



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

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Associate Director



OBJECTIVES

Describe	Describe unique infection prevention challenges associated with LTCFs
List	List factors contributing to infections in the elderly
Describe	Describe regulatory factors impacting LTCFs
Describe	Describe components of a LTCF infection control program

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

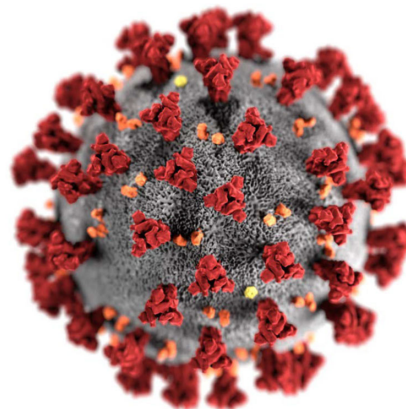
- Life expectancy:
 - 1970s life expectancy was 70 and today well in the '90s
 - 85% over the age of 75
- Level of care
 - Moved from “custodial care” to very complex medical care and invasive devices
- Demographics
 - Comorbid conditions and complex drug regimens
 - ~ 70% some form of cognitive deficit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

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

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Older Adults in Congregate Care Setting Disproportionately Affected by COVID-19

- Long-Term Care Facility (LTCF) residents and staff accounted for 6% of cases and 40% of deaths in the U.S. (Nov 24, 2020)
 - Skilled Nursing Facilities (~1.3 M)
 - ~ 496,000 confirmed + probable cases (as of November 15, 2020)
 - > 69,000 deaths
 - Assisted Living Facilities (~0.8 M)
 - 27,965 confirmed + suspected cases (as of October 15/2020, based on 23 states)
 - 5,469 deaths (as of October 15/2020, based on 23 states)



Phased Allocation of COVID-19 Vaccines: Kathleen Dooling, MD, MPH ACIP meeting 12/1/2020



Where are we? (March 21st, 2021)

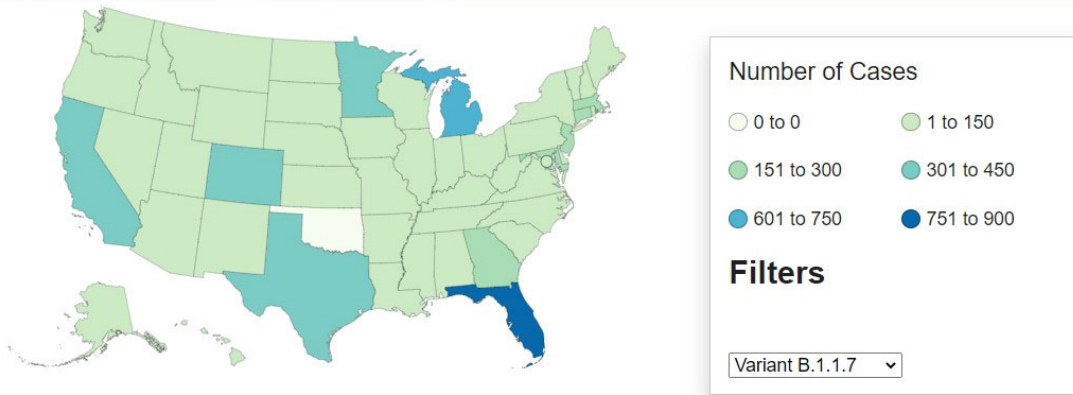


- Total Number of U.S. Cases
 - 29,613,017
- Total Number of U.S. Deaths
 - 539,038
- Total Vaccines Administered
 - 124 M
- Total Number of **N.C.** Cases
 - 895,263
- Total Number of N.C. Deaths
 - 11,820
- Percent of population vaccinated:
 - Fully vaccinated: 13.4%
 - Partially vaccinated: 20.9%

Congregate Living Settings		
	Cases	Deaths
Nursing Home	34,899	3,914
Residential Care Facility	16,687	1,242
Correctional Facility	13,674	92
Other	4,294	17
Not Living/Working in Congregate Living Settings	463,395	3,730
Missing	362,314	2,825



Cases of Variants of Concern in the United States**†



Variant	Reported Cases in US	Number of Jurisdictions Reporting
B.1.1.7	5567	50
B.1.351	180	26
P.1	48	15

<https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant-cases.html>

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LTCF-Unique Infection Prevention Challenges

- 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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LTCF-Unique Infection Prevention Challenges: COVID-19

- Additional precautions and training to reduce transmission and isolate residents
- Lack dedicated in room-sinks
- Lack in room storage for linen, supplies
- Lack of alcohol-based hand rubs in rooms
- Few negative pressure rooms-if any
- Difficulty in procuring PPE
- Difficulty in procuring EPA registered disinfectants
- Staff quit or call in sick because of COVID-19



LTCF-Unique Infection Prevention Challenges: COVID-19

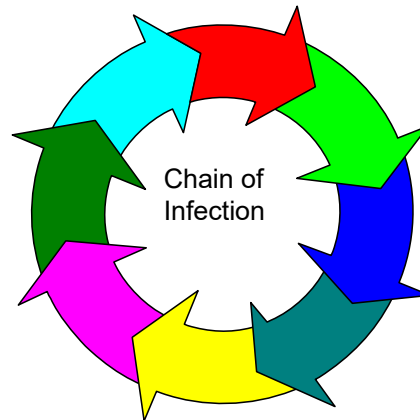
- Need for staff to deliver trays and assist residents individually
- Need to move resident to single rooms
- Required time for screening procedures
- Increased time required for facilitating telehealth visits with providers and alternative means of visitation with family.



