

# City of Virginia Beach Police Department

## Blood Borne Pathogen Field Guide



### **A Guide for Department Personnel**

- Methods for Handling Blood Borne Pathogens and Contamination
- Information on Blood Borne Diseases

*This Field Guide is Prepared and Updated by the Virginia Beach  
Police Department Professional Development and Training,  
Under the Approval of the Chief Of Police*

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Acknowledgments:

The principle resources of this Field Guide are:

Center for Disease Control & Prevention

*CDC Website – [www.cdc.gov](http://www.cdc.gov)*

Federal OSHA – Office of Health Compliance

*OSHA Website – [www.osha.gov/dcsp/compliance\\_assistance](http://www.osha.gov/dcsp/compliance_assistance)*

Association for Professionals in Infection Control & Epidemiology

*APIC Website – [www.APIC.org](http://www.APIC.org)*

*CDC National Prevention Information Network*

This Field Guide has been created to serve as a developmental tool for the Virginia Beach Police Department. It has been designed to meet the needs of the faculty of Professional Development & Training, for the Virginia Beach Police Department.

## Preface

Police Officers need the knowledge, skills, and ability to recognize the inherent risks associated with acquiring a blood-borne or airborne transmissible disease as a result of the performance of their job. We as Police Officers and first responders need to be aware of the risk and measures established for our protection. This guide is designed to review risks, the diseases that pose a risk, measures for preventing disease transmission, and post-exposure follow up in the event of an unprotected exposure. The method to reduction of risk is infection control or exposure control.

## Introduction

The Blood-borne Pathogens and Exposure Control, is driven by the Occupational Safety and Health Administration (OSHA). Those regulations were published December 6, 1991. Those regulations went into effect March 6, 1992. A new compliance directive was published November 27, 2001, and has been incorporated into this Field Guide. This Field Guide is designed to assist the Virginia Beach Police Department, with meeting the requirements for education and training in accordance with Blood-borne Pathogens, and Tuberculosis Exposure.

The objective of this field guide is to establish systematic guidelines to comply with OSHA standard [29 CFR 1910.1030](#), and minimize the danger of exposure to blood-borne Pathogens by Police Officers.

## What are Blood Borne Pathogens?

Blood-borne Pathogens are defined as pathogenic microorganisms that are present in human blood, and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

## What are the Characteristics of Blood-Borne Pathogens?

Pathogens are found in blood, certain body fluids, and objects. Occupational exposures occur in punctures, contacts, and splashes.

The Centers for Disease Control (CDC) list the body fluids that pose a risk for transmission of hepatitis B, HIV, and hepatitis C, as follows:

- PRIMARY – blood, semen, vaginal secretions during sexual contact.
- SECONDARY – fluid in the joints, around the heart, in the abdomen, in the chest cavity, in the womb of a pregnant woman, and the fluid in the spinal column and other body fluids that contain visible blood.
- The following body fluids do not pose a risk of blood borne pathogens unless there is visible blood: tears, sweat, saliva, urine, stool, vomit, and nasal secretions.

## **What Are the Diseases Caused By Blood-borne Pathogens?**

### **Hepatitis**

Hepatitis is an inflammation or infection of the liver. It is one of the most dangerous infections that you may encounter in everyday dealings with the public.

### **Hepatitis B**

Hepatitis B is a viral infection, and means inflammation of the liver. Hepatitis B disease is transmitted by blood to blood contact, sexual contact, or indirect contact with a contaminated object. Approximately 50 – 60 % of the people infected with Hepatitis B, do not know they are infected with the virus. The incubation period for the disease (time of exposure until the time symptoms develop) is up to six months. Signs and symptoms of Hepatitis B begin with flu-like symptoms and may or may not progress into common signs that include yellow skin, dark urine, and whitish stools. Carriers of Hepatitis B will not become ill, but can still pass the disease on to others.

