

Nursing Home Patient Safety Series Session 4: Reducing Facility-Associated Infections and Hospitalizations Related to UTI, Sepsis, Pneumonia and COVID-19



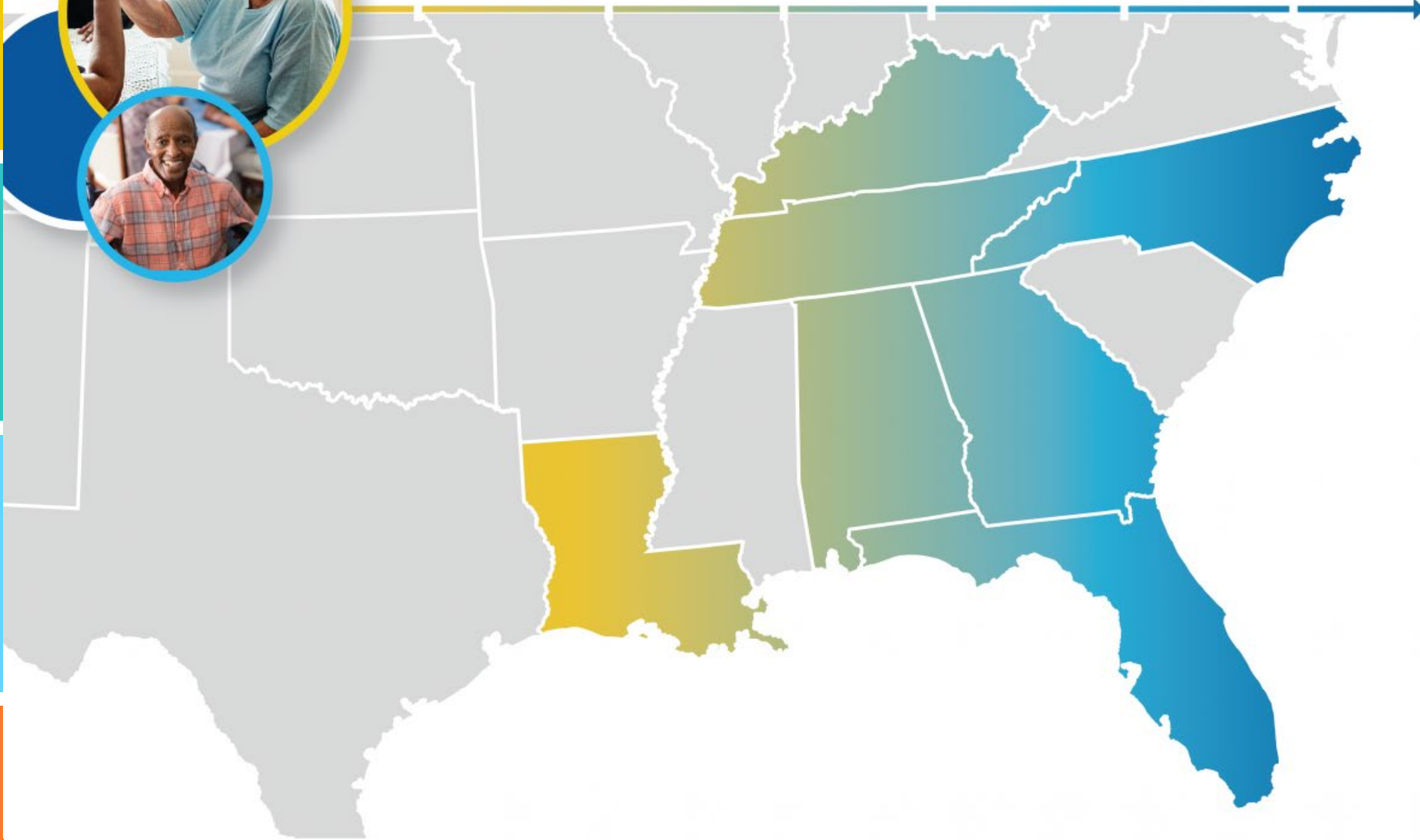
Erica Umeakunne, MSN, MPH, APRN, CIC
Infection Prevention Specialist

