North Carolina SPICE
Statewide Program for Infection Control & Epidemiology

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

Evelyn Cook, RN, CIC
Associate Director

Objectives

1. **Describe unique infection prevention challenges associated with 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. COVID-19 Specific Plan

Long-term Care Facilities- Landscape

- 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

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Long-term Care Landscape: Resident

- Life expectancy:
  - 1970s life expectancy was 70 and today well in the ’90s
  - 85% over the age of 75
- Level of care
  - Moved from “custodial care” to very complex medical care and invasive devices
- Demographics
  - Comorbid conditions and complex drug regimens
  - ~ 70% some form of cognitive deficit (48% with dementia)

https://www.jamda.com/article/S1525-8610(20)30522-3/fulltext

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Unique Infection Prevention Challenges: LTC

- 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

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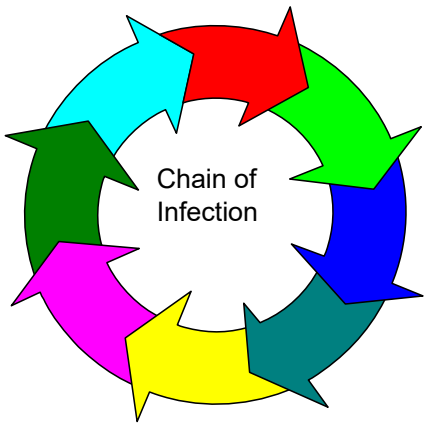
Elements Required for an infection

- 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

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Healthcare- associated infections (HAI)

- 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

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Healthcare- associated infections (HAI)

- 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

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NHSN LTCF
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

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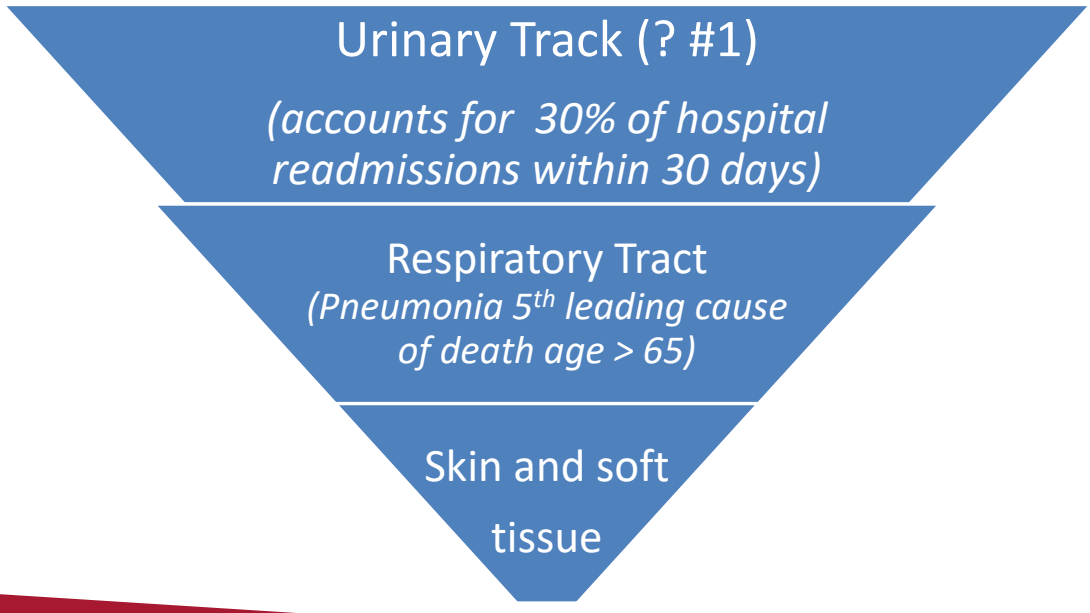
Specific Infections in LTCFs



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Specific Infection in LTCFs

Gastroenteritis (*Clostridioides difficile,* norovirus)

Conjunctivitis

Bacteremia (*50% related to UTI)*

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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

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CDC Home | Search | Health Topics A-Z

MMWR Weekly

March 11, 2005 / 54(09);220-223

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).

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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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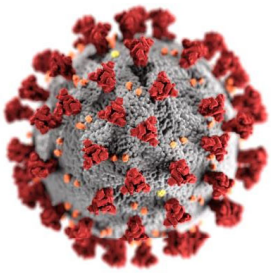
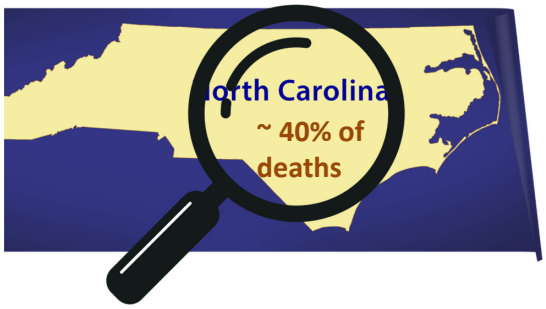
Long-term Care COVID-19





- Less than 1% of American's population lives in long-term care facilities, but as of August 13, 2020, this tiny fraction of the country accounts for 43% of U.S. deaths
- About 10 states do not report long-term care death data

https://covidtracking.com/data/longtermcare

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Resident Factors *(non-modifiable)* 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)

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Resident Factors *(non-modifiable)* Contributing to infections

- Coexisting chronic diseases
- Complications from invasive diagnostic procedures
- Impaired responses to infection
- Increased frequency of therapeutic toxicity (declining liver and kidney function)

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Environmental Factors

- Family and visitors integral to resident care and well being
- Socialization encouraged as part of physical, emotional and mental health
- Inadequate number of private rooms
- Inadequate OR poorly maintained ventilation systems

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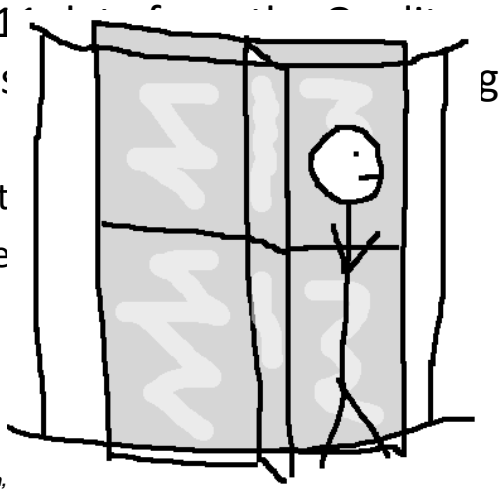
Staffing Factors

- Nurse (staff turnover)
  - Published data on overall high employee turnover rates in LTC facilities; 201[illegible] Long Term Care Commiss[illegible]g turnover rates:
    - Administrators, 3 percent
    - Director of nursing, 39 pe
    - RNs, 50 percent
    - LPNs, 49 percent and
    - CNAs, 71 percent



Infection Prevention in LTC: Emphasis Needed on Education, Gail Bennett, RN, MSN, CIC, Rome, GA ICP Associates, Inc.

