

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



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

November 16, 2022

 **ALLIANT**
HEALTH SOLUTIONS

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

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 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, most recently, the COVID-19 pandemic.

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

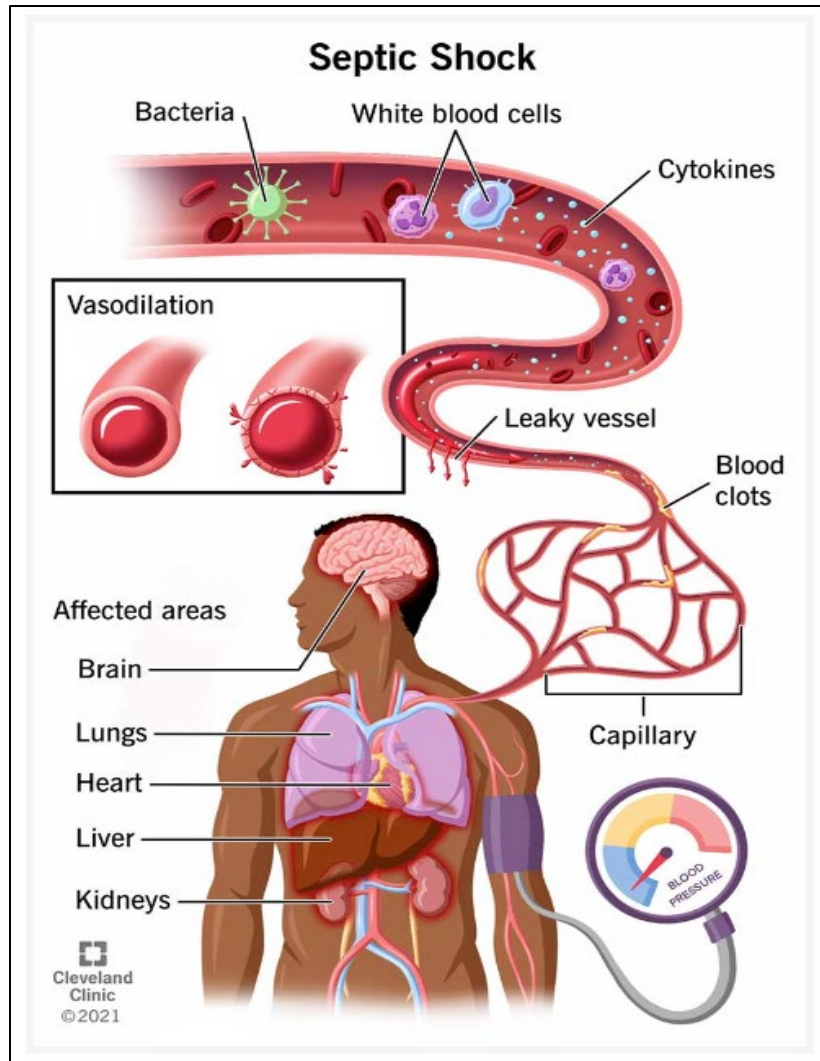
Contact: Erica.Umeakunne@allianthealth.org



Objectives

- Present the burden of sepsis in nursing home facilities
- Discuss steps to prevent sepsis in nursing home residents
- Describe interventions for the early recognition and management of sepsis
- Share Alliant Health Solutions quality improvement resources to support your infection prevention and control initiatives

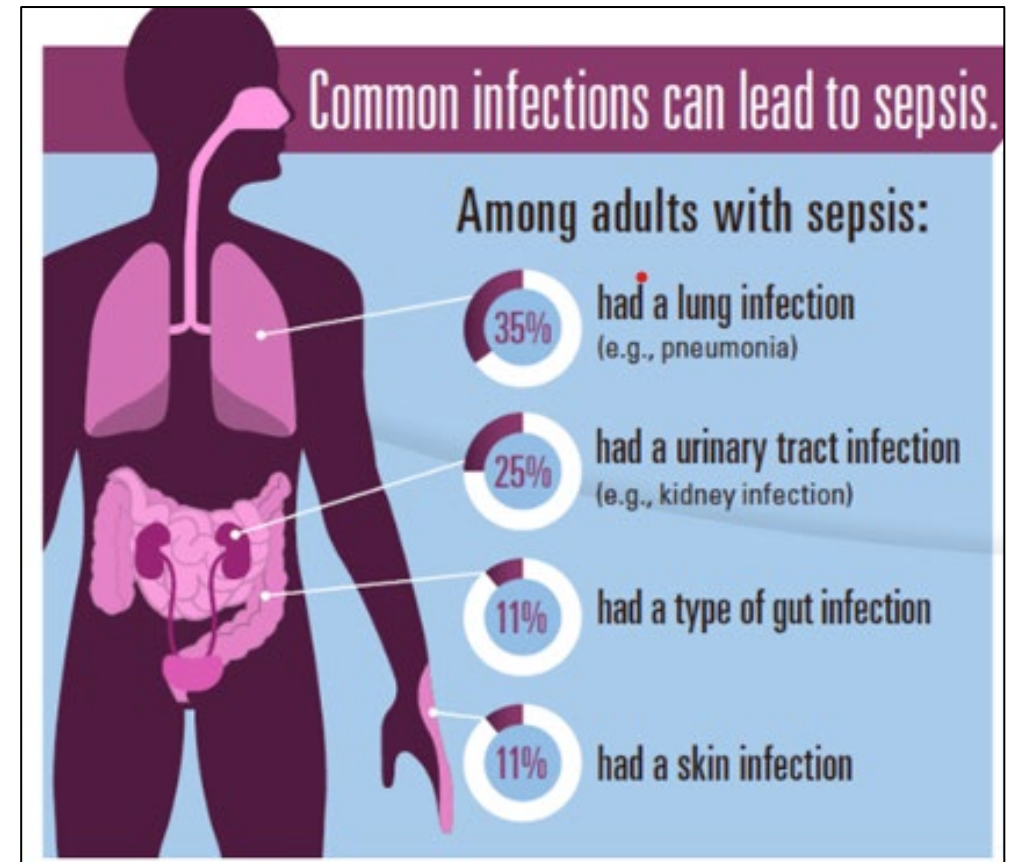
Sepsis



- Sepsis is the body's extreme response to an infection.
 - Happens when an infection triggers a chain reaction throughout the body
 - Life-threatening medical emergency
 - Rapidly leads to tissue damage, organ failure, and death
 - **Severe sepsis**
 - **Septic shock**

