This policy has been adopted by UNC Health Care for its use in infection control. It is provided to you as information only.

Infection Control Manual		
UNC HEALTH CARE	Policy Name	**Infection Control Program**
	Policy Number	**IC 0029**
	Date this Version Effective	**October 2017**
	Responsible for Content	**Hospital Epidemiology**

I. Description

Describes the roles and responsibilities of the UNC Health Care Infection Control Program

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II. Rationale

Hospital Epidemiology (HE) is a department with expertise in infection control and prevention related disciplines. Our mission is to promote a healthy and safe environment by preventing the acquisition of healthcare-associated infections by patients and by preventing the transmission of infectious agents among patients, staff and visitors. This will be accomplished in an efficient and cost-effective manner by a continual assessment and modification of our services based on regulations, standards, scientific studies, internal evaluations and guidelines.

- Department Vision

  Hospital Epidemiology seeks to be recognized internally and externally as the foremost hospital epidemiology program in the country.

- Department Values
  - The promotion of excellence in the performance of patient care, education and research.

- Decision-making based on science.
- Personal competence, creativity and dedication to continuous professional development.
- Teamwork, fairness, collegiality both within our department and in our health care community.
- The ability to respond in a flexible manner to a dynamic healthcare environment and continuous improvement in the services we offer.
- To be prepared to aid in the management of a bioterrorist event, new and emerging infectious diseases and pandemics.

- Department Goals

  The primary goal of Hospital Epidemiology is to promote actions to reduce the risks of endemic and epidemic healthcare-associated infections in patients and health care personnel in a major academic medical center, ambulatory surgical center, home health and hospice service, and campus and community-based practices. Each year specific goals are set to improve patient outcomes as determined by the Infection Control Risk Assessment and Infection Control Plan.

- Coverage

  UNC Health Care provides a comprehensive infection prevention program to provide a healthy and safe environment for patients, visitors, trainees/students, volunteers and employees in all UNC Health Care locations. For the purposes of the policies located in the Infection Control Manual, UNC Health Care refers to UNC Hospitals (Chapel Hill and Hillsborough campuses) and UNC Outpatient Care Services.

III. Policy

A. Patient Demographics

Approximately 12,500 employees provide primary and specialized care to approximately 41,000 inpatients per year from all 100 North Carolina counties, from nearby states, and from across the country and around the world. Some of the specialized services within the UNC Health Care (UNCHC) include a comprehensive transplant program both solid organ and adult and pediatric bone marrow transplant; trauma care, including burn treatment; cardiology; obstetrics; pediatrics; neurosciences; hemophilia and other blood diseases; cystic fibrosis; geriatrics and oncology. Proximity and affiliation to the University of North Carolina at Chapel Hill also creates opportunity for diagnosis and treatment of new and emerging diseases based on travel of students and employees of the University and studying emerging pathogens in Biosafety Level 3 labs on the research campus. UNCHC provides outpatient services at campus-based facilities and community-based practices with approximately 1,150,000 visits per year. Patient care services are also provided to an increasing number of Hispanic patients since this population has greatly increased both locally and within the state of North Carolina. The Health Care system and Hospital Epidemiology strive to be culturally responsive by addressing specific health care issues such as increased risk of rubella infection and by providing native language educational materials.

B. Strategies

1. Control sources of contamination by disinfection and/or sterilization of patient care equipment and instruments and by isolation and/or treatment of infected patients.
2. Prevent transmission of infectious agents through the faithful practices of hand hygiene, asepsis and sanitation.
3. Protect the susceptible patient, employee and volunteer by use of approved isolation/precautions practices, immunizations and post exposure prophylaxis.

4. Reduce the risks of, and monitor the trends in rates of epidemiologically significant microorganisms.
5. Measure the effectiveness of infection control policies and education by performing evaluations (e.g. rounds, surveys), analyzing the results, and providing feedback to clinical staff.

C. Qualifications of Staff

The Epidemiology staff consists of 14 highly qualified individuals to implement the program. The staff possesses the required academic credentials and is trained in infection surveillance, prevention, and control functions, has knowledge or job experience in the principles of epidemiology and infectious disease as well as sterilization, sanitation, and disinfection practices. Certification in infection control is required for the Director and Associate Director, and is encouraged for all Infection Preventionists.