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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)

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Regulatory and/or Accrediting Agencies: COVID-19

- CMS
  - At least 10 QSOs-visitation-testing-reporting etc.,
  - New focused survey tool-COVID-19 and infection prevention
- NCDHHS
  - Tool kit
  - Multiple guidance document(s) on visitation, outbreak and testing
- CDC
  - Multiple guidance document(s)-Preparing, Responding to COVID in NHs
  - Testing

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Regulatory and/or Accrediting Agencies: COVID-19

- OSHA
  - Bloodborne Pathogen Standard
  - Respiratory Protection Standard
    - Medical evaluation
    - Fit testing

N 95 face fitting respirators that are not fit-tested do not provide the same level of respirator protection and should not be used for aerosol generating procedures

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OBRA (Omnibus Budget Reconciliation Act)

- *And as minimum standards, Long-Term Care Ombudsmen should view OBRA as a baseline that should be built upon to reach not only resident "well-being" but also happiness and fulfillment.*
- *Not allowed to visit residents during pandemic*

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Additional NC State Regulations

- 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

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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)

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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

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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

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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.

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What are the Core Infection Prevention Practices?

- There are eight core 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

https://www.cdc.gov/hicpac/pdf/core-practices.pdf

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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

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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

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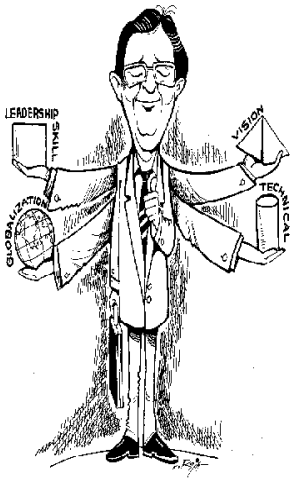
Infection Preventionist

- Collection and analysis of infection data
- Evaluation of products and procedures
- Development of policies
- Consultation
- Education



- Implementation of mandated changes
- Application of epidemiologic principles-*outbreak management*
- Antimicrobial management
- Research
- High quality services in a cost-efficient manner

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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

No of beds	Hours per week for IC
1-50	8
51-100	16
101-150	24
151-200	32
more than 200	40

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

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Infection Control Hours

- October 2016 - **CMS**
  - Require that the IP work at least part time in the facility
- July 2019 - **CMS**
  - Require that the facility must ensure that the IP has sufficient time at the facility to meet the objectives of its IPCP.
- June 25th, 2020 – **CDC**
  - **One full time role in facilities with more than 100 residents**

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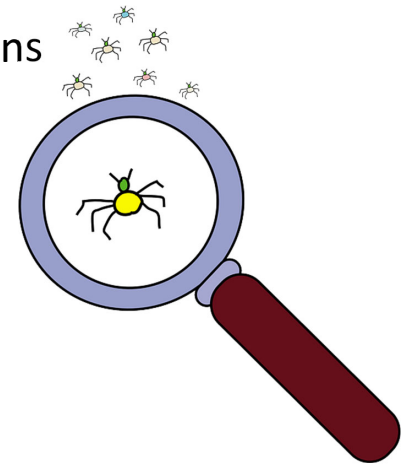
Surveillance in LTCF

- 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



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INFECTION PREVENTION RISK ASSESSMENT

https://spice.unc.edu/resources/template-risk-assessment-for-ltc/

https://www.cdc.gov/longtermcare/training.html#anchor_1557254909

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Infection Control Risk Assessment

Infection Control Risk Assessment

Priorities

Goals

Infection Control Plan

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Risk Assessment Tips

- Proactive and prioritize risk or events
- Annually review/revision or as processes change
- Team effort and approval by QAPI/QI
- Very subjective-no specific tool required
- Use historical data, staff feedback and regulatory requirements to begin
- Should be integrated into your overall facility wide risk assessment required by CMS (483.70)(e)

Living, breathing document

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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

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Four Factors To Consider: Ranking The Risk

Probability of Occurrence (Likelihood)	*Risk Level of Failure*	*Potential Change in Care*	*Preparedness*
• High: If there were more events than baseline numbers or more than experienced historically • Medium: If there were a similar number of events experienced historically • Low: If there were fewer events than expected or experienced historically • None: No events occurred	• Life-Threatening: Event associated with high rates of mortality • Permanent Harm: Event associated with loss of limb or permanent change in status • Temporary Harm: Event associated with a temporary change in ambulation	• High: Event resulted in transfer to higher level of care (hospital) • Medium: Event resulted in major change to resident's care plan (acquisition of *C difficile* for example) • Low: Event resulted in minor/short term modification to treatment (change in VS routine for example) • None: No change in treatment or care plan	• Poor: No policies or procedures or process in place • Fair: Policies/procedures in place but no monitoring to ensure compliance • Good: Policies/procedures in place and compliance being monitored with staff feedback

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Determine Your Events

EVENT	PROBABILITY OF OCCURRENCE (How likely is this to occur)				RISK LEVEL OF FAILURE (What would be the most likely)				POTENTIAL CHANGE IN CARE (Will treatment/care be needed for resident/staff)				PREPAREDNESS (Are processes in place and can they work)			YEAR: _____ RISK LEVEL Add rankings (score of 8 or > are considered highest priority for improvement efforts)
Score	High	Med	Low	None	Life Threatening	Permanent Harm	Temp Harm	None	High	Med	Low	None	Poor	Fair	Good	
	3	2	1	0	3	2	1	0	3	2	1	0	3	2	1	
Example: Lack of Communication with Transferring Facility		2					1			2					1	6

Scoring Each Event/Risk

- **Probability-** **0 - 3**
- **Risk Level-** **0 - 3**
- **Change Needed-** **0 - 3**
- **Preparedness-** **0 - 3**

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**

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EVENT	PROBABILITY OF OCCURRENCE (How likely is this to occur)				RISK LEVEL OF FAILURE (What would be the most likely)				POTENTIAL CHANGE IN CARE (Will treatment/care be needed for resident/staff)				PREPAREDNESS (Are processes in place and can they work)			YEAR: _____ RISK LEVEL Add rankings (score of 8 or > are considered highest priority for improvement efforts)
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	3	2	1	0	3	2	1	0	3	2	1	0	3	2	1	
Facility Associated Infection(s)																
Symptomatic Urinary Tract Infection (SUTI)		2			3				3					2		10

Important:
Review year-end data from previous year!

