DEVELOPMENT OF AN INFECTION CONTROL PROGRAM FOR LONG-TERM CARE FACILITIES

Evelyn Cook, RN, CIC
Associate Director
Objectives

1. Describe the problem of healthcare associated infections in LTCFs
2. List the factors contributing to infections in the elderly
3. Describe regulatory factors impacting LTCFs
4. Describe the components of a LTCF infection prevention program
5. Discuss water management plan
Part of the Problem

- Infection Prevention and Control (IPC) programs are inadequately staffed, as much as four-fold less than their acute care hospital counterparts
- IPs wear multiple hats
- Less than 10% have specialized training
- Difference in social environment
- Populations in LTCFs are heterogeneous

_Council of State and Territorial Epidemiologists (CSTE): Recommendations for Surveillance and Reporting of Healthcare-Associated Infections in Long Term Care Facilities_
Long-term Care Facilities

- Nursing homes, skilled nursing facilities, and assisted living facilities
- Provide a variety of services both medical and personal
- Over 4 million Americans admitted to/reside in nursing and skilled facilities
- Nearly 1 million in assisted living facilities
Healthcare associated infections (HAI)  
Long Term Care Facilities (LTCFs)  

• Limited data  
• 1 – 3 million serious infections annually  
• Infections include:  
  – UTI, diarrheal disease, antibiotic-resistant staph infection and others  
• Major cause of hospitalization  
• 380,000 die of infections in LTCFs annually
Healthcare associated infections (HAI) long term care Facilities (LTCFs)

• Account for 26% of all serious adverse events
• 59% deemed preventable
• Among the most frequent causes of transfer to acute care hospitals and 30-day hospital readmissions.
• Cost of infection-related hospitalizations was estimated to be $83 million in single month

*OIG. Adverse Events in Skilled Nursing Facilities: National Incidence Among Medicare Beneficiaries, OEI-06-11-00370, February 2014*
Healthcare-associated infections in U.S. nursing homes

- Pilot study done in nine (9) nursing homes
- Four (4) states
- Nursing homes >120 beds
- Findings presented at Council of State and Territorial Epidemiologist (CSTE) annual conference (6/16/2015)

<table>
<thead>
<tr>
<th></th>
<th>Prevalence Per 100 Residents</th>
<th># of Infections (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>5.3</td>
<td>70</td>
</tr>
<tr>
<td>G.I</td>
<td>2.0</td>
<td>26</td>
</tr>
<tr>
<td>SST</td>
<td>1.7</td>
<td>21</td>
</tr>
<tr>
<td>Respiratory</td>
<td>1.3</td>
<td>16</td>
</tr>
<tr>
<td>UTI</td>
<td>0.5</td>
<td>6</td>
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<tr>
<td>Other</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>BSI</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
NHSN Long-term Care Facility Component Early Reporting Experience
January 2013-December 2015

• 279 Long term care facilities were enrolled and eligible to report

• Crude rate pooled estimates
  – 0.98 Incident LTCF-onset CDI cases per 10,000 resident days
  – 0.59 UTI cases per 1,000 resident days
  – 0.10 LTCF-onset MRSA cases per 1,000 resident days

AJIC 46 Issue 6 (June 2018) 637-42
Outbreaks in Long-Term Care Facilities

- Carbapenem-Resistant Klebsiella pneumoniae Associated with a Long-Term Care Facility – West Virginia, 2009-2011
- Investigation of a Prolonged Group A Streptococcal Outbreak Among Residents of a Skilled Nursing Facility, Georgia, 2009-2012
- Invasive Group A Streptococcus in a Skilled Nursing Facility – Pennsylvania, 2009-2010
- Transmission of Hepatitis B Virus among Persons Undergoing Blood Glucose Monitoring in Long-Term Care Facilities – Mississippi, North Carolina, and Los Angeles County, California, 2003-2004
- Hospitalizations and Mortality Associated With Norovirus Outbreaks in Nursing Homes, 2009-2010
- Outbreaks of Human Metapneumovirus in Two Skilled Nursing Facilities – West Virginia and Idaho, 2011-2012
- Mycoplasma pneumoniae Outbreak in a Long-Term Care Facility – Nebraska, 2014
- Outbreaks of 2009 Pandemic Influenza A (H1N1) among Long-Term Care Facility Residents – Three States, 2009
Elements Required for an infection

- Chain of Infection:
  - Infectious agent
  - Reservoir
  - Portal of Exit
  - Portal of Entry
  - **Means of Transmission**
  - Susceptible host