Hepatitis B presents a great risk for occupational illness, but may be prevented by taking Hepatitis B vaccine. There are two vaccines available to prevent this disease Recombivax HB, and Engerix-HB. Both have been tested and declared safe. Side effects of the vaccine are small: low-grade fever, soreness, and redness at the site of the injection. No severe consequences to vaccine have been reported.

Hepatitis B vaccine is safe to take if pregnant, thinking of becoming pregnant, or breastfeeding. The vaccine will be offered to each employee who wishes to receive it free of charge. Employees are not required to be vaccinated, but if they elect not to accept the vaccination, they must sign a declination form. Vaccine should be given to an employee within 10 days of assignment to a position that would place he or she at risk. This should be done only after education about the disease, followed by administration of the vaccine for all who will perform at risk tasks. The vaccine only protects individuals from Hepatitis B. It will not provide protection against any other types of Hepatitis. The Hepatitis vaccine is given in a series of three doses. The first dose is given, and four weeks later a second dose is administered. A third dose will be given six months after the initial dose. It takes six months to complete the series. The injection is only given IM (intramuscularly) in the deltoid muscle of the arm. It is important to complete all three doses. If the series is interrupted, just pick up where you left off. There is no reason to start all over again.

A titer test should be performed between 1 - 2 months after completion of the vaccine series. The titer test is done to identify non-responders. If a person does not respond to first series of shots, a second full series of shots will be administered. If a person does not respond to a second series of shots, no additional doses are offered. Several factors may influence non-response, which include age, (over 40), weight, smoking, and compromised immune system.

Titer will decline over time to even undetectable levels. A person may still be protected because of “immunologic memory”. Once a positive titer is on record, there is no need to re-titer even if there is an exposure. Most Hepatitis B vaccine recipients will be protected for life. All newborns and all teenagers and college students are currently being vaccinated in the United States. There is no evidence that hepatitis B vaccine causes any form of chronic illness. There is no cure for Hepatitis B.

## **Hepatitis C**

Hepatitis C is separate and unrelated to Hepatitis B. Hepatitis C also referred to as Non A, Non B, Hepatitis. Hepatitis C is transmitted through contact with blood, blood transfusion, needle-stick injury, or sexual transmission. Tattoos and body piercing usually increase risk for acquiring Hepatitis C. Groups at risk for acquiring Hepatitis C include I.V. drug users, transfusion recipients, hemodialysis patients, and sexual contacts.

Only 25% of persons infected with Hepatitis C virus will show signs or symptoms; Therefore, 75 % of people with Hepatitis C will not have any of the typical signs of Hepatitis C that include yellow skin and eyes, dark urine, and whitish stools. Window phase for testing for Hepatitis C is 5 – 6 weeks. People with Hepatitis C may show signs and symptoms of loss of appetite, headache, fatigue, and nausea.

There is no vaccine to protect against Hepatitis C, and there is no effective treatment for exposure to the disease. Education and post exposure testing is essential. Post exposure testing is possible using the Hepatitis C antibody test or (HCV-RNA). Approximately 25 – 30 % of people infected with Hepatitis C will develop chronic liver disease.

## **Human Immunodeficiency Virus (HIV)**

The Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system, and destroys its ability to fight infection. Persons infected with HIV are considered to be communicable from the time of infection. HIV that progresses to the later stage is termed AIDS (Acquired Immunodeficiency Syndrome). HIV infection is transmitted primarily by sexual contact, but may also be transmitted by sharing I.V. drug needles and syringes, or from a mother to her infant child. HIV disease can also be transmitted occupationally through needle stick injury, or blood transfusion.

HIV is not a highly infectious virus, because it dies when exposed to light, and air. HIV requires large numbers of the virus to cause disease; Therefore, Hepatitis poses a much greater occupational risk. To define a high risks exposure to HIV by a puncture, the recipient must receive a deep puncture injury, have visible blood on the device, the device must have entered recipient's vein or artery, and the HIV source must have high viral load.

Currently laboratories take 10 – 20 minutes to perform tests on source patient blood. The new rapid testing methods make testing quicker and more efficient. If the source blood is HIV positive, a viral load test will be performed to assess level of risks. If rapid HIV testing is negative on source, no further testing of employee is needed. Currently there is no vaccine available to prevent HIV disease.

Common signs and symptoms of HIV infection include recurring fever, general malaise, flu-like symptoms, swollen lymph glands, (neck groin and underarms). These common symptoms are usually followed by a phase in which no symptoms are present. The next stage of symptoms is known as the Symptomatic Phase. During the symptomatic stage the infected person will experience continued fatigue, chronic diarrhea, fever with night sweats, and swollen lymph glands. Most HIV infected persons are at high risk for TB. A large percentage of HIV infected persons with TB, have Atypical TB, which is not communicable. Non-progressors are individuals who are HIV positive, but do not have an impaired immune system. These individuals are not ill, and have no detectable virus in their bloodstream. These individuals carry a mutated gene, and are immune to HIV.

## **Syphilis**

Syphilis is a blood borne disease caused by bacteria, although Syphilis is primarily a sexually transmitted disease. People at risks for Syphilis include I.V. drug users, prostitutes, and sexual partners of these individuals. Needle-stick injury and direct contact with blood may pose a risk for transmission of Syphilis.

Signs and symptoms of Syphilis may include a primary lesion or chancre that will appear 3 weeks after exposure. However, a chancre may not always occur following an infection. Other symptoms may appear 4 – 6 weeks later, which include a rash on soles of feet, and a rash on palms of hand. These symptoms may progress to latent stage if not treated. Post exposure treatment for Syphilis is long-acting penicillin G.

## **West Nile Virus**

West Nile Virus (WNV) has emerged as a new viral infection affecting humans, horses, and birds. The virus was first isolated in Uganda in 1937. The Virus first appeared in North America in 1999. West Nile Virus is carried in about 1% of mosquitoes. There were 4,156 reported cases of West Nile Virus in the United States in 2002. The disease has not been transmitted person to person via contact.

Modes of transmission of West Nile Virus include blood transfusion, organ donation, breast milk, and sharps injury (Needle). The incubation period is between 3 – 24 days following the exposure. Mild signs and symptoms of West Nile Virus include headache, fever, body aches, skin rash, and swollen lymph glands. Severe signs and symptoms of West Nile Virus include high fever, neck stiffness, coma, convulsions, and paralysis. Approximately 1 % of infected individuals develop severe symptoms.

Most infected persons with West Nile Virus do not know they have acquired the disease. The immune system typically responds quickly. Approximately 1 in 50 individuals who contract West Nile Virus develop severe symptoms, and are usually elderly. No post exposure treatment is typically needed with West Nile Virus exposure.

## **Airborne Pathogens**

### **Tuberculosis (TB)**

Tuberculosis is a disease that is spread from person to person through the air. TB usually affects the lungs, but can affect other parts of the body, such as the brain, kidneys, and spine. People with TB Disease can be treated and cured if they seek medical help.

People with latent TB will usually have no symptoms of the disease. People with latent TB will not feel sick. Individuals with latent TB can't spread disease to others. Individuals with Latent TB usually show positive on skin test. People with latent TB can develop TB disease, if not treated. Individuals with latent TB can take medication to prevent TB Disease.

People with TB disease will complain about feeling weak or sick. Individuals suffering from TB disease will usually experience weight loss. High fever and night sweats are common symptoms associated with TB disease. Severe cough is another symptom of TB disease. Individuals suffering from TB disease may also experience chest pain. Coughing up blood is another common symptom of TB disease.

People commonly affected or encountered by police with TB include:

- The homeless
- Immigrants
- Nursing Home Residents
- Prisoners
- Alcoholics
- Intravenous Drug Users
- Diabetics
- Cancer Patients
- People with HIV

## **The Disease Process**

The fear of acquiring HIV is one concern that attracts the most attention; however, other diseases pose a great threat to Police Officers, employees of the Virginia Beach Police Department, and health care professionals. Diseases like Hepatitis B, Hepatitis C, and Tuberculosis, are more likely to affect Virginia Beach Police Department employees during their everyday activities. Employees must know how these diseases are acquired, and what conditions are needed for a transmission to occur, as well as ways to prevent these exposures and infections from occurring.

## **Definitions**

Norma Flora - Microorganisms in humans that assist the body in maintaining health equilibrium by preventing overgrowth of harmful bacteria.

Bacteria - Organisms that need certain conditions for growth, reproduction and maintenance of life.

Virus - A packet of genetic material surrounded by a protein covering that is unable to grow, or reproduce outside the living host.

Infection - the growth of an organism in a host (a person who may or may not have any signs of illness).

There are two types of diseases usually discussed, infectious and communicable. Infectious disease results from an invasion of the body by bacteria, virus, fungi or parasite. Communicable is a disease that is readily spread from one person to another under certain conditions. Therefore, a disease can be infectious and not communicable. Communicable diseases are spread by either direct or indirect contact. Direct contact is spread from direct contact with infected persons' blood or bodily fluids. Indirect contact is spread from one person, to an object, to another person.

There are four factors that must be considered in assessing the risks of an exposure. Those four factors consist of organism, dose of organism, virulence (strength of organism) and host resistance (how healthy you are).

- Dosage is the number of organisms that are present in an exposure. A specific number is required to be present for an exposure to occur. Each disease will have a different number requirement, which if not attained infection will not occur.

- Virulence is the strength of the organism outside versus inside the body. Organisms such as HIV and TB die quickly when exposed to light and air outside the body. Hepatitis B has been shown to survive for seven days outside the body.
- The body's natural defenses to disease and infection control include the skin. The skin is typically the first line of defense for keeping the body free from infection. The conjunctiva (a thin membrane that covers the eye ball) protects the eyelids along with the production of tears. The GI tract produces acid and gastric juices, and bile secretions. Finally the immune system provides resistance to infection or disease.

### **Blood-Borne Pathogens & Exposure Control**

In compliance with OSHA standard 29 CFR part 1910.1030, this field guide has been developed along with the [City of Virginia Beach Occupational Exposure to Blood borne Pathogens Plan](#), to minimize the danger of exposure to blood borne pathogens by department personnel. The Virginia Beach Police Department Blood Borne Pathogen Field Guide will be reviewed and updated annually by the Commanding Officer of Professional Development and Training or his/her designee, to insure the best possible anti-contamination procedures are in effect. Adherence to the Blood Borne Pathogen and Exposure Control plan is mandatory for employees, and failure to adhere to policy could result in disciplinary action.

Occupational exposure can be anticipated when skin, eye, and mucous membrane come in contact with blood or other potentially infectious material, during the performance of work duties. All unfixed tissue or organ from a human, living or dead, will be considered potentially infectious.

### **Training**

All Virginia Beach Police Department employees will receive training regarding blood borne pathogens at the time of their initial assignment and then annually thereafter. This training shall include at a minimum, the following:

- Hepatitis, Human Immunodeficiency Virus (HIV), Tuberculosis, Syphilis, and West Nile Virus.
- The location and content of the OSHA Standard (1910.1030) and the Blood Borne Pathogen Field Guide.
- Personal Protective Equipment (PEP) needle safe devices and safe disposal sites.
- Police Department procedure for biological waste management.
- Hepatitis B vaccines (shot) and TB testing for employees
- Post-exposure management procedures
- Signs and labels for medical waste.

The Virginia Beach Police Department, Office of Professional Development and Training shall maintain training records on all Officers regarding blood borne pathogens.

**Personal Protective Equipment**

Face masks, eye shields, goggles, and antimicrobial towlettes will be issued to all personnel. Latex gloves will be issued to all personnel having routine exposure. Other Personal Protective Equipment (PPE) will be available as needed.

The following are guidelines for employees utilizing personal protective equipment in certain situations.

A – Latex Gloves	D – Shoe Covers	G – Hair Covering
B – Rubber Gloves	E – Face Masks	H – Antimicrobial Towelettes
C – Coveralls	F– Goggles	I - Soap and Water Wash

<b>Situation / Incident</b>	<b>P.P.E</b>
No Body Fluid	Optional
Bodily Fluids on Victim	A, H, I
Bodily Fluids on Floor	A, D, H, I
Bodily Fluids on Floor, Walls or Ceilings	A, C, D, E, F
Arrests: resistance not anticipated	Optional
Arrest: resistance anticipated	A
Arrest: known HBV or HIV or HCV	A, E, F
Arrest: DUI Blood Test	A
Arrest: Contact or any contamination	H, I
Contaminated Materials	A, E, F, H
Vehicles: small areas of contamination with Body Fluids	A, E, F, I
Clothing: small areas of contamination either wet or dry (minor amounts)	A, E, F, I

**Post Exposure Procedures**

In the event of an occupational exposure, exposed areas of the skin must be cleansed at the scene, or as soon as possible thereafter with soap and water. In cases of extensive skin exposure, officers are to shower at a City of Virginia Beach fire station as soon as possible. The Fire department will assist by providing the necessary decontaminations area, soap and water. Clothing with minor contamination is to be rinsed in cold water, disinfected, and laundered. All weapons and leather gear with minor contamination will be decontaminated by the Officer.

Uniforms and other clothing with major contamination shall be disposed of as hazardous waste. Weapons with major contamination shall be placed in a plastic bag marked biohazard, and held at the individuals command for pickup by range supervisor or his designee. The contaminated weapon will be decontaminated by range personnel. Leather gear with major contamination that has soaked into the leather will be decontaminated by the Officer, and then set aside for two weeks of quarantine. The quarantined leather gear will be marked as a biohazard, and stored in a designated safe place. The on duty supervisor will decide if an item has major or minor contamination.

It is strongly recommended that Officers carry with them a complete change of clothing, for use in the event of major contamination.

In accordance with the [City of Virginia Beach Human Resources requirements](#), when a member is injured, has an accident, or an exposure incident occurs while performing job-related duties for the City, the following procedure must be followed:

1. The member must immediately notify his supervisor of the injury, accident or exposure.
2. The supervisor must immediately provide the member with the City's Workers' Compensation Physician Panel Form (DF 159) and shall make certain the member knows that they must select a doctor from the panel should they require medical attention as a result of the incident.
3. Prior to sending a member to the panel physician he/she has selected, the member's supervisor shall issue the member a properly completed Authorization for Medical Treatment Form (DF 76). The member shall sign the certification and shall present this form to the attending physician, who shall complete the bottom portion of the form. The member shall then return this form to his supervisor immediately after seeing the doctor and follow up with a visit to Occupational Health. This form shall be forwarded to the Department of Finance, Risk Management Division along with all other required forms.
4. All claim information for accidents and losses shall be completed online in [RISKMASTER](#). The DF 75 form may be used internally by departments to gather the information needed for input into RiskMaster.
5. All claim information for injury and illness shall be completed online at the Corvel reporting site – [CAREMC.com](#). The DF 75WC may be used internally by departments to capture all information needed for input into Corvel System.

For exposure incidents, a Health Hazard Exposure Form (DF 156) must be filled out by the member and reviewed by the supervisor. Notify and send the form to Occupational Health Services (385-4851) as soon as possible after incident. If possible, OHS officials would prefer the employee respond to OHS to speak to a clinician.

Exposures are to be reported by supervisors in accordance with the information provided in [Appendix 1](#).

