

INFECTION PREVENTION TRAINING FOR HEMODIALYSIS SETTINGS

Statewide Program for Infection Control and
Epidemiology (SPICE)

UNC School of Medicine

STATEMENT OF DISCLOSURES

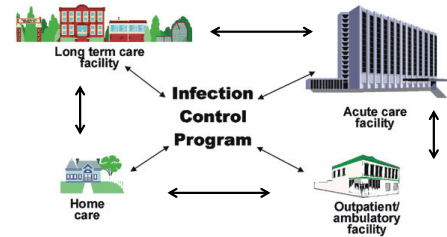
- **Statement of Disclosures**
- Learners will gain an infection control knowledge base to ensure that they can systematically assess that their facilities have the appropriate infection prevention policies and procedures and competencies in place to allow healthcare personnel to provide safe patient care consistent with North Carolina communicable disease rule 10A NCAC 41A .0206: Infection Prevention – Healthcare Facilities.
- Learners must complete all 7 modules. Learners must complete the on-line course evaluation to receive the course completion certificate and continuing education credit.
- The content of this activity has no connection with any products consumed by or used on patients, so there is no conflict of interest for anyone with the ability to control the content of this activity.
- This nursing continuing professional development activity was approved by the North Carolina Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

STATEWIDE PROGRAM FOR INFECTION CONTROL AND EPIDEMIOLOGY (SPICE)

Mission

The Statewide Program for Infection Control and Epidemiology promotes prevention and control of healthcare-associated infections in North Carolina and beyond by providing evidence-based education and consultation across the healthcare spectrum.

“PATIENTS DESERVE EFFECTIVE INFECTION PREVENTION WHEREVER THEY RECEIVE HEALTHCARE.”



Adapted from: Jarvis WR Emerg Infect Dis. 2001;7:170-3. Macedo de Oliveira et al. Annals of Int Med. 2005, 11

Modules

- **Module A** - North Carolina Laws Concerning Infection Prevention
- **Module B** - Complying with OSHA Bloodborne Pathogen
- **Module C** - Epidemiology and Risk of Infection
- **Module D** - Outbreak and Safe Injection Practices
- **Module E** - Principles and Practices of Asepsis
- **Module F** - Principles of Disinfection and Sterilization
- **Module G** – Infection Prevention and Control in Outpatient Hemodialysis Settings

<https://spice.unc.edu/0206-spice-handouts/>

Module A

NC LAWS CONCERNING INFECTION PREVENTION IN OUTPATIENT HEMODIALYSIS SETTINGS

Objectives

- Discuss North Carolina State Laws governing infection prevention in healthcare facilities
- Describe: Control Measures for Human Immunodeficiency Virus (HIV), hepatitis B and hepatitis C (10A NCAC 41A .0202, .0203, and .0214)
- Review: Communicable Disease Reporting
 - (GS 130A-135) (10A NCAC 41A)
- Describe: NC Medical Waste Rules (15A NCAC 13B .1200)

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History



- 1990 – CDC becomes aware of a possible transmission of HIV from a dentist to 6 patients (Kimberly Bergalis case)
- July 1991 – CDC publishes *Recommendations for Preventing Transmission of HIV and hepatitis B Virus to Patients During Exposure-Prone Invasive Procedures*
- October 1991 – Congress passes Public Law 102-141, requiring states to adopt CDC Guidelines or equivalent guidelines drafted by the state
- July 6th, 2012 – CDC Updated Recommendations for Management of Hepatitis B Virus-Infected Health-Care Providers and Students

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10A NCAC 41A .0207 HIV AND HEPATITIS B INFECTED HCP



- All healthcare providers who perform or assist in:
 - Surgical OR
 - obstetrical OR
 - Dental procedures
- And who know themselves to be infected with HIV or Hepatitis B shall notify the NC State Health Director
- No requirement to notify employer

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10A NCAC 41A .0207 HIV AND HEPATITIS B INFECTED HCP

- Once notification occurs:
 - Health Director is responsible to:
 - Investigate providers practice
 - Evaluate clinical condition
 - Determine risk of transmission to patients
 - Convene expert panel
 - Expert Panel shall:
 - Review evidence
 - Hear testimony from provider and/or their physician
 - Make recommendations related to restrictions and identification of potentially exposed patients

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10A NCAC 41A .0206 INFECTION PREVENTION – HEALTH CARE SETTINGS

(a) The following definitions apply throughout this Rule:

(1) "Health care organization" means a hospital; clinic; physician, dentist, podiatrist, optometrist, or chiropractic office; home care agency; nursing home; local health department; community health center; mental health facility; hospice; ambulatory surgical facility; urgent care center; emergency room; Emergency Medical Service (EMS) agency; pharmacies where a health practitioner offers clinical services; or any other organization that provides clinical care.