1. Four full-time nurses that serve as the Hospitals' Inpatient Infection Preventionists (IP) are trained in infection surveillance, prevention and control functions and have knowledge or job experience in the principles of epidemiology and infectious diseases as well as sterilization, sanitation and disinfection practices.
2. One full-time nurse that serves as the Hillsborough Campus's Infection Preventionist (inpatient and outpatient) and Occupational Health Nurse.
3. One full-time Manager of HAI Surveillance and Public Health Epidemiologist (PHE) with specialized training in surveillance data analysis and reporting for both hospital and community infections. This person serves as the liaison for the health care system and the public health departments and is trained in management of bioterrorist threats.
4. One full-time Information Management Specialist who is responsible for administrative duties, database management, surveillance quality assurance, and technical assistance in report and policy preparation.
5. One full-time Senior Medical Technologist performs microbiological sampling of the hospital environment, assists in outbreak investigations as needed and conducts research activities.
6. One full-time Infection Preventionist/Safety Officer is responsible for the Outpatient Care Services infection control and environment of care oversight.
7. One full-time Manager of Quality Improvement Initiatives in Infection Prevention who provides oversight and organization of infection prevention efforts throughout the hospital.
8. One full-time compliance Specialist who performs visual compliance audits of evidence-based infection prevention practices and provides education to ensure compliance.
9. The administrative staff includes an Associate Director who manages and participates in the day-to-day functions and supervises the staff, a Director and Medical Director who participate in prevention activities and oversees the Hospital Epidemiology staff.

D. Program Responsibilities

1. *Definitions of healthcare-associated infections for surveillance purposes, for uniform identification and reporting of healthcare-associated infections and to determine healthcare-associated infection rates.* These definitions are based upon CDC criteria for healthcare-associated infections and available on the CDC National Healthcare Safety Network website.
2. *Annual healthcare-associated infection risk assessment including a multidrug*-resistant organism *risk assessment with trend analysis*. *The annual risk assessment is used to develop an annual Infection Control Plan.*

3. *A system for evaluating, reporting, and maintaining records of healthcare-associated infections among patients*. Using a commercial software program (Theradoc) designed for infection prevention surveillance and supported by ISD. Data are collected, analyzed for trends, benchmarked with the National Healthcare Safety Network (NHSN) data if applicable, and used to identify methods of performance improvement. These data are shared with the Hospital Infection Control Committee, service directors, nurse managers, and Performance Improvement who periodically reports this information to the Board of Directors.
4. *Ongoing review and evaluation of written policies and procedures that outline prevention and control mechanisms in all patient care and service areas*. The policies and procedures are based upon professional guidelines, applicable laws and regulations, and are evidence-based. The policies address prevention of transmission of infection among patients, employees, medical staff, contractors, volunteers, visitors and environmental issues. Policies are reviewed and approved within a three year period with the exception of the Bloodborne Pathogens Exposure Control Plan, Tuberculosis Control Plan, and the Infection Control Plan which are reviewed annually. Policies are updated more frequently if indicated by need, new guidelines or regulations. The Infection Control Plan and all infection control policies can be found on the Hospitals' intranet accessible either through the Department Infection Control website or through Policies. This site is used to provide current policy information for all employees at all times. Hospital Epidemiology staff have hard copy manuals in the event of computer/communication failures.
5. *Assessment of compliance with infection prevention policies and procedures through periodic surveys/rounds of inpatient units, procedure areas, and clinics.*
6. *Direct input into the content and scope and administration of the Occupational Health Program including an Occupational Health Service Infection Control Policy based upon the most recent CDC recommendations.*
7. *Orientation of all new employees and volunteers as to the importance of infection control and their responsibility in the prevention of infection*.
8. *Educational programs for current employees and volunteers to ensure competent infection control practices (with emphasis on the importance of and indications for hand hygiene).* Education is provided through a variety of methods to address the learning needs of the adult learner. These methods include "train the trainer" sessions, scheduled inservices, videos, posters, self-instructional materials, websites, computer-based self-tutorials, and newsletters. Educational programs are based upon practice or knowledge deficits identified through infection control rounds, supervisor requests, and everyday activities of the infection control staff. Learning objectives are designed to address the identified knowledge deficits and are based upon current guidelines, regulations, infection control policies and other important issues (e.g., antibiotic-resistant organisms). Ongoing educational programs include an Infection Control Liaison Program, , High Level Disinfection Training, and the North Carolina Administrative Code (NCAC).0206 Compliance Program.
9. *Reporting of information about patient/employee infections, as appropriate, to designated staff within the hospitals and to public health agencies for purposes of communicable disease control.* Hospital Epidemiology interacts with the local health department regarding infectious disease contacts that may need immediate community follow-up (e.g., tuberculosis, pertussis) and assists the health department with confirming cases that may have received care in the hospitals or clinics. Reportable diseases are those identified by the North Carolina Public Health Department and are listed in the Administrative Policy: Reporting of Communicable Diseases. Hospital Epidemiology works with Occupational

Health to evaluate employee infectious disease exposure and ensure appropriate management. Guidelines for this activity are included in Appendix 2.

