



Lehigh University Emergency Medical Services Exposure Control Plan

Revised for September, 2002

In order to comply with the Occupational Safety and Health Administration's (OSHA) 29 CFR 1910.1030, the LUEMS Exposure Control Plan shall be implemented and followed by all members.

1.1.1 Introduction

OSHA Standard 29 CFR 1910.1030, Bloodborne Pathogens, issued under the authority of the Occupational Safety and Health Act, defines standards to prevent occupational exposure of members to blood or other potentially infectious materials. This Exposure Control Plan (ECP) has been developed by Lehigh University Emergency Medical Services (LUEMS) to address these requirements. This ECP is available to all members for review. A copy of 29 CFR 1910.1030 is included in the ECP binder.

1.1.2 Scope and Applicability

This Exposure Control Plan establishes work practices, engineering controls, and procedures for the use of Personal Protective Equipment to be used by all members to minimize potential exposure to blood and other potentially infectious materials. This Plan is applicable to all members who provide any sort of active duty or on-call support to LUEMS and thereby have potential occupational exposure to blood and other potentially infectious materials. The terms of this ECP constitute standard practices and procedures to be exercised by all members. Engineering and work practice controls defined in this Plan are considered applicable at the scene of a call, during transportation of patient(s), and during cleanup and restoration of emergency vehicles and equipment. This Plan is not applicable to personnel who are not members of LUEMS but who may assist in the delivery of patient care on-scene, on-board an emergency vehicle, or at the receiving medical facility. Examples of such personnel include police, fire fighters, paramedics, ambulance attendants, nurses, midwives, physician assistants, physicians, by-standers, and parents/guardians of minors being treated/transported. Such personnel are considered to be covered by ECPs established by their individual employers. All members of LUEMS to whom this Plan is applicable are required to review this Plan, to attend relevant training sessions, to provide necessary signed certifications relevant to this Plan and 29 CFR 1910.1030, and to practice the standards defined herein. All members should provide signatures on Form G when they have personally reviewed this Plan.

1.1.3 Administration

Responsibility and authority for the administration and monitoring of this Plan is assigned to the Line Office of LUEMS. However, since this Plan and related services, equipment, and programs thereof are provided as a service to individual members, it is considered the ultimate responsibility of individual members to implement, practice, and enforce the standards defined in this Plan.

1.1.4 Definition of Employer and Member

For purposes of this ECP, the "Employer" is defined as the Lehigh University Emergency Medical Services as administered by officers selected by the squad as a collective entity. For purposes of this ECP, the "Member" means volunteer members who provide active riding or on-call duty. For purposes of this ECP, the term "LUEMS member" is synonymous with "member." LUEMS is a volunteer organization. Volunteer members are not paid employees of LUEMS, and thus the applicability of certain OSHA regulations is not explicit. However, LUEMS recognizes that riding duty for an EMS organization contains inherent hazards with regard to bloodborne pathogens not only for individual members but also for other members present on a call, and thus, for purposes of this ECP, all volunteer riding members must adhere to the guidelines and provisions of this Plan. This Plan shall be considered part of the Lehigh University EMS Standard Operating Procedures.

1.1.5 Exposure Determination

1.1.5.1 Job Classifications that Have Occupational Exposure

Job classifications at LUEMS that have occupational exposure as defined by 29 CFR 1910.1030 includes: Volunteer Members. Volunteer Members include all members who provide any extent of riding duty for

LUEMS, including regular duty crew members, members on-call, members responding to an emergency while not on call, and members on leave who may provide occasional duty. Members desiring to respond directly to the scene of a call in their personal vehicles are encouraged to take advantage of the opportunity to request and stock personal supplies of Personal Protective Equipment.