- All of these factors are present in LTCFs
- Almost as many HAIs occur annually in LTCFs as acute care hospitals in the US
Specific Infections in LTCFs

Urinary Track (? #1)
(accounts for 30% of hospital readmissions within 30 days)

Respiratory Tract
(Pneumonia 5th leading cause of death age > 65)

Skin and soft tissue
Specific Infection in LTCFs

- Gastroenteritis (*Clostridioides difficile*, norovirus)
- Conjunctivitis
- Bacteremia (50% related to UTI)
Specific Infections in LTCFs

Antibiotic Resistant Bacteria

- MRSA
- VRE
- Resistant S. pneumoniae
- MDRO gram-negative bacteria

Pseudomonas aeruginosa
Acinetobacter spp.
ESBL Producers
Carbapenem resistant Enterobacteriaceae
Transmission of Hepatitis B Virus Among Persons Undergoing Blood Glucose Monitoring in Long-Term--Care Facilities --- Mississippi, North Carolina, and Los Angeles County, California, 2003--2004

Regular monitoring of blood glucose levels is an important component of routine diabetes care (1). Capillary blood is typically sampled with the use of a fingerstick device and tested with a portable glucometer. Because of outbreaks of hepatitis B virus (HBV) infections associated with glucose monitoring, CDC and the Food and Drug Administration (FDA) have recommended since 1990 that fingerstick devices be restricted to individual use (2,3). This report describes three recent outbreaks of HBV infection among residents in long-term--care (LTC) facilities that were attributed to shared devices and other breaks in infection-control practices related to blood glucose monitoring. Findings from these investigations and previous reports suggest that recommendations concerning standard precautions and the reuse of fingerstick devices have not been adhered to or enforced consistently in LTC settings (2--5). The findings underscore the need for education, training, adherence to standard precautions, and specific infection-control recommendations targeting diabetes-care procedures in LTC settings (4--6) (Box 1).
Blood Glucose Monitoring and Risks for Bloodborne Pathogen Transmission

Photo courtesy of the Statewide Program for Infection Control and Epidemiology (SPICE) at the University of North Carolina
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Contributing Factors

LCTFs are different from other healthcare settings in that elderly patients at increased risk for infection, are brought together in one setting and remain in the facility for extended periods of time; for most residents, it is their home.
Resident Factors Contributing to infections

- Medications affecting resistance to infection (corticosteroids and chemotherapy)
- Limited physiologic reserve
- Compromised host defenses (cough reflex, thinning skin, decreased tear production and immune dysfunction)
- Coexisting chronic diseases
- Complications from invasive diagnostic procedures
- Impaired responses to infection
- Increased frequency of therapeutic toxicity (declining liver and kidney function)
Additional Contributing Factors

➢ Nurse (staff turnover)

➢ Published data on overall high employee turnover rates in LTC facilities; 2011 data from the Quality Long Term Care Commission showed the following turnover rates:
  ➢ Administrators, 3 percent
  ➢ Director of nursing, 39 percent
  ➢ RNs, 50 percent
  ➢ LPNs, 49 percent and
  ➢ CNAs, 71 percent
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Regulatory and/or Accrediting Agencies

- OSHA (Occupational Safety and Health Administration)
- OBRA (Omnibus Budget Reconciliation Act)
- CMS
- TJC (The Joint Commission)
Regulatory Responsibilities

- **OSHA** is responsible for employees/healthcare workers
  NOT patients

- **CMS/DHSSR** is responsible for patients
  NOT healthcare workers
Regulatory Focus - OSHA

- Occupational Exposure to Bloodborne Pathogens: Final Rule, December 6, 1991
- Occupational Injury and Illness Recording and Reporting Requirements; Final Rule, January 19, 2001
- CPL 2-2.69 Subject: Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens, Nov 27, 2001
State Regulations Impacting LTCFs

• Rules Governing the Sanitation of Hospitals, Nursing and Rest Homes, Sanitariums, Sanitoriums and Other Institutions - 15A NCAC 18A .1300
• NC Communicable Disease Rule 10A NCAC 41A .0206.
• NC Rules for the Licensing of Nursing Homes and Beds in Homes for the Aged Licensed as Part of a Nursing Home
Federal Regulations and Standards That Govern LTCFs

