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# Infection Control Policy

## I. Universal Precautions

### A: Definition of Key Terms

With the increased prevalence of AIDS, hepatitis, MDRO (multidrug-resistant organisms including MRSA), and other bacterial and viral diseases in the U.S., it is likely that some patients carrying these diseases will be encountered in an eye care practice.

Since the mid 1970's there has been a dramatic increase in infections caused by MRSA. The main mode of transmission is via hands, especially health-care worker's hands.<sup>1</sup> MRSA can be categorized by where the infection was acquired: Hospital-Acquired (HA-MRSA) or Community-Associated (CA-MRSA). CA-MRSA has only been known since the 1990s and in contrast to HA-MRSA, the origin is elusive; i.e. it usually cannot be traced to a specific exposure. CA-MRSA usually manifests as a skin infection, and occurs in otherwise healthy people. Furthermore, CA-MRSA involves different strains which may spread more easily than HA-MRSA.<sup>2</sup>

It is impractical to try to identify all patients who may be carrying infectious agents. As a result, the following procedures should be routinely utilized for all patients. These guidelines have been developed based on the recommendations of the Centers for Disease Control (CDC) as "universal precautions" to prevent the transmission of disease within health care practices.<sup>3,4,5</sup>

<u>Term</u>	<u>Definition</u>
Bloodborne pathogen	A pathogenic microorganism that is present in human blood and can cause disease in humans.
Exposure incident	A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials.
Occupational exposure	Reasonable anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.
Personal protective equipment	Specialized clothing or equipment such as gloves, gowns, masks and eye protection worn by an employee for protection.
Potentially infectious materials	Includes blood, semen, vaginal secretion, cerebrospinal fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures and any body fluid visibly contaminated with blood. <u>Tears are not considered to be potentially infectious materials under the OSHA Standard unless they contain visible blood.</u>
Universal precautions	An approach to infection control which treats all blood and body fluids as if they are infectious. Precautions include hand washing, the wearing of gloves (as appropriate) and the sterilizing of instruments.
Engineering / work practice controls	All control measures that isolate or remove a hazard from the workplace.

## **B: Infection Control Guidelines Checklist**

The following Universal Precautions should be followed for the care of all patients in an eye care practice.

### **Hand Washing**

- Hands and other skin surfaces should be washed before every patient contact and immediately after contact with blood or other potentially infectious materials.
- Hands should be washed immediately after gloves are removed.

### **Protective Equipment (PPE)**

- Use appropriate barrier precautions to prevent exposure to blood or other potentially infectious materials.
- Disposable latex gloves should be used for touching blood, mucous membranes, or non-intact or infected skin of patients.
- Wear gloves if you have any open wound or cuts on your hands.
- Gloves must be disposed of after contact with each patient.
- Protective eyewear should be worn during procedures that are likely to generate splattering of blood or other potentially infectious materials.
- Masks should be worn during procedures when the transmission of airborne diseases exists.
- Gowns should be worn during procedures that are likely to generate splashes of blood or other potentially infectious materials.

### **Handling of Sharp Instruments**

- To prevent injuries, all disposable needles, syringes and other sharps must be handled and disposed of properly. Never try to bend, break or recap a used needle by hand.
- All nondisposable sharps must be placed in puncture-proof containers and disinfected or sterilized after each use.
- Proper puncture-resistant containers must be available for use in disposal of sharps.

### **Instrument Disinfection**

- All instruments which come in contact with the patient should be wiped clean and thoroughly disinfected and/or sterilized after each use. Most ophthalmic instruments can be disinfected by immersion for 10 minutes in one of the following solutions:
  1. 3% hydrogen peroxide
  2. 1/10 dilution (0.5% solution) of common household bleach (sodium hypochlorite)
  3. 70% ethanol or isopropyl alcohol
  4. CaviCide<sup>®</sup> or equivalent disinfecting solution
- The device should be thoroughly rinsed in tap water and air dried before re-use.
- Special care may need to be taken to protect tonometer tips from damage. Two reports have noted that isopropyl alcohol, while effective in removal of viruses, may damage Goldmann applanation tonometer tips over time.<sup>6,7</sup> One study comparing all three disinfection solution procedures has recommended to use of 3% hydrogen peroxide as the method of choice for Goldmann tonometers.<sup>8</sup>
- The tip of a digital pneumotonometer may be cleaned with an alcohol swab and allowed to air dry. Alternately, a disposable latex cover may be placed over the tonometer tip.
- For effective disinfection the Schiottz tonometer must be disassembled between uses in order to clean the barrel. Since the non-contact tonometer does not make contact with the cornea or tears, it does not require routine disinfection. However, the front surface may be wiped with an alcohol swab if it should accidentally touch the eye or lashes.