December 21, 2022

 **ALLIANT**
HEALTH SOLUTIONS

QIN-QIO
Quality Innovation Network -
Quality Improvement Organizations
CENTER FOR MEDICARE & MEDICAID SERVICES
QUALITY IMPROVEMENT & INNOVATION GROUP

Making Health Care Better *Together*



About Alliant Health Solutions

Erica Umeakunne, MSN, MPH, APRN, CIC

INFECTION PREVENTION SPECIALIST

Erica Umeakunne is an adult-gerontology nurse practitioner and infection preventionist with experience in primary care, critical care, health care administration and public health.

She previously served as the interim hospital epidemiology director for a large health care system in Atlanta and as a nurse consultant in the Centers for Disease Control and Prevention's (CDC) Division of Healthcare Quality Promotion. While at the CDC, she served as an infection prevention and control (IPC) subject matter expert for domestic and international IPC initiatives and emergency responses, including Ebola outbreaks and the COVID-19 pandemic.

Erica enjoys reading, traveling, family time and outdoor activities.

Contact: Erica.Umeakunne@allianthealth.org

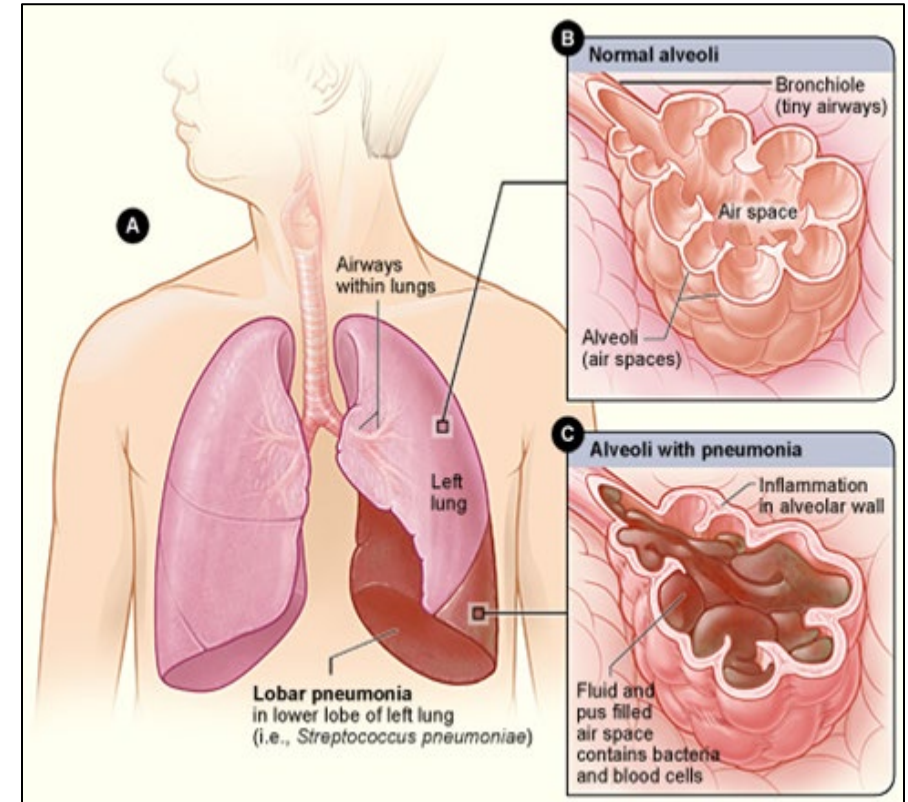


Objectives

- Present the burden of pneumonia in nursing home facilities
- Discuss steps to prevent pneumonia in nursing home residents
- Describe infection prevention and control tools for pneumonia surveillance
- Share Alliant Health Solutions quality improvement resources to support your infection prevention and control initiatives