• Federal regulations specific to all LTCF. The Federal Omnibus Budget Reconciliation Act of 1987 (OBRA): Subtitle C - Nursing Home Reform includes changes in LTCF management and provision of services which include or impact infection control including:
  • Requirement for sanitation,
  • infection control, and
  • physical environment
• Five areas of targeted focus and goals:
  • NHSN enrollment
    • *Goal:* 5% of CNHs within 5 years period of launch of NHSN module
  • Urinary Tract Infections/CAUTIs
    • *Goal:* Pilot reporting to NHSN, evaluate variability, and obtain consensus on measurable five-year goal.
  • *Clostridium difficile* infection (CDI)
    • *Goal:* Pilot reporting to NHSN, evaluate variability, and obtain consensus on measurable five-year goal.
  • Resident influenza and pneumococcal vaccination
    • *Goal:* 85% vaccinated with 5 years
  • Healthcare personnel influenza vaccination
    • *Goal:* In alignment with the previous Influenza Vaccination of HCP chapter, 75% of HCP in long-term care receive the seasonal influenza vaccination by 2015.

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LTCF Infection Prevention Program

- An active, effective, facility-wide infection prevention program should be established in the LTCF (Cat 1C).
  - The Purpose of the program is to reduce the risk of development and spread of infectious disease
  - The IP Program must comply with federal, state and local regulations (Cat 1C)
SHEA/APIC guideline: 
*infection prevention and control in the long-term care facility*

- In this document, as in several published HICPAC, SHEA, and APIC guidelines, each recommendation is categorized based on existing scientific evidence, theoretical rationale, applicability, and national or state regulations

*Healthcare Infection Control Practices Advisory Committee (HICPAC)*
*Society Healthcare Epidemiology of America (SHEA)*
*Association for Professionals in Infection Control and Epidemiology (APIC)*

*Smith et al; AJIC September 2008*
Categorization of Recommendations

- Category IA: Strongly recommended and strongly supported
- Category IB: Strongly recommended with some support
- Category IC: Required by law/regulation
- Category II: Recommended for implementation
- No Recommendation: Unresolved issues
Core Infection Prevention and Control Practices for Safe Healthcare Delivery in ALL Settings

- Healthcare Infection Control Practices Advisory Committee (HIPAC) is a federal advisory committee
- Provides advice and guidance to CDC regarding the practice of infection prevention/control
- March 2013 CDC charged HIPAC to review all guidelines and identify recommendations that warrant inclusion as core practices.
What are the Core Infection Prevention Practices?

- Leadership Support
- Education and Training of Healthcare Personnel on Infection Prevention
- Patient, Family and Caregiver Education
- Performance Monitoring and Feedback
- Standard Precautions
- Transmission-Based Precautions
- Temporary Invasive Medical Devices for Clinical Management
- Occupational Health

Core Practice: Leadership Support

• Infection prevention programs require visible and tangible support from all levels of leadership
  – Ensure the Governing body (Board of directors, Administration) is accountable for the success of infection prevention activities
  – Allocate enough human and material resources (e.g., personnel, space, equipment, supplies)
  – Assign qualified individuals with relevant training to manage the program (e.g., course, certification)
  – Empower and support for those managing the program (e.g., authority, continuing education)
  • Authority statement included in the written program
Administrative Structure (Committee)

- Oversight of the IP program should be defined and should include participation of the IP, administration, nursing staff, and physician staff (Category II)
  - Meet on regular basis
  - Written minutes with action plans and recommendations
  - Evaluate effectiveness
  - Review of IP data
  - Approve policies and procedures
Infection Preventionist

- Collection and analysis of infection data
- Evaluation of products and procedures
- Development of policies
- Consultation
- Education
- Implementation of mandated changes
- Application of epidemiologic principles
- Antimicrobial management
- Research
- High quality services in a cost-efficient manner
Infection Control Hours

- Is the time given to the IP adequate for the size of the facility, acuity of the residents, and types of procedures and treatment?
- No specific amount of time has been researched to be ideal; the following guideline has been developed based on experience.

