Kansas
Department of Health and Environment
Division of Health

Hepatitis B Virus
(Acute, Chronic and Perinatal)
Investigation Guideline

Contents

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Revision History:

Date	Replaced	Comments
05/2018	**12/2015**	Updated notification section with new requirements of new regulations.
03/2018	**12/2015**	Updated Perinatal Hepatitis B to CDC 2017 case definition. Updated links and Standard Case Investigation section. Formatted Laboratory Analysis, Epidemiology, Disease Overview, Notification to Public Health, Investigator Responsibilities, Managing Special Situations, Data Management and Reporting, and Additional Information / References. Removed Attachments section.
12/2015	**05/2012**	Updated "Pregnancy and Delivery" section of Managing Special Situations with updated contact information for Perinatal Coordinator and testing recommendations for infants. Updated Notification, Investigator Responsibilities, and Data Management sections with disease surveillance indicator targets.
10/2014	**05/2012**	Details added to Investigators Responsibilities and Data Management. Reformatted Standard Case Investigation section to assist with EpiTrax system data entry. Updated references and web links. Edits to needle exposure section.
05/2012	**04/2009**	Updated to CDC 2012 Case Definition. Added Notification Section. Edited Laboratory Analysis Section. Data Management (Closing of Chronic Cases). Removed reference to KS-EDSS. Edited Data Management Section.

Hepatitis B Virus
Disease Management and Investigative Guidelines

CASE DEFINITION – Acute (CDC, 2012)

Clinical Description for Public Health Surveillance (Acute):
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 one of the following:

- a) jaundice
- b) elevated serum alanine aminotransferase (ALT) levels >100 IU/L.

*No clinical presentation is needed if a negative hepatitis B surface antigen (HBsAg) laboratory result is documented within 6 months prior to a positive test. *[Positive tests can include: HBsAg, hepatitis B "e" antigen (HBeAg), or hepatitis B virus nucleic acid testing (HBV NAT) including genotype.]*

Laboratory Criteria for Case Classification (Acute):

- HBsAg positive, AND
- Immunoglobulin M (IgM) antibody to hepatitis B core antigen (IgM anti-HBc) positive (if done).

Case Classification (Acute):

- **Confirmed**: A case that meets the clinical case definition is laboratory confirmed, and is not known to have chronic hepatitis B.
- **Probable**: Laboratory result with positive IgM antibody to hepatitis B core antigen case and missing or incomplete clinical information. *(KDHE definition for data management; requires further investigation by LHD.)*

CASE DEFINITION – Chronic (CDC, 2012)

Clinical Description for Public Health Surveillance (Chronic):
No symptoms are required.
Persons with chronic HBV infection may have no evidence of liver disease or may have a spectrum of disease ranging from chronic hepatitis to cirrhosis or liver cancer.

Laboratory Criteria for Case Classification (Chronic):

- IgM anti-HBc negative AND a positive result on one of the following tests:
  - HBsAg, HBeAg, or HBV DNA (qualitative, quantitative, or genotype testing)
  - HBsAg positive, HBV DNA positive (qualitative, quantitative, or genotype testing), or HBeAg positive two times ≥ 6 months apart *(Any combination of these tests performed 6 months apart is acceptable)*

Case Classification (Chronic):

- **Confirmed:** A case that meets either of the above laboratory criteria for diagnosis.
- **Probable:** A person with a single HBsAg positive or HBV DNA positive or HBeAg positive lab result and does not meet the case definition for acute hepatitis B.

Note: Multiple laboratory tests indicative of chronic HBV infection may be performed simultaneously on the same patient specimen as part of a "hepatitis panel." Testing may lead to seemingly discordant results. For the purposes of this case definition, any positive result among the three laboratory tests mentioned above is acceptable. Negative HBeAg results and HBV DNA levels below positive cutoff level do not confirm the absence of HBV infection.

CASE DEFINITION – Perinatal (CDC, 2017)

Clinical Description for Public Health Surveillance (Perinatal):
Perinatal Hepatitis B in a child ≤24 months of age may range from asymptomatic to fulminant hepatitis.