Pneumonia

- Infection that affects one or both lungs
 - Causes the air sacs, or alveoli, of the lungs to fill up with fluid or pus
 - Ranges from mild to severe illness in people of all ages
- Caused by:
 - Bacteria (*Streptococcus pneumoniae*, *Mycoplasma pneumoniae*, *Haemophilus influenzae*, *Legionella* species, etc.)
 - Viruses (Influenza, Respiratory syncytial virus, SARS-CoV-2)
 - Fungi (*Aspergillus*, *Cryptococcus neoformans*, *Pneumocystis jirovecii*)
- Symptoms
 - Chest pain
 - Fever/Chills
 - Cough
 - Hypoxemia (Low blood oxygen levels)
 - Shortness of breath



<https://www.nlm.nih.gov/health/pneumonia>

<https://www.cdc.gov/pneumonia/index.html>

Pneumonia Risk Factors

Adults 65 or older

People with weakened immune systems

People with chronic medical conditions

People with recent severe illness or hospitalization

Living in congregate setting

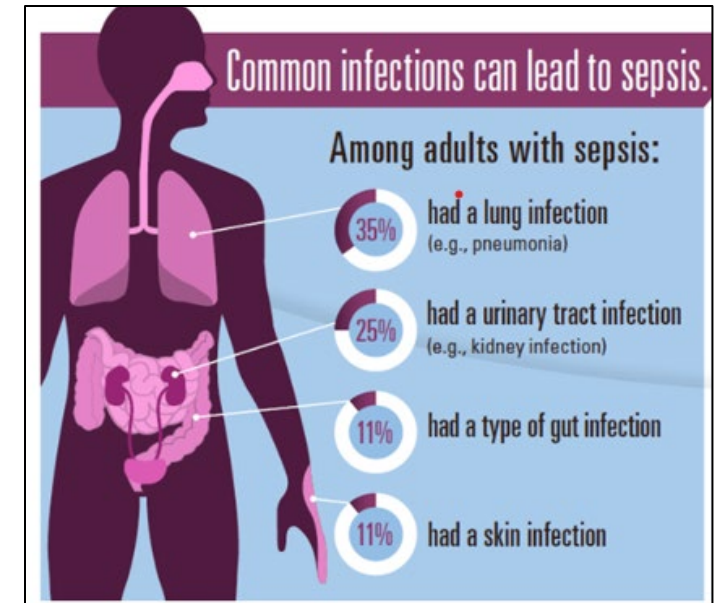
Smoking

Pneumonia Classification

- **Community-acquired pneumonia**
 - Pneumonia develops in the community (not in a hospital)
- **Healthcare-associated pneumonia**
 - Pneumonia develops during or following a stay in a healthcare setting
 - Hospitals
 - Dialysis centers
 - Long-term care facilities
- **Ventilator-associated pneumonia**
 - Pneumonia develops after being on a ventilator (a machine that supports breathing)
- **Nursing home acquired pneumonia (NHAP)*** ([Janssens & Krause, 2004](#); [Maruyama et al., 2010](#); [Mylotte, 2020](#))
 - *Argument that NHAP is clinically distinct from CAP*
 - *Underlying causes: poor mobility, poor nutritional status, multiple comorbidities*
 - *Higher mortality rate than CAP*
 - *Due to dementia and other neurological disorders that may delay diagnosis & treatment*
 - *Management considerations*