<table>
<thead>
<tr>
<th>No of beds week for IC</th>
<th>Hours per</th>
</tr>
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<tbody>
<tr>
<td>1-50</td>
<td>8</td>
</tr>
<tr>
<td>51-100</td>
<td>16</td>
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<tr>
<td>101-150</td>
<td>24</td>
</tr>
<tr>
<td>151-200</td>
<td>32</td>
</tr>
<tr>
<td>more than 200</td>
<td>40</td>
</tr>
</tbody>
</table>

Ref: Mark JF, APIC LTCF Newsletter, 1995, vol 6, no 1
Infection Control Hours

*Federal Registers/CMS*

- **October 2016:**
  - Require that the IP work at least part time in the facility

- **July 2019:**
  - Require that the facility must ensure that the IP has sufficient time at the facility to meet the objectives of its IPCP.
Surveillance in LTCF

- The LTCF should have a system for ongoing collection of data on infections in the institution (Cat IC)
  - Process and/or Outcome Surveillance
  - Standardized Definitions
  - Surveillance tools
  - Analyzing those healthcare associated (facility-acquired) infections
Assess

Select outcome or process

Collect data

Analyze

Risk Stratify

Report

Validate

Recommended Practices for Surveillance
INFECTION PREVENTION RISK ASSESSMENT

“Risk Assessment: How To” Slides:
Acknowledgement
Julie Hernandez
Infection Control Risk Assessment

Infection Control Risk Assessment

Priorities

Goals

Infection Control Plan
Risk Assessment Tips

• Proactive and prioritize risk or events
• Annually completed and/or revised during year as needed
• Team effort and approval by QAPI/QI
• Very subjective-no specific tool required
• Use historical data, staff feedback and regulatory requirements to begin
• Fundamental to Infection Prevention Plan
• Should be integrated into your overall facility wide risk assessment required by CMS (483.70)(e)

Living, breathing document
2 Types of Events/Risks

- **Community/External**
  - TB risk (HCP & residents)
  - Geographical area & environmental issues such as flooding, mudslides, hurricane, tornado, legionella, etc.
  - Population served & socioeconomic status such as retirement community, rural, low income, drug abuse, etc.
  - Regulatory - DHSR - OSHA

- **Facility specific/Internal**
  - Healthcare associated infections
  - Antibiotic stewardship/ MDROs
  - Exposure related events
  - HCP compliance
  - Resident/family
  - New services/construction
  - Procedures/devices
Determine Your Events

Scoring Each Event/Risk

- **Probability**: How likely is it to happen/occur?
- **Risk Level**: What degree of harm could occur; potential impact?
- **Change Needed**: Will treatment be needed for resident/staff?
- **Preparedness**: Are control measures in place, policies written, staff educated?

**Final Risk Level**

- Determine by adding score from each category (some tools multiply)
- Rank by top 3-5 highest scores to determine **priorities and goals**
Important:
Review year-end data from previous year!

- **6** UTIs in 2017 per McGeer Criteria compared to **12** in 2016
- **1** healthcare acquired C. difficile in 2017 compared to **2** in 2016
- **2** needle stick exposures in 2017 compared to **5** in 2016
What are your opportunities?

- Norovirus outbreak with 25 HCP and 11 residents infected
- Staff Hand Hygiene compliance: 66% in 2017 (Goal = 90%)
- Employee influenza vaccination compliance: 40% in 2017
## TB RISK ASSESSMENT

TB Risk Assessment

• Reviewing number of cases
  – National ➔ State ➔ County ➔ Facility

• Determining your risk classification
  – Low
    • No TB cases; <200 beds & < 3 active TB cases; >200 beds & <6 active TB cases
  – Medium
    • <200 beds & > 3 active TB cases; >200 beds & > 6 active TB cases
  – Potential Ongoing Transmission
    • Evidence of ongoing transmission in facility
North Carolina specific rules

S. Quick Reference for Tuberculin Skin Testing Requirements:

1. Tuberculin Skin Testing (TST) or IGRA (Interferon Gamma Release Assays) testing is required by communicable disease/TB rules for:

- household and other close contacts of active cases of pulmonary and laryngeal tuberculosis
  By: 10 A NCAC 41A .0205
  Frequency: at the time of exposure and 3 months post exposure
- persons reasonably suspected of having tuberculosis disease
  By: 10 A NCAC 41A .0205
  Frequency: when suspected
- inmates in the custody of the Department of Corrections
  By: 10 A NCAC 41A .0205; DOC policy
  Frequency: upon incarceration and annually
- Department of Correction employees with direct inmate contact
  By: 10A NCAC 41A .0205; OSHA; DOC policy
  Frequency: upon employment
- patients in long term care facilities
  By: 10A NCAC 41A .0205; 10A NCAC 13D .2202 & .2209
  Frequency: upon admission (two-step for TST or IGRA) & by risk assessment (DFS regulations require an annual screening which can be accomplished by a verbal elicitation of symptoms)
- long term care facility employees
  By: 10A NCAC 41A .0205; 10A NCAC 13D .2202 & .2209; OSHA
  Frequency: upon employment (two-step for TST or IGRA) & by risk assessment (DFS regulations require an annual screening which can be accomplished by a verbal elicitation of symptoms)
- employees of adult day care centers providing care for persons with HIV infection or AIDS
North Carolina specific rules

10A NCAC 41A.0205

• A 2-step TST or IGRA must be performed on all new residents.