(2) "Invasive procedure" means entry into tissues, cavities, or organs or repair of traumatic injuries. The term includes the use of needles to puncture skin, vaginal and cesarean deliveries, surgery, and dental procedures during which bleeding occurs or the potential for bleeding exists.

(3) "Non-contiguous" means not physically connected.

(b) In order to prevent transmission of HIV, hepatitis B, hepatitis C and other bloodborne pathogens each health care organization that performs invasive procedures shall implement a written infection control policy. The health care organization shall ensure that health care workers in its employ or who have staff privileges are trained in the principles of infection control and the practices required by the policy; require and monitor compliance with the policy; and update the policy as needed to prevent transmission of HIV, hepatitis B, hepatitis C and other bloodborne pathogens. The health care organization shall designate one on-site staff member for each noncontiguous facility to direct these activities. The designated staff member in each health care facility shall complete a course in infection control approved by the Department. The Department shall approve a course that addresses:

(1) Epidemiologic principles of infectious disease;

(2) Principles and practice of asepsis;

(3) Sterilization, disinfection, and sanitation;

(4) Universal blood and body fluid precautions;

(5) Safe injection practices;

(6) Engineering controls to reduce the risk of sharp injuries;

(7) Disposal of sharps; and

(8) Techniques that reduce the risk of sharp injuries to health care workers.

(c) The infection control policy required by this Rule shall address the following components that are necessary to prevent transmission of HIV, hepatitis B, hepatitis C and other bloodborne pathogens:

(1) Sterilization and disinfection, including a schedule for maintenance and microbiologic monitoring of equipment; the policy shall require documentation of maintenance and monitoring;

(2) Sanitation of rooms and equipment, including cleaning procedures, agents, and schedules;

(3) Accessibility of infection control devices and supplies; and

(4) Procedures to be followed in implementing 10A NCAC 41A .0202(4) and .0203(b)(4) when a health care provider or a patient has an exposure to blood or other body fluids of another person in a manner that poses a significant risk of transmission of HIV or hepatitis B.

(d) Health care workers and emergency responders shall, with all patients, follow Centers for Disease Control and Prevention Guidelines on blood and body fluid precautions incorporated by reference in 10A NCAC 41A .0201.

(e) Health care workers who have exudative lesions or weeping dermatitis shall refrain from handling patient care equipment and devices used in performing invasive procedures and from all direct patient care that involves the potential for contact of the patient, equipment, or devices with the lesions or dermatitis until the condition resolves.

(f) All equipment used to puncture skin, mucous membranes, or other tissues in medical, dental, or other settings must be disposed of in accordance with 15A NCAC 13B .1200 after use or sterilized prior to reuse.

History Note: Authority G.S. 130A-144; 130A-145; 130A-147;
 Eff. October 1, 1992;
 Amended Eff. January 1, 2010; December 1, 2003; July 1, 1994; January 4, 1994.

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10A NCAC 41A .0206



- Each healthcare organization in which invasive procedures are performed must:
 - Implement a written infection control policy addressing components necessary to prevent transmission of HIV, hepatitis B, hepatitis C and other bloodborne pathogens
 - Designate one on-site staff member to direct infection control activities



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10A NCAC 41A.0206
Infection Prevention-
Healthcare Settings



Video Clip: Start the video by clicking on the image below.