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

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



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

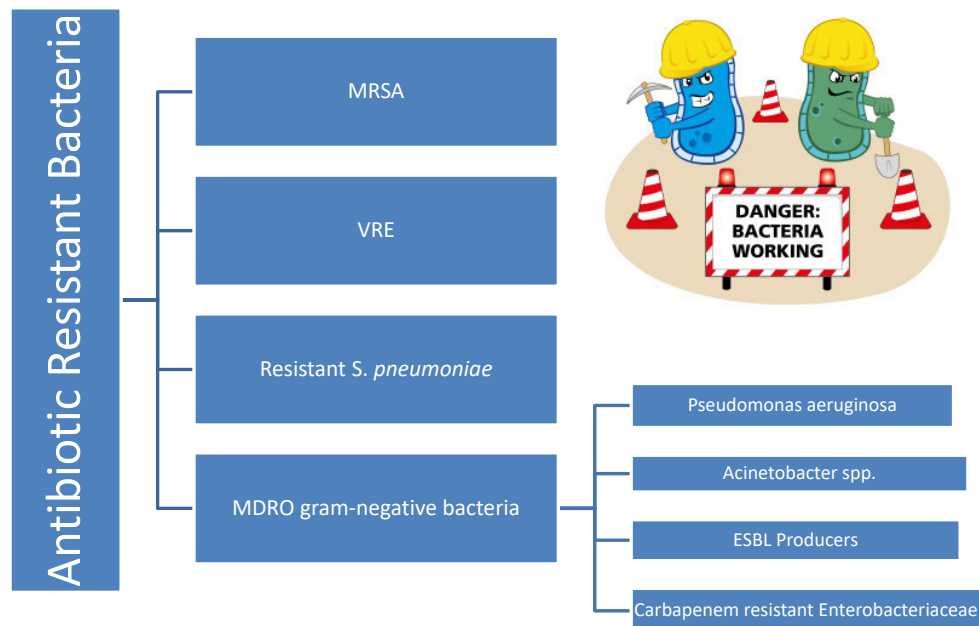


Specific Infections in LTCFs

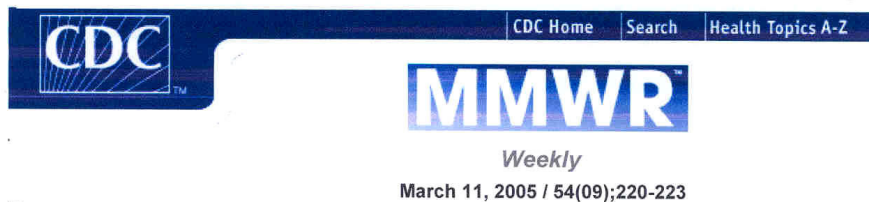
- Urinary Tract Infections
 - 30% of hospital readmissions in 30 days
- Respiratory Track Infections
 - Pneumonia 5th lead cause of death >65
- Skin and Soft Tissue
- Gastroenteritis
 - *C difficile* most common
- Conjunctivitis
- Bacteremia(s)
 - 50% related to UTI



Specific Infections in LTCFs



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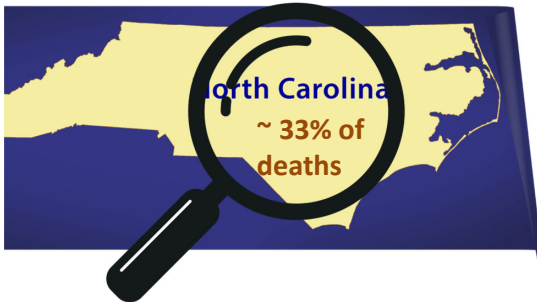
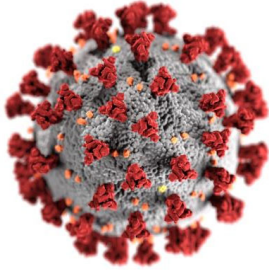


Transmission of Hepatitis B Virus Among Persons Undergoing Blood Glucose Monitoring in Long-Term--Care Facilities --- Mississippi, North Carolina, and Los Angeles County, California, 2003--2004

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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Long-term Care COVID-19 Infections



- Less than 1% of American's population lives in long-term care facilities, but as of March 4th, 2021, this tiny fraction of the country accounts for 34% of U.S. deaths
- About 10 states do not report long-term care death data

<https://covidtracking.com/nursing-homes-long-term-care-facilities>

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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)



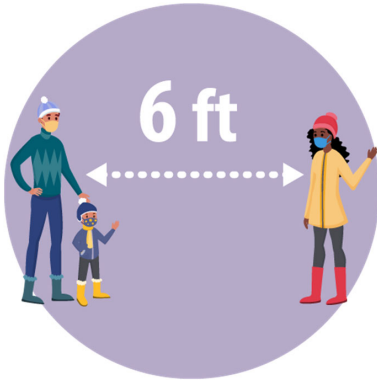
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Resident Factors (*non-modifiable*) Contributing to infections

- 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



- Families' 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

Staffing Factors

- Published data on overall high employee turnover rates in LTC facilities; 2012 data from the American Health Care Association (AHCA) showed the following turnover rates:

	Work force	Turnover rate
RN	12%	50%
LPNs	22%	36.4%
CNAs	64%	51.5%

- CNAs often work in multiple LTCFs to supplement their income

Staffing Factors

- While many people join the field with a desire to provide compassionate, hands-on care for residents, physical and emotional demands and low wages drive high rates of turnover among direct care workers
- Preliminary research has also found that nursing homes with low nursing staff levels per resident had a higher burden of COVID-19 cases than those NHs with higher nursing staff levels