Pneumonia: Impact

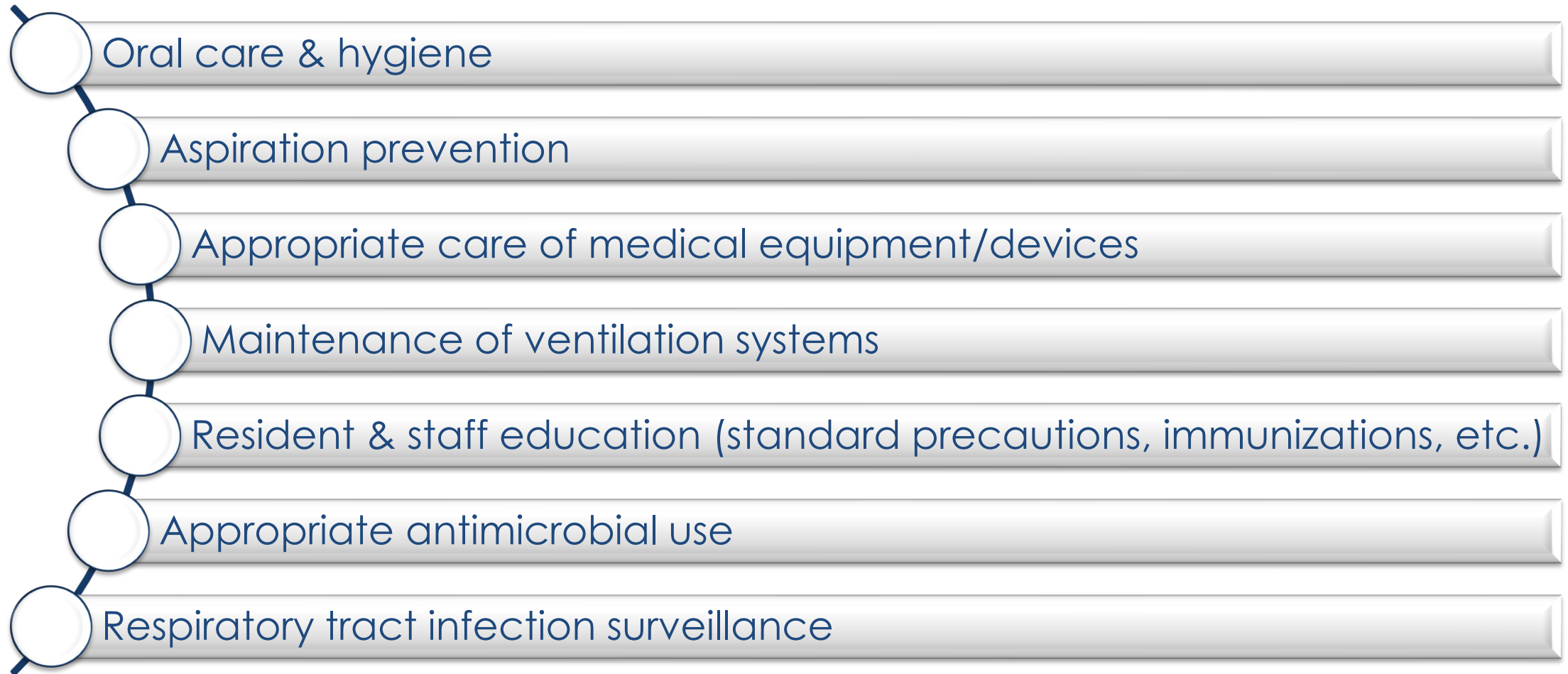
- 1.5 million visits to emergency departments with pneumonia as the primary diagnosis
- 47,601 pneumonia-related deaths
 - 14.4 deaths per 100,000 population
- Major cause of morbidity and mortality in nursing home residents ([Mills et al., 2009](#))
 - 30-day mortality rates ranging from 10 to 30 percent
- Clinical implications
 - Sepsis
 - Exacerbation of existing comorbidities
 - Potential exposure to antibiotic-resistant pathogens
 - Chronic lung disease
 - Cardiovascular sequelae
 - Hospitalization
 - Death
- Huge burden on the health care system
 - VAP hospital costs range from ~\$19,000 - \$80,000 ([AHRQ, 2017](#))
 - CAP hospitalization expenditures averaged \$33,380 ([Weycker et al., 2020](#))
 - \$4568 during the 30-day period thereafter
 - Long-term phase, all-cause expenditures averaged \$83,463 for CAP patients versus \$51,017 (95% CI \$49,553–\$52,491) for comparison patients