Laboratory Criteria for Case Classification (Perinatal):
One or more of the following:

- HBsAg positive (only if ≥4 weeks after last dose of Hep B vaccine)
- HBeAg positive
- HBV DNA detected

Epidemiologic Linkage
Born to a HBV-infected mother

Case Classification (Perinatal):

- **Confirmed:** Born in the US to HBV-infection mother and
    - HBsAg positive at ≥1 and ≤24 months of age **OR**
    - Positive for HBeAg or HBV DNA at ≥9 and ≤24 months of age
- **Probable:** Born in the US, mother's hepatitis B status is unknown and
    - HBsAg positive at ≥1 and ≤24 months of age **OR**
    - Positive for HBeAg or HBV DNA at ≥9 and ≤24 months of age

LABORATORY ANALYSIS

- The Kansas Health and Environmental Laboratories (KHEL) is equipped to test for:
    - HBsAg for household and sexual contacts of HBsAg positive clients (*among clients of local health departments and some state-operated facilities)*
    - HBsAg and anti-HBs (PVST) for perinatal patients *(requires epi-approval)*
- For additional information and/or questions concerning specimen submission, collection/transport and laboratory kits call (785) 296-1620.
- Description of Hepatitis B Laboratory Tests:

Source: CDC Division of Viral Hepatitis

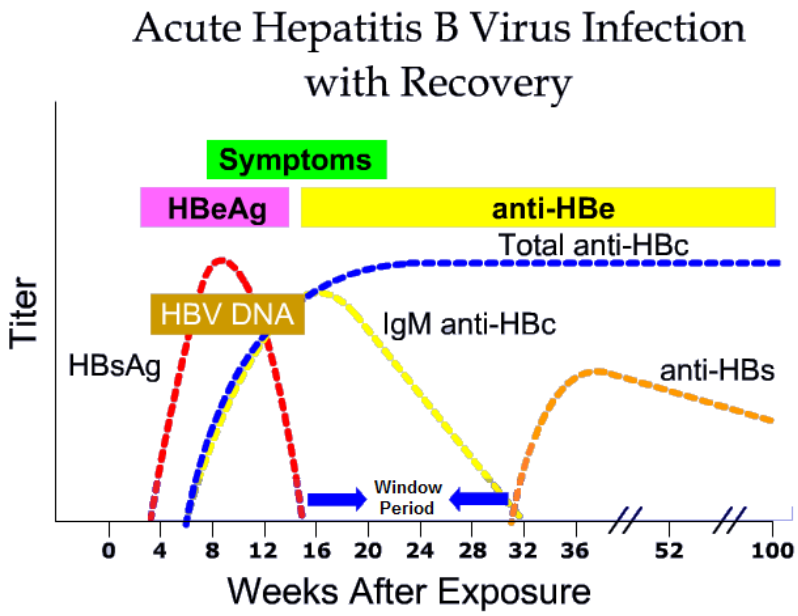
Diagnostic Marker		Significance
HBsAg	Hepatitis B surface antigen	Acute or chronic infection
Anti-HBs	Antibodies to HBsAg	Infection in the past or post-vaccination Immunity
T Anti-HBc	Total antibodies to HBcAg	Acute, chronic or past infection
IgM HBc	Antibodies IgM to HBcAg	Acute or recent HBV infection
HBeAg	Hepatitis Be antigen	High-level HBV replication and viremia, therefore infectiousness is high
Anti-HBe	Antibodies to HBeAg	Acute, Resolved or Chronic infection
HBV DNA	Hepatitis B Virus Deoxyribonucleic Acid	Active Infection: Acute or Chronic

- Interpretation of laboratory tests for HBV:

Tests Results and Interpretations

HBsAg	anti-HBc	IgM anti-HBc	anti-HBs	Interpretation
-	-		-	Susceptible
-	+		+	Immune due to natural infection
-	-		+	Immune due to Hepatitis B vaccination
-	+		-	Interpretation unclear; four possibilities*
+	+	+	-	Acutely infected
+	+	-	-	Chronically infected

* 1) Resolved infection (most common) 2) False-positive anti-HBc, thus susceptible
3) "Low level" chronic infection 4) Resolving acute infection



Window Period: Time during which HBsAg or HBV DNA is undetectable and before anti-HBS is detectable.

- Additional training for HBV serology: www.cdc.gov/hepatitis/Resources/Professionals/Training/Serology/training.htm

EPIDEMIOLOGY

Hepatitis B virus (HBV) is a major cause of chronic liver disease and cancer worldwide. In developed countries, the infection rate is low. In the United States, the rate of new HBV infections has declined by approximately 82% since 1991, when a national strategy to eliminate HBV infection was implemented and routine vaccination was recommended. In 2015, the overall incidence of reported acute Hepatitis B was 1.1 per 100,000 persons. However, because many HBV infections are either asymptomatic or never reported, the actual number of new infections is estimated to be approximately tenfold higher. Rates are highest among adults; particularly males aged 25-44 years.