Exceptions

• If the resident is being admitted directly from another hospital, licensed nursing home/adult care home in NC AND there is documentation of a 2-step skin test or single IGRA test
  → NO need to re-test

• A single TST or IGRA in the following situations
  – Person has ever had a 2-step skin test
  – Person has had a single skin test within the last twelve months
TB Screening, Testing and Treatment of U.S. Health Care Personnel
(CDC Recommendations 2019)

• Since 1991 U.S. TB rates declined
• Serial TB testing has limitations in populations at low risk
• Recommendations for HCP screening, testing, treatment and education updated
• Other recommendations, i.e., facility risk assessments for guiding IC policies and procedures unchanged.
<table>
<thead>
<tr>
<th>Category</th>
<th>2005 Recommendation</th>
<th>2019 Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline (preplacement) screening and testing</td>
<td>TB screening of all HCP, including a symptom evaluation and test (IGRA or TST) for those without documented prior TB disease or LTBI.</td>
<td>TB screening of all HCP, including a symptom evaluation and test (IGRA or TST) for those without documented prior TB disease or LTBI (unchanged); individual TB risk assessment (new).</td>
</tr>
<tr>
<td>Postexposure screening and testing</td>
<td>Symptom evaluation for all HCP when an exposure is recognized. For HCP with a baseline negative TB test and no prior TB disease or LTBI, perform a test (IGRA or TST) when the exposure is identified. If that test is negative, do another test 8–10 weeks after the last exposure.</td>
<td>Symptom evaluation for all HCP when an exposure is recognized. For HCP with a baseline negative TB test and no prior TB disease or LTBI, perform a test (IGRA or TST) when the exposure is identified. If that test is negative, do another test 8–10 weeks after the last exposure (unchanged).</td>
</tr>
<tr>
<td>Serial screening and testing for HCP without LTBI</td>
<td>According to health care facility and setting risk assessment. Not recommended for HCP working in low-risk health care settings. Recommended for HCP working in medium-risk health care settings and settings with potential ongoing transmission.</td>
<td>Not routinely recommended (new); can consider for selected HCP groups (unchanged); recommend annual TB education for all HCP (unchanged), including information about TB exposure risks for all HCP (new emphasis).</td>
</tr>
<tr>
<td>Evaluation and treatment of positive test</td>
<td>Referral to determine whether LTBI treatment is indicated.</td>
<td>Treatment is encouraged for all HCP with untreated LTBI, unless medically contraindicated (new).</td>
</tr>
</tbody>
</table>
BOX. Indicators of risk* for tuberculosis (TB) at baseline health care personnel assessment†
Health care personnel should be considered to be at increased risk for TB if they answer “yes” to any of the following statements.

1. Temporary or permanent residence (for ≥1 month) in a country with a high TB rate (i.e., any country other than Australia, Canada, New Zealand, the United States, and those in western or northern Europe)

Or

2. Current or planned immunosuppression, including human immunodeficiency virus infection, receipt of an organ transplant, treatment with a TNF-alpha antagonist (e.g., infliximab, etanercept, or other), chronic steroids (equivalent of prednisone ≥15 mg/day for ≥1 month), or other immunosuppressive medication

Or

3. Close contact with someone who has had infectious TB disease since the last TB test

Abbreviation: TNF = tumor necrosis factor.


† Adapted from a tuberculosis risk assessment form developed by the California Department of Public Health.
Written policies and procedures

• Approved by the infection prevention committee (QAPI)
• Reviewed and/or revised on a regular basis *(don’t forget about contract services)*
  – CMS annual review
  – TJC every three years
• Facility wide policies
  – Hand hygiene
  – Transmission-based precautions
  – High level disinfection
• Department specific policies
  – Based on unique characteristics of the department (pharmacy, environmental services etc.,)
Recognizing and Containing Outbreaks

• An outbreak is typically one or more of the following:
  – One case of an infection that is highly communicable
  – Trends that are 10% higher than the historical rate of infection for the facility
  – Occurrence of three or more cases of the same infection over a specified length of time on the same unit or other defined areas