Sepsis Facts

- At least **1.7 million** adults in America develop sepsis
- At least **350,000** adults who develop sepsis die during their hospitalization or are discharged to hospice
- **One in three** people who dies in a hospital had sepsis during that hospitalization
- Sepsis, or the infection causing sepsis, starts before a patient goes to the hospital in nearly **87%** of cases
- Risk factors:
 - Adults 65 or older
 - People with weakened immune systems
 - People with chronic medical conditions, such as diabetes, lung disease, cancer and kidney disease
 - People with recent severe illness or hospitalization, including due to severe COVID-19
 - People who survived sepsis
 - Children younger than one



Sepsis Facts: Impact

- ~20% increase in sepsis cases from 2012-2018
- ~ \$23 billion annually for sepsis admissions
 - \$13.4 billion attributed to Medicare beneficiaries
- High 6-month mortality rates for Medicare fee-for-service
 - 60% for septic shock
 - 36% for severe sepsis
 - 31% for sepsis attributed to a specific organism
 - 27% for unspecified sepsis



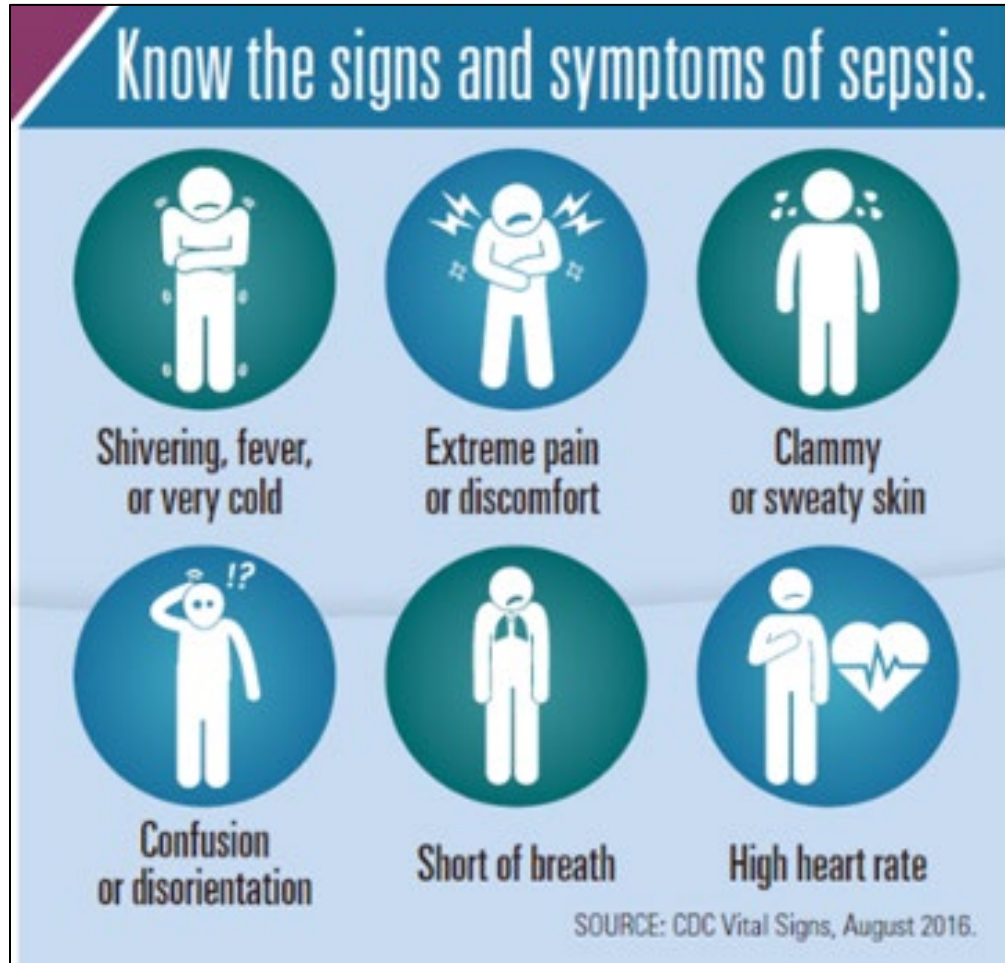
Sepsis: Nursing Homes

- Nursing home residents are sevenfold more likely to have a severe sepsis diagnosis compared to non-nursing home residents (Ginde et al., 2013).
- Nursing home residents with severe sepsis, compared to non-nursing home residents, had significantly higher rates of ICU admission (40% vs. 21%), hospital LOS (median 7 vs. 5 days) and in-hospital mortality (37% vs. 15%) (Ginde et al., 2013).
- NHs need better systems to monitor NH residents whose status is changing and to present that information to medical providers in real-time, either through rapid medical response programs or telemetry (Sloane et al., 2018).
 - Documentation of one or more vital signs was absent in 26% - 34% of cases
 - Data points were missing from the record
 - 65% of cases met criteria for sepsis

Ginde, A. A., Moss, M., Shapiro, N. I., & Schwartz, R. S. (2013). Impact of older age and nursing home residence on clinical outcomes of US emergency department visits for severe sepsis. *Journal of critical care*, 28(5), 606-611.