1.1.5.2 Jobs Classifications that Have No Occupational Exposure

Members of LUEMS who provide purely administrative duties or who provide no duty have no occupational exposure are thereby exempt from the requirements of this Plan. Housekeeping and support staffs are considered contractors engaged by LUEMS and are therefore not considered members. These personnel do not perform any duties that may result in occupational exposure to blood and other potential infectious materials.

1.1.5.3 Tasks and Procedures that Have Occupational Exposure

Tasks and procedures that have potential occupational exposure to blood and other infectious materials include:

1. Emergency vehicle preparation.
2. On-scene assessment of emergency calls.
3. Treatment and care of patients.
4. Movement and transportation of patients.
5. Transfer of patient to appropriate medical facility personnel.
6. Cleanup and restocking of emergency vehicles and equipment.

Occupational exposure includes contact with potentially infectious materials such as blood, semen, vaginal secretions, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva, body fluid visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

1.1.6 Methods of Compliance

1.1.6.1 General

All members are required to practice Universal Precautions (Body Substance Isolation) where there is potential exposure to blood, body fluids or other infectious materials. In circumstances where differentiation between body fluid types is difficult or impossible, body fluids shall be considered potentially infectious materials. All emergency operations shall be performed in a manner that limits splashing, spraying, or aerolization of blood and other potentially infectious materials.

1.1.6.2 Engineering and Work Practice Controls

1.1.6.2.1 General

Engineering and work practice controls shall be used by all members to minimize exposure to blood, body fluids, or infectious materials. These controls do not preclude the need for the use of Personal Protective Equipment. As part of its regular shift duties, each duty crew is required to inspect engineering control devices for proper operation and/or availability. Malfunctioning or defective equipment shall be immediately reported to the Line Office for prompt repair and/or replacement.

1.1.6.2.2 Hand washing

Hand washing shall be performed immediately after the delivery of patient care. If possible, hand washing shall be performed:

1. After each patient contact.
2. After handling potentially infected materials.
3. After removing gloves or other Personal Protective Equipment.
4. After transferring patient to receiving medical facility.
5. After cleanup/decontamination of emergency vehicles and equipment.
6. Before and after eating or handling food.

The use of anti-bacterial soap shall be preferred over ordinary bar or liquid soap for handwashing. LUEMS makes available disinfectant hand cleaner in all first aid kits. Where waterless disinfectants or towlettes are used, follow-up handwashing using antibacterial soap and running water shall be performed as soon as possible.

1.1.6.2.3 Contaminated Needles and Sharps

As part of their regular duties, LUEMS members shall not handle contaminated needles or sharps. In general, contaminated needles and sharps are to be handled only by professional health care personnel assisting on a call, such as paramedics and nurses. LUEMS members are not permitted to recap, shear, dispose, or otherwise handle potentially contaminated needles or sharps. LUEMS members must encourage assisting health care personnel to use appropriate sharps disposal containers. Contaminated sharps and needles must never be thrown on-scene or inside emergency vehicles. In the event that needles or sharps should be found in an emergency vehicle or on-scene, the following steps shall be taken:

1. If possible, the health care professional generating the sharp shall be identified and verbally requested to remove the sharp or needle from the emergency vehicle. If the relevant individual should refuse to remove the sharp or needle, the Line Office shall be immediately notified, and an Incident Report shall be filed. The Line Office shall report the incident to the supervising agency of the health care professional.
2. In the event that the individual generating the needle or sharp cannot be found and no trained healthcare provider can be found to remove the sharp:
 - a. Appropriate Personal Protective Equipment shall be donned.
 - b. An appropriate method for picking up the sharp or needle shall be employed that does not result in breaking, cutting, shearing, or bending of the object. The sharp shall not be recapped.
 - c. The sharp or needle shall be placed in an appropriate sharps container and properly disposed of as soon as possible.

1.1.6.2.4 Eating, Drinking, Smoking, and Personal Hygiene

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited during calls and during the clean-up of emergency equipment.

