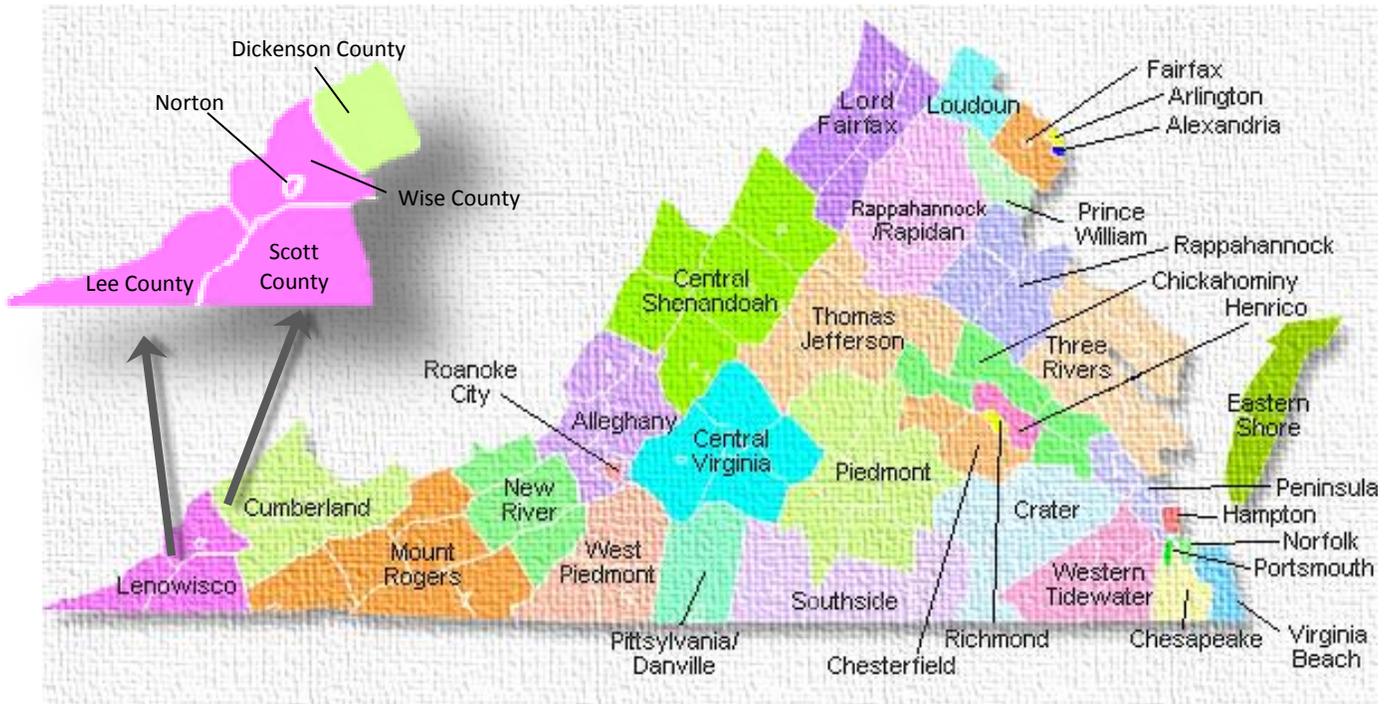


Virginia Department of Health



Hepatitis and HIV Community Response Plan (CRP) LENOWISCO Health District and Dickenson County (DiLENOWISCO)



Table of Contents

Authorization Signature Page2

Background..... 3

 A. Purpose..... 3

 B. Objectives..... 3

 C. Authority 4

 Table 1. *Code of Virginia* Statute and Corresponding Authority 4

 Table 2. *Virginia Administrative Code* and Corresponding Authority 5

 Table 3. Federal Codes and Authority 5

 D. Scope..... 6

 E. Assumptions 6

 G. Maintenance 7

 H. Disclaimer 7

Communication/Notification Procedures..... 11

a. Passive Surveillance 19

b. Enhanced Surveillance..... 20

c. Active Surveillance 20

d. Other Surveillance Options 20

e. Analysis of Surveillance Data..... 20

Conclusions..... 28

Acronyms 29

Revisions..... 32

Appendix A, Hepatitis B.....34

Appendix B, Hepatitis C.....54

Appendix C, Human Immunodeficiency Virus (HIV) Guidelines 69

Appendix D, Injection Drug Use81

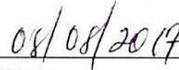
Appendix E, Infection Control Guidance 87

AUTHORIZATION SIGNATURE PAGE

As the District Health Director for LENOWISCO and Acting Director for Cumberland Plateau Health Districts (includes Dickenson County), I approve the LENOWISCO Health District and Dickenson County (DiLENOWISCO) Hepatitis and HIV Community Response Plan (CRP) as presented in this document.



Eleanor S. Cantrell, MD - Health Director



Date

The LENOWISCO Health District and Dickenson County (DiLENOWISCO) Hepatitis and HIV Community Response Plan (CRP) is acknowledged, adopted, and supported by the signature above.

Background

A. Administration

A. Purpose

The LENOWISCO Health District and Dickenson County (DiLENOWISCO) Hepatitis and HIV Community Response Plan (CRP) Annex has been developed to guide the communities of DiLENOWISCO to quickly respond to a bloodborne pathogen (specifically hepatitis B, hepatitis C, and HIV) outbreak associated with injection drug use (IDU). The plan includes steps for rapid identification of an increase in hepatitis and/or HIV infections; determining the most likely source(s) of the emergency and preventing the spread of hepatitis and HIV, with the overarching goal of minimizing sickness and death. To accomplish these tasks, effective epidemiology processes, community resource mobilization and emergency risk communication capabilities must be employed.

The CRP integrates the key elements of communicable disease control and prevention with emergency management concepts and community resource mobilization. As such, this document applies to all phases (preparedness, response, and recovery) of an emergency situation resulting from the increase number of cases of hepatitis B, hepatitis C and HIV related to IDU. A National Incident Management System (NIMS) compliant Incident Command System (ICS) organizational structure will be utilized to scale the response as needed to effectively meet the incident objectives of the emergency. More detailed guidance about NIMS and ICS is available elsewhere, including in the LENOWISCO and Cumberland Plateau Emergency Operations Plan(s) as well as from the Federal Emergency Management Agency (FEMA).

B. Objectives

The CRP serves as a guide for specific disease (HBV, HCV, and HIV) surveillance and investigation activities and is an annex to the DiLENOWISCO's Emergency Operations Plan(s) (EOP). Specific community resources (i.e., transportation, medical specialty treatment, access to SUD treatment, etc.) needed may vary depending on the nature of the outbreak, including location and size; therefore additional community resources will be identified as the event unfolds. While general strategies have been outlined, it is recognized that during an event the judgment of public health leadership and incident command staff may require alterations in the strategies.

Specific objectives of this plan are to:

- Define an organizational structure which may be applied to ensure that all of the necessary elements of the CRP are addressed in emergency response, including epidemiologic task:
 - I.** Existing hepatitis B, hepatitis C, and HIV disease surveillance system
 - II.** Processes involved in investigating occurrences or outbreaks of HBV, HCV, and HIV
 - III.** Steps for ensuring the timely, accurate, and consistent flow of disease- and outbreak-related information to the necessary stakeholders
 - IV.** Roles and responsibilities of epidemiology staff during HBV, HCV, and HIV events
- Detail the community resources and partnerships necessary in a HBV, HCV, and HIV event:
 - I.** Access to medical specialty care

- II. Insurance navigation
- III. Transportation
- IV. Substance use disorder (SUD) treatment
- V. AIDS Drug Assistance Program/Ryan White

C. Authority

There are several laws, regulations, and guidelines that govern public health activities. Chapter 2 (Disease Prevention and Control) of Title 32.1 (Health) of the *Code of Virginia* provides the authority for the management of disease in the Commonwealth of Virginia. In particular, several sections within the *Code of Virginia* give the Board of Health and the State Health Commissioner, and the local health department (LHD) or district health director (directly or as a designee of the Commissioner), the authority to perform certain acts to protect the health of citizens. Sections of the *Code of Virginia* and corresponding authority which relate to surveillance and investigation activities that may be conducted by the Virginia Department of Health (VDH) are listed in Table 1.

Table 1. Code of Virginia Statute and Corresponding Authority

Statute	Authority
Reporting of Disease §§32.1-35, -36, -37, -38	<ul style="list-style-type: none"> • Requires reporting of selected diseases to the Board of Health by physicians practicing in Virginia and others, such as those in charge of a medical care facility. Immunity from liability for reporting is provided in §32.1-38.
Investigation of Disease §32.1-39	<ul style="list-style-type: none"> • Authorizes the Board of Health to provide for surveillance and investigation of preventable diseases and epidemics, including contact tracing.
Authority to Examine Records §32.1-40, -41	<ul style="list-style-type: none"> • Authorizes the Commissioner or his designee to examine medical records in the course of investigation, research or studies. §32.1-41 requires that the anonymity of each patient and practitioner be preserved.
Emergency Orders and Regulations §§32.1-13, -20	<ul style="list-style-type: none"> • Authorizes the Board of Health to make orders and regulations to meet any emergency for the purpose of suppressing nuisances dangerous to public health and communicable, contagious, and infectious diseases and other dangers to public life and health. • Authorizes the Commissioner to act with full authority of the Board of Health when it is not in session.
Disease Control Measures §§32.1-42, -43, -48	<ul style="list-style-type: none"> • Authorizes the Commissioner to require quarantine, vaccination, or treatment of any individual when he/she determines it necessary to control the spread of any disease of public health importance. • Permits the Commissioner to require immediate vaccination of all persons in the event of an epidemic.
Comprehensive Harm Reduction §32.1-45.4.	<ul style="list-style-type: none"> • House Bill 2317 passed by the 2017 General Assembly changed the Code of Virginia authorizing the Commissioner of Health, during a declared public health emergency, to establish and operate comprehensive harm reduction (CHR) programs that include the provision of sterile and proper disposal of used hypodermic needles and syringes

The *Code of Virginia* is available on-line, in searchable format, at: <http://law.lis.virginia.gov/vacode>.

As indicated above, the Board of Health has the responsibility for promulgating regulations pertaining to the reporting and control of diseases of public health importance and to meet any

emergency or to prevent a potential emergency caused by a disease dangerous to the public health, including hepatitis B, hepatitis C and HIV. The Virginia Administrative Code is a compilation of rules that state agencies use to govern their operations. The Commonwealth of Virginia Board of Health *Regulations for Disease Reporting and Control* provide the processes and procedures that fulfill the requirements of the *Code of Virginia* and ensure the uniform reporting of diseases of public health importance occurring within the Commonwealth in order that appropriate control measures may be instituted to interrupt disease transmission.

Sections of the *Virginia Administrative Code* and corresponding authority, which relate to surveillance and investigation activities that may be conducted by VDH, are listed in Table 2.

Table 2. Virginia Administrative Code and Corresponding Authority

Section	Points of interest
12 VAC 5-90-20	Authority of the Board of Health to promulgate regulations to control disease
12 VAC 5-90-80	List of reportable diseases
12 VAC 5-90-90	Requirements for physicians, directors of laboratories and persons in charge of medical facilities for disease reporting
12 VAC 5-90-100	Authority for district health directors to perform contact tracing for persons with communicable diseases and recommend appropriate disease control measures. Methods for application of Article 3.02 of the <i>Code of Virginia</i> if voluntary compliance or methods under Article 3.01 unlikely to be effective.

The Commonwealth of Virginia Board of Health *Regulations for Disease Reporting and Control* are available on-line at: <http://www.vdh.virginia.gov/surveillance-and-investigation/commonwealth-of-virginiastate-board-of-health/>

Note that provisions of the State Laws and Regulations may be supplemented by provisions of **local health codes**.

Table 3. Federal Codes and Authority

Law/Section	Description/Point of Interest
Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended	Authorizes the delivery of federal technical, financial, logistical, and other assistance to states and localities during declared major disasters or emergencies.
Public Health Service Act Section 319	Authorizes the HHS secretary to determine that a public health emergency exists, which triggers emergency powers that permit the federal government to assist state and local governments, suspend or modify certain legal requirements, and expend available funds to address public health emergencies. <i>A Section 319 public health emergency declaration is separate and distinct from a presidential declaration under the National Emergencies Act or the</i>

	<i>Stafford Act.</i>
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D. Scope

This plan applies to hepatitis B and C and HIV outbreaks associated with IDU. Since contracting any one of these communicable diseases puts a person at risk for the other two, they will be referred to collectively as bloodborne pathogens (BBP) through the remainder of the plan unless otherwise noted. Some BBP outbreaks or situations will require limited response activities; other situations will require large-scale response efforts that involve the community partners, other state and national agencies, and/or the Virginia Department of Health (VDH) central office.

The CRP is a functional response guide for the Incident Commander, command staff and other responders. The CRP includes a core plan and resources. Depending on the situation, parts of the plan can be activated and deactivated as necessary. The Appendices contain additional details and tools to be used during a response.

The CRP addresses the need for other response areas such as direct medical care, medical surge, and mental health/SUD treatment; but does not address alternate standards of care. The CRP is to be utilized in concert with the LENOWISCO and Cumberland Plateau Emergency Operations Plan(s), which delineates the supporting and coordinating functions that will be led by the VDH Office of Emergency Preparedness.

E. Assumptions

The Community Response Plan Annex is based upon the assumptions that:

1. ICS is the management tool that will be used for any emergency response in accordance with NIMS.
2. While the plan outlines key functions and roles, depending on the scale of the event and the response, one individual responder may fulfill more than one role or position.
3. Confidential data regarding individual cases will not be shared outside of those who need to know in order to fulfill the legally mandated public health functions.
4. DiLENOWISCO may be the first to receive reports of disease events or outbreaks and the first to respond to the reports.
5. Many geographic areas within DiLENOWISCO and its neighboring jurisdictions may be affected simultaneously.
6. Both surveillance and investigation are conducted on an ongoing, regular basis, but may be amplified to prevent and control the spread of a disease.
7. Normal District operations will continue according to the prioritization of mission critical functions.
8. Priority goals in any emergency response, in order, are:
 - a. Protecting the health and safety of responding personnel and volunteers
 - b. Ensuring the health and safety of the citizens and visitors
 - c. Resumption of routine public health services
9. An adequate response to an outbreak of BBP from injection drug use would require participation from many sectors of the community, including but not limited to:

public health, law enforcement, social services, faith based organizations, and mental health providers.

F. Plan Activation

The following circumstances may warrant activation of the CRP:

- A significant increase in incidence of BBPs based on laboratory testing (defined as an increase over the baseline number of cases normally expected for the population in a given period of time).
- A large number of individuals with unexplained elevated levels of liver enzymes, and/ or jaundice.
- An increase in individuals with a history of IDU presenting with influenza-like illness and associated lymphadenopathy.
- Unusual or unexplained diseases (i.e., endocarditis, epidural spinal abscess, septic arthritis, osteomyelitis) in patients without other explanation.

G. Maintenance

The CRP is a working document. In an effort to maintain an up-to-date CRP, which addresses emergent issues and changing knowledge, the CRP will be reviewed and supplemented as needed as a result of lessons learned during an actual activation or exercise of the plan, to comply with changes in the State Emergency Management Plan, or in response to changes in NIMS or ICS guidelines. The Local Health Emergency Coordinator will update the plan annually, at a minimum, with input and review provided by community partners, District Epidemiologist, Disease Intervention Specialist, and Nurse Manager/District Director as available.

H. Disclaimer

No single set of guidelines applies to all outbreaks or to all diseases, or can provide all of the information needed. This plan, along with the documents listed in the reference section, primarily outline the response to specified BBP outbreaks. Please note that the contents of the CRP do not take the place of appropriate, practical public health knowledge and experience.

Epidemiology and Public Health in Virginia

A. The Virginia Department of Health (VDH)

The State Health Commissioner is the executive officer for the State Board of Health. The central office of the Virginia Department of Health is located in Richmond. The LENOWISCO Health District and Dickenson County operates under the direction of a District Health Director(s), who has responsibility for overseeing the surveillance and investigation of reportable diseases and outbreaks that occur in the jurisdiction. The District health director is also responsible for instituting measures for disease control.

The VDH central office, under the State Health Commissioner, provides technical support and coordination for the DiLENOWISCO. Offices within the VDH central office are further subdivided into Divisions. Depending on the specific BBP disease, one of two divisions (Divisions of Surveillance and Investigation [DSI]; Disease Prevention [DDP]) in the Office of

Epidemiology will play an important role in implementing control measures. The Office of Epidemiology serves as a liaison between the different entities involved in the investigation and management of disease outbreak investigations (e.g., district health directors, private physicians, institutions, the State Health Commissioner, the Attorney General's office, law enforcement, etc.).

B. Organization and Responsibilities

DiLENOWISCO Epidemiologist(s) and communicable disease nurses maintain strong relationships with hospitals, physicians, clinics, schools, day care centers, nursing homes and other facilities within the District. Under the direction of the District Health Director, communicable disease staff is responsible for coordinating disease surveillance activity within the District. Disease reporting regulations and mechanisms are routinely discussed so that reportable diseases, outbreaks, and unusual occurrences of public health concern are identified by DiLENOWISCO Epi Response Team and the Health Director. Unusual occurrences whose investigation and/or response exceed the capabilities of the district are reported to Central office with a request for additional resources.

Community Response Plan

Given the wide variety of tasks to be accomplished as part of the community response, as well as the large number of individuals and skill sets that may be involved, organization of the response to a BBP situation is critical. The Community Response Plan describes the organization of resources and tasks according to ICS principles.

Overall, the Community Response Plan is organized to address three tiers of public health preparedness and response:

- I.** Community Prevention (Pre-Outbreak)
- II.** Community Response (Immediate and Intermediate Response)
- III.** Community Recovery (Sustained Response)

The organization of response will vary between the three tiers.

I. Community Prevention (Pre-Outbreak)

An HIV outbreak occurred in a rural Indiana county in 2015 and the demographics of this area in Indiana are strikingly similar to many counties in DiLENOWISCO. The Centers for Disease Control (CDC) listed eight counties in Southwest Virginia as vulnerable to rapid dissemination of HIV or HCV infection among persons who inject drugs. DiLENOWISCO is at high-risk for an outbreak of BBPs; therefore a preemptive, multifaceted approach is needed to address the situation and steps for prevention are included in this response plan.

Prevention objectives, as they relate to BBPs for DiLENOWISCO are outlined below:

- a) **Educate community members on available evidence-based resources to reduce initiation of substance misuse and abuse.**
 - i) [SAMSHA resource list](#)
 - ii) Prevention coalitions locations, service areas, meeting schedule

- iii) **Targeted populations**
 - (1) Head Start; K-12 provided by parents, church leaders, teachers, etc.
 - (2) 18-30 year olds through college/community college outreach, worksite targeted education/outreach; bars/restaurants outreach (e.g. stall door posters, etc.)
 - (3) 31-45 year olds through worksite targeted education/outreach; civic and faith organizations; bars/restaurants; sporting events
 - (4) 45 and up through worksite targeted education/outreach; civic and faith organizations; bars/restaurants; sporting events; age-related groups (AARP, senior centers)
- b) **Educate at-risk (for BBPs) populations (PWID, partners of PWID, household contacts).**
- c) **Educate healthcare providers on:**
 - i) current indicators of substance use in the region and available training opportunities and resources (e.g. Applying CDC’s Guideline for Prescribing Opioids-Appendix D)
 - ii) rates of BBP infection, and resources available to reduce risk of infection (SSP, PrEP, Hep B vaccination, etc.).
- d) **Educate and advocate for screening inmates for BBP at local and regional Department of Corrections (DOC)/Jails.**
 - i) Ensure substance abuse class is always offered to inmates through the Department of Corrections’ re-entry program.
 - ii) Educate inmates in re-entry program about BBPs from IDU if approved by DOC, and as requested.
- e) **Share surveillance data and other pertinent information**— Share data and information such as cost of treating BBP versus the cost of SSPs with decision makers, health care providers, community leaders, law enforcement, commonwealth’s attorney and community members in town hall style meetings, business meetings, newsletters, and other mediums.
- f) **Reach out to areas that are geographically dispersed, specifically Lee County. Locations for meetings, trainings, support groups and Community Outreach Centers (“one stop shops”) as recommended by community members include:**
 - i) White Rocks for any needs necessary for the community.
 - ii) Stickleyville School
 - iii) Keokee Alumni
 - iv) Pennington Community Center
- g) **Partner with Faith based community**
 - i) to serve as Community Outreach Centers
 - ii) transportation
 - iii) locations for AA/NA meetings
 - iv) locations for taskforce and community meetings
 - v) volunteers

- h) **Southwest Virginia Medical Reserve Corps**—provide BBP and SUD training to regional medical reserve corps volunteers so they may assist DiLENOWISCO staff in outbreak response if properly trained, and provide other outreach services as needed
- i) **Educate Law Enforcement (LE) officers**—educate on evidenced based prevention and transmission of BBP and SUD information, including:
 - i) current indicators of substance use in the region
 - ii) rates of BBP infection
 - iii) opiate prescribing practices
 - iv) SSPs and the reduced risk of needlestick injuries to LE officers
 - v) Overdose prevention, including Narcan

Additionally, garner LE support for SSPs by:

 - vi) provide access to training for BBP/Universal precautions and consultation as requested related to the management of occupational exposures to BBP
- j) **Partner with Pharmacies and Pharmacy Organizations**
 - i) Pharmacies who are authorized per Code of Virginia § 32.1-45.4. can provide sterile syringes to IDUs and serve as a resource for related SSP procedures
 - ii) Encourage pharmacy schools in the region to serve as subject matter experts and provide venues for presentations on SUD, NAS, Harm Reduction and BBPs
 - iii) Outreach to pharmacists should include information and handouts about:
 - (1) Community Outreach Centers including the available services, target population demographics, and the location and hours of sites
 - (2) state laws that allow syringe access (Code of Virginia § 32.1-45.4.)
 - (3) general education about common concerns (e.g., “Will SSPs increase discarded syringes?” “Increase crime?” “Increase drug use?” etc.)
 - (4) epidemiological evidence for SSP efficacy
- k) **Waste Management for Syringe Disposal**
 - i) As part of building community partnerships, engage city or county waste management and their leadership, during the planning and implementation of SSPs to assure safe, adequate and proper waste management plans
- l) **Volunteer Program (non-MRC)**
 - i) “Recovery Volunteers” (initiated by county Sheriff’s office) recruit volunteers, retired professionals, clergy, community leaders, private citizens and others who are willing to assist with transportation to recovery resources or just someone to talk with and provide positive support
 - ii) Service Agencies will provide trainings to volunteers on:
 - (1) CPR & First Aid
 - (2) Recognition of opioids/synthetics
 - (3) Drug abuse and misuse prevention
 - (4) Naloxone administration
 - (5) Mental Health First Aid
 - (6) Compassion Fatigue

- (7) Setting up group meetings AA/NA/AN
- (8) Faith Based Programs
- (9) Harm reduction, syringe exchange and prevention education

II. Community Response

A. Communication/Notification Procedures

Most reports of HBV are received through laboratories rather than from providers. Standard panels or groups of laboratory tests are ordered by providers and performed by clinical or reference laboratories. In most cases, results of at least two tests are required to determine whether a person has acute or chronic HBV infection. Some laboratories report only positive results to public health; however complete results, including negative findings, are reported to the clinician. As indicated by the nature of the call, district staff should notify the Regional Epidemiologist and/or the DSI central office staff in a timely manner.

