



The University of Alabama at Birmingham



Presented by the:
*Alabama Regional Center for
Infection Prevention and Control
Training and Technical Assistance
&
The Alabama Nursing Home and
Long-Term Care Facility Strike
Team*

WELCOME TO THE
**MOBILE COUNTY
MINI INFECTION
PREVENTION BOOTCAMP FOR
NURSING HOMES AND LONG-
TERM CARE FACILITIES**

APRIL 26, 2024



About the Alabama Nursing Home and Long-Term Care Facility Strike Team (LTC Strike Team)

The goal of the LTC Strike Team is to provide nursing homes and long-term care facilities in Alabama with up-to-date guidance and technical assistance for the prevention and surveillance of infectious disease outbreaks including COVID-19.

- Established in Spring 2022 through funding from the Alabama Department of Public Health (ADPH) **Bureau of Communicable Disease Infectious Diseases & Outbreaks Division** via the CDC's Epidemiology and Laboratory Cooperative Agreement (ELC CoAg).
- The ADPH Bureau of Communicable Disease Infectious Diseases & Outbreaks Division is completely separate from Bureau of Health Provider Standards Long-Term Care Division
- Intent of the LTC Strike Team is to be a resource for all nursing homes and long-term care facilities in the state of Alabama.
- Funded until 6/30/2026



Primary Activities

Infection Prevention and Control Consultation for nursing homes and long-term care facilities 	In-Service Training for health care providers and in your facility 	Technical Assistance 
We utilize the CDC's Infection Control and Response Assessment (ICAR) tools to assist facilities in Alabama in preparing for or responding to COVID-19 and other infectious disease outbreaks.	We provide specialized training to assist facilities in building and maintaining infection prevention infrastructure.	We support the effective implementation of practices to prevent the transmissions of COVID-19 and other infectious diseases by providing technical assistance to facilities.
<ul style="list-style-type: none">• Voluntary• Non-regulatory• In-person• Before, during or following an outbreak	<ul style="list-style-type: none">• Environmental Cleaning• Handwashing and Basics of Infection Prevention• PPE Selection• PPE Donning/Doffing Sequence• Others as requested by facilities	<ul style="list-style-type: none">• N-95 Fit Testing• HEPA Filtration Systems• Assistance with COVID-19 Administration

<https://sites.uab.edu/lcstriketeam/>

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ADPH/LTC Strike Team Partnership

ADPH's Bureau of Communicable Disease - Infectious Diseases & Outbreaks Division

- Disease surveillance/reporting
- Infectious disease outbreak investigations
- Work with facilities to implement plans to reduce the occurrence of infectious diseases
- Provide technical expertise, consultation, and assistance (may ask LTC Strike Team IP Specialist to offer outbreak ICAR)
- Education

Primary POC: Your District Investigator
<https://www.alabamapublichealth.gov/infectiousdiseases/investigators.html>

LTC Strike Team

- Preventative ICAR Consultations (COVID-19 or general)
- In-service training on IPC topics
- N-95 Respirator Fit-testing for employees
- COVID-19 Line List Review and Outreach

Primary POC: Infection Prevention Specialist who serve your county
<https://sites.uab.edu/lcstrike/about/leadership-and-staffing/>



Free HEPA Air Purifiers Available

- Available for resident and common rooms in your facility
- Continuous use, portable units
- Hospital grade filters
- Lifetime warranty



Always follow manufacturer's instructions for use for use, care, and maintenance



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Housekeeping

- Please make sure you signed in!
- CEs
- Training Evaluation
- Certificates of Participation
- Questions
- Restrooms

CEUs approved for this bootcamp:

Nursing: The Deep South Center for OH&S is an approved provider of continuing education units for nurses by the AL Board of Nursing (Provider ABNP0420 Expiration Date 12/16/2026) and has awarded this program **4.5 CEUs**. All other professionals are awarded .38 CEU's

Nursing Home Administrator: The Board of Examiners of Nursing Home Administrators has reviewed and approved the seminar for continuing education credit for licensed nursing home administrators in the State of Alabama for **3.5 hours**.

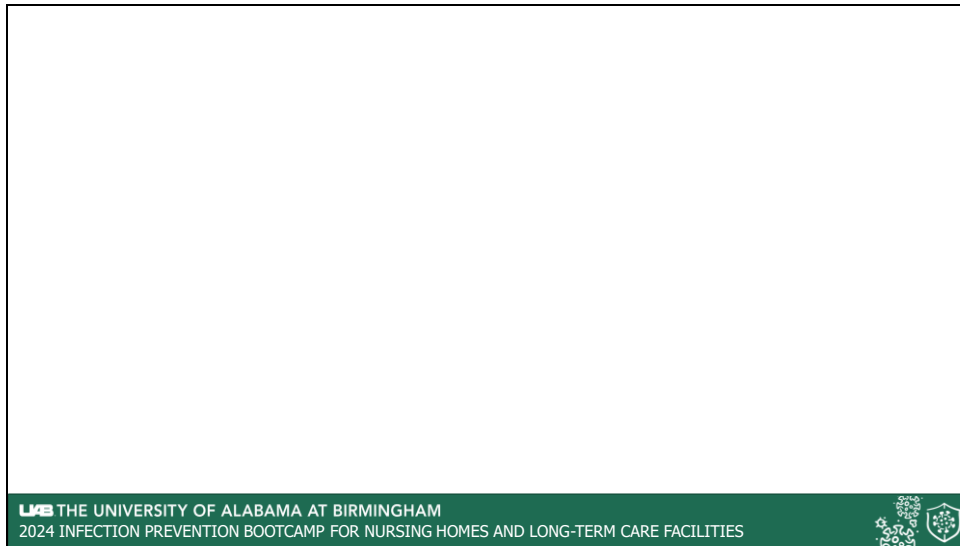


Lori Lloyd, BSN, RN

- Infectious Disease and Outbreaks Division
- Emergency Management Division



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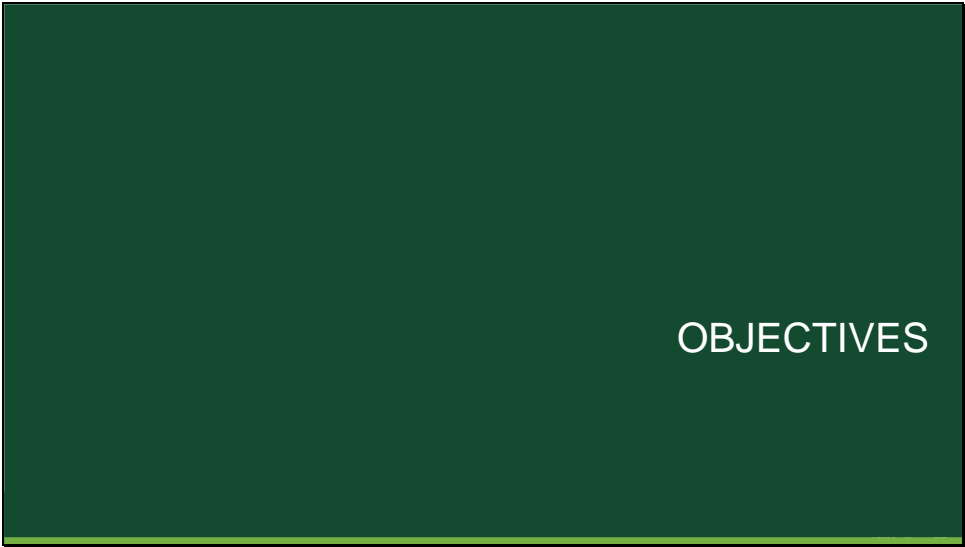


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Laundry Services: General Infection Prevention Overview for Long-Term Care Facilities



»»» OBJECTIVES

- 1**
Review processes used in healthcare laundry services on premises or offsite.
- 2**
Identify steps to minimize the spread of infections during linen transport.
- 3**
Describe how improper personnel handling, laundering, and storage of soiled linen can pose a risk of exposure to infectious materials.