### **Contact Lens Disinfection**

- Eye doctors and their staffs involved in the fitting and dispensing of contact lenses should be familiar with proper disinfection techniques for in-office use. Lenses should only be applied or removed after proper hand washing. All trial lenses must be disinfected after each patient use using one of the following Centers for Disease Control (CDC) recommended procedures.<sup>9</sup>
  1. Hard lenses (PMMA) can be disinfected with a commercially available hydrogen peroxide system currently approved for use with soft contact lenses. Also, most hard lenses can be disinfected using the standard heat treatment regimen used for soft lenses (78-80 degrees centigrade) for 10 minutes.<sup>10</sup>
  2. Rigid gas permeable (RGP) lenses can be disinfected using a commercially available hydrogen peroxide system approved for use with soft contact lenses. RGP lenses should not be heat disinfected as the lenses may warp.
  3. Soft contact lenses can be disinfected with an approved hydrogen peroxide system. Some soft lenses have also been approved for heat disinfection.

### **Infectious Waste Disposal**

- The Environmental Protection Agency (EPA) and Centers for Disease Control, as well as many state, county and city governments have developed guidelines that govern the disposal of hazardous and/or infectious waste. Doctors and staff in eye care practices should be familiar with the requirements they may need to meet.
- Infectious waste has been defined by the EPA as “wastes that in all probability contain pathogenic agents that, because of their type, concentration, and quantity, may cause disease in persons exposed to the waste.”
  1. All used disposable gloves need to be discarded as hazardous waste.
  2. All sharps used in patient care should be considered potentially infectious waste and placed in appropriate infection control containers for disinfection or disposal.
  3. All disposable items (e.g. tissues, gauze, etc.) contaminated with blood or other infectious materials should be disposed of in clearly marked receptacles.
  4. All infectious waste must be placed in appropriate containers and disposed of according to federal, state and local regulations.

## II. OSHA Bloodborne Pathogens Standard

The infection control guidelines in Section One relate to general precautions that should be taken in the care of all patients within eye care practices. However, the Occupational Safety and Health Administration (OSHA) have also developed specific regulations that relate to the prevention of the transmission of blood borne diseases to health care workers. The Blood borne Pathogens Standard, which became effective March 06, 1992, requires employers to ensure that any of their employees who may be at risk of exposure to blood and other potentially infectious materials are appropriately protected.<sup>11</sup>

The likelihood of exposure to blood borne diseases in most eye care practices is limited. OSHA does not consider individuals coming in contact with tears (unless they contain visible blood) to have occupational exposure. But, before you dismiss these requirements as not relating to your practice, be sure to do a careful review of all staff duties and procedures. If it can be reasonably anticipated that any of your employees may come in contact with blood or other potentially infectious materials (as defined in this regulation) as part of his or her routine duties, then you must comply with all aspects of this standard.

### Exposure Control Plan

- The standard requires that all employers whose employees may experience occupational exposure must develop and implement a written Exposure Control Plan (ECP). A copy of the plan should be accessible to employees, reviewed at least annually or whenever necessary to accommodate new tasks or procedures or reflect new OSHA standards. The following sections list elements that must be included in the plan.
- The purpose of this Exposure Control Plan is to:
  1. Minimize or eliminate occupational exposure to blood or other potentially infectious body fluids, and
  2. Comply with 29 CFR 1910.1030 OSHA Bloodborne Pathogen Standard

The ECP must include employer-solicited input from non-managerial employees responsible for direct patient care regarding the identification, evaluation, and selection of effective engineering controls, including safer medical devices.<sup>12</sup> Employers are required to document in the ECP how they received input from employees. This obligation can be met by:

- Listing the employees involved and describing the process by which input was requested, or
- Presenting other documentation, including references to the minutes of meetings, copies of documents used to request employee participation, or records of responses received from employees.