BBPs are required to be reported by healthcare providers, hospital directors, and laboratory directors to the health department. Upon receipt of a report of any of these 3 infections, the epidemiology nurse, district epidemiologist or disease intervention specialist (DIS) initiates an investigation, following established protocols, confirming the patient, lab results, clinical picture, patient's location and that the infection has not been previously reported. The district staff will notify the district health director, the regional epidemiologist and VDH central office epi staff. The investigation of a case will identify, in most cases, risk factors for the infection as well as contacts of the index case; contact identification and evaluation (testing) is an important means to determine the extent and in some cases, the direction of transmission (to or from the contact), and to mitigate further spread of infection by provision of prophylaxis appropriate to the infection under consideration, to susceptible and potentially exposed contacts.

In all cases, the person who receives the initial report should:

- Collect initial information regarding the event, such as:
 - The confirmed or presumed BBP
 - Actual or estimated numbers of infected and/or exposed individuals
 - Geographic location of occurrence
 - Type of facility affected, if applicable
 - Timing of occurrence
 - If available, lab results and testing methodologies that have been utilized
 - Treatment and prophylaxis methods
- Assess the validity of the report
- Ensure proper infection control precautions are in place to control the continued spread of disease (if appropriate)
- Provide preliminary response information such as protective and preventive measures
- Notify appropriate personnel at the state, regional and district levels

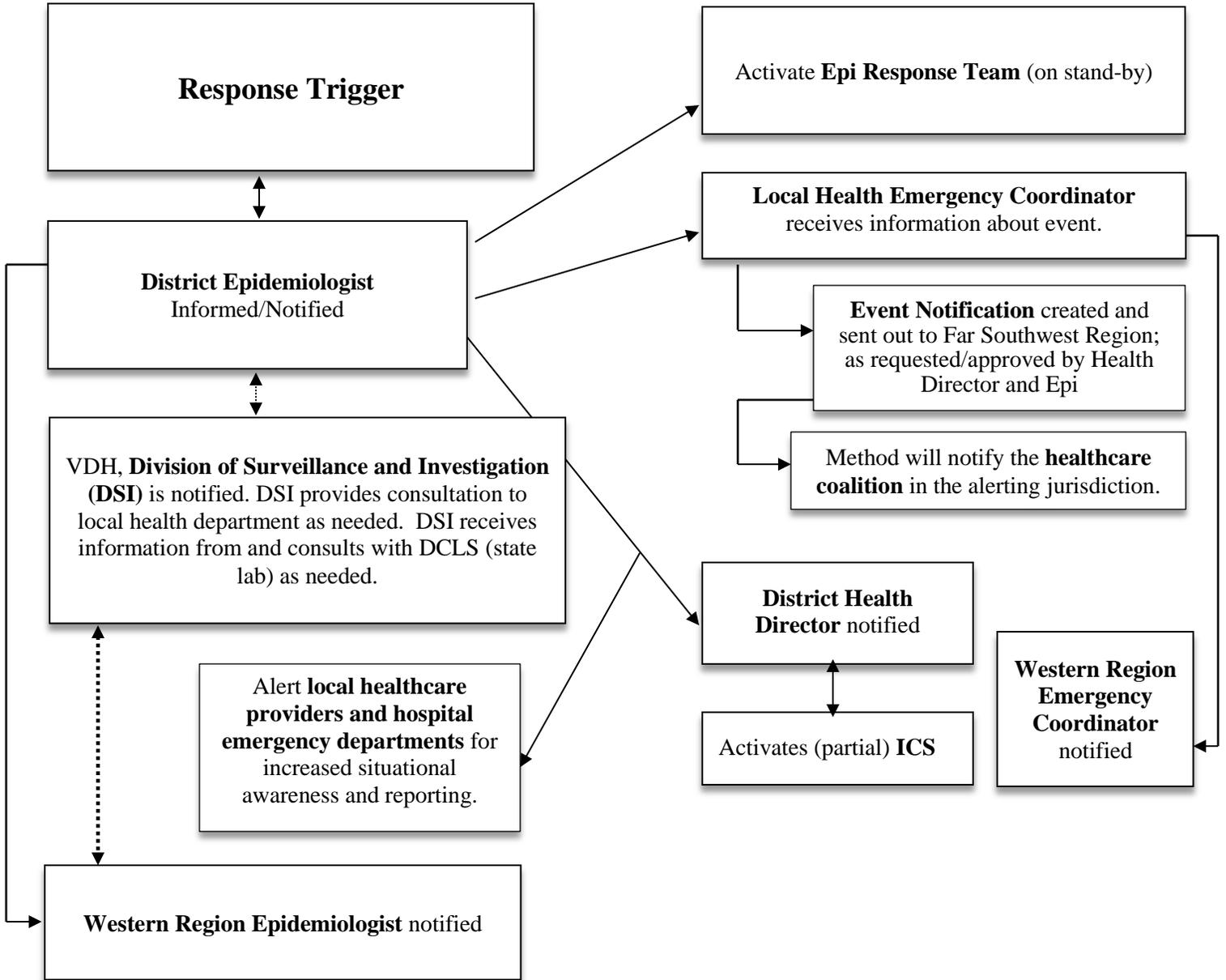
In all situations, DSI should be promptly notified of public health emergencies.

A communication flow sheet for BBP is shown in Figure 1. Evaluation will occur with each step of notification and the notification process will move forward as necessary. As specified personnel are notified, additional relevant staff members may be contacted.

Other key communication activities will include:

- Working to distribute timely and appropriate information regarding a public health disease or outbreak
- Providing regular updates to the Operations/Planning Chief or the Incident Commander
- Monitoring bulletins from Central Office, CDC, World Health Organization (WHO), etc. regarding epidemiologic and clinical findings associated with BBP

Figure 1 - Initial Notification of a Disease Event of Public Health Importance



B. Epi Response Team (ERT)

Each health district has established an Epidemiology Response Team (ERT) in accordance with Central office guidelines. The ERT includes the District Health Director, District Epidemiologist, Public Health Nurses, Environmental Health Specialist, and others (Emergency Coordinator, Clerical staff, etc.) as necessary. A core and expanded team have been identified. The composition of the ERT is listed below.

Depending on the scale of the public health incident, the core district ERT can be expanded but initially would be composed of those members of the Health District who conduct disease investigation on a weekly or monthly basis.

Epidemiology Response Team (ERT) Members	
Position	Duties in Core Team
District Epidemiologist	Investigation and follow-up of bloodborne diseases (hepatitis b, c, and HIV). Coordination of Epi Response Team (ERT); syndromic surveillance; quality assurance, data entry, and training on VEDSS; disease investigation and follow-up. Copying case investigation forms, submitting forms to Central office, and filing in District.
Public Health Nurses	Investigation and follow-up of bloodborne diseases (hepatitis b, c, and HIV) as assigned, VEDSS data entry, screening of patient for residency in the jurisdiction.
Environmental Health Specialist	May provide assistance with specimen drop off or collection; advises environmental risks and control measures.
Disease Intervention Specialist	Investigation and follow-up of bloodborne diseases (hepatitis b, c, and HIV) as assigned; providing accurate information and referral for patients as assigned.
Emergency Coordinator	Works with ERT members to plan for public health incidents using principles of ICS; follow-up post outbreak with hotwash meetings and AAR/IP.
Expanded ERT Members	
Additional Environmental Health Staff- <i>Staff and duties assigned as necessary.</i>	
Health Director- <i>Medical Consultation and decision making for follow-up on case investigation</i>	
Administrative support Staff- <i>Logistical support; tracking costs of investigation; Staff and duties assigned as necessary.</i>	
Public Health Educator(s) - <i>Staff and duties assigned as necessary.</i>	
Western Region EP&R Team (including Western Region Public Information Officer)- <i>as need and requested</i>	

i. Activities and Responsibilities

The ongoing activities and responsibilities of the team include the following:

- Maintaining an active ERT
- Maintaining current lists of staff available to respond to an outbreak or other public health emergency and how to contact them on an emergency basis
- Ensuring awareness of roles and responsibilities of each member in different types of emergencies;
- Ensuring that all ERT members have access to training and to exercises that test response plans;
- Ensuring that at least one member of the ERT is accessible by phone and available 24 hours a day, seven days a week to receive notification and initiate response to public health emergencies;
- Establishing and strengthening links with partners (e.g., physicians, infection control) and ensuring partners know how to report disease events to the health department at any time;
- Serving as the initial point of contact for the public reporting of diseases and investigation;
- Investigating individual reports of disease and investigating all reported outbreaks in prioritized order;
- Providing informational assistance for outbreaks as time and resources allow-if a full response cannot be implemented or is not indicated;
- Initiating enhanced or active surveillance when indicated;
- Reporting disease information to DSI or other Central Office divisions within required time frames as indicated;
- Notifying Central office and pertinent VDH leadership of suspected or confirmed outbreaks of public health importance;
- Cooperating in regional efforts to collect and analyze disease data to facilitate the early detection and management of outbreaks.

Staff health and safety is a paramount concern during the investigation and response. Access to personal protective equipment and policies/procedures for maximizing personal safety of staff when conducting field work is the responsibility of district and agency leadership. General infection control recommendations can be found in Appendix E. The VDH Infection Control Manual, located on the VDH Intranet at <http://tinyurl.com/vdhinfectioncontrol>, provides additional methods for reducing the transmission of infections from patients to VDH personnel, and from personnel to patients.

ii. Expansion of the ERT and Scalable Response

An Epidemiology Response Team and a scalable structure (presented in the Emergency Epidemiology Plan) may be applied to effectively organize the investigation and management of a BBP outbreak of any size or complexity.

Addressing a BBP outbreak should involve the integration of incident command principles (e.g., ICS and NIMS), especially for larger outbreaks. This helps to streamline decision-making and improve consistency, accountability, resource use, and communications. Incident command

principles can also help provide resources to meet the needs of the response and improve the efficiency and effectiveness of the response.

The expanded structure for outbreak response described below may be implemented for any size incident/event, but is particularly recommended for larger scale public health emergencies. The structure is based on epidemiologic tasks that need to be completed as part of the public health response. These tasks are carried out daily by the ERT in an informal manner. In those situations, the whole incident is an epidemiologic incident and the incident commander, the District Director, and all other roles of the response may be fulfilled by a few people. Resources are added as needed to address the situation.

The scalable organizational structure helps ensure that all of the necessary epidemiology activities that may be implemented during a public health emergency are considered, including:

- Epidemiologic surveillance and investigation activities such as case surveillance and investigation, and contact tracing, monitoring, and management.
- Public health disease containment measures such as infection control
- Laboratory testing and confirmation of threat agents.
- Identifying populations infected or at risk of infection through epidemiologic and diagnostic methods specific to the suspected or confirmed contagious agent
- Implementing specific worker protection measures
- Design and conduct of epidemiologic studies to identify risk factors for illness.
- Communicable disease information dissemination to the medical community, responders, and the public.
- Coordination with other city, regional, state, and federal agencies and other organizations responding to a large public health emergency.
- Coordination with city, regional, state, and federal law enforcement agencies conducting an incident criminal investigation.

The following materials provide a general overview of the tasks to be accomplished by the Epidemiology Branch of the Operations Section within the general ICS structure, which is shown in Figure 1. Note that this Incident Command structure is organized in such a way as to expand and contract as needed depending on the incident scope, complexity, and resource needs. The specific epidemiology functions that would be contained within the Epidemiology Branch of the Operations Section are organized into the following three Groups:

1. The Enhanced Surveillance and Case Reporting Group (“Surveillance Group”)
2. The Epidemiology Investigation and Management Group (“Investigation Group”)
3. The Health Information Development Group

Figure 2. General ICS Structure

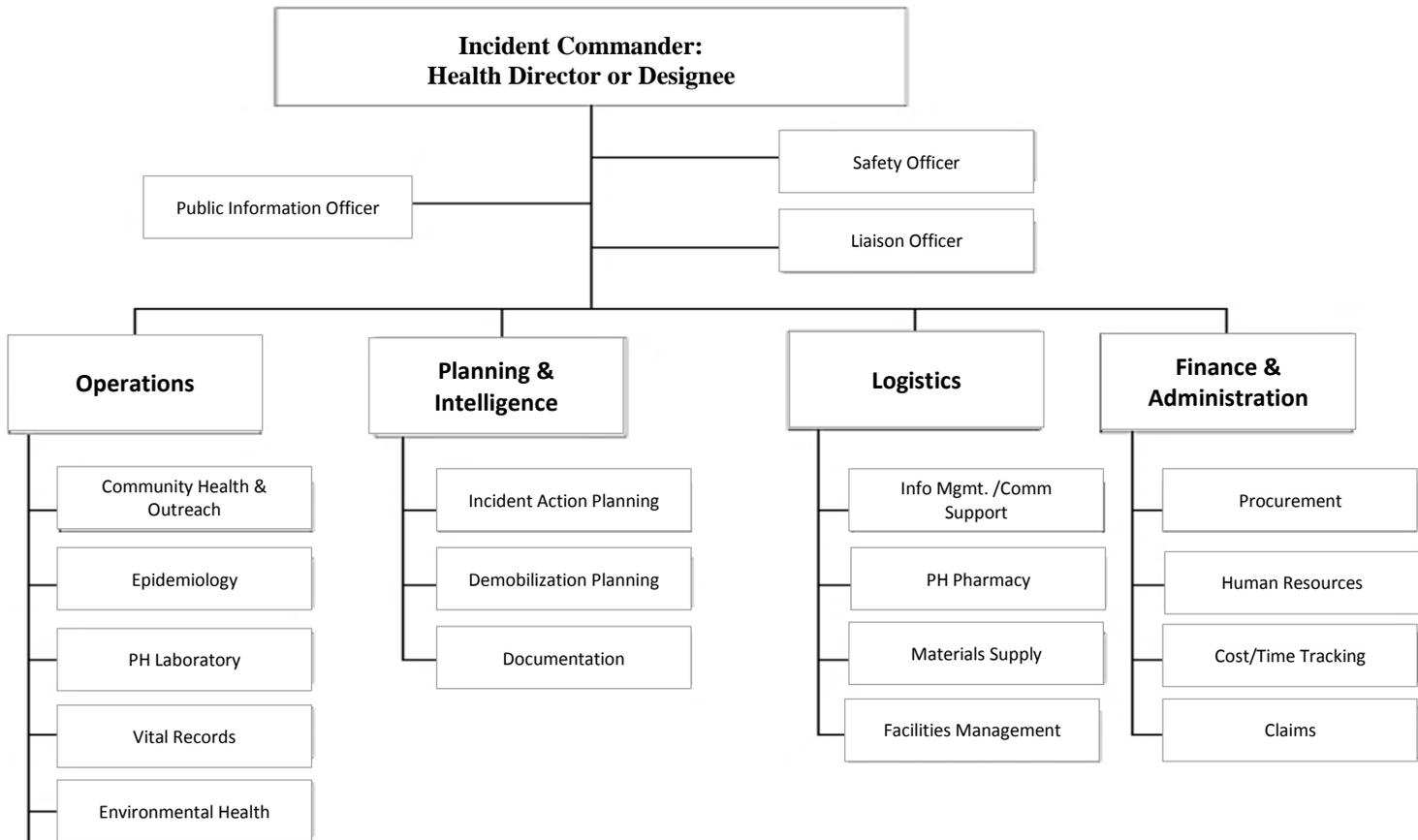
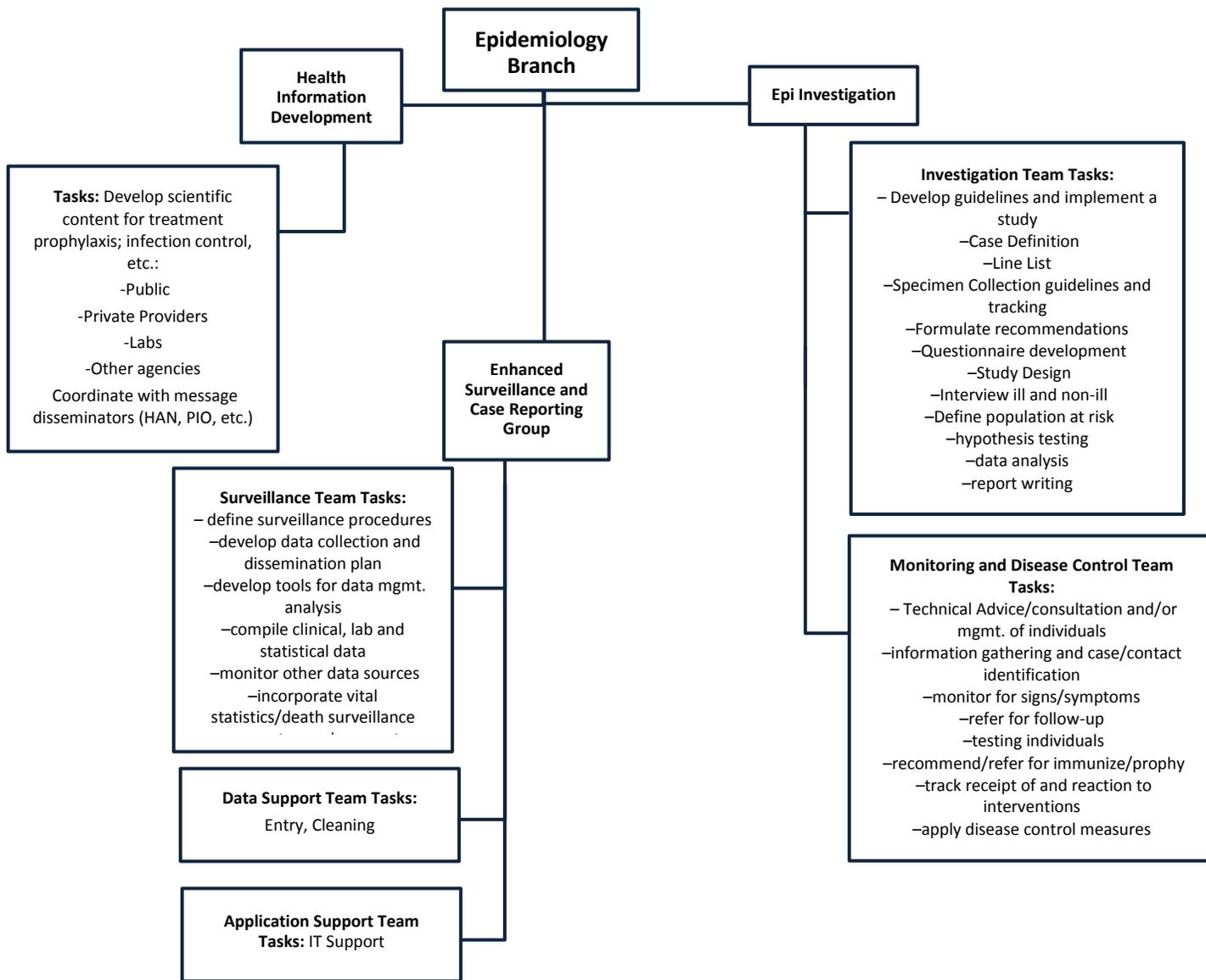


Figure 3. Epidemiology Branch of Operations



The organizational structure and tasks of each group are illustrated in Figure 2. Plans and products are presented to and approved by the Epidemiology Operations Director. Job action sheets for members of these groups are available in the Emergency Epidemiology Plan. The Epidemiology Branch of Operations might also need to provide a resource to serve a liaison function, to be the chief point of contact for interactions with other VDH central offices, DCLS, and other partners participating in the response.

Surveillance

a. Passive Surveillance

Virginia Department of Health districts utilize a passive disease surveillance system as a primary tool for monitoring the health of communities. This system relies on healthcare providers, laboratories, and other entities required by the *Code of Virginia* to provide information to local health departments for all reportable conditions in the Commonwealth (*Virginia Reportable Disease List* <http://www.vdh.virginia.gov/content/uploads/sites/13/2016/03/Regulations-for-Disease-Reporting-and-Control-October-2016.pdf>).

After receiving reports of cases of disease or outbreaks, Epi staff reviews and investigates the report condition, ensuring that appropriate public health measures are implemented to protect the ill person and their contacts; in the case of reportable HCV, HBV and HIV, the following information will be solicited

- The names of all sex and/or needle sharing partners (and close/household contacts for viral hepatitis) exposed between twelve months prior to the date of testing and the date of the patient interview.
- Establish with the patient whether health department staff will notify and refer contacts/partners for counseling and testing, or the patient will inform and refer their own contacts/partners within a mutually agreed upon time frame to accomplish the referral.
- Provide referrals for medical, preventive, and psychosocial services as necessary.
- Provide contacts testing and counseling about risk reduction methods.
- Providing recommendations to facilities where the individual has sought care that may have increased risk for bloodborne transmission: hemodialysis centers, congregate living facilities, and healthcare facilities, including outpatient medical and dental clinics.