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OVERVIEW OF LAUNDRY SERVICES

 Linen may become contaminated with pathogens from resident's skin, blood, body fluids, and other toxic substances that may pose a risk to healthcare providers.

 Items that are laundered may include textiles such as bed sheets, blankets, washcloths, towels, reusable gowns, curtains, resident's/HCP's personal clothing, and linen used for cleaning and disinfection.



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THE LAUNDRY PROCESS

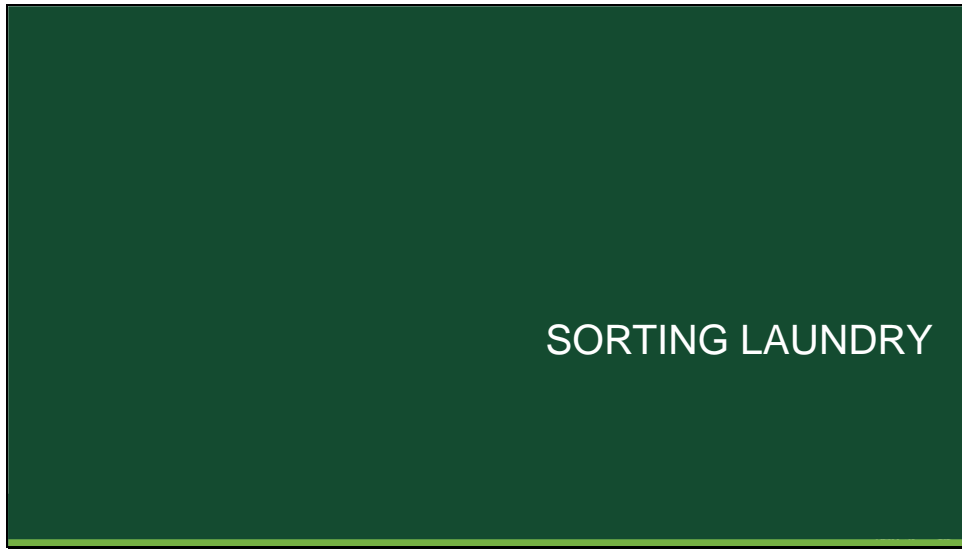


THE LAUNDRY PROCESS: CONTAINMENT

- Used linens should be handled in a manner that avoids contamination of the environment and healthcare personnel clothing. They should not be shaken, sorted, or prerinsed at the point of use.
- Soiled laundry should be contained in bags or containers that clearly indicate they are soiled at the point of use. Hamper covers are not required in patient care areas.
- Contaminated textiles and fabrics are placed into bags or other appropriate containment in this location; these bags are then securely tied or otherwise closed to prevent leakage.







PARAMETERS OF THE LAUNDRY PROCESS

THE LAUNDRY PROCESS: LAUNDRY OVERVIEW



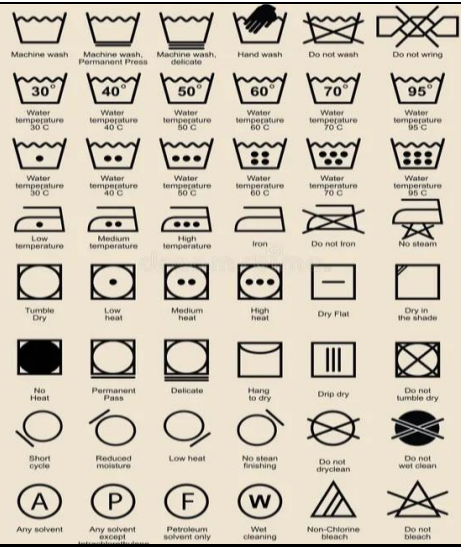
HYGIENICALLY CLEAN

- Fabrics, textiles, and clothing used in health-care settings are disinfected during laundering and generally rendered free of vegetative pathogens (i.e., hygienically clean), but they are not sterile.
- Laundering cycles consist of flush, main wash, bleaching, rinsing, and souring.
- Cleaned wet textiles, fabrics, and clothing are then dried, pressed as needed, and prepared (e.g., folded and packaged) for distribution back to the facility.

THE LAUNDRY PROCESS: LAUNDRY SYMBOL GUIDE

Ensure that staff are appropriately trained and deemed competent.

Also ensure that the manufacturer's instructions for use are followed.



THE LAUNDRY PROCESS: WASHING PARAMETERS



- The antimicrobial action of the laundering process results from a combination of mechanical, thermal, and chemical factors.
- Dilution and agitation in water remove substantial quantities of microorganisms.
- Soaps and detergents function to suspend soils and exhibit some microbicidal properties.

THE LAUNDRY PROCESS: WASHING PARAMETERS

- Hot water provides an effective means of destroying microorganisms.
 - Washing with hot-water, defined as 160°F (71°C) temperature, for a minimum of 25 minutes
 - Water can be provided by steam jet or separate booster heater.
- Low-temperature laundry cycles rely heavily on the presence of chlorine- or oxygen-activated bleach to reduce the levels of microbial contamination.
 - Washing in low water temperatures of 71°F–77°F (22°C–25°C) can reduce microbial contamination when the cycling of the washer, the wash detergent, and the amount of laundry additive are carefully monitored and controlled.




THE LAUNDRY PROCESS: CHLORINE BLEACH



- Chlorine bleach is an economical, broad-spectrum chemical germicide that enhances the effectiveness of the laundering process.
- Chlorine bleach is not, however, an appropriate laundry additive for all fabrics.
- The use of chlorine bleach assures an extra margin of safety.
 - A total available chlorine residual of 50–150 ppm is usually achieved during the bleach cycle.
 - Chlorine bleach becomes activated at water temperatures of 135°F–145°F (57.2°C–62.7°C).

Always follow manufacturer's instructions for use.

THE LAUNDRY PROCESS: RINSE CYCLE



- The last of the series of rinse cycles is the addition of a mild acid (i.e., sour) to neutralize any alkalinity in the water supply, soap, or detergent.
 - ◻ It inactivates some microorganisms.
 - ◻ It reduces the risk for skin reactions among residents.
- Damp laundry is not left in machines overnight.



INFECTION CONTROL
PREVENTION STRATEGIES

»»» BASIC INFECTION PREVENTION & CONTROL STRATEGIES

- Standard Precautions
- Hand Hygiene
- Minimize Transmission of Infection
- Disinfection of Surfaces

INFECTION PREVENTION

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STANDARD PRECAUTIONS


STANDARD PRECAUTIONS

Standard Precautions are a group of infection prevention practices that **apply to the care of all residents, regardless** of suspected or confirmed infection or colonization status.


USE STANDARD PRECAUTIONS FOR EVERYONE!


»» STANDARD PRECAUTIONS

- Standard precautions **protect** and **prevent** healthcare personnel or the environment from transmitting infections to other residents.
- Standard precautions are based on the principle that **all** blood, body fluids, secretions, and excretions (except sweat) **may** contain transmissible infectious agents.



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WHY IS HAND HYGIENE IMPORTANT?

- Normal human skin is colonized with bacteria.
-
- Total bacterial counts on the hands of medical personnel have ranged from **39,000** CFUs/cm² to **4,600,000** CFUs/cm².
- Performing hand hygiene **reduces** the spread of potentially deadly germs to residents and healthcare providers.

<https://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>

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CLEAN HANDS COUNT

HAND HYGIENE

Germs are primarily spread through the hands of healthcare providers. Therefore, hand hygiene remains the #1 way to prevent the spread of infection.