Guidance to Surveyors: Long-Term Facilities
Outbreak Control

- Surveillance data should be used to detect and prevent outbreaks in the LTCF (Cat IB/IC)
- State health departments offer guidance and regulations regarding responding to and reporting outbreaks (*NCDPH considers 2 or more cases an outbreak*)
- Policies and protocols for prevention and investigation need to be in place
- Prevent further transmission while considering the needs of all residents and staff
Resident Care

- Rooms should have accessible sink with soap, water towels and toilet facilities
- Skin care program
- Program to prevent UTIs
  - Routine UA/culture to screen not recommended
- Program to minimize the risk of pneumonia and LRTI (oral hygiene and pneumonia guidelines)
Resident Health

- A resident health program should be implemented
  - H&P on admission with immunization status
  - TB screening (2 step and CXR if positive)
  - Vaccine for tetanus, diphtheria, influenza, pertussis, pneumococcal pneumonia
  - Policies and procedures addressing visitors (when to limit)
§483.80(d) Influenza and Pneumococcal Immunizations

- Influenza: Facility must develop policies and procedures to ensure that:
  - Before offering, education provided
  - Offered between October 1-March 31 annually
  - Right to refuse
  - Documentation

- Pneumococcal disease: Facility must develop policies and procedures to ensure that:
  - Before offering, education provided
  - Offered unless already immunized or medically contraindicated
  - Right to refuse
  - Documentation
# Key Elements – Employee Health

<table>
<thead>
<tr>
<th>Immunize</th>
<th>Establish</th>
<th>Adhere</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunize against vaccine-preventable diseases</td>
<td>Establish sick leave policies that encourage:</td>
<td>Adhere to federal and state standards and directives applicable to protecting healthcare workers against transmission of infectious agents</td>
</tr>
<tr>
<td>• Hepatitis B</td>
<td>• Healthcare personnel to stay home when they are ill</td>
<td></td>
</tr>
<tr>
<td>• Influenza</td>
<td>• Reporting of signs, symptoms, and diagnosed illnesses that may represent a risk to their patients and coworkers</td>
<td></td>
</tr>
<tr>
<td>• MMR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Varicella</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tetanus, diphtheria, pertussis</td>
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<td></td>
</tr>
</tbody>
</table>
Employee Health

- Published information from governmental organization (i.e., CDC) are available.

- LTCF are required to prohibit employees with skin lesions or communicable diseases from direct contact with residents and to prohibit employees with potentially infectious skin lesions from contact with residents food.
Influenza Vaccination

- Between 13-34% of skilled nursing facilities report an influenza outbreak annually
- Influenza vaccination of HCP associated with 30-40% reduction in mortality of nursing home residents
- 60% influenza virus infections can be prevented when 100% of HCP are vaccinated
- Even with above in the last 3 years only an estimated 50-65% of HCP in LTCF receive the vaccine
How To Improve Compliance?

• Offer immunization at multiple locations/times
  – Orientation
  – Staff meetings
  – Shift change
• Senior leader buy-in
• Incentives
  – Pizza party for unit with highest compliance rate
• Declination form
  – Adds accountability
  – Data used for improvements

Education and Training of Healthcare Personnel on Infection Prevention

• Training should be:
  – Job-specific and adapted to the individual healthcare personnel
  – Performed before duties can be assigned and at least annually
  – Additional training to recognized lapses in adherence
  – Require HCP to demonstrate competency following each training
  – System of documentation of competency for each healthcare personnel
Healthcare Worker Education

- Topics should include, but are not limited to:
  - Routes of disease transmission
  - Hand Hygiene
  - Sanitation procedures
  - MDROs
  - Transmission-based precautions
  - OSHA required education
Monitoring Performance: Audits

- Quality audits are performed to verify conformance to standards through objective review.
- Should be an opportunity for improvement and not punitive.
- Audits can assist the facility in:
  - Establishing a baseline of performance for each activity
  - Identifying what needs to be improved, and
  - Targeting educational needs
Feedback of Data: Does it Work?