Pneumonia Prevention: Recommended Immunizations

- [COVID-19](#)
- [Haemophilus influenzae type b \(Hib\)](#)
- [Influenza \(flu\)](#)
- [Measles](#)
- [Pertussis \(whooping cough\)](#)
- [Pneumococcal](#)
- [Varicella \(chickenpox\)](#)

Pneumonia Prevention: IPC Interventions



Pneumonia Surveillance in Nursing Homes

 **NHSN**
NATIONAL HEALTHCARE
SAFETY NETWORK

January 2022

Pneumonia (Ventilator-associated [VAP] and non-ventilator-associated Pneumonia [PNEU]) Event

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- National Healthcare Safety Network (NHSN): Patient Safety Module
 - Centers for Disease Control & Prevention (CDC)
 - Surveillance definitions
 - Adults, pediatrics, neonates
 - Non-ventilated
 - Mechanically ventilated
- McGeer Criteria
 - Evidence-based, standardized guidance for infection surveillance activities in long-term care facilities (LTCF)
 - Represented syndromes capture a variety of clinically relevant infections that occur in the LTCF population

Pneumonia Surveillance: McGeer Criteria (Respiratory Tract Infections)

- Pneumonia (all three criteria must be present)
 1. Interpretation of a chest radiograph as demonstrating pneumonia or the presence of a new infiltrate
 2. At least one of the following respiratory sub-criteria:
 - a. New or increased cough
 - b. New or increased sputum production
 - c. O₂ saturation 94% on room air or a reduction in O₂ saturation of 13% from baseline
 - d. New or changed lung examination abnormalities
 - e. Pleuritic chest pain
 - f. Respiratory rate of ≥ 25 breaths/min
 3. At least one of the constitutional criteria (see Table 2)
- Lower respiratory tract (bronchitis or tracheobronchitis; all three criteria must be present)
 1. Chest radiograph not performed or negative results for pneumonia or new infiltrate
 2. At least two of the respiratory sub-criteria (a–f) listed in section C above
 3. At least one of the constitutional criteria (see Table 2)

https://www.jstor.org/stable/pdf/10.1086/667743.pdf?refreqid=excelsior%3A7a3c77f74c239a8bdd7b7f2457a8b37d&ab_segments=&origin=&acceptTC=1

True or False: Lung Infections Are One of the Most Common Infections That Lead to Sepsis