10. *Providing Information to referring health care facilities of a healthcare-associated infection that is not known at the time of referral or transfer.*
11. *Expertise and authority to manage an influx or anticipated influx of patients as a result of a bioterrorism event or infectious disease public health crisis*.
12. *Expertise to the Product Management Committee on infection prevention related products or issues with new products*.
13. *Monitoring of the environment routinely and as indicated in an outbreak setting.*
14. *Consultation and support for clinical research activities.*

When infection data are used for any purpose other than internal performance improvement, the following requirements must be met by the principal investigator:

a. All research must comply with UNCHC guidelines on HIPAA and University guidelines on human subject research.
b. Anyone using Hospital Epidemiology (HE) data must have approval of the Director of Surveillance or the departmental Director, Medical Director, or Associate Director prior to receiving the dataset.
c. HE must review and approve an outline of the proposed research that includes: goals, hypothesis, predictors, and outcomes.
d. All abstracts using HE data must be reviewed prior to submission. All papers using HE data must be reviewed prior to submission. All conclusions must be supported by the research data.
e. Appropriate credit should be given to any HE member who participates in the research.
f. All research must be conducted with the highest scientific and ethical standards. Unless these standards are met, approval will not be given for dissemination of the data by any means (e.g., electronic, abstract, poster, peer-reviewed publication).

E. Hospital Infections Surveillance System

UNC Health Care surveillance is a comprehensive program that includes all inpatient and outpatient services, Home Health and Hospice and is conducted on a continual basis. Device-associated infections are calculated for ventilator-associated pneumonia, central line-associated primary bloodstream infection and catheter-associated urinary tract infections. Procedure-related infection rates are calculated for surgery types as specified by the CDC NHSN criteria. The data are collected and statistical analysis is completed to determine rates of healthcare-associated infection, identify trends, benchmark with NHSN, and used to identify practice improvements that may contribute to infection prevention. The protocol is as follows:

1. Investigation is initiated for any patient who has a positive microbiology culture suggestive of a healthcare-associated infection. Positive laboratory results are displayed in real-time on Theradoc. Hospital Epidemiology staff are also notified about patients with suspected healthcare-associated infections by health care staff. Home Health and Hospice related infections are reported by a faxed report form for each suspected infection. Criteria for infections and mechanisms are described in the Home Health and Hospice Infection Control Policy
2. On the basis of medical record review a decision is made as to whether or not infection is present using Centers for Disease Control and Prevention (CDC) strict criteria for healthcare-associated infections.

3. If a definite infection is present per the CDC surveillance criteria, this is documented using a standard case report form and the infection is classified as healthcare-associated.
4. Pertinent information for infection is obtained and recorded on an infection form within TheraDoc. This information includes name, hospital unit number, age, sex, race, admitting date, service, location in the hospital at time of infection, attending physician, specific instrumentation procedures, diagnostic procedures, medical and surgical treatments, identity of infecting organism, results of antibiotic sensitivity tests, and other pertinent characteristics of the infection.
5. Information collected on the data collection form in TheraDoc is reviewed by the Associate Director to determine that the necessary information has been obtained to support the diagnosis of a healthcare-associated infection. The Associate Director and/or IP consult with the Medical Director as needed for complicated or questionable infections. Complicated and questionable infections are also submitted to CDC NHSN for their determination of whether criteria are satisfied.
6. Additional clinical or laboratory data will be obtained when necessary.
7. Infection data are reviewed daily to identify problems that may need intervention prior to the monthly analysis.
8. Data are analyzed and reported to the Hospital Infection Control Committee (HICC) and to the chairs of all clinical departments and service lines. Infection rates, type of infection and organisms are reported to each inpatient area each month. Endemic rates of infections are monitored for all inpatient units and selected devices and procedures. Data are analyzed to identify effectiveness of prevention strategies and to detect the occurrence of any epidemic events. Surveillance for methicillin-resistant *S. aureus* (MRSA), vancomycin-resistant enterococcus (VRE), *C. difficile*, and other multidrug-resistant organisms (MDRO) of clinical relevance is evaluated as a percent of healthcare-associated infections caused by these organisms that were antibiotic resistant strains. An interpretation of the findings to include an assessment of cross-transmission, cluster of infections and relationship to confidence intervals is done by the Manager of Surveillance and the Medical Director and reported to the Infection Control Committee members. The IPs send a report of the monthly infections summary to the nurse managers and medical directors for each patient care unit. An explanation of the summary and recommendations for improvement is provided when indicated.
9. An investigation will be initiated whenever there is a potential healthcare-associated infection problem, such as when the incidence of infections is excessively high, a cluster of infections is detected, or a sentinel event is suspected. Definitive criteria do not exist which identify problems that require evaluation; however, the decision to investigate a potential problem will be made by the HICC or its designee (i.e., Director or Medical Director of Hospital Epidemiology). Statistical guidelines (e.g., 95% confidence intervals, statistical significance when comparing endemic and epidemic rates) will be used to establish general thresholds for concern. Additionally, certain infections are either so sufficiently important that the occurrence (e.g., group A streptococcus) of one or more healthcare-associated infections almost invariably suggest an infection problem and this may similarly call for an assessment. While each epidemiological study is different, the general approach that is used at UNCHC is described in several references (e.g., Wenzel, Bennett and Brachman). As part of the investigation, some carefully selected culture specimens may be obtained from persons or the inanimate environment. This will be done only in accordance with applicable law or regulation. The medical technologist in Hospital Epidemiology will assist with the collections and interpretation of the laboratory data.