- 6 UTIs in 2019 per McGeer Criteria compared to 12 in 2018
- 1 healthcare acquired C. difficile in 2019 compared to 2 in 2018
- 2 needle stick exposures in 2019 compared to 5 in 2018

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	3	2	1	0	3	2	1	0	3	2	1	0	3	2	1	
Healthcare personnel																
Lack of compliance with influenza immunization	3				3					2			3			11

What are your opportunities?

- Employee influenza vaccination compliance: 40 % in 2019

	Likelihood	Severity	Preparedness	Risk Score
Facility Related	**1(low)-5(high)**	**1(low)-5(high)**	**1(low)-5(high)**	**(Likelihood X Severity)/ Preparedness**
Influenza like illness				
Symptomatic UTI	5	5	1	25
Cellulitis/SST Infection				
C difficile				

Example:

Symptomatic UTI:

- **10** symptomatic UTIs were documented to meet surveillance criteria and reported as HAIs in **2018**
- **30** symptomatic UTIs were documented to meet surveillance criteria and reported as HAIs in **2019**

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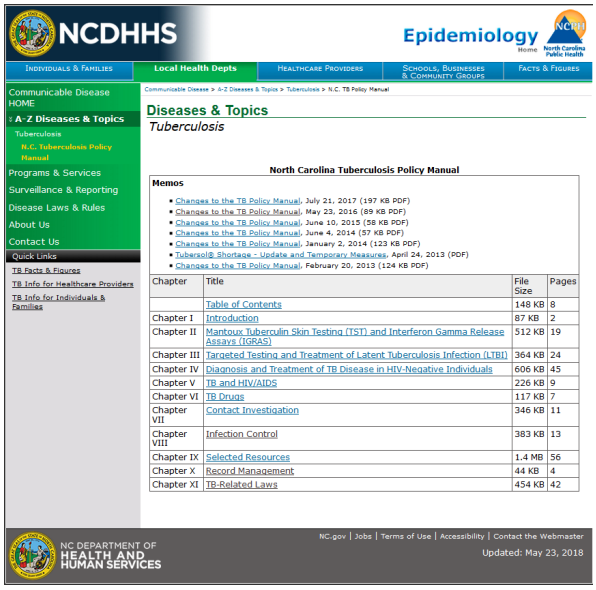

TB
RISK ASSESSMENT

http://epi.publichealth.nc.gov/cd/lhds/manuals/tb/toc.html

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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

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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**

NC TB Control Program Policy Manual (Rev. 07/17) XI-40

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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

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To: Local Health Department TB Programs
From: Jason Stout, MD, MHS, TB Controller/Medical Director
Re: Deferring baseline tuberculosis screening for new hires

The mandates of social distancing to protect our community from the COVID-19 epidemic have made baseline screening of employees and new residents of correctional facilities, nursing homes, and adult day care centers quite challenging. In the spirit of maintaining social distancing during this time, the NC Tuberculosis Control Program recommends deferring required tuberculin skin testing or interferon gamma release assay testing for the following groups for whom it is required:

- Staff with direct inmate contact upon employment
- Inmates in the custody of the Department of Corrections (both testing upon incarceration and yearly thereafter)
- Staff of licensed nursing care homes or adult care homes upon employment
- Residents upon admission to licensed nursing homes or adult care homes
- Staff in adult day care centers providing care to persons with HIV/AIDS upon employment

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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.

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BOX. Indicators of risk* for tuberculosis (TB) at baseline health care personnel assessment†

Return

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.

* Individual risk assessment information can be useful in interpreting TB test results. (Lewinsohn DM, Leonard MK, LoBue PA, et al. Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention clinical practice guidelines: diagnosis of tuberculosis in adults and children. Clin Infec Dis 2017;64:111–5). https://academic.oup.com/cid/article/64/2/111/2811357

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

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Category	2005 Recommendation	2019 Recommendation
Baseline (preplacement) screening and testing	TB screening of all HCP, including a symptom evaluation and test (IGRA or TST) for those without documented prior TB disease or LTBI.	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)**.
Postexposure screening and testing	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.	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)**.
Serial screening and testing for HCP without LTBI	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.	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)**.
Evaluation and treatment of positive test	Referral to determine whether LTBI treatment is indicated.	Treatment is encouraged for all HCP with untreated LTBI, unless medically contraindicated **(new)**.

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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.,)

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Oklahoma State Dept. of Health

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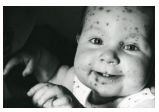
Recognizing and Containing Outbreaks

- 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

SPICE

COVID-19 Specific

- CMS
  - An outbreak is defined as **a** new COVID-19 infection in HCP or nursing home-onset COVID-19 infection in a resident
- CDC
  - A new SARS-CoV-2 infection in any HCP or any nursing home-onset SARS-CoV-2 infection in a resident).
- NCDHHS
  - Two or more laboratory confirmed cases within two incubation periods (28 days)

SPICE

Resident Care

- Rooms should have accessible sink with soap, water towels and toilet facilities
  - ***Put alcohol-based hand sanitizer with 60-95% alcohol in every resident room (ideally both inside and outside of the room) and other resident care and common areas (e.g., outside dining hall, in therapy gym).***
- 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)

SPICE

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)

SPICE

§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

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2005 North Carolina Code - General Statutes § 131E-113. Immunization of employees and residents.

