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Part II

Department of Labor

Occupational Safety and Health Administration

29 CFR Part 1910.1030
Occupational Exposure to Bloodborne Pathogens; Final Rule

STATE OF MARYLAND
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A Regulator Helping People

January 14, 1992

MEMORANDUM TO: Interested Persons

FROM: Henry Koellein, Jr., Commissioner
Division of Labor and Industry

SUBJECT: Federal Standard on Occupational Exposure to Bloodborne Pathogens

The Office of the Commissioner of Labor and Industry has received a number of inquiries regarding the federal Occupational Safety and Health Administration's (OSHA) Standard on Occupational Exposure to Bloodborne Pathogens, as published in the December 6, 1991, issue of the Federal Register. In light of this interest, the Commissioner has determined to distribute copies of the Standard to those individuals who appear on the Commissioner's mailing list for materials regarding bloodborne pathogens.

Pursuant to the Labor and Employment Article, Section 5-312, Annotated Code of Maryland, the Commissioner will hold a hearing on whether to adopt for Maryland the Standard as promulgated by OSHA. The tentative date for the hearing is Tuesday, March 31, 1992, at 10:00 a.m. in Hearing Room Number 15, First Floor, 501 St. Paul Place, Baltimore, Maryland. The Commissioner will publish formal notice, together with a definite hearing date, in the Maryland Register. The Commissioner will accept both written comments and testimony. Address written comments to the Commissioner at the address listed above. If you wish to be placed on the hearing agenda, please contact either Doris Wright, secretary to the Board, or Carolyn West, Regulations Coordinator, no later than March 27, 1992, at (410)333-4184.

CW:dmw

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XI. The Standard

General Industry

Part 1910 of title 29 of the Code of Federal Regulations is amended as follows:

PART 1910—[AMENDED]

Subpart Z—[Amended]

1. The general authority citation for subpart Z of 29 CFR part 1910 continues to read as follows and a new citation for § 1910.1030 is added:

Authority: Secs. 6 and 8, Occupational Safety and Health Act, 29 U.S.C. 655, 657, Secretary of Labor's Orders Nos. 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (48 FR 35736), as applicable; and 29 CFR part 1911.

* * * * *

Section 1910.1030 also issued under 29 U.S.C. 653.

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2. Section 1910.1030 is added to read as follows:

§ 1910.1030 Bloodborne Pathogens.

(a) *Scope and Application.* This section applies to all occupational exposure to blood or other potentially infectious materials as defined by paragraph (b) of this section.

(b) *Definitions.* For purposes of this section, the following shall apply:

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means 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).

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

Contaminated means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

Contaminated Sharps means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Decontamination means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Director means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Occupational Exposure means reasonably 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.

Other Potentially Infectious Materials means

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

Personal Protective Equipment is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Production Facility means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

Regulated Waste means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Research Laboratory means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

Sterilize means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

(c) *Exposure control*—(1) *Exposure Control Plan.* (i) Each employer having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to

eliminate or minimize employee exposure.

(ii) The Exposure Control Plan shall contain at least the following elements:

(A) The exposure determination required by paragraph(c)(2),

(B) The schedule and method of implementation for paragraphs (d) Methods of Compliance, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, (g) Communication of Hazards to Employees, and (h) Recordkeeping, of this standard, and

(C) The procedure for the evaluation of circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of this standard.

(iii) Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.20(e).

(iv) The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

(v) The Exposure Control Plan shall be made available to the Assistant Secretary and the Director upon request for examination and copying.

(2) *Exposure determination.* (i) Each employer who has an employee(s) with occupational exposure as defined by paragraph (b) of this section shall prepare an exposure determination. This exposure determination shall contain the following:

(A) A list of all job classifications in which all employees in those job classifications have occupational exposure;

(B) A list of job classifications in which some employees have occupational exposure, and

(C) A list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs and that are performed by employees in job classifications listed in accordance with the provisions of paragraph (c)(2)(i)(B) of this standard.

(ii) This exposure determination shall be made without regard to the use of personal protective equipment.

(d) *Methods of compliance*—(1) *General*—Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

(2) *Engineering and work practice controls.* (i) Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

(ii) Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

(iii) Employers shall provide handwashing facilities which are readily accessible to employees.

(iv) When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

(v) Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

(vi) Employers shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

(vii) Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited.

(A) Contaminated needles and other contaminated sharps shall not be recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical procedure.

(B) Such recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

(viii) Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:

(A) Puncture resistant;

(B) Labeled or color-coded in accordance with this standard;

(C) Leakproof on the sides and bottom; and

(D) In accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps.

(ix) Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

(x) Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.

(xi) All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

(xii) Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

(xiii) Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

(A) The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens/containers remain within the facility. Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens/containers leave the facility.

(B) If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.

(C) If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.