10. Surveillance activities for employee-related infections are conducted by the Occupational Health Service. These activities include evaluation of clusters of infections and follow-up for infectious disease exposure related events. A quarterly report of employee exposures, prophylaxis provided, and occurrence of disease is provided to the Hospital Infection Control Committee.

F. Sentinel Events

Healthcare-associated infections are monitored for the occurrence of sentinel events. A sentinel event is defined as an unanticipated death or a major permanent loss of limb or function where the predominant cause was a healthcare-associated infection. Hospital Epidemiology follows the UNC Health Care Policy "Sentinel Events" and a department specific protocol for each investigation. This protocol is provided in Appendix 3. Each investigation will be conducted to identify a root cause and analysis from which an action plan will be formulated for performance improvement.

G. Quality Improvement Initiatives

The Hospital Epidemiology Department's Directors with input from the IPs, Manager for QI Initiatives, and Compliance Specialist are responsible for developing measures to identify, prevent, and control healthcare-associated infections. The Department, through its Manger for QI Initiatives and in collaboration with other quality groups, oversees hospital-wide committees to work toward infection-related goals (e.g., reductions in catheter-associated urinary tract infections, central line associated blood stream infections, surgical site infections, and *C. difficile* infections, and improved hand hygiene.) Department staff also co-leads or participate in unit and service line initiatives and periodic Lean Six Sigma improvement projects and monitor process measures related to overarching infection goals.

H. Program Objectives

The main objective is to monitor, evaluate and improve infection control practices related to patient care and employee exposure. The mechanisms by which this is accomplished include:

1. Comprehensive surveillance for healthcare-associated infections in all patient-care areas, surgical site infections, targeted healthcare-associated infections in Home Health patients (i.e., foley catheter related UTIs, central line-associated bacteremia,) and infections in outpatient areas.
2. Existing infection control policies are reviewed and new infection control policies are developed based on state, federal and CDC guidelines and scientific studies.
3. Hospital renovation and construction plans including a risk assessment are reviewed. Construction sites are visited every 2 weeks.
4. A periodic assessment (i.e., infection control rounds) of all patient-care areas is performed to determine compliance with infection control policies and procedures and identify areas for improvement.
5. Investigations of all healthcare-associated infection outbreaks are performed. Investigations are conducted using epidemiological methods and identification of infecting organism including genetic fingerprinting techniques. Infection control personnel have direct access to administrative, medical, and nursing personnel with authority to direct changes in policy and procedure if necessary to achieve immediate control of the outbreak. Outbreak management involves unit administrators and/or directors to achieve maximum effectiveness. Basic strategies to control outbreaks are instituted (e.g., isolation techniques, patient cohort) and amended as indicated by the investigation.

6. Infection control procedures relating to infection risk associated with the inanimate hospital environment are evaluated (e.g., Central Processing, Environmental Services, Nutrition and Food Services, Plant Engineering, Respiratory Therapy and Physical Therapy).
7. Identification and participation in sentinel event investigations in collaboration with Risk Management is performed for all healthcare-associated infection sentinel events.
8. Analysis of surveillance and monitoring data, actions taken to resolve problems and outcome of actions taken to improve patient care are reported to the HICC and applicable clinical staff (e.g., department chair, nurse managers). These infection data provide a continuous measure of the success of interventions and need for modifications of practice.
9. Evaluation of HCP-related infections is monitored for clusters of infections as well as for compliance with the Occupational Health Service Infection Control Policy. Immunity to the following vaccine preventable diseases is required: measles, mumps, rubella, pertussis, and varicella. Hepatitis B vaccine is provided for HCP at risk of exposure to bloodborne pathogens. Tdap is provided to all new HCP. The influenza vaccine is also provided to all HCP and is an annual condition of employment. Immunity to the following diseases is required (unless contraindicated): Mumps, measles, rubella, and varicella. Other vaccines may be offered at the discretion of the Medical Director and Director of Occupational Health. These vaccines are provided to both protect the health of the provider and to prevent transmission of disease from the infected healthcare provider to susceptible patients. All vaccines are free of charge and offered at convenient hours by the Occupational Health Service (OHS). Vaccine status of HCP is monitored by OHS and trends in compliance followed for identification of performance improvement.