DEFINITIONS

• “Healthcare organization” means:

- Hospital
- Clinic
- Physician Practice
- Dentist
- Podiatrist
- Optometrist, or
- Chiropractic office
- Home care agency
- Nursing Home
- Local health department
- Community health center
- Mental health facility
- Hospice
- Ambulatory surgical facility
- Urgent care center
- Emergency room
- Emergency medical service (EMS) agency
- Pharmacies where a health practitioner offers clinical services

Or any other organization that provides clinical care

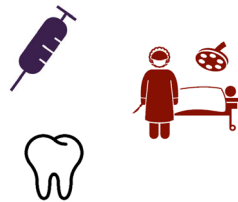


DEFINITIONS

• “Invasive procedure” means entry into tissues, cavities or organs or repair of traumatic injuries.

This includes:

- Use of needles to puncture skin
- Vaginal and cesarean deliveries
- Surgery
- Dental procedures during which bleeding occurs or the potential for bleeding exists



INFECTION CONTROL POLICY

• Infection control policy must include and address the following components necessary to prevent transmission of HIV, hepatitis B, hepatitis C and other bloodborne pathogens:

- Disinfection and Sterilization
- Maintenance and microbiologic monitoring of equipment
- Sanitation of rooms and equipment
 - Cleaning procedures, agents used and schedules
- Accessibility of infection control devices and supplies
 - Personal protective equipment (PPE), safety sharps, etc.
- A post-exposure follow-up program.



DESIGNATED STAFF MEMBER

• Designated staff member must complete a State approved course in infection prevention

- Course curriculum developed by SPICE
- SPICE has oversight of course
- Course faculty must submit an application and be approved by SPICE prior to offering the course
- On the job training is not sufficient and “Train the Trainer” concept cannot be used
- Upon completion of course will receive a certificate of completion
 - Serves as documentation of compliance with rule .0206



APPROVED COURSE MUST INCLUDE

- Epidemiologic principles of infectious disease;
- Principles and practice of asepsis;
- Sterilization, disinfection, and sanitation
- Universal blood and body fluid precautions (Standard Precautions);
- Safe injection practices;
- Engineering controls to reduce the risk of sharp injuries;
- Disposal of sharps; and
- Techniques that reduce the risk of sharp injuries to health care workers.



10A NCAC 41A .0206: 2010 AMENDMENT



- Safe Injection Practices has been added to list of topics covered in state-approved course
- Hepatitis C and other bloodborne pathogens are addressed, in addition to HIV and HBV
- One designated trained staff member is required for each **noncontiguous healthcare facility**
 - **Non contiguous: when facilities are not physically connected to each other.**
- OSHA bloodborne pathogen training, alone, does not include all of the elements required under .0206



10A NCAC 41A .0206:



Healthcare provider with Exudative Lesions or Dermatitis on hands/wrists **Shall refrain from:**

- Handling patient care equipment
- Handling devices used for invasive procedures
- All direct care activities likely to have contact with lesion



KNOWLEDGE CHECK



Which of the following are included in the definition of "invasive procedure" under .0206?

- a) Surgery
- b) Vaginal deliveries
- c) Dental procedures
- d) Giving an allergy shot
- ✓ e) All of the Above



KNOWLEDGE CHECK



Rule .0206 requires all of the following for healthcare organizations: True or False?

- Have a written infection control policy
- Conduct infection control training for healthcare providers
- Have at least one person designated to have oversight of infection control
- Designated person must attend a state-approved course
- Compliance with infection control requirements must be monitored



OBJECTIVES

- Discuss North Carolina State Laws: .0207 and .0206: Governing infection prevention in healthcare facilities
- Describe 10 A NCAC 41A .0202, .0203, and .0214:
 - Control Measures for Human Immunodeficiency Virus (HIV), hepatitis B and hepatitis C
- Review GS 130A-135:Communicable Disease Reporting
- Describe 15A NCAC 13B .1200: NC Medical Waste Rules



CONTROL MEASURES – HIV, HBV, HCV 10A NCAC 41A .0202, .0203, AND .0214

3 Key Steps

1. Determining the risk
2. Following up on the source
3. Maintaining confidentiality



CONTROL MEASURES

STEP 1

- Determine if exposure to the person constitutes a significant risk
 - Needlestick most common
 - For all other exposures (splashes and splatters for example) evaluate:
 - The amount and type of body fluid,
 - Potential pathogen and
 - The route of exposure (mucous membranes, non-intact skin for example)