(xiv) Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

(A) A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.

(B) The employer shall ensure that this information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, prior to handling, servicing, or shipping so that appropriate precautions will be taken.

(3) Personal protective equipment—(i) Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

(ii) Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgement, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurences in the future.

(iii) Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

(iv) Cleaning, Laundering, and Disposal. The employer shall clean, launder, and dispose of personal protective equipment required by paragraphs (d) and (e) of this standard, at no cost to the employee.

(v) Repair and Replacement. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

(vi) If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

(vii) All personal protective equipment shall be removed prior to leaving the work area.

(viii) When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

(ix) Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.

(A) Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

(B) Disposable (single use) gloves shall not be washed or decontaminated for re-use.

(C) Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

(D) If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:

(*1*) Periodically reevaluate this policy;

(*2*) Make gloves available to all employees who wish to use them for phlebotomy;

(*3*) Not discourage the use of gloves for phlebotomy; and

(*4*) Require that gloves be used for phlebotomy in the following circumstances:

(*i*) When the employee has cuts, scratches, or other breaks in his or her skin;

(*ii*) When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and

(*iii*) When the employee is receiving training in phlebotomy.

(x) Masks, Eye Protection, and Face Shields. 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 anticipated.

(xi) Gowns, Aprons, and Other Protective Body Clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

(xii) Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).

(4) *Housekeeping.* (i) General. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

(ii) All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.

(A) Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.

(B) Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.

(C) All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

(D) Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means,

such as a brush and dust pan, tongs, or forceps.

(E) Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

(iii) Regulated Waste.

(A) Contaminated Sharps Discarding and Containment. (*1*) Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

(*i*) Closable;

(*ii*) Puncture resistant;

(*iii*) Leakproof on sides and bottom; and

(*iv*) Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

(*2*) During use, containers for contaminated sharps shall be:

(*i*) Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);

(*ii*) Maintained upright throughout use; and

(*iii*) Replaced routinely and not be allowed to overfill.

(*3*) When moving containers of contaminated sharps from the area of use, the containers shall be:

(*i*) Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;

(*ii*) Placed in a secondary container if leakage is possible. The second container shall be:

(*A*) Closable;

(*B*) Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

(*C*) Labeled or color-coded according to paragraph (g)(1)(i) of this standard.

(*4*) Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

(B) Other Regulated Waste Containment.(*1*) Regulated waste shall be placed in containers which are:

(*i*) Closable;

(*ii*) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

(*iii*) Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and

(*iv*) Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(*2*) If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

(*i*) Closable;

(*ii*) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

(*iii*) Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and

(*iv*) Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(C) Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.

(iv) Laundry.

(A) Contaminated laundry shall be handled as little as possible with a minimum of agitation. (1) Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

(2) Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.

(3) Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

(B) The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

(C) When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i).

(e) *HIV and HBV Research Laboratories and Production Facilities.* (1) This paragraph applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.

(2) Research laboratories and production facilities shall meet the following criteria:

(i) Standard microbiological practices. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

(ii) Special practices.

(A) Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.

(B) Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.

(C) Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.

(D) When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign shall comply with paragraph (g)(1)(ii) of this standard.

(E) All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.

(F) Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

(G) Special care shall be taken to avoid skin contact with other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials is unavoidable.

(H) Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

(I) Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.

(J) Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) shall be used for the injection or aspiration of other potentially infectious materials. Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or decontaminated before reuse or disposal.

(K) All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

(L) A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.

(M) A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures, and shall be required to follow them.

(iii) Containment equipment. (A) Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

(B) Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.

(3) HIV and HBV research laboratories shall meet the following criteria:

(i) Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area.

(ii) An autoclave for decontamination of regulated waste shall be available.

(4) HIV and HBV production facilities shall meet the following criteria:

(i) The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.

(ii) The surfaces of doors, walls, floors and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.

(iii) Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.

(iv) Access doors to the work area or containment module shall be self-closing.

(v) An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

(vi) A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

(5) *Training Requirements.* Additional training requirements for employees in HIV and HBV research laboratories and HIV and HBV production facilities are specified in paragraph (g)(2)(ix).

(f) *Hepatitis B vaccination and post-exposure evaluation and follow-up—(1) General.* (i) The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

(ii) The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are:

(A) Made available at no cost to the employee;

(B) Made available to the employee at a reasonable time and place;

(C) Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and

(D) Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).

(iii) The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

(2) *Hepatitis B Vaccination.* (i) Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

(ii) The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.

(iii) If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.

(iv) The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in appendix A.

(v) If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).

(3) *Post-exposure Evaluation and Follow-up.* Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

(i) Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;

(ii) Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;

(A) The source individual's blood shall be tested as soon as feasible and

after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.

(B) When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

(C) 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.

(iii) Collection and testing of blood for HBV and HIV serological status:

(A) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

(B) If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

(iv) Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service:

(v) Counseling; and

(vi) Evaluation of reported illnesses.