A. True

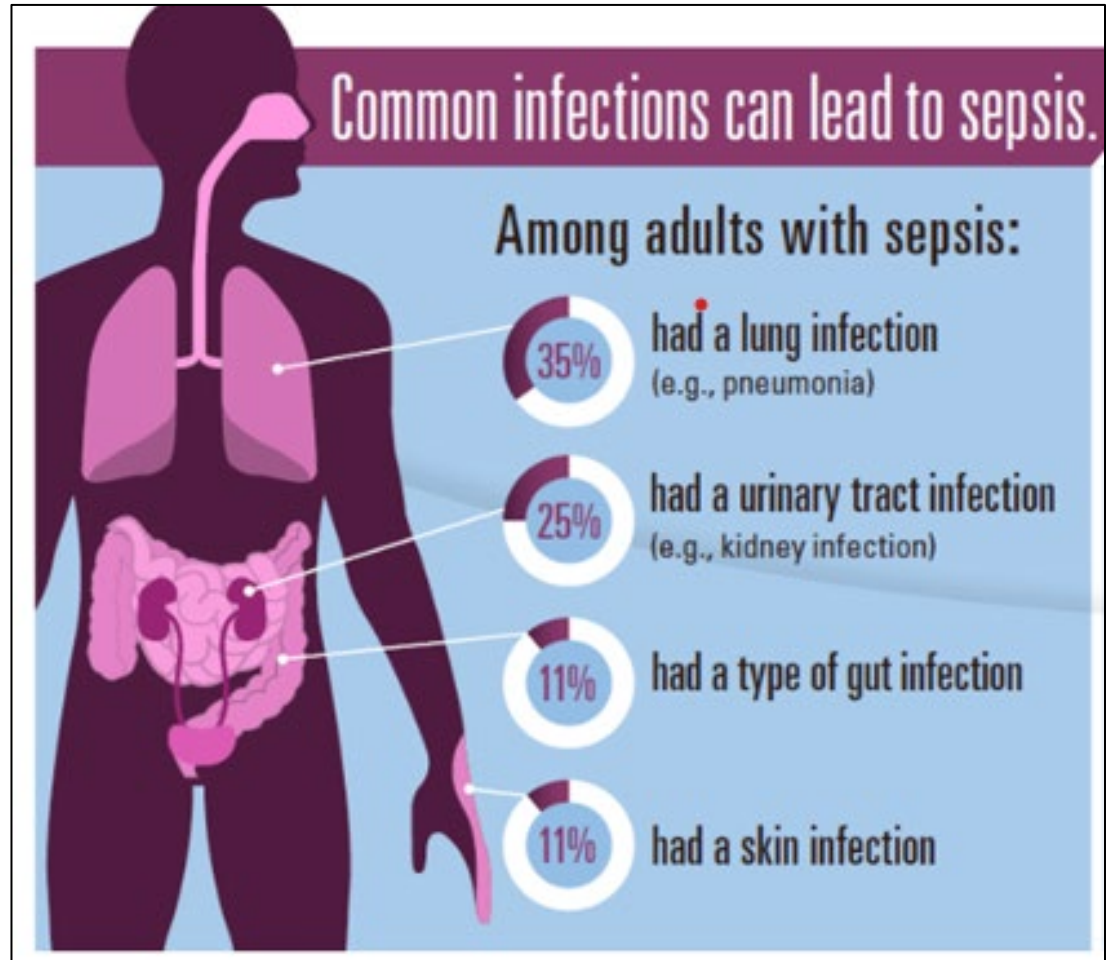
B. False

<https://www.cdc.gov/vitalsigns/sepsis/index.html>

True or False: Lung Infections Are One of the Most Common Infections That Lead to Sepsis

A. True

B. False



What Interventions May Prevent Nursing Home Residents From Developing Pneumonia?

- A. Facility-wide infection prevention and control program
- B. Policies and procedures for aspiration prevention and oral care and hygiene
- C. Using surveillance to inform your respiratory infection prevention practices
- D. Resident, family and staff education
- E. Encouraging immunizations for preventable infections that commonly cause pneumonia
- F. All the above

What Interventions May Prevent Nursing Home Residents From Developing Pneumonia?

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- F. All the above**

Pneumonia Tools, Resources and Printables

- Outcome Surveillance
 - [UNC SPICE: McGeer Criteria Respiratory Tract Infections Worksheet](#)
- Process Surveillance
 - [Quick Observation Tool for Infection Prevention \(QUOT\): Ventilator Care](#)
 - [QUOT: Hand Hygiene](#)
 - [QUOT: Standard Precautions-Personal Protective Equipment \(PPE\) Use](#)
- Sepsis
 - [Long-Term Care Nurses: Protect your Residents from Sepsis](#)
 - [Long-Term Care Certified Nurse Assistants: Protect Residents from Sepsis](#)
 - [Sepsis: Technical Resources & Guidelines](#)
- Antimicrobial stewardship
 - [AHRQ Safety Program for Improving Antibiotic Use: Bacterial Pneumonia in Long-Term Care](#)
 - [ARHQ: Assessment and Management of the Resident With a Suspected Respiratory Tract Infection](#)
- [Alliant Health Solutions: Nursing Home Infection Control](#)

SAVE THE DATE

Pneumonia Management & Nursing Care Considerations

January 18, 2023
1-1:30 p.m. ET



Questions?