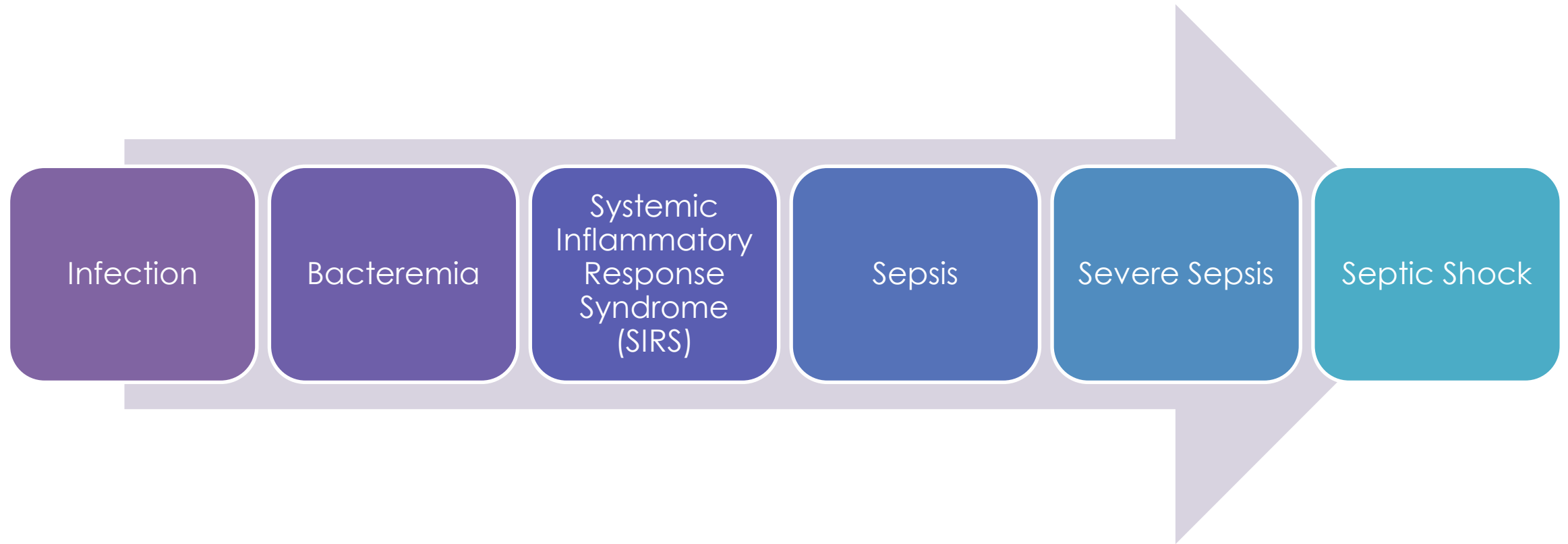
Sloane, P. D., Ward, K., Weber, D. J., Kistler, C. E., Brown, B., Davis, K., & Zimmerman, S. (2018). Can sepsis be detected in the nursing home prior to the need for hospital transfer?. *Journal of the American Medical Directors Association*, 19(6), 492-496.

Sepsis: Signs and Symptoms



- Fever or hypothermia
- Tachycardia (> 100 heartbeats/minute)
- Tachypnea (> 20 breaths/minute)
- Altered mental status
- Hyperglycemia
- Leukocytosis (White blood cell [WBC] count > 12,000) or Leukopenia (WBC count < 4,000)
- Elevated inflammatory markers (C-reactive protein, procalcitonin)
- Hypotension (Systolic blood pressure [SBP] < 90 mmHg or a SBP decrease > 40 mmHg)
- Decrease in urine output
- Coagulation/clotting abnormalities
- Thrombocytopenia (low platelet count < 100,000)