- Except as provided in subsection (e) of this section, a nursing home licensed under this Part shall require residents and employees to be immunized against influenza virus and shall require residents to also be immunized against pneumococcal disease.
  - *No individual shall be required to receive vaccine under this section if the vaccine is medically contraindicated, or if the vaccine is against the individual's religious beliefs, or if the individual refuses the vaccine after being fully informed of the health risks of not being immunized*.

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Key Elements – Employee Health

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

SPICE

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

SPICE

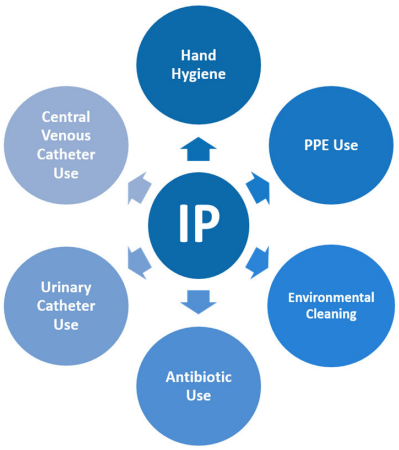
Healthcare Worker Education

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

SPICE

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



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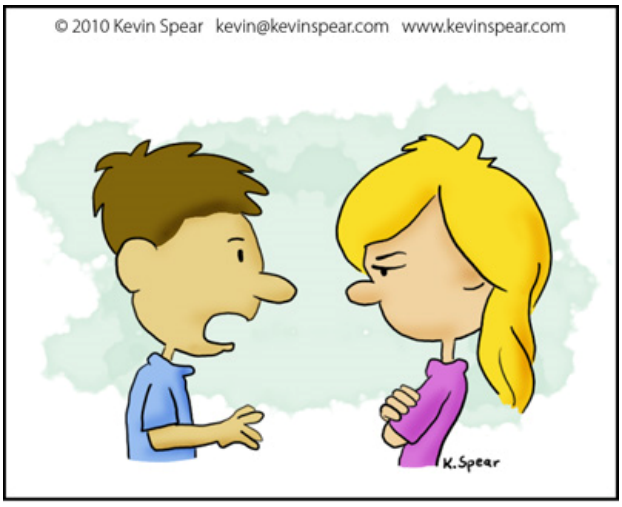
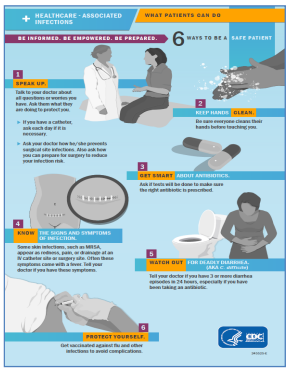


"It's not that I don't love you.
It's just that a ten year-old needs his freedom."

Feedback of Data: Does it Work?

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



https://www.cdc.gov/drugresistance/pdf/HAI-Patient-Empowerment_DPK.PDF

https://apic.org/Resource_/TinyMceFileManager/IP_and_You/IPandYou_InfographicPoster_2013.pdf

SPICE

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)

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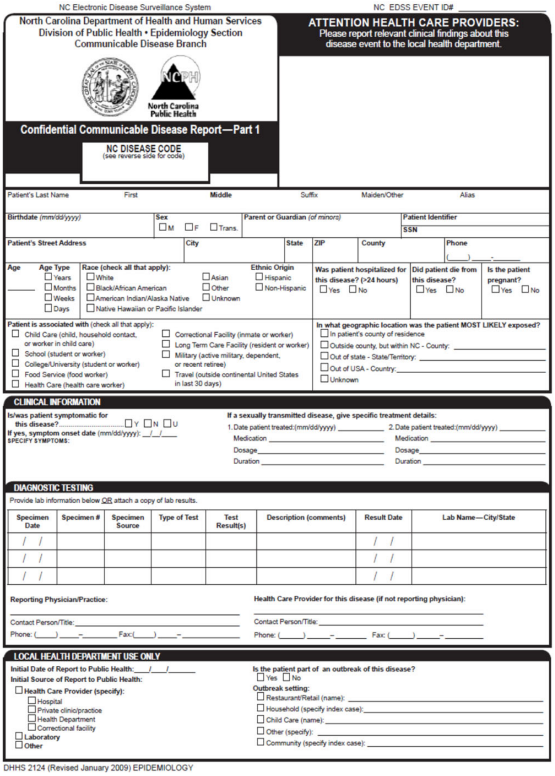
Required under NCAC 03H.2209
Rules for Licensing Nursing Home - IC

All cases of reportable diseases and outbreaks reported to local health department



NC Electronic Disease Surveillance System — NC EDSS EVENT ID#

North Carolina Department of Health and Human Services
Division of Public Health • Epidemiology Section
Communicable Disease Branch

ATTENTION HEALTH CARE PROVIDERS:
Please report relevant clinical findings about this disease event to the local health department.

Confidential Communicable Disease Report—Part 1

NC DISEASE CODE (see reverse side for code)

Patient's Last Name | First | Middle | Suffix | Maiden/Other | Alias

Birthdate (mm/dd/yyyy) | Sex ☐M ☐F ☐Trans. | Parent or Guardian (of minors) | Patient Identifier SSN

Patient's Street Address | City | State | ZIP | County | Phone

Age | Age Type ☐Years ☐Months ☐Weeks ☐Days | Race (check all that apply): ☐White ☐Black/African American ☐American Indian/Alaska Native ☐Native Hawaiian or Pacific Islander ☐Asian ☐Other ☐Unknown | Ethnic Origin ☐Hispanic ☐Non-Hispanic | Was patient hospitalized for this disease? (>24 hours) ☐Yes ☐No | Did patient die from this disease? ☐Yes ☐No | Is the patient pregnant? ☐Yes ☐No

Patient is associated with (check all that apply):
☐Child Care (child, household contact, or worker in child care) ☐School (student or worker) ☐College/University (student or worker) ☐Food Service (food worker) ☐Health Care (health care worker) ☐Correctional Facility (inmate or worker) ☐Long Term Care Facility (resident or worker) ☐Military (active military, dependent, or recent retiree) ☐Travel (outside continental United States in last 30 days)

In what geographic location was the patient MOST LIKELY exposed?
☐In patient's county of residence ☐Outside county, but within NC - County: ☐Out of state - State/Territory: ☐Out of USA - Country: ☐Unknown

CLINICAL INFORMATION

Is/was patient symptomatic for this disease? ☐Y ☐N ☐U
If yes, symptom onset date (mm/dd/yyyy): __/__/____
SPECIFY SYMPTOMS:

If a sexually transmitted disease, give specific treatment details:
1. Date patient treated:(mm/dd/yyyy) _____ Medication _____ Dosage _____ Duration _____
2. Date patient treated:(mm/dd/yyyy) _____ Medication _____ Dosage _____ Duration _____

DIAGNOSTIC TESTING

Provide lab information below OR attach a copy of lab results.