I. Department Staff Meetings

These meetings are held weekly.

- Review ongoing surveillance activities and discuss infection problems/issues
- Assess identified problems, assign responsible persons to evaluate problem, recommend corrective action and conduct outcome follow-up
- Disseminate minutes to Hospital Epidemiology staff for review

J. Hospital Infection Control Committee Meetings

These meetings are held monthly except for November.

- Assess healthcare-associated infections data and other ongoing monitoring activities.
- Review occupationally-acquired infections in employees.
- Review and approve infection control policies.
- Evaluate and summarize reports of infection control rounds and surveys conducted in patient care areas.
- Discuss problems, recommend actions and follow-up.
- Review federal and state infection control regulations (e.g., OSHA) and guidelines (CDC) and develop plans to achieve compliance.
- Submit minutes to HICC members.

K. Special Studies Associated with Prevention of Healthcare-Associated Pneumonia

- Legionella: investigation will proceed if a laboratory confirmed case of healthcare-associated Legionnaires disease is identified please refer to Appendix 5. Prevention strategies for

Legionellosis and other waterborne pathogens are addressed in the Plant Engineering and Maintenance Infection Control Policy IC0045.

- Aspergillosis and other environmental fungal infections: each case will be assessed and an investigation conducted if there is a suspicion of environmental exposure within the Hospitals.

L. Special Problem-Focused Studies/Outbreak Management

Special problem-focused studies to include personnel or environmental sampling will be performed as deemed necessary by:

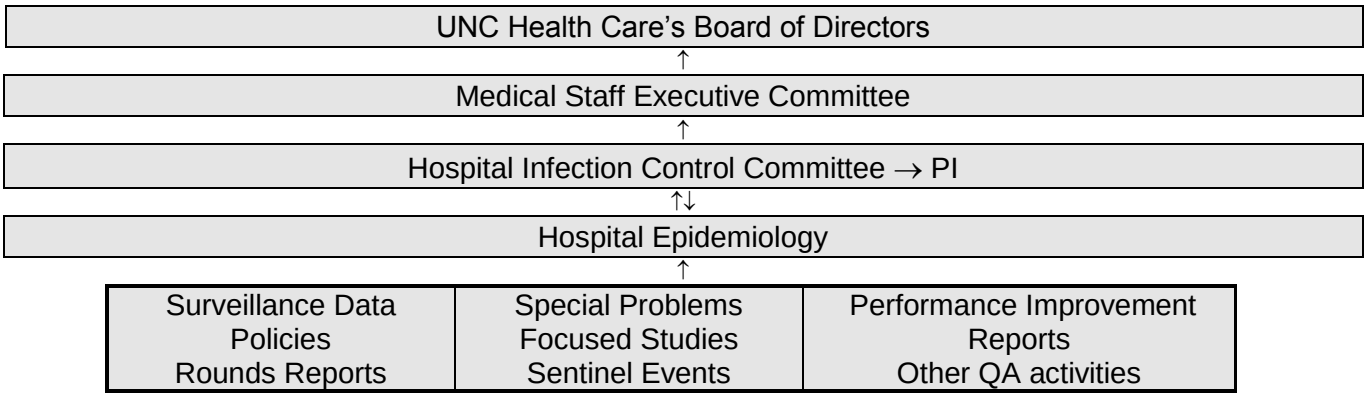
- The Director, Associated Director or Medical Director of Hospital Epidemiology or their designee and/or
- Hospital Infection Control Committee review and/or
- Results of the weekly Departmental Staff Meeting

Assessment will be completed and an action plan will be developed and implemented if indicated for performance improvement. Documentation of the study will be presented to the Hospital Infection Control Committee and a copy will be sent to the PI Department.

M. Additional Monitoring Activities

- Appropriate microbiological surveillance of the hospital environment (e.g., biological monitoring of sterilizers, culturing respiratory therapy equipment, sterility testing of hospital-prepared pharmaceuticals) is performed.
- The performance of all sterilizing equipment throughout the healthcare system is monitored and reported to the Hospital Infection Control Committee on a quarterly basis.
- Infection control education is conducted throughout the health care system and is based in part on the results of the monitoring, evaluation and analysis of the surveillance activities, observations and investigational studies performed by the Hospital Epidemiology Department.