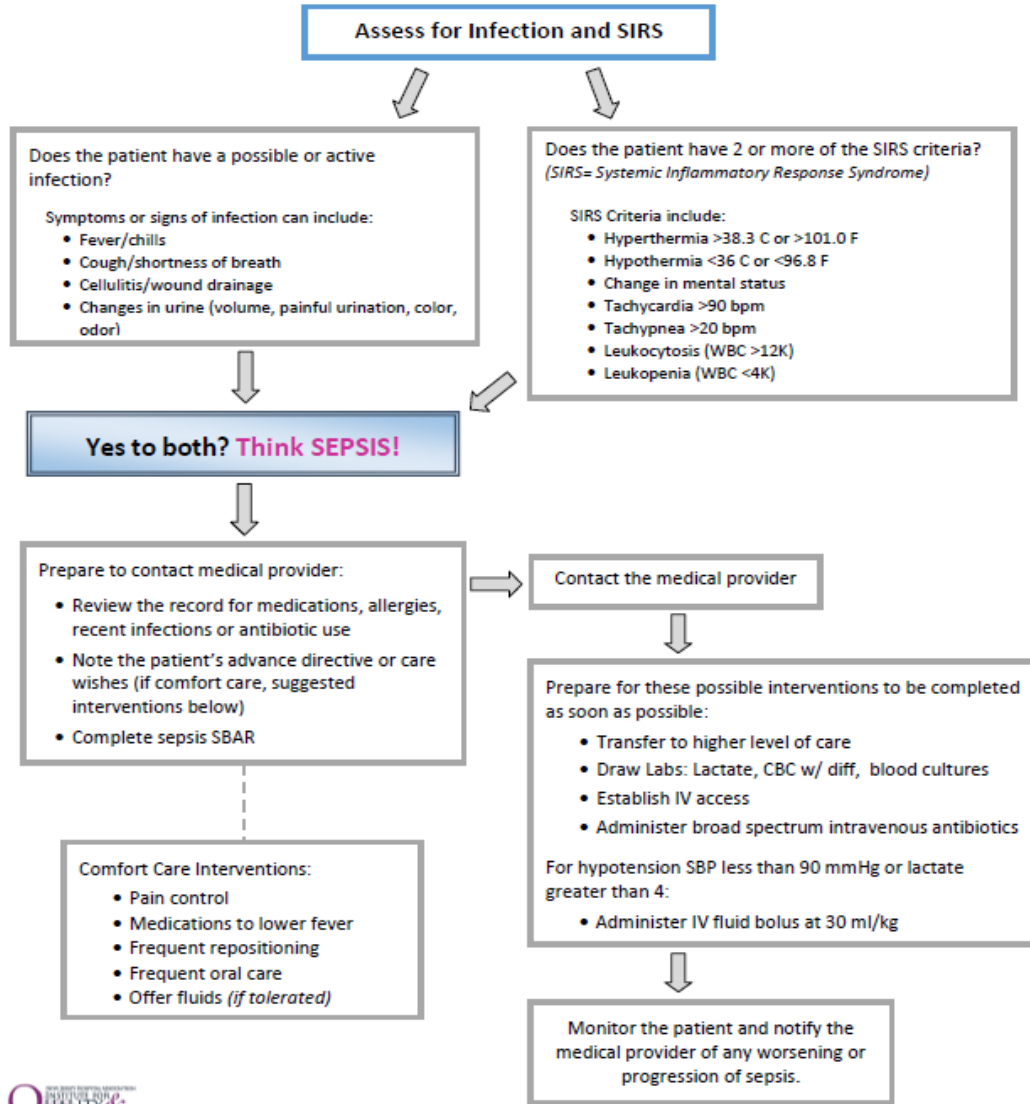
Sepsis: Clinical Progression



Prevent Sepsis and Improve Early Recognition



SEPSIS EARLY IDENTIFICATION AND TREATMENT PATHWAY



SBAR FOR SEPSIS

S

(describe the situation)

- My name is _____ and I am calling from _____.
- I need to speak to you about patient Mr. or Mrs. _____.
- This patient is showing signs and symptoms of infection and sepsis.

B

(provide background)

- The patient was admitted on _____ (date) with the diagnosis of _____ (original condition).
- The patient now is showing these signs of a possible infection _____ (describe the signs and potential source of infection).
- This started on _____ (date).
- The patient is allergic to _____.
- The patient's advance care directive is _____.

A

(describe the key assessment findings)

- My assessment of the situation is that the patient may be experiencing a new or worsening of his/her infection. Here are my assessment findings:
- The current vital signs:
- BP _____ HR _____ RR _____
- Temp _____ SPO2 _____ (on room air or supplemental O2)
- The patient has voided _____ times in the last 8 hours
- Mental status is (changed or unchanged) from baseline _____
- Other physical assessment findings that are related to possible infection or sepsis (lung sounds, wound assessments, etc): _____

R

(recommendation)

- I am concerned this patient has sepsis. I recommend that you see the patient as soon as possible and that we order a serum lactate, blood cultures and a basic metabolic panel. Do you agree?
- If the patient is hypotensive: Should I start an IV and give a fluid bolus?
- The physician should confirm, clarify and request additional information and then work with the nurse to take appropriate action with this patient.

Before Calling the Physician / NP / PA/other Healthcare Professional:

Evaluate the patient and complete this form

Check vital signs- be alert for the early sepsis warning signs

Review the patient record: recent hospitalization, lab values, medications, and progress notes

Note any allergies

Be aware of the patient's advance care wishes

Early Sepsis Warning Signs

Report any of these Findings:

Temp >38.3 C (101.0 F)
Temp <36.0 C (96.8 F)
Heart rate >90 bpm
Respiratory rate >20 bpm

White Blood Cell Count >12,000 µL-1 or <4,000 µL-1

Altered mental status

SPO2 <90%

Decreased urine output

From recently drawn labs (within 24 hours):
Creatinine >2.0 mg/dl (176.8 mmol/L)
Bilirubin >2 mg/dl (34.2 mmol/L)
Platelet count <100,000 µL
Lactate >2 mmol/L (18.0 mg/dl)
Coagulopathy (INR >1.5 or aPTT >60 secs)

<https://www.njha.com/media/328416/NJSepsisLACToolkitPost-AcuteCareSettings.pdf>

ALLIANT
HEALTH SOLUTIONS

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

Sepsis Gap Assessment and Action Steps

- Gap analysis tool used to assess the difference between actual practice and expected performance
 - Organizational commitment and leadership support
 - Dedicated sepsis resources/sepsis coordinator
 - Early identification/screening/risk
 - Bundle Implementation
 - Measurement/continuous improvement

Sepsis Gap Assessment and Action Steps

A gap analysis is a tool used to assess the difference between actual practice and expected performance. It is useful to compare best practice guidelines against your currently accepted practices. It is important to assess practice through observation and audit rather than relying on if a policy is in place, as practice can vary from policy.