Nursing Home and Partnership for Community Health: CMS 12th SOW GOALS



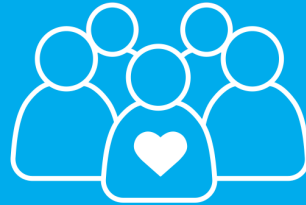
OPIOID UTILIZATION AND MISUSE

- Promote opioid best practices
- Reduce opioid adverse drug events in all settings



PATIENT SAFETY

- Reduce hospitalizations due to c. diff
- Reduce adverse drug events
- Reduce facility acquired infections



CHRONIC DISEASE SELF-MANAGEMENT

- Increase instances of adequately diagnosed and controlled hypertension
- Increase use of cardiac rehabilitation programs
- Reduce instances of uncontrolled diabetes
- Identify patients at high-risk for kidney disease and improve outcomes



CARE COORDINATION

- Convene community coalitions
- Reduce avoidable readmissions, admissions to hospitals and preventable emergency department visits
- Identify and promote optimal care for super utilizers



COVID-19

- Support nursing homes by establishing a safe visitor policy and cohort plan
- Provide virtual events to support infection control and prevention
- Support nursing homes and community coalitions with emergency preparedness plans



IMMUNIZATION

- Increase influenza, pneumococcal, and COVID-19 vaccination rates



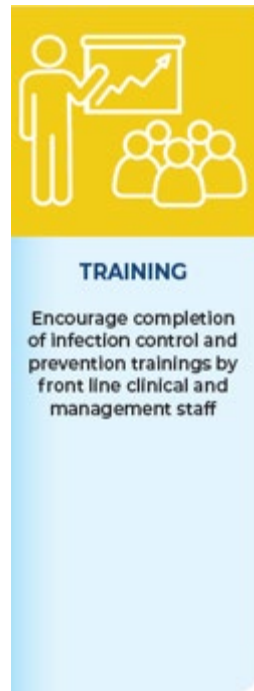
TRAINING

- Encourage completion of infection control and prevention trainings by front line clinical and management staff

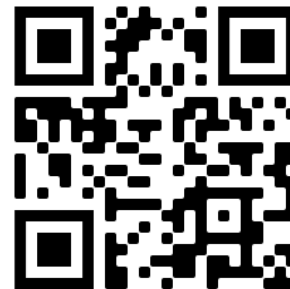
Scan the QR code or Click the Link to Complete the Assessment!

CMS requested Alliant Health Solutions, your QIN-QIO, to work with select nursing homes to understand emerging healthcare needs in nursing homes. Alliant Health Solutions is engaging nursing home leadership on each of these key areas to ensure plans are in place to achieve and maintain health quality and equity!

Please scan the QR code below and complete the assessment.