N. Communication



APPROVED BY THE HOSPITAL INFECTION CONTROL COMMITTEE

IV. Reviewed/Approved by

Hospital Infection Control Committee

V. Original Policy Date and Revisions

Revised on Jan 2005, Apr 2006, Sept 2008, Dec 2010, Dec 2013, Dec 2016, Oct 2017_{rev}

Appendix 1: Responsibility and Scope of Service

Surveillance

- Comprehensive surveillance for healthcare-associated infections and targeted surveillance for home health/hospice infections(laboratory based system)
- Calculation/distribution of monthly infection rates for each inpatient unit
- Ventilator-associated pneumonias quarterly for ICUs
- Central catheter-associated for all inpatient units
- Urinary catheter-associated UTIs reported quarterly for all inpatient units
- Procedure-related infection rates (e.g., CABGs, VP shunts, knew prosthesis, peripheral vascular bypass surgery, herniorrhaphy, laminectomy, craniotomy, etc.)
- Syndromic surveillance for community outbreaks and acts of bioterrorism

Surveillance

- Clinic reporting system for infections identified in outpatient facilities (not culture based)
- Periodic assessment of ambulatory surgery-related infections
- Sentinel event evaluations

In conjunction with OHS:

- Trendsur analysis of employee blood exposures annually
- Clusters of infections in health care staff
- Immunization coverage
- Annual trend analysis of communicable disease exposures

Committee Involvement

- Hospital Infection Control Committee
- Environmental Health and Safety Committee
- Personnel and Environmental Safety Subcommittee
- Antibiotic Management Subcommittee – P&T
- Medical Staff Executive Committee
- Product Management Committee and Quality Practice Committee
- ICU Advisory Improvement Committee
- UNC Medical Center Improvement Council
- Clinical Quality Management
- Professional Liability Advisory Committee
- Disaster Committee
- Needlestick Prevention Task Force
- Preventing Patient Harm Guiding Coalition

Microbiologic/Environmental Quality Control Assessments

- Respiratory Care equipment
- Sterilizer monitoring
- Compounded pharmaceuticals
- Blueprint review
- Preconstruction meetings
- Construction rounds bi-weekly
- Environmental rounds via Statewide Infection Control Program Course
- Infection control rounds: inpatient and outpatient facilities with trend analysis annually

Continuous Quality Improvement

- Use multi-disciplinary quality teams to work toward infection reduction goals
- Monitor process measures as part of quality improvement initiatives
- Periodic Lean Six Sigma improvement projects
- Collaboration with quality organizations hospital-wide on infection prevention measures

Consultation

- Policy development and review
- Infection Control website
- New products/devices
- Responding to customer needs by phone and email: service provided 24/7
- Resource for University and Student Health Services
- Liaison with State and county health departments
- Preparation for emerging pathogens/bioterrorist events and possible sudden influx of patients
- Resources for all health care facilities in NC

Outbreaks/Exposures

- Investigation and control interventions for cluster of infections
- Pulse field gel electrophoresis for identifying etiologic agent
- Environmental cultures when indicated
- Air sampling when indicated
- Communicable disease exposure evaluations and contact notifications
- Practice observations

Regulatory Compliance and Accreditation

- TJC
- CARF
- FACT
- OSHA Bloodborne Pathogens Rule
- OSHA Tuberculosis Compliance
- EPA Regulations
- DFS and other State Regulations
- CMS regulations

Education

- Unit-specific newsletters
- Inservice and presentations to staff, attending physicians, residents, contract employees, students, volunteers
- Media production (video, slides, web-based training, handouts, posters)
- Hospital Epidemiology staff continuing education
- Statewide Program for Infection Control and Prevention
- Departmental Safety Coordinator training for infection control
- Learning Management System programs for infection control
- Professional organizations
- Infection Control Liaisons

Appendix 2: Notification of Communicable Disease Exposure

Communicable diseases pose a threat in the hospital setting to patients, visitors, and healthcare providers. An important component of the Hospital Epidemiology program is to evaluate communicable disease exposures occurring within the health care system and to implement a plan of action specific to the disease. The purpose of these evaluations is to prevent secondary cases of illness, while maintaining a safe, healthy environment for patients, visitors and employees.

I. METHOD OF IDENTIFICATION OF COMMUNICABLE DISEASE

Infection Preventionists identify potential infectious disease exposures by reviewing daily microbiology culture results and by personal communication with McClendon Labs, healthcare personnel and public health departments. The medical record of the index case is reviewed for pertinent information, such as locations where the patient was housed, caregivers involved in the patient's care, and any ancillary services that were involved. Follow-up begins with the potentially exposed patients and/or employees, and may occasionally involve outside facilities such as emergency medical services or health departments.

Infectious disease exposure evaluations are performed using a systematic approach. The Epidemiology staff conducts the case and contact investigation and Occupational Health Services validates any employee exposure and provides appropriate prophylaxis as well as any additional follow-up that may be indicated. For patient exposure, the Epidemiology Medical Director and assigned IP notify the patient's attending physician and/or the public health department (see Appendix 4) of the exposure and provide recommendations for follow-up care. If indicated, direct patient notification of exposure accompanied by notification of the attending physician is conducted.