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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)



Additional NC State Regulations

- Rules Governing the Sanitation of Hospitals, Nursing and Rest Homes, Sanitariums, Sanatoriums 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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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

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)

Infection Prevention and Control Program (IPCP)

- **§483.80 Infection Control**
 - The facility must establish and maintain an infection **prevention and control** program designed to provide a safe, sanitary and comfortable environment and to help prevent the development and transmission of **communicable** disease and infection



Infection Prevention and Control Program (IPCP)

- Requires system for preventing, identifying, reporting, investigating and controlling infections and communicable diseases that:
 - Covers all residents, staff, visitors, volunteers and other service providers
 - Is based on the individual facility assessment
 - Follows accepted national standards

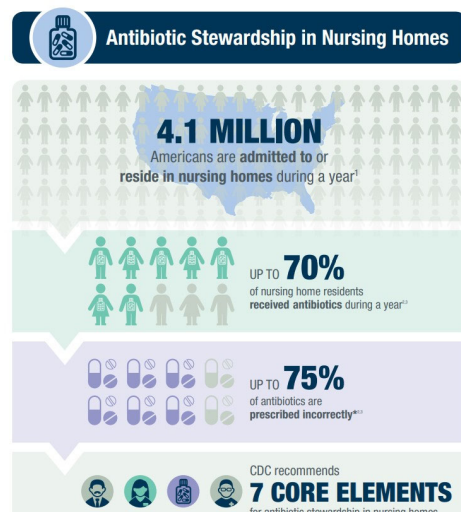
Infection Prevention and Control Program (IPCP)

- Must include, at a minimum policies and procedures that address:
 - Surveillance
 - Reporting
 - Standard and Transmission-based Precautions
 - Emphasis that isolation should be the least restrictive
- Ensure staff are aware of policies
- Annual review of the IPCP and update as needed



Infection Prevention and Control Program (IPCP)

- An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor use
- A system for recording incidents identified and the corrective actions taken

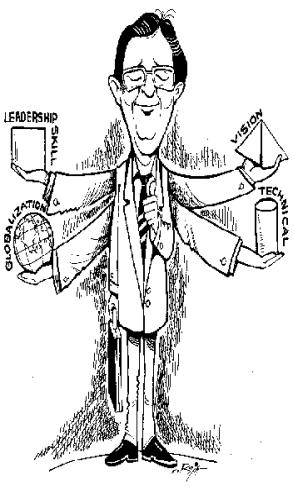


Core Practice: Leadership Support

- 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



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



Infection Preventionist(IP)

- 483.80(b) Infection Preventionist: all subparts implemented beginning 11/28/19
 - The facility must designate one or more individual(s) as the infection Preventionist(s) (IP)(s) who is responsible for the facility's IPCP. The IP must:
 - (1) Have primary professional training in nursing, medical technology, microbiology, epidemiology, or another related field;
 - (2) Is qualified by education, training, experience or certification;
 - (3) Works at least part-time at the facility; and
 - (4) Has completed specialized training in infection prevention and control.



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

<u>No of beds</u> <u>week for IC</u>	<u>Hours per</u>
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



Infection Preventionist

CDC Guidance: "Preparing for COVID-19 in Nursing Homes"

- Facilities should assign at least **one individual with training in IPC to provide on-site management of their COVID-19 prevention and response activities**
- This should be a **full-time role for** at least one person in facilities that have more than 100 residents or that provide on-site ventilator or hemodialysis services.
- Smaller facilities should consider staffing the IPC program based on the resident population and facility service needs identified in the facility risk assessment.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html>

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Administrative Structure (Committee)

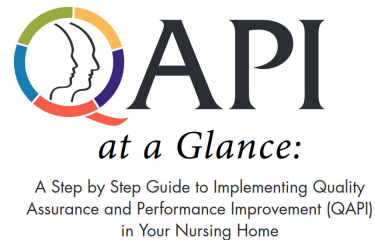
- Oversight of the IP program should be defined and should include participation of the IP, administration, nursing staff, and physician staff (Category II)
 - Meet on regular basis
 - Written minutes with action plans and recommendations
 - Evaluate effectiveness
 - Review of IP data
 - Approve policies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



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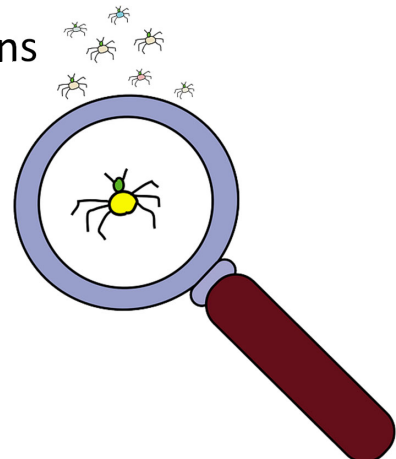
Infection Preventionist (IP)

- The individual designated as the IP (or at least one if there is more than one) must be:
 - A member of the facilities quality assessment and assurance committee
 - Report on the IPCP on a regular basis



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



Facility-wide Assessment

- “Determine what resources are necessary to care for its residents competently during both day-to-day operations and emergencies”
- “The facility must review and update that assessment:
 - As necessary
 - At least annually
 - Whenever there is, or facility plans for, any change that would require a substantial modification to any part of this assessment”