An estimated 800,000-1.4 million persons in the United States have chronic HBV infection. Globally, chronic HBV affects approximately 350 million persons. An estimated 887,000 persons worldwide die from HBV-related liver disease each year.

Persons at increased risk for Hepatitis B include:

- Infants born to infected mothers
- Sex partners of infected persons
- Men who have sex with men
- Injection drug users
- Household contacts of persons with chronic HBV infection
- Health care and public safety workers at risk for occupational exposure to blood or blood-contaminated body fluids
- Hemodialysis patients

DISEASE OVERVIEW

A. Agent: The Hepatitis B virus is a DNA hepadnavirus

B. Clinical Description: HBV infection may be acute or chronic, both of which may asymptomatic. Symptoms, if present include:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal Pain
- Dark Urine
- Clay-colored stool
- Elevated liver enzymes
- Jaundice

Disease tends to be worse and mortality higher in persons >60 years old. Asymptomatic infections are common in children <5 years of age. The risk of chronic infection decreases with age; while chronic infection increases the risk of chronic liver cancer later in life

C. Reservoirs: Humans

D. Mode(s) of Transmission: HBV is transmitted through blood or body fluids. The highest concentrations of the virus are in blood; lower titers are in semen and even lower titers in saliva.

E. Incubation Period: Range from 60-160 days; average 90 days

F. Period of Communicability: A person is considered infectious as long as Hepatitis B surface antigen (HBsAg) is detectable. Most people are infectious from 1-2 months before to 1-2 months after the onset of symptoms. Persons who have chronic Hepatitis B (i.e., carriers) remain infectious indefinitely. Persons with circulating Hepatitis B e antigen (HBeAg) are more infectious than those that are HBeAg negative.

G. Susceptibility and Resistance: Protective immunity follows infection if antibody to HBsAg (anti-HBs) develops and HBsAg is negative. After three intramuscular doses of Hepatitis B vaccine, more than 90% of healthy adults and more than 95% of infants, children, and adolescents develop adequate antibody responses. However, there is an age-specific decline in immunogenicity.

H. Treatment: Supportive only during the acute phase. Persons who have chronic HBV infection require medical evaluation and regular monitoring.

NOTIFICATION TO PUBLIC HEALTH AUTHORITIES

Suspected cases of Hepatitis B (acute, perinatal, and chronic) shall be reported within 24 hours, except if the reporting period ends on a weekend or state-approved holiday, the report shall be made by 5:00 p.m. on the next business day after the 24-hour period:

1. Health care providers and hospitals: report to the local public health jurisdiction
2. Local public health jurisdiction: report to KDHE-BEPHI (see below)
3. Laboratories: report to KDHE-BEPHI (see below)

Kansas Department of Health and Environment (KDHE)
Bureau of Epidemiology and Public Health Informatics (BEPHI)
Phone: 1-877-427-7317 Fax: 1-877-427-7318

Further responsibilities of state and local health departments to the CDC:
As a nationally notifiable condition, Hepatitis B (acute, chronic, and perinatal) cases require a ROUTINELY NOTIFIABLE report to the Center of Disease Control and Prevention (CDC).

1. ROUTINE reporting requires KDHE-BEPHI to file an electronic report for within the next reporting cycle. (KDHE will file electronic reports weekly with CDC.)
2. **Local public health jurisdiction** will report information requested in the Kansas electronic surveillance system, as soon as possible. For an acute case investigation, the electronic form should be completed within 5 days or receiving a notification of an acute hepatitis case.

INVESTIGATOR RESPONSIBILITIES

1) Report all cases to the KDHE-BEPHI.

2) *Investigate **all** cases to determine if testing was for acute disease.*
- Start the investigation within 3 days of notification for acute disease.

3) Contact medical provider to collect additional information and confirm diagnosis using current case definition.
- Collect all information requested in Step 1) of case investigation.
- For females, ages 12-55 years, determine if the case is pregnant.
  - The Hepatitis B (Pregnancy) Investigation Guideline should be used to manage the pregnancy; this will require the creation of a "Hepatitis B Pregnancy, Event" in EpiTrax.
- Ensure that case is aware of his/her diagnosis.