II. EXPOSURE PROTOCOLS FOR SPECIFIC COMMUNICABLE DISEASES

MTB

Healthcare worker, patient and visitor exposure is defined as meeting one of the criteria below when a patient is known to have active infection with *M. tuberculosis* (pulmonary, laryngeal, open wound). If an evaluation of exposed HCWs reveals TST conversion, or if the patient has an MDR, or XDR TB, less intensively exposed persons will be evaluated as determined by the Occupational Health Provider. Exposed patients will be evaluated by their attending physician and exposed visitors and outpatients will be referred to the local health department.

Exposure criteria:

1. Healthcare workers without a mask who were exposed during a cough-inducing procedure.
2. Healthcare workers without a mask who cared for the patient in the following environments:
    - ≥ 4 hour**s** in a small poorly ventilated space
    - ≥ 8 hours in a small well ventilated space
    - ≥ 12 cumulative hours in a classroom-sized space

- ≥ 50 cumulative hours in a large open area
- Exposure to MDR/XDR TB: As per the Medical Director of Hospital Epidemiology.

Pertussis
Exposure is defined as direct contact with a patient, such as holding or suctioning a .patient or sharing confined airspace for > 1 hour.

Meningococcal Meningitis
Exposure is defined as close contact to an infected patient with exposure to respiratory secretions such as mouth to mouth resuscitation, endotracheal intubation or endotracheal tube management. Non-direct contact (e.g., being in the same room, taking a history) unless close enough to have been directly exposed to respiratory secretions does not constitute and exposure.

Varicella
Exposure is defined as having physical ungloved contact with vesicles, being in close proximity to an infectious person for several minutes or more or in an enclosed airspace with an infectious person for a period of time.

Rubella
Exposure is defined as having contact with respiratory secretions of an infectious person or being in close proximity (within 3-6 feet to an infectious person for several minutes or more or in the same-room proximity to an infectious person for an hour or more. *Infants with congenital rubella Syndrome secrete the virus via urine.

Syphilis
Exposure may occur by

- contact with blood or body fluids of an infected patient,
- transmitted though intact skin via contact with a primary or secondary skin lesions on an infected patient o
- employee has handled an infected newborn without gloves prior to infants first bathed or have not received appropriate antimicrobial therapy for 24 hours.

Parvo-B19
Exposure should include close person to person contact with the infected person without wearing a mask, or contact with respiratory secretions from an infected person or items contaminated with the infected persons secretions without wearing gloves.

Lice/Scabies
Exposure can be defined as prolonged close personal contact with the infected person, such as holding the infected person and touching the affected area without wearing gloves. HCWs determined to have been exposed to lice/scabies should be counseled to report to their OHS if they experience symptoms.

MERS-CoV (working definition as of 6/4/14)
CDC does not have specific guidance at this time regarding what constitutes “exposure” in healthcare settings. In the IN and FL investigations, they classified HCP as having had exposure with a case if they had been in the patient’s room; had face-to-face contact; or been within 6 feet for any duration while not using appropriate PPE.

Other communicable diseases that are not addressed in this policy occasionally present within the healthcare system. When performing an exposure evaluation, IPs consult the Medical Director of Hospital Epidemiology/Occupational Health and the latest reference materials for exposure follow up on these communicable diseases.

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Appendix 3: Healthcare-Associated Infection Sentinel Events

Standard: Unanticipated Death, Major Permanent Loss of Function Associated with Healthcare-Associated Infection

Healthcare-associated Infection Resulted in a Patient's Death/Permanent Loss of Function
(e.g., death associated with*, Legionella*, RSV)
↓
↓
Outbreak Investigation, if indicated
↓
↓
Hospital Epidemiology Review ← patient record review
↓
↓
If meets criteria, then report to Risk Management (RM) via PORS
↓
↓
Root Cause Analysis by Interdisciplinary Team per RM
(Staff most directly involved in the event develops improvement action plans)
↓
↓
Action Plan follow-up and reports completed by Risk Management

Appendix 4: Management of Communicable Disease Exposures at UNC Health Care - Contact of Exposed Persons Who Are Not Inpatients of UNC Hospitals

A. This policy pertains to the following populations:
- Visitors
- Outpatients
- Discharged patients

B. This policy pertains only to exposures for which post-exposure prophylaxis (e.g., pertussis) or diagnostic testing (e.g., TB skin test) is recommended.