### Exposure Determination

- OSHA requires each employer to develop a listing of all job classifications in which employees may incur occupational exposure to blood or other potentially infectious materials. This listing is to identify all at-risk employees so proper training in safe work practices and procedures can be completed.
- The following is a sample listing:

In this office, the following job classifications may incur occupational exposure to blood or other potentially infectious materials:

1. Eye Physician  
*Tasks or procedures* - Foreign body removal, lacrimal irrigation, lacrimal occlusion, eyelid manipulation techniques (e.g. Meibomian gland expression), examination of external eye and adnexa, and handling contact lenses.
2. Assistant / Technician  
*Tasks or procedures* - Assisting with above procedures, instrument disinfection, handling contact lenses, and instructing in CL handling techniques.

## Methods of Compliance

- Universal Precautions

Since not all individuals with infectious diseases can be identified, all human blood and certain human body fluids shall be treated as if infectious for HBV, HIV and other bloodborne pathogens; therefore, the same infection control procedures and practices will be used with all individuals.

The use of universal precautions (as described in Section One) shall be observed to prevent contact with blood or other potentially infectious materials. Precautions include hand washing, the wearing of gloves (as appropriate), and the sterilizing of instruments.

- Engineering and workplace controls shall be used to eliminate or minimize employee exposure and may include:
  1. Providing hand washing facilities that are readily accessible to employees or, if unavailable, antiseptic hand cleanser and clean towels.
  2. Ensuring that employees wash their hands immediately after removal of gloves or other personal protective equipment or contact with blood or other potentially infectious materials.
  3. Prohibiting eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in work areas where there is a reasonable likelihood of occupational exposure.
  4. Contaminated needles and other disposables shall be immediately discarded in appropriate containers.
  5. Re-usables including lacrimal cannulae shall be properly sterilized as soon as possible following use.
  6. Needles shall not be recapped by a two-handed technique.

The above-mentioned controls will be examined and maintained on a regular schedule.

- Personal protective equipment (PPE) shall be used where occupational exposure remains after institution of engineering and workplace controls. All PPE used will be provided without cost to employees. PPE will be chosen based on reasonably anticipated exposure to blood or other potentially infectious materials. Masks in combination with eye protection devices such as goggles or glasses with solid side shields or chin length face shields shall be worn whenever splashes, spray, spatter or droplets of blood or other potentially infectious materials may be generated and eye, nose or mouth contamination can be reasonably expected. Gowns should be worn during procedures that are likely to generate splashes of blood or other potentially infectious materials.

All PPE will be cleaned, laundered, and/or disposed of without cost to the employee. Repairs and replacements will also be made at no cost to the employee. Any garments penetrated by blood or other infectious material shall be removed immediately or as soon as feasible. All PPE will be removed prior to leaving the work area. After removal, PPE shall be placed in a designated and appropriate area or container for storage, washing, decontamination or disposal.

Gloves will be worn when it is reasonably anticipated that the employee will have contact with blood or other potentially infectious materials or when handling or touching contaminated items or surfaces. Disposable gloves are not to be washed or decontaminated for reuse and are to be replaced as soon as practical when their function as a barrier to exposure is compromised.

- Housekeeping: All contaminated surfaces and equipment will be decontaminated immediately or as soon as feasible after any spill of blood or contact with other potentially infectious material.

Decontamination will be accomplished by utilizing 1:10 dilution of bleach (sodium hypochlorite), 70%+ ethanol or isopropyl alcohol, or other surface disinfectant (e.g. CaviCide®).

Contaminated disposable equipment and/or supplies shall be discarded in appropriate containers that are labeled and color coded (fluorescent orange or orange-red). These containers shall be easily accessible and located as close as possible to the work area.

When moving regulated waste containers, the containers shall be closed prior to removal or replacement to prevent spillage during handling, storage, transport or shipping. If leakage is possible, the container shall be placed in a properly color coded second container with a label attached to identify its contents. Reusable containers shall not be opened, emptied or cleaned in any manner which would expose the employee to the risk of injury or contamination.

NOTE: Disposal of regulated waste shall be in accordance with applicable federal, state and local regulations. Laundry contaminated with blood or other potentially infectious materials shall be handled as little as possible. Such laundry will be placed in appropriately marked (biohazard labeled and color coded) bags at the location where it was used.

### **Hepatitis B Vaccination**

Hepatitis B vaccinations shall be made available to all employees who may have occupational exposure and post-exposure follow-up will be provided to employees who have had an exposure incident.