“It’s not that I don’t love you.
It’s just that a ten year-old needs his freedom.”
Patient, Family and Caregiver Infection Prevention Education

• Include information about . . .
  – How infections spread
  – How they can be prevented
  – What signs or symptoms should prompt reevaluation and notification of the patient’s healthcare provider
• Instructional materials and delivery should address varied levels of education, language comprehension, and cultural diversity
• Provide education to patients, family members, visitors, and their caregivers
Communicable Disease Reporting

- State health departments provide a list of reportable diseases (Communicable Disease Report Cards)
- NC the attending physician is responsible for reporting communicable diseases
- NC law provides for a designee to do the reporting (i.e., IP or laboratory)
Required under NCAC 03H.2209
Rules for Licensing Nursing Home - IC

All cases of reportable diseases and outbreaks reported to local health department
NC Communicable Disease Branch
phone number:
919-733-3419
Developing a Water Management Program to Reduce *Legionella* Growth & Spread in Buildings

A PRACTICAL GUIDE TO IMPLEMENTING INDUSTRY STANDARDS

Legionnaires’ Disease Is On the Rise
2000–2015*

In the United States, reported cases of Legionnaires’ disease have increased by nearly four and a half times since 2000. More illness occurs in the summer and early fall but can happen any time of year.

*National Notifiable Diseases Surveillance System
LEGIONELLA PNEUMOPHILA

• *Legionella* is found naturally in freshwater environments (lakes and streams) but generally does not lead to disease

• *Legionella* can become a health problem in building water systems

• *Legionella* first must grow...THEN

• Must be aerosolized so people can breathe in small, contaminated water droplets
WHERE CAN LEGIONELLA GROW AND SPREAD?

- Hot and cold-water storage tanks
- Water heaters
- Water filters
- Aerators Faucet flow restrictors
- Pipes, valves and fittings
- Electronic and manual faucets*
- Showerheads*
- Centrally-installed misters and humidifiers*
- Eyewash stations*
- Ice Machines*
- Hot tubs*
- Decorative fountains*
- Cooling towers*
- Medical Devices*
  - CPAP machines, hydrotherapy equipment, bronchoscopes
Factors Leading to Growth

**External Factors**
- Construction
- Water main breaks
- Changes in municipal water quality

**Internal**
- Biofilm
- Scale and sediment
- Water temperature fluctuations
- Water pressure changes
- pH
- Inadequate disinfectant
- Water Stagnation
Identifying Buildings at Increased Risk

Survey your building (or property) to determine if you need a water management program to reduce the risk of *Legionella* growth and spread.

If you answer **YES** to any of questions 1 through 4, you should have a water management program for that building’s hot and cold water distribution system.

### Healthcare Facilities

<table>
<thead>
<tr>
<th>Yes ____ No ____</th>
<th>1. Is your building a healthcare facility where patients stay overnight or does your building house or treat people who have chronic and acute medical problems† or weakened immune systems?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes ____ No ____</td>
<td>2. Does your building primarily house people older than 65 years (like a retirement home or assisted-living facility)?</td>
</tr>
<tr>
<td>Yes ____ No ____</td>
<td>3. Does your building have multiple housing units and a centralized hot water system (like a hotel or high-rise apartment complex)?</td>
</tr>
<tr>
<td>Yes ____ No ____</td>
<td>4. Does your building have more than 10 stories (including basement levels)?</td>
</tr>
</tbody>
</table>
Devices in buildings that can spread contaminated water droplets should have a water management program even if the building itself does not. If you answer **NO** to all of questions 1 through 4 but **YES** to any of questions 5 through 8, you should have a water management program for that device.

5. Does your building have a cooling tower*?
   - Yes ____  No ____

6. Does your building have a hot tub (also known as a spa) that is not drained between each use?
   - Yes ____  No ____

7. Does your building have a decorative fountain?
   - Yes ____  No ____

8. Does your building have a centrally-installed mister, atomizer, air washer, or humidifier?
   - Yes ____  No ____
What Needs To Be Done?

Identify building water systems for which *Legionella* control measures are needed

Assess how much risk the hazardous conditions in those water systems pose

Apply control measures to reduce the hazardous conditions, whenever possible, to prevent *Legionella* growth and spread

Make sure the program is running as designed and is effective
Elements of a WMP

1. Establish a water management program team
2. Describe the building water systems using text and flow diagrams
3. Identify areas where Legionella could grow and spread
4. Decide where control measures should be applied and how to monitor them
5. Establish ways to intervene when control limits are not met
6. Make sure the program is running as designed and is effective
7. Document and communicate all the activities

Annual Review

Continuous program review (see below)
Water Management Team

- Administrator
- Maintenance or engineering
- State/local health officials
- Infection preventionist
- Medical director
- Risk/Quality management staff
Describe Your Building Water Systems

Develop a written description of your building water systems in addition to a process flow diagram.
Understood easily by all members of your WMT.
Areas Where *Legionella* Could Grow and Spread