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STEP 2

CONTROL MEASURES

- Follow up on the source of the exposure:
 - If source is known: notify their physician, test for HIV, HBV and HCV (unless already known to be infected) and offer follow up as appropriate.
 - If source unknown: offer HIV testing to exposed person, verify status of HBV vaccination and offer HCV testing

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CONTROL MEASURES – HIV, HBV, HCV

STEP 3

- Maintain Confidentiality
 - Protect confidentiality of known source person and their testing status
 - Exposed person instructed to maintain confidentiality
 - Disclosures for communicable disease reporting are protected and do not violate HIPAA regulations



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Management of Occupational Blood Exposures to HBV, HCV, or HIV

Step 1: Provide immediate care to the exposure site

- Wash wounds and skin with soap and water
- Flush mucous membranes with water
- Irrigate eyes with clean water, saline, or sterile irrigant
- Do not use caustic chemicals or use antiseptics or caustic agents (e.g., bleach)

Step 2: Evaluate the exposure

Determine risk associated with exposure

| Exposures | Substances | Status | Susceptibility |
|--|--|--|--|
| Exposures posing risk of infection transmission | Substances posing risk of infection transmission | Determine infection status of exposed person | Determine susceptibility of exposed person |
| • Blood | • Blood | • HIV | • Hepatitis B vaccine status |
| • Fluids containing visible blood | • Potentially infectious fluids | • HBV | • HBV antibody |
| • Needlestick exposure | • Blood | • HCV | • HCV antibody |
| • Mucous membrane exposure | • Blood | • HIV | • HIV antibody |
| • Non-intact skin exposure | • Blood | • HBV | • HBV antibody |
| • Skin resulting in blood exposure to other person | • Blood | • HCV | • HCV antibody |
| • Other person exposed | • Blood | • HIV | • HIV antibody |
| • Other person exposed | • Blood | • HBV | • HBV antibody |
| • Other person exposed | • Blood | • HCV | • HCV antibody |

Step 3: Give postexposure prophylaxis (PEP) for exposures posing risk of infection transmission

- HIV – see Table
- HBV – see Table
- HCV – PEP not recommended

Step 4: Perform follow-up testing and provide counseling

- HIV – see Table
- HBV – see Table
- HCV – see Table

Recommended HIV PEP

| Exposure | Recommended HIV PEP |
|--------------------------------|--|
| Exposure to HIV-infected blood | • Zidovudine (ZDV) 300 mg po bid for 28 days |
| Exposure to HIV-infected blood | • Zidovudine (ZDV) 300 mg po bid for 28 days |
| Exposure to HIV-infected blood | • Zidovudine (ZDV) 300 mg po bid for 28 days |

Recommended HBV PEP

| Exposure | Recommended HBV PEP |
|--------------------------------|---|
| Exposure to HBV-infected blood | • Hepatitis B vaccine (HBVax) 10 mcg IM |
| Exposure to HBV-infected blood | • Hepatitis B vaccine (HBVax) 10 mcg IM |
| Exposure to HBV-infected blood | • Hepatitis B vaccine (HBVax) 10 mcg IM |

Recommended HCV PEP

| Exposure | Recommended HCV PEP |
|--------------------------------|----------------------|
| Exposure to HCV-infected blood | • No PEP recommended |
| Exposure to HCV-infected blood | • No PEP recommended |
| Exposure to HCV-infected blood | • No PEP recommended |

https://www.cdc.gov/hai/pdfs/hiv/occupational_exposure_HIV_08_11x17.pdf

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KNOWLEDGE CHECK

True or False:

Needlesticks are the most common route of exposure to bloodborne pathogens in the healthcare setting



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- Review GS 130A-135, 10A NCAC 41A: Communicable Disease Reporting
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REPORTING RULES: GS 130A-135; 10A NCAC 41A

- “A physician licensed to practice medicine who has reason to suspect that a person about whom the physician has been consulted professionally has a communicable disease (CD) or condition declared by the Commission to be reported, shall report information required by the Commission to the local health director ...”
- Physicians, labs & specified others must report CDs designated “reportable” by NC Commission for Public Health