DiLENOWISCO staff routinely contact physicians and other providers, hospital infection control personnel and others mandated to report to alert them about disease reporting requirements and procedures in order to improve the timeliness and completeness of disease reporting. They also communicate surveillance data back to the health care community by referring them to the data portal (comprehensive source for community health assessment, public, and population health data).

b. Enhanced Surveillance*Syndromic Surveillance*

The Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) is a system that supports enhanced surveillance within Virginia. It provides chief complaints from hospital emergency departments and urgent care facilities over-the-counter drug sales from large pharmacy chains, and sentinel clinical data from selected primary care settings. Chief complaint will be monitored for symptoms related to BBPs. Aberration detection algorithms identify unusual patterns needing epidemiologic review.

c. Active Surveillance

DiLENOWISCO Epidemiologist will survey chief complaint logs in emergency departments on a regular basis (e.g. hourly) or ESSENCE daily (by chief complaint or ICD 9) for BBPs, including taking actions such as:

- Asking what types of illness the emergency room has been seeing and the level of activity in the unit;
- Reviewing the chief complaint log for the previous day;
- Highlighting any chief complaints being followed, relative to the disease under surveillance; and
- For each visit that is highlighted, obtaining relevant follow-up information (e.g., test results, relevant exposure, risk factors) and determining if follow-up with the lab is needed.
- Surveying laboratories for relevant lab tests ordered and following up with corresponding patients.
- Establishing daily contact with the Infection Control Practitioner to review relevant hospital data.
- Contacting physician office practices and urgent care centers and asking them to report patients who meet specific surveillance criteria.

d. Other Surveillance Options

Other methods of enhancing surveillance that may be implemented include reports received directly from non-traditional reporting sources (e.g., the general public, social media/media, homeless shelter, prison/jail, etc.).

e. Analysis of Surveillance Data

Surveillance data are analyzed to detect potential outbreaks, determine the geographic and demographic distribution of disease, and generate hypotheses for further studies and quality assurance purposes.

Immediate Response

- a) **Automated infectious disease reporting system**—use of an automated infectious-disease-reporting system offers significant support to viral hepatitis and HIV surveillance

and reporting. District Epidemiologist or designee will monitor Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE); Virginia Electronic Disease Surveillance System (VEDSS); physician and hospital reports; and VDH central office reports for trends, spikes, or anything of significance in bloodborne pathogens reporting daily. Additional surveillance methods include using the VA Tech Algorithm for social media monitoring, 211 and Blue Ridge Poison Control. Surveillance data for disease indicators related to BBP infections from regional prisons and jails may be monitored as events dictate. Surveillance will be focused on trends in drug use, recent increases in infection due to BBPs and overdose data from death certificates, emergency departments, EMS reports and Narcan administration.

- b) **Targeted Efforts for BBP Screening & Referral to Treatment**
 - i) Case reports of individuals infected with one BBP
 - ii) People who inject drugs (PWID)
 - iii) At-risk contacts of PWID
 - (1) Household
 - (2) Sexual
 - (3) Perinatal
 - (4) Injection drug use partner

- c) **Alert healthcare providers and provide clinician education; alert public health providers in region (neighboring states and jurisdictions) who are not affected by BBP event**
 - i) All people diagnosed with any one of the three BBPs should be tested for **all** of them; assure access to treatment
 - ii) Resources for provision of Pre-Exposure Prophylaxis (PrEP) and Non-Occupational Post- Exposure Prophylaxis (nPEP)
 - iii) Resources for the provision of Hepatitis B vaccine for susceptible, at-risk individuals
 - iv) Resources for testing at regular intervals on recommended schedule for those with ongoing risk factors

- d) **Provide BBP prevention training**
 - i) To community professionals to include recommended BBP testing and referral resources
 - ii) To persons who inject drugs (PWID) and other community members
 - (1) Risk reduction
 - (2) Access to screening for BBP infection
 - (3) Treatments and prevention options and the benefits of medication adherence
 - (4) Resources for provision of Pre-Exposure Prophylaxis (PrEP) and Non-Occupational Post- Exposure Prophylaxis (nPEP)
 - (5) Resources for the provision of hepatitis B vaccine for susceptible, at-risk individuals

- e) **Partner with SUD Treatment/Mental Health Providers**

- i) Ongoing assessment/referral of persons who inject drugs (PWID) identified by DiLENOWISCO healthcare providers including public health to treatment and recovery resources at each contact.
 - ii) Partnership between DiLENOWISCO public health and healthcare providers and mental health/substance abuse treatment providers to refer new SUD clients for screening for BBP, PrEP, nPEP, hepatitis B vaccine, SSP and family planning.
 - iii) DiLENOWISCO public health and healthcare providers will promote the adoption and maintenance of hepatitis and HIV risk-reduction behaviors among clients who have multiple, complex problems and risk-reduction needs.
 - (1) DiLENOWISCO in partnership with healthcare systems and regional academic centers will ensure the healthcare workforce are adequately trained/educated in best practices to counsel and manage the health of persons with complex medical, behavioral, SUD and social problems and related risk-reduction behaviors.
 - (2) DiLENOWISCO health care providers including public health will refer persons who engage in substance misuse behaviors to Behavioral Health; which serve as a link between services and PWID. Referrals to treatment and recovery resources will be offered at each contact.
- f) **Educate, promote risk reduction, and provide resources targeting PWID**
- i) Cleaning injection equipment (3 steps, 3 cups: see Appendix C)
 - ii) Syringe Service Programs (SSPs)*
 - (1) Screening for readiness for referral to substance use disorder (SUD) treatment options (Stages of Change)
 - (2) Education and counseling to reduce sexual, injection and overdose risks
 - (3) Linkage to other critical services and programs (housing, transportation, food, etc.)
 - (4) Provision of sterile needles, syringes and other drug preparation equipment and disposal services
 - (5) Provision of condoms to reduce risk of sexual transmission of viral hepatitis, HIV or other STDs
 - (6) Provision of naloxone (Narcan) to reverse opioid overdoses (with training on administration- Project REVIVE!- see Appendix D)
 - (a) Train PWIDs, close contacts and anyone prescribed chronic, high-dose opiates on recognizing and responding to an opioid overdose emergency with the administration of naloxone (Narcan)
 - (b) Education about risks of overdose
 - (c) Medication assistance to obtain Narcan
 - (7) Provision of or referral to HIV, viral hepatitis, STD and TB testing, prevention, treatment and care services, including antiviral therapy for HCV and HIV, pre-exposure prophylaxis (PrEP), post-exposure prophylaxis (PEP), prevention of mother-to-child transmission and partner services (see Appendix C)
 - 10) Provision of hepatitis B virus (HBV) vaccination if indicated
 - 11) Referral and linkage to and provision of substance use disorder treatment (including medication-assisted treatment for opioid use disorder which combines drug therapy (e.g., methadone, buprenorphine, or naltrexone) with counseling and behavioral therapy)

- 12) Referral to medical care, mental health services, family planning and other support services; assess willingness to accept assistance and provide support as needed.
- iii) Continue periodic ongoing screening for BBPs infection for PWIDs, if negative; refer for treatment of BBPs if infected
- *Many of the services and tests provided at SSPs are done at the health department, hospitals, doctor's offices, etc.; SSPs are just an excellent opportunity to reach PWIDs and their contacts.*
- g) **Community Outreach Centers** (to be modeled after Scott County, Indiana's "One-Stop Shops") providing:
- i) Insurance Enrollment
 - ii) Care Coordination
 - iii) Syringe Services Program (SSP)
 - iv) BBP Testing and referrals as indicated
 - v) Immunizations
 - vi) Referral to SUD Treatment/Recovery
 - vii) Referral to Behavioral Health for evaluation and treatment of co-occurring mental illness if applicable
 - viii) Family planning services
 - ix) Food Assistance
 - x) Employment Assistance
 - xi) Child Care
 - xii) Health Department services (WIC, case management for pregnant women or parenting children under age 2 by women with SUD, etc.)
 - xiii) Vital Records- Birth Certificates
 - xiv) Department of Motor Vehicles-IDs and/or Birth Certificates
 - xv) Law Enforcement
 - xvi) Healthcare Navigators
 - xvii) Hospitals
 - xviii) Housing and Urban Development (Housing Referral and Application)
 - xix) Social Services
 - xx) Workforce Development
 - xxi) Pharmacy Connect (pharmaceutical manufacturer assistance programs)
 - xxii) Homeless Shelters

Intermediate Response

- a) **Prioritization of prevention of further BBP infection**
- i) Target at-risk populations (i.e. persons who use drugs and at-risk contacts) to identify susceptible population who may be candidates for intervention to reduce risk of infection (HBV and HIV primarily)
 - ii) Prevention interventions to be integrated into other commonly encountered points of contact (healthcare system or public health encounters, behavioral health or SUD treatment programs, community recovery programs, etc.) or promoted through social networks.

- b) **Perinatal Transmission and Neonatal Abstinence Syndrome (NAS)**
 - i) Provide education and information to clinicians that care for pregnant women with known SUD about current management of pregnant women with a BBP infection.
 - ii) Testing & Treatment
 - (1) BBP
 - (a) Pregnant women are required by Virginia Code 12VAC5-90-130 to be tested for hepatitis B infection and positive test results are referred to the health department for investigation and contact tracing. Women who are positive are managed perinatally to reduce the risk the transmission to the infant. HIV testing is encouraged (but not legally required) to reduce the risk of perinatal transmission
 - (2) SUD
 - (a) Screen all pregnant women for presence of Substance Use Disorders using an evidence-based screening tool; train Obstetric providers in providing Screening, Brief Intervention and Referral to Treatment (SBIRT- SBIRT is an approach to the identification of and delivery of early intervention and treatment to people with substance use disorders and those at risk of developing these disorders.)
- c) **Continue to update Healthcare Providers**
 - i) Provide SBIRT Training to encourage providers in varied community settings (urgent care, ED, primary care providers to undertake SBIRT)
 - ii) Assure that hospital providers and private medical providers have resources (training, testing resources, counseling information) to screen patients for BBPs; collaborate as needed to provide point-of-care testing/rapid testing for HIV and HCV when needed; maintain community resource list for referral network for treatment for BBP infections; facilitate required clinician and hospital reporting or BBP infections in patient population.
- d) **Provide information to the public on the current status of incident, incident response and available resources**
 - i) Flyers posted in common areas (grocery stores, discount stores, post office, etc.)
 - ii) Social media information posts
 - iii) Community forum/town hall meetings
 - iv) DiLENOWISCO will work with community and academic partners as needed to provide training and education programs for clinicians and other professionals working with clients with BBP infections, SUD.
- e) **Foster partnerships with organizations serving priority populations**, including community organizations (civic and faith-based groups, service organizations, advocacy groups, etc.), and academic institutions (e.g., VA Tech has program to evaluate health literacy level of health education materials) to raise awareness of BBPs.

- f) **Continue to update healthcare providers in all settings, including institutional settings regarding:**
- i) Regional prevalence of BBP infection and the need to assess risk for BBP infection
 - ii) Screening and interpretation of BBP test results
 - iii) Procedures/best practices to reduce risk of BBP transmission in institutional settings (corrections, ALF, LTCF, etc.)
 - iv) Efficacy of and access to treatment for BBP infection
 - v) BBP Risk reduction: Vaccination, medication to reduce risk (HBV vaccine, PreP, nPEP, etc.)
 - vi) Develop a cadre of primary care providers in the DiLENOWISCO region who are educated and equipped to provide treatment for chronic HBV and chronic HCV infections with support for providers undertaking this work.
 - (1) Linkage to Project ECHO (see Appendix A) or other telemedicine support, such as the University of Virginia
 - (2) Linkage to pharmaceutical assistance programs providing medication for patients based on patient ability to pay
 - (3) Develop resources to support payment associated with laboratory and other diagnostic testing required in the course of treating BBP
- g) **Develop culturally sensitive, trained community health workers (CHW) based in local communities to provide prevention education regarding HCV/HBV/HIV infection and point-of-care testing for HCV and HIV—** CHWs conducting BBP prevention education may require technical assistance to address situations that may go beyond their training which will be provided by community or public health professional staff. CHWs will be trained to provide point-of-care testing for HCV and HIV and related pre and post-test counseling; CHWs will be trained phlebotomists in order to draw confirmatory testing.
- h) **Improve access to sterile needles and syringes and proper disposal of used injection equipment** in areas vulnerable to viral hepatitis and HIV outbreaks.
- i) DiLENOWISCO Health Districts will continue to educate PWIDs on the 3 cup method for syringe and injection equipment cleaning to reduce risk of BBP infection transmission, in addition to other BBP infection risk reduction methods; until a more effective means to reduce infection rates are adopted (such as the SSP). Public health leadership will approach county leadership and local law enforcement for support in the adoption of a syringe services program, providing screening for infection, information and referral for treatment services, clean syringe distribution and proper disposal of used syringes to PWID. When adopted, SSP policies and procedures will be implemented to assure adherence to state guidelines and employee and client safety.

III. Community Recovery

- a. **The following circumstances may trigger implementation of the Recovery component of the Community Response Plan:**

- Return to pre-outbreak or pre-event BBP incidence levels.
- Containment of cases with reduced or no further transmission or identification of secondary cases.
- Resources in place to provide on-going management of HIV infection and treatment of HBV and HCV infection.

b. Activities that would occur during the Recovery phase include:

1. Demobilization, which occurs in accordance with the Emergency Operation Plan, with the following specific action items for public health event:
 - Recommendations and assurance of access for follow up testing may be required
 - Shutdown select Community Outreach Centers as outbreak levels decline
2. Health Department operations will return to normal status. As appropriate personnel become available and the situation allows, operations will be resumed in order of priority.
3. Documentation and Review – To the extent possible, documentation and review of response activities take place actively during investigations. After an event is over, however, one or more additional steps may need to take place, including:
 - a. Completion of the appropriate outbreak reporting form(s);
 - b. Completion of a Memo to the File* or Field Epidemiology Report* (FER); and,
 - c. Conducting an After Action Review* (AAR).

*Additional information on these forms is located in the Epidemiology Response Plan.

Sustained Response

- a) **Develop a culturally competent multimedia messaging framework**
 - b) Ensure messaging engages targeted population in multiple venues (e.g., social media via mobile technology versus posters and brochures).
 - c) Culturally competent, age-appropriate, evidence-based risk reduction messages for all age groups at-risk of or currently abusing substances.
 - d) Broad-based campaigns to provide BBP testing;
 - e) Media campaign to address the stigma of SUD/addiction (Ex: Kansas’ “Stop the Shame” campaign) and others.
- b) **Utilize existing communication networks**—Utilize the ways in which information on drugs is disseminated to provide effective avenues for prevention messaging (e.g. well known location of IDU or word of mouth among PWID).
- c) **Continue heightened awareness of transmission risk for people living with BBPs**
 - a) Methods of Transmission
 - b) Strategies for Prevention
 - c) Access to treatment
 - d) Referral to other services
- d) **Ensure effective counseling messages for those with ongoing exposure to BBPs**

- a) Testing should be repeated in persons who remain at-risk on a regular schedule as recommended by the CDC
- e) **Identify and reduce barriers for access to treatment and recovery**
 - a) Provide/assure Transportation to treatment services and recovery support
 - b) Provide/assure quality Child Care
 - c) Increase number of qualified providers for SUD treatment services and BBP treatment, providing care per current standards of care and best practices.
 - d) Publish recovery meetings, times & locations; assure meetings are scheduled and located so walking and the use of public transportation are available to a significant number of the population in DiLENOWISCO
 - e) Increase access to healthcare insurance/navigators to assist with insurance applications
 - f) Assure adequate and supportive housing
- f) **Develop or enhance resources of existing community coalitions**— To address consequences of SUD/ODU (Opiate Use Disorder) including but not limited to: overdose deaths, BBP infections by replicating best practices from other similar coalitions (such as the Wilkesboro, NC coalition’s successful efforts to reduce overdose deaths).
 - DiLENOWISCO public health will:**
 - a) Continue to work with Virginia Department of Behavioral Health & Developmental Services and local law enforcement to provide REVIVE training (Naloxone training); train-the-trainer training to healthcare providers; training for lay persons to decrease deaths from opioid overdoses.
 - b) Establish local or regional Substance Abuse Taskforces
 - c) Continue to engage local communities, including law enforcement and local government officials to support comprehensive harm reduction program in the community; adhering to Virginia Code § 32.1-45.4 (Comprehensive harm reduction programs to include syringe services) if SSPs are not in place
 - d) Continue to engage, educate and support healthcare provider community
 - e) Ongoing assessment of BBP infection rates, assets deployed and efficacy and identification of gaps
- g) **Promote Integrated Approaches**
 - a) Address health concerns related to SUD/IDU in addition to BBPs (oral health needs, chronic disease management, risk for/presence of bacterial infections related to IDU, etc.).
 - b) Promote the adoption and maintenance of BBP risk-reduction behaviors.
 - c) Partner with behavioral health/SUD treating providers to complete BBP prevention training and participate in BBP counseling.
 - d) Ongoing assessment of readiness to change and in consideration of stage of change, referral of persons with SUD to treatment and recovery resources, offered at each contact.
- h) **Adult and Juvenile Drug Courts**

- 1) Screen clients for BBP infection
- 2) Provide education on transmission of BBP infection and
- 3) Provide education on risk reduction

Conclusions

The Hepatitis and HIV Community Outbreak Response Plan (CRP) is an important component of Emergency Operations in DiLENOWISCO. It provides guidelines on responding to hepatitis B, hepatitis C, and HIV (BBP) outbreaks caused by injection drug use in a rapid and efficient manner. It outlines the mission, authority, scope, objectives, epidemiologic structure, functions, and planning within DiLENOWISCO to respond to hepatitis B, hepatitis C, and HIV outbreaks. Additionally, the plan addresses quite possibly the most important aspect of combatting BBPs due to injection drug use: the community and community resources. Important lessons have been learned from a 2015 HIV outbreak in Indiana as well as DiLENOWISCO's BBP outbreak tabletop exercise and subsequent town hall meetings regarding integrating community efforts and support prior to and during an outbreak.

Acronyms

AAR – After Action Review
 BBP – Bloodborne Pathogen(s)-hepatitis B, hepatitis C, and HIV
 CDC – Centers for Disease Control and Prevention
 COV – Commonwealth of Virginia
 CRP – Hepatitis B, hepatitis C, and HIV Community Response Plan
 CSTE – Council of State and Territorial Epidemiologists
 DCLS – Division of Consolidated Laboratory Services
 DEE – Division of Environmental Epidemiology
 DI – Division of Immunization
 DiLENOWISCO – Dickenson, Lee, Scott, and Wise Counties and the City of Norton
 DOC – Department of Corrections (Medicine, 2017)
 DSI – Division of Surveillance and Investigation
 EARS – Early Aberration Reporting Systems
 EOC – Emergency Operations Center
 EP&R – Office of Emergency Preparedness
 ERT – Epidemiology Response Team
 ESSENCE – Electronic Surveillance System for the Early Notification of Community-
 FER – Field Epidemiology Report
 HAN – Health Alert Network
 HBC – Hepatitis C Virus
 HBV – Hepatitis B Virus
 HDOC – Health Department Operations Center
 HIV - Human Immunodeficiency Virus
 ICS – Incident Command System
 IDU – Injection Drug Use
 ILI – Influenza-like illness
 LHD – Local health department
 NAS – Neonatal Abstinence Syndrome
 NIMS – National Incident Management System
 NNC – Nationally notifiable condition
 NNDSS – National Notifiable Disease Surveillance System
 NORS – National Outbreak Reporting System
 OUD – Opioid Use Disorder
 PWID – Persons who inject drugs
 VAERS – Vaccine Adverse Event Reporting System
 VDEM – Virginia Department of Emergency Management
 VDH – Virginia Department of Health
 VEDSS – National Electronic Disease Surveillance System
 VEDSS – Virginia Early Detection Surveillance System

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Revisions to Guidelines

Revision Number	Supersedes	Effective Date

Appendices

Appendix A

Hepatitis B Guidelines

Hepatitis B Overview

	HEPATITIS B is caused by the Hepatitis B virus (HBV)
U.S. Statistics	<ul style="list-style-type: none"> • Estimated 19,200 new infections in 2014 • Estimated 850,000 - 2.2 million people with chronic HBV infection
Routes of Transmission	<p>Contact with infectious blood, semen, and other body fluids, primarily through:</p> <ul style="list-style-type: none"> • Birth to an infected mother • Sexual contact with an infected person • Sharing of contaminated needles, syringes or other injection drug equipment • Needlesticks or other sharp instrument injuries
Persons at Risk	<ul style="list-style-type: none"> • Infants born to infected mothers • Sex partners of infected persons • Persons with multiple sex partners • Persons with a sexually transmitted disease (STD) • Men who have sex with men • Injection drug users • Household contacts of infected persons • Healthcare and public safety workers exposed to blood on the job • Hemodialysis patients • Residents and staff of facilities for developmentally disabled persons • Travelers to regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of 2%)
Incubation Period	45 to 160 days (average: 120 days)
Symptoms of Acute Infection	Symptoms of all types of viral hepatitis are similar and can include one or more of the following: • Fever • Fatigue • Loss of appetite • Nausea • Vomiting • Abdominal pain • Gray-colored bowel movements • Joint pain • Jaundice
Likelihood of Symptomatic Acute infection	<ul style="list-style-type: none"> • < 1% of infants < 1 year develop symptoms • 5%–15% of children age 1-5 years develop symptoms • 30%–50% of persons > 5 years develop symptoms <p>Note: Symptoms appear in 5%–15% of newly infected adults who are immunosuppressed</p>
Potential for Chronic Infection	<ul style="list-style-type: none"> • Among unimmunized persons, chronic infection occurs in >90% of infants, 25%–50% of children aged 1–5 years, and 6%–10% of older children and adults

Severity	<ul style="list-style-type: none"> • Most persons with acute disease recover with no lasting liver damage; acute illness is rarely fatal • 15%–25% of chronically infected persons develop chronic liver disease, including cirrhosis, liver failure, or liver cancer • 1,800 persons in the United States die with HBV-related liver disease as documented from death certificates
Serologic Tests for Acute Infection	<ul style="list-style-type: none"> • HBsAg in acute and chronic infection • IgM anti-HBc is positive in acute infection only
Serologic Tests for Chronic Infection	<ul style="list-style-type: none"> • HBsAg (and additional markers as needed)
Recommendations for Testing	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> • All pregnant women • Persons born in regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of $\geq 2\%$) • U.S.–born persons not vaccinated as infants whose parents were born in regions with high rates of Hepatitis B (HBsAg prevalence of $\geq 8\%$) • Infants born to HBsAg-positive mothers • Household, needle-sharing, or sex contacts of HBsAg-positive persons • Men who have sex with men • Injection drug users • Patients with elevated liver enzymes (ALT/AST) of unknown etiology • Hemodialysis patients • Persons needing immunosuppressive or cytotoxic therapy • HIV-infected persons • Donors of blood, plasma, organs, tissues, or semen
Treatment	<ul style="list-style-type: none"> • Acute: No medication available; best addressed through supportive treatment • Chronic: Regular monitoring for signs of liver disease progression; some patients are treated with antiviral drugs
Vaccination Recommendations	<p>Hepatitis B vaccine is recommended for:</p> <ul style="list-style-type: none"> • All infants at birth • Older children who have not previously been vaccinated • Susceptible sex partners of infected persons • Persons with multiple sex partners • Persons seeking evaluation or treatment for an STD • Men who have sex with men • Injection drug users • Susceptible household contacts of infected persons • Healthcare and public safety workers exposed to blood on the job

	<ul style="list-style-type: none"> • Persons with chronic liver disease, including HCV-infected persons with chronic liver disease • Persons with HIV infection • Persons with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients • Residents and staff of facilities for developmentally disabled persons • Travelers to regions with intermediate or high rates of Hepatitis B (HBsAg prevalence of $\geq 2\%$) • Unvaccinated adults with diabetes mellitus 19–59 (for those aged ≥ 60 years, at the discretion of clinician) • Anyone else seeking long-term protection
Vaccination Schedule	<ul style="list-style-type: none"> • Infants and children: 3 to 4 doses given over a 6- to 18-month period depending on vaccine type and schedule • Adults: 3 doses given over a 6-month period (most common schedule)

Hepatitis B Virus Standard Operating Procedures

Outbreaks

An outbreak of HBV may not be recognized immediately, because individuals with acute HBV infection may shed virus without being symptomatic. In addition, individuals with chronic HBV infection are usually asymptomatic and may shed virus for many years. Local health departments should monitor acute and chronic HBV reports. A case reported from a congregate living facility (e.g., a corrections facility, a long-term care facility (LTCF) or assisted living facility (ALF)) could indicate an unrecognized outbreak. A second case – even if reported several months later – should be considered an outbreak until proven otherwise.

Outbreaks and suspected outbreaks of HBV must be reported to the local health department immediately, by the most rapid means available. District health departments are required to notify the Office of Epidemiology immediately by the most rapid means available. Contact the Regional Epidemiologist. If the Regional Epidemiologist is unavailable during normal business hours, contact the Central Office at the main telephone number. If you need to speak with someone in DSI outside normal business hours, call the Epi phone during nights, weekends and holidays. Telephone notification should be followed with written notification via [Epi-1 forms](#).

CDC Reporting Requirement

Confirmed cases of HBV are reportable to the Centers for Disease Control and Prevention (CDC) by electronic transmission. All reports to CDC will be transmitted by Division of Surveillance and Investigation (DSI) Central Office personnel.

Case Definition and Laboratory Testing Considerations

CDC/CSTE Case Definition

See page 49.

Additional Information on Laboratory Testing

Pages 50-52 have additional information on laboratory testing. Currently, most reports of HBV are received through laboratories rather than from providers. Standard panels or groups of laboratory tests are ordered by providers and performed by clinical or reference laboratories. In most cases, results of at least two tests (i.e., Hepatitis B surface antigen [HBsAg] and IgM antibody to Hepatitis B core antigen [IgM anti-HBc]) are required to determine whether a person has acute or chronic HBV infection. Some laboratories report only positive results to public health; however complete results, including negative findings, are reported to the clinician. DCLS and CDC may support additional laboratory testing for investigation of HBV outbreaks or suspected outbreaks. Possible need for additional testing should be discussed with the Regional Epidemiologist and DSI Central Office. Additional information on submission of samples will be provided after consultation with CDC.

Disease Characteristics

Period of Communicability

Communicability continues as long as HBsAg is present in the blood. Most acute HBV infections resolve in 2-4 months. Chronic HBV infection may persist for a lifetime.

Mode of Transmission

Transmission is by percutaneous and mucosal contact with infected blood and serous fluids (e.g., serum, wound drainage). Other body fluids (semen and saliva) may be infectious. Transmission via tears, sweat, urine, and stool or droplet nuclei is not known to occur.

Incubation Period

Ranges from 45 to 160 days (average 90-120 days).

High Risk Situations

The following populations are at increased risk of becoming infected with the hepatitis B virus:

- Injection drug users
- Infants born to infected mothers
- Sex partners of infected persons
- Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., >1 sex partner during the previous 6 months)
- Men who have sex with men
- 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
- Residents and staff of facilities for developmentally disabled persons
- Travelers to countries with intermediate or high prevalence of HBV infection

Additional categories not included in previous guidelines where risk for infection may be increased:

- Persons with diabetes where shared glucose monitoring equipment may be used.
- Persons in congregate living settings other than those listed above, especially if assisted blood glucose monitoring is done on some residents.

Once infected, the following are at increased risk for developing chronic HBV infection:

- Infants
- Children 1-5 years of age
- Immunosuppressed persons (e.g., hemodialysis patients and persons with HIV infection)

Public Health Investigation and Follow-up**All Reported Cases**

1. Evaluate laboratory results to determine next steps:

- All cases of acute hepatitis B should be investigated.
- Certain chronic cases should also always be investigated, while others are investigated as resources permit. The following explanation and the algorithm presented on page 50 will help you first assess the information that is available and determine the extent to which a public health investigation is indicated.
- Review the laboratory results to determine whether the report is of: 1) an acute infection; 2) what looks like an acute infection but more information is needed; or 3) a chronic infection. Subsequent steps will depend on the answers to those questions. To determine which of these three categories the case falls into, you need to evaluate the results for the anti-HBc IgM and for any of the set of results we are calling ‘infectivity markers’. Those are HBsAg, HBeAg, or PCR. Follow the steps below, and as illustrated in the algorithm at Attachment E1 to make that determination:
 - Anti-HBc IgM positive: Does the report indicate an anti-HBc IgM positive result? If so, then lean toward thinking that it might be an acute case. Next look to see if the report also contains a positive result for any of the infectivity markers (HBsAg,

- HBeAg, or HBV DNA). If so, then this is an acute case that needs to be investigated UNLESS you look in VEDSS and find that this case has already been reported and investigated before.
- Anti-HBc IgM positive; no results available on any of the infectivity markers: If the anti-HBc IgM is positive but no results are available on any of the infectivity markers, then this falls into the category of “looks like an acute case but more information is needed”. In this situation, call the physician to ask why the patient was tested for hepatitis B, if any other lab results are available, and what the results of any liver function tests that were conducted are. If the infectivity markers were all negative, then no further investigation is needed. If the full hepatitis B panel was not ordered, recommend that it be done and wait for the results of those tests and, when they are available, assess them against the algorithm on page 50 to guide the public health investigation.
 - Anti-HBc IgM negative or missing; infectivity markers negative: If the report does not indicate an anti-HBc IgM positive result, then look to see if any of the three infectivity markers are positive. If not, then no further investigation is necessary.
 - Anti-HBc IgM negative or missing; infectivity markers positive: When the IgM is negative or missing and any of the infectivity markers are positive, review the age, sex, and address of the case-patient, source of the report, and comments noted on the report to prioritize the investigation. Public health investigation priorities for chronic hepatitis B infections are to find pregnant females or young children who might need intervention or represent a missed vaccination opportunity, to find multiple cases in congregate living situations that might indicate an outbreak that needs to be investigated in order to find and remove a source of transmission in a group setting, or to follow up on leads that indicate a potential source that could present a health hazard to others.
- Initiate investigation of any reports of children < 5 years of age or females of child-bearing years reported from a prenatal care site. If multiple reports are received from a congregate living setting within a year, especially if the setting is an assisted living facility or nursing home, then an investigation is warranted (These multiple reports would be identified by reviewing cases in VEDSS to see if the same address was reported or reviewing the monthly VEDSS report that lists multiple cases reported with the same address.). If the report includes a comment that a certain exposure is hypothesized (such as a medical or dental procedure), then gather more details about the date and type of procedure, setting location and provider involved. As resources are available, also provide education and referral for care to the parents/guardians of any child between 5-17 years of age reported to have HBV infection. The investigation of other reports of hepatitis B infection should be done based on the availability of resources and competing priorities in the district.

After you have determined that the case needs investigation, follow the steps below to conduct the investigation. The primary goals of case investigation are to identify potential risk factors for acquiring the disease/infection, potential risk of transmission to others, and potential outbreak situations. Public health purposes are to prevent further transmission; however, follow up with reported cases is also useful to ensure that they are aware of not only preventive measures but also clinical treatment options that may reduce their long-term risk of complications.

Note: If the case (acute or chronic) is known to be pregnant, is post-partum, or is a child ≤ 5 years of age, follow-up should be coordinated with the [Virginia Perinatal Hepatitis B Prevention \(VPHBP\) Program](#).

2. Contact the healthcare provider and/or hospital as necessary to collect additional information. Use the VDH Acute and Chronic Hepatitis B Case Report Worksheet* to record the information.
 - Obtain the date of onset and the occurrence of signs/symptoms suggestive of acute hepatitis. Obtain results of past or present tests for HBV and liver function tests obtained at time of the HBV-associated illness. Be sure hepatitis A and other causes for acute hepatitis have been ruled out.
 - Obtain as much demographic information as possible, including current location (home or hospital), and home and work telephone numbers.
 - Determine whether the infected person's living or work situation is thought to place others at increased risk for infection. Ask about pregnancy status, immunization history, and any known risk factors.
 - Ask what information has been given to the patient, including whether the patient knows about the diagnosis and whether any counseling has been provided.
 - Inform the health care provider that the patient/guardian may be contacted by the health department as part of the public health investigation.
3. Contact the case-patient by telephone or home/hospital visit to obtain additional information.
 - Use the VDH Hepatitis B Acute and Chronic Case Report Worksheet* to guide the interview and collect information on risk factors for HBV infection during the six months prior to onset.
 - If exposure risk factors are identified, use the relevant sections of Part 2 of the VDH Hepatitis B Acute and Chronic Case Report Worksheet* to guide collection of additional information that will be required to plan next steps in the investigation.
4. Review the laboratory results and the information obtained from the healthcare provider and the case-patient.
5. Refer to page 50, and consult with the Regional Epidemiologist and DSI Central Office as necessary to determine whether additional investigation is indicated and what the next steps should be.

*Located in VDH Disease Control Manual.

Additional Investigation of Cases and Contacts

Additional investigation should focus on locations and circumstances where others may be at risk for HBV infection and situations where available prevention and control measures may prevent additional cases.

Depending on the characteristics of the case-patient and the exposure and transmission risks identified, the following should be considered and addressed as promptly and completely as resources permit. The highest priority situations are listed first.

Household, sexual, and needle sharing contacts: Close contacts should be identified and referred to a private provider for evaluation of any symptoms and offered testing and/or

vaccination in accordance with current ACIP recommendations. In addition, HBIG may be recommended for contacts of acute cases, depending on susceptibility and date of last exposure. Contacts should be educated as to the characteristics of HBV, routes of transmission and methods for prevention of transmission.

Pregnant woman*: HBV infection in a pregnant woman should be immediately reported to the Virginia Perinatal Hepatitis B Prevention Program (See additional information at <http://www.vdh.virginia.gov/immunization/>). Appropriate management of the woman, her infant and household contacts may prevent HBV infection and the high probability of chronic hepatitis in the infant.

Young child: A young child with hepatitis B infection has a high probability of developing chronic HBV infection, placing family members and other close contacts at risk for infection.

Blood products and donated tissue/organs: HBV infection transmitted from blood products or a donated tissue/organ (e.g., kidney) should be reported to DSI so the blood or tissue bank from which the product was obtained may be informed. The blood/tissue bank may identify and retest the donor and, if found to be positive, identify and evaluate other recipients of blood or tissues from the same donor.

Hemodialysis patient: HBV infection in a person receiving hemodialysis should be investigated sufficiently to determine whether other cases from the same facility have been reported, and whether transmission within the facility has occurred or could occur. Failure to consistently apply recommended infection prevention measures is frequently noted in reports of outbreaks linked to dialysis centers. Specific infection control guidelines for hemodialysis centers have been published.

Congregate living facility: HBV infection in a resident or worker at a congregate living facility (e.g., LTCF, ALF, or a facility for developmentally disabled individuals) should be investigated to determine whether there are other cases and whether prevention and control measures (i.e., immunization and measures to prevent transmission of bloodborne pathogens) are in place and enforced. These facilities have been associated with outbreaks of HBV, with transmission between and among both staff and residents. ALF and LTCF may be especially high risk environments because: 1) elderly individuals are more likely than younger people to develop chronic HBV, with high viral loads and shedding of virus for months to years; 2) many residents have regular blood glucose monitoring, with possible exposure of personnel and other residents to blood; personal care items (e.g., nail clippers) may be shared; and 3) recommended measures for prevention of transmission of bloodborne pathogens are not always followed. See Attachment F4.

Healthcare facility, including outpatient medical and dental clinics: An HBV infection in an individual whose only exposure is admission to a healthcare facility, a surgical procedure, a dental procedure, or receipt of parenteral medications at an outpatient facility (e.g., chemotherapy at an outpatient oncology clinic) should prompt a review of other recent cases with a similar exposure history. HBV transmission has been associated with lack of adherence to recommended infection prevention practices (e.g., facility use of multi-dose vials of medications for more than one patient).

*** Woman Not Screened for HBV during Pregnancy**
Public Health Priority

Most women are screened for HBV infection during pregnancy as part of routine prenatal care. Rarely, a woman may be admitted to a hospital in labor without having been screened or with HBV test results unavailable. Current recommendations^o for care of the woman and her infant include:

- Test mother for HBsAg immediately on admission for labor/delivery.
- Give infant first dose of Hepatitis B vaccine within 12 hours of birth.
- Administer Hepatitis B Immune globulin (HBIG) within 7 days of birth if mother tests positive for HBsAg.
 - Note 1: Some experts recommend administering HBIG within 7 days if mother's HBsAg test result is not available.
 - Note 2: Current (2009) AAP/Redbook) recommendation is that an infant weighing < 2000 g. at birth should receive HBIG within 12 hours if mother is HBsAg positive or if result is not known.

Public Health Actions

- Obtain laboratory results for mother's Hepatitis B surface antigen (HBsAg) and IgM.
- Look up person's name in VEDSS to determine whether the person has previously been tested for HBV and additional laboratory test results are available.
- Use the chart in Attachment E1 as necessary to determine whether the person has acute HBV infection, chronic HBV infection or is immune.
- Enter case report and laboratory results in VEDSS.
- Contact the Virginia Perinatal Hepatitis B Prevention (VPHBP) Program. Additional information on VPHBP is available at: <http://www.vdh.virginia.gov/immunization/vphbp/>
- Coordinate with VPHBP to assure that household and other close contacts of mother and infant are identified, tested, counseled and/or immunized to minimize risks for HBV transmission to the infant.
- Identify other infants/small children in the household to assure that they are tested, referred for care if they are HBV infected, or immunized if they are not infected and have not been immunized.

^oAmerican Academy of Pediatrics Report of the Committee on Infectious Diseases (Red Book) 2009. Refer to the latest edition of Red Book, as recommendations are updated periodically.

Prevention and Control Measures

- Immune globulin to prevent infection in persons recently exposed to HBV (e.g., by needle stick injury).
- HBV vaccine. Current ACIP recommendations for immunization of children and adults at increased risk for exposure to HBV are located at <https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html>
- Infection prevention measures. Transmission of HBV is by direct contact with blood and body fluids. In healthcare settings, "standard precautions" are used for all routine patient care, with additional precautions (e.g., use of gloves, face shields) if contact with contaminated materials or splashing of blood/fluids onto skin or mucus membranes is anticipated. Because transmission of HBV associated with inappropriate glucose monitoring practices has occurred with significant morbidity and mortality, especially in ALF residents, additional guidelines for safe use of blood glucose monitoring equipment have been published.

Management of Outbreaks

Priority and Timing of Response

An outbreak investigation should be initiated as soon as an outbreak is suspected.

An outbreak may not be recognized immediately, because individuals with acute HBV infection may shed virus without being symptomatic or before illness is recognized. In addition, individuals with chronic HBV infection are usually asymptomatic and may shed virus for many years.

Local health departments should monitor acute and chronic HBV reports in their district over time. A case reported from a LTCF or ALF could indicate an unrecognized outbreak. A second case – even if reported a year or more later – should be considered an outbreak until proven otherwise.

Historically, most HBV outbreaks have occurred in congregate care facilities, including those caring for developmentally disabled and the mentally ill. In recent years, outbreaks most often reported by CDC have involved non-hospital healthcare settings (e.g., dental clinics and outpatient clinics where IV medications are administered), or congregate living settings where some healthcare is provided (e.g., LTCF and ALF). Most reported LTCF/ALF outbreaks have implicated fingerstick devices and meters used for monitoring of blood glucose levels. Extensive investigations of outbreaks in several states, including Virginia, have identified shared use of equipment intended for individual use and inadequate attention to basic infection control measures as major risk factors.

Response Team

A response to an outbreak should be planned, with inclusion of the Health Director, district and regional epidemiologists, public health nurses, environmental health specialists, Central Office personnel and others included as indicated by the disease, mode of transmission and size of outbreak. If the outbreak is large, complicated and a multi-jurisdictional or multi-agency response is anticipated, an incident-command structure for the response should be considered.

Notifications

1. Other Notifications

- Local or district health departments in Virginia may be contacted directly.
- Other state health departments will be contacted by VDH Central Office.
- Healthcare providers and healthcare facilities may be contacted by the local or district health department.
- Other state and federal agencies (e.g., USDA, FDA) will be contacted by VDH Central Office staff.

2. Media

- Issue a press release when appropriate, after consultation with District Health Director and VDH Central Office.

Outbreak Investigation and Prevention/Control Measures

Outbreak Investigation

Definition of an outbreak or possible outbreak of acute HBV is based on an increase over the expected number of acute HBV cases. In situations where no cases of acute HBV infection have previously been reported or in populations considered at low risk, a single case may meet the definition for an outbreak.

Steps in an outbreak investigation and recommended prevention/control measures will depend on the outbreak setting and most probable route of transmission. Completion of the VDH Hepatitis B Exposure and Transmission Risk Worksheet for each reported HBV case and periodic review of the Worksheets may identify a setting or a possible exposure for several apparently sporadic cases. Once an outbreak is suspected and the possible setting(s) or mode(s) of transmission identified, appropriate guidelines should be consulted.

The usual first steps in the investigation are:

1. A review of available records for reported cases to confirm the diagnosis of HBV, attempt to determine dates of exposure and illness, whether the HBV infection is acute, chronic or resolved and to confirm the information on the Worksheet (e.g., whether person was receiving care at a dialysis center or resident of an ALF or LTCF during the likely time period of the outbreak).
2. A re-interview of the case-patient or person able to speak for the case-patient to confirm the information on the Worksheet and elicit additional information (e.g., past history of surgery or receipt of blood transfusions).
3. A site visit if a, LTCF/ALF, dialysis center or other high risk setting has been identified.
4. A search for additional cases by review of facility records, local health department records, and VEDSS surveillance data.
5. Development of a line-list or other tool to capture information on all outbreak-related cases (suspected and confirmed).

Next steps should follow discussion of findings with local health department management, the Regional Epidemiologist, and DSI Central Office. Other experts (e.g., infection preventionists), facility managers and health care providers should be included in the review and planning of an investigation, especially if a healthcare facility, or corrections, ALF, LTCF are involved.

Prevention and Control Measures

Prevention/Control Measures are as outlined in section 6: Public Health Investigation and Follow-up, and must be tailored to the specific setting and population affected.

Immune globulin: Immune globulin is useful only in the few days following a documented high risk exposure.

Immunization: Immunization of individuals at increased risk for exposure to HBV before they enter the high risk environment is recommended. ACIP recommendations are found here <https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html>

Immunization of susceptible individuals is one of several possible measures for use in containing an outbreak. However, immunization of high risk susceptible individuals has limitations and is usually used in combination with other measures. Major limitations are that completion of the recommended vaccine series requires several months and persons > 60 years of age and immunocompromised individuals of any age may not respond to vaccine, so will remain susceptible.

Measures to prevent transmission of HBV and other bloodborne pathogens: Transmission of HBV and other bloodborne pathogens can be prevented by preventing direct contact with infected blood and body fluids.

Healthcare facilities routinely use standard precautions in the care of all patients, with additional precautions (use of gowns, gloves, and face shields) when direct contact or splashes of blood or body fluids is possible, and routine use of safety devices to prevent needle stick injuries. Routine application of precautions to prevent transmission of blood borne pathogens in ambulatory care and congregate living settings is more difficult for a variety of reasons, including lack of understanding of how bloodborne diseases are transmitted, and lack of guidelines adapted to non-hospital settings. Costs of equipment and supplies (gloves), increased complexity of routine activities (frequent glove changes, increased hand hygiene), lack of support for infection prevention behaviors/activities and reluctance to be obvious in use of protective equipment in non-healthcare settings may be factors and should be addressed in recommendations to facilities.

Implementation of appropriate infection prevention guidelines in non-healthcare settings requires understanding of the population, the high risk situations or activities (e.g., shared needles by drug users, high risk activities by inmates, and blood glucose monitoring in ALF). Guidelines, implementation strategies and follow-up to assure continued adherence to recommendations must be tailored to the population and the setting.

Other Considerations

Isolation and Quarantine (as defined by statute/regulation) are not applicable.

Cohorting of chronically infected individuals (e.g., housing infected with other infected individuals in congregate settings) has sometimes been recommended, but it may be difficult to keep patient/resident information confidential if reasons for room assignments are known. Strict adherence to standard precautions and preventing shared use of personal care items is preferred.

Forms/Questionnaires/Reports

Epi-1 and Laboratory Reports

Forward the top copy of the Epi-1 and/or the laboratory report for all Hepatitis B confirmed cases as soon as possible, but within 3 days of initial notification.

VDH Forms

Complete the [VDH Acute and Chronic Hepatitis B Case Report Worksheet](#), Part 1 and the relevant portions of the VDH Acute and Chronic Hepatitis B Case Report Worksheet, Part 2. Send the completed forms to the Regional Epidemiologist.

If an outbreak has been identified and an outbreak-specific questionnaire or line-list is used, completing the Hepatitis B Exposure and Transmission Risk Worksheet for each case may not be necessary. Questionnaires and line-list documents (e.g., cases and suspected cases, dates, clinical information, and laboratory reports) should be developed and finalized in consultation with the Regional Epidemiologist and DSI Central Office staff. When the outbreak investigation is complete, the local health department and the Regional Epidemiologist should determine where all investigation-related documents will be retained.

CDC Case Report Form

A Viral Hepatitis Case record for Reporting of Patients with Symptomatic Acute Viral Hepatitis is available, but its completion is not required. Information requested by CDC is transmitted through the VEDSS reporting system.

Reports

Outbreak investigations that include an analytic study should have a Field Epidemiology Report written when the investigation is completed. The District Epidemiologist should draft the Field Epidemiology Report and work with the Regional Epidemiologist to finalize the report. For outbreak investigations where insufficient data are available for a complete epidemiologic study, a memo to the file or completion of the Hepatitis B Outbreak Investigation Summary is sufficient for documentation of the findings. The final report/memo/investigation summary should be sent to the Regional Epidemiologist.

VEDSS

All reported cases of acute HBV should be entered into VEDSS as soon as possible. Reported cases of chronic HBV should be entered as soon as resources permit.

Hepatitis B Immune Globulin (HBIG) Dose and Administration

- The standard dose of HBIG is .06 mL/kg for all applications in adults.
- HBIG may be administered simultaneously with hepatitis B vaccine but in a different injection site.
- HBIG is administered by intramuscular injection. An appropriate muscle mass (i.e., deltoid or gluteal) should be chosen in which to deliver the large volumes of HBIG required by using a needle length appropriate for the person’s age and size.
- HBIG should be stored at 35°F-46°F and should not be frozen.

Guidelines for post-exposure prophylaxis* of persons with non-occupational exposures† to blood or body fluids that contain blood by exposure type and vaccination status

	Cause of Exposure	Suggested Action Unvaccinated Persons§	Suggested Action Previously Vaccinated Persons¶
Discrete exposure to an HBsAg**-positive source	Percutaneous (e.g., bite or needlestick) or mucosal exposure to HBsAg-positive blood or body fluids that contain blood.	Administer hepatitis B vaccine series and hepatitis B immune globulin (HBIG)†	Administer hepatitis B vaccine booster dose
	Sexual or needle-sharing contact of an HBsAg-positive person.	Administer hepatitis B vaccine series and HBIG†	Administer hepatitis B vaccine booster dose
	Victim of sexual assault/abuse by a perpetrator who is HBsAg-positive.	Administer hepatitis B vaccine series and HBIG†	Administer hepatitis B vaccine booster dose
Discrete exposure to a source with unknown HBsAg status	Percutaneous (e.g., bite or needlestick) or mucosal exposure to blood or body fluids that contain blood from a source with unknown HBsAg status.	Administer hepatitis B vaccine series†	No treatment.
	Sexual or needle-sharing contact of an HBsAg-positive person.	Administer hepatitis B vaccine series†	No treatment.
	Victim of sexual assault/abuse by a perpetrator with unknown HBsAg status.	Administer hepatitis B vaccine series†	No treatment.

* Immunoprophylaxis should be administered as soon as possible, preferably within 24 hours. Studies are limited on the maximum interval after exposure during which post-exposure prophylaxis is effective, but the interval is unlikely to exceed 7 days for percutaneous exposures and 14 days for sexual exposures. The hepatitis B vaccine series should be completed.

[†]These guidelines apply to non-occupational exposures. Guidelines for management of occupational exposures are published separately.

[§]A person who is in the process of being vaccinated but who has not completed the vaccine series should complete the series and receive treatment as indicated.

[¶]A person who has written documentation of a complete hepatitis B vaccine series and who did not receive post-vaccination testing.

**Hepatitis B surface antigen.

CDC/CSTE Case Definition

	Clinical	Laboratory	Classification
Acute			
Hepatitis B	<p>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 either a) jaundice, or b) elevated serum alanine aminotransferase (ALT) levels >100 IU/L.</p> <p>*A documented negative hepatitis B surface antigen (HBsAg) laboratory test result within 6 months prior to a positive test (either HBsAg, hepatitis B "e" antigen (HBeAg), or hepatitis B virus nucleic acid testing (HBV NAT) including genotype) result does not require an acute clinical presentation to meet the surveillance case definition.</p>	<ul style="list-style-type: none"> • HBsAg positive, AND • Immunoglobulin M (IgM) antibody to hepatitis B core antigen (IgM anti-HBc) positive (if done) 	A case that meets the clinical case definition, is laboratory confirmed, and is not known to have chronic hepatitis B.
Chronic			
Hepatitis B	<p>No symptoms are required. Persons with chronic hepatitis B virus (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.</p>	<ul style="list-style-type: none"> • Immunoglobulin M (IgM) antibodies to hepatitis B core antigen (IgM anti-HBc) negative AND a positive result on one of the following tests: hepatitis B surface antigen (HBsAg), hepatitis B e antigen (HBeAg), or nucleic acid test for hepatitis B virus DNA (including qualitative, quantitative and genotype testing), OR • HBsAg positive or nucleic acid test for HBV DNA positive (including qualitative, quantitative and genotype testing) or HBeAg positive two times at least 6 months apart (Any combination of these tests performed 6 months apart is acceptable) 	<p>Probable A person with a single HBsAg positive or HBV DNA positive (including qualitative, quantitative and genotype testing) or HBeAg positive lab result and does not meet the case definition for acute hepatitis B.</p> <p>Confirmed A person who meets either of the above laboratory criteria for diagnosis.</p>

Hepatitis B Serology *

*Adapted from CDC Hepatitis Webpage (Available at <https://www.cdc.gov/hepatitis/hbv/hbvfaq.htm#C1>)

Hepatitis B Serologic Markers

Hepatitis B surface antigen (HBsAg): A protein on the surface of HBV; it can be detected in high levels in serum during acute or chronic HBV infection. The presence of HBsAg indicates that the person is infectious. The body normally produces antibodies to HBsAg as part of the normal immune response to infection. HBsAg is the antigen used to make Hepatitis B vaccine.

Hepatitis B surface antibody (anti-HBs): The presence of anti-HBs is generally interpreted as indicating recovery and immunity from HBV infection. Anti-HBs also develop in a person who has been successfully vaccinated against Hepatitis B.

Total Hepatitis B core antibody (anti-HBc): Appears at the onset of symptoms in acute Hepatitis B and persists for life. The presence of anti-HBc indicates previous or ongoing infection with HBV in an undefined time frame.

IgM antibody to Hepatitis B core antigen (IgM anti-HBc): Positivity indicates recent infection with HBV (≤ 6 months). Its presence indicates acute infection.

Hepatitis B e antigen (HBeAg): A secreted product of the nucleocapsid gene of HBV that is found in serum during acute and chronic Hepatitis B. Its presence indicates that the virus is replicating and the infected person has high levels of HBV.

Hepatitis B e antibody (HBeAb or anti-HBe): Produced by the immune system temporarily during acute HBV infection or consistently during or after a burst in viral replication. Spontaneous conversion from e antigen to e antibody (a change known as seroconversion) is a predictor of long-term clearance of HBV in patients undergoing antiviral therapy and indicates lower levels of HBV.

Time to Seropositivity

HBsAg will be detected in an infected person's blood an average of 4 weeks (range: 1–9 weeks) after exposure to the virus. About 1 of 2 patients will no longer be infectious by 7 weeks after onset of symptoms, and all patients who do not remain chronically infected will be HBsAg-negative by 15 weeks after onset of symptoms.

Interpretations for hepatitis B serologic markers

Tests	Results	Interpretation
HBsAg	negative	Susceptible
anti-HBc	negative	
anti-HBs	negative	
HBsAg	negative	Immune due to natural infection
anti-HBc	positive	
anti-HBs	positive	
HBsAg	negative	Immune due to hepatitis B vaccination
anti-HBc	negative	

anti-HBs	positive	
HBsAg	positive	
anti-HBc	positive	Acutely infected
IgM anti-HBc	positive	
anti-HBs	negative	
HBsAg	positive	
anti-HBc	positive	Chronically infected
IgM anti-HBc	negative	
anti-HBs	negative	
Interpretation unclear; four possibilities:		
HBsAg	negative	1. Resolved infection (most common)
anti-HBc	positive	2. False-positive anti-HBc, thus susceptible
anti-HBs	negative	3. "Low level" chronic infection
		4. Resolving acute infection

hepatitis B surface antigen (HBsAg): A protein on the surface of HBV; it can be detected in high levels in serum during acute or chronic HBV infection. The presence of HBsAg indicates that the person is infectious. The body normally produces antibodies to HBsAg as part of the normal immune response to infection. HBsAg is the antigen used to make hepatitis B vaccine.

hepatitis B surface antibody (anti-HBs): The presence of anti-HBs is generally interpreted as indicating recovery and immunity from HBV infection. Anti-HBs also develop in a person who has been successfully vaccinated against hepatitis B.

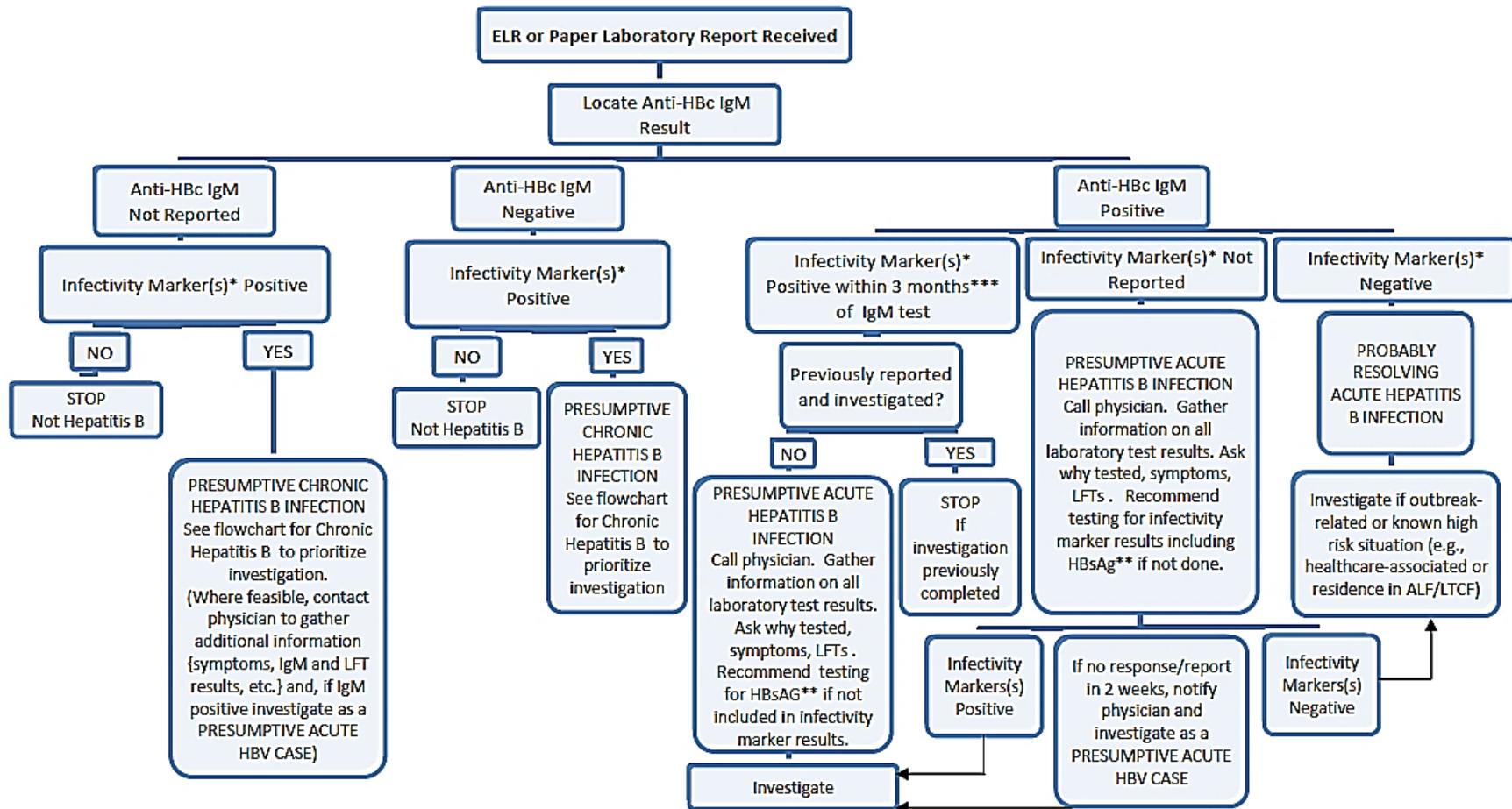
Total hepatitis B core antibody (anti-HBc): Appears at the onset of symptoms in acute hepatitis B and persists for life. The presence of anti-HBc indicates previous or ongoing infection with HBV in an undefined time frame.

IgM antibody to hepatitis B core antigen (IgM anti-HBc): Positivity indicates recent infection with HBV (≤ 6 months). Its presence indicates acute infection.

Adapted from: A Comprehensive Immunization Strategy to Eliminate Transmission of hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. Part I: Immunization of Infants, Children, and Adolescents. MMWR 2005; 54(No. RR-16).

Evaluation of a Hepatitis B Laboratory Report

Initial steps for identifying need to initiate public health investigation



* Infectivity Marker = HBsAg positive OR HBeAg positive OR positive nucleic acid test for hepatitis B virus DNA. For purposes of initiating an investigation of the reported case, all infectivity markers are considered of equal importance. Note which markers are reported, investigate according to the algorithm, and at the end of the investigation, classify the case based on all the information that is known about the clinical illness and lab results.

** HBsAg positive result required to classify acute Hepatitis B.

*** If > 3 months, presume chronic hepatitis B infection and see flowchart for chronic hepatitis B to prioritize investigation

Project ECHO: A Revolution in Medical Education and Care Delivery

Project ECHO is a lifelong learning and guided practice model that revolutionizes medical education and exponentially increases workforce capacity to provide best-practice specialty care and reduce health disparities. The heart of the ECHO model™ is its hub-and-spoke knowledge-sharing networks, led by expert teams who use multi-point videoconferencing to conduct virtual clinics with community providers. In this way, primary care doctors, nurses, and other clinicians learn to provide excellent specialty care to patients in their own communities.



People need access to specialty care for their complex health conditions.

There aren't enough specialists to treat everyone who needs care, especially in rural and underserved communities.

ECHO trains primary care clinicians to provide specialty care services. This means more people can get the care they need.

Patients get the right care, in the right place, at the right time. This improves outcomes and reduces costs.

Project ECHO (Extension for Community Healthcare Outcomes) is a collaborative model of medical education and care management that empowers clinicians everywhere to provide better care to more people, right where they live. The ECHO model™ does not actually “provide” care to patients. Instead, it dramatically increases access to specialty treatment in rural and underserved areas by providing front-line clinicians with the knowledge and support they need to manage patients with complex conditions such as: hepatitis C, HIV, tuberculosis, chronic pain, endocrinology, behavioral health disorders, and many others. It does this by engaging clinicians in a continuous learning system and partnering them with specialist mentors at an academic medical center or hub.

Opioid Training at Project ECHO

ECHO provides training in opioid addiction treatment at no cost, delivered right to clinics every week. Using simple videoconferencing technology, healthcare teams can connect to a community of learners which offers:

- Free continuing education credit
- Opportunity to present actual patient cases, in a de-identified format, and receive specialty input
- Addiction treatment training, including management of naloxone/ buprenorphine (e.g. Suboxone) and injectable naltrexone (e.g. Vivitrol)
- Access to a virtual learning community for access to treatment guidelines, tools, and patient resources
- Certificate of training completion from ECHO and the American Society of Addiction Medicine

<http://echo.unm.edu/>

Appendix B

Hepatitis C Guidelines

Hepatitis C Overview

	HEPATITIS C is caused by the Hepatitis C virus (HCV)
U.S. Statistics	<ul style="list-style-type: none"> • Estimated 30,500 new infections in 2014 • Estimated 2.7–3.9 million people with chronic HCV infection
Routes of Transmission	<p>Contact with blood of an infected person, primarily through:</p> <ul style="list-style-type: none"> • Sharing of contaminated needles, syringes, or other injection drug equipment <p>Less commonly through:</p> <ul style="list-style-type: none"> • Sexual contact with an infected person • Birth to an infected mother • Needlestick or other sharp instrument injuries
Persons at Risk	<ul style="list-style-type: none"> • Current or former injection drug users • Recipients of clotting factor concentrates before 1987 • Recipients of blood transfusions or donated organs before July 1992 • Long-term hemodialysis patients • Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV) • HIV-infected persons • Infants born to infected mothers
Incubation Period	14 to 180 days (average: 45 days)
Symptoms of Acute Infection	Symptoms of all types of viral hepatitis are similar and can include one or more of the following: • Fever • Fatigue • Loss of appetite • Nausea • Vomiting • Abdominal pain • Gray-colored bowel movements • Joint pain • Jaundice
Likelihood of Symptomatic Acute infection	<ul style="list-style-type: none"> • 20%–30% of newly infected persons develop symptoms of acute disease
Potential for Chronic Infection	<ul style="list-style-type: none"> • 75%–85% of newly infected persons develop chronic infection • 15%–25% of newly infected persons clear the virus
Severity	<ul style="list-style-type: none"> • Acute illness is uncommon. Those who do develop acute illness recover with no lasting liver damage. • 60%–70% of chronically infected persons develop chronic liver disease • 5%–20% develop cirrhosis over a period of 20–30 years • 1%–5% will die from cirrhosis or liver cancer • 19,600 deaths in 2014

Serologic Tests for Acute Infection	<ul style="list-style-type: none"> • No serologic marker for acute infection
Serologic Tests for Chronic Infection	<ul style="list-style-type: none"> • Screening assay (EIA or CIA) for anti-HCV • Verification by an additional, more specific assay (e.g., nucleic acid testing (NAT) for HCV RNA)
Testing Recommendations	<p>Testing is recommended for:</p> <ul style="list-style-type: none"> • Persons born from 1945–1965 • Persons who currently inject drugs or who have injected drugs in the past, even if once or many years ago • Recipients of clotting factor concentrates before 1987 • Recipients of blood transfusions or donated organs before July 1992 • Long-term hemodialysis patients • Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV) • HIV-infected persons • Children born to infected mothers (do not test before age 18 mos.) • Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme tests) • Donors of blood, plasma, organs, tissues, or semen
Treatment	<ul style="list-style-type: none"> • Recommendations for When and in Whom to Initiate Treatment: Treatment is recommended for all patients with chronic HCV infection, except those with short life expectancies that cannot be remediated by treating HCV, by transplantation, or by other directed therapy. Patients with short life expectancies owing to liver disease should be managed in consultation with an expert. <p>Please refer to the Infectious Disease Society of America for the most current recommendations on Hepatitis C treatment guidelines.</p>
Vaccination Recommendations	<p>There is no Hepatitis C vaccine</p>
Vaccination Schedule	<p>There is no Hepatitis C vaccine</p>

CDC/CSTE Case Definition

	Clinical	Laboratory	Classification
Acute			
Hepatitis C	<p>An illness with discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain),</p> <p>AND</p> <p>(a) jaundice, OR</p> <p>(b) a peak elevated serum alanine aminotransferase (ALT) level >200 IU/L during the period of acute illness.</p>	<ul style="list-style-type: none"> • A positive test for antibodies to hepatitis C virus (anti-HCV) • Hepatitis C virus detection test: <ul style="list-style-type: none"> -Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative or genotype testing) -A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)* <p>* When and if a test for HCV antigen(s) is approved by FDA and available.</p>	<p>Probable</p> <ul style="list-style-type: none"> • A case that meets clinical criteria and has a positive anti-HCV antibody test, but has no reports of a positive HCV NAT or positive HCV antigen tests, <p>AND</p> <ul style="list-style-type: none"> • Does not have test conversion within 12 months or has no report of test conversion. <p>Confirmed</p> <ul style="list-style-type: none"> • A case that meets clinical criteria and has a positive hepatitis C virus detection test (HCV NAT or HCV antigen), <p>OR</p> <ul style="list-style-type: none"> • A documented negative HCV antibody, HCV antigen or NAT laboratory test result followed within 12 months by a positive result of any of these tests (test conversion).
Chronic			
Hepatitis C	<p>No available evidence of clinical and relevant laboratory information indicative of acute infection (refer to the criteria for classification Table VII-B in CSTE position statement 15-ID-03). Most hepatitis C virus (HCV)-infected persons are asymptomatic; however, many have chronic liver disease, which can range from mild to severe.</p>	<ul style="list-style-type: none"> • A positive test for antibodies to hepatitis C virus (anti-HCV) • Hepatitis C virus detection test: <ul style="list-style-type: none"> ◦ Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative or genotype testing) ◦ A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)* <p>* When and if a test for HCV antigen(s) is approved by FDA and available.</p>	<p>Probable</p> <ul style="list-style-type: none"> • A case that does not meet clinical criteria or has no report of clinical criteria, <p>AND</p> <ul style="list-style-type: none"> • Does not have test conversion within 12 months or has no report of test conversion, <p>AND</p> <ul style="list-style-type: none"> • Has a positive anti-HCV antibody test, but no report of a positive HCV NAT or positive HCV antigen test. <p>Confirmed</p> <ul style="list-style-type: none"> • A case that does not meet clinical criteria or has no report of clinical criteria, <p>AND</p> <ul style="list-style-type: none"> • Does not have test conversion within 12

			months or has no report of test conversion, AND •Has a positive HCV NAT or HCV antigen test.
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****Criteria to Distinguish a New Case from an Existing Case:** A new acute case is an incident acute hepatitis C case that meets the case criteria for acute hepatitis C and has not previously been reported. A new probable acute case may be re-classified as confirmed acute case if a positive NAT for HCV RNA or a positive HCV antigen(s) test is reported within the same year. A confirmed acute case may be classified as a confirmed chronic case if a positive NAT for HCV RNA or a positive HCV antigen is reported one year or longer after acute case onset. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status).