1.1.6.2.5 Handling of Specimens

Due to the potential for test tubes and specimen containers to break, cause injury, and thereby cause potential exposure, LUEMS members are not permitted to handle containers of blood, urine, or other body fluid specimens. Where the transportation of blood, urine, or other specimens is necessary, LUEMS members shall encourage assisting health care personnel (such as paramedics and nurses) to use a secondary sealed container such as a zip-lock bag. Secondary containers shall be transparent or clearly labeled as containing a biohazardous material. LUEMS members shall ensure that specimen containers are transported in a safe manner on board emergency vehicles (for example, placed in paramedics' bags or taped to IV solution bags).

1.1.6.2.6 Decontamination of Equipment

All patient care equipment used by LUEMS personnel which is or may be potentially contaminated by blood or other body fluids shall be decontaminated or replaced as soon as possible after use and prior to being placed back in service. Patient care equipment includes, but is not limited to:

1. Stretchers.
2. "Jump" Bag and Bag Contents.
3. Backboards and Head Immobilization Devices.
4. KED's and Cervical Collars.
5. Respiratory equipment such as Airways, Oxygen Masks and Cannulas, and BVM's.
6. Stairchairs and Reeves Stretchers.
7. Splints.
8. Sheets, Pillows, and Blankets.
9. Suction Equipment.
10. MAST Trousers.
11. Stethoscopes and Blood Pressure Cuffs.
12. Emergency Vehicles, including Cabs, Countertops, Floors, Seats, Walls, and Benches.
13. Personal Protective Equipment.

Proper decontamination includes the following:

1. Emptying infectious residual fluid into medical waste containers at a receiving medical facility. Residual fluids shall not be poured down sink drains or into toilets. When possible, bleach shall be added

to any residual fluid prior to disposal. When possible, a solidifying emulsion shall be added to the infectious fluid and the entire apparatus containing infectious fluid shall be disposed in medical waste containers and replaced.

2. Washing and scrubbing with soap and hot water - all blood/fluid residue must be removed. Where blood or body fluid residue cannot be removed, the apparatus shall be disposed of and replaced.

3. Soaking for 20 minutes in a 10% solution of bleach.

4. Air-dry on a drying rack. The use of anti-bacterial spray cleaning solution is an acceptable substitute for soap and water solution but must always be followed by a bleach treatment. Where bleach soaking is impractical, spraying with a 10% bleach solution is acceptable. Turnout gear shall not be sprayed with or soaked in bleach. (Bleach can impair the fire-retardant nature of turnout gear). All equipment shall be air-dried prior to being placed back in service. (Infectious agents can grow in crevices and cracks that remain wet.) Towel drying may be used to remove excess water but shall be followed by air-drying. Wet equipment may be transported back to the LUEMS office for air-drying provided that appropriate washing and bleach-treatment have been performed. When available, contaminated equipment shall be exchanged with the receiving medical facility for new equipment. All laundry shall be considered contaminated and shall be exchanged with the receiving medical facility for new linen. Decontamination shall be performed at the receiving medical facility at the completion of a call. Contaminated equipment shall not be placed back in emergency vehicles nor transported back to the LUEMS office. In the event that decontamination of equipment or vehicles should be necessary at the LUEMS office, decontamination shall be performed in such a way that hazardous materials are spread into the environment. All infectious or hazardous materials must be transported in approved and supplied biohazard bags to the receiving facility. Since all equipment is considered contaminated prior to decontamination, members shall use appropriate Personal Protective Equipment during decontamination procedures.