Hand hygiene includes:

- Hand sanitizing with an alcohol-based hand rub (with 60-95% alcohol content)
- Hand washing with soap and water




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PERSONAL PROTECTIVE EQUIPMENT




CLEANING AND DISINFECTION
IN LONG-TERM CARE LAUNDRY FACILITIES

LAUNDRY FACILITIES		
<p><i>“Soiled laundry holding areas are anticipated to be heavily contaminated and should undergo at a minimum, daily cleaning and disinfection consistent with other areas of the hospital.”</i></p>		<p><i>“These areas include soiled utilities on the units, laundry chute discharge areas, and soiled laundry holding areas near the loading dock if healthcare laundry is performed offsite.”</i></p>
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LAUNDRY FACILITIES: SOILED LINEN AREA

“Maintain the receiving area for contaminated healthcare textiles at negative pressure compared with the clean areas of the laundry in accordance with AIA construction standards in effect during the time of facility construction.”

In all facility types (including long-term care), ASHRAE Standard 170-2017 indicates that soiled utility and soiled holding areas *“should be at negative pressure to adjacent areas with a minimum of 2 outdoor air changes per hour (ACH) and 10 total ACH.”*



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»» LAUNDRY FACILITIES: CLEAN VS. SOILED LINEN AREA

- Clean linen must always be kept separate from contaminated linen.
- The use of separate rooms, closets, or other designated spaces with a closing door provides the most secure methods for reducing the risk of accidental contamination.



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»» PREVENTION IS KEY

Infection Prevention and Control is an important strategy intended to reduce the spread of infections in laundry facilities.

PREVENTION IS KEY!

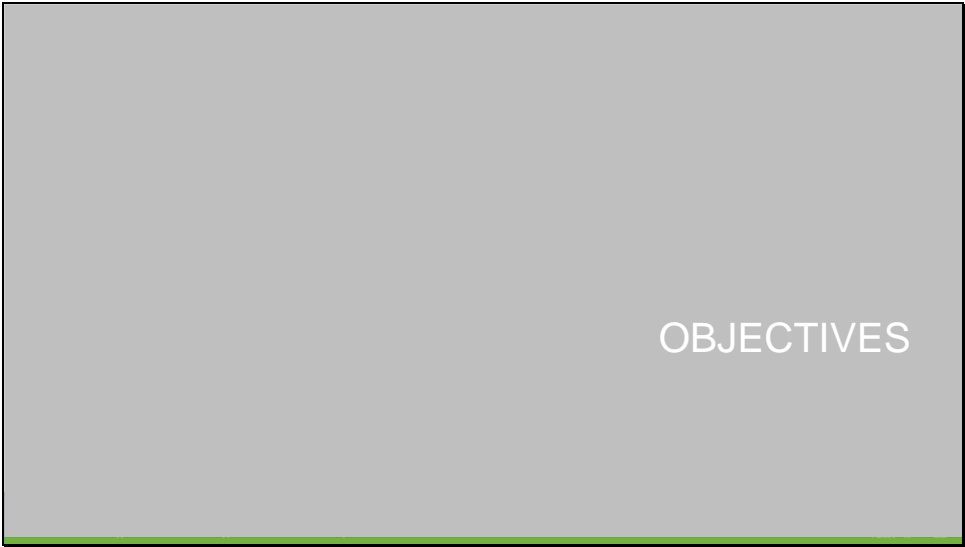


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Factors That Affect Medication Administration



Resident appointment schedules (Example: dialysis, therapy, doctor, or dental appointment)

The number of prescribed medications that are to be administered to each resident

Performing an assessment (resident, lab values, or vital signs) prior to medication administration

Medication calculations

Resident with a higher acuity, on isolation precautions, or with an urgent/emergent situation


Need for order clarification from ordering provider

Often working with limited staffing resources, increased staffing ratios or provider with multiple roles

Ensuring that the necessary equipment to complete medication administration is available

The length of time it takes to prepare and pass medication in the morning, mid-day, afternoon, or evening and being timely when passing medications at the appropriate times

To be informed and knowledgeable about each medication and to have a working knowledge of side effects, adverse effects, and potential drug interactions of these medications



Medication Cart Items

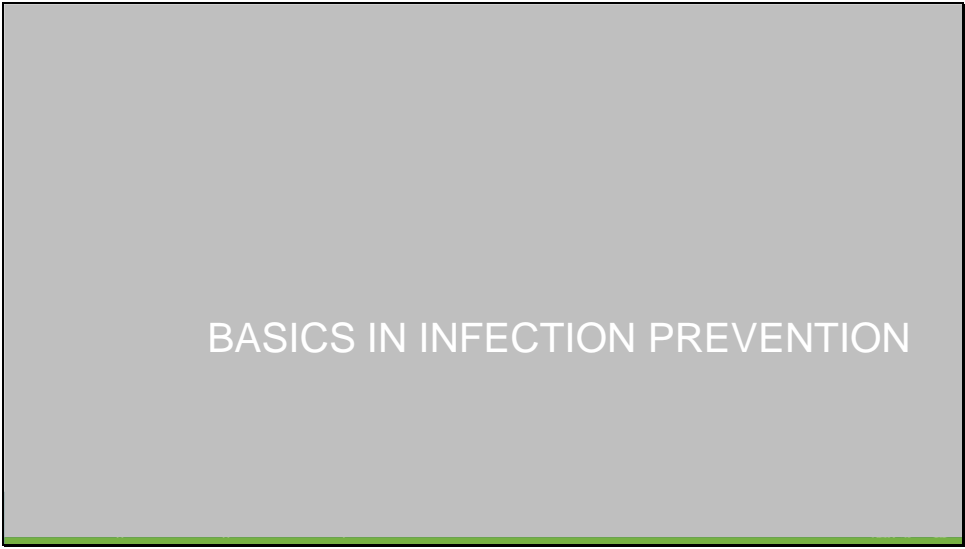
- Pill crusher (silent knight)
- Drinking cups
- Medication cups
- Spoons
- Applesauce (comes from kitchen)
- Water pitcher (Dated and Labeled)
- Thickened Water
- Juice (If resident prefers)
- Protein Supplement
- Straws
- Diabetes Management supplies
- Lancet, strips, glucometer
- Hand sanitizer
- Facility provided lotion



Common Food Used With Medication Administration

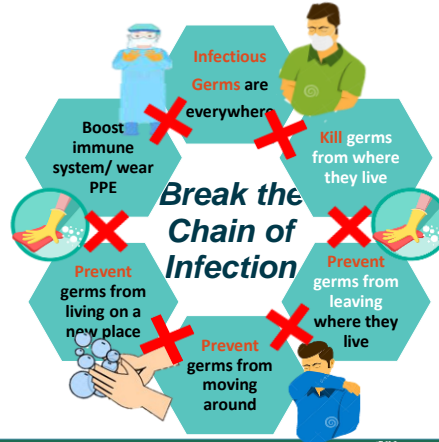
- Apple Sauce
- Pudding
- Ice Cream
- Juices/Punch
- Milk Supplements
- Thicken Liquids





Role of Infection Prevention and Control

The role of infection prevention and control is critical in healthcare settings as it assists in the *disruption or ending* of the cycle that will **STOP THE SPREAD** of pathogens and germs within the environment.



So, What's The Infection Control Issue?


Medication administration is often fraught with many potential infection control risk.

Let's highlight a few!



Infection Prevention Plan

- The IP must address the potential increased risk of pathogen transmission associated with these additional activities and services.
- A comprehensive IPC plan must now include measures to prevent environmental contamination of items such as in-room computers, computer keyboards, touch screens, and equipment.
- In addition, the plan must anticipate an increasing traffic flow to the LTC facility by visitors and service providers who support these activities.



Prevent Infection Transmission From Fomites

- Fomites are inanimate objects that can be contaminated with germs.
- Germs can be spread when the fomites are touched.
- Examples of fomites are medication drawer handles, surface of medication cart, touch screen monitors, and bedside tables.
- Ensure that these surfaces are **cleaned and disinfected** on a routine basis and as needed when soiled or contaminated.