(4) *Information Provided to the Healthcare Professional.* (i) The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.

(ii) The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

(A) A copy of this regulation;

(B) A description of the exposed employee's duties as they relate to the exposure incident;

(C) Documentation of the route(s) of exposure and circumstances under which exposure occurred;

(D) Results of the source individual's blood testing, if available; and

(E) All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

(5) *Healthcare Professional's Written Opinion.* The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

(i) The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

(ii) The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

(A) That the employee has been informed of the results of the evaluation; and

(B) That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

(iii) All other findings or diagnoses shall remain confidential and shall not be included in the written report.

(6) *Medical recordkeeping.* Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.

(g) *Communication of hazards to employees*— (1) *Labels and signs.* (i) Labels. (A) Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in paragraph (g)(1)(i)(E), (F) and (G).

(B) Labels required by this section shall include the following legend:

BIOHAZARD

BIOHAZARD

(C) These labels shall be fluorescent orange or orange-red or predominantly so, with lettering or symbols in a contrasting color.

(D) Labels required by affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

(E) Red bags or red containers may be substituted for labels.

(F) Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of paragraph (g).

(G) Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

(H) Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.

(I) Regulated waste that has been decontaminated need not be labeled or color-coded.

(ii) Signs. (A) The employer shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:

BIOHAZARD

BIOHAZARD
(Name of the Infectious Agent)
(Special requirements for entering the area)
(Name, telephone number of the laboratory director or other responsible person.)

(B) These signs shall be fluorescent orange-red or predominantly so, with lettering or symbols in a contrasting color.

(2) *Information and Training.* (i) Employers shall ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.

(ii) Training shall be provided as follows:

(A) At the time of initial assignment to tasks where occupational exposure may take place;

(B) Within 90 days after the effective date of the standard; and

(C) At least annually thereafter.

(iii) For employees who have received training on bloodborne pathogens in the year preceding the effective date of the standard, only training with respect to the provisions of the standard which were not included need be provided.

(iv) Annual training for all employees shall be provided within one year of their previous training.

(v) Employers shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

(vi) Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

(vii) The training program shall contain at a minimum the following elements:

(A) An accessible copy of the regulatory text of this standard and an explanation of its contents;

(B) A general explanation of the epidemiology and symptoms of bloodborne diseases;

(C) An explanation of the modes of transmission of bloodborne pathogens;

(D) An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;

(E) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;

(F) An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment;

(G) Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;

(H) An explanation of the basis for selection of personal protective equipment;

(I) Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;

(J) Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;

(K) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available;

(L) Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;

(M) An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and

(N) An opportunity for interactive questions and answers with the person conducting the training session.

(viii) The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

(ix) Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.

(A) The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.

(B) The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.

(C) The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

(h) *Recordkeeping—(1) Medical Records.* (i) The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.20.

(ii) This record shall include:

(A) The name and social security number of the employee;

(B) A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by paragraph (f)(2);

(C) A copy of all results of examinations, medical testing, and follow-up procedures as required by paragraph (f)(3);

(D) The employer's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and

(E) A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B)(C) and (D).

(iii) Confidentiality. The employer shall ensure that employee medical records required by paragraph (h)(1) are:

(A) Kept confidential; and

(B) Are not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

(iv) The employer shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.20.

(2) *Training Records. (i) Training records shall include the following information:*

(A) The dates of the training sessions;

(B) The contents or a summary of the training sessions;

(C) The names and qualifications of persons conducting the training; and

(D) The names and job titles of all persons attending the training sessions.

(ii) Training records shall be maintained for 3 years from the date on which the training occurred.

(3) *Availability.* (i) The employer shall ensure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.

(ii) Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.20.

(iii) Employee medical records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.20.

(4) *Transfer of Records.* (i) The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.20(h).

(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three month period.

(i) *Dates—(1) Effective Date.* The standard shall become effective on March 6, 1992.

(2) The Exposure Control Plan required by paragraph (c)(2) of this section shall be completed on or before May 5, 1992.

(3) Paragraph (g)(2) Information and Training and (h) Recordkeeping shall take effect on or before June 4, 1992.

(4) Paragraphs (d)(2) Engineering and Work Practice Controls, (d)(3) Personal Protective Equipment, (d)(4) Housekeeping, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, and (g) (1) Labels and Signs, shall take effect July 6, 1992.

Appendix A to Section 1910.1030—Hepatitis B Vaccine Declination (Mandatory)

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

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IAFF DEPARTMENT OF OCCUPATIONAL HEALTH AND SAFETY

THE NEW OSHA STANDARD ON BLOODBORNE PATHOGENS

Background

On December 2, 1991 the Occupational Safety and Health Administration promulgated a new standard for bloodborne pathogens that will greatly change how fire fighters, emergency response personnel and all other workers potentially exposed to bloodborne diseases will be trained and equipped to protect themselves from infections. The new standard, which is known as the Bloodborne Pathogens standard (29 CFR 1910.1030) was published in the Federal Register on December 6, 1991 (56 FR 64004). This memorandum will summarize the key points of the standard as well as what it means for fire fighters, emergency responders, and others.

