

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>1</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated: 11/2013	
HEPATITIS B POLICY		

-This policy is not intended to delineate all aspects of the care of an offender with hepatitis B. In particular, the minimal requirements in this policy are intended only to help gather necessary information for a provider to make an appropriate clinical decision about the management of each offender. In addition, please be aware that the guidelines listed below are subject to change based on new information as it becomes available.

POLICY: To provide guidance regarding the modes of transmission, screening, prevention, clinical housing, and work assignments of offenders with Hepatitis B (HBV).

PROCEDURES:

I. Modes of Transmission

- A. Hepatitis B is transmitted primarily by infected blood or body fluids (e.g., semen and saliva).
 1. Sex with an infected partner
 2. Injection drug use that involves sharing needles, syringes, or drug-preparation equipment
 3. Birth (transmitted from an infected mother to her baby during birth)
 4. Contact with blood or open sores of an infected person
 5. Needle sticks or sharp instrument exposures
 6. Sharing items such as razors or toothbrushes with an infected person

II. Screening

- A. All offenders should be evaluated for the above listed risk factors for hepatitis B. On the initial intake physical examination, signs and symptoms of liver disease should be screened. If any risk factors, signs, or symptoms are present, hepatitis B screening with a HBsAg test should be offered, unless offender has documented history or screening. Offenders must be screened with an anti-HBs antibody test during the intake medical evaluation unless they have a documented history of previous completed hepatitis B vaccination series or a reliable history of previous hepatitis B infection, to determine whether hepatitis B vaccine must be offered.
- B. Offenders with persistently abnormal alanine aminotransferase levels (ALT).

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>2</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated:11/2013	
HEPATITIS B POLICY		

- C. Offenders receiving immune-suppressive therapy.
 - D. Offenders with a history of sexually transmitted disease (Chlamydia, gonorrhea, or syphilis).
 - E. Every offender who is found to be HIV positive or HCV positive must be screened with anti-HBs antibody, HBsAg and anti-HBc total antibody as part of the baseline evaluation.
 - F. Chronic hemodialysis offenders who have not responded to vaccination must be screened for HBsAg monthly. All hemodialysis offenders must be screened for anti-HBs antibody every 6 months. If these offenders previously had a protective antibody level that falls below the protective threshold, they should be given a booster dose of hepatitis B vaccine.
 - G. Pregnant offenders must be screened for hepatitis B surface antigen during the first trimester or at the first prenatal visit, whichever is earlier. They must be screened even if they have been previously tested or have been vaccinated, unless they are already documented to have chronic hepatitis B. Women who continue to have risk factors for infection during their pregnancy must be screened again at the time of delivery.
- III. If an offender is found to be HBsAg positive, obtain an anti-HBc IgM antibody test. (Note: Do not order an anti-HBc total antibody test as it will not provide the information that is required to establish a diagnosis of acute or chronic infection)
- IV. Prevention
- A. Educate staff and offenders about modes of transmission, prevention and early reporting of signs and symptoms of infection.
 - 1. Discourage high risk behaviors including sharing tattooing equipment, unprotected sex, sharing needles, and sharing personal grooming items such as razors, toothbrushes and tweezers.
 - 2. Vaccinate susceptible offenders as directed in CMHC Infection Control Manual Policy B-14.07.

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>3</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated: 11/2013	
HEPATITIS B POLICY		

3. Identify close contacts (sexual partners and those who share needles) of newly diagnosed cases and offer testing and education to those contacts.
 - a. Any sexual contacts within the 2 weeks preceding diagnosis and any needle sharing contacts within 1 week preceding diagnosis who have not previously completed a hepatitis B vaccination series should receive 5 ml of HBIG IM and begin the hepatitis B vaccination series.
 - b. Those who have been previously vaccinated should be tested for HBsAg and anti-HBs antibody.
 - i. If both tests are negative they should receive HBIG if less than 14 days have elapsed since their last sexual exposure or less than 7 days since their last needle exposure to the index case. They should also repeat the hepatitis B vaccine series, regardless of the length of time since their last exposure to the case.
 - ii. If there is not enough time to get the laboratory results before the 14 day or 7 day limit expires, administer HBIG without waiting for the lab results.