1.1.6.3 Personal Protective Equipment

1.1.6.3.1 Provision

LUEMS provides a wide variety of Personal Protective Equipment (PPE) for use by all members. Individual members are responsible for selecting PPE that is appropriate for the level of potential exposure to blood or other body fluids. PPE is considered appropriate if does not permit blood or other potentially infectious materials to pass through to or reach the member'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 PPE will be used. The LUEMS uniform is considered a basic level of PPE. All LUEMS EMT members are encouraged to wear a uniform jacket to respond to a call. Response to a call in street clothes without a uniform is discouraged. Supplemental PPE provided by LUEMS on board ambulances includes the following:

1. Nitrile (non-latex) gloves, regular and heavy grade, in various sizes.
2. Surgical masks with splash visor.
3. Goggles.
3. Infection Control Kits – Contains protective gowns, gloves, masks, scrub caps, shoe covers. (One kit containing two sets in the emergency vehicle.)

1.1.6.3.2 Use

PPE shall be used where there is potential for spill, splash, or exposure to body fluids. Appropriate PPE cannot be defined for every specific emergency call; LUEMS members are responsible for selecting and using PPE that is appropriate for the level of potential exposure encountered during an emergency call. It is the responsibility of the senior leader in charge of a call to ensure that appropriate levels of PPE are used. During decontamination procedures, the Material Safety Data Sheet for cleaning solutions may be consulted for selecting appropriate PPE. PPE that becomes soiled, torn, punctured, or otherwise damaged shall be replaced as soon as practical. Disposable PPE is not to be reused and must be properly and promptly discarded in medical waste containers. When possible, PPE should be changed between patients in a multiple casualty situation. When possible, hands should be washed immediately after removing gloves. As is the case with most emergency health care settings, individual members reserve the right to decline using PPE when, under rare and extraordinary circumstances, it is the member's judgment that the delay necessary for donning PPE will prevent the delivery of necessary health care to a patient or will pose an increased hazard to the safety of workers or co-workers. Declining use of PPE, however, dramatically increases risk of exposure and is discouraged.

1.1.6.3.3 Accessibility

All PPE is readily accessible to members. Each EMT member is issued an individual LUEMS jacket and is encouraged to wear it on calls. Gloves, facemasks, and shields are readily accessible in Jump Bags and in the patient compartment of ambulances. Gowns, Tyvek suits, goggles, and Infection Control Kits are also available in emergency vehicles. Members may request personal supplies of PPE to stock in uniforms or personal vehicles. Members are encouraged to keep extra gloves in uniform pockets. Members may request special PPE such as hypoallergenic gloves.

1.1.6.3.4 Cleaning, Laundering, and Disposal

Disposable PPE that becomes contaminated shall be immediately disposed of in appropriate medical waste containers at the receiving medical facility. In the event that a uniform should become contaminated, the uniform shall be removed immediately and placed in a contaminated laundry bag. In the event of a situation that prohibits immediate changing of clothes, it is acceptable to delay removal of contaminated uniforms until returning to the office. Contaminated laundry shall be transported in biohazard bags to an appropriate medical laundry facility. Members are not permitted to bring contaminated clothing home.

1.1.6.3.5 Repair and Replacement

All PPE is repaired or replaced at no cost to the member. Uniforms that need repair or replacement should be brought to the attention of a line officer. Other PPE should be replaced as part of routine emergency vehicle cleanup and restocking.

1.1.7 Housekeeping

1.1.7.1 General

All emergency vehicles, equipment, and service areas shall be kept clean and sanitary. Contaminated trash shall be disposed of in appropriate containers at receiving health care facilities. Vehicle interior surfaces shall be kept clean and free of blood or other body fluid residues. Waste containers inside vehicles shall be emptied on a daily basis and shall be replaced if full. Under no circumstances will kitchens, bathrooms, or living areas be used for decontamination or storage of patient care equipment or infectious waste.

1.1.7.2 Equipment and Working Surfaces

After exposure to blood or other potentially infectious materials, all equipment and working surfaces shall be cleaned and decontaminated in accordance with procedures outlined in Section 1.1.6.2.6. Decontamination shall be performed as part of the regular vehicle-check if prior decontamination is questionable. All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood of becoming contaminated with blood or other potentially infectious materials shall be inspected as part of the regular vehicle check and decontaminated as necessary.