Specimen Date	Specimen #	Specimen Source	Type of Test	Test Result(s)	Description (comments)	Result Date	Lab Name—City/State
/ /						/ /	
/ /						/ /	
/ /						/ /	

Reporting Physician/Practice:
Contact Person/Title:
Phone: (____)____–____ Fax:(____)____–____

Health Care Provider for this disease (if not reporting physician):
Contact Person/Title:
Phone: (____)____–____ Fax: (____)____–____

LOCAL HEALTH DEPARTMENT USE ONLY

Initial Date of Report to Public Health: __/__/____
Initial Source of Report to Public Health:
☐Health Care Provider (specify): ☐Hospital ☐Private clinic/practice ☐Health Department ☐Correctional facility
☐Laboratory
☐Other

Is the patient part of an outbreak of this disease? ☐Yes ☐No
Outbreak setting:
☐Restaurant/Retail (name): ☐Household (specify index case): ☐Child Care (name): ☐Other (specify): ☐Community (specify index case):

DHHS 2124 (Revised January 2009) EPIDEMIOLOGY

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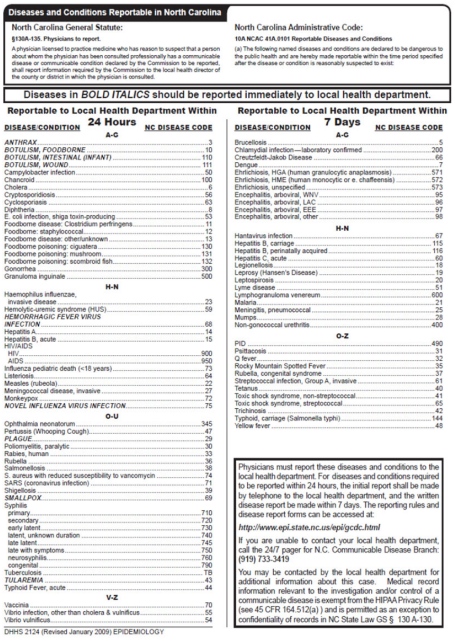
NC Subchapter 41A Communicable Disease Control – Section .0100
Confidential Communicable Disease Report

NC Communicable Disease Branch phone number:

919-733-3419



Diseases and Conditions Reportable in North Carolina

North Carolina General Statute:
§130A-135. Physicians to report.
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 or communicable condition declared by the Commission to be reported, shall report information required by the Commission to the local health director of the county or district in which the physician is consulted.

North Carolina Administrative Code:
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:

Diseases in *BOLD ITALICS* should be reported immediately to local health department.

Reportable to Local Health Department Within 24 Hours

DISEASE/CONDITION	NC DISEASE CODE
A-G	
ANTHRAX	3
BOTULISM, FOODBORNE	10
BOTULISM, INTESTINAL (INFANT)	110
BOTULISM, WOUND	111
Campylobacter infection	50
Chancroid	100
Cholera	6
Cryptosporidiosis	56
Cyclosporiasis	63
Diphtheria	8
E. coli infection, shiga toxin-producing	53
Foodborne disease: Clostridium perfringens	11
Foodborne: staphylococcal	12
Foodborne disease: other/unknown	13
Foodborne poisoning: ciguatera	130
Foodborne poisoning: mushroom	131
Foodborne poisoning: scombroid fish	132
Gonorrhea	300
Granuloma inguinale	500
H-N	
Haemophilus influenzae, invasive disease	23
Hemolytic-uremic syndrome (HUS)	59
HEMORRHAGIC FEVER VIRUS INFECTION	68
Hepatitis A	14
Hepatitis B, acute	15
HIV/AIDS	
HIV	900
AIDS	950
Influenza pediatric death (<18 years)	73
Listeriosis	64
Measles (rubeola)	22
Meningococcal disease, invasive	27
Monkeypox	72
NOVEL INFLUENZA VIRUS INFECTION	75
O-U	
Ophthalmia neonatorum	345
Pertussis (Whooping Cough)	47
PLAGUE	39
Poliomyelitis, paralytic	30
Rabies, human	33
Rubella	36
Salmonellosis	38
S. aureus with reduced susceptibility to vancomycin	74
SARS (coronavirus infection)	71
Shigellosis	39
SMALLPOX	69
Syphilis	
primary	710
secondary	720
early latent	730
latent, unknown duration	740
late latent	745
late with symptoms	750
neurosyphilis	760
congenital	790
Tuberculosis	78
TULAREMIA	43
Typhoid Fever, acute	44
V-Z	
Vaccinia	70
Vibrio infection, other than cholera & vulnificus	55
Vibrio vulnificus	54

Reportable to Local Health Department Within 7 Days

DISEASE/CONDITION	NC DISEASE CODE
A-G	
Brucellosis	5
Chlamydial infection—laboratory confirmed	200
Creutzfeldt-Jakob Disease	66
Dengue	7
Ehrlichiosis, HGA (human granulocytic anaplasmosis)	571
Ehrlichiosis, HME (human monocytic or e. chaffeensis)	572
Ehrlichiosis, unspecified	573
Encephalitis, arboviral, WNV	95
Encephalitis, arboviral, LAC	96
Encephalitis, arboviral, EEE	97
Encephalitis, arboviral, other	98
H-N	
Hantavirus infection	67
Hepatitis B, carriage	115
Hepatitis B, perinatally acquired	116
Hepatitis C, acute	60
Legionellosis	18
Leprosy (Hansen's Disease)	19
Leptospirosis	20
Lyme disease	51
Lymphogranuloma venereum	600
Malaria	21
Meningitis, pneumococcal	25
Mumps	28
Non-gonococcal urethritis	400
O-Z	
PID	490
Psittacosis	31
Q fever	32
Rocky Mountain Spotted Fever	35
Rubella, congenital syndrome	37
Streptococcal infection, Group A, invasive	61
Tetanus	40
Toxic shock syndrome, non-streptococcal	41
Toxic shock syndrome, streptococcal	65
Trichinosis	42
Typhoid, carriage (Salmonella typhi)	144
Yellow fever	48

