

## Catawba County Emergency Medical Services

### Infection Control

- Need for Infection Control Policy
  - Infection with a communicable disease, including Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), and other communicable diseases represents a small but real hazard to Emergency Medical Caregivers of Catawba County.
  - The increase in cases of AIDS and Hepatitis B means an increased potential for exposure to all employees and caregivers.
  - Catawba County and its caregivers should take reasonable precautions to prevent exposure.
  - As an Emergency Medical Caregiver, Catawba County is committed to providing a healthy and safe work environment to provide the best possible services to County citizens and to maintain the public's confidence in its employees.
  - The well being of County citizens demands that the County take the actions necessary to protect its employees.
  - Catawba County will abide by all laws and recognized standards of care in its efforts to fulfill its duties.
  - Catawba County complies with 29 CFR 1910.1030, the OSHA Bloodborne Pathogens Standard, and relevant sections of the North Carolina communicable disease laws and rules (G.S. 130A-144, 15A NCAC 1 in A.0201 (b) (4) (e) and (f), .0202 (4) in Sections 9), and .0203 (b) (3), and 309.26 and 15A NCAC 13 B.1200 to .1207).
- Purpose for policy
  - To prevent the spread of infectious diseases that are spread by blood, tears, sweat, saliva, sputum, gastric secretions, urine, feces, cerebrospinal fluid, semen and breast milk.
  - To establish guidelines and procedures to reduce risk of EMS employees, volunteers and the general public to infectious/communicable diseases.
  - This policy will apply to all EMS personnel and volunteers of Catawba County and affiliated agencies including but not limited to:
    - Employees
    - Reserve personnel or other volunteers
    - Students and trainees on units
    - Observers
    - Rescue squad and/or other First Responder personnel

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- Clergy members
  - An annual review and update will be conducted to reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens. Medical devices with engineered sharps injury protections and needle-less systems constitute an effective engineering control and will be considered during our review. These devices will be used where feasible to ensure employee safety.
- Infection Control Responsibilities
- Education and Orientation
    - This Exposure Control Plan will be provided and reviewed with every new employee, reserve, volunteer, observer or student during his or her orientation.
    - Periodic in-service training will be provided for all personnel annually.
    - The month of January has been allotted as training for bloodborne pathogens. New employees will receive bloodborne pathogens training in rookie school prior to working in the field.
    - Training will stress Universal Precautions and appropriate selection of protective clothing as well as the modes of transmission of various communicable diseases.
    - Personnel will be instructed as to:
      - ❖ Precautions to be followed in the event of an exposure.
      - ❖ Proper techniques for cleaning equipment and units.
      - ❖ Management of spills involving blood and/or body fluid.
    - The Exposure Control Plan will be distributed to all agencies that provide First Responder services under the auspices of the Catawba County EMS. These agencies, with the assistance of EMS and the Personnel Department, shall provide the necessary initial training and in-service of all personnel in their agency.
    - Job titles that are subject to possible exposure include:
      - ❖ EMS Manager
      - ❖ EMS Operations Officer
      - ❖ EMS Training Officer
      - ❖ EMS QA Officer
      - ❖ EMS Logistics Technician
      - ❖ EMS Shift Supervisors
      - ❖ Emergency Medical Technician – Paramedics
      - ❖ Emergency Medical Technician – Intermediates
      - ❖ Emergency Medical Technicians
      - ❖ Cleaning Specialists
    - Education Program Objectives

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- ❖ At the conclusion of the training session, personnel will be familiar with:
  - Definitions of:
    - a. Universal Precautions/Universal Isolation
    - b. Hepatitis A, B, non-A, and non-B
    - c. Blood borne pathogens
    - d. Sterilization vs. disinfection
    - e. HIV vs. AIDS
  - Demonstrate proper Infection Control procedures to be used with ALS procedures:
    - a. IV
    - b. Intubation/airway management/suctioning
    - c. Wound dressing/Hemorrhage control
    - d. Blood/vomit/urine/feces spillage
    - e. Childbirth
  - Proper handling of “sharps”.
  - Proper use of disinfectants.
  - Procedures for handling exposure to blood/body fluid.
  - Proper hand washing procedures.
  - Knowledge of location of infection control supplies.
  - Proper handling of soiled supplies/linens.