1.1.7.3 Regulated Medical Waste

No regulated medical waste is to be stored on emergency vehicles or in the office. All regulated medical waste shall be disposed of in appropriate containers at the receiving medical facility. LUEMS members shall not handle contaminated sharps or needles. Red medical waste bags are placed in the Jump Bag and in emergency vehicles. All trash generated during a call should be considered contaminated and placed in medical waste bags. If necessary, double bagging shall be used when danger of puncturing the bag is present. No trash should be left on-scene or in emergency vehicles. Medical waste bags shall be closed and transported as soon as possible to the receiving health care-facility for proper disposal in medical waste containers. These bags may be transported by ambulance with the patient or taken to the receiving medical facility separately. Appropriate PPE shall be used when handling medical waste.

1.1.7.4 Laundry

Contaminated linen shall be exchanged with the receiving medical facility for clean linen. Universal Precautions shall be used in handling potentially contaminated laundry. Contaminated items shall not be sorted or rinsed. Contaminated uniforms are addressed in Section 6.1.6.3.4

1.1.8 Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-Up

1.1.8.1 Hepatitis B Vaccination

All LUEMS members are encouraged to obtain a Hepatitis B vaccination. This vaccination is available at the Lehigh University Health Center.

1.1.8.2 Post-Exposure Evaluation and Follow-Up

(ALL REFERENCE FORMS ARE AVAILABLE IN THE EXPOSURE CONTROL PLAN BINDER IN THE OFFICE)

An exposure incident is a specific eye, mouth, mucous membrane, non-intact skin, or potential contact with blood or other potentially infectious materials that results from the performance of a member's duties as defined in this ECP. In the event that a member should become involved in an exposure incident, the following steps should be taken:

1. On-scene steps should be taken to minimize the impact of the exposure.
2. LUEMS Line Office should be immediately notified.
3. The member should report to an appropriate medical facility for treatment and evaluation. In order to ensure the quality of post-exposure treatment and evaluation, the Line Office reserves the right to direct the member to a particular medical facility.
4. The medical facility should be informed that an exposure incident has occurred and that appropriate treatment, evaluation, and reporting by a health care professional pursuant to 29 CFR 1910.1030 is required. The evaluating health care professional should be provided with a copy of 29 CFR 1910.1030 (Appendix C-2), available documentation concerning the relevant incident, and a copy of Form F, Letter to the Evaluating Health Care Professional. It is preferred that this evaluation be performed by a licensed physician with knowledge in the field of infectious diseases.
5. The post-exposure evaluation will include a baseline assessment and/or blood testing. If the member refuses HIV serologic testing, the blood sample shall be preserved for at least 90 days to permit testing at a later date if consent should later be granted.
6. The Ryan White Act of 1990 (Appendix C-3) requires receiving medical facilities to inform emergency transport personnel if a transported patient is diagnosed with a communicable disease. Additionally, 29 CFR 1910.1030 requires employers to attempt to identify the source individual in an exposure incident and to request permission to obtain HIV or HBV testing. In the event of an exposure incident, the crew involved on the call shall attempt to identify the source individual (patient) and inform the staff of the receiving medical facility that blood testing of that individual for HBV and HIV infectivity is requested pursuant to the Ryan White Act of 1990 and OSHA Standard 29 CFR 1910.1030. The Line Office shall follow-up with a formal written request to the medical facility for consent from the source individual to allow HBV/HIV testing (Form D). If the source individual's consent cannot be obtained, written refusal shall be obtained (Form E). The results of such testing shall be documented and provided to the healthcare professional evaluating the exposed member. Results of testing on the source individual shall be provided to the member.
7. The member shall complete a confidential Incident Report. (Form C, Post-Exposure Questionnaire, may be substituted.) Documentation shall be made of the type(s) and route(s) of exposure and the circumstances under which the exposure incident occurred. The Incident Report shall be hand-delivered to the Line Office and filed in the member's medical record.
8. A professional written opinion will be obtained from the health care professional performing the post-exposure evaluation of the member. The written report will conform to the limitations and requirements of 29 CFR 1910.1030 and shall be provided to the member. This report will be obtained within 15 days of completion of the evaluation. This report will be considered confidential.
 - a. Pursuant to 29 CFR 1910.1030, the health care professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an member, and if the member has received such vaccination.
 - b. Pursuant to 29 CFR 1910.1030, the health care professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:
 - i. That the member has been informed of the results of the evaluation.
 - ii. That the member has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation and treatment.
 - c. Pursuant to 29 CFR 1910.1030, all other findings or diagnoses shall remain confidential and shall not be included in the written report.
9. Counseling and evaluation of reported illnesses shall be provided to the member as requested.