Source: Federal Register *Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities Final Rule: 10/4/16.*

Residents

- The facility’s resident population
- The care required for resident population:
 - Types of diseases, conditions, physical and cognitive disabilities
 - Overall acuity
 - Other pertinent facts that are present within that population
- Ethnic, cultural or religious factors

Source: Federal Register *Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities Final Rule: 10/4/16.* <https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities>

INFECTION PREVENTION RISK ASSESSMENT



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

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



Infection Control Risk Assessment

*Infection Control
Risk Assessment*



Priorities



Goals



Infection Control Plan



Infection Prevention and Control Assessment Tool for Long-term Care Facilities

This tool is intended to assist in the assessment of infection control programs and practices in nursing homes and other long-term care facilities. If feasible, direct observations of infection control practices are encouraged. To facilitate the assessment, health departments are encouraged to share this tool with facilities in advance of their visit.

Overview

Section 1: Facility Demographics

Section 2: Infection Control Program and Infrastructure

Section 3: Direct Observation of Facility Practices (optional)

Section 4: Infection Control Guidelines and Other Resources

Infection Control Domains for Gap Assessment

- I. Infection Control Program and Infrastructure
- II. Healthcare Personnel and Resident Safety
- III. Surveillance and Disease Reporting
- IV. Hand Hygiene
- V. Personal Protective Equipment (PPE)
- VI. Respiratory/ Cough Etiquette
- VII. Antibiotic Stewardship
- VIII. Injection safety and Point of Care Testing
- IX. Environmental Cleaning

<https://www.cdc.gov/infectioncontrol/pdf/icar/lcfc.pdf>

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Section 2: Infection Control Program and Infrastructure

I. Infection Control Program and Infrastructure		
Elements to be assessed	Assessment	Notes/Areas for Improvement
A. The facility has specified a person (e.g., staff, consultant) who is responsible for coordinating the IC program.	☐ Yes ☐ No	Click here to enter text.
B. The person responsible for coordinating the infection prevention program has received training in IC <i>Examples of training may include: Successful completion of initial and/or recertification exams developed by the Certification Board for Infection Control & Epidemiology; Participation in infection control courses organized by the state or recognized professional societies (e.g., APIC, SHEA).</i>	☐ Yes ☐ No	Click here to enter text.
C. The facility has a process for reviewing infection surveillance data and infection prevention activities (e.g., presentation at QA committee).	☐ Yes ☐ No	Click here to enter text.
D. Written infection control policies and procedures are available and based on evidence-based guidelines (e.g., CDC/HICPAC), regulations (F-441), or standards. <i>Note: Policies and procedures should be tailored to the facility and extend beyond OSHA bloodborne pathogen training or the CMS State Operations Manual</i>	☐ Yes ☐ No	Click here to enter text.
E. Written infection control policies and procedures are reviewed at least annually or according to state or federal requirements, and updated if appropriate.	☐ Yes ☐ No	Click here to enter text.
F. The facility has a written plan for emergency preparedness (e.g., pandemic influenza or natural disaster).	☐ Yes ☐ No	Click here to enter text.

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Section 1. Facility Demographics and Critical Infrastructure

(facility should complete this section prior to consultation, provided as separate PDF:

<https://www.cdc.gov/coronavirus/2019-ncov/downloads/hcp/nursing-home-icar-section1-demographics.pdf>)

1. Facility name: _____
2. County in which the facility is located: _____
3. Type of care provided by the facility (please select all that apply):

☐ Skilled nursing	☐ Ventilator care	☐ Psychiatric care
☐ Subacute rehabilitation	☐ Tracheostomy care	☐ In-facility dialysis
☐ Long-term care	☐ Dementia/memory care	☐ Other, please specify: _____
4. Total number of licensed beds in the facility: _____
5. Total number of residents currently in the facility: _____
6. Total number of units in the facility: _____
7. Total number of each resident room type in the facility:
 - Singles/Privates: _____
 - Doubles/Semi-Privates: _____
 - Triples: _____
 - Quads: _____
 - Other, please specify: _____
8. Current number of healthcare personnel (HCP*) working in the facility:
 - 8a. Total number of HCP: _____
 - 8b. Number of nurses (RNs, LVNs, etc.): _____
 - 8c. Number of nursing aides: _____
 - 8d. Number of environmental service staff (i.e., housekeeping): _____

* **Healthcare Personnel (HCP):** HCP refers to all paid and unpaid persons serving in healthcare settings who have the potential for direct or indirect exposure to residents or infectious materials, including body substances (e.g., blood, tissue, and specific body fluids); contaminated medical supplies, devices, and equipment; contaminated environmental surfaces; or contaminated air. HCP include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in resident care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel).

<https://www.cdc.gov/coronavirus/2019-ncov/downloads/hcp/nursing-home-icar-non-facilitator-guide.pdf>

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EVENT	PROBABILITY OF OCCURRENCE				RISK LEVEL OF FAILURE				POTENTIAL CHANGE IN CARE				PREPAREDNESS			YEAR: _____
	(How likely is this to occur) ¹				(What would be the most likely) ²				(Will treatment/care be needed for resident/staff) ³				(Are processes in place and can they work) ⁴			RISK LEVEL Add rankings (score of 8 or >are considered highest priority for improvement efforts)
	High	Med	Low	None	Life Threatening	Permanent Harm	Temp Harm	None	High	Med	Low	None	Poor	Fair	Good	
Score	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
External Factors (Community, Demographics)																
Identify other risk factors in the community based on geographic location (coast, mountains etc.)																
Risk of TB in the community																
Risk of emerging infectious disease in the community																
Internal Factors (Facility Related)																
Facility Associated Infection(s)																
Symptomatic urinary tract infection (SUTI)																
Influenza like illness																
Pneumonia																