- **No disinfectant**
- **Temperature permissive**
- **Stagnation**
- Associated with healthcare facilities
Additional Elements of a WMP

1. Describe control measures and how monitored
2. Ways to intervene when control limits not met
3. Make sure program is running as designed
4. Document and communicate
Legionnaires’ Disease

- Full investigation for source when:
  - >1 case of **definite** healthcare-associated Legionnaires’ disease (resident spent the entire 10 days prior to onset of illness in the facility)
  - >2 cases of **possible** healthcare-associated Legionnaires’ disease (cases in residents who spent part of the 10 days before symptoms began at the same facility) are identified within 12 months of each other
In Conclusion

- One person, the IP, should be assigned the responsibility of directing, infection control activities in LTCF
- The IP should have a written job description of infection control activities
- The IP requires the support of administration in order to function effectively
- The IP needs to be guaranteed sufficient time to direct the infection control program
- The IP should have written authority to institute infection control measures.
In Conclusion

The trained competent LTCF IP shall be able to establish an active, effective, facility-wide infection control program in the LTCF to help prevent the development and spread of infections and infectious diseases.
“Unless someone like you cares a whole awful lot, nothing is going to get better. It’s not.”

Dr. Seuss The Lorax
QUESTIONS
RESOURCES
The *Infection Preventionists Guide to Long-Term Care* is accompanied by a CD-ROM with customizable forms, tools, and resources. Developed by a team of infection prevention experts, the book presents topic-specific information in a user-friendly format that includes numerous examples, visuals, checklists, and references to help increase the understanding of:
Guide to Long-Term Care

- Regulatory requirements
- Comprehensive infection prevention risk assessment and program development
- Surveillance and reporting
- Nursing assessment and interventions to prevent the most commonly occurring infections in long-term care
- Environmental cleaning and disinfection
• Unique long-term care issues such as care transitions and life enrichment activities
• Occupational health, immunization programs, and staff education
• Disaster and pandemic preparedness

(Member Price $169.00)
Applying High Reliability Principles to Infection Prevention and Control in Long Term Care

Free Online Learning Module & Index of Resources

Unique opportunity to educate your team and improve care and safety

Do you work in a nursing home, assisted living facility or related health care setting? View this easy-to-use, engaging e-learning tool designed for staff across all levels and disciplines. You will learn:

- how to apply high reliability principles to preventing and controlling infections in Long Term Care
- how each person's role contributes to high reliability
- from scenarios that illustrate the application of these principles

View the Learning Module
Index of Resources

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Regulatory Focus Bulletin

Is an informational and educational service of the Regulatory Focus Committee to assist you in finding the resources for answers to questions regarding issues not regulated by the Division of Health Service Regulation. The source of the information is included for your reference.

FILE TOPIC: Infection Control Regulatory Focus Bulletin will address questions on infection control found in the Federal regulation and North Carolina licensure rules. Most infection control issues are addressed by the Centers for Disease Control and/or the NC Statewide Program for Infection Control.
CDC Guidelines

Healthcare Infection Control Practices Advisory Committee (HICPAC)

– Guideline for Hand Hygiene in Healthcare Settings, 2002

AND...
CDC Guidelines

- Guideline for Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006
- Guideline for Disinfection and Sterilization in Health-Care Facilities, 2008
- Guideline for the Prevention of CAUTIs, 2009

AND
CDC Guidelines

• Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE)
  – 2012 CRE Toolkit

• Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings
Web Sites of Interest

Centers for Disease Control http://www.cdc.gov/
   Email Inquiries: cdcinfo@cdc.gov

North Carolina Statewide Program for Infection Control and Epidemiology (SPICE) http://www.unc.edu/depts/spice/

NC Department of Health and Human Services, Epidemiology Section
http://www.epi.state.nc.us/epi/ Occupational Safety & Health Administration http://www.osha.gov/

NC Division of Environmental Health http://www.deh.enr.state.nc.us/
References

- CMS Manual System; Subject: State Operations Manual Appendix PP- Guidance to Surveyors for Long Term Care Facilities, Tag F483.80
- National Action Plan To Prevent Health Care-associated Infections: Road Map To Elimination: April 2013 Chapter 8: Long-Term Care Facilities
- Council of State and Territorial Epidemiologists; “Recommendations for Surveillance and Reporting of Healthcare Associated Infections in Long Term Care Facilities”
- CDC Prevalence Project: Healthcare-Associated Infections and Antimicrobial Use in Nursing Homes and Skilled Nursing Facilities