10. Records of the initial evaluation and follow-up evaluations will be kept in the member's medical file, separate from his/her personnel file. All medical records are confidential and are accessible to the Captain, Lieutenant, and Staff Advisor only.

1.1.9 Communication of Hazards

1.1.9.1 Labels and Signs

Containers used to store, transport, or ship blood or other potentially infectious materials shall be labeled with fluorescent red Biohazard labels or by other acceptable means (such as through the use of red Biohazard bags). As discussed in Section 1.1.7.3, biohazardous materials are not permitted to be stored at the office or in emergency vehicles. Biohazardous materials are permitted in emergency vehicles only for transport for disposal at the receiving medical facility.

1.1.9.2 Information and Training

All members are expected to know and understand the procedures set forth in this ECP. Questions should be directed to the Line Office. Furthermore, all members are expected to follow the rules and standards set forth by their certifying authority and the PA Department of Health. As part of their required continuing education, members are expected to keep their training up to date with regards to infection control and personal protective equipment.

1.1.9.3 Material Safety Data Sheets

Material Safety Data Sheets (MSDS's) are retained on file for all hazardous substances in possession of LUEMS. All MSDS's are readily accessible for member reference.

APPENDIX
POST-EXPOSURE CHECKLIST

In the event of an exposure incident, the following are immediate steps that should be taken. Please reference Section ____ for more complete discussion.

1. Minimize impact of exposure
2. Notify a LUEMS Line Officer immediately
3. Exposed employee should report to nearest medical facility for evaluation. (Use St. Luke's Emergency Room or other nearest facility.)
4. Exposed employee should complete FORM __, Emergency Response Employee Reporting Form.
5. The medical facility receiving the *patient* should be immediately notified of exposure incident. As soon as possible, the receiving medical facility should be provided with:
 - a. Copy of completed FORM __, Emergency Response Employee Reporting Form.
 - b. FORM __, Hospital Evaluation of Exposure Incident Form.

The receiving medical facility must comply with requests for information within 48 hours.

6. The medical professional evaluating the *employee* should be provided with:
 - a. Copy of completed FORM __, Emergency Response Employee Reporting Form.
 - b. As soon as available, copy of completed FORM __, Hospital Evaluation of Exposure Incident Form.
 - c. FORM __, Letter to the Evaluating Health Care Professional.

Depending on the suspected pathogen, it may be appropriate for the employee to receive only an initial evaluation and treatment at the Emergency Room, with a comprehensive follow-up evaluation conducted by a health care professional familiar with post-exposure protocols. In such cases the health care professional conducting the follow-up should receive the above forms and should generate the required report. The Emergency Room staff should be consulted to determine the appropriate procedure.

Acknowledgement of Exposure Control Plan

I _____ hereby acknowledge having received, and having read the Exposure Control Plan of Lehigh University EMS (Revised for September 2002). I also affirm that I will follow and help to enforce the rules set down in these procedures to prevent the distribution of infectious materials, in accordance with the highest standards, and in the good name of Lehigh University Emergency Medical Services.

Signature

Date