All documented exposure events are to be maintained in a confidential manner. Employees are to keep exposure information in confidence to protect patient privacy and reduce the opportunity for rumors or other problems in the work place. In the event of an exposure, the patient if known will be asked to consent to a blood test. Releasing of source patient test results is not a HIPPA violation.

### **Post Exposure Testing - Hepatitis B**

Post exposure procedure for Hepatitis B:

- Test source patient. If source patient is positive;
- Check employee to see if Hepatitis B, vaccine is on file. If employee has positive titer on file no treatment needed.
- Hepatitis C Post Exposure Testing

**Post Exposure Testing - Hepatitis C:**

- Test both source patient and employee for baseline Hepatitis C antibody. If source patient positive for Hepatitis C;
- Conduct a baseline test on the employee.
- Refer directly to infectious disease specialist.

**Post Exposure Testing - HIV**

Post exposure procedure for HIV;

- Test source patient. If source patient is positive;
- Conduct viral load testing on source patient and consult physician for follow up. If negative, no further testing will be needed.

**Post Exposure Testing - Syphilis**

Post exposure procedure for Syphilis;

- Test source patient. If source patient tests positive for Syphilis;
- Have employee consider treatment of IM injection of long-acting Penicillin 2.4 million units. If employee is Penicillin allergic, oral Doxycycline or tetracycline may be given.

**Post Exposure Testing – Tuberculosis**

Post exposure procedure for TB;

- Test source patient. If test is positive for source patient;
- Check to see if employee has documented negative TB results in past three months, if they have ever tested positive. If employee tests positive, or shows symptoms of TB,
- Order a chest x-ray and seek medical treatment

**Biological Waste Management**

All department vehicles will be issued red or orange biohazard disposal bags, suitable for disposal of small amounts of waste such as contaminated gloves and masks.

Contaminated waste bags must be turned into one of the decontamination centers for proper disposal. The contamination bags can also be turned in at Occupational Health, or the local emergency room. Finally, contaminated waste can be turned over to rescue squad personnel.

All regulated waste destined for disposal shall be placed in covered leak proof containers, or bags that are color coded, or labeled, in appropriate sharp containers. Regulated waste will be defined as liquid or any semi liquid blood, vomit or other bodily secretions that may contain potentially infectious material. Other contaminated items that would be considered regulated waste include blood or potentially infectious

materials in liquid, or semi liquid state if compressed. Dried blood or other potentially infectious materials that are capable of being released during contact will be considered regulated waste. Contaminated sharps; and pathological microbiological waste containing blood, will be considered regulated waste.

The international symbol of regulated waste is usually a BIOHAZARD Symbol found in red, or black, if used on a red bag.



Decontamination Centers are located in the following areas:

FIRST PRECINCT	Fire Station # 6 (Creeds) Fire Station #17 (Sandbridge) Fire Station #21 (General Booth)
SECOND PRECINCT	Fire Station # 11 (Oceanfront)
THIRD PRECINCT	Fire Station # 2 (Haygood) Fire Station # 20 (Little Neck)
FOURTH PRECINCT	Fire Station # 9 (Kempsville)

**Testing and Vaccination**

As provided in General Order 2.05 (Conditions of Work), Sworn members, Animal Control Officers and selected Ancillary Members shall receive annual medical physical examinations by the City of Virginia Beach Department of Human Resources, Occupational Health Services. Physical Examinations shall include:

- Mandatory (OSHA) TB Screening will determine the need for a tuberculosis skin test. (Employees are also tested after an exposure incident) via a tuberculosis skin test.
- TB skin tests must be read, by one of the trained medical staff at Occupational Health Services between 48 – 72 hours after being administered. Individuals being tested after a suspected exposure may need a second skin test 10 –12 weeks later.
- The option for the employee to receive a Hepatitis B vaccination

Appendix 1

**Blood borne Pathogens Exposure Management**