<https://spice.unc.edu/tools-for-success/>

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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



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



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 <i>C difficile</i> 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



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



NCDHHS

Epidemiology

INDIVIDUALS & FAMILIES
Local Health Depts
HEALTHCARE PROVIDERS
SCHOOLS, BUSINESSES & COMMUNITY GROUPS
FACTS & FIGURES

Communicable Disease HOME
A-Z Diseases & Topics
Tuberculosis
N.C. Tuberculosis Policy Manual
Programs & Services
Surveillance & Reporting
Disease Laws & Rules
About Us
Contact Us
Quick Links
TB Facts & Sources
TB Info for Healthcare Providers
TB Info for Individuals & Families

Communicable Disease > A-Z Diseases & Topics > Tuberculosis > N.C. TB Policy Manual

Diseases & Topics
Tuberculosis

North Carolina Tuberculosis Policy Manual

Memos

- [Changes to the TB Policy Manual](#), July 21, 2017 (197 KB PDF)
- [Changes to the TB Policy Manual](#), May 23, 2016 (89 KB PDF)
- [Changes to the TB Policy Manual](#), June 10, 2015 (58 KB PDF)
- [Changes to the TB Policy Manual](#), June 4, 2014 (57 KB PDF)
- [Changes to the TB Policy Manual](#), January 2, 2014 (123 KB PDF)
- [Tuberculosis Shortage - Update and Temporary Measures](#), April 24, 2013 (PDF)
- [Changes to the TB Policy Manual](#), February 20, 2013 (124 KB PDF)

Chapter	Title	File Size	Pages
	Table of Contents	148 KB	8
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NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

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Updated: May 23, 2018

TB RISK ASSESSMENT

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



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: 10A NCAC 41A .0205
Frequency: at the time of exposure and 3 months post exposure
- **persons reasonably suspected of having tuberculosis disease**
By: 10A NCAC 41A .0205
Frequency: when suspected
- **inmates in the custody of the Department of Corrections**
By: 10A 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.



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.

* 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 Infect 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
- 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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Outbreak Definitions: 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)



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)



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

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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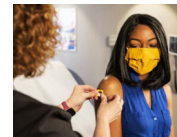
Key Elements – Employee Health

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

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Vaccination-Residents and HCP

COVID-19



Vaccine	Dose	Dose volume	Number doses/series	Interval between doses
Pfizer-BioNTech	30 µg	0.3 ml	2	3 weeks (21 days)
Moderna	100 µg	0.5 ml	2	1 month (28 days)
Janssen	5×10 ¹⁰ viral particles	0.5 ml	1	N/A

A single, valid vaccination series (i.e., either a two-dose mRNA COVID-19 vaccine series or a single dose of Janssen COVID-19 vaccine) should be administered. People are not recommended to receive more than one complete COVID-19 vaccination series.



Potential Side Effects

- Inform about the potential side effects and that they are normal
- Potential Side Effects:
 - **Local:** pain, redness, swelling at the injection site
 - **Systemic:** fever, muscle or joint aches, malaise
- Generally, occur within 1-3 days following vaccine and resolve within 1-3 days of onset
- May be more pronounced after the second dose

Reactogenicity reported to v-safe

Local and systemic reactions, day 0-7 ^{*,†}	All vaccines %	Pfizer- BioNTech dose 1 %	Pfizer-BioNTech dose 2 %	Moderna dose 1 %
Pain	70.7	67.7	74.8	70.1
Fatigue	33.4	28.6	50.0	29.7
Headache	29.4	25.6	41.9	26.0
Myalgia	22.8	17.2	41.6	19.6
Chills	11.5	7.0	26.7	9.3
Fever	11.4	7.4	25.2	9.1
Swelling	11.0	6.8	26.7	13.4
Joint pain	10.4	7.1	21.2	8.6
Nausea	8.9	7.0	13.9	7.7

^{*} v-safe data lock point 1/14/2021, 5:00 AM ET
[†] Reported on at least one health check-in completed on days 0-7 after receipt of vaccine



Interim Considerations: COVID-19 vaccines

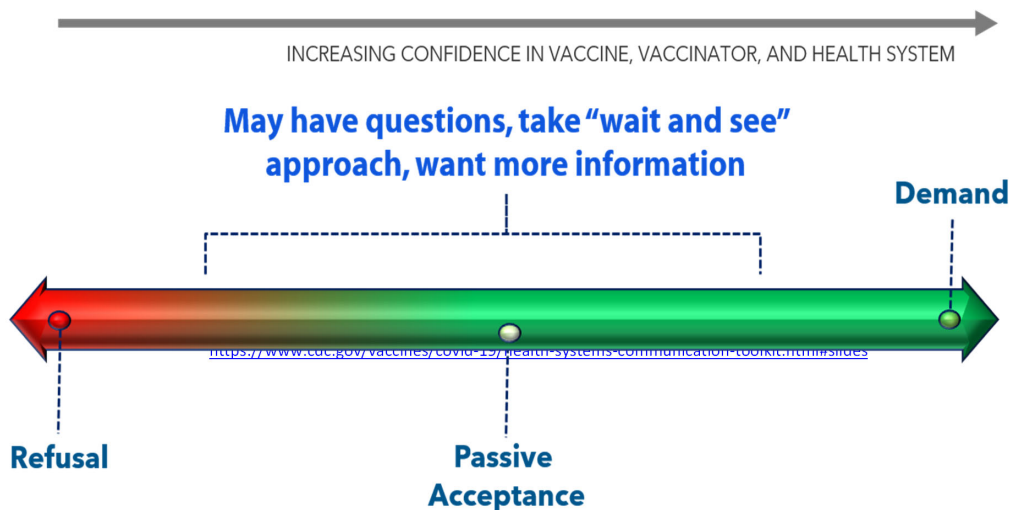


- None are live virus vaccines
- Vaccine series administered alone with a minimum interval of 14 days before or after other vaccine
- NC TB Rule
- Dosing per schedule – no booster recommended at this time-not interchangeable
- For COVID-19 + persons defer until recovered (off precautions)