Physicians must report these diseases and conditions to the local health department. For diseases and conditions required to be reported within 24 hours, the initial report shall be made by telephone to the local health department, and the written disease report be made within 7 days. The reporting rules and disease report forms can be accessed at:

http://www.epi.state.nc.us/epi/gcdc.html

If you are unable to contact your local health department, call the 24/7 pager for N.C. Communicable Disease Branch: (919) 733-3419

You may be contacted by the local health department for additional information about this case. Medical record information relevant to the investigation and/or control of a communicable disease is exempt from the HIPAA Privacy Rule (see 45 CFR 164.512(a)) and is permitted as an exception to confidentiality of records in NC State Law GS § 130A-130.

DHHS 2124 (Revised January 2009) EPIDEMIOLOGY

SPICE

Objectives

1. Describe unique infection prevention challenges associated with 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. **COVID-19 Specific Plan**

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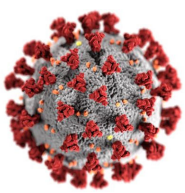
Plan specific to COVID-19

- Assign one or more individuals
- Report to NHSN
- Educate residents-HCP
- **Implement source control measures**
- **Plan for visitor restriction**



- **Testing of residents and staff**
- Screening of residents and staff
- Supplies available-HH and PPE
- **Dedicated unit**
- **Manage new admissions**

SPICE

Implement Universal Source Control Measures

- Healthcare Personnel (HCP)
  - Always wear a face mask (includes break rooms)
  - When PPE required surgical face mask
  - Eye protection (face shield-goggles)

- Residents
  - Cloth face covering or mask whenever leaving their room
  - Cloth face covering or mask whenever leaving the facility for procedure(s)

- Visitors
  - Cloth face covering or mask whenever in facility

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Designated COVID-19 Unit

- Appropriate signage
- Designated staff
- Wear all recommended PPE (extended use of gowns if supplies limited)
- Must meet CDC criteria for discontinuing TBPs

New Admissions or Re-Admissions

- Private room or designated hall
- Dedicated staff if possible
- Wear all recommended PPE
- 14-day period regardless of – test at time of admission

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Developing a Water Management Program to Reduce *Legionella* Growth & Spread in Buildings

A PRACTICAL GUIDE TO IMPLEMENTING INDUSTRY STANDARDS

https://www.cdc.gov/legionella/downloads/toolkit.pdf

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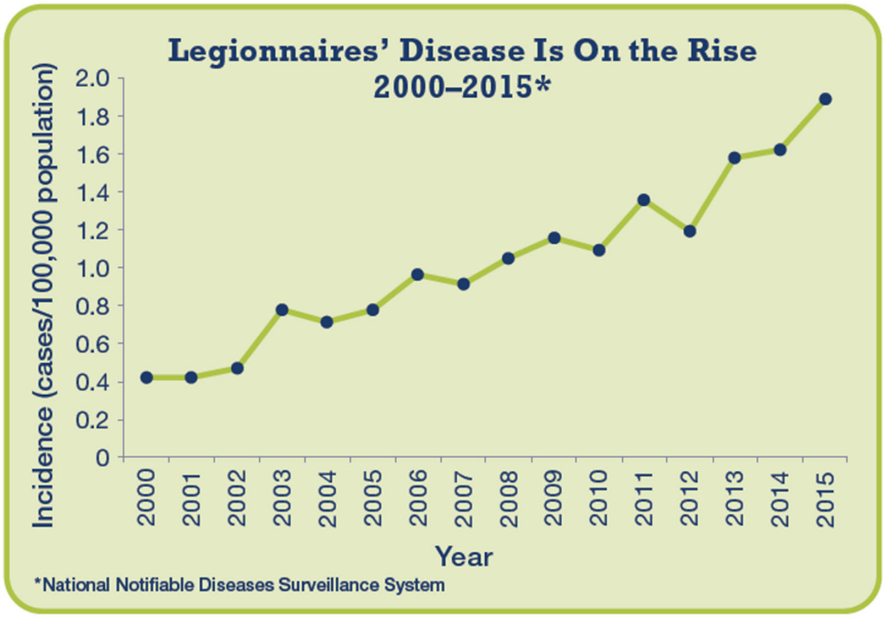

In the United States, reported cases of Legionnaires' disease have increased by nearly four and a half times since 2000. More illness occurs in the summer and early fall but can happen any time of year.

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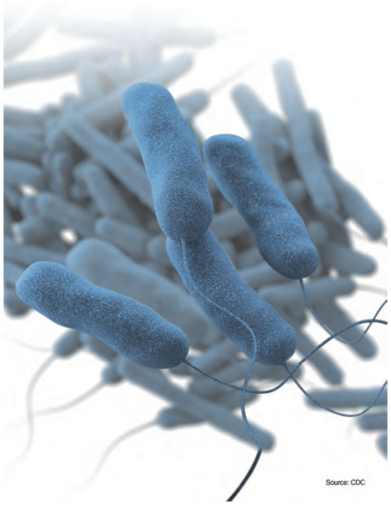
LEGIONELLA PNEUMOPHILA

- *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



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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

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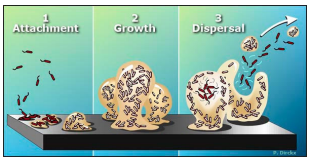
Factors Leading to Growth

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

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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

Yes ____ No ____ 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?

Yes ____ No ____ 2. Does your building primarily house people older than 65 years (like a retirement home or assisted-living facility)?

Yes ____ No ____ 3. Does your building have multiple housing units and a centralized hot water system (like a hotel or high-rise apartment complex)?

Yes ____ No ____ 4. Does your building have more than 10 stories (including basement levels)?

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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*.

Yes ___ No ___ 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?