C. Procedure

In the event of a demonstrated exposure within a UNC Health Care facility Hospital Epidemiology will take the following steps:

1. Hospital Epidemiology staff will generate a list of potentially exposed persons. For some exposure events, it may be not be possible to accurately identify all potentially exposed individuals (e.g., visitors). The list will include name, unit number when available, and contact information.
2. A letter describing the exposure and recommended follow-up guidance (when appropriate, determined in consultation with local health department and in accordance with NC General Statute's 130A-144) will be generated by Hospital Epidemiology and mailed to all exposed persons or for diseases with short incubation period contact will be via phone (e.g., meningococcal meningitis).
3. When possible, NC local health departments (HD) will be contacted and provided information regarding the exposure event along with a list of exposed persons in their county. The HD will be asked to contact exposed persons and provide post-exposure prophylaxis as per HD policy (NC General Statute's 130A-144).
4. Hospital Epidemiology will consult with Risk Management, Patient Relations, and Public Affairs as needed.
5. When indicated, Hospital Epidemiology will also contact the patient's UNC medical provider.

D. In the event that post-exposure prophylaxis is indicated but cannot be provided by the HD, Hospital Epidemiology will facilitate contact of patients through the appropriate UNC Health Care medical service and recommend care via UNC Hospital personnel or the exposed person's local medical provider.

Appendix 5: Prevention and Control of Healthcare-Associated Legionnaires Disease: Procedures for Infection Surveillance and Interventions for Cases of *Legionella* Based on CDC Pneumonia Prevention Guideline

A. Infection Control and Surveillance
   1. Routine culturing of water systems for *Legionella* spp.
      a. UNC will not routinely culturing water systems for *Legionella* spp.
   2. Culturing of patients
      a. Standard procedure in the UNC Hospitals' Microbiology Laboratory is to obtain cultures for *Legionella* spp. from all sputum samples obtained via bronchoscopy or by physician order.
      b. Urine *Legionella* testing is available via a physician's order

B. Use and Care of Medical Devices, Equipment, and Environment
   1. Nebulizers and other devices: Follow guidance contained in Respiratory Care Department Infection Control Policy 0057.

C. SECONDARY PREVENTION:

   Response to identification of laboratory-confirmed healthcare-associated Legionellosis in a hospital location with severely immunocompromised patients: When one inpatient of an HSCT or solid-organ transplant unit develops a case of laboratory-confirmed definite (i.e., after >10 days of continuous inpatient stay) or possible (i.e., within 2-9 days of inpatient stay) health-care-associated Legionnaires disease, or when two or more patients develop laboratory-confirmed Legionnaires disease within 6 months of each other and after having visited an outpatient transplant unit during part of the 2-10 day period before illness onset, Hospital Epidemiology

   a. Contact the local and/or state health department
   b. Conduct a combined epidemiologic and environmental investigation to determine the source(s) of Legionella spp. including but not limiting the investigation to such potential sources as showers, water faucets, cooling towers, hot-water tanks, and carpet-cleaner water tanks. On its identification, decontaminate or remove the source of *Legionella* spp.
   c. If the health-care facility's potable water system is found to be the source of *Legionella* spp., UNC will avoid the use of the facility's potable water by recipients of HSCT or solid-organ transplants; and decontaminate the water supply.
   d. UNC will not conduct an extensive facility investigation when an isolated case of possible health-care-associated Legionnaires disease occurs in a patient who has had little contact with the inpatient transplant unit during most of the incubation period of the disease.
   e. If no evidence of continued nosocomial transmission exists, continue the intensive prospective surveillance for cases for >2 months after surveillance is begun.
   f. If evidence of continued transmission exists:
      i. Conduct an environmental investigation to determine the source(s) of *Legionella* spp. by collecting water samples from potential sources of aerosolized water and saving

and subtyping isolates of *Legionella* spp. obtained from patients and the environment.

ii. If a source is not identified, continue surveillance for new cases for >2 months and, depending on the scope of the outbreak, decide to either defer decontamination pending identification of the source(s) of *Legionella* spp. or proceed with decontamination of the hospital's water distribution system, with special attention to the specific hospital areas involved in the outbreak.

iii. If a source of infection is identified by the epidemiologic and environmental investigations, promptly decontaminate the source.

iv. Assess the efficacy of implemented measures in reducing or eliminating *Legionella* spp. by collecting specimens for culture at 2-week intervals for 3 months
   - If *Legionella* spp. are not detected in cultures during 3 months of monitoring at 2-week intervals, collect cultures monthly for another 3 months.
   - If *Legionella* spp. are detected in one or more cultures, reassess the implemented control measures, modify them accordingly, and repeat decontamination procedures. Options for repeat decontamination include the intensive use of the same technique used for the initial decontamination, or a combination of superheating and hyperchlorination.

v. Keep adequate records of all infection control measures, including maintenance procedures, and of environmental test results for cooling towers and potable-water systems

Reference:

https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm