

Bloodborne Pathogens

Occupational exposure to blood and other potentially infectious materials place law enforcement officers at risk for infection with bloodborne pathogens. Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).

I. Bloodborne Pathogen Exposure Control Plan

Law enforcement agencies in Wisconsin are subject to the requirements of the Occupational Safety and Health Administration's (OSHA) Bloodborne Pathogen Standard, 29 CFR 1910.1030. This standard has been adopted by the State of Wisconsin (Wisconsin Statutes Section 101.055) for public employees and is enforced by the Department of Commerce's Safety and Buildings Division. The standard requires that an employer having employees with occupational exposure to bloodborne pathogens establish a *Bloodborne Pathogen Exposure Control Plan*. The purpose of the plan is to offer guidelines to minimize chances of exposure to these pathogens. A model exposure control plan is available at [OSHA.gov](https://www.osha-slc.gov).

Topics the BBP Exposure Control Plan should include are:

- A.** Engineering controls and work practices
- B.** Recordkeeping
- C.** Personal protective equipment
- D.** Housekeeping schedules
- E.** Use of biohazard labels
- F.** Training and information on the types of exposures
- G.** Hepatitis B vaccinations
- H.** Post-exposure evaluations

It is your employer's responsibility to offer hepatitis B vaccinations at no cost. Vaccination is not mandatory and you may refuse. However, vaccinations must be provided at no cost if you later change your mind.

A basic premise of the plan is the use of **universal precautions**. This means **all** human blood and other potentially infectious materials (OPIM) are treated as if known to be infectious for HIV, HBV and other bloodborne pathogens. Other potentially infectious materials include, but are not limited to:

- A. Seminal fluid
- B. Pleural fluid (lungs)
- C. Vaginal secretions
- D. Pericardial fluid (around heart)
- E. Cerebrospinal fluid
- F. Peritoneal fluid (abdominal)
- G. Synovial fluid (joint)
- H. Amniotic fluid (around fetus)
- I. Human tissue

Feces, nasal secretions, sweat, tears, vomit and urine (when they are not contaminated with blood) are not addressed under universal precautions. However, they can transmit other infectious diseases so **caution is advised**. Any body fluid must be handled with caution.

II. General Guidelines to Avoid Exposure

- A. Assess a situation beforehand and wear appropriate personal protective equipment (gloves, mask, goggles, shoe coverings, coveralls, etc.).
- B. Protect eyes, nose and mouth by using goggles and a mask. These provide a barrier to spraying, splashing or aerosol transmission of infectious materials.
- C. Gloves minimize the risk of infectious materials entering the body through a cut or other skin lesion. Most latex gloves have microscopic “holes” and openings. Double gloving (wearing two pair of gloves at the same time) and changing gloves frequently aids in protection.
- D. Wash your hands after removing gloves. Frequent hand washing is a good hygiene and safety practice.
- E. Items that are soaked with blood or other body secretions should be carefully air dried. Dry in a manner that minimizes the exposure of other staff to the liquid or dried material.
- F. Do not assume that a dried sample is risk free. Current research indicates that the infectious activity of some organisms persists **more than several days** after drying.
- G. Minimize or avoid direct handling of contaminated sharp or pointed objects. Collect syringes in puncture-resistant, leak-proof containers and attach a biohazard label. Never shear, break or bend a contaminated sharp.
- H. Smoking, drinking or eating at a crime scene is hazardous. Avoid these activities when handling evidence.

Collection Kits

The following information is provided to assist law enforcement in preparing various evidence collection kits. These kits may be modified to best fit an agency's resources and expertise. If you have any questions or difficulties obtaining the items listed below, please contact the Laboratory in your service area for assistance.

I. General Collection Kit

This kit contains a variety of packaging options and items for documentation and collection of physical evidence at a crime scene. A toolbox with two or more compartments can be used to contain the following:

- A.** Sharpies
- B.** Ink Pens
- C.** Razor Blades
- D.** Scissors
- E.** Disposable Tweezers
- F.** 1 oz. Dropper Bottle of Distilled or Bottled Water
- G.** Coin Envelopes
- H.** Sterile Swabs
- I.** Swab Boxes
- J.** Methanol Soluble Trace Evidence Tape
- K.** Mikrosil™ Casting Putty for Tool Mark Impressions
- L.** 25' Tape Measure
- M.** Variety of Paper Bags
- N.** Biohazard Labels
- O.** Weighing Paper
- P.** Evidence Tape
- Q.** Large Stapler
- R.** Box of Staples
- S.** Variety of Manila Envelopes
- T.** Syringe Safety Tubes
- U.** 2 and 4 oz. Specimen Jars
- V.** Cardboard Slide (Pill) Boxes

II. Fingerprint Processing Kit

This kit contains a variety of fingerprint powders, brushes, lifting media and backing cards for lifts. (See Chapter 11, *Latent Prints* and Chapter 12, *Major Case Prints*.) A toolbox with two or more compartments can be useful to separate the powders from the other contents of the kit. This can prevent lift cards and tapes from being damaged by stray powder. As an added precaution, powder jars should be tightened periodically to prevent a jar from opening accidentally. This can occur to jars stored in vehicles over a period of time due to the movement of the vehicle.

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| A. Black and Grey Magnetic Powder | I. White Backing Cards |
| B. Black and Grey Fingerprint Powder | J. Black Backing Cards |
| C. 2" and 4" Rolls of Lift Tape | K. Clear Acetate Sheets |
| D. Gelatin-Type Lift Tape | L. Dust/Mist Respirator Masks |
| E. Fingerprint Brushes | M. Ruler |
| F. Wand for Magnetic Powders | N. Pad of Elimination Print Records |
| G. Disposable Tweezers | O. Ink Pad (for Elimination Prints) |
| H. Adhesive Scales | P. Gloves |
| | Q. Magnifier |

III. Casting Kits

These kits may be used for casting tire and footwear impressions at a crime scene (see Chapter 10, *Footwear and Tire Impressions*).

Dental Stone Kit

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| A. Prepackaged Bags of Dental Stone | G. Flexible Mixing Bowl(s) or Containers |
| B. Ziplock Plastic Bags | H. Metal Stir Rod |
| C. Bulk Dental Stone | I. Deflector (Large Spoon) |
| D. Measuring Cup for Bulk Dental Stone and Water | J. Ruler |
| E. Snow Print Wax | K. Hand Sifter |
| F. Metal or Wood Forms | L. Spray Bottle |
| | M. Water Jug |

Sulfur Kit

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| A. Sulfur (Sublimed or Flowers of Sulfur) | F. Dust/Mist Respiratory Masks |
| B. Heating Mantle | G. Heat-Resistant Gloves |
| C. One-Gallon Unlined Paint Can | H. Metal Stir Rod |
| D. Ruler | I. Goggles |
| E. Deflector (Large Spoon) | J. Forms |

IV. Kits Available Through the Crime Laboratory

Sexual Assault & Suspect Evidence Collection Kits

The Sexual Assault Evidence Collection Kit and the Suspect Evidence Collection Kit (see Chapter 6, Sexual Offenses) designed by the WI State Crime Laboratory are available through Document Sales at 800-DOC-SALE.

Sexual Assault Evidence Collection Kit – **1205D**
 Suspect Evidence Collection Kit – **1208D**

Though not provided in the Sexual Assault Evidence Collection Kit, blood and urine samples are still needed when date rape drugs are suspected. Samples collected should have the preprinted label included in this kit affixed to the container (see Chapter 28, Toxicology).

Biological Specimens Kits

Biological Specimens Kits with labels for either the Madison or Milwaukee Laboratories are also offered at Document Sales. Please order your kits based upon which Laboratory is in your service area. The kit is designed for collection of up to five (5) separate samples (see Chapter 5, DNA Evidence and Standards). Contents include:

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| A. (5) Packages Each Containing Two Sterile Swabs | D. Pair of Gloves |
| B. (5) Swab Boxes | E. Bottle of Distilled Water |
| C. (5) Individual Envelopes | F. Instructions for Use |
| | G. Transmittal Form |

Biological Specimens Kit – Madison Lab – **1207D**
 Biological Specimens Kit – Milwaukee Lab – **1206D**

Autopsy Kits

Autopsy kits are available through the State Crime Laboratory in Madison: **(608) 261-2031**. (See Chapter 25, Autopsy and Chapter 28, Toxicology.) Contents include:

- A. (1) 8 oz. Jar
- B. (2) 4 oz. Jars
- C. (2) 2 oz. Jars
- D. (2) Gray-topped Tubes (Sodium Fluoride)
- E. (1) Purple-topped Tube (EDTA)
- F. (1) DNA Stain Card with Envelope
- G. Toxicology Worksheet (Collection Recommendations) and Kit Instructions
- H. Transmittal Form

V. Other Recommendations

- A. Personal Protective Equipment (e.g., Gloves, Dust/Mist Respirator Masks, Goggles, Shoe Covers, Overalls)
- B. Large Paper Evidence Bags
- C. Unlined Paint Cans
- D. Cardboard Evidence Boxes (e.g., Handgun and Long Gun Boxes)
- E. Plastic Cable (Zip) Ties
- F. Sharps Storage Containers
- G. Flashlights
- H. Forms: Crime Laboratory Transmittal, Evidence Inventory Sheets, Photo Log, Video/Audio Slate
- I. Physical Evidence Handbook
- J. Handwriting Exemplars (Available from State Crime Lab – Madison)
- K. Evidence Markers
- L. Electrostatic Dust Print Lifter and Metallic-Backed Mylar Film
- M. Metal Detector
- N. Portable Lighting
- O. Alternate Light Source (ALS)

VI. Recommended Equipment for Forensic Photography

Photographer's Kit

New equipment should be coordinated with existing equipment for system compatibility. The following recommendations are for digital SLR camera equipment intended for general crime scene photography.

A. Camera

The camera must have:

1. Full manual exposure and focusing capability.
2. A flash synch of at least a 1/60th of a second with 1/125th or higher preferred.
3. A DSLR with accurate focusing and accurate viewfinder.
4. A built-in light meter with TTL exposure capability being desirable.
5. A connection for an external flash.
6. A cable release or remote capability. A self timer may also be useful in certain situations.
7. A standard tripod fitting.

The camera should be designed with interchangeable lenses.

B. Camera Lenses

1. At a minimum, the camera kit should include a wide-angle to telephoto macro zoom lens that is the equivalent of approximately a 24mm to 105mm on a 35mm SLR.
2. A wide-angle zoom lens is useful as a second lens for overall photographs of small rooms and overall views of crime scenes.
3. For surveillance photography, lenses in the 300 to 1000mm range should be considered. A general rule of thumb states that 1mm per foot of distance should be used for chest to head image size on film and 2mm per foot for full face detail on film. For example (using the 2mm rule) if the subject is 300 feet away, then a 600mm lens is needed.
4. For advanced applications, more sophisticated devices are available such as a night vision device or electronic amplification.

C. Electronic Flash

1. The electronic flash must have a guide number when in manual of at least **100 at an I.S.O. setting of 100**. If the flash has a zoom head, the guide number should be based on the 35mm setting.
2. The electronic flash should have TTL, automatic and manual modes. An additional desirable feature is an automatic zoom head linked to the lens focal length.
3. An external battery pack is desirable.
4. The electronic flash must have an “open flash” button. This will let you flash your unit without it being connected to the camera (used for painting with light and multiple “pops”).
5. The electronic flash must have a ready light and some indication of when the flash failed to fire.
6. External synch cord to camera capability.
7. A tilting, rotating and focusable head is desirable. Tilting capability is very useful with bounce flash in the automatic mode.
8. Dedicated electronic flash units with remote TTL capability are desirable when multiple flash units are needed.

D. Tripod

1. Generally speaking, a good **heavy duty** tripod will start at \$100 and up. Do not buy an inexpensive tripod. If it is not rated to hold a camera that weights at least 2 times the weight of your camera and lens, **don't buy it**.
2. Important considerations:
 - a. Sturdy construction with quick release legs.
 - b. A sturdy three-way pan, pistol grip or ball head.
 - c. Can the tripod provide eye level camera height without extending center column?
 - d. The center column should be either reversible or have the capability of being rotated at a 90 degree angle for close-up photography.
 - e. The tripod legs should be collapsible to accommodate different levels or will allow the tripod to lay flat on the ground.

E. Other Camera Accessories

1. Hard or soft shell case/bag to hold equipment.
2. Lens accessories.
 - a. Lens shade(s)
 - b. U. V. filter(s) for each lens
 - c. Lens cleaning tissue (not eyeglass cleaning tissue) or microfiber cleaning cloth
 - d. Lens cleaning fluid
 - e. Camel's hair brush or blowing device for blowing air onto lens to remove particulate matter
3. Locking cable release that is at least six inches long or remote capability.
4. Flash synch cord and a spare cord.
5. Precise scales.
 - a. Flat rigid scales or forensic scales
 - b. ABFO #2 scale (available from forensic suppliers)
 - c. Transparent photo evidence ruler (also available from forensic suppliers)
6. Angle finder or inclinometer (available from some hardware stores, photo suppliers or forensic suppliers).
7. Directional compass.
8. Black and white contrast filters:
 - a. Number 15 (yellow-orange)
 - b. Number 29 (red)
 - c. Number 47 (blue)
 - d. Number 58 (green)
 - e. Number 22 (orange) if using alternative light sources
9. Data sheets for notes, drawings, comments, etc.
10. 18% neutral grey card or color reference card. A diffusion disk for setting a custom white balance may also be desirable.
11. Spare batteries and chargers for rechargeable batteries.
12. Spare camera cards and camera card storage cases.
13. Cover to protect camera from rain.

Basic Studio Type Equipment for Evidence Photography

A. Lighting Equipment

1. Tungsten lights for forensic photography.
 - a. Two 12” reflector floods
 - b. One 5” reflector flood
 - c. One mini spot with snoots
 - d. Small, adjustable table lamps
2. A boom arm on a wheeled stand is recommended.
3. Various light stands.

B. Background paper and a background roll paper stand/system.

C. Studio camera stand or studio tripod with “L” arm extension or similar capability.

D. Hand-held light/flash meter.

E. Incidental accessories listed previously for Photographer’s Kit.