The rationale for the standard is described in the extensive introductory text. In essence, OSHA recognizes that bloodborne pathogens, including (but not limited to) Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV), among others, account for significant morbidity and mortality in the workplace. In the preamble to the final standard, OSHA estimates that, "for every 1000 workers with occupational exposure to blood or other potentially infection material, between 83 and 113 will become infected with HBV over the course their working lifetime because of occupational exposure to the virus. Of these, 21 to 30 will suffer clinical illness and 4 to 6 will need hospitalization. Between 4 and 12 of the cases with clinical illness will become chronic carriers, and 1 to 3 of them will suffer from chronic hepatitis. HBV infection from occupational exposure will lead to the death of 2 to 3 of these 1000 exposed workers."

The standard relies on several mechanisms to protect workers. It calls for identifying workers at risk through **exposure control plans**; it sets requirements for limiting exposure to those workers through a combination of **engineering controls, personal protective equipment, and worker training**, and it calls for **hepatitis vaccination** to be offered to all at-risk employees at no cost to the employees. OSHA estimates that universal vaccination of at-risk employees would prevent from 244,00 to 274,000 cases of HBV infection over 45 years, resulting in the saving of

some 5,400 to 6,100 lives over that time. Finally, there is a provision for post-exposure evaluation and follow-up, so that workers who are exposed on the job can receive proper assessment of their risk and appropriate treatment and documentation.

Highlights of the Standard

The following is a summary of the most important parts of the standard applicable to fire fighters. **This is not a word-for-word transcription of the standard, and does not contain all of the provisions of the standard.** It also does not contain the preamble to the standard, which contains some of OSHA's explanations for various provisions. Where appropriate, some of these comments have been added. However, this summary should not substitute for the regulatory text itself.

* Employers must develop comprehensive ***exposure control plans***, which describes how the employer will meet the overall goals of the standard (minimizing employee exposures) and the specific elements of the program

* Employers must develop ***exposure determinations***, which list job classifications, activities, and potential for exposures to infectious materials.

* ***Universal precautions*** shall be followed whenever the potential for exposure exists.

* ***Engineering and work practice controls*** shall be used by employers to eliminate or minimize employee exposures. Where occupational exposures remain after these controls are instituted, ***personal protective equipment*** (PPE) is also to be used. There must be a regular maintenance and replacement schedule for engineering controls.

* ***Handwashing facilities*** will be accessible to all employees, or, where this is not feasible, antiseptic hand cleaner with cloth or paper towels. Hands must be washed after removal of PPE; hands, mucous membranes, or other exposed skin must be washed after exposure to blood or other infectious materials.

* ***Sharps*** may not be bent, recapped, or removed unless there is no feasible alternative. If they must be recapped or removed, it must be through a one-handed technique.

* ***Workplace practices*** are specified, including immediate safe disposal of sharps, prohibition against eating, drinking, or other practices in areas where there is a "reasonable likelihood" of occupational exposure, and a requirement that blood and other potentially infectious materials be handled in a way so as to minimize potential exposures. **[Note:** In the summary and

explanation, OSHA states, "...[The] Agency recognizes that circumstances could arise which would require employees to remain in ambulances for extended periods of time. It is not the Agency's intent to prohibit these employees from eating or drinking during such extended periods. Therefore, eating and drinking in ambulance cabs is permitted under the final standard provided the employer has implemented procedures to wash up and change contaminated clothing prior to entering the cab. In addition, employers must prohibit the consumption, handling, storage, and transport of food and drink in the rear of the vehicle."]

* ***Potentially contaminated equipment*** must be inspected and decontaminated, if necessary, before servicing or shipping.

* ***Personal protective equipment*** (PPE) shall be provided at no cost to all employees and accessible in situations where there is occupational exposure. The PPE will be considered "appropriate" if it prevents penetration of the potentially infectious material to the employee's skin, street clothing, or mucous membranes. [**Note:** In the summary and explanation, OSHA states, "Based upon the information provided in the comments, OSHA has concluded that minimization of mouth-to-mouth resuscitation is prudent practice and that the most effective means to do so is to require ventilation devices be provided for resuscitation. Consequently, these devices have been retained under the requirements for provision of personal protective equipment. In addition...these devices are to be readily accessible to employees who can reasonably be expected to resuscitate a patient."]