### ➤ Universal Precautions

- Communicable diseases and their modes of transmission necessitate specific precautions on the part of all EMS employees and volunteers. Since medical history and examination cannot reliably identify all patients infected with HIV or other blood borne pathogens, blood and body fluid precautions should be consistently used for all patients.
- Universal Precautions shall be taken on every patient if contact with their blood or body fluid is possible. This includes, but is not limited to basic and advanced techniques including starting IV's, intubations, suctioning, caring for trauma patients, and assisting with OB/GYN emergencies.
- The following procedures should be followed to minimize the opportunity for infection:
  - Staff PPE
    - ❖ All EMS staff and volunteers should routinely use appropriate barrier precautions to prevent skin and mucous membrane exposure when contact with blood or body fluids of any patient is anticipated.

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- ❖ Gloves should be worn for touching blood and body fluids, mucous membranes, or non-intact skin of all patients, for handling items or surfaces soiled with blood or body fluids, and for performing venipuncture and other vascular access procedures. Gloves should be changed after contact with each patient and when they become grossly soiled.
  - ❖ Masks and protective eyewear or face shields should be worn during procedures that are likely to generate droplets of blood or other body fluids to prevent exposure of mucous membranes of the mouth, nose, and eyes.
  - ❖ Helmets are provided and should be worn when caring for a patient during vehicle extrication. Turnout gear is provided to all employees and should be worn when involved in patient care while vehicle extrication is being performed.
- Patients with suspected TB
    - ❖ Patients who, upon examination by Catawba County EMS personnel, present with a combination of persistent productive cough (longer than 3 weeks), unexplained weight loss, anorexia, fever and a history of being immunocompromised, a nursing home patient, or high risk exposure to either tuberculosis or HIV should be presumed to have active tuberculosis.
    - ❖ Catawba County EMS personnel and volunteers will take appropriate airborne infection control measures, as outlined in the Catawba County Operating Procedures manual.
- Hand washing
    - ❖ Hands and other skin surfaces should be washed as soon as possible and thoroughly with alcohol based cleaners if contaminated with blood or body fluids.
    - ❖ Hands should be washed immediately after removal of gloves.
    - ❖ Waterless hand soap is available for situations when running water is not immediately accessible but should not be used as a substitute for hand washing.
- Precautions
    - ❖ All EMS staff and volunteers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal of used needles; and when handling sharp instruments after procedures.
    - ❖ To prevent needle stick injuries, needles should not be recapped, purposely bent or broken by hand, removed from disposable syringes, or otherwise manipulated by hand.
    - ❖ After use, disposable syringes and needles, scalpel blades, and lancets should be placed in an approved sharps container.
    - ❖ Sharps containers are mounted on the interior walls of each ambulance and located in each primary medical bag.

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- ❖ Sharps containers that are approximately three-fourths full should be closed, secured properly and disposed of in an appropriate OSHA approved container at the appropriate hospital. The disposal area at both Catawba Valley Medical Center and Frye Regional Medical Center is in the designated soiled utility room.
- Sharps with Engineered Sharps Injury Protection
  - Non-needle sharps or needle devices containing built-in safety features that are used for collecting fluids, administering medications or other fluids, or other procedures involving the risk of sharps injury will be used where feasible.
  - During the annual review, these devices will be discussed and reviewed as to their effectiveness with current procedures, and used where feasible.
  - This covers a broad array of devices, including:
    - Syringes with a sliding sheath that shields the attached needle after use.
    - Needles that retract into a syringe after use.
    - Shielded or retracting catheters.
    - Intravenous medication (IV) delivery systems that use a catheter port with a needle housed in a protective covering.
- Needle-less Systems
  - Needle-less systems are defined as devices which provide an alternative to needles for various procedures to reduce the risk of injury involving contaminated sharps.
  - During the annual review, these devices will be discussed and reviewed as to their effectiveness with our current procedures, and used where feasible.
  - Types of needle-less systems include:
    - IV medication systems which administer medication or fluids through a catheter port using non-needle connections.
    - Jet injection systems, which deliver liquid medication beneath the skin or through the muscle.
    - Lancets, used when checking a patient's blood glucose level.
  - Other Precautions
    - Although saliva has not been implicated in HIV transmission, to minimize the need for emergency mouth-to-mouth resuscitation, mouthpieces, resuscitation bags, or other ventilation devices should be available for use in areas in which the need for resuscitation is predictable.
    - EMS staff and volunteers that have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling patient care equipment until the condition resolves.
    - All EMS staff and volunteers that participate in invasive procedures should use appropriate barrier precautions to prevent skin and mucous membrane contact with blood and other body fluids of all patients. Gloves should be worn for all invasive procedures. Protective eyewear, masks, or shields should be worn for