4) Conduct a case investigation to identify potential source of acute infection.
- Acute infection – collect data requested on the Hepatitis B Acute Form within 5 days of receiving a notification of a case.
- Chronic infection that has never been investigated – complete an interview to collect data requested on the Hepatitis B, Chronic Form.

5) Conduct contact investigation to identify additional cases, as needed.

6) Identify whether the source of infection is major public health concern.

7) Initiate any needed control and prevention measures.

8) Record data, collected during the investigation, in the KS EpiTrax system.

9) As appropriate, use the disease fact sheet to notify individuals or groups.

STANDARD CASE INVESTIGATION

Case Investigation

1) Contact the ordering ***medical provider*** to ensure patient is aware of diagnosis and obtain the following information:
   - [Demographic] tab
     - Contact information (address, phone, email)
     - Date of birth
     - Birth country, if not US
     - Ethnicity
     - Race
     - Primary language
   - [Clinical] tab
     - Hospitalization status
       - If hospitalized, determine location, duration, and reason
     - Mortality status
       - If deceased, was it due to hepatitis B infection
     - Pregnancy status (if female aged 12-55 years)
       - If pregnant, obtain expected delivery date & create a pregnancy event
     - ***Acute case only***: earliest symptom onset and diagnosis date
   - [Investigation] tab:
     - (Symptoms) subtab
       - Reason for testing
       - Symptoms of hepatitis infection
         - → Jaundice, obtain date of onset
       - Liver enzymes levels at time of diagnosis
     - (Vaccination History) subtab
       - Immunization status
         - → If yes, number of doses, dates of doses, and post-vaccine antibody titers
         - → If not and <18 years, determine why
     - (Exposure) subtab
       - Year patient was first diagnosed with hepatitis B
   - [Laboratory] tab:
     - ***Probable chronic case:*** with only one HBsAg test available, determine if previous testing occurred ≥ 6 months prior to the laboratory report.
     - ***Acute case:*** Confirm classification by encouraging or coordinate testing original specimen for IgM anti-HBc or retesting patient for HBsAg >6 months after the original test.
2) Scan and attach copies of reports required for case confirmation that have not been reported in [Notes] tab.
   Contact the ***patient*** to obtain the following information:
   - [Demographics] tab:
     - Contact information (address, phone, email)
     - County of birth, if not the US
   - [Contacts] tab:
     - Any contacts that may have resulted in transmission (household, sexual, etc)
       - Obtain the names of household members and sexual contacts
       - If patient has history of drug use, obtain names of contacts involved in this activity
     - Obtain information needed for contact management

- [Epidemiological] tab:
  - Occupation
  - Specify exposure to high risk facilities
    - Medical/dental occupations
    - Public safety officer
    - Correctional facility
      - → Employee or incarcerated
        - . Determine potential contact with human blood
    - Group living
  - Record any Place Exposure(s) (where illness could have been acquired).
- [Investigation] tab:

Acute cases:	**Chronic cases:**
Inquire about 6 weeks – 6 months prior to onset.	Inquire about "ever" unless time period noted

  - (Exposure) subtab
    - Contact with a confirmed HBV case
      - → Note type of contact (sexual, household, etc)
        - . Note name and address and add to [Contacts] tab
    - Number of male and female sex partners
    - Use of any type of substances illegally.
      - → If yes, were any injected.
        - . If yes, were any needles or equipment shared.
        - . The last time substances were injected. (< or > 6 months)
    - Receipt of tattoo(s) or body piercing
      - . If yes, what type of provider (commercial, private, correctional)
      - . Was the procedure done in the last 6 months?
      - . If yes, specify facility name and city.
    - Receipt of acupuncture or long-term hemodialysis.
      - . Was the procedure done in the last 6 months?
      - . If yes, specify facility name and city.
    - Ever received an organ transplant.
      - . If yes: year, organ, and facility, provider, and city where received.
    - Before 1992, received a blood transfusion.
    - Before 1987, received clotting factor concentrates.
    - Currently, use of blood monitoring equipment by finger-stick or lancet.
      - . If yes, was any testing equipment shared.
    - In the past 6 months: any dental work or oral surgery, other surgery, receipt of blood or blood products, or receipt of IV infusions or injections
      - → If yes, specify facility name, provider name, city and procedure type.
    - Donated blood (if the case was identified by a recent donation, ask about the donation prior to the most recent.)
      - → If yes, year of donation and name of organization
      - → For any recent blood or plasma to that may not been identified by routine screening processes. Refer to Managing Special Situations.