* The employer is responsible for seeing that the employees use the appropriate PPE. The employer may show that the employee "temporarily and briefly" ***declined to use PPE*** if the employee judged that use of the PPE would have prevented the delivery of health care or increased the hazard to the employee or a co-worker; however, the circumstances of the occurrence are supposed to be investigated so as to prevent similar events in the future. [Note: In the summary and explanation, OSHA discusses at length the rationale for providing an exemption to the use of PPE. "...The types of circumstances which OSHA envisions may necessitate invocation of the exemption are those which require an on-the-spot decision and would not be conducive to awaiting approval or disapproval of the employer...OSHA does not intend to compel an employee to bypass the use of appropriate personal protective equipment against the employee's will...Utilization of the exemption is to occur, as stated in the standard, only in rare and extraordinary circumstances which are unexpected and threaten the life or safety of the patient, worker, or co-worker...It should also be understood that the decision not to use personal protective equipment is to be made on a case-by-case basis and in no way is to be generally applied to a particular work area or recurring task..."]

* PPE must be ***accessible at the worksite or issued to employees.*** For people with sensitivity to the gloves ordinarily provided, alternatives (hypoallergenic gloves or glove liners, for example) must be provided. [Note: In the summary and explanation to the standard, OSHA commented on the need for accessibility in cases where it was not possible to return to a "home base" between emergency calls. "OSHA agrees...that..."accessible" would be on-scene, either on an individual's person or on the vehicle, depending upon the nature of the equipment...[The] second set of clothing could be kept on the ambulance or employees could be provided with several sets of replaceable coveralls to be kept on the vehicle. *The employer's responsibility to ensure accessible personal protective equipment for employees at non-fixed worksites cannot be overemphasized.* (emphasis added).]

* PPE shall be ***cleaned, laundered, and disposed of*** as appropriate by the employer at no cost to employees. It shall also be ***repaired or replaced*** at no cost. If ***penetrated with blood or other potentially infectious materials,*** the garment shall be removed immediately. PPE must be ***removed prior to leaving the work area,*** and ***placed in a designated area or container*** for storage, washing, decontamination, or disposal.

* ***Gloves*** shall be worn in all situations where it may be "reasonably anticipated" there may be contact with blood or "other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures (except in volunteer blood banks under specified conditions); and when handling or touching contaminated items or surfaces." Disposable gloves must be disposed of after use or if they are contaminated, torn, or punctured; they many not be washed or decontaminated.

* ***Masks, eye protection, and face shields*** shall be used whenever potentially infectious material may be "reasonably anticipated" from splashes, spray, spatter, etc.

* ***Gowns, aprons, and other protective body clothing*** may be used depending on the type of situation.

* ***Housekeeping*** requirements include an appropriate written schedule for cleaning and decontamination of the worksite (based on the activity or potential contamination of the area), cleaning and decontamination of equipment, environmental and working surfaces after contact with blood or other potentially infectious materials; prompt removal of protective coverings (plastic, aluminum foil, or imperviously-backed absorbent paper) immediately if they become contaminated or on a regular schedule; inspection and decontamination of bins, pails, cans, and similar waste receptacles; removal of broken glassware with mechanical means (brush and

dustpan, tongs, or forceps); and storage of reusable sharps in such a fashion that employees do not have to reach into a container with their hands.

* ***Sharps must be disposed of*** in appropriate containers. ***Containers for sharps*** shall be closable, puncture resistant, leakproof on the sides and bottom, labeled and color-coded, easily accessible, maintained upright, and replaced routinely. When removed from the area of use, the containers must be closed prior to removal, placed in a secondary container if leakage is possible, and may not be reopened in any way that would expose an employee to the risk of an injury.

* ***Other regulated waste*** (materials that have come in contact with or could release infectious material) must be placed in containers that are closable, do not leak, are color-coded, and are closed prior to removal. If the outside of the container is itself contaminated, it must be placed in a secondary container that is similarly constructed.

* ***Contaminated laundry*** must be bagged or containerized at the location where it was used without any sorting or rinsing, and shall be transported in labeled or color-coded containers or bags to the laundry facility. Employees who handle the laundry must wear gloves and other appropriate PPE.

* ***Hepatitis B vaccine*** shall be made available to <u>all employees who have occupational exposures, at no cost to the employees</u>. The vaccine shall be made available "after the employee has received the training required" (see below) and "within 10 working days of initial assignment to all employees who have occupational exposure <u>unless</u> the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons." Vaccinations are to be given by or under the supervision of a licensed physician or other health care professional according to the recommendations of the U.S. Public Health Service. Participation in a ***prescreening program*** (a program to screen people for previous exposure to Hepatitis B) can not be made a prerequisite for receiving Hepatitis B vaccination. If an employee initially declines vaccination but decides later to get vaccinated, the employer shall make the vaccine available at no cost. If an employee declines to receive the vaccination, he/she must sign a **waiver** described in the standard. If at some point the U.S. Public Health Service recommends that people who have had the vaccination series should receive routine <u>booster doses</u>, they shall be made available to all employees at no cost.