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procedures that commonly result in the generation of droplets, splashing of blood or other body fluids, or the generation of bone chips. Gowns or aprons made of materials that provide an effective barrier should be worn during invasive procedures that are likely to result in the splashing of blood or other body fluids. All EMS staff and volunteers that perform or assist in vaginal deliveries should wear gloves and gowns when handling the placenta or the infant until blood and amniotic fluid have been removed from the infant's skin and should wear gloves during post delivery care of the umbilical cord.

- If a glove is torn or a needle stick or other injury occurs, the glove should be removed and a new glove used as promptly as patient safety permits; the needle or instrument involved in the incident should also be removed from the sterile field.

### ➤ Cleanup and Decontamination

- Avoid contact with your skin from contaminated medical equipment.
- Avoid touching face and clothing before you have washed your hands.
- Wash your hands and contaminated surfaces carefully after treating a patient or handling soiled or potentially contaminated articles, i.e., the steering wheel, medical equipment, etc. touched while your hands are contaminated.
- Wear disposable gloves during equipment clean up, especially when you have an open wound on your hand(s).
- When appropriate, you may wish to cover yourself with a disposable gown and mask. However, when using these items be sure to dispose of them in a red biohazard bag and dispose of appropriately.
- Clean and disinfect (with a micro-bactericidal cleaner) all equipment used to treat the patient, i.e., bag valve mask, ambulance stretcher, stethoscope, cardiac monitor, etc. Cleaning contaminated equipment is a necessary part of emergency medical work. Equipment that is contaminated or in dirty condition can serve as a reservoir for infections. This is an endangerment to the patient and the health care worker.
- Clean unit. Remove all potentially contaminated matter with micro-bactericidal cleaner. Red bags should be used for collection of equipment (non-disposable) requiring sterilization. Regular scheduled cleaning of units and equipment should be performed. Any spills involving blood and/or body fluid or potentially infected materials will immediately be cleaned in the prescribed manner. All equipment used in patient care will be cleaned immediately after use so as to limit the possibility of the spread of contaminated materials, using the following steps:
  - Disassemble equipment if necessary.
  - Wash with warm soapy water.
  - Wipe equipment with approved disinfectant.
  - Rinse with water.
  - Allow to air dry.

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- Reassemble if necessary.
  - Clean in approved and assigned decontamination area. Water should have the capability of being contained and not able to runoff.
  - If cleaning is done at the bases, there should be an assigned decon sink. Do not use kitchen or bathroom sinks for decontamination.
  - The patient compartment of the vehicle shall be cleaned with an approved disinfectant daily and after any soilage has occurred.
  - All potentially contaminated disposable supplies shall be placed in a leak-proof bag. Double-bagged red biohazard bags are preferred.
  - Any item, which requires soaking, should be done so for a minimum of 20 minutes in (1:10) Clorox solution.
  - If necessary, employees should be allowed to shower.
- Guidelines for decontamination of uniforms or linens soiled with blood or body fluids
- Soiled uniforms or linens should be handled as little as possible and with a minimum of agitation to prevent gross contamination.
  - Linen soiled with blood or bodily fluids during patient treatment or transport should be placed and transported in separate bags that prevent leakage. Bags should be sealed.
  - If personnel contaminate their clothing with blood or body fluid, they should shower and change into a clean uniform prior to answering another call. Supervisory personnel shall allow adequate time for the technician to change after exposure to blood or body fluids. Contaminated uniforms should be bagged in red biohazard bags and shall be taken to the individual agency for cleaning.
    - Manufacturer's recommendations of the article of clothing should be followed when washing is performed.
    - Uniforms and linen visibly soiled with blood and body fluids can be dry-cleaned if the individual chooses to do so. Ordinary dry cleaning involves exposing the garment to organic solvents and high temperatures for about 20 minutes; subsequent steam pressing of the garment involves even higher temperatures. These processes would kill the AIDS, even if the clothing were heavily contaminated. Inform the vendor that the garments may be contaminated.
    - Shoes that become soiled with blood or bodily fluids can be wiped with alcohol, wiped with clear water, and allowed to dry.
  - Any exposure should be notified to your supervisor or officer in charge and the Personnel Department. File a detailed incident report.
  - Complete in detail The Injury/Exposure Report.
  - The following resources will be committed to each response unit for infield decontamination efforts:

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- Clorox Clean-Up and TNT anti-microbial spray is provided for decontamination of the unit. The solutions are used for cleaning apparatus, stretchers, floors, etc.
- A supply of disposable gloves (sterile and non-sterile).
- Disposable face masks
- Disposable Tyvex coveralls
- Safety glasses
- Red contamination bags
- Roll of insulation tape
- Dirty needle container
- Anti-microbial waterless hand soap
- Other items as deemed necessary by EMS administration as further research progresses

### ➤ Hepatitis B Vaccination

- The Bloodborne Pathogens Coordinator, also referred to as the Risk Manager of Catawba County is in charge of the Hepatitis B vaccination program.
- The County's Occupational Health Department or other identified facilities will administer vaccinations.
- Hepatitis B vaccinations will be made available after the employee has received the training in occupational exposure and within 10 working days of initial assignment to all employees who have occupational exposure.
- If an 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, the employee may be exempt.
- Individuals who are hired by Catawba County EMS and have received the vaccination series by Catawba County EMS, a titer will be given to determine their status. If not converted, the series will be administered again.
- Those individuals, who are hired by Catawba County EMS and have not yet received the vaccination but wish to participate in the vaccination series, will be given the vaccinations at no cost to the employee.
- After the initial series is given, during the sixth or seventh month after the vaccination is complete a titer will be given to determine if the individual has the proper antibodies.
- If the individual does not have the proper antibodies the entire Hepatitis B Vaccination series will be repeated. After completion of the second series of vaccinations and the individual still does not convert, the subject will be counseled on the risks involved in their particular job.



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- If the employee initially declines the Hepatitis B vaccination but at a later date, while still covered under the standard, decides to accept the vaccination, the vaccination shall then be made available.
  - Each employee who declines the Hepatitis B vaccine offered, shall sign a declination form indicating his or her refusal. Appendix C includes the OSHA declination statement to be used for this purpose.
- Post-Exposure Evaluation and Follow-Up
- These guidelines are provided to facilitate prompt reporting, evaluation, counseling, and follow-up of exposed employees and the use of the Injury/Exposure Report.
  - Because Hepatitis Band HIV require immediate follow-up, the responsibility for prompt reporting lies with the employee.
  - Only through prompt reporting can Catawba County provide proper follow-up for exposures experienced by employees and volunteers.
  - All information regarding the exposed employee and the source person **will be treated confidentially.**
    - Employee and/or Volunteer – Immediately after exposure:
      - ❖ Encourage cuts or needle sticks to bleed freely. Flush exposures to mucous membranes with water.
      - ❖ Wash cuts or needle stick injuries vigorously with warm water and soap.
      - ❖ Further medical attention may be necessary, i.e., suturing, tetanus, or antibiotic therapy. The employee or volunteer should consult the emergency room physician.
    - Reporting
      - ❖ All exposure incidents shall be reported, investigated, and documented. When the employee or volunteer incurs an exposure incident, it shall be reported to the immediate supervisor or officer in charge at the volunteer organization.
      - ❖ The *Injury/Exposure Report Form* should be downloaded from the Intranet and filled out completely. Copies of the form should be forwarded to the EMS Manager and Shift Supervisor. The Shift Supervisor will be responsible for forwarding the form to the Catawba County Risk Manager.
    - Medical Evaluation
      - ❖ Following a report of an exposure incident, the exposed employee or volunteer shall immediately receive a confidential medical evaluation and follow-up, including at least the following elements:
        - Documentation of the route of exposure, and the circumstances under which the exposure incident occurred.