<https://www.cdc.gov/vaccines/covid-19/info-by-product/clinical-considerations.html>

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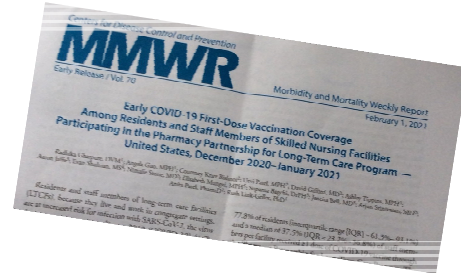
Vaccine Hesitancy



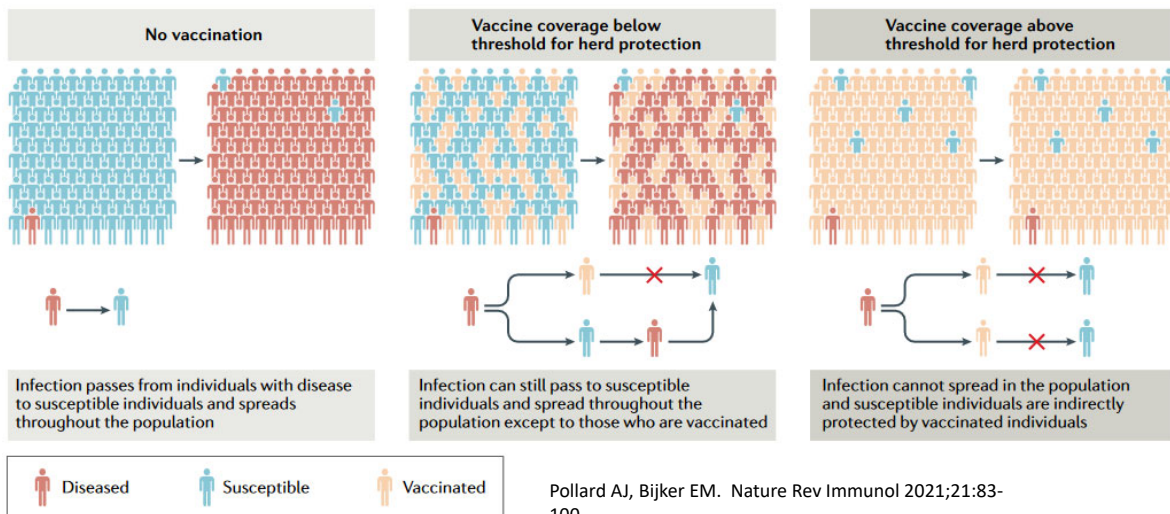
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Vaccine Hesitancy is Real

- Published February 1st, 2021
- Studied receipt of vaccine in first month of Pharmacy Partnership for LTC Program with data from NHSN and CMS
- 77.8 % of residents and 37.5% of staff members per facility received ≥ 1 dose of vaccine through Pharmacy Partnership for LTC Program



COMMUNITY PROTECTION (Herd Immunity)



Acknowledgement to Dr. David Weber-Associate CMO, UNC



COVID-19 Vaccinations: Your best shot at stopping COVID-19.

YOU HAVE A **SPOT.** TAKE YOUR **SHOT.**

You have a spot, take your shot. A tested, safe and effective vaccine will be available to all who want it, but supplies will be limited at first. To save lives and slow the spread of COVID-19, independent state and federal public health advisory committees recommend first protecting health care workers, people who are at the highest risk of being hospitalized or dying, and those at high risk of exposure to COVID-19. Keep practicing the 3 Ws—wear a mask, wait six feet apart, wash your hands—until everyone has a chance to get vaccinated.



Our goal is to vaccinate as many people as quickly as possible given the limited supply of vaccines. North Carolina moves through vaccination groups by aligning to federal priorities while empowering local health departments and hospitals with flexibility to move to the next priority group as they complete groups and have vaccines available.

For more information: [YourSpotYourShot.nc.gov](https://yourspotyourshot.nc.gov)

<https://covid19.ncdhhs.gov/vaccines/find-your-spot-take-your-shot>

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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



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Healthcare Worker Education

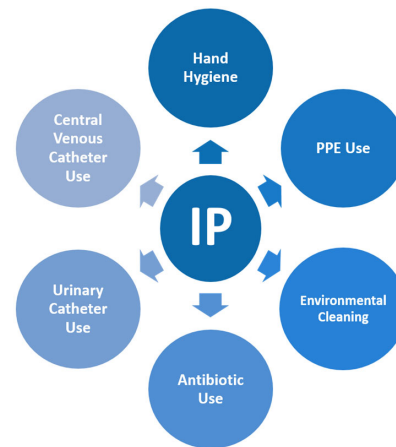
- Topics should include, but are not limited to:
 - Routes of disease transmission
 - Hand Hygiene
 - Sanitation procedures
 - MDROs
 - Transmission-based precautions
 - OSHA required education