V. Management for Chronic Hepatitis B

A. Diagnostic criteria

1. HBsAg positive > 6 months
2. HBV DNA > 20,000 IU/mL. Lower values 2,000-20,000 IU/mL may be seen in HBeAg-negative chronic hepatitis B.
3. Persistent or intermittent elevation in ALT or AST levels
4. Liver biopsy showing chronic hepatitis

B. Offenders with chronic HBV infection must be enrolled in chronic care clinic and seen at least once every 12 months.

C. Baseline evaluation and initial management of offenders newly identified as having chronic HBV infection include the following:

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>4</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated: 11/2013	
HEPATITIS B POLICY		

1. Take a targeted history to determine the probable date infection was acquired. For example, the date of infection in an injection drug user would be the year he started sharing needles. Also obtain history of previous and present alcohol use, co-infections such as HIV or HCV, drug use, symptoms of liver disease, and previous treatment for HBV.
2. Perform a physical examination and clinical evaluation looking for signs of advanced liver disease and evidence of other causes of liver disease.
3. Obtain the following baseline laboratory tests:
 - a. CBC with differential and platelet count
 - b. Prothrombin time and INR
 - c. ALT, AST, alkaline phosphatase, bilirubin, albumin, AFP
 - d. Anti-HAV antibody tests unless the offender has a history of hepatitis A or is documented to be immune.
 - e. Anti-HCV and anti-HIV antibody tests unless previously documented to be positive.
 - f. Calculate the AST/Platelet Ratio Index (APRI) score. Calculation of the APRI score is based on the current AST and platelet count using the below formula

$$APRI = (AST \div ULN) \div (\text{platelet count}) \times 100$$

Where ULN = upper limit of normal for the AST level and platelet count is 1,000/mm³

An APRI calculator is available on the CMCWEB under the tools submenu and is available in the EHR under Guidelines.

- g. HBV-DNA (viral load), if the offender is potentially a candidate for treatment.
- D. Vaccinate against hepatitis A if the anti-HAV test is negative.
 - E. Educate the offender about natural history of HBV, transmissions of HBV precautions to avoid other offenders, and the effects of alcohol and other hepatotoxins.
 - F. Treatment with current antiviral medications is unlikely to completely eradicate the hepatitis B virus. It is possible to suppress viral replication

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>5</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated:11/2013	
HEPATITIS B POLICY		

and induce seroconversion to HBe-Ag negative status and potentially prevent or reduce progression to cirrhosis or hepatocellular carcinoma. The decision to treat should be based on the severity of liver disease, likelihood of response, existing co-morbid conditions, potential for adverse effects, and other relevant offender specific factors (e.g., likelihood of adherence with treatment).

G. If it is determined that the offender to be a candidate the following criteria must be met :

1. Willing and interested in undergoing treatment
2. Evidence of cirrhosis (compensated or decompensated)
3. APRI score > 2
4. Co-infection with HIV or HCV
5. Age >30 with an APRI < 2.0 with an abnormal ALT and a viral load > 20,000 copies

H. If the offender meets the above criteria, refer for treatment to the designated provider or clinic and obtain the following level 2 labs/procedures:

1. Quantitative HBV-DNA
2. Abdominal ultrasound
3. AFP
4. HBeAG
5. ANA
6. CXR and EKG if over 40 years of age or clinically indicated
7. The following labs if not done in the preceding six months:
 - a. ALT, AST, bilirubin, albumin, BUN, creatinine
 - b. CBC, platelets, Prottime
 - c. T4, TSH
 - d. Iron, TIBC

I. If the offender is not referred for treatment consideration after the baseline evaluation, monitor for disease progression and/or chronic hepatitis disease reactivation with ALT and HBV-DNA every 6 3 months for the first year and then every 6 to 12 months thereafter.

1. If, after the initial year of monitoring or thereafter, the offender meets criteria in V.G., above they should be referred for evaluation for treatment as indicated.

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>6</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated:11/2013	
HEPATITIS B POLICY		

2. If the offender is not referred to be evaluated for treatment, continue monitoring the offender as least once per year, clinically and with CBC with differential, albumin, bilirubin, prothrombin time, ALT, AST, alpha fetoprotein, HBV-DNA and, if the previous HBeAg test was positive, HBeAg.
3. At each chronic care clinic appointment, review clinical status and labs to determine if referral to be evaluated for treatment is indicated.
4. Offenders with a family history of cirrhosis are at risk of developing hepatocellular carcinoma or esophageal varices. These offenders should have their AFP Levels checked every 6 months and undergo surveillance with abdominal ultrasound.