States and territories may choose to track resolved hepatitis C cases in which spontaneous clearance of infection or sustained viral response to treatment are suspected to have occurred before national notification or are known to have occurred after national notification as a confirmed or probable case to CDC.

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

~A new chronic case is an incident chronic hepatitis C case that meets the case criteria for chronic hepatitis C and has not previously been reported. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status).

States and territories may choose to track resolved hepatitis C cases in which spontaneous clearance of infection or sustained viral response to treatment are suspected to have occurred before national notification or are known to have occurred after national notification as a confirmed or probable case to CDC.

Hepatitis C Virus (HCV) Laboratory Test Interpretation Sheet

During acute infection, HCV RNA is first detectable within 1-3 weeks after exposure. Elevated ALT generally occurs 6-7 weeks after exposure, and the EIA becomes positive at about 6-12 weeks (only 50-70% of individuals are EIA positive at symptom onset; 90% seroconvert within 3 months).

EIA is generally the initial test for HCV. In some cases, HCV RNA testing should be performed following a negative EIA, such as when diminished antibody production occurs (e.g., immunosuppression, HIV infection, or long-term hemodialysis) or following a recent exposure or in the early stage of acute HCV infection when some persons may not yet have developed an antibody response.

If the Anti-HCV Screening Test Result is:		The RIBA is:		The HCV RNA is:		Interpret HCV Infection Status as:	Additional Testing or Evaluation Recommended:
Negative	Then	Not Needed	And	Not Needed	Interpret	Not Infected	None unless recent infection is suspected or other evidence exists to indicate HCV infection
Negative	And	Not Done	And	Positive	Interpret	Past/Current	Early infection or chronic infection in immunosuppressed
Positive	And	Not Done	And	Not Done	Interpret	Not Known	RIBA or HCV RNA
Positive	And	Not Done	And	Negative	Interpret	Not Known*	RIBA
Positive (high s/co ratio)**	And	Not Done	And	Not Done	Interpret	Past/Current	Evaluate for chronic infection and liver disease. More specific supplemental testing can be requested, if indicated.
Positive	And	Negative	Then	Negative/ Not Needed	Interpret	Not Infected	None
Positive	And	Positive	And	Not Done	Interpret	Past/Current	Evaluate for chronic infection and liver disease
Positive	And	Positive	And	Negative	Interpret	Past/Current	Repeat HCV RNA
Positive	And	Positive/Not Done	And	Positive	Interpret	Current	Evaluate for chronic infection and liver disease
Positive	And	Indeterminate	And	Not Done/ Indeterminate	Interpret	Not Known	Test for HCV RNA or repeat Anti-HCV testing
Positive	And	Indeterminate	And	Positive	Interpret	Current	Evaluate for chronic infection and liver disease
Positive	And	Indeterminate	And	Negative	Interpret	Not Known	Repeat HCV RNA

*Single negative HCV RNA result cannot determine infection status as persons might have intermittent viremia. Other reasons for this result include resolved infection, chronic infection with low level viremia, false positive antibody test, and passively acquired antibodies.

**Samples with high signal-to-cut-off (s/co) ratios usually (>95%) confirm positive; however < 5% might represent false-positives, therefore, more specific testing may be indicated.

Note: Available serologic tests for anti-HCV do not distinguish between acute and chronic or past infection. Thus, other causes of acute hepatitis should be excluded for anti-HCV positive patients who have an acute illness compatible with viral hepatitis. Persons who have chronic hepatitis or persons identified as anti-HCV positive should not be reported as having acute viral hepatitis unless they have evidence of an acute illness compatible with viral hepatitis.

Sources: MDPH; Cleveland Clinic Testing Algorithm; WV Infectious Disease Epi Program; CDC

Hepatitis C Standard Operating Procedures

Reporting Procedure

Regulations for Disease Reporting and Control (Title 12 VAC 5-90-80) require that reports of HCV infection (acute and chronic) be submitted in writing to local health departments within three (3) days of diagnosis.

For reports that contain only an EIA or CIA positive result [without a signal-to cutoff ratio, confirmatory results, or clinical signs/symptoms] no notification of the Office of Epidemiology is recommended.

For any other positive report situation, local health departments should forward the report to the Office of Epidemiology (Regional Epidemiologist) within three (3) days. Submission of the Epi-1 and/or copy of the laboratory report (with contact information) are adequate initial notification, but should be followed by the appropriate forms and/or reports.

Outbreaks should be reported to the local health department by the most rapid means available (e.g., telephone, fax, pager, etc.) within 24 hours, and should be investigated immediately. The local health department is required to notify the Office of Epidemiology within 24 hours. Contact the Regional Epidemiologist, or if the Regional Epidemiologist is unavailable, contact the Central Office through the main number during regular business hours or through the Epi Phone during nights and weekends (see Disease Control Manual Contact List). Telephone notification should be followed with written notification: submission of the Epi-1 form and/or copy of the laboratory report (with contact information) is adequate initially, but should be followed by appropriate forms and reports.

Note: If the local health department received initial notification of a case from the VDH Central Office, then re-notification of the Central Office (e.g., by Epi-1) is not required. New information (e.g., supplemental testing results, symptoms) should then be forwarded through the usual reporting mechanism.

Disease Characteristics

Period of Communicability - Communicability begins one or more weeks before onset of the first signs and symptoms, lasts through the acute clinical course, and continues indefinitely in those persons who become chronic carriers.

Modes of Transmission

- Percutaneous exposure to contaminated blood or plasma derivatives (e.g. through accidental needle sticks or the sharing of contaminated needles). Injection-drug use currently accounts for most HCV transmission in the United States.
- Sexual and perinatal transmission occurs infrequently. HCV transmission among sero-discordant couples who are monogamous is approximately 1%. Perinatal transmission is around 5%, and does not occur in utero, but only during birth when blood can mix. Non-sexual transmission to household contacts is uncommon.

- HCV is rarely transmitted by blood transfusion. Routine testing of donors for HCV infection has reduced the risk for infection to 1 in 100,000 per unit transfused.
- Receipt of clotting factor concentrates prepared from plasma pools posed a high risk for HCV infection until effective procedures to inactivate viruses, including HCV, were instituted in 1987. Persons with hemophilia who were treated with products before inactivation of those products have prevalence rates of chronic HCV infection as high as 90%.
- Transplantation of organs (e.g., heart, kidney, liver) from infectious donors carried a high risk for transmitting HCV infection prior to the implementation of donor screening. Use of anti-HCV (antibody to hepatitis C virus) negative organ and tissue donors has virtually eliminated risks for HCV transmission from transplantation.

Incubation Period - Ranges from two weeks to six months; usually within six to nine weeks. Chronic infection may persist for 20 years or more before the onset of symptoms, which may be indicative of liver fibrosis, cirrhosis, or cancer.

High Risk Situations - Persons at risk of acquiring hepatitis C include:

- High Risk
 - Injection drug users
 - Recipients of clotting factors made before 1987
- Elevated Risk
 - Long-term hemodialysis patients
 - Recipients of blood and/or solid organs before 1992
 - People with undiagnosed liver problems
 - Infants born to infected mothers (Note: Breast-feeding does **not** appear to transmit HCV)
- Mildly-Elevated Risk
 - Healthcare workers following occupational exposure to blood
 - People having sex with multiple partners, sex workers, and men who have sex with men (MSM)
 - People having sex with an infected steady partner

Public Health Investigation

The Reported Case

In general, follow-up is indicated only for likely cases of acute HCV infection. Therefore:

- If the only information available is a positive EIA or CIA result, and the signal-to-cut off ratio is not provided or is not significant, then no further follow-up or notification is required. Do not forward to the Office of Epidemiology Division of Surveillance and Investigation – they will not be counted as cases in official state morbidity statistics unless additional information becomes available. Reports not available electronically (i.e., not in NEDSS) should be collected and forwarded periodically (e.g., monthly) to the Office of
- Epidemiology Division of Disease Prevention Hepatitis C Coordinator (see Disease Control Manual Contact List) for surveillance purposes.
- If the only information available is a positive EIA or CIA result with a significant signal-to-cut off ratio, and/or a positive nucleic acid test (e.g., bDNA, TMA, RT-PCR) and/or a positive RIBA, then forward the results to the Office of Epidemiology Division of Surveillance and Investigation (see Disease Control Manual Contact List). They will be counted as chronic infection. However, no further follow-up is required.

- If the available information includes:
 - A positive EIA or CIA result with a significant signal-to cut off ratio and/or a positive PCR and/or a positive RIBA (as above) AND
 - Elevated serum aminotransferase (ALT) (>400 IU/L), or signs and symptoms of hepatitis then the case may represent an acute HCV infection and additional follow-up is indicated.
- If a case has evidence of an acute HCV infection, contact the physician and/or hospital as necessary to collect the following information.
 - Obtain the date of illness onset, signs or symptoms consistent with acute viral hepatitis, pregnancy status (if female), date and outcome of additional tests performed, treatment, and past history of viral hepatitis infection or immunization.
 - Determine the results of serologic testing for hepatitis B (if done). If IgM anti-HBc is positive then the patient's symptoms are likely due to acute HBV infection, rather than acute HCV infection. Consider the case as a chronic HCV infection (non-acute) and manage as indicated in the Disease Control Manual section on hepatitis B.
 If the anti-HBsAg result is positive, the patient will be immune to re-infection by hepatitis B; therefore, HBV vaccination is not needed. If HBV testing has not been done, when practicable suggest to the healthcare provider that HBV testing be performed to determine the need for immunization.
 Inquire about possible evidence of past infection to assess the likelihood that current symptoms are due to a newly acquired infection. Identify any known risks for exposure in the cases past medical history (e.g., injection drug use, blood transfusions, organ transplants, etc.).
 - Determine what information has been given to the patient (especially diagnosis: acute vs. chronic vs. resolved/cleared), including any counseling regarding HCV infection, methods to prevent transmission, and referral sources for follow-up, HIV testing, and evaluation by a specialist. If adequately provided already, no further patient counseling is needed.
 - Where appropriate, request that physicians provide additional relevant clinical information and supplemental testing results so that future reports would be more complete.
 - In addition, carefully provide education to healthcare providers on appropriate testing protocols (e.g., confirmatory testing of screening tests), if applicable. Refer the healthcare provider to the district health director for more information on appropriate HCV testing protocols, if necessary.
 - When necessary (see below), notify the case's physician that contacting the case may be required as VDH follows up on all acute cases of hepatitis C to assess risks factors and to better characterize the occurrence of HCV infection in VA. This enables coordinating with the physician, as it is possible that the case is not yet aware of the test result(s), or that s/he will have questions regarding treatment or clinical needs. It may also be appropriate at this point to determine if the physician has any concerns in regards to the health department contacting the case.
- For acute cases requiring additional follow-up, contact the patient by telephone or home visit to collect further information for the completion of the *Viral Hepatitis Case Report Form* and provide counseling if necessary.

- Identify potential risk factors for infection during the 2 weeks to 6 months prior to illness onset.
- If the case has received a blood transfusion or blood product within the 2-week to 6-month incubation period, notify the transfusion service and blood collection establishment.
- If the case has had a recent hospitalization, surgery and/or dental procedure during the incubation period, and has no other recognized risk factors for infection, obtain additional information regarding the specific medical care provider(s) and setting (e.g., hospital, clinic). Additional investigation may be necessary to determine the potential for a nosocomial source of the case's HCV infection.
- If not already done by the healthcare provider, provide health education covering the disease process, mode of transmission, and prevention using the fact sheet on hepatitis C. Provide information on local support groups, if available.
- Provide counseling regarding chronic liver disease and the importance of ongoing medical evaluations to assess liver injury.
- Cases should be counseled to advise their at-risk contacts (e.g., sexual partners or injection drug use contacts) to seek counseling and testing. HCV positive women who have recently given birth may have the child tested for anti-HCV antibodies at 18 months of age or later (earlier anti-HCV testing may detect residual maternal anti-HCV antibodies). If an earlier diagnosis is desired, HCV RNA (e.g., RT-PCR) testing may be done as early as 1-2 months after birth. If the child tests positive, the child will need to be evaluated further for HCV infection and/or for liver disease. Note: HCV infection is not generally a contraindication to pregnancy or nursing (breastfeeding).
- Reported cases whose status (i.e., acute vs. chronic) are unknown may be contacted as district resources allow to collect additional information and/or inform the patient of test results and provide counseling as above.
- Specific guidance on case management, laboratory testing interpretation, reporting, etc. may also be requested from the Virginia Hepatitis C Coordinator within the Division of Disease Prevention (see Disease Control Manual Contact List).

Contacts of the Case

As there is no vaccine for hepatitis C, and the available data suggests that post-exposure prophylaxis with immune globulin (IG) is not effective in preventing infection by HCV, no public health follow-up for contacts is generally indicated.

However, if the case has been on dialysis or is a kidney transplant recipient, notification and investigation of the facility may be appropriate to identify or prevent a potential outbreak. Ensure that the reported case's confidentiality is maintained.

Outbreak Situation

Outbreaks of hepatitis C have been very rare. If two or more acute cases of hepatitis C occur within the 2-week to 6-month incubation period and report exposure to the same surgery, dialysis, other invasive procedure (e.g., injection infusions, colonoscopy) or another common source, then an outbreak may be suspected.

- Begin the investigation as soon as an outbreak is identified.
- Use a team approach (District Director, District Epidemiologist, Regional Epidemiologist, nursing and environmental health personnel, etc.) according to District policy.

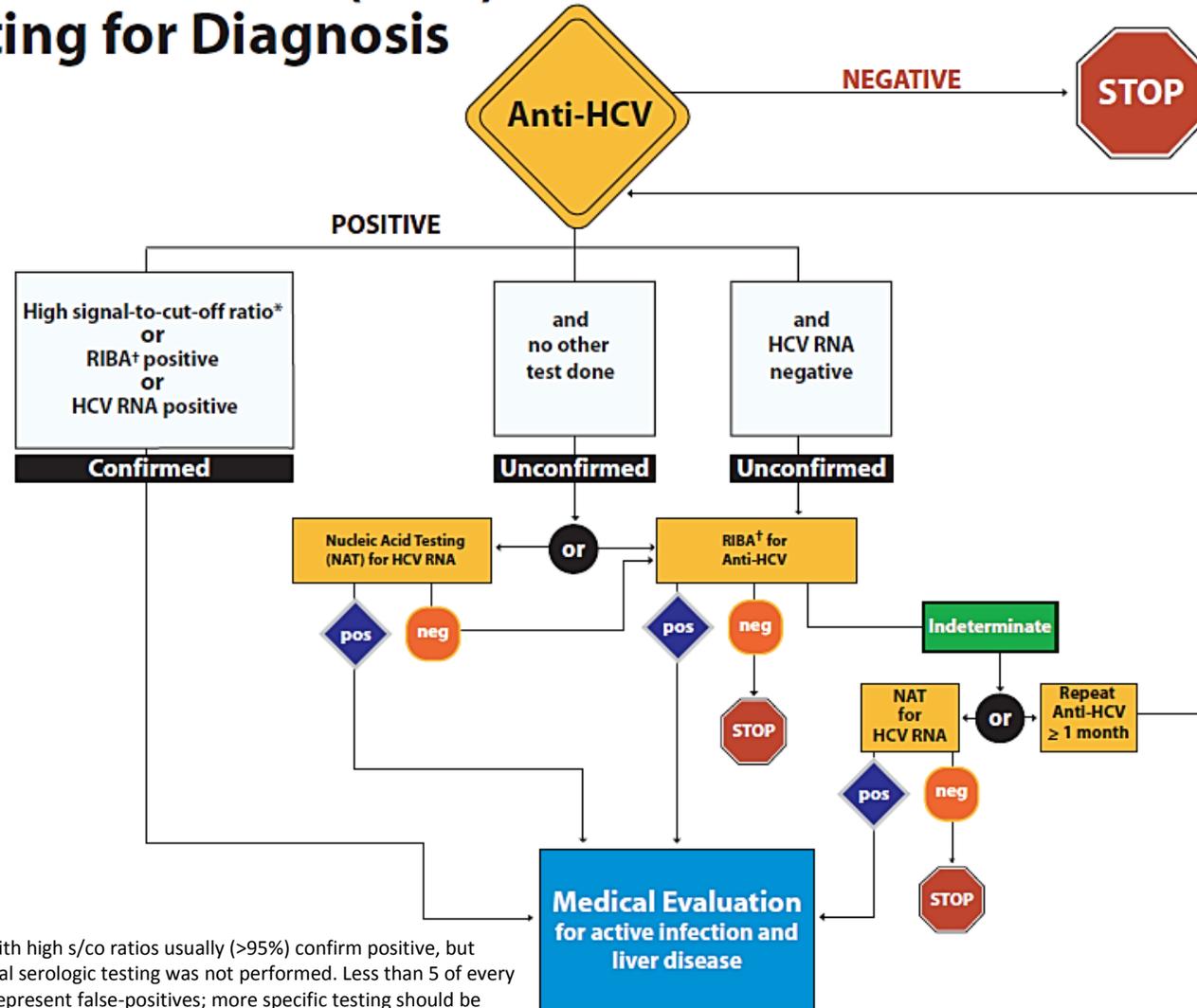
- If the cases have received a blood transfusion or blood product within the 2-week to 6-month incubation period, notify the transfusion service and blood collection establishment. For those patients who have no other recognized risk factors for infection, the blood collection establishment should identify and retest the donor(s) for evidence of HCV infection. If positive, further case-finding may be warranted to identify others who may have received the blood product. Ensure that the reported cases' confidentiality is maintained.
- Surveillance using liver function tests (e.g., ALT levels) may be helpful in detecting new cases before other tests (e.g., antibody tests such as EIA or RIBA) would become positive.
- Appropriate recommendations to prevent transmission of HCV and other bloodborne pathogens in the facility should be provided. Consider testing of exposed/susceptible individuals for other bloodborne pathogens (e.g., HIV, hepatitis B virus) that may have been co-transmitted.
- Notify the Office of Epidemiology (Regional or Central Office) via telephone report. After business hours and on weekends, use the Epi Phone number (see Disease Control Manual Contact List).

Update the Office of Epidemiology and request assistance as needed (see Disease Control Manual Contact List). The Office of Epidemiology may contact additional resources, such as the Centers for Disease Control and Prevention (CDC), as needed.

Forms, Reports, and Logs

- When indicated forward the top copy of the Epi-1 form and/or the laboratory report form(s) to the Regional Epidemiologist (see Disease Control Manual Contact List). The Regional Epidemiologist will evaluate and forward reports to the Office of Epidemiology Division of Surveillance and Investigation.
- Note: If the local health department received initial notification of a suspected case via laboratory report from the VDH Central Office, then re-submission of the laboratory data to the Central Office on an Epi-1 Form is not required.
- **For an acute hepatitis C case, complete as much of the *Viral Hepatitis Case Report Form (Attachment D)* as possible** in order to identify risk factors for infection and forward to the Regional Epidemiologist. The Regional Epidemiologist will evaluate and forward reports to the Office of Epidemiology Division of Surveillance and Investigation (see Disease Control Manual Contact List). If it will take a while to get the information necessary to complete this form, send the Epi-1 form to the Regional Epidemiologist rather than waiting to report the case. Forward the *Viral Hepatitis Case Report Form* later when it is completed.
For a non-acute hepatitis C case, it is not necessary to submit the *Viral Hepatitis Case Report Form*.
- Follow district protocol for entering the case into a local communicable disease log or computerized database. Add the case to a hepatitis C database (may include name, address, age, race, sex, source of report, test results and test date, liver enzyme results, symptoms/date, why tested, risk factors, medical evaluations done, contacts that have been contacted), if one is maintained locally.

Hepatitis C Virus (HCV) Infection Testing for Diagnosis



*Samples with high s/co ratios usually (>95%) confirm positive, but supplemental serologic testing was not performed. Less than 5 of every 100 might represent false-positives; more specific testing should be requested, if indicated.

*Recombinant immunoblot assay

Testing Recommendations for Hepatitis C Virus Infection

**from the CDC, Division of Viral Hepatitis and
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention*

Persons for Whom HCV Testing Is Recommended

- [Adults born from 1945 through 1965](https://www.cdc.gov/hepatitis/populations/1945-1965.htm) (https://www.cdc.gov/hepatitis/populations/1945-1965.htm) should be tested once (without prior ascertainment of HCV risk factors)
- HCV testing is recommended for those who:
 - Currently injecting drugs
 - Ever injected drugs, including those who injected once or a few times many years ago
 - Have certain medical conditions, including persons:
 - who received clotting factor concentrates produced before 1987
 - who were ever on long-term hemodialysis
 - with persistently abnormal alanine aminotransferase levels (ALT)
 - who have HIV infection
 - Were prior recipients of transfusions or organ transplants, including persons who:
 - were notified that they received blood from a donor who later tested positive for HCV infection
 - received a transfusion of blood, blood components, or an organ transplant before July 1992
- HCV- testing based on a **recognized exposure** is recommended for:
 - Healthcare, emergency medical, and public safety workers after needle sticks, sharps, or mucosal exposures to HCV-positive blood
 - Children born to HCV-positive women

Note: For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended.