<https://epi.publichealth.nc.gov/cd/report.html>



CHAPTER 41 - EPIDEMIOLOGY HEALTH

SUBCHAPTER 41A - COMMUNICABLE DISEASE CONTROL

SECTION .0100 - COMMUNICABLE DISEASE CONTROL

10A NCAC 41A .0101 REPORTABLE DISEASES AND CONDITIONS

(a) The following named diseases and conditions are declared to be dangerous to the public health and are hereby made reportable within the time period specified after the disease or condition is reasonably suspected to exist:

- (1) acquired immune deficiency syndrome (AIDS) - 24 hours;
- (2) anthrax - immediately;
- (3) botulism - immediately;
- (4) brucellosis - 7 days;
- (5) campylobacter infection - 24 hours;
- (6) **Candida auris - 24 hours;**
- (7) **Carbapenem-Resistant Enterobacteriaceae (CRE) - 24 hours;**
- (8) ~~chikungunya~~ - 24 hours;
- (9) chikungunya virus infection - 24 hours;
- (10) chlamydial infection (laboratory confirmed) - 7 days;
- (11) cholera - 24 hours;
- (12) Creutzfeldt-Jakob disease - 7 days;
- (13) cryptosporidiosis - 24 hours;
- (14) cyclosporiasis - 24 hours;
- (15) dengue - 7 days;
- (16) diphtheria - 24 hours;
- (17) Escherichia coli, shiga toxin-producing - 24 hours;
- (18) ehrlichiosis - 7 days;
- (19) encephalitis, arboviral - 7 days;
- (20) foodborne disease, including Clostridium perfringens, staphylococcal, Bacillus cereus, and other and unknown causes - 24 hours;
- (21) gonorrhea - 24 hours;
- (22) granuloma inguinale - 24 hours;
- (23) Haemophilus influenzae, invasive disease - 24 hours;



OBJECTIVES

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- Describe 10 A NCAC 41A .0202, .0203, and .0204: Control Measures for Human Immunodeficiency Virus (HIV), hepatitis B and hepatitis C
- Review GS 130A-135, 10A NCAC 41A: Communicable Disease Reporting
- Describe 15A NCAC 13B .1200: NC Medical Waste Rules



15A NCAC 13B .1200: NC MEDICAL WASTE RULES



- The NC Medical Waste Rules:
 - Define types of medical waste,
 - Outline how medical waste should be packaged
 - Dictates how medical waste should be stored and transported and
 - Outlines methods of treatment and disposal
- Rules are periodically updated



15A NCAC 13B .1200: NC MEDICAL WASTE RULES CURRENTLY TWO TYPES OF MEDICAL WASTE



Medical waste

- Any solid waste generated in the
 - diagnosis,
 - treatment, or
 - immunization of human beings or animals
- Disposed of in the county landfill and no treatment necessary prior to disposal

Regulated medical waste

- Must be treated prior to disposal
- Regulated medical waste and treatment methods include the following:
 - Any blood or body fluids in individual containers >20ml (about size of test tube)...incineration/sanitary sewage system
 - Microbiological waste...incineration, steam sterilization, microwave, or chemical treatment
 - Pathological waste...incineration



NOT DEFINED AS REGULATED MEDICAL WASTE UNDER 15A NCAC 13B .1200:



Sharps

- Rules do not require treatment before disposal
- Must be packaged in a container that is rigid, leak-proof when upright, and puncture resistant
- Shall not be compacted prior to off-site transportation
- Can be disposed of with general solid waste
 - Some landfills do not accept sharps



Miscellaneous Items

- Dressings and bandages (even blood soaked), sponges, disposable instruments, used gloves, and tubing
 - Disposed of as general solid waste
- Household waste including injections administered at home is not included in medical waste rules.



KNOWLEDGE CHECK

Which of the following is **NOT** classified as “Regulated” medical waste in the NC Medical Waste Rules?

- a) Microbiological
- ✓ b) Gowns and gloves
- c) Pathological
- d) Blood in quantities of >20 ml per a single unit vessel



KNOWLEDGE CHECK

What do the NC Medical Waste Rules require for disposal of sharps?

- a) Container for sharps is rigid, puncture resistant and leak proof when in an upright position.
- b) Closed sharps container may be disposed of with general solid waste.
- c) Contained sharps shall not be compacted prior to off-site transportation.
- ✓ d) All of the above



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QUESTIONS?