* ***Post-exposure evaluations and follow-up , including prophylaxis in the case of exposure,*** are also to made available to <u>all employees at no cost and at a reasonable time and place</u>. After the exposure incident is reported, the

employer will make available to the employee a confidential medical evaluation and follow-up, which includes at least:

-- Documentation of the **route of exposure and circumstances** under which it occurred;

-- Identification and documentation of the **"source individual"** (the individual whose blood or body fluids were the source of the exposure) unless that identification is not feasible or is prohibited by state or local law; once the source individual is identified, his blood shall be **tested for HIV and HBV infectivity** (if patient consent for testing is legally required it must be obtained before his blood can be tested; if consent is required but not obtained that must be established by the employer; if consent is not required then the source individual's blood will be tested and the results documented). **Testing is not required** if the source individual is already known to be infected with HIV or HBV. Once the source individual's status for HIV and HBV infectivity is known, that information is made available to the exposed employee, as well as any "laws or regulations concerning disclosure of the identity and infectious status of the source individual;"

-- **Testing of the employee for HBV and HIV serologic status** as soon as feasible after consent is obtained. The employee may consent to give blood but not have HIV serologic testing; if so, the blood must be stored for at least 90 days, so that the employee can later elect to have the sample analyzed;

-- **Post-exposure prophylaxis**, when medically indicated, as recommended by the U.S. Public Health Service;

-- **Counseling**; and

-- **Evaluation of reported illnesses.**

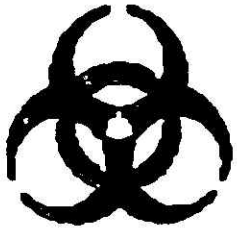
* The standard defines ***information provided to the healthcare professional***, including a copy of the regulation for the healthcare professional providing the Hepatitis B vaccination, and, for the healthcare professional providing care after an exposure incident, a copy of the regulation, a description of the employee's duties, documentation of the route(s) and circumstances of the exposure, results of any blood testing on the source individual, and all medical records relevant to the appropriate treatment of the employee which are the employer's responsibility to maintain.

* Within 15 days of the completion of the healthcare professional's evaluation, the employer must obtain and provide to the employee a copy of the ***healthcare professional's written opinion,*** which shall include only:

-- For Hepatitis B vaccination, only whether vaccination is indicated and whether the employee has received it;

-- For a post-exposure evaluation, only that the employee has been informed of the results of the evaluation, and that the employee has been told about "any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment."

* *Warning labels* must be affixed to "containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials"; there are exceptions for red bags or red containers, blood or blood components that have been released for transfusions or other clinical uses, individual containers of blood or other potentially infection materials that are placed within a properly labeled container, or regulated waste that has been decontaminated. The label must include the biohazard legend:



BIOHAZARD

* *A training program* must be provided at no cost during working hours to all employees with occupational exposures. Training must be provided at the time an employee is initially assigned to a job where occupational exposure may take place, within 90 days after the effective date of the standard (March 3, 1992) and at least annually thereafter. Employees who have already had some training in bloodborne pathogens in the year prior to the standard only need training on subjects which their previous training did not cover. There must also be training updates when the tasks or procedures done by the employee change or create a new exposure. The training must include at a minimum, a copy and explanation of the standard, general explanations of the epidemiology and symptoms of bloodborne diseases, how bloodborne diseases are transmitted, the employer's exposure control plan and how the

employees can obtain a copy, how to recognize tasks that may involve exposures to bloodborne pathogens, the methods (and limitations of those methods) that will prevent exposures to bloodborne pathogens, including appropriate engineering controls, PPE, and work practices, the "types, proper use, location, removal, handling, decontamination and disposal" of PPE, the selection of appropriate PPE, information on Hepatitis B vaccination, including the benefits and the fact that it is no cost to the employee, actions and procedures to be followed in the even of exposure and a description of the post-exposure evaluation, and labeling and signing requirements.

* The employer is required to ***maintain records*** according to the following schedule: medical records (including the employee's name, social security number, hepatitis B vaccination status, all examinations and evaluations required under the standard, healthcare professionals' written opinions, and information provided to the healthcare professionals) for the duration of employment plus at least 30 years; and training records for 3 years from the date on which the training occurred. Medical records are confidential and may not be disclosed or reported without the employee's written consent. Medical records records are to be available to employees and to anyone having written consent of the employees upon request. Training records are available to the employee or employee representative upon request.