COMPONENTS	YES	NO	NA	COMMENTS/ACTION STEPS
Organizational Commitment and Leadership Support				
Do you have a sepsis program? Describe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does your sepsis program have leadership support including CEO, Medical Staff, Nursing, Clinical Staff, Governing Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is medical staff, nursing staff and clinical leadership actively involved in sepsis prevention and management?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Managing sepsis is aligned with hospital's quality, safety, or organizational goals (strategic plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Multidisciplinary team in place and regular meetings (providers, nursing, quality, care management, etc.) from various care areas, ED, ICU, Med Surg, Perinatal, Peds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Team reports to Medical Staff, Quality and Infection Control Committees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sepsis data is shared with staff? What data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sepsis data is shared with patients/families?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dedicated Sepsis Resource/Sepsis Coordinator				
Dedicated Sepsis Resource in place (identify who)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FTE allocation/ time commitment to sepsis role including data abstraction, reporting, communication coordination - define	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other role responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Early Identification/Screening/Risk				
Early alert or warning system/process in place or describe triggers for sepsis screening:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• ED (assessed/screened in triage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• ICU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Inpatient Units (Med Surg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Perinatal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Pediatrics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Purpose: Provide recommendations for improving physician partnering and adherence to sepsis measures.

TOP INTERVENTIONS	ACTION PLAN (to be completed by hospital)
1. C-suite/administration and Medical Executive Committee (MEC) support for improvement and accountability <ul style="list-style-type: none"> Current data and strategies for improvement Impact of not improving (patient safety, financial, community reputation) 	
2. Administration and MEC to designate a formal physician and nursing leader for oversight such as: <ul style="list-style-type: none"> ER Medical Director Hospitalist Medical Director Chief of Staff Chief Medical Officer Chief of Medicine Department Chair ED, ICU or Acute Care nurse leader Chief Nursing Officer 	
3. Establish multidisciplinary improvement team that meets at least monthly to review data and monitor improvement work. <ul style="list-style-type: none"> Assigned leaders Quality expert, including abstractor Champions (a physician and nurse; early adopters, respected, interested) 	
4. Conduct timely chart audits of patients with sepsis <ul style="list-style-type: none"> Abstractor/quality expert to review records and summarize data weekly 	
5. Abstractor/quality expert to meet with physician and nurse leaders weekly to review audit results <ul style="list-style-type: none"> Focused meeting; summarized data # cases, measures met, measures failed and reason 	
6. Establish template to provide feedback to individual providers <ul style="list-style-type: none"> Physician leader to send to involved provider to provide education, information and offer assistance 	
7. Quality and Safety as first item of every medical staff and hospital quality improvement committee agenda. <ul style="list-style-type: none"> Consider sepsis measures as standing agenda topic with current data and summary findings to each meeting 	

LINKS TO RESOURCES

- [JHI Engaging Physicians in a Share Quality Agenda White Paper.aspx](#)
- [A New Way to Engage Physicians \(jhi.org\)](#)
- [Strategies for Increasing Physician Engagement | HealthLeaders Media](#)

This material was prepared by the Comagine and modified by Alliant Quality, the quality improvement group of Alliant Health Solutions, a Hospital Quality Improvement Contractor (HQIC) under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services (HHS). Views expressed in this material do not necessarily reflect the official views or policy of CMS or HHS, and any reference to a specific product or entity herein does not constitute endorsement of that product or entity by CMS or HHS. AHSHQIC-TO3H-21-1053-08/31/21.

www.alliantquality.org

https://quality.allianthealth.org/wp-content/uploads/2021/09/HQIC-Sepsis-Provider-Engagement_AHSHQIC-TO3H-21-1053-08.31.21.pdf

Sepsis: SPOT THE SIGNS

An infection with any combination of the following symptoms could mean sepsis, a medical emergency:

- Confusion or disorientation
- Fever, shivering or feeling cold
- Shortness of breath
- Fast heart rate
- Extreme pain or discomfort
- Clammy or sweaty skin

Act fast if you suspect sepsis. Seek medical care immediately!

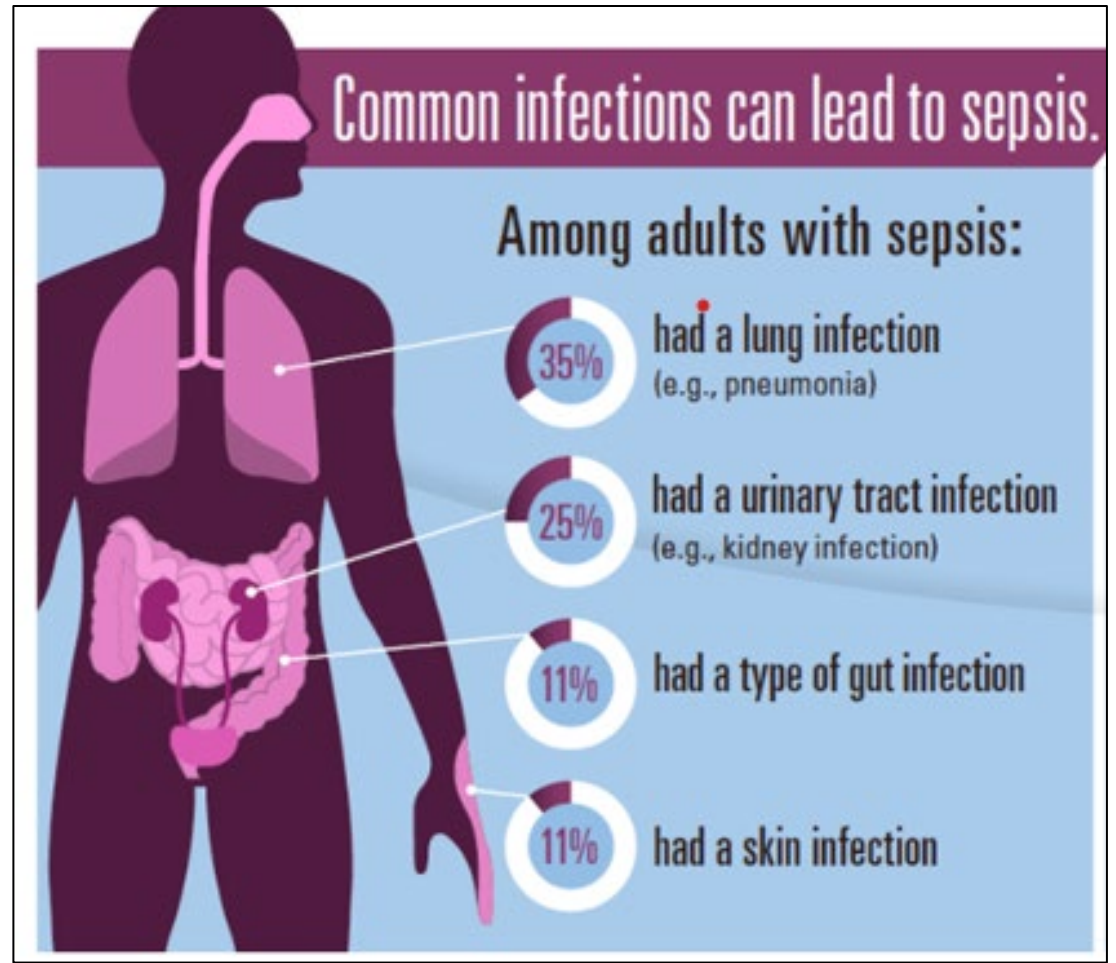
<https://quality.allianthealth.org/wp-content/uploads/2021/10/HQIC-Sepsis-Spot-the-Signs-Magnet-508-FINAL.pdf>