Point of Care POC Device

- Glucometer
 - Is the device for single resident use
 - Cleaning and Disinfection per IFU
 - Proper Disinfectant Used
 - Where to clean and disinfect
 - Proper storage procedure followed
- Insulin Pins/ Multidose Insulin Vials
 - Needles – Single use
- Lancet
 - Lancet - Single use
- All supplies should remain in original containers (with lot #s, expiration dates).
- Cotton balls should be maintained and covered to prevent contamination



Infection Prevention with Supplies on Medication Cart

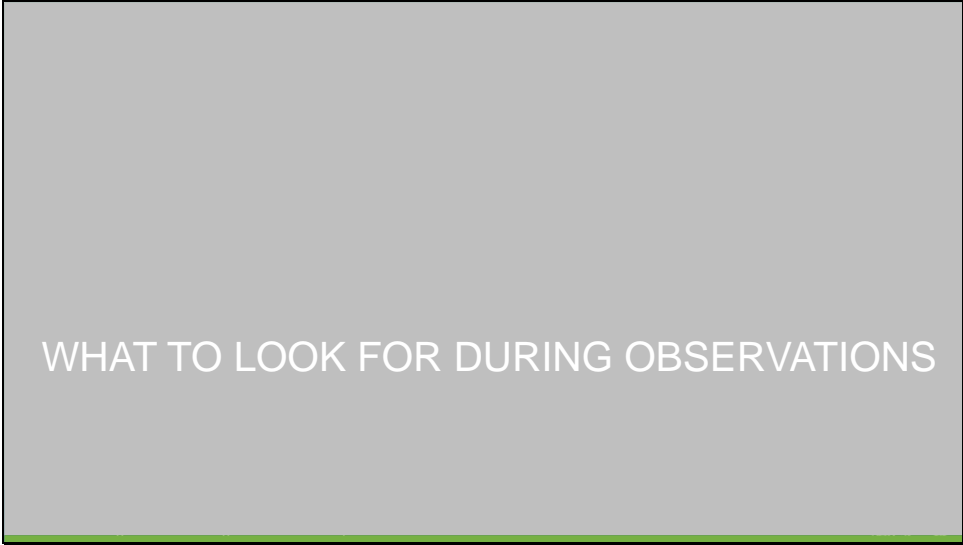
- Items are to be maintained as single use
- Items are to be protected from being contaminated (cups turned downward)
- Water pitcher (labeled and dated)
- Foods used (labeled and dated)
- Surfaces intact without, rust, or breaks in its integrity
- Medications should not be touched with bare hands
- No personal drinks or items should be on the medication cart
- Items are used before expiration date
- Outdate checks (shift older items to the front or top)





Infection Prevention and Medication Administration

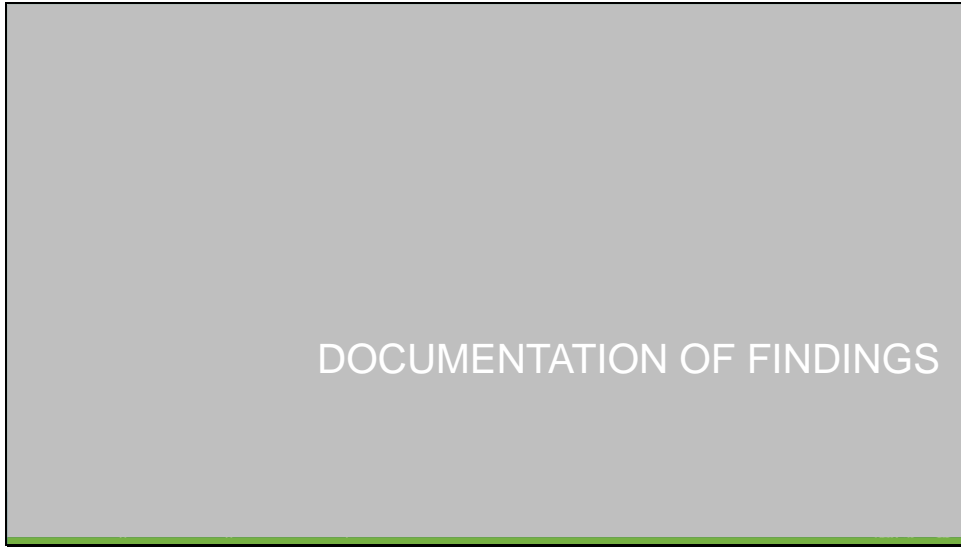
- Care should be planned based on the type of medication being administered
- Take care to scrub the hub prior to administering intravenous medications
- Note IV access: Site intact, flushes with ease, without redness, without signs of infiltration
- For all creams and drops, ensure that these do not get contaminated.
- Utilize appropriate PPE
- Care should be given for proper cart cleaning and disinfection (Example: between shift change or daily)



Module 6 Injection Safety ICAR

- Injection safety includes practices intended to prevent transmission of infectious diseases between one patient and another, or between a resident and healthcare provider.
- Injection safety further helps to prevent harm to the healthcare provider, such as a needlestick injury.







Scenario #1 - Question

A nurse is administering medications to a resident with a gastrostomy tube.

What type of precautions should the nurse take to prevent infection with this resident?



Scenario #2 - Question

You are performing infection control observations at a SNF. You notice a small container of applesauce left unattended on the medication cart. This applesauce container is open, with a spoon in it, without a labeled time or date.

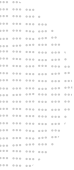


What would you do next?

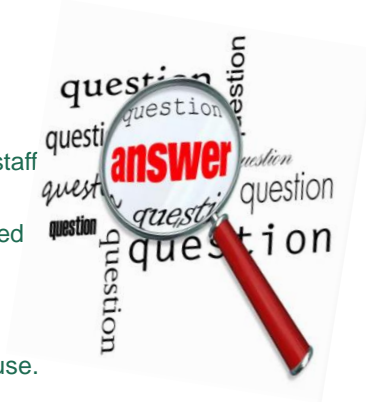
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Scenario #2 - Answer




- At minimum: You would:
 - Inform nursing leadership of the issue in a non-confrontational, non-judgmental way.
 - Encourage them to notify the appropriate staff to discard the applesauce.
 - The new applesauce will be dated and timed and discarded after each medication pass.
 - Provide just in time education of the importance of proper storage and maintenance of food items that are not in use.




Scenario #3 - Answer



d. Bring it to the attention of the medication nurse/tech in a non-threatening way. Provide just in time education reminding the staff member that a gown and gloves are to be for residents on Contact Precautions, worn per policy.



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Scenario #4 - Question

While performing observations, you observe a glucometer with a strip inserted in it on top of the medication cart.


You should:

- a. Do nothing since it is time for your break.
- b. Thank the staff member that has prepared it for your use and use it to check a resident's blood glucose.
- c. Provide just in time education sharing that the glucometer should be cleaned and disinfected after each resident's use, per the manufacturer's instructions for use.
- d. Do nothing because it only needs to be cleaned and disinfected at the end of each shift.


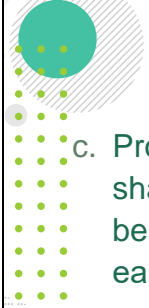


Scenario #4 - Answer

c. Provide just in time education sharing that the glucometer should be cleaned and disinfected after each resident's use, per the manufacturer's instructions for use.



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Let's Be Mindful!