Effective Dates of the Standard

The standard becomes effective 90 days after publication in the Federal Register (March 6, 1992). The employer's Exposure Control Plans are to be completed within 60 days of the effective date (May 5, 1992). The Information and Training and Recordkeeping requirements are to take effect within 90 days of the effective date (June 4, 1992). The provisions on Engineering and Work Practice controls, PPE, Housekeeping, HIV and HBV research laboratories, Hepatitis B vaccination and Post-Exposure evaluation and follow-up, and labels and signs, are to take effect 120 days after the effective date (July 6, 1992).

Applicability of the Standard

Who is affected by this standard? The standard applies to "...[All] occupational exposure to blood or other potentially infectious materials..." Specifically, "occupational exposure" means, "reasonably anticipated skin, eye, mucous membrane, or parenteral (intravascular) contact with blood or other potentially infectious materials that may result from the performance of an employee's duties." This means that **any** fire fighter who ***may*** have contact with blood or other materials, either as a first responder or in any other way that is work-related, is subject to the provisions of the standard. In its Regulatory Impact and Regulatory

Flexibility Analysis, "...OSHA based its estimate of the population at risk on survey responses which indicated essentially all EMT's to be exposed (98 percent)...and 80 percent of all fire fighters to be exposed." If there is any doubt, the assumption should be that anyone who could possibly be exposed to bloodborne pathogens should be assumed to be at risk, should be immunized, and should adhere to the other provisions of the standard.

Under the Occupational Safety and Health Act of 1970, federal OSHA has no direct enforcement authority to ensure that state and local governments comply with health and safety standards, such as the OSHA Bloodborne Pathogens Standard, for public employees. However. the OSHA law does permit other methods to be utilized in order to maximize the protection of public employees' health and safety.

In lieu of federal OSHA enforcement of health and safety standards, a state may opt to implement their own enforcement program providing federal OSHA has approved their state safety and health plan. Section 18 of the Occupational Safety and Health Act requires that a state must provide satisfactory assurance that it will establish and maintain an effective and comprehensive occupational safety and health program for all public employees as effective as that contained in the approved state plan covering private employees. OSHA has given the State Plan states 6 months from the publication date of the final standard to adopt a comparable standard that is "at least as effective" as the OSHA standard. All fire departments, whether state, county, or municipal, in any of the states or territories where an OSHA State Plan agreement is in effect has the protection of the minimally acceptable health and safety standards promulgated by federal OSHA. Individual states may provide more stringent standards, if they wish to do so.

The following twenty-five states/territories have State OSHA Plans:

- Alaska
- Arizona
- California
- Connecticut
- Hawaii
- Indiana
- Iowa
- Kentucky
- Maryland
- Michigan
- Minnesota
- Nevada
- New Mexico
- New York
- North Carolina
- Oregon
- Puerto Rico
- South Carolina
- Tennessee
- Utah
- Vermont
- Virginia
- Virgin Islands
- Washington
- Wyoming

OSHA announced on December 2, 1991 that it would be sending letters to the governors of states which do not yet have approved state plans, "to encourage them to extend the protections of the standard to public sector employees."

Finally, Executive Order 12196 issued February 26, 1980 and implemented December 21, 1980 requires that all federal agencies comply with the same safety and health

requirements as private employees. Thus, **federal fire fighters** are protected under federal OSHA safety and health standards.

The coverage of public employees under minimum acceptable standards as promulgated by federal OSHA becomes important when we consider this infection control regulation. **This standard is enforceable for all public fire fighters in states with approved federal OSHA plans.** However, all U.S. and Canadian fire fighters should consider this to be the minimum acceptable standard for protection from bloodborne pathogens.

UNIVERSAL PRECAUTIONS

PATIENT CONTACT	HAND WASHING	GLOVES	EXTRA or PROTECTIVE CLOTHING	MASK	EYE PROTECTION
Monitoring IV Fluids or other Equipment	X				
Examining Patients without contact with Blood, Body Fluids or Mucous Membranes	X				
Monitoring Vital Signs	X				
Administering Medications	X				
Examining Patients and having contact with Blood, Body Fluids or Mucous Membranes	X	X			
Inserting IV's	X	X			
Drawing Blood	X	X			
Changing Soiled Linen	X	X	Use protective clothing, (or change soiled clothing) mask and eye protection if splattering of blood or body fluid is likely		
Cleaning Unit or Equipment	X	X			
Applying Dressings	X	X			
Suctioning	X	X			
Intubation	X	X			
Caring for Trauma (Bleeding) Patients	X	X			

- Wear exam gloves under extrication gloves for convenience when extrication is complete.
- Wash hands after removing gloves.
- Don't touch anything clean (radio, cot etc.) with contaminated gloves.
- Double glove or wear heavier latex gloves for cleaning unit or equipment.
- ACCOUNT FOR ALL NEEDLES - and dispose in puncture proof containers.