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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

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Water Management Team

- Administrator
- Maintenance or engineering
- State/local health officials
- Infection preventionist
- Medical director
- Risk/Quality management staff

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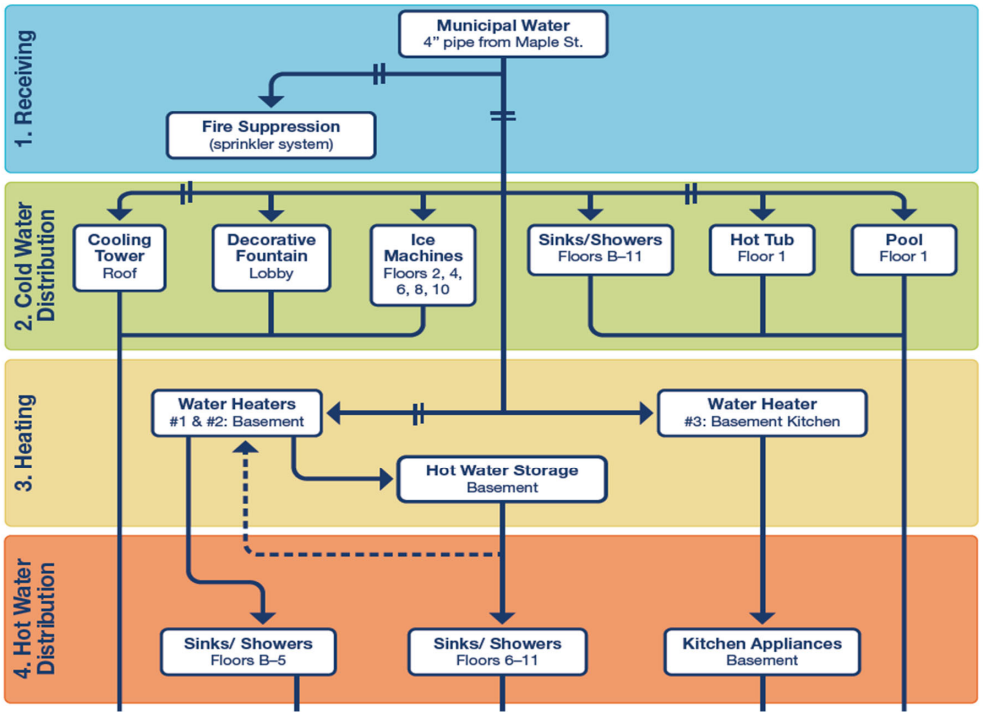
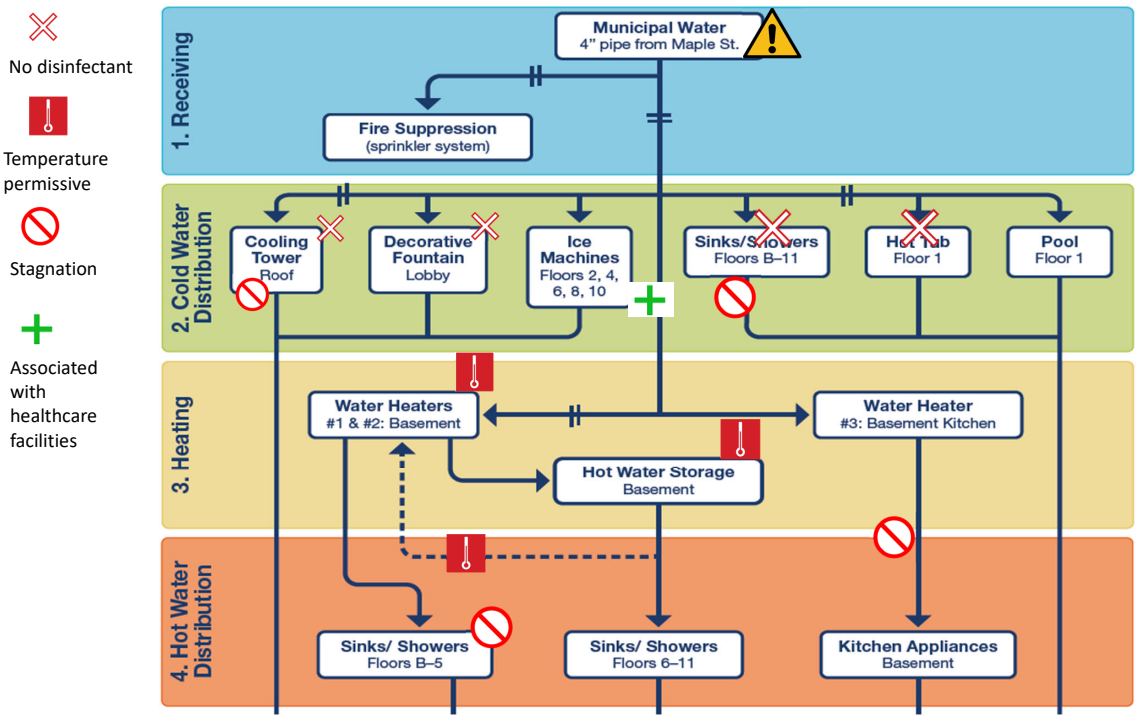


Describe Your Building Water Systems

Develop a written description of your building water systems in addition to a process flow diagram.

Understood easily by all members of your WMT.



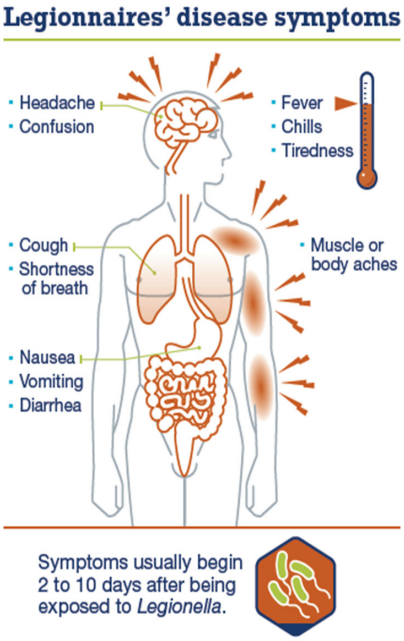
Areas Where *Legionella* Could Grow and Spread

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



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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.