All medical evaluations and procedures including the Hepatitis B vaccinations and post-exposure follow-up will be:

1. Available at no cost to the employee,
2. Available at a reasonable time and place,
3. Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional, and
4. Provided according to the U.S. Public Health Service recommendations.

Hepatitis B vaccination shall be made available after the employee has received training in occupational exposure and within 10 working days of initial assignment for all employees who have occupational exposure unless the employee has previously received the complete Hepatitis B vaccination series, antibody testing has revealed immunity, or medical contraindication is indicated.

If an employee initially declines Hepatitis B vaccination but at a later date decides to accept the vaccination, the vaccination shall then be made available. **All employees declining the Hepatitis B vaccination shall sign the OSHA required waiver indicating refusal.**

If a routine Hepatitis B vaccine booster is recommended by the U.S. Public Health Service at a future date, such booster injections shall be made available.

### **Post-exposure Follow Up**

All exposure incidents shall be reported, investigated and documented. When an employee incurs an exposure incident, it shall be reported to the physician on staff. Following a report of an exposure incident, the exposed employee shall immediately receive a confidential medical evaluation and follow-up, including at least the following elements:

1. Date and time of exposure<sup>13</sup>
2. Route of exposure documentation
3. Circumstances under which exposure incident occurred
4. Identification and documentation of source individual, unless identification is infeasible or impossible
5. If source individual is known, then a blood test shall be done as soon as feasible to determine HIV/HBV infectivity

Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

Collection and testing of blood for HBV and HIV serological status will comply with the following:

1. Exposed employee's blood shall be collected and tested as soon as feasible after consent is obtained.
2. Employee will be offered the option of having his/her blood tested for HIV/HBV serological status.

All employees who incur an exposure incident will be offered post-exposure evaluation and follow-up in accordance with the OSHA standard.

### **Information and Training**

Training will be provided at the time of initial assignment to tasks where occupational exposure may occur and shall be repeated within twelve months. It should include:

1. A copy and explanation of the OSHA standard
2. Discussion of the epidemiology and symptoms of bloodborne diseases
3. Explanation of the modes of transmission of bloodborne pathogens
4. Explanation of the Bloodborne Pathogen Exposure Control Plan and method for obtaining a copy
5. Identification of tasks that may involve exposure
6. Explanation of use and limitations of methods to reduce exposure, for example, work practices, engineering controls and PPE
7. Information on types, use, location, removal, handling, decontamination and disposal of PPE
8. Information on the Hepatitis B vaccination, including efficiency, safety, administration and benefits
9. Information and explanation for appropriate action if exposure incident occurs
10. Explanation and identification of appropriate signs, labels and color-coding systems

Additional training shall be provided when there is a change of tasks or procedures.

### **Evaluation and Review**

The Director of Quality Improvement shall be responsible for annually reviewing this program and its effectiveness and updating it annually.<sup>12</sup>

### **Confidential Records**

Employers shall establish and maintain confidential medical records for each employee with occupational exposure to include: name and Social Security number, employee hepatitis vaccination status and results of any medical examinations or testing.

## Resources

The methods by which your office will comply with these requirements must be included in a written Exposure Control Plan that should be available for all employees to review. Before finalizing your Exposure Control Plan, you should review and understand the complete OSHA Bloodborne Pathogen Standard (25 CFR 1910.1930).

Additional information and guidance for employee training can be found in the OSHA publication, "Occupational Exposure to Bloodborne Pathogens," Order No. 3127. A copy can be obtained without cost from your regional OSHA office, or from the OSHA Publications Office, 200 Constitution Ave., N.W., Room N3101, Washington DC 20210. Enclose a self-addressed envelope.

## Responsibility to Patients

Physicians have a moral and ethical responsibility to care for all patients.<sup>12</sup> With proper precautions, eye care providers and their staffs are at low risk of contracting infections in the course of routine clinical practice. The risk of contracting the HIV infection in the ophthalmic health care disciplines is considered to be remote. To date there is no evidence that the virus can be contracted from tears, contact lenses or routine patient contact.

It must be remembered, however, that eye doctors and their staffs will come in contact with many types of patients with a variety of potentially infectious conditions. It is the legal and ethical responsibility of all ophthalmic personnel to be knowledgeable about and to practice effective techniques to prevent disease transmission between patients, staff and themselves.

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