PRINCE GEORGE'S COUNTY
FIRE DEPARTMENT
PGFD

WERE YOU *EXPOSED?*

	Exposure Type	Immediate Management	Follow-Up/Risk
Class I Direct Contact with Blood, Semen, Vaginal Secretions, Wound Drainage	Through the Skin (Percutaneous)	Allow to bleed freely. Clean thoroughly. Apply disinfectant.	Possible risk of HIV infection (<1%). Medical follow-up, *HIV testing, and counseling recommended. Possible risk of Hepatitis B infection. prophylaxsis/ Hepatitis B prophylaxsis/ vaccine. Possible Tetanus Toxoid/ booster.
	Contact with Eyes, Nose, Mouth (Mucocutaneous)	Flush eyes, nose, mouth with water as soon as possible.	
	Contact with an Open Wound	Clean thoroughly. Apply disinfectant.	
Class II Direct Contact with Other Body Fluids (urine, tears, saliva, sputum, vomitus, feces)	Through the Skin (Percutaneous)	Allow to bleed freely. Clean thoroughly. Apply disinfectant.	Extremely low risk of HIV infection. Follow-up *HIV testing is optional. Follow-up HIV counseling to answer questions and address concerns. Possible risk of Hepatitis B infection. Hepatitis B prophylaxsis/vaccine. Possible Tetanus Toxoid/booster.
	Contact with Eyes, Nose, Mouth (Mucocutaneous)	Flush eyes, nose, mouth with water as soon as possible.	
	Contact with an Open Wound	Clean thoroughly. Apply disinfectant.	
Class III Contact with any body fluids	Clothing or healthy, unbroken skin comes in contact with blood or any body fluids.	Wash area with soap and water or hand degermer. Change soiled clothing	No evidence of risk of HIV or Hepatitis B infection. Counseling to answer questions/concerns. Follow-up HIV testing is not necessary. (Employee may be tested if they desire.)

PERCUTANEOUS exposures occur through the skin (eg. needle stick or injury from other contaminated sharp objects). MUCOCUTANEOUS exposures occur through splashes onto mucous membrane surfaces of the eye, nose, mouth, etc. OPEN WOUND exposures include contact of weeping wounds, burns, dermatitis, or chapped skin with potentially infectious blood or body fluids.

REPORT ALL POSSIBLE EXPOSURE INCIDENTS TO YOUR SUPERVISOR

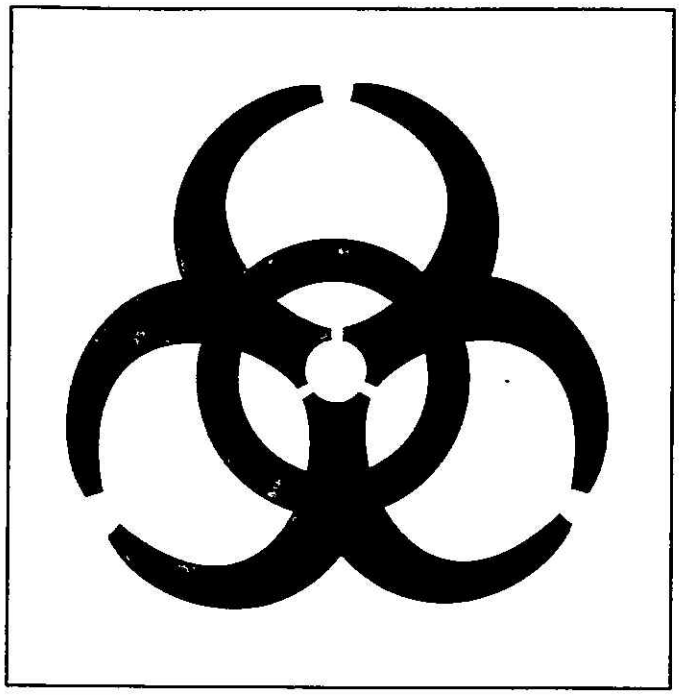
*HIV TESTING INFORMATION

Anonymous - Prince George's County Health Department 386-0350 (call for information)
Confidential - **PGHC Express Care**
Other - Private Medical Doctor

**Express Care will not see anyone for exposure incidents without notification first from the EMCS/AEMS Officer-in-Charge.*

MARYLAND OCCUPATIONAL SAFETY AND HEALTH

Bloodborne Pathogens Exposure Control Plan
Compliance Guide



- Instructions
- Compliance Worksheet
- Resources
- 29 CFR 1910.1030
- Exposure Control Plan

STATE OF MARYLAND

WILLIAM DONALD SCHAEFER
Governor of Maryland

WILLIAM A. FOGLE, JR., Secretary
Department of Licensing and Regulation

DIVISION OF LABOR AND INDUSTRY
Henry Koellein, Jr., Commissioner

(4/92)

501 St. Paul Place