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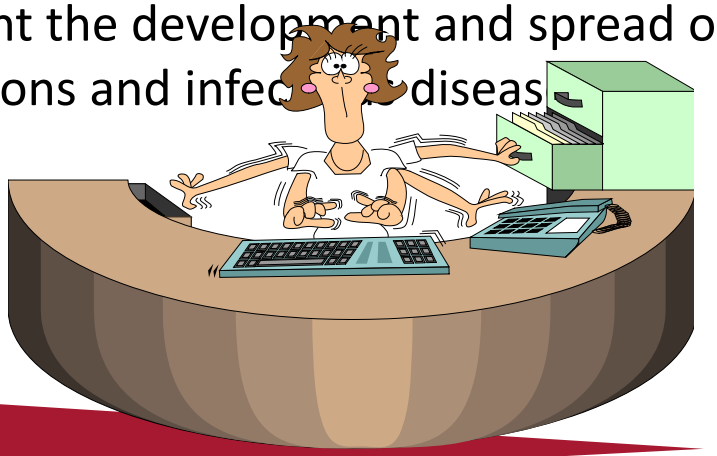
In Conclusion

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



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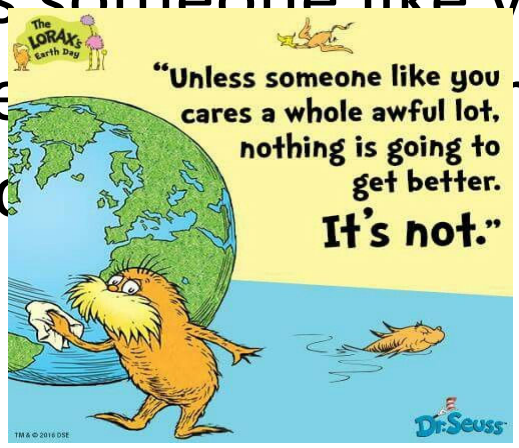
Quote by a Famous Doctor

"Unless someone like you cares a whole [illegible] ning is going to [illegible] not"



Dr. Seuss The Lorax

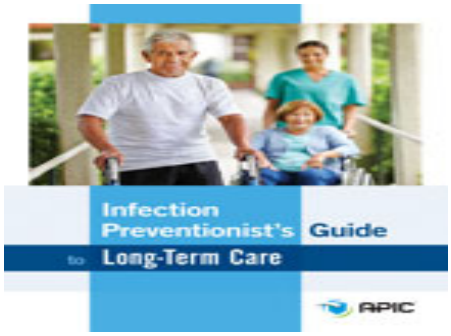
SPICE

QUESTIONS

SPICE

RESOURCES

SPICE



- 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:

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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

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- 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)

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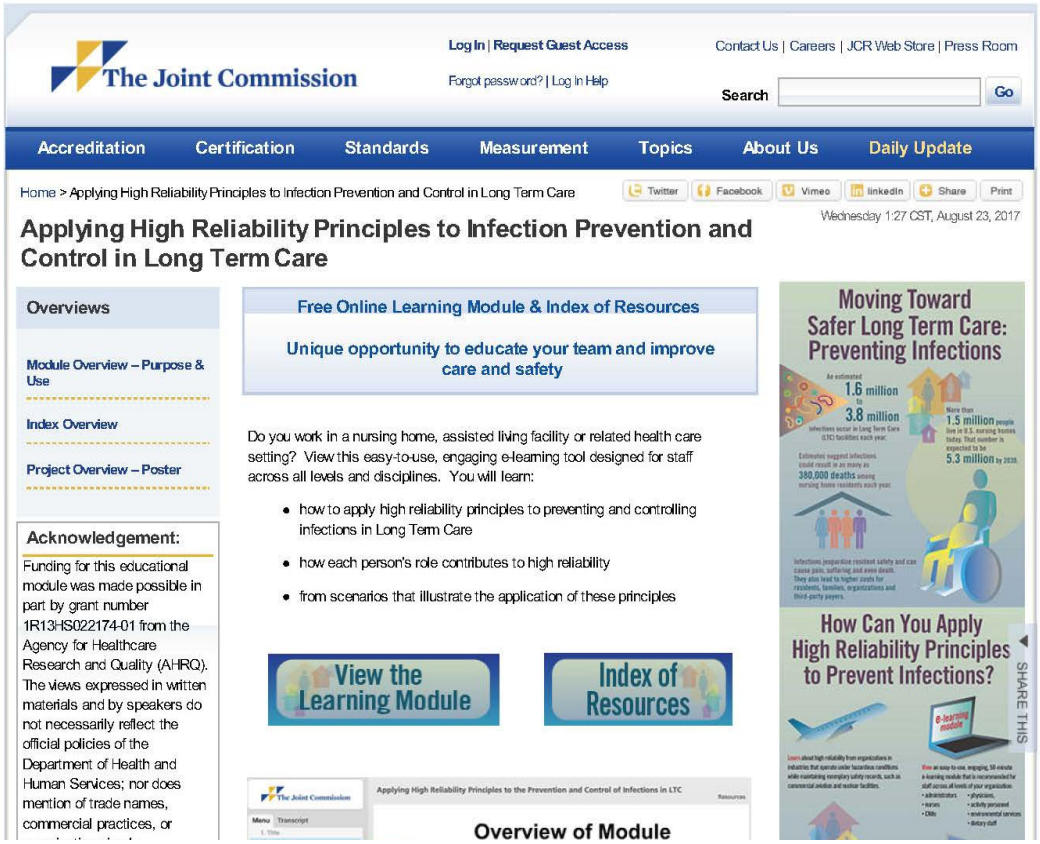
https://www.jointcommission.org/hripcltc.aspx



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
- Guideline for Prevention of Intravascular Catheter-Related Infections, 2011
- Guideline for Environmental Infection Control in Healthcare Facilities, 2003
- Guideline for Prevention of Healthcare-Associated Pneumonia, 2003

AND…

CDC Guidelines

- Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, 2007
- 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

SPICE

CDC Guidelines

- **Guidance for Control of Carbapenem-resistantEnterobacteriaceae (CRE)**
  - 2012 CRE Toolkit

- Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings

SPICE

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

- Smith PW, et al. Infection Prevention and Control in the Long-Term Care Facility. Infect Control Hosp Epidemiol 2008;29:785-814.
- 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