What Are the Most Common Types of Infection That Lead to Sepsis?

- A. Lung infections (e.g., pneumonia)
- B. Urinary tract infections (e.g., kidney infection)
- C. Gastrointestinal (GI) infections
- D. Skin infections
- E. All the above

What Are the Most Common Types of Infection That Lead to Sepsis?

- A. Lung infections (e.g., pneumonia)
- B. Urinary tract infections (e.g., kidney infection)
- C. Gastrointestinal (GI) infections
- D. Skin infections
- E. **All the above**



Which of the Following Is NOT a Common Sign or Symptom of Sepsis?

- A. Constipation
- B. Shortness of breath
- C. Clammy or sweating skin
- D. Confusion or disorientation
- E. Shivering, fever or very cold

Which of the Following Is NOT a Common Sign or Symptom of Sepsis?

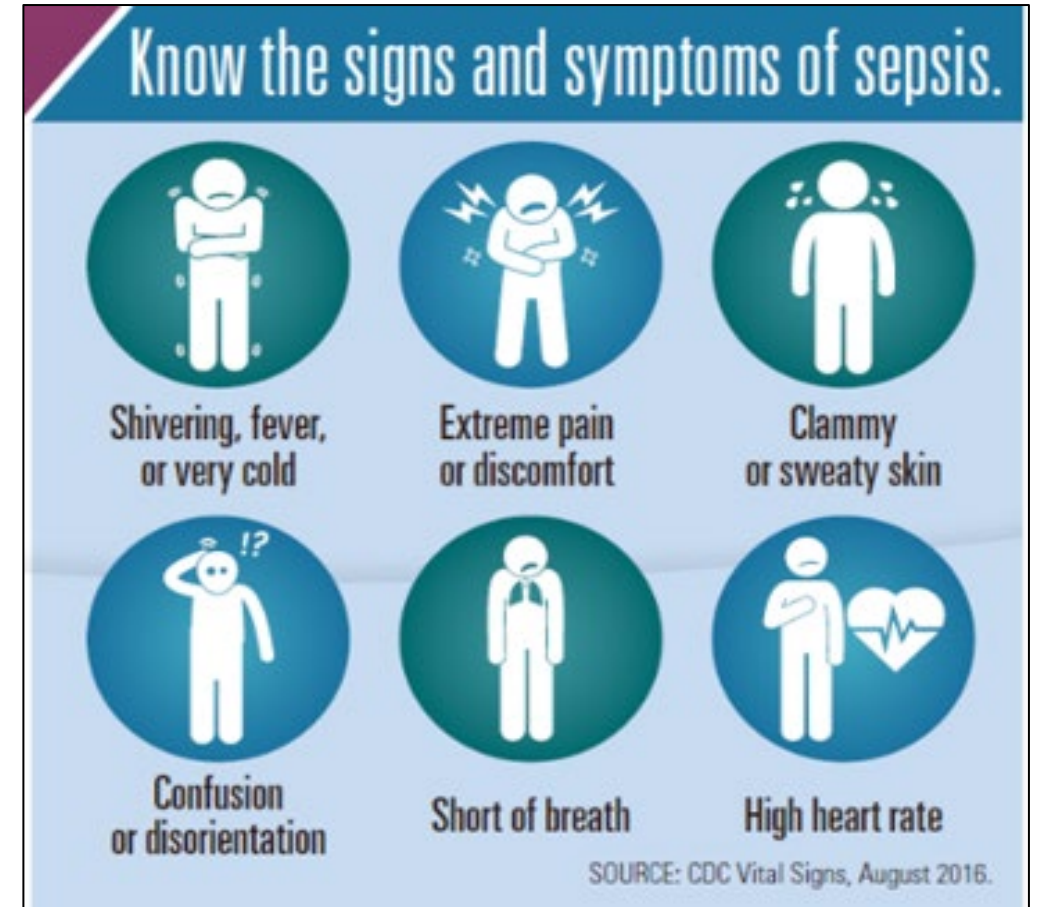
A. Constipation

B. Shortness of breath

C. Clammy or sweating skin

D. Confusion or disorientation

E. Shivering, fever or very cold



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

What Interventions May Prevent Nursing Home Residents From Developing Sepsis?