Hand Hygiene

Care not to contaminate surfaces/ Use routine cleaning and disinfection


Use PPE: Knowing when and how to use PPE

Ensure all food items are labeled with date and time with proper storage

Auditing

Education/ Preparation/ Communication


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Prevention is Key

Infection Prevention and Control is an important strategy intended to prevent and reduce the spread of healthcare associated infections

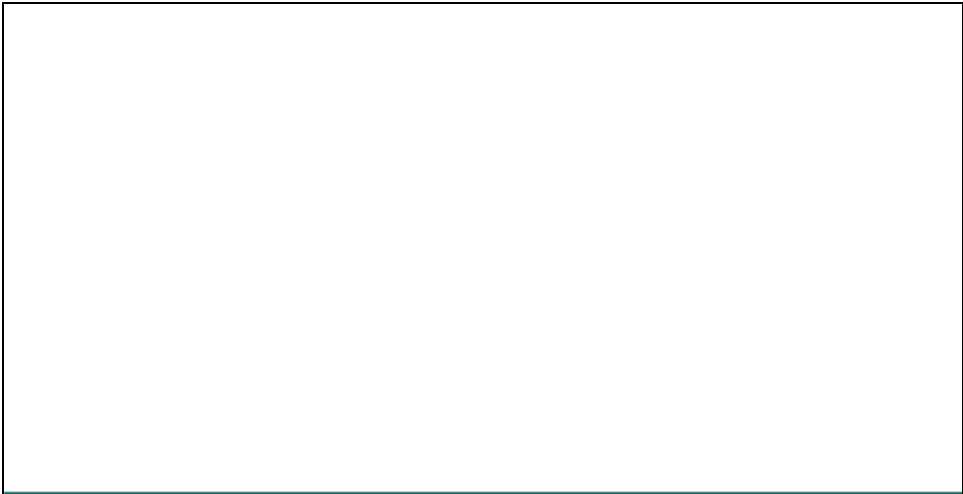
PREVENTION IS KEY!




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TAKE PRECAUTIONS:
Prevent Urinary Tract Infections in Long-Term Care Settings





"My family member is showing signs of confusion, I think they need treatment for a UTI."

"Ms. Resident has dark, foul-smelling urine. I think she needs to be treated for an UTI."

"Mr. Resident has had an indwelling urinary catheter in for a week. I think it would be a good idea to order a urine culture just to make sure that he still does not have an infection."


"It is ok to collect a urine specimen from the catheter's drainage bag."

GOAL: By the end of this presentation, you will be able to appropriately respond to these statements.

OBJECTIVES

- 1
Define urinary tract infection (UTI) and describe the different types of UTIs.
- 2
Identify the risk factors, signs and symptoms and infection prevention strategies related to UTI.
- 3
Recognize the importance of antibiotic stewardship in residents with suspected UTIs and identify the consequences of overuse of antibiotics.

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According to Centers for Disease and Control





■ Healthcare Associated Infections (HAIs)

- 1 to 3 million serious infections occur every year in nursing homes, skilled nursing and assisted living facilities.
- Infections include urinary tract infection, diarrheal diseases, antibiotic-resistant staph infections, and many others.
- Infections are a major cause of hospitalization and death; as many as 380,000 people die of the infections in LTCFs every year.

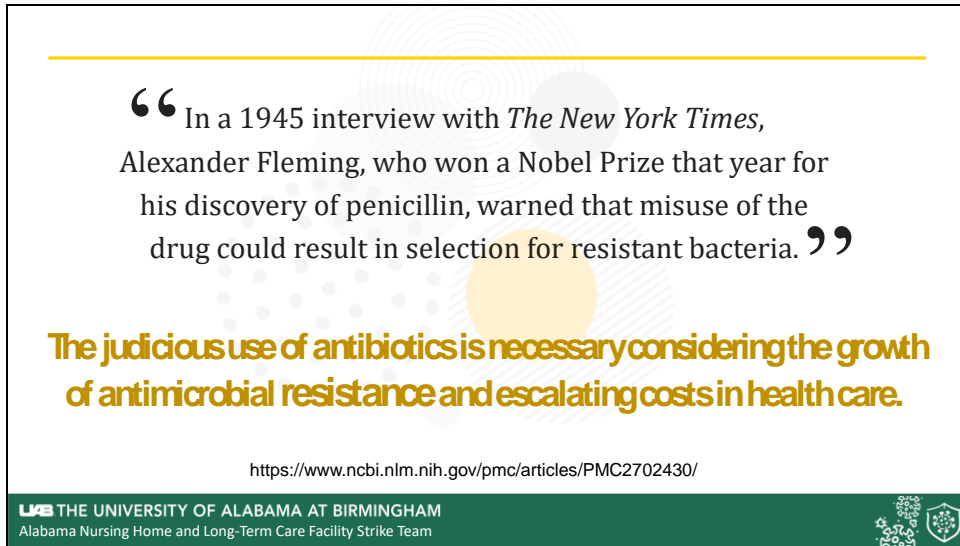
Reducing HAIs is critical to improving patient safety and controlling healthcare costs.



ANTIBIOTIC USAGE IN NURSING HOMES

 4.1 million Americans are admitted to or reside in nursing homes during a year	 12% of LTCF residents have an infection at any given time
 Up To 70% of nursing home residents received one or more antibiotics during a year	 Up to 75% of antibiotics are prescribed incorrectly

Having an effective Antimicrobial Stewardship Program is important in this setting




“ In a 1945 interview with *The New York Times*, Alexander Fleming, who won a Nobel Prize that year for his discovery of penicillin, warned that misuse of the drug could result in selection for resistant bacteria. ”

The judicious use of antibiotics is necessary considering the growth of antimicrobial resistance and escalating costs in health care.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2702430/>

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**SURVEILLANCE VERSUS CLINICAL CRITERIA
FOR LTCFS**

SURVEILLANCE CRITERIA FOR LTC FACILITIES



Surveillance criteria is used to track true case events and to estimate the actual incidence/prevalence of disease conditions consistently.



Clinical criteria is meant to assist with making informed decisions on individual residents when care is needed.



[Facility Logo]

Revised McGeer Criteria for Infection Surveillance Checklist


Patient Name: _____ MRN: _____ Location: _____
Date of Infection: _____ Date of Reviewer: _____ Reviewed by: _____

UTI: evaluated - criteria met 8/11: evaluated - criteria met 8/11: evaluated - criteria met 8/11: evaluated - criteria met

Table 1. Constitutional Criteria for Infection			
Fever Single oral temp $\geq 38.3^{\circ}\text{C}$ (101 $^{\circ}\text{F}$), OR Repeated oral temp $\geq 38.3^{\circ}\text{C}$ (101 $^{\circ}\text{F}$), OR Repeated oral temp $\geq 38.3^{\circ}\text{C}$ (101 $^{\circ}\text{F}$) Single temp $\geq 38.3^{\circ}\text{C}$ (101 $^{\circ}\text{F}$) from baseline from any site	Leukocytosis $\geq 14,000 \text{ WBC} / \text{mm}^3$, OR 14% band, OR $\geq 13,000 \text{ bands} / \text{mm}^3$	Acute Mental Status Change Acute onset, AND Fluctuating course, AND Stupor/coma, OR Either disorganized thinking, OR altered level of consciousness	Acute Functional Decline A point increase in baseline ADL score according to the following items: 1. Bed mobility 2. Gait/ambulation 3. Continence within 1-12P 4. Dressing 5. Feeding 6. Personal hygiene 7. Toileting (Each scored from 0 (independent) to 4 (total dependence))