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- Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law.
  - 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 Bloodborne Pathogens Coordinator/Risk Manager shall establish that legally required consent cannot be obtained. When law does not require the source individual's blood, if available, shall be tested and the results recommended.
  - When the source individual is already known to be infected with HBV or HIV, testing the source individual's known HBV or HIV status needs to be repeated.
  - Results of the source individual's testing shall be made available to the exposed employee or volunteer, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.
- ❖ Collection and testing of blood for HBV and HIV serological status will comply with the following:
- The exposed employee or volunteers blood shall be collected as soon as feasible and tested after consent is obtained.
  - The employee or volunteer will be offered the option of having their blood collected for testing of the employee's HIV/HBV serological status.
  - The blood sample will be preserved for up to 90 days to allow the employee or volunteer to decide if the blood shall be tested for HIV serological status.
- Evaluation and Follow-Up
- ❖ Each employee or volunteer who incurs an exposure incident will be offered post-exposure evaluation and follow-up in accordance with the OSHA standard.
  - ❖ The County's Occupational Department or another identified health care provider will perform all post exposure follow-ups.
- Tuberculosis
- If any persons with pulmonary or laryngeal tuberculosis sneeze, cough, speak, or sing, infection occurs when a susceptible person inhales these nuclei.
  - Some tuberculosis patients will not, or cannot cover their mouths and noses when they cough or sneeze. **Reverse precautions may be needed when a patient cannot do this.**
  - Remember to use personal masks and that suctioning can cause airborne droplets.

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- Symptoms of TB may include:
    - Listlessness
    - Vague chest pain
    - Inflammation of the membranes that surround the lungs (pleurisy)
    - Loss of appetite
    - Fever
    - Weight loss.
  
  - As the disease progresses symptoms may include:
    - Bleeding in the lungs
    - Persistent cough
    - Dyspnea
    - Night sweats.
  
  - High-risk groups for TB include:
    - HIV infected persons
    - Homeless persons
    - Nursing home residents
    - Refugees/Immigrants from Southeast Asia
    - Blacks, Pacific Islanders
    - Prison inmates
    - Alcoholics, IV drug users
  
  - A diagnosis of tuberculosis should be considered for patients who report the above symptoms.
    - Early identification, preferably during triage or initial assessment, of persons with potentially infectious tuberculosis should be made.
    - Unless a patient is definitely non-infectious, isolation procedures should be instituted as soon as possible.
    - Environmental methods for preventing the spread of infectious droplets would include negative ventilation. In the ambulance the patient compartment windows can be opened and the venting can be adjusted to a non-recirculation cycle.
  
  - Personnel having contact with an “Isolated Precautionary” patient suspected of having tuberculosis will be at significant risk if they do not follow barrier precautions.
  
  - Should the health care worker have become involved in an unprotected exposure to a patient deemed to have active TB, the Injury/Exposure forms should be completed and a TB skin test should be performed ASAP to determine a baseline. A retest should be performed in six to eight weeks. A chest x-ray should be done if the health care worker tests positive and he/she should seek further diagnostic tests and medical treatment.
- PPD Testing
- All PPD’s will be placed using the Mantoux method.
  - Standard criteria will be used to place and interpret PPD’s.

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- Results of the PPD tests will be recorded in the individuals HCW's employee or volunteer health record, maintained in Personnel.
- Results of PPD tests should be read within 48-72 hours.
- PPD testing will be performed on an annual basis or when needed by new employees.
- Hand washing
  - Hand washing is the single most important step in the prevention of disease transmission.
  - Hands must be washed following patient contact or contact with potentially contaminated surfaces or materials.
  - Hands must be washed, even if gloves have been worn.
  - Handwashing Procedures
    - Handwashing shall not be done in a food preparation area.
    - Stand away from the sink to reduce contamination of clothing.
    - Use warm, running water and antiseptic soap.
    - Work up lather and rub briskly for at least 15 seconds.
    - Rinse with warm flowing water, with water running from wrist to fingertips.
    - Dry hands with paper towels and turn off water faucet with towel. Dispose of towel in appropriate receptacle.
    - Where hand washing facilities are not available, a waterless (alcohol-based) hand cleaner should be used, in accordance with product instructions. Personnel will wash hands with soap and water at the earliest possible opportunity.
- Personal Protective Equipment
  - Catawba County Emergency Medical Services provides its employees the necessary PPE for situations which may be encountered while on duty.
  - The following is a list of personal protective equipment provided:
    - Turnout gear which is to be worn any time personnel are involved in patient care while extrication is taking place around them.
    - Traffic safety vests which are to be worn any time personnel are on or near the roadway for visibility.
    - Safety glasses which are worn any time there is the possibility of blood or other body fluid splatter.
    - N95 HEPA masks which are worn any time there is the possibility of airborne transmission.
    - Helmets should be worn when personnel are involved in any situation that warrants protection to the head.
  - The PPE policy should be referenced regarding further explanation of PPE