Persons for Whom Routine HCV Testing Is of Uncertain Need

- Recipients of transplanted tissue (e.g., corneal, musculoskeletal, skin, ova, sperm)
- Intranasal cocaine and other non-injecting illegal drug users
- Persons with a history of tattooing or body piercing
- Persons with a history of multiple sex partners or sexually transmitted diseases
- Long-term steady sex partners of HCV-positive persons

Persons for whom Routine HCV Testing is Not Recommended (unless they have risk factors for infection):

- Health-care, emergency medical, and public safety workers
- Pregnant women
- Household (nonsexual) contacts of HCV-positive persons
- General population

Information for Counseling Persons Who Test Positive for HCV

MMWR, Vol. 47 / No. RR-19

To protect their lives from further harm, HCV-positive persons should be advised to:

- Avoid alcohol completely, and seek treatment if they have a history of abusing alcohol
- Avoid new medicines, including over-the-counter and herbal medicines, without checking with their doctor
- Get tested for hepatitis A and B, and if not immune, complete the vaccine series

To reduce the risk for transmission to others, HCV-positive persons should be advised to:

- Avoid donating blood, body organs, other tissue, or semen
- Never share toothbrushes, dental appliances, razors, or other personal-care articles that might have blood on them
- Cover cuts and sores on the skin to keep from spreading infectious blood or secretions

HCV-positive persons with *one long-term steady sex partner* do not need to change their sexual practices. They should:

- Discuss the risk, which is low but not absent, with their partner (If they want to lower the limited chance of spreading HCV to their partner, they might decide to use barrier precautions)
- Discuss with their partner the need for counseling and testing

HCV-positive women do not need to avoid pregnancy or breastfeeding. Potential, expectant, and new parents should be advised that:

- Approximately 5 out of every 100 infants born to HCV-infected women become infected (This occurs at the time of birth, and no treatment exists that can prevent this from happening)
- Infants infected with HCV at the time of birth seem to do very well in the first years of life. However, studies are needed to determine if those who are infected at birth are more likely to resolve the HCV infection on their own than are adults
- No evidence exists that mode of delivery is related to transmission; therefore, determining the need for Cesarean delivery versus vaginal delivery should not be made on the basis of HCV infection status
- Limited data regarding breastfeeding indicate that it does not transmit HCV, although HCV-positive mothers should consider abstaining from breastfeeding if their nipples are cracked or bleeding
- Infants born to HCV-positive women should be tested for HCV infection and if positive, be evaluated for the presence or development of chronic liver disease

Other counseling messages:

- If an HCV-positive woman has given birth to any children after the woman became infected with HCV, she should have the children tested
- HCV is not spread by sneezing, hugging, coughing, food or water, sharing eating utensils or drinking glasses, or casual contact
- Persons should not be excluded from work, school, play, child-care or other settings on the basis of their HCV infection status
- Involvement with a support group might help patients cope with hepatitis C
- HCV-positive persons should be evaluated (by referral or consultation, if appropriate) for presence or development of chronic liver disease including:
 - Assessment for biochemical evidence of chronic liver disease
 - Assessment for severity of disease via liver biopsy, and possible treatment according to current practice guidelines in consultation with, or by referral to, a specialist knowledgeable in this area
 - Determination of need for hepatitis A vaccination and hepatitis B vaccination

Appendix C
Human Immunodeficiency Virus (HIV) Guidelines

Human Immunodeficiency Virus (HIV) Overview

	<p>HIV is caused by the Human Immunodeficiency Virus</p>
<p>U.S. Statistics</p>	<ul style="list-style-type: none"> • In 2014, there were an estimated 37,600 new HIV infections—down from 45,700 in 2008.* • An estimated 1.1 million people in the United States were living with HIV at the end of 2014, the most recent year for which this information is available. Of those people, about 15%, or 1 in 7, did not know they were infected. • The South has the highest number of people living with HIV/
<p>Routes of Transmission</p>	<p>Most commonly, people get or transmit HIV through sexual behaviors and needle or syringe use.</p> <p>Only certain body fluids—blood, semen, pre-seminal fluid, rectal fluids, vaginal fluids, and breast milk—from a person who has HIV can transmit HIV. These fluids must come in contact with a mucous membrane or damaged tissue or be directly injected into the bloodstream (from a needle or syringe) for transmission to occur. Mucous membranes are found inside the rectum, vagina, penis, and mouth.</p> <p>In the United States, HIV is spread mainly by:</p> <ul style="list-style-type: none"> • Having anal or vaginal sex with someone who has HIV without using a condom or taking medicines to prevent or treat HIV. • Sharing needles or syringes, rinse water, or other equipment used to prepare drugs for injection with someone who has HIV. HIV can live in a used needle up to 42 days depending on temperature and other factors. <p>Less commonly, HIV may be spread:</p> <ul style="list-style-type: none"> • From mother to child during pregnancy, birth, or breastfeeding. Although the risk can be high if a mother is living with HIV and not taking medicine, recommendations to test all pregnant women for HIV and start HIV treatment immediately have lowered the number of babies who are born with HIV. • By being stuck with an HIV-contaminated needle or other sharp object. This is a risk mainly for health care workers. <p>In extremely rare cases, HIV has been transmitted by:</p> <ul style="list-style-type: none"> • Oral sex • Receiving blood transfusions, blood products, or organ/tissue transplants that are contaminated with HIV. • Eating food that has been pre-chewed by an HIV-infected person. • Being bitten by a person with HIV. There is no risk of transmission if the skin is not broken. • Contact between broken skin, wounds, or mucous membranes and HIV-infected blood or blood-contaminated body fluids. • Deep, open-mouth kissing if both partners have sores or bleeding gums and blood from the HIV-positive partner gets into the bloodstream of the HIV-negative partner. HIV is not spread through saliva.

Persons at Risk	<ul style="list-style-type: none"> • Young African American gay and bisexual men, are most affected • Gay and bisexual Men • Transgender women who have sex with men • Heterosexuals and people who inject drugs • African Americans • Hispanics/Latinos • Age groups: 20-29; 30-39 <p>Persons who engage in risky behaviors, like having anal or vaginal sex without using a condom or taking medicines to prevent or treat HIV, and sharing needles or syringes</p>
Incubation Period	<ul style="list-style-type: none"> • Also known as Acute HIV Infection: Within 2 to 4 weeks after infection large amounts of virus are being produced in the body • During the clinical latency period, the virus is replicating in the body for up to 10 years or more with mild or no symptoms
Symptoms of Acute Infection	<ul style="list-style-type: none"> • Flu like symptoms such as fever, chills rash, night sweats, muscle aches, sore throat, fatigue, swollen lymph nodes, and mouth ulcers, which can last anywhere from a few days to several weeks
Likelihood of Symptomatic Acute infection	<ul style="list-style-type: none"> • 40% to 90% of people have flu-like symptoms within 2-4 weeks after HIV infection
Potential for Chronic Infection	<ul style="list-style-type: none"> • There is NO cure for the virus. Current medications can allow infected individuals to live longer, healthier lives although it is a 'chronic' disease.
Severity	<ul style="list-style-type: none"> • If a person has HIV and is not on ART, eventually the virus will weaken the body's immune system and progress to AIDS (acquired immunodeficiency syndrome), the late stage of HIV infection. This will result in death in approximately 3 years.
Serologic Tests for Acute Infection	<ul style="list-style-type: none"> • If acute retroviral syndrome is a possibility, a plasma RNA test should be used in conjunction with an HIV antibody test to diagnose acute HIV infection
Serologic Tests for Chronic Infection	<ul style="list-style-type: none"> • Antibody tests, combination or fourth-generation tests, and nucleic acid tests (NATs)

<p>Recommendations for Testing</p>	<ul style="list-style-type: none"> • Everyone between the ages of 13 and 64 get tested for HIV at least once as part of routine health care • If you were HIV-negative the last time you were tested and answer yes to any of the following questions, you should get an HIV test because these things increase your chances of getting HIV: <ul style="list-style-type: none"> • Are you a man who has had sex with another man? • Have you had sex—anal or vaginal—with an HIV-positive partner? • Have you had more than one sex partner since your last HIV test? • Have you injected drugs and shared needles or equipment (for example, water) with others? • Have you exchanged sex for drugs or money? • Have you been diagnosed with or sought treatment for another sexually transmitted disease? • Have you been diagnosed with or treated for hepatitis or tuberculosis (TB)? • Have you had sex with someone who could answer yes to any of the above questions or someone whose sexual history you don't know? • You should be tested at least once a year if you keep doing any of these things. • Sexually active gay and bisexual men may benefit from more frequent testing • If you're pregnant, talk to your health care provider about getting tested for HIV • Anyone who has been sexually assaulted should get an HIV test as soon as possible after the assault
<p>Treatment</p>	<ul style="list-style-type: none"> • Antiretroviral (ARV): These drugs are always given in combination with other ARVs; this combination therapy is called antiretroviral therapy (ART). These drugs are not a cure but are the reason why the annual number of deaths related to AIDS has dropped over the past two decades.
<p>Vaccination Recommendations</p>	<p>There is currently no vaccine available that will prevent HIV infection or treat those who have it.</p>
<p>Vaccination Schedule</p>	<p>There is currently no vaccine available that will prevent HIV infection or treat those who have it.</p>

CDC/CSTE Case Definition for HIV Infection

	Clinical	Laboratory	Classification
<p>HIV</p> <p><i>Criteria for Persons Aged ≥18 Months whose Mothers were Not Infected</i></p> <p>For additional information visit: https://www.cdc.gov/mmwr/preview/m</p>	<ul style="list-style-type: none"> • Clinical criteria for a confirmed case (i.e., a "physician-documented" diagnosis for which the surveillance staff have not found sufficient laboratory evidence described above) are met by the 	<ul style="list-style-type: none"> • Laboratory criteria require reporting of the date of the specimen collection for positive test results in multitest algorithms or stand-alone virologic tests and enough information about the tests 	<ul style="list-style-type: none"> • All HIV infections in the United States should be assumed to be type 1 (HIV-1) unless laboratory test results are sufficient to classify the infection as type 2 (HIV-2), dual HIV-1 and HIV-2

<p>mwrhtml/rr6303a1.htm</p>	<p>combination of:</p> <ul style="list-style-type: none"> • A note in a medical record by a physician or other qualified medical-care provider that states that the patient has HIV infection, and • One or both of the following: <ul style="list-style-type: none"> — The laboratory criteria for a case were met based on tests done after the physician's note was written (validating the note retrospectively). — Presumptive evidence of HIV infection (e.g., receipt of HIV antiretroviral therapy or prophylaxis for an opportunistic infection), an otherwise unexplained low CD4+ T-lymphocyte count, or an otherwise unexplained diagnosis of an opportunistic illness (Appendix). 	<p>to determine that they meet any of the following criteria:</p> <ul style="list-style-type: none"> • A multitest algorithm consisting of: <ul style="list-style-type: none"> — A positive (reactive) result from an initial HIV antibody or combination antigen/antibody test, and — An accompanying or subsequent positive result from a supplemental HIV test different from the initial test. • A positive result of a multitest HIV antibody algorithm from which only the final result was reported, including a single positive result on a test used only as a supplemental test (e.g., HIV Western blot, immunofluorescence assay) or on a test that might be used as either an initial test or a supplemental test (e.g., HIV-1/2 type-differentiating rapid antibody immunoassay) when it might reasonably be assumed to have been used as a supplemental test (e.g., because the algorithm customarily used by the reporting laboratory is known). • A positive result or report of a detectable quantity (i.e., within the established limits of the laboratory test) from any of the following HIV virologic (i.e., non-antibody) tests: <ul style="list-style-type: none"> — Qualitative HIV NAT (DNA or RNA) — Quantitative HIV NAT (viral load assay) — HIV-1 p24 antigen test — HIV isolation (viral culture) or — HIV nucleotide sequence (genotype). 	<p>infections, or undifferentiated HIV infection, as described below. Clinical or epidemiologic evidence might lead to laboratory testing for HIV-2 but is insufficient for classifying the HIV type as HIV-2.</p> <ul style="list-style-type: none"> • HIV-2 infection For HIV-2 infection, one or more of the following laboratory criteria are necessary and sufficient: <ul style="list-style-type: none"> • FDA-approved HIV1/2 type-differentiating antibody test result positive for HIV-2 and negative for HIV-1. • Positive HIV-2 Western blot (WB) (or immunoblot or line assay) result and negative or indeterminate HIV-1 WB result. • Positive qualitative HIV-2 NAT result. • Detectable quantitative HIV-2 NAT (viral load). • Laboratory results interpreted as consistent with HIV-2 infection by a laboratory expert experienced in differentiating HIV-2 from HIV-1 if laboratory evidence for HIV-2 is ambiguous. • Dual infection with HIV-1 and HIV-2 The HIV type is classified as "dual" infection (both HIV-1 and HIV-2) if both an HIV-1 NAT and an HIV-2 NAT are positive. • Undifferentiated HIV type The HIV type is classified as "undifferentiated" if there is no positive or detectable result from an HIV-1 NAT and a laboratory expert cannot resolve ambiguous evidence for HIV-2, such as:
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			<ul style="list-style-type: none">• HIV-2 WB is positive and HIV-1 WB is HIV positive or• HIV-1/HIV-2 type-differentiating antibody test result interpretation is "undifferentiated" (positive for both HIV-1 and HIV-2).
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Human Immunodeficiency Virus (HIV) Standard Operating Procedures

Reporting Procedure - Regulations require that reports be submitted in writing to the local health department within seven days of diagnosis. Local health departments should, in turn, forward the reports within seven days to the Division of STD/AIDS, according to district routing procedures.

Disease Characteristics

Period of Communicability - Transmission can occur almost immediately following infection and communicability extends for the length of the individual's life.

Mode of Transmission

1. Sexual contact with an infected person (vaginal, oral, anal).
2. Sharing of needles, syringes or other equipment used to inject drugs.
3. From mother to infant either before or during birth, or through breast milk.
4. Needle sticks or exposure to infectious body fluids during health care procedures.
5. Other direct exposure to contaminated blood or blood products.

Incubation Period - While the symptoms of AIDS do not appear, on average, until ten years after infection with HIV, the presence of the virus can be detected in 95% of patients within six months of infection.

High Risk Situations

1. Unprotected sexual contact (vaginal, oral, anal).
2. Sharing of needles, syringes or other equipment used to inject drugs.
3. Needlestick exposure and exposure to blood and potentially infectious body fluids during health care procedures.

Public Health Investigation and Follow-up

These activities should be conducted only by STD/HIV Health Counselors or other public health professionals who have adequate training and have been given responsibility for providing these intervention services.

The Reported Case

For follow up of cases that are not medically managed at the health department, a person charged with performing HIV intervention activities should contact the reporting physician to:

- Confirm the diagnosis. Determine the basis for considering the patient to have HIV infection, such as by patient report or specific tests. If tests (such as EIA and Western blot) were conducted, obtain dates and results.
- Confirm that a diagnosis of AIDS was ruled out. Obtain information on diseases indicative of AIDS and dates and results of any tests that were conducted, including most recent CD4+, PCR, and/or viral load tests. Use the AIDS case definition in the attachments to this chapter as a guide.
- Obtain date and result of most recent PPD test.
- Inquire whether the patient is aware of the diagnosis and whether the patient is currently hospitalized.

- Inquire whether the patient has any psychological, social or medical problems that must be considered during counseling and/or partner notification and identify risk factors.
- Obtain the physician's concurrence and any locating information needed in order to contact the patient for interview and sex and/or needle sharing partner referral services.

All health department patients and those arranged with the reporting physician should receive counseling and partner notification services.

Contact the patient to arrange to meet at the health department or other location for confidential counseling and discussion of partner referral activities.

- Provide referrals for medical, preventive, and psychosocial services as necessary.
- Counsel the patient about risk reduction methods.
- Elicit the names of all sex and/or needle sharing partners exposed between twelve months prior to the date of testing and the date of the patient interview.
- The partner notification interview period for separated and divorced HIV infected patients is extended to identify marriage partners in the past ten years. There is no need to go back ten years, however, for HIV-infected separated or divorced patients with a known infectious period (known negative HIV test date). Spousal notification should encompass the six months prior to the negative test date.
- Establish with the patient whether health department staff will notify and refer partners for counseling and testing, or the patient will inform and refer their own partners within a mutually agreed upon time frame to accomplish the referral.

Contacts of the Case

- Sex and/or needle sharing partners should be counseled regarding their possible exposure and encouraged to be tested for HIV infection.
- A sex and/or needle sharing partner who tests positive for HIV infection according to approved confirmatory test(s) (e.g., EIA tests and a positive Western Blot) should be considered HIV infected and managed as a case.
- Sex and/or needle sharing partners who test negative should be counseled regarding practices that reduce the risk of HIV infection. They should also have repeat antibody tests three months after the first test. Those who are negative at three months should be advised to return in three more months for another HIV antibody test. Any partner who tests antibody negative six months after a specific exposure should be considered not infected.

Outbreak Situation

- Contact the VDH Division of STD/AIDS for advice.
- Routine epidemiological investigations should be intensified, especially identifying sex and/or needle sharing partners for counseling and testing.

Forms, Reports, and Logs - Please refer to the STD Manual for more detailed instructions regarding the completion and routing of forms and reports.

Complete Field Record when attempting to locate persons with HIV infection who need post-test counseling and/or partner notification services if one has not been completed.

- Submit the "pink" copy to the Division of STD/AIDS when follow up is initiated.
- Retain the "gold" copy for local records.
- Submit the "white" copy to the Division of STD/AIDS when the investigation is concluded.

- Retain the "green" copy for documentation of investigative activities.
- STD/HIV Health Counselors or other persons charged with interviewing individuals who are HIV seropositive should complete the Interview Record (IR). Disposition of the IR
-
- copies is as follows:
 - Retain the "white" copy for local records.
 - Submit the "yellow" copy to the Division of STD/AIDS when the case is opened.
 - Submit the "green" copy to the Division of STD/AIDS when the case is closed.
 - Retain the "back page" (which is the Original Patient Information Sheet) for documentation of interview information.
- Prepare a Field Record for all sex and needle sharing partners to be located and referred; however, copies should not be submitted to the Division of STD/AIDS. These records will remain in local health department files.
- Follow District protocol for routing morbidity reports, Interview Records, Field Records and other related paperwork to the Division of STD/AIDS's Central Registry Unit or for entering information into a communicable disease log or computerized database.

Pre-exposure Prophylaxis (PrEP) for HIV Prevention

From the CDC Fact Sheet: Pre-Exposure Prophylaxis for HIV Prevention May 2014

Pre-exposure prophylaxis, or PrEP, is a way for people who do not have HIV to help prevent HIV infection by taking a pill every day. The pill contains two medicines that are also used, in combination with other medicines, to treat HIV. When someone is exposed to HIV through sex or injection drug use, PrEP can help stop the virus from establishing a permanent infection.

When used consistently, PrEP has been shown to greatly reduce the risk of HIV infection in people who are at substantial risk. PrEP is much less effective when it is not taken consistently.

PrEP is a powerful HIV prevention tool, and can be combined with condoms and other prevention methods to provide even greater protection than when used alone. People who use PrEP must commit to taking the drug daily and seeing their health care provider every 3 months for HIV testing and other follow-up.

Research Supporting PrEP Use

In studies, the risk of getting HIV infection was lower—up to 92% lower—for **participants who took the medicines consistently** than for those who did not take the medicines. (See PrEP web page at www.cdc.gov/hiv/prevention/research/prep/ for a brief description of the clinical trials, with links to the published studies.)

Guidelines for PrEP Use

The new federal guidelines for health care providers recommend that PrEP be considered for people who are HIV-negative and **at substantial risk for HIV infection**.

For sexual transmission, this includes anyone who is in an ongoing relationship with an HIV-positive partner. It also includes anyone who 1) is not in a mutually monogamous relationship with a partner who recently tested HIV-negative, and 2) is a gay or bisexual man who has had anal sex without a condom or been diagnosed with an STD in the past 6 months; or heterosexual man or woman who does not regularly use condoms during sex with partners of unknown HIV status who are at substantial risk of HIV infection (e.g., people who inject drugs or have bisexual male partners).

For people who inject drugs, this includes those who have injected illicit drugs in past 6 months and who have shared injection equipment or been in drug treatment for injection drug use in the past 6 months.

Health care providers should also discuss PrEP with heterosexual couples in which one partner is HIV-positive and the other is HIV-negative as one of several options to protect the partner who is HIV-negative during conception and pregnancy.

Because no prevention strategy for sexually active people is 100% effective, patients taking PrEP are encouraged to use other effective prevention strategies to maximally reduce their risk, including:

- Using condoms consistently and correctly.
- Getting HIV testing with partners.
- Choosing less risky sexual behaviors, such as oral sex.

- For people who inject drugs, getting into drug treatment programs and using sterile equipment.

The more prevention options patients choose, the greater their protection. Some HIV prevention strategies, such as using condoms, can also provide protection against other STDs, which PrEP does not prevent.

PrEP is only for people who are at ongoing substantial risk of HIV infection. For people who need to prevent HIV after a single high-risk event of potential HIV exposure—such as unprotected sex, needle-sharing injection drug use, or sexual assault —there is another option called post-exposure prophylaxis, or PEP. PEP must begin within 72 hours of exposure.

Summary of Guidance for PrEP Use			
	Men Who Have Sex With Men	Heterosexual Women and Men	Injection Drug Users
Detecting substantial risk of acquiring HIV infection:	<ul style="list-style-type: none"> • Sexual partner with HIV • Recent bacterial STD • High number of sex partners • History of inconsistent or no condom use • Commercial sex work 	<ul style="list-style-type: none"> • Sexual partner with HIV • Recent bacterial STD • High number of sex partners • History of inconsistent or no condom use • Commercial sex work • Lives in high-prevalence area or network 	<ul style="list-style-type: none"> • HIV-positive injecting partner • Sharing injection equipment • Recent drug treatment (but currently injecting)
Clinically eligible:	<ul style="list-style-type: none"> • Documented negative HIV test before prescribing PrEP • No signs/symptoms of acute HIV infection • Normal renal function, no contraindicated medications • Documented hepatitis B virus infection and vaccination status 		
Prescription	Daily, continuing, oral doses of TDF/FTC (Truvada), ≤90 day supply		
Other services:	<ul style="list-style-type: none"> • Follow-up visits at least every 3 months to provide: • HIV test, medication adherence counseling, behavioral risk reduction support, side effect assessment, STD symptom assessment • At 3 months and every 6 months after, assess renal function • Every 6 months test for bacterial STDs 		
	<ul style="list-style-type: none"> • Do oral/rectal STD testing 	<ul style="list-style-type: none"> • Assess pregnancy intent • Pregnancy test every 3 months 	<ul style="list-style-type: none"> • Access to clean needles/syringes and drug treatment services

Source: US Public Health Service. Preexposure prophylaxis for the prevention of HIV infection| in the United States —2014: a clinical practice guideline.

Post-exposure prophylaxis for HIV prevention

From: Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, Sexual Transmitted Diseases and Tuberculosis Prevention, Centers for Disease Control and Prevention

PEP stands for post-exposure prophylaxis. It means taking antiretroviral medicines (ART) after being potentially exposed to HIV to prevent becoming infected.