Table 2. Urinary Tract Infection (UTI) Surveillance Definitions	
Syndromes UTI without indwelling catheter Meet Full set 1 AND 2 . 1. At least one of the following signs or symptoms: - Acute dysuria or pain, burning, or tenderness of testes, epididymis, or prostate - Hematuria, or pyuria - Acute costovertebral angle pain or tenderness - Suprapubic pain - Gross hematuria - New or marked increase in incontinence - New or marked increase in urgency - New or marked increase in frequency - If the focus is hematuria, then 2 of the following: - Suprapubic pain - New or marked increase in incontinence - New or marked increase in urgency - New or marked increase in frequency 2. At least one of the following microbiologic criteria: - $\geq 10^5$ CFU/ml of no more than 2 species of organisms in a voided urine sample - $\geq 10^4$ CFU/ml of any organism(s) in a specimen collected by an in-and-out catheter	Selected Comments* The following 2 comments apply to both UTI with or without catheter: - UTI can be diagnosed without the classic symptoms if a blood culture is the source of the organism isolated from urine and there is no alternate site of infection. - The absence of a clear alternate source of infection, fever, or rigors, with a positive urine culture result in the non-catheterized patient or acute confusion in the catheterized patient will allow for treatment as UTI. However, evidence suggests that most of these episodes are likely not due to infection of a urinary source. - Urine specimens for culture should be processed as soon as possible, preferably within 1-2h. - If urine specimens cannot be processed within 60 min of collection, they should be refrigerated and used for culture within 24 h.
UTI with indwelling catheter Meet Full set 1 AND 2 . 1. At least one of the following signs or symptoms: - Feces, urine, or new onset hyperemesis, with no alternate site of infection - Urine acute change: abnormal color or acute functional decline, with no alternate diagnosis and leukocytosis - New onset suprapubic pain or costovertebral angle pain or tenderness - Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate 2. Urinary catheter specimen culture with $\geq 10^4$ CFU/ml of any organism(s) <input type="checkbox"/> UTI criteria met <input type="checkbox"/> UTI criteria NOT met	- Recent catheter trauma, catheter obstruction, or new onset hematuria are valid findings signs that are consistent with UTI but are not necessary for diagnosis. - Urinary catheter specimens for culture should be collected after replacement of the catheter if it has been in place ≥ 24 h.

Refer to original article (Stone NL, et al. Infect Control Hosp Epidemiol 2013;138:668-77) for full comments



Revised McGeer Criteria for Infection Surveillance Checklist

https://www.pharmacy.umaryland.edu/media/SOP/wwwpharmacyumaryland.edu/centers/lamy/antimicrobial-stewardship/mcgeer-criteria-for-infection-surveillance-checklist_form.pdf

URINARY TRACT INFECTION (UTI)

RISK FACTORS FOR UTI

- History of UTIs
- Dementia
- Catheter Use
- Bladder Incontinence
- Bowel Incontinence
- A prolapsed bladder
- Immobility

In Women:

- For women over age 65, the incidence rate of UTIs is over 10%.
 - For women over age 85, the incidence rate increases to almost 30%.
- Estrogen deficiency in postmenopausal women

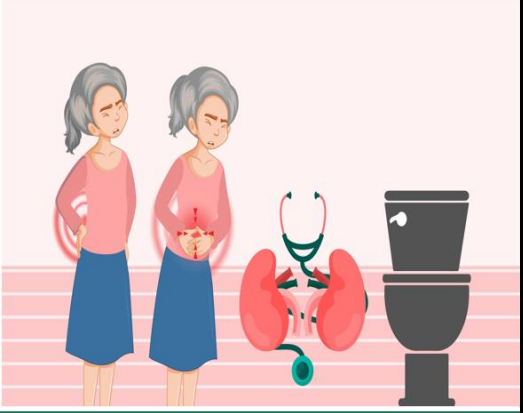
In Men:

- A bladder or kidney stone
- An enlarged prostate
- Bacterial prostatitis



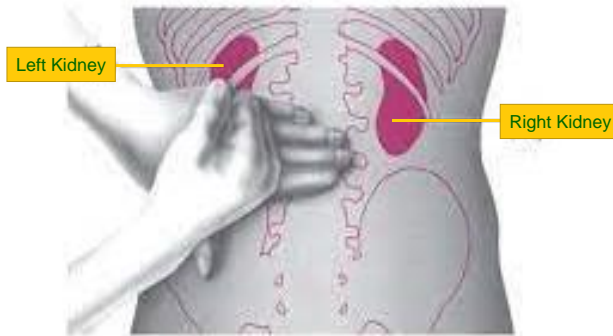
SIGNS AND SYMPTOMS OF UTI

- The symptoms of UTI (cystitis) are:
 - Dysuria
 - Frequency
 - Urgency
 - Suprapubic pain
- If pyelonephritis occurs (in which the infection spreads to the kidneys), these severe symptoms can include:
 - Fever
 - Nausea
 - Vomiting
 - Flank pain
- Older adults may present with atypical or non-localizing symptoms.



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COSTOVERTEBRAL ANGLE TENDERNESS



BACKGROUND: PATHOGENESIS OF CAUTI

Infections can either occur early due to contamination at insertion or later due to improper maintenance techniques.

Extraluminal (Outside of the closed catheter system)

- Early, at insertion
 - Endogenous- Meatal, rectal, or vaginal colonization
 - Exogenous- Health care providers hands or equipment
- Late, by capillary action

Intraluminal (Inside the closed catheter system)

- Break in closed drainage
- Ascension of fecal or skin flora
- Balloon prevents complete bladder emptying
- Biofilm formation
- Contamination of collection bag urine

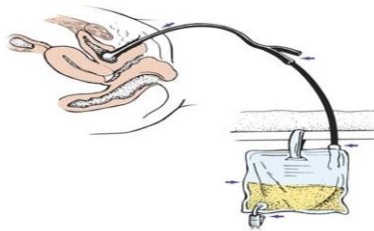



Figure from: Maki DG, Tambyah PA. Emerg Infect Dis 2001;7:1-6

APPROPRIATE URINARY CATHETER USE


Insert and continue catheters ***only*** for appropriate indications

- Acute urinary retention or bladder outlet obstruction.
- Critically ill with need for accurate urinary output monitoring
- Perioperative for certain surgeries
 - Urologic surgery or other surgery on the contiguous structures of the genitourinary systems
 - Prolonged duration of surgery (should be removed post-op)
 - Anticipation of large-volume infusions or diuretics during surgery
 - Need for intraoperative monitoring of urinary output
- Assist in open sacral or perineal wound healing in the incontinent resident
- Prolonged immobilization
- End-of-life comfort, if needed


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ALTERNATIVES TO INDWELLING CATHETERS




Male, Female urinals




Male external catheters



Female external urinary management device




Intermittent straight catheters




Bedside Commode



Scale to Weigh Absorbent Products



Incontinence Care Supplies



Ultrasound for Bladder Scanning


Pictures are not intended to imply recommendations for specific products or brands.

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Urinary Tract Infection	MCGEER CRITERIA – Resident <u>With</u> Indwelling Urinary Catheter								
Resident WITH Indwelling Urinary Catheter Must fulfill both 1 AND 2:	Minimum Criteria for meeting surveillance definition Must fulfill both 1 AND 2 criteria: 1. At least one of the following signs or symptoms: <table border="0" style="width: 100%; text-align: center;"><tr><td style="width: 25%;"><input type="checkbox"/></td><td style="width: 25%;"><input type="checkbox"/></td><td style="width: 25%;"><input type="checkbox"/></td><td style="width: 25%;"><input type="checkbox"/></td></tr><tr><td>Fever, rigors, or new onset hypotension, with no alternate site of infection</td><td>Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis</td><td>New-onset suprapubic pain or costovertebral angle pain or tenderness</td><td>Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate</td></tr></table> <p style="text-align: center;">AND</p> 2. <input type="checkbox"/> Urinary catheter specimen culture with $\geq 10^5$ cfu/mL of any organism(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fever, rigors, or new onset hypotension, with no alternate site of infection	Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis	New-onset suprapubic pain or costovertebral angle pain or tenderness	Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Fever, rigors, or new onset hypotension, with no alternate site of infection	Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis	New-onset suprapubic pain or costovertebral angle pain or tenderness	Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate						

