



QIN-QIO

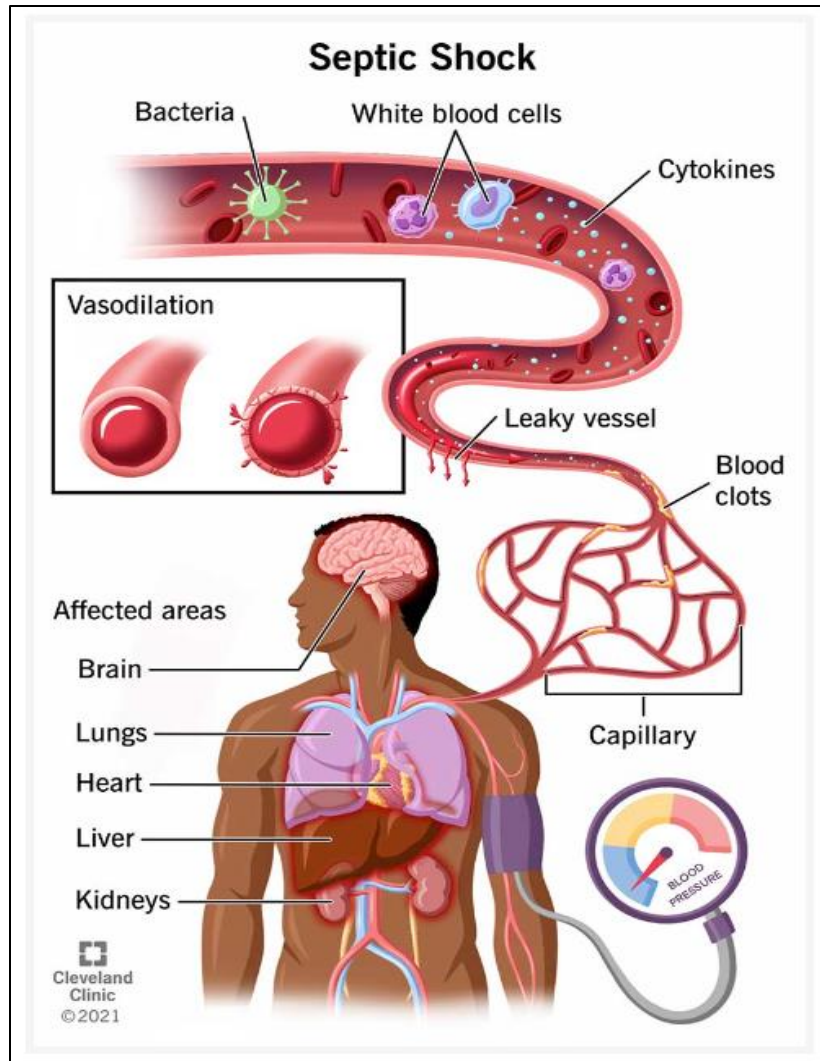
Quality Innovation Network -
Quality Improvement Organizations
CENTERS FOR MEDICARE & MEDICAID SERVICES
iQUALITY IMPROVEMENT & INNOVATION GROUP

Bite-Sized *Learning*

Objectives