3) Investigate epi-links among cases (clusters, household, co-workers, etc).
   - Inquire about others in the household with similar symptoms to determine possible outbreaks.

Contact Investigation

1) Consider the following types of contacts during the contact investigation:
   - Household members of HBsAg positive individuals.
   - Infants born to HBsAg positive mothers
   - Infants < 12 months of age with household exposure to a primary caregiver with acute Hepatitis B.
   - Individuals with mucosal or percutaneous exposure to infectious body fluid of an infections person.
   - Sexual partners of HBsAg positive individuals.
2) After identifying potential contacts, evaluate whether a risk of transmission exists.
   - If yes → add contact to [Contact] tab
   - create a line listing of contacts at-risk of developing disease. [Contact]
3) Contact notification will be required for at-risk contacts in a manner that respects the privacy of the case and contacts*.
4) Follow-up with at-risk contacts as instructed in Contact Management.

*** Note:** The Kansas STI/HIV Section have specialists with expertise in reach the type of contacts identified with HBsAg-positive patients and might be able to provide guidance on procedures and best practices. For further assistance, contact the Director or Assistant Director of the Kansas STI/HIV Section at (785) 296-5595.

Isolation, Work and Daycare Restrictions

Persons ***should not*** be excluded from work, school, play, child care, or other settings on the basis of their HBV infection status. There is no evidence of HBV transmission from food handlers, teachers, or other service providers in the absence of blood-to-blood contact.

To prevent exposure to blood and body fluids, universal precautions should be followed. Safe-sex practices reduce risk of sexual transmission.

There are no current recommendations to restrict professional activities of healthcare workers with HBV infection. As recommended for all health-care workers, those who are HBV-positive should follow strict aseptic technique and standard precautions, including appropriate use of hand washing, protective barriers, and care in the use and disposal of needles and other sharp instruments.
Refer to further guidance in CDC' MMWRs:

- Updated CDC Recommendations for the Management of Hepatitis B Virus–Infected Health-Care Providers and Students: MMWR 2012;61(RR-12);1-12
- CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Post-exposure Management MMWR 2013;62(rr10);1-19

Case Management

1) Educate those with acute illness on measures to avoid disease transmission.
2) For acute cases, repeat testing for HBsAg after 6 months to determine the clearance or continued presence of HBsAg.
   – Those still HBsAg positive are considered confirmed chronic carriers and should be reported in the state electronic surveillance system.
3) Council chronic carriers on measures to avoid disease transmission, including risks to newborns, and measures to take to protect the liver.

Contact Management

1) Evaluate each contact's susceptibility and initiate PEP for susceptible contacts as soon as possible (preferably within 24 hours).
   - Consider these contacts as susceptible:
     - Unvaccinated (<3 doses of the hepatitis B vaccine series)
     - No documentation of prior HBV infection
     - Documentation of non-response to a completed hepatitis B series (anti-HBs negative)
2) Unvaccinated past or present sex, household, and needle-sharing contacts should simultaneously
   - Tested for HBsAg and anti-HBs
   - Receive an initial hepatitis B vaccine with or without immune globulin, as recommended in Table 1.
3) Infected (HBsAg positive) contacts:
   - Do not require additional PEP or post vaccination serological testing.
   - Promote to CMR
     - Under the [Contact] tab, click 'Show' beside the contact on the listing.
     - Select 'Promote to CMR'
   - For suspected outbreaks refer to Managing Special Situations section
4) Immune (anti-HBs positive) contacts do not require additional PEP or post vaccination serological testing.
5) Not infected and susceptible (HBsAg AND anti-HBs negative) contacts require PEP per Table 1.
6) Report any adverse event that occurs after the administration of a vaccine to Vaccine Adverse Events Reporting System at http://vaers.hhs.gov/index.
7) After completion of the immunization series, susceptible contacts should be tested for anti-HBs and HBsAg 1-2 months following completion of the series.
   - If both labs are negative, repeat 1 doses of hepatitis B vaccine and test in 1-2 months
     - If anti-HBs still negative, give other 2 doses in the vaccine series and test 1-2 months following completion
     - If anti-HBs still negative, contact is a vaccine non-responder
8) Provide education on avoiding further exposures and to ensure proper medical care is obtained and precautions taken if symptoms develop.
9) Once management is complete, report the final disposition in [Contact] tab.