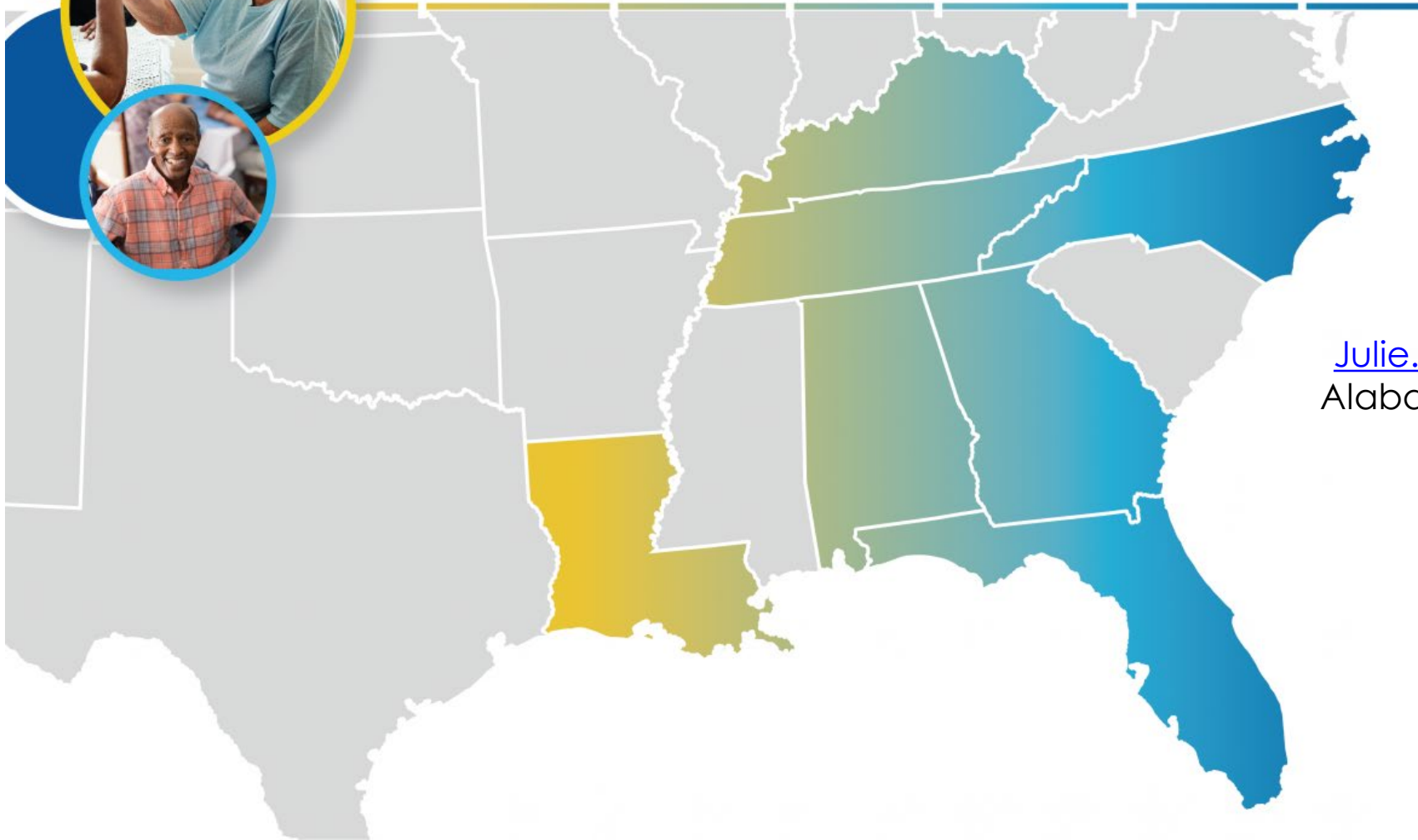


Nursing Home Infection Prevention (NHIP) Initiative Training Assessment



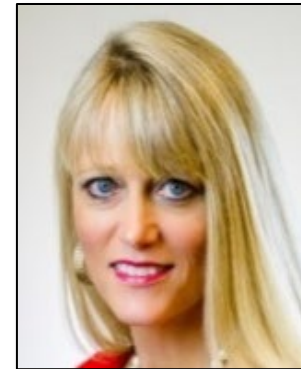
<https://bit.ly/NHIPAssessment>

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Julie Kueker

Julie.Kueker@AlliantHealth.org
Alabama, Florida and Louisiana



Leighann Sauls

Leighann.Sauls@AlliantHealth.org
Georgia, Kentucky, North Carolina and Tennessee

Program Directors

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