusions or are intravenous drug users. It is estimated that frequency of infection is around 1% to 2% in healthy populations in the United States. Epidemiologic research has shown that type 2 is prevalent in the United States. Co-infection with hepatitis C is common.

Report liver enzyme results for all cases where these are available.

### 4. LABORATORY TESTING

#### A. Criteria for diagnosis

HGV RNA detection by reverse transcriptase PCR. Currently, no serological test is available.

#### B. Services available at the EBPHL

The Bureau of Public Health Laboratories (BPHL) does not currently offer serology testing for hepatitis G. Suspected cases of hepatitis G must be brought to the attention of Bureau of Epidemiology (DCBE) staff. DCBE staff will coordinate the shipping of samples to the CDC for serology and hepatitis G RNA testing.

#### C. Testing requests

Contact the regional laboratory liaison to facilitate testing the sample at the CDC.  
[http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/\\_documents/investigationunitmap\\_11-22-13color.pdf](http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/investigationunitmap_11-22-13color.pdf)

**D. Interpretation of results:**

Reverse transcriptase PCR is the only test available for hepatitis G. HGV RNA detection in the blood can be interpreted as a current HGV infection.

**5. CASE INVESTIGATION****A. Contact the physician or hospital**

1. Confirm hepatitis G infection has been diagnosed in the reported patient
2. Obtain as much information as possible about the patient, such as:
  - a. Contact information
  - b. Demographic information (e.g., DOB, gender, race, ethnicity)
  - c. Date of onset
  - d. Symptoms
  - e. Laboratory tests performed
  - f. Recent travel
3. Ask what information has been given to the patient, including whether the patient knows about the diagnosis.
4. Notify the physician that you will be contacting the patient as DOH follows up on all cases of hepatitis G to assess risk factors, to better characterize the occurrence of hepatitis G in Florida and to take necessary steps to prevent additional cases. Also, review infection control recommendations and address any concerns in regards to the CHD contacting the case.

**B. Interview the case**

1. Complete an interview as soon as possible after the case is reported to optimize recall.
  - a. Make at least three phone call attempts to reach the case; calls should be made at different times of the day with at least one call being made in the evening.
  - b. If phone calls are unsuccessful, mail a letter to the patient requesting that he/she contact the CHD and/or conduct a home visit or leave a letter for the patient.
  - c. If the patient is unable to provide information, interview a proxy (e.g., a spouse, parent) to gather further information.
2. Once contact is made, education about hepatitis G infection should be provided and an interview should be conducted to obtain any further information not already gathered from the provider or hospital. A viral Hepatitis Case Report Form is available to guide the investigation and assist in follow-up: [http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/\\_documents/crf-hepatitis-viral.pdf](http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/crf-hepatitis-viral.pdf)
3. Pertinent items to cover during the interview include:
  - a. Education
  - b. Demographic information (e.g., DOB, gender, race, ethnicity)
  - c. Identification of possible exposures and risks during exposure period (two to eight weeks prior to onset of symptoms)

- i. Close contact (e.g., household member, sexual partner) with any person who had an illness compatible with hepatitis G or any person with a known hepatitis G infection
  - ii. Injection and non-injection drug use
  - iii. Tattoos and/or body piercings
  - iv. Surgery, dental work, other invasive procedures
  - v. History of hemodialysis and blood transfusions
  - vi. Co-infection with HIV/AIDS, hepatitis C, and or hepatitis B
- d. Information on where to obtain the hepatitis B vaccine

#### D. Merlin data entry

Create a case in Merlin under disease code **HEPATITIS G-07059**. Enter available data, being sure to include all required fields on the Basic Data screen, complete the Case Symptoms screen, and attach all relevant laboratory results. Please note that liver function test results should be entered as a laboratory result. The extended data screen should also be completed in Merlin. Travel history, if relevant, should be entered as well.

## 6. CONTROLLING FURTHER SPREAD

### A. Patient/Household education on prevention recommendations

1. Hepatitis G epidemiology and clinical manifestations.
  - a. Modes of transmission
  - b. Symptoms (noting that persons may be infectious without being ill)
2. General prevention
  - a. Disinfect all items that may come in contact with blood and body fluid.
  - b. Do not share personal items that may have blood on them (e.g., razorblades, toothbrushes).
  - c. Cuts and sores on the skin should be covered to prevent the spread of infected blood or body fluid.
  - d. Patients should be informed of the risk of sexual transmission. Hepatitis B virus-positive persons engaged in high-risk sexual activities\* should be counseled to use latex barriers correctly every time they have sex.
  - e. Do not share needles or syringes. Disposable needles should be used only once then discarded. As a last resort, undiluted household bleach can be used to clean syringes and needles.
  - f. Active injection drug users should be directed to needle exchange programs and drug rehabilitation services.
  - g. Blood spills, including dried blood, still carry a risk of infection. All blood spills should be cleaned using 1:10 dilution of one part bleach to 10 parts water.

### B. Isolation of cases

Standard precautions should be observed to prevent exposures to blood and body fluids in health care settings.

### C. Management of contacts

1. Provide education
2. Symptomatic contacts of a confirmed patient should be referred to a health care provider and tested for hepatitis G.

\* High-risk sexual activities are any type of penetrative sexual contact without using barrier protection, especially if the person has multiple sexual partners (even if one is a steady) regardless of vaccination status.

## 7. MANAGING SENSITIVE SITUATIONS

### A. Identifying a sensitive situation

As defined by *Florida Administrative Code* 64D-3.028, a sensitive situation is a setting in which the presence of a case would increase significantly the probability of spread of the diagnosed or suspected disease or condition and would, therefore, constitute a public health hazard. Examples of such settings are schools, childcare facilities, hospitals and other patient care facilities, food storage, food processing establishments or other food outlets.

### B. Work or childcare restrictions

No occupational, school, or childcare restrictions are necessary for hepatitis G infected individuals.

### C. Needle stick and similar exposure

Accidental needle sticks carry a risk for transmission of hepatitis B and G, depending on the status of the infected person.

### D. Case is a recent blood donor or recipient

Notify the blood bank immediately so that any unused product can be recalled.

## 8. IMPORTANT LINKS

### A. Viral Hepatitis Case Report Form:

[http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/\\_documents/crf-hepatitis-viral.pdf](http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/crf-hepatitis-viral.pdf)

## 9. REFERENCES

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- C. Bhattarai N, Stapleton JT “GB virus C: the good boy virus?” *Trends Microbiol.* 2012 Mar;20(3):124-30.**
- D. Tang S, Lai KN “Chronic viral hepatitis in hemodialysis patients.” *Hemodial Int.* 2005 Apr;9(2):169-79.**