PEP must be started within 72 hours after a recent possible exposure to HIV, but the sooner starting PEP, the better. If prescribed PEP, it should be taken once or twice daily for 28 days. PEP is effective in preventing HIV when administered correctly, but not 100%.

If you're HIV-negative or don't know your HIV status, and in the last 72 hours you:

- think you may have been exposed to HIV during sex (for example, if the condom broke),
- shared needles and works to prepare drugs (for example, cotton, cookers, water), or
- were sexually assaulted,

Talk to your health care provider or an emergency room doctor about PEP right away.

PEP is effective, but not 100%, so condoms should be used with sex partners and safe injection practices continued while taking PEP. These strategies are protective against exposure to HIV again and reduce the chances of transmitting HIV if infection does occur while on PEP.

PEP should be considered if you've had a recent possible exposure to HIV at work. Report your exposure to your supervisor, and seek medical attention immediately.

Occupational transmission of HIV to health care workers is extremely rare, and the proper use of safety devices and barriers can help minimize the risk of exposure while caring for patients with HIV. A health care worker who has a possible exposure should see a doctor or visit an emergency room immediately. PEP must be started within 72 hours after a recent possible exposure to HIV.

PEP should be used only in emergency situations.

PEP is not the right choice for people who may be exposed to HIV frequently—for example, if persons often have sex without a condom with a partner who is HIV-positive. Because PEP is given after a potential exposure to HIV, more drugs and higher doses are needed to block infection than with PrEP, or *pre-exposure* prophylaxis. PrEP is when people at high risk for HIV take HIV medicines daily to lower their chances of getting HIV.

Appendix D
Injection Drug Use Reference Guide

3 Steps, 3 Cups: A pamphlet developed in collaboration with VDH Division of Surveillance and Investigation and CDC's Division of Viral Hepatitis, 2012

THREE STEPS, THREE CUPS

If you must reuse your syringes, follow these 3 steps *each time* to **flush** out the syringe, **disinfect** it with bleach, and **rinse** it to wash out the bleach. This will help reduce the risk of spreading disease.

STEP 1—FLUSH WITH WATER

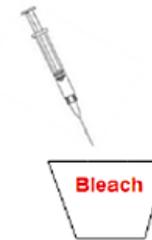
- Fill syringe with clean water from cup #1.
- Shake the syringe and tap it.
- Squirt the water out, such as into a sink, toilet, or bucket.
- Repeat if possible.
- It's best to do this until you can't see any blood.



Why? This step removes blood and drugs.

STEP 2—DISINFECT WITH BLEACH

- Fill syringe with fresh, full-strength bleach from cup #2.
- Shake the syringe, tap it, and then let it sit for 30 seconds.
- Squirt the bleach out, such as into a sink, toilet, or bucket.



Why? This step kills viruses and germs that can make you sick.



STEP 3—RINSE WITH WATER

- Fill syringe with clean water from cup #3.
- Shake the syringe and tap it.
- Squirt the water out, such as into a sink, toilet, or bucket.



Why? This step washes out the bleach and any viruses that are left in the syringe.

Other tips:

DO NOT share your cups with anyone else or use someone else's cups.
ALWAYS change your water and bleach at least once per day.

PROTECT YOURSELF TO STAY HEALTHY



- The best advice is to stop injecting and get into substance abuse treatment.
- If you can't do that, the next best thing is to use a new sterile syringe every time and NEVER reuse or share syringes, spoons, water, solutions, or cotton. HBV, HCV, and HIV can be spread by sharing those items. Any item contaminated with blood can contaminate other items and transmit disease.
- Wash your hands and arms.
- Make sure any surfaces your skin or blood might touch are kept clean.
- If you are having sex, use a latex condom every time and use water-based lube because that kind of lube won't destroy the condom.
- If you aren't already, get vaccinated against HBV.

Disinfect Syringes
to Reduce Disease
Risk

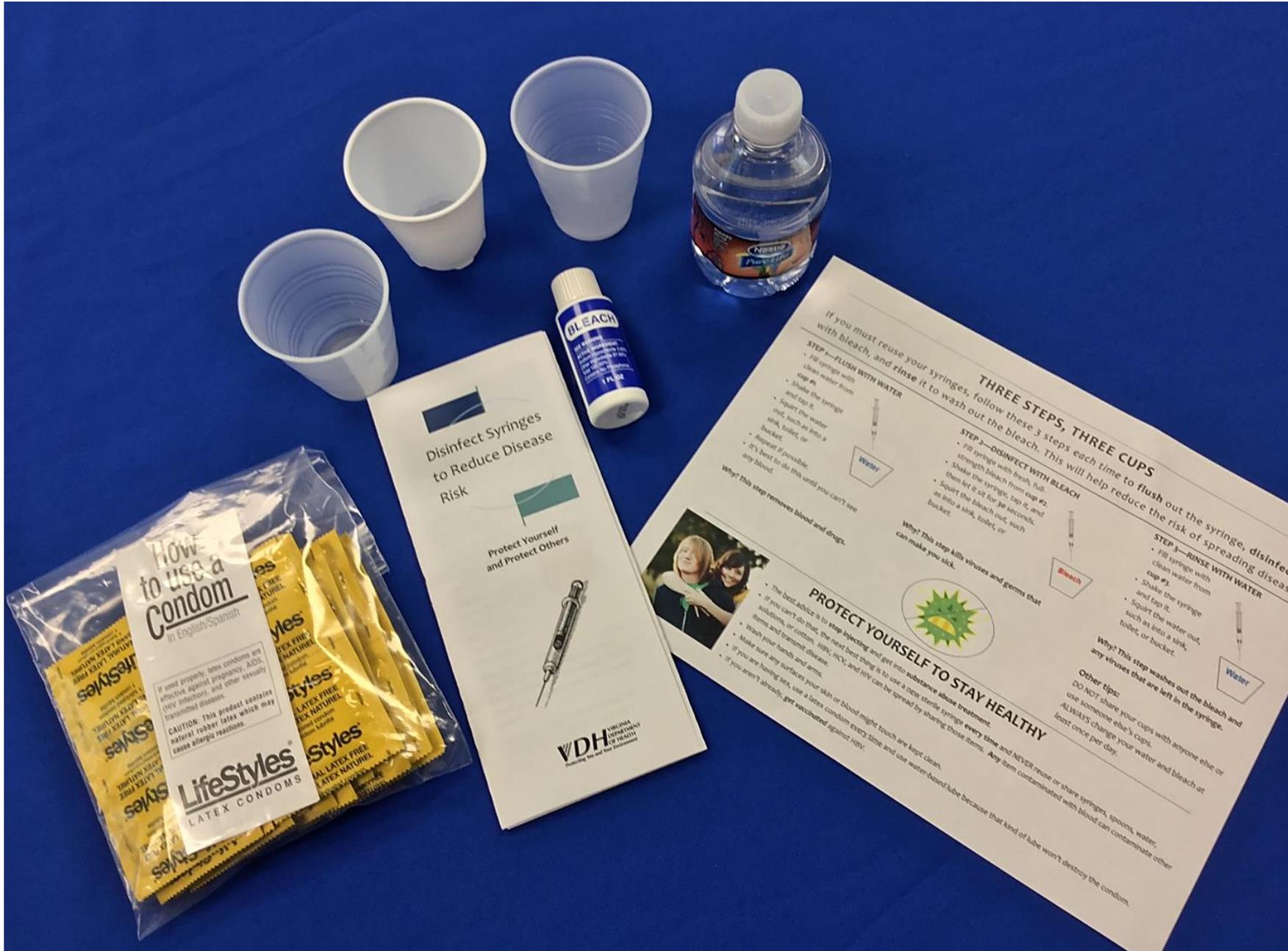
Protect Yourself
and Protect Others



VDH VIRGINIA
DEPARTMENT
OF HEALTH
Protecting You and Your Environment

Materials* shown below are distributed to PWIDs to encourage safe injection practices.

*not pictured-alcohol prep pads



REVIVE!

OPIOID OVERDOSE AND NALOXONE EDUCATION FOR VIRGINIA

REVIVE! is the Opioid Overdose and Naloxone Education (OONE) program for the Commonwealth of Virginia. REVIVE! provides training to professionals, stakeholders, and others on how to recognize and respond to an opioid overdose emergency with the administration of naloxone (Narcan ®). REVIVE! is a collaborative effort led by the Virginia Department of Behavioral Health and Developmental Services (DBHDS) working alongside the Virginia Department of Health, the Virginia Department of Health Professions, recovery community organizations such as the McShin Foundation, OneCare of Southwest Virginia, the Substance Abuse and Addiction Recovery Alliance of Virginia (SAARA), and other stakeholders. REVIVE! offers two different types of trainings:

- Lay Rescuer trainings are between 1-1.5 hours long. This training covers understanding opioids, how opioid overdoses happen, risk factors for opioid overdoses, and how to respond to an opioid overdose emergency with the administration of Naloxone.
- Lay Rescuer Training of Trainers is approximately 3 hours long and covers everything in the lay rescuer training with additional focus and discussion of each specific training objective to ensure a thorough understanding of the materials trainers will be presenting on. This training teaches trainers how to conduct trainings and is appropriate for individuals who intend on leading trainings in the community.



The *CDC Guideline for Prescribing Opioids for Chronic Pain* is an online training series that provides recommendations for safer and more effective prescribing of opioids for chronic pain in patients 18 and older in outpatient settings (outside of active cancer treatment, palliative care, and end-of-life care).

This interactive training series is intended to help healthcare providers apply CDC's recommendations in a clinical setting. It will help the provider gain a better understanding of the recommendations, the risks and benefits of prescription opioids, non-opioid options, patient communication, and risk mitigation.

The provider will also have access to CDC resources such as publications for professionals and patients, graphics for social media/websites, posters, data, Morbidity and Mortality Weekly Report (MMWR) articles, and many other resource links and trainings.

<https://www.cdc.gov/drugoverdose/training/index.html>

**CDC Opioid Guideline App:
Prescribe with Confidence**



A free tool designed to help providers apply the recommendations of CDC's *Guideline for Prescribing Opioids for Chronic Pain* into clinical practice by putting resources in the palm of their hand.

Virginia Department of Health ‘Opioid Addiction in Virginia’ webpage

<http://www.vdh.virginia.gov/commissioner/opioid-addiction-in-virginia/>

- Consumers and health professionals can find resources on:
- Opioid Addiction Crisis Declared a Public Health Emergency in Virginia
- State Health Commissioner Comments on Opioid Addiction Declaration
- Declaration of Public Health Emergency
- Standing Orders
- REVIVE!
- Protocol for Prescribing and Dispensing of Naloxone
- Recorded Telebriefings
- The Surgeon General’s Report on Alcohol, Drugs and Health
- CDC Guidelines for Prescribing Opioids for Chronic Pain
- Fact Sheets (e.g., Guidelines for Prescribing Opioids for Chronic Pain, Naloxone FAQs)
- Virginia Opioid Addiction Indicators Dashboard –interactive dashboard that summarizes health outcomes in Virginia related to opioid addiction and overdose (Data on overdose deaths, emergency department visits for overdoses and more; users can track trends by location, age group and year)

VaAware Addiction, Prevention & Recovery Resources

<http://vaaware.com/>

VaAware is a collaboration among four Virginia agencies, the Department of Health, Department of Behavioral Health and Developmental Services, Department of Criminal Justice Services, and the Department of Health Professions.

The site includes:

- information on treatment if they or a loved one is struggling with addiction
- access to resources in their part of Virginia
- latest research and data on this crisis

Information for Practitioners:

- prescribing
- pain management
- addiction
- continuing education opportunities

Law Enforcement:

- being first responders to an overdose
- offer convenient disposal options for Virginians
- opioid overdose and Naloxone education

Syringe Service Program Guidance

- Syringe Access Manual from harmreduction.org is a separate document to serve as a guide for developing SOPs. <http://harmreduction.org/issues/syringe-access/tools-best-practices/manuals-and-best-practice-documents/syringe-access-manual/>
- Develop FAQs for webpage and social media- see example from Santa Cruz here: <http://www.santacruzhealth.org/Portals/7/Pdfs/SSP/SSPFAQ.pdf>
- Code of Virginia § 32.1-45.4. <http://law.lis.virginia.gov/vacode/title32.1/chapter2/section32.1-45.4/>
- VDH Resources: <http://www.vdh.virginia.gov/commissioner/opioid-addiction-in-virginia/>

Appendix E – Infection Control Guidance

Protection of Health Care Personnel and Patients from Infections

VDH Policies and Nursing Directives/Guidelines

Elements of a Facility Infection Control Plan

Administrative Oversight

1. Training and continuing education - Develop a system to ensure that VDH personnel are educated about the use of infection control/prevention measures and their responsibility for adherence to them.
2. Adherence to precautions - Periodically evaluate adherence to precautions and use findings to direct improvements.
3. Safety needle evaluation - Annually re-evaluate available safety needles and lancets used for immunizations, PPD, venipuncture, and capillary puncture. Maintain documentation of the re-evaluations.
4. Availability of appropriate equipment and supplies (e.g., gloves, gowns, face shields, surgical masks, respiratory protection).

Infection Control Precautions

Standard Precautions

Standard Precautions are combined strategies designed to protect the health care worker from exposure to bloodborne diseases.

Standard Precautions apply to all patients, regardless of their diagnosis or presumed infection status.

1. Hand Hygiene

- a. Perform hand hygiene between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments. It may be necessary to perform hand hygiene between tasks and procedures on the same patient to prevent cross-contamination of different body sites.
- b. Use non-antimicrobial soap and water for routine handwashing. If hands are not visibly soiled, an alcohol based waterless hand rub may be used.
- c. If gloves are worn, perform hand hygiene immediately after removal of gloves.
- d. Infection prevention experts recommend that artificial nails should not be worn by employees who deliver direct patient care. Natural nails should be no longer than ¼ inch.

2. Gloves

- a. Wear clean, nonsterile gloves when performing vascular access procedures or when touching blood, body fluids, and contaminated items. Change contaminated gloves between tasks and procedures on the same patient. Remove gloves promptly after use, before touching uncontaminated items and environmental surfaces, and between patients. Perform hand hygiene immediately after removing gloves.
- b. Wear sterile gloves as needed to protect the patient or if performing a procedure in a sterile field.
- c. Latex allergy in the health care worker and the patient should be considered when choosing gloves. See VDH policy for use of latex-free materials in VDH facilities.

3. Mask, Eye Protection, Face Shield

Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood or body fluids.

4. Gown

Wear a disposable gown to protect skin and to prevent contamination of clothing during procedures and patient-care that are likely to generate splashes or splatters of blood or body fluids. Remove the soiled gown as promptly as possible and perform hand hygiene to avoid transfer of microorganisms to other patients or the environment.

5. Patient-Care Equipment

Handle contaminated patient-care equipment with proper personal protective equipment to prevent skin and mucous membrane exposures. Ensure that contaminated reusable equipment is not used for the care of another patient until it has been cleaned and reprocessed appropriately. Ensure that single-use items are discarded properly.

6. Environmental cleaning

Clean and disinfect contaminated environmental surfaces, examination tables, counters, hard-surfaced flooring, waste pails, pediatric toys, and other frequently touched or contaminated surfaces at the end of the session/clinic/day.

7. Linen/fluid impervious absorbent materials

Handle, transport, and process used linen and materials (i.e. exam table paper, Chux) soiled with blood or body fluids to prevent skin and mucous membrane exposures and contamination of clothing, and if a manner that prevents transfer of microorganisms to others in the environment.

8. Needles, lancets, scalpels and other sharps

Safety devices should be used when available. Place used disposable sharp items in appropriate puncture-resistant containers, which are located in the area in which the items are used. Place reusable dental syringes and needles in a puncture-resistant container for transport to the reprocessing area. Do not recap, bend, break or hand-manipulate used needles.

9. Resuscitation equipment

Use mouthpieces, resuscitation bags, or other ventilation devices as an alternative to mouth-to-mouth resuscitation methods to prevent contact with mouth or oral secretions.

Droplet Precautions

Use Droplet Precautions in addition to Standard Precautions for patients known or suspected of being infected with microorganisms transmitted by large particle droplets (larger than 5 micrometers in size). These droplets can be generated by the patient during coughing, sneezing, and talking. Examples of infections transmitted by this route include meningococcal infection, streptococcal pharyngitis, pertussis, and influenza.

1. Patient Placement

Place the patient in an exam room away from other patients. In waiting rooms and other common areas, maintain spatial separation of at least 3 feet between the infected patient and other patients, visitors, and staff. Special air handling and ventilation are not necessary.

2. Mask

In addition to Standard Precautions, wear a surgical mask when working within 3 feet of the patient.

3. Patient Transport

If transport or movement is necessary, minimize dispersal of droplets by placing a surgical mask on the patient and follow respiratory hygiene/cough etiquette.

Airborne Precautions

Some diseases can be transmitted through the air in very fine particles called droplet nuclei. Droplet nuclei can remain suspended in air for some time and can be dispersed widely by air currents. Examples of diseases transmitted by the airborne route include measles, varicella, and tuberculosis. A complete list of pathogens and recommended precautions is located at Appendix C1. Airborne Precautions are used in addition to Standard Precautions.

Precautions adequate to prevent airborne transmission of pathogens require specially ventilated rooms and additional personal protective equipment for personnel. These additional measures may be difficult to implement in a health department clinic setting.

4. Patient Placement

- a. A patient suspected of having an infection transmitted by the airborne route should be placed in a negative pressure room, if one is available. The room must be monitored regularly to assure that adequate ventilation and negative pressure are maintained. The patient should remain in
- b. the room with the door closed at all times.
- c. If a negative pressure room is not available, the patient should be placed in a private room and the door kept closed at all times. The patient should be evaluated as soon as possible and either discharged home with recommendations for self-isolation (e.g., for measles or varicella) or transferred to a facility with appropriate isolation facilities (e.g., for suspected tuberculosis or management of severe/complicated measles or varicella).
- d. After the patient is discharged or transferred, the room should remain empty, with the door closed until adequate time/air exchanges have occurred to clear the room of droplet nuclei.
- e. If the patient is transferred to another healthcare facility, arrangements must be made with workers managing the transfer (e.g., ambulance attendants) and the receiving facility to assure adequate infection control measures at all stages of the transfer.

Note: A surgical mask worn by the patient is not an adequate substitute for a negative pressure room and the use of respiratory protection by healthcare workers.

5. Respiratory Protection for Personnel

- a. Only personnel known to be immune to measles and varicella should care for patients with suspected measles or varicella.
- b. Persons caring for patients with infectious pulmonary TB, or other infections transmissible by the airborne route must use a NIOSH approved filtering facepiece respirator rated at N95 or better at all times when in the room with the patient, and until the room has been ventilated after the patient vacates the room.
- c. Non-immune personnel caring for patients with suspected measles or varicella must wear an N95 or other approved respirator (as above).
- d. All personnel required to wear respiratory protection in the course of their job duties must be enrolled in the VDH Respiratory Protection Program, and meet all requirements for medical screening, training and fit testing. Each district should have in place a training and fit testing program for all staff required to use N95 respirators as part of their duties.

6. Additional Precautions for Preventing Transmission of Tuberculosis

Any health district providing services to patients with suspected/confirmed tuberculosis and their contacts must have policies and procedures in place for management of those patients in a way that minimizes chances of transmission of TB to personnel and other patients.

Consult CDC "Guidelines for Preventing the Transmission of Tuberculosis in Health-Care Facilities" for additional prevention strategies and contact the VDH TB Control Program for assistance in the development of district-specific TB prevention and control policies.

Contact Precautions

Use Contact Precautions in addition to Standard Precautions to protect against transmission of microorganisms that can be transmitted by direct or indirect contact. Examples of infections transmitted by this route include enteric infections such as *Shigella*, *Clostridium difficile*, respiratory syncytial virus (RSV), vancomycin-resistant enterococci (VRE), and methicillin resistant *Staphylococcus aureus* (MRSA).

1. Gloves and Handwashing

Follow Standard Precautions for handwashing and the use of gloves.

2. Gown

Wear a disposable gown to protect skin and to prevent contamination of clothing during procedures and patient-care. Remove the soiled gown as promptly as possible and before removing gloves. Perform hand hygiene immediately after removing gloves to avoid transfer of microorganisms to other patients or environments.

3. Patient-Care Equipment

When possible, use disposable patient-care equipment. If reusable equipment must be used, decontaminate and clean in accordance with manufacturer's recommendations.

Additional Precautions for Preventing the Spread of Multidrug-Resistant Organisms (MDRO)

Multidrug-resistant organisms (MDROs), (e.g., methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE) and certain gram-negative bacilli (GNB), such as *Escherichia coli*, *Klebsiella pneumoniae*, and *Acinetobacter baumannii* have important infection control implications. Although transmission of MDROs is most frequently documented in acute care facilities, all healthcare settings and congregate living facilities where residents have frequent admissions to healthcare settings are affected by the emergence and transmission of antimicrobial-resistant microbes.

1. Standard Precautions and Contact Precautions are indicated when handling patients colonized or infected with MDROs.
2. Additional Precautions
 - a. Healthcare workers should wash their hands with antimicrobial soap or an alcohol-based waterless hand cleanser in the manner described under Standard Precautions.
 - b. The use of disposable items is encouraged. Contaminated reusable items should be disinfected with an EPA approved disinfectant before being placed back into service for another patient. Since these organisms may remain viable for weeks on environmental surfaces, thorough

cleaning of exam tables and other fixtures that may have become contaminated is recommended.

- c. Items contaminated with wound drainage or body fluids may be discarded in regular trash unless dripping or saturated with blood or other body fluids. Items that can release body fluids during handling should be placed in a biohazard bag.

For additional strategies for preventing the spread of multidrug-resistant organisms refer to: Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006

<http://www.cdc.gov/hicpac/pdf/MDRO/MDROGuideline2006.pdf>.

From: Memorandum to District Directors, August 12, 2009; Subject/Title: Infection Control Guidelines

HBV, HCV and HIV specific guidelines:

1. [Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis \(2001\)](#)
2. [Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis \(2005\)](#)
3. [Updated CDC Recommendations for the Management of Hepatitis B Virus–Infected Health-Care Providers and Students \(2012\)](#)
4. [National HIV/AIDS Telephone Consultation Service \(2012\)](#)