- A. Facility-wide infection prevention and control program
- B. Policies and procedures for managing invasive devices (i.e. indwelling catheters, IVs, central lines, etc.)
- C. Sepsis screening tools
- D. Resident, family and staff education
- E. All the above

What Interventions May Prevent Nursing Home Residents From Developing Sepsis?

- A. Facility-wide infection prevention and control program
- B. Policies and procedures for managing invasive devices (i.e. indwelling catheters, IVs, central lines, etc.)
- C. Sepsis screening tools
- D. Resident, family and staff education
- E. All the above**

Sepsis Education Tools, Resources and Printables

- [Sepsis: Educational Information for Healthcare Professionals](#)
- [Sepsis: Educational Information for Residents and Families](#)
- [Sepsis: Check Your Knowledge](#)
- [Long-Term Care Nurses: Protect your Residents from Sepsis](#)
- [Long-Term Care Certified Nurse Assistants: Protect Residents from Sepsis](#)
- [Sepsis: Technical Resources & Guidelines](#)
- [Surviving Sepsis Campaign: Protocols and Checklists](#)

FOR LONG-TERM CARE NURSES

PROTECT YOUR RESIDENTS FROM SEPSIS.

GET AHEAD OF SEPSIS
KNOW THE RISKS. SPOT THE SIGNS. ACT FAST.

Sepsis is a medical emergency. You play a critical role. Protect your residents by ACTING FAST. Infections put your residents at risk for sepsis. Anyone can get an infection, and **almost any infection, including COVID-19, can lead to sepsis. With your fast recognition and treatment, most residents survive.**

WHAT CAUSES SEPSIS?
Bacterial infections cause most cases of sepsis. Sepsis can also be a result of other infections, including viral infections, such as COVID-19 or influenza, or fungal infections. The most frequently identified pathogens that cause infections that can develop into sepsis include *Staphylococcus aureus* (staph), *Escherichia coli* (E. coli), and some types of *Streptococcus*. COVID-19 can have a similar presentation and a similar clinical course to some forms of sepsis. Many residents who require hospitalization for COVID-19 have signs or symptoms that meet the definition of sepsis. Infections that lead to sepsis most often start in the:

WHO IS AT RISK?
Anyone can develop sepsis, but some people are at higher risk for sepsis:

65+
Adults 65 or older

People with weakened immune systems

People with chronic medical conditions, such as diabetes, lung disease, cancer, and kidney disease

People with recent severe illness or hospitalization, including due to severe COVID-19

People who survived sepsis

Children younger than one

WHAT ARE THE SIGNS AND SYMPTOMS OF SEPSIS?
A resident with sepsis might have one or more of the following signs or symptoms:

High heart rate or low blood pressure

Fever, shivering, or feeling very cold

New onset or increased confusion or disorientation

Shortness of breath

Extreme pain or discomfort

Clammy or sweaty skin

Residents with sepsis should be urgently evaluated and treated by a healthcare professional.

Infection Control Resources

Sepsis

[HQIC Sepsis Gap Assessment and Action Steps](#)
[HQIC Sepsis: Spot the Signs Magnet](#)
[HQIC Sepsis Provider Engagement](#)
[AQ Sepsis-ZoneTool](#)
[Recognition and Management of Severe Sepsis and Septic Shock](#)

[SHOW MORE](#)

NHSN

[Joining the Alliant Health Solutions NHSN Group](#)
[Instructions for Submitting C. difficile Data Into NHSN](#)
[5-Step Enrollment for Long-term Care Facilities](#)
[CDC's National Healthcare Safety Network \(NHSN\)](#)
[NHSN Enrollment/ LAN Event Presentation](#)

Training

[Options for Infection Control Training In Nursing Homes
Flyer](#)

Catheter Associated Urinary Tract Infection (CAUTI)

[CAUTI Gap Assessment Tool](#)
[Urinary Catheter Quick Observation Tool](#)
[CDC-HICPAC Guideline for Prevention of CAUTI 2009](#)
[AHRQ Toolkit for Reducing CAUTI in Hospitals](#)
[CDC TAP CAUTI Implementation Guide](#)

[SHOW MORE](#)

Clostridioides Difficile Infection (C. difficile)

[C.difficile Training](#)
[Nursing Home Training Sessions Introduction](#)
[Nursing Home C.difficile Infection](#)

COVID-19

[Invest In Trust \(AHRQ Resource for CNA COVID-19 Vaccines\)](#)
[Nursing Home Staff and Visitor Screening Toolkit – PDF](#)
[Nursing Home Staff and Visitor Screening Toolkit – Excel](#)

Hand Hygiene

[Handwash the FROG Way – Badges – English](#)
[Handwash the FROG Way – Badges – Spanish](#)
[Handwash the FROG Way – Poster – English](#)
[Handwash the FROG Way – Poster – Spanish](#)
[Frequently Asked Questions – Alcohol Based Hand Rub](#)

Antibiotic Stewardship

[Antibiotic Stewardship Basics](#)
[A Field Guide to Antibiotic Stewardship In Outpatient Settings](#)
[Physician Commitment Letter](#)
[Be Antibiotics Aware](#)
[Taking Your Antibiotics](#)

[SHOW MORE](#)

<https://quality.allianthealth.org/topic/infection-control/>

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



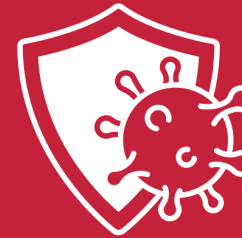
CHRONIC DISEASE SELF- MANAGEMENT

- 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 codes or Click the Links to Complete the Assessments!