VI. Job Assignment

- A. Offenders with chronic hepatitis B should be restricted from plumber's helper or bar trap cleaner job assignments unless they have been vaccinated against hepatitis A or have been documented to have positive anti-HAV antibody.
- B. Restrictions for other job assignments will be handled on a case by case basis.
- C. Job restrictions will be entered onto the HSM-18

VII. Reporting

- A. If the anti-HBc IgM is negative, the offender has chronic hepatitis B and should be managed according to the procedures for chronic hepatitis B. The case must be reported within 7 days to the Office of Public Health as a chronic hepatitis B case.
- B. If the anti-HBc IgM is positive, the offender has acute hepatitis B or was infected with hepatitis B in the recent preceding months.
 1. Report the case within 7 days to the Office of Public Health as acute hepatitis B.
 2. Elicit contact history for the previous 3 months to determine the source case as well as persons who may be candidates for post-exposure prophylaxis.

C M H C INFECTION CONTROL MANUAL	Effective Date: 04/14/2016	NUMBER: B-14.13.2 Page <u>7</u> of <u>6</u>
	Replaces: 04/09/2015	
	Formulated:11/2013	
HEPATITIS B POLICY		

3. Obtain HBsAg and anti-HBs antibody tests in 6 months to document resolution of the infection. If HBsAg remains positive after 6 months the case has become chronic and should be managed according to the procedures for chronic hepatitis B. File a follow-up report with the Office of Public Health noting that the case is chronic if HBsAg is positive for 6 months or longer.

Reference: Overview of the Management of Hepatitis B and Case Examples, updated February 7, 2013

Medscape: Hepatitis B Treatment and Management Nikolaos T. Pyrsopoulos, et.al. January 11, 2015.

Hepatitis Reporting Form

This form is for reporting purposes only and is not intended as a clinical guideline.

Name: _____

TDC Number: _____

Facility: _____

UH Number: _____

Diagnosis:

Acute Hepatitis A
Acute Hepatitis B
Acute Hepatitis C

Chronic Hepatitis B
Chronic Hepatitis C

Supporting Data:

Symptoms (acute disease only):

Date of Symptom Onset: _____

- Nausea, vomiting or anorexia
- Diarrhea
- Jaundice or icterus
- Fever, malaise, flu-like symptoms

Lab: (lab tests done are based on clinical considerations and should not be ordered simply to complete this report form.)

Test	Date, if done	Pos	Neg	Not Done or Unknown
Acute Hepatitis A				
Hep A antibody (anti-HAV IgM Ab)	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis B				
Hep B surface antigen (HBsAg)	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hep B core antibody (anti-HBc IgM Ab)	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hep B surface antibody (anti-HBs Ab)	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis C				
Hep C antibody (anti-HCV Ab)	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis D				
Delta hepatitis antibody (anti-HDV Ab)	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

***For Acute Illness only:**

Highest* ALT (SGPT) level: _____

Date: _____

Highest* AST (SGOT) level: _____

Date: _____

Expected Serological Patterns					
Acute Hepatitis A	Resolved Hepatitis A (not reportable)	Acute Hepatitis B	Chronic Hepatitis B	Resolved Hepatitis B (not reportable)	Hepatitis C
Anti-HAV IgM (+)	Anti-HAV IgM (-) Anti-HAV IgG (+)	HBsAg (+) HbeAg (+) Anti-HBc IgM (+)	HBsAg (+) HBeAg (+ in majority) Anti-HBc total (+) Anti-HBc IgM (-)	HBsAg(-), HBeAg(-) Anti-HBs (usually +) Anti-HBc total (usually +)	Anti-HCV (+)

Contraindications to Drugs Used for the Treatment of Chronic Hepatitis B

Interferon or Peginterferon	
Absolute Contraindications	Relative Contraindications
<ul style="list-style-type: none"> • Decompensated cirrhosis • Potentially life-threatening non-hepatic disease such as far advanced AIDS, malignancy, severe COPD or severe heart failure • Uncontrolled autoimmune disorders • Autoimmune hepatitis • Poorly controlled diabetes • Uncontrolled hyperthyroidism • Solid organ transplant • Ongoing alcohol or injection drug use • Suicidal ideation or other uncontrolled neuropsychiatric disorder • Poorly controlled seizure disorder 	<ul style="list-style-type: none"> • Neutropenia • Thrombocytopenia

Entecavir	
Absolute Contraindications	Relative Contraindications
<ul style="list-style-type: none"> • HIV co-infected and not receiving HAART 	

Absolute Contraindications	Relative Contraindications
<ul style="list-style-type: none"> • HIV co-infected and not receiving HAART 	

Tenofovir	
Absolute Contraindications	Relative Contraindications
<ul style="list-style-type: none"> • HIV co-infected and not receiving HAART 	<ul style="list-style-type: none"> • Concurrent use of nephrotoxic drugs