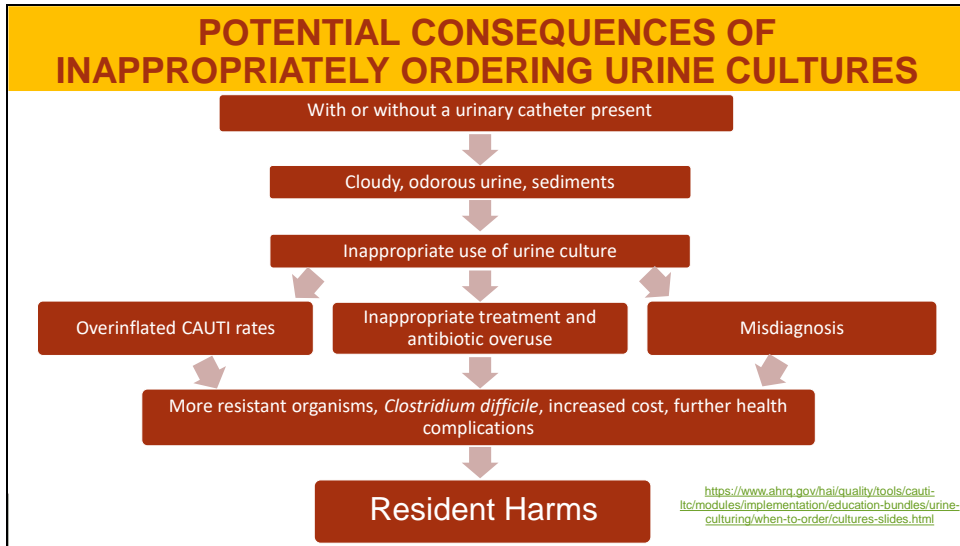
LOEB CRITERIA – Resident <i>With</i> Urinary Catheter	
Urinary Tract Infection	Minimum Criteria for Collecting Urine & Starting Antibiotic Therapy
Resident <i>WITH</i> Urinary Catheter	At Least <i>One</i> of the following criteria: <ul style="list-style-type: none">❑ Rigors – an episode of shaking or exaggerated shivering <i>with</i> a rise in temperature❑ New onset delirium – confusion❑ Temp > 100° F or 2.4° F above baseline❑ New costovertebral angle tenderness

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DETERMINING WHEN TO ORDER AN URINE CULTURE

Urinary Tract Infection	Minimum Criteria for Collecting Urine & Starting Antibiotic Therapy
Resident <i><u>WITHOUT</u></i> Urinary Catheter	<p>Either <u>one</u> of the following criteria:</p> <ul style="list-style-type: none"> • Acute dysuria (discomfort, pain, burning) OR • Temp >100°F (>37.9°C) or 2.4°F (1.5°C) increase above baseline. <p style="text-align: center;"><u>AND</u></p> <p>>1 of the following new or worsening symptoms:</p> <ul style="list-style-type: none"> □ Urgency (sudden desire to void) □ Suprapubic pain □ Urinary incontinence □ Frequency (needing to urinate 8 or more times a day) □ Gross hematuria □ Costovertebral angle tenderness
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POTENTIAL CONSEQUENCES OF INAPPROPRIATE ANTIBIOTIC USE

								
Allergic Reactions	Loss of Appetite	Diarrhea	Kidney or Liver Damage	Confusion or Mental Status Change	Seizure	Cardiac Arrhythmias	<i>Clostridioides difficile</i> infection	Antibiotic Resistance



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PLEASE NOTE:

- Urine cultures should **not** be performed on a scheduled basis (e.g., monthly).
- Urine cultures should **not** be used to identify UTIs in the absence of symptoms.
- Smelly or cloudy urine is **not** a symptom of a UTI.
- Residents with an intermittent catheter or a condom catheter should be evaluated as “not catheterized” because the catheter is not indwelling.
- Urine cultures should be used to identify the most appropriate antibiotic.
- For residents with acute dysuria, it may be appropriate to initiate empirical antibiotic therapy; but for all other symptoms, wait for a urine culture.
- For residents that regularly run a lower temperature, use a temperature of 2°F (1°C) above the baseline as a definition of a fever.



COULD IT BE SEPSIS?

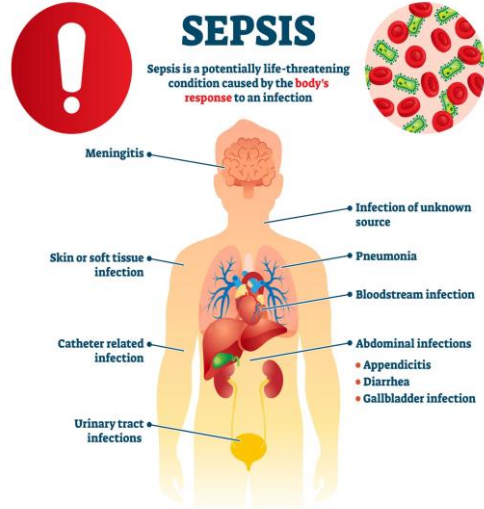
- The urinary tract infection can lead to cystitis, pyelonephritis, bacteremia, and septic shock, resulting in decreased functionality, possible acute care hospitalization and mortality.
- Management of sepsis is a complicated clinical challenge requiring **early recognition** and management of infection, hemodynamic issues, and other organ dysfunctions.



<https://jamanetwork.com/journals/jama/article-abstract/2598892>

WHAT IS SEPSIS?

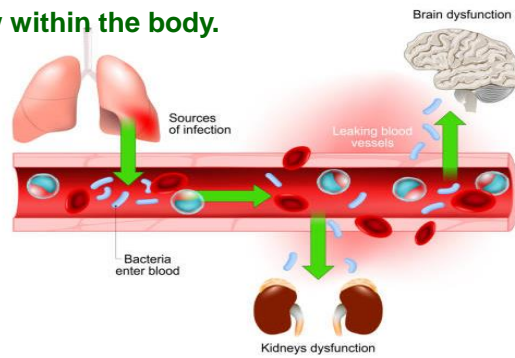
- Sepsis is the body's extreme response to an infection. It is a life-threatening medical emergency.
- Without timely treatment, sepsis can rapidly lead to tissue damage, organ failure, and death.



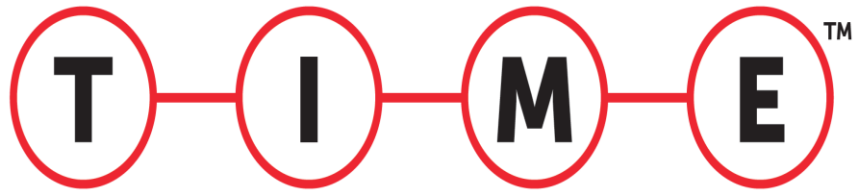
WHAT IS SEPSIS?

The immune response leads to a decreased amount of blood flow within the body.

- Capillary leak
- Vasodilation
- Blood clotting



When it comes to sepsis, remember
IT'S ABOUT TIME™. Watch for:



TEMPERATURE

higher or lower than normal

INFECTION

may have signs and symptoms of an infection

MENTAL DECLINE

confused, sleepy, difficult to rouse

EXTREMELY ILL

severe pain, discomfort, shortness of breath

**BASIC INFECTION PREVENTION &
CONTROL STRATEGIES**



STANDARD PRECAUTIONS

The diagram consists of a central light green circle labeled 'STANDARD PRECAUTIONS'. Surrounding it are 12 smaller circles, each containing a specific practice: Hand Hygiene, Resident Placement, PPE, Environmental Hygiene, Management of Blood and Body Fluid Exposure, Proper Disposal of Waste and Sharps, Respiratory Etiquette, Safe Injection Practices, Proper Handling of Linen, Proper Use of Medical Devices, Proper Cleaning and Disinfection of Equipment between Use, and Employee Safety.