Table 1. Recommended PEP for Uninfected (HBsAg Negative) Contacts Based on Receipt of Hepatitis B Vaccine and Documented Immune Response

Status of Hepatitis B Series and Immune Response	Household Exposure	Initial sexual exposure <14 days prior or initial percutaneous exposure <7 days prior	Initial sexual exposure >14 days prior or initial percutaneous exposure >7 days prior
Unvaccinated (anti-HBs negative)	Administer Hepatitis B vaccine series.	Administer HBIG **and** * Hepatitis B vaccination series.	Administer Hepatitis B vaccine series.
Incomplete series (anti-HBs negative)	Administer remaining doses of Hepatitis B series.	Administer HBIG **and** * remaining doses of Hepatitis B vaccination.	Administer remaining doses of Hepatitis B series.
Completed series but without documented anti-HBs <10 mIU/mL	No booster dose needed.	Administer a booster dose of Hepatitis B vaccine.	Administer a booster dose of Hepatitis B vaccine.
* If appropriate, administer HBIG simultaneously with vaccine in a separate injection site. *For more information, refer to "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States".*			

Environment

None, unless a health care or long-term care facility or a tattoo, body piercing or cosmetic procedures facility is implicated in transmission. In which case, an inspection of the facility should be coordinated through the proper regulatory agency.

Education

1) Advise persons with acute HBV infection:
   - That their blood and other secretions are infectious until the virus has cleared
   - Postpone non-emergency dental care and surgery until infection has cleared
2) Advise all persons who are infected (acute and chronic):
   - How the virus is transmitted.
   - How to prevent the transmission of the virus to others.
   - How contacts (future and present) can be protected by Hepatitis B prophylaxis including vaccination.
   - Detailed instructions should include:
     - The importance of notifying household, sex, and needle-sharing contacts (future and present) to allow testing for markers of HBV infection and vaccination against hepatitis B
     - Prevention of transmission through sexual contact by abstinence, use of barriers such as condoms, or other practices until the sex partners are vaccinated with immunity documented
     - Do not donate blood, plasma, tissue, or semen
       Organs may be donated to HBV-immune or chronically infected persons needing a transplant)
     - Cover open wounds on skin to lessen chances of others having contact with secretions or blood.
     - Do not to share items (e.g., toothbrushes, razors, or personal injection equipment) that could be contaminated with blood.
     - Properly disinfect surfaces contaminated with saliva and blood

    - Do not to share needles
    - Inform medical and dental care provider of HBsAg positive status

3) Pregnant women and chronic female cases (12 – 55 years old) should be told:
    - Risk of transmission to newborns
    - Importance of prophylaxis for infants (vaccine series and HBIG) at birth
4) Parents/guardians of HBsAg positive persons with functional disabilities should be alerted to the risk of HBV infection associated with excessive drooling or aggressive behavior, such as biting and scratching.
5) Advise chronic cases:
    - Prevent future liver damage by:
        - Avoiding or limiting alcohol consumption
        - Consulting with healthcare provider before beginning any new medicines, including over-the-counter and herbal medicines
        - Obtain vaccination against Hepatitis A
    - Prevent transmission of the virus by methods listed above

MANAGING SPECIAL SITUATIONS

Outbreak Investigation:

There are no formal outbreak definitions; however, the investigator may consider the possibility of an outbreak when one of the following occurs:

- ≥ 2 cases are clustered in time and/or space
- Epidemic threshold is exceeded for the community.

- Notify KDHE immediately, 1-877-427-7317.
- Active case finding will be an important part of any investigation.
- Healthcare related outbreak guidance can be found at: www.cdc.gov/hepatitis/Outbreaks/index.htm

Recent Blood Donor or Recipient:

- Notify the KDHE-BEPHI at 1-877-427-7317, for the following:
    - Case has donated blood or plasma ≤ 8 weeks prior to symptoms onset.
    - Transfused blood or blood products are suspected as a possible source.
- Further investigation will determine what notifications should occur.
- Testing for HBsAg or anti-HBc may be required of the blood that is still available or of the donors themselves.

Pregnancy or Recent Delivery:

Preventing perinatal transmission is perhaps the most important part of case follow-up. For this reason, the State of Kansas has a Perinatal Hepatitis B Prevention Program (785-296-5588).

Disease investigation guidelines outline case management. However, collect the following information immediately.