Training and Competency *SARS-CoV-2 (COVID-19)*

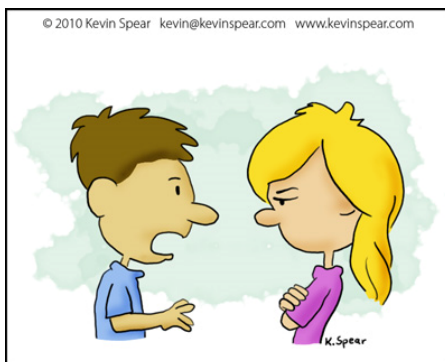
- Educate and train HCP, including facility-based and consultant personnel (e.g., wound care, podiatry, barber) and volunteers who provide care or services in the facility.
- Reinforce adherence to standard IPC measures including hand hygiene and selection and use of personal protective equipment (PPE).
- Have HCP demonstrate competency with putting on and removing PPE and monitor adherence by observing their resident care activities.
 - Return demonstration
- Educate HCP about any new policies or procedures.

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



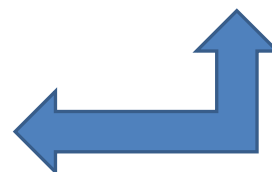
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"It's not that I don't love you.
It's just that a ten year-old needs his freedom."

- **Timely**
- **Based on data that is valid**
- **Comparisons between peers may be helpful**
- **Sustained**

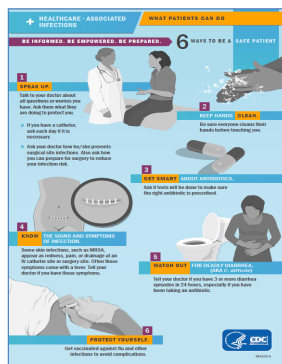
**Feedback of
Data:
Does it Work?**



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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



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)



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.

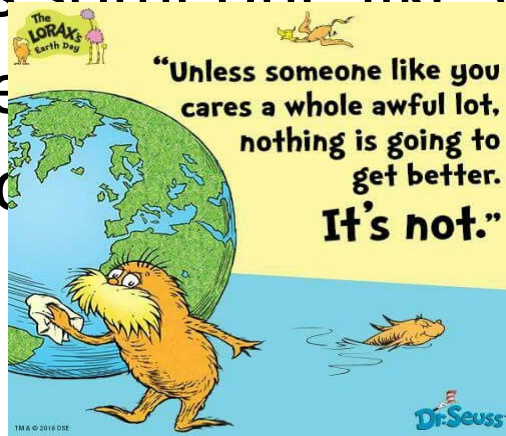
In Conclusion

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



Quote by a Famous Doctor

“Unless someone like you cares
a whole awful lot, nothing is
going to get better. It's not.”



Dr. Seuss The Lorax

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QUESTIONS



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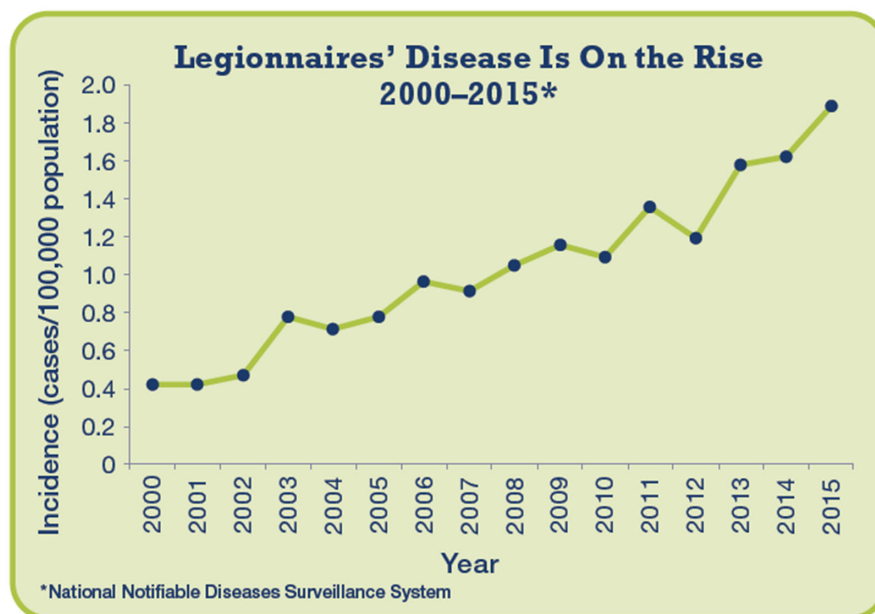
Developing a Water Management Program to Reduce *Legionella* Growth & Spread in Buildings

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

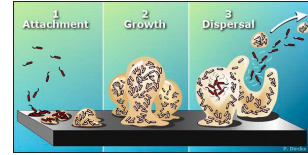
External Factors

- 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



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)?