Standard Precautions are a group of infection prevention practices that **apply to the care of all residents**, *regardless* of suspected or confirmed infection or colonization status.

USE STANDARD PRECAUTIONS FOR EVERYONE!



HAND HYGIENE

WHY IS HAND HYGIENE IMPORTANT?



- Normal human skin is colonized with bacteria.
- Total bacterial counts on the hands of medical personnel have ranged from **39,000** CFUs/cm² to **4,600,000** CFUs/cm².
- Performing hand hygiene *reduces* the spread of potentially deadly germs to residents and healthcare providers.

<https://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>


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HAND HYGIENE


Germs are primarily spread through the hands of healthcare providers. Therefore, hand hygiene remains the #1 way to prevent the spread of infection.

Hand hygiene includes:

- Hand sanitizing with an alcohol-based hand rub (with 60-95% alcohol content)
- Hand washing with soap and water




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 **HAND HYGIENE**

Alcohol-Based Hand Sanitizer

- Used for **routine hand hygiene** in most clinical situations (*when hands are not visibly soiled or dirty*)
- Immediately before touching a resident
- Before performing an aseptic technique (e.g., placing an indwelling device) or handling invasive medical devices
- Before moving from work on a soiled body site to a clean body site on the same resident- unless hands are visibly soiled
- After touching a resident or the resident's immediate environment
- After encountering possibly contaminated surfaces
- Immediately after glove removal










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PROPER URINE SPECIMEN COLLECTION

URINE SPECIMEN COLLECTION SAMPLES

<p style="text-align: center;">Do ✓</p> <ul style="list-style-type: none">▪ Clean-Catch (Mid-stream)▪ Intermittent, Straight Catheter▪ From Sample Port of Catheter    <p style="text-align: center;">Intermittent straight catheter</p> <p style="text-align: center;">Sample Port of Indwelling Urinary Catheter</p>	<p style="text-align: center;">Do Not collect from ❌</p> <ul style="list-style-type: none">▪ Bedpans▪ Urinals▪ Collection hats▪ Catheter drainage bags    
--	--

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**UTI PREVENTION
IN LONG-TERM CARE FACILITIES**

PREVENTION STRATEGIES TO REDUCE UTI IN LTCFS

- Perform hand hygiene
- Use gowns and gloves to protect staff and residents
- Only use catheters when they meet criteria
- Increase fluid intake, if appropriate: Older adults are subject to dehydration and over hydration. (Example: Offer 2-3 gulps of water every 30 minutes between the hours of 8am to 4pm (averages to approximately 64 oz))
- Offer scheduled toileting for each resident (Example: every 2 to 4 hours).
- Educating staff and residents to practice proper genital-urinal hygiene (Example: For women, wiping in a “front to back” method to prevent fecal contamination.
- For incontinent persons, use soap and water for cleansing the perineal area (do not use antiseptics).




**CAUTI PREVENTION
IN LONG-TERM CARE FACILITIES**


Enhanced Barrier Precautions

Applies to all residents in Skilled Nursing Facilities with any of the following:

- Infection or colonization with an MDRO *when Contact Precautions do not otherwise apply*
- Wounds and/or indwelling medical devices (e.g., central line, urinary catheter, feeding tube, tracheostomy/ventilator) regardless of MDRO colonization status




gloves




gown

PPE used for these situations during high-contact resident care activities:

- Dressing
- Bathing/Showering
- Transferring
- Providing hygiene
- Changing Linens
- Changing briefs or assisting with toileting
- Device care or use: central line, urinary catheter, feeding tube, tracheostomy/ventilator
- Wound care: any skin opening requiring a dressing



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USE OF CATHETER SECUREMENT DEVICE

BELOW THE LEVEL OF THE BLADDER

USE OF BED CLIP

POSITIONING THE INDWELLING DRAINAGE BAG

MUST NOT HAVE DEPENDENT LOOPS

BELOW LEVEL OF THE BLADDER

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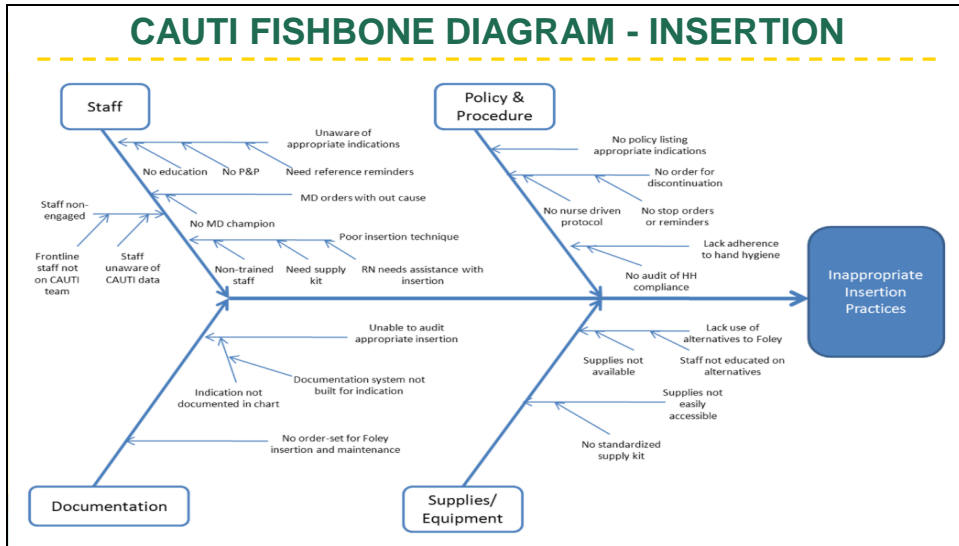
SUMMARY OF CAUTI PREVENTION MEASURES*

Best Practice

- Perform Hand hygiene and standard (or appropriate isolation) precautions
- Insert catheters only for appropriate indications
- Leave catheters in place only as long as needed
- Only properly trained persons insert and maintain catheters
- Insert catheters using aseptic technique and sterile equipment
- Maintain a closed drainage system
- Maintain unobstructed urine flow
- Prevent dependent loops in the catheter
- Position the drainage bag below the level of the bladder

*All recommendations in HICPAC guidelines at: http://www.cdc.gov/hicpac/cauti/001_cauti.htm

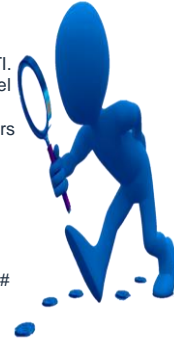




PERFORMANCE MEASURES


Process Measures

- Consider reporting both process and outcome measures to senior administration, medical, and nursing leadership and clinicians who care for residents at risk for CAUTI.
 - **Compliance with education program:** Calculate percent of healthcare personnel (HCP) who have been trained
 - Example: # of trained HCP who insert catheters/# of HCP who insert catheters (Multiply by 100 to express as a percentage)
 - **Compliance with documentation of catheter insertion and removal dates:**
 - Example: # of residents with catheters with proper documentation/# of residents with a catheter in place at some point since admission (Multiply by 100 to express as a percentage)
 - **Compliance with documentation of indication for catheter placement:**
 - Example: # of residents with catheters with proper indication documentation/# of residents with a catheter in place (Multiply by 100 to express as a percentage)



PERFORMANCE MEASURES


Outcome Measures



- Consider reporting both process and outcome measures to senior administration, medical, and nursing leadership and clinicians who care for residents at risk for CAUTI.
 - **Rates of CAUTI:**
 - Example: # of CAUTIs/Total # of urinary catheter days for all residents with an indwelling urinary catheter (Multiply by 1,000 to express as cases per 1,000 catheter days)

Use Quality improvement programs as an active approach to accomplish recommendations and when process and outcome measure goals are not being met based on internal reporting.

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