- Determine expected due date and expected delivery facility
- Coordinate with the birthing facility to ensure HBIG and vaccine are available with recommendation to give to newborn within 12 hours of birth

Needle-stick and Similar Exposures:

- For occupational exposures, refer to Kansas Regulation 28-1-23 Management of Occupational Exposures
    - Follow the facility's "Bloodborne Pathogen Exposure Protocol.
- For other situations, further guidance is available in Appendix B of *"A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States"*
- Persons who suffer such injuries or exposures should have a baseline blood sample collected followed by testing again at 6 months.

Correctional Facilities:

- Unless it is a US correctional facility, it is the responsibility of the LHD to coordinate with the correctional facility to obtain necessary information needed to complete investigation
- Refer to "Prevention and Control of Infections with Hepatitis Viruses in Correctional Settings"

DATA MANAGEMENT AND REPORTING TO THE KDHE

1. [Administrative] tab:
    - Accept the case assigned to the LHD and record the date the LHD investigation and control measures were initiated was started
2. Complete investigation of case and contacts as outlined above.
    - Any female of childbearing age (12-55 yrs):
        - Collect information on pregnancy status and report in [Clinical] tab.
    - Chronic HBV, previously reported:
        - Complete [investigation] tab for any case where it has not been completed
    - Any case <5 years old (even if child does not meet case definition):
        - Determine why testing was performed
    - During outbreak investigations, refer to guidance from a KDHE epidemiologist for appropriate collection tools.
3. Report data collected during the investigation via EpiTrax**.**
    - Some data that cannot be reported on an EpiTrax tab may need to be recorded in [Notes] or scanned and attached to the record.
4. If a case is lost to follow-up after three unsuccessful attempts to contact the case have been made
    - Record the date and outcome each attempt to contact case in the [Administrative] tab
    - Complete investigation based on information collected from the provider
    - Indicate lost to follow-up and record a reason for 'lost to follow-up' in [Notes].
5. After the requirements listed under Case Investigation have been completed, record the "Date LHD investigation completed" field located on the bottom of the [Administrative] tab.
    - Record the date even if the local investigator's Contact Management (i.e. testing 1 months after vaccination) for the contact is not "Complete".
6. Once the investigation and contact management is completed, the LHD investigator

will click the "Complete" button. This will trigger an alert to the LHD Administrator so they can review the case before sending to the state.

- The LHD Administrator will then "Approve" or "Reject" the CMR.
- Once a case is "Approved" by the LHD Administrator, BEPHI staff will review the case to ensure completion before closing the case.

7. Review the EpiTrax User Guide, Case Routing for further guidance

Note:

1) HBsAg positive laboratory reports (with no information on anti-HBc or other testing) are initially reported as "Hepatitis B, chronic". Information from the local investigation may result in a case being changed to "Hepatitis B, acute."
2) For cases reported as acute and >6 months later be determined to have converted to chronic,
   - The initial "Hepatitis B, Acute" event will remain and
   - A second event "Hepatitis B, Chronic" will be created (deep copy). The record number for the first event will be noted under the new event.
3) The date of diagnosis on the [Clinical] tab is used by KDHE when a "Probable, Chronic Hepatitis B" case that was reported in a previous year is confirmed.
   - The date the most recent (confirmatory) lab was collected is recorded as the diagnosis date on the [Clinical] tab.
   - The Year of Diagnosis on the [Investigation] tab can remain as the earliest year diagnosed.

ADDITIONAL INFORMATION / REFERENCES

A. **Treatment / Differential Diagnosis:** Red Book: 2015 Report of the Committee on Infectious Diseases. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2015:564-568.

B. **Epidemiology, Investigation and Control:** Heymann, D., ed., Control of Communicable Diseases Manual, Washington, DC, American Public Health Association, 2015.

C. **Case Definitions:** wwwn.cdc.gov/nndss/

D. **Kansas Regulations/Statutes Related to Infectious Disease:** www.kdheks.gov/epi/regulations.htm

E. **Pink Book:** Epidemiology and Prevention of Vaccine-Preventable Diseases. www.cdc.gov/vaccines/pubs/pinkbook/index.html

F. **Manual for the Surveillance of Vaccine-Preventable Diseases:** www.cdc.gov/vaccines/pubs/surv-manual/index.html

G. **CDC Hepatitis MMWR Resource Center:** www.cdc.gov/hepatitis/Resources/Professionals/MMWRs.htm

H. **CDC Hepatitis page:** www.cdc.gov/hepatitis/