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

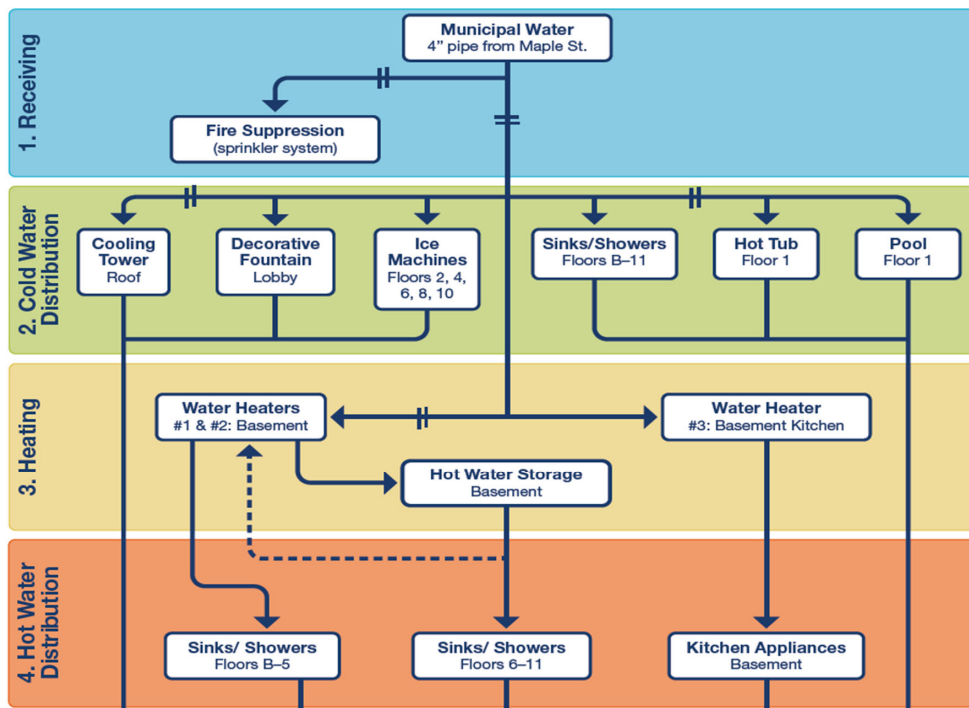
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Water Management Team

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



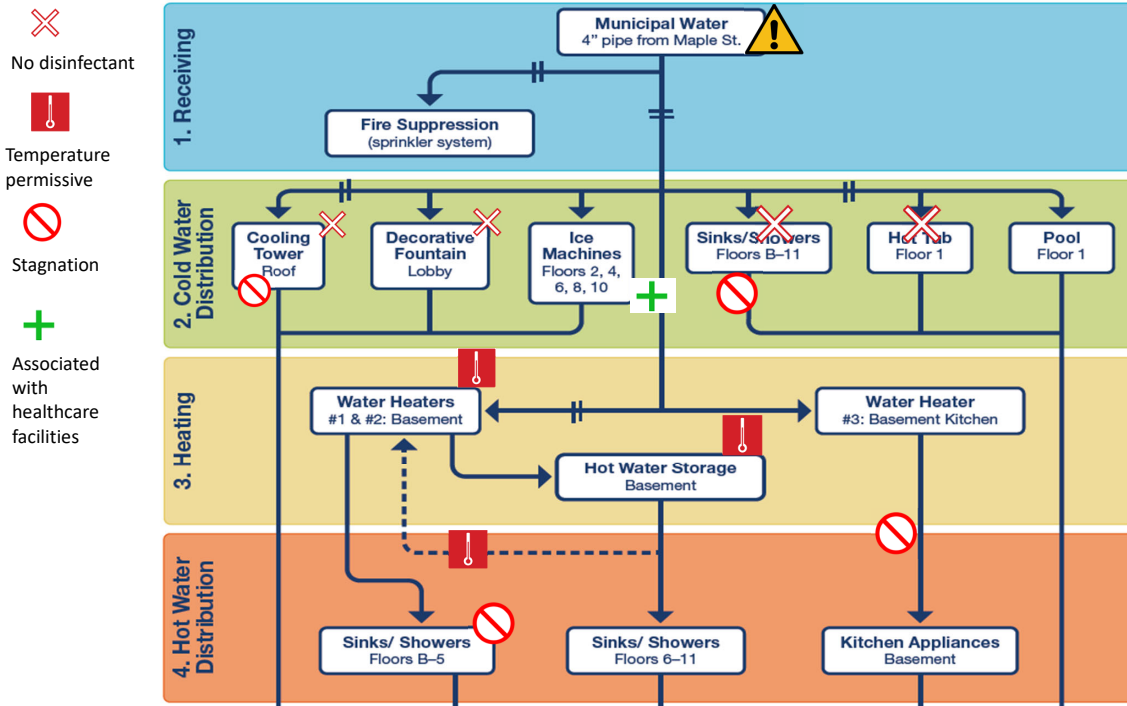
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Describe Your Building Water Systems

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

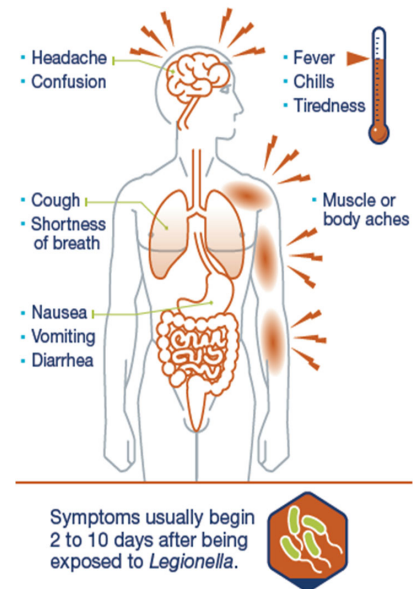
Additional Elements of a WMP

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

Legionnaires' disease symptoms



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QUESTIONS



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