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 codes below and complete the assessments.




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

Nursing Home Emergency Preparedness Program (NH EPP) Self-Assessment



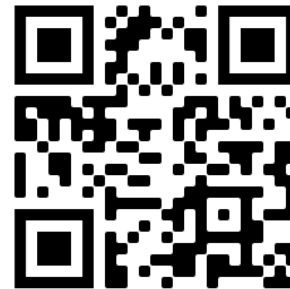
https://bit.ly/AHS_NHEPPAssessment




TRAINING

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

Nursing Home Infection Prevention (NHIP) Initiative Training Assessment



<https://bit.ly/NHIPAssessment>



COVID-19

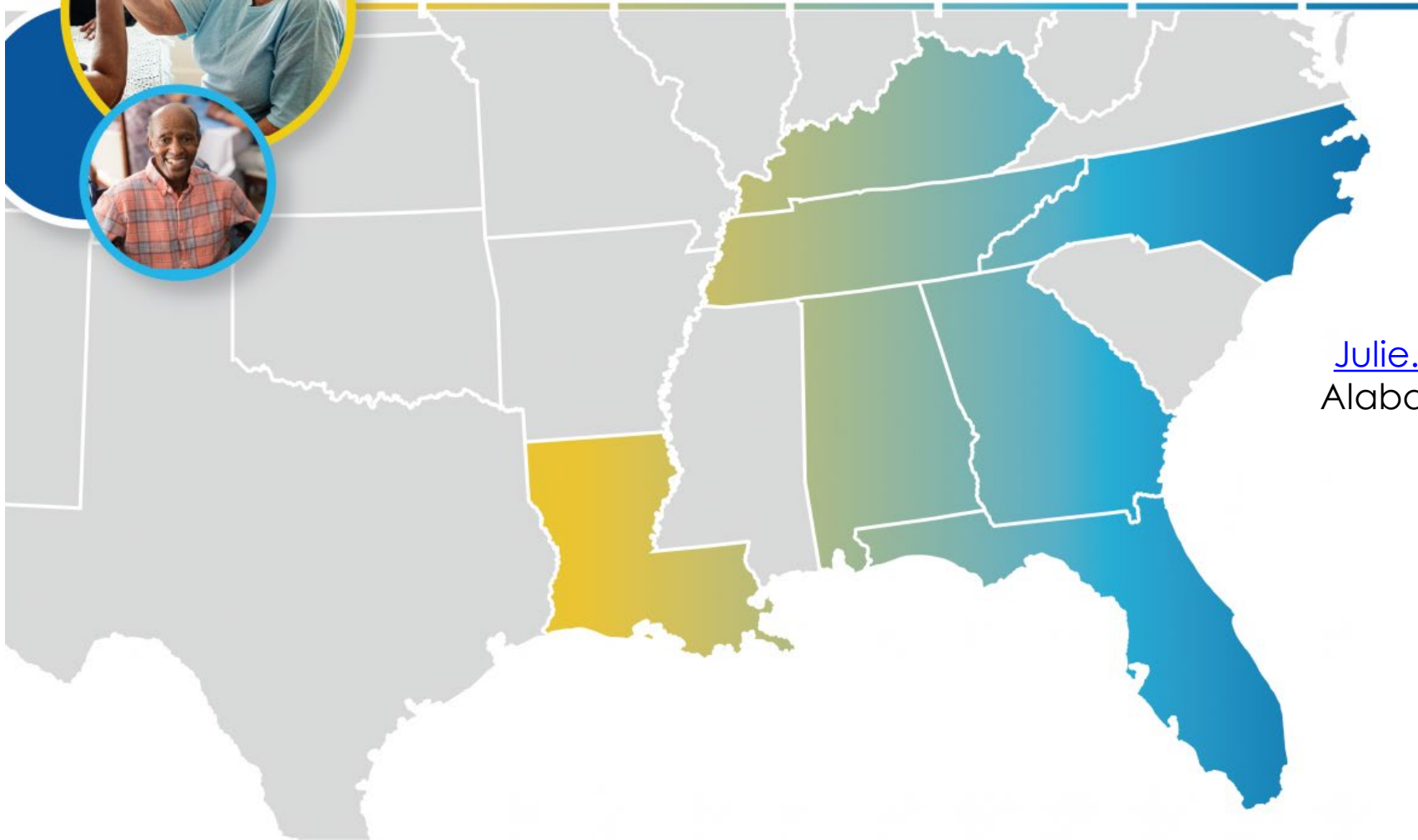
- Support nursing homes by establishing a safe visitor policy and cohort plan
- Provide virtual events to support infection control and prevention
- Support nursing homes and community coalitions with emergency preparedness plans

Nursing Home Safe Visitor Policy and Cohorting Plan Verification



<https://bit.ly/SafeVisitorVerification>

Making Health Care Better *Together*



Julie Kueker

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



Leighann Sauls

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

Program Directors

Making Health Care Better Together



ALABAMA • FLORIDA • GEORGIA • KENTUCKY • LOUISIANA • NORTH CAROLINA • TENNESSEE



@AlliantQIO



Alliant Health Solutions



@AlliantQIO



AlliantQIO

This material was prepared by Alliant Health Solutions, a Quality Innovation Network-Quality Improvement Organization (QIN – QIO) under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services (HHS). Views expressed in this material do not necessarily reflect the official views or policy of CMS or HHS, and any reference to a specific product or entity herein does not constitute endorsement of that product or entity by CMS or HHS. Publication No. 12SOW-AHS-QIN-QIO TO1-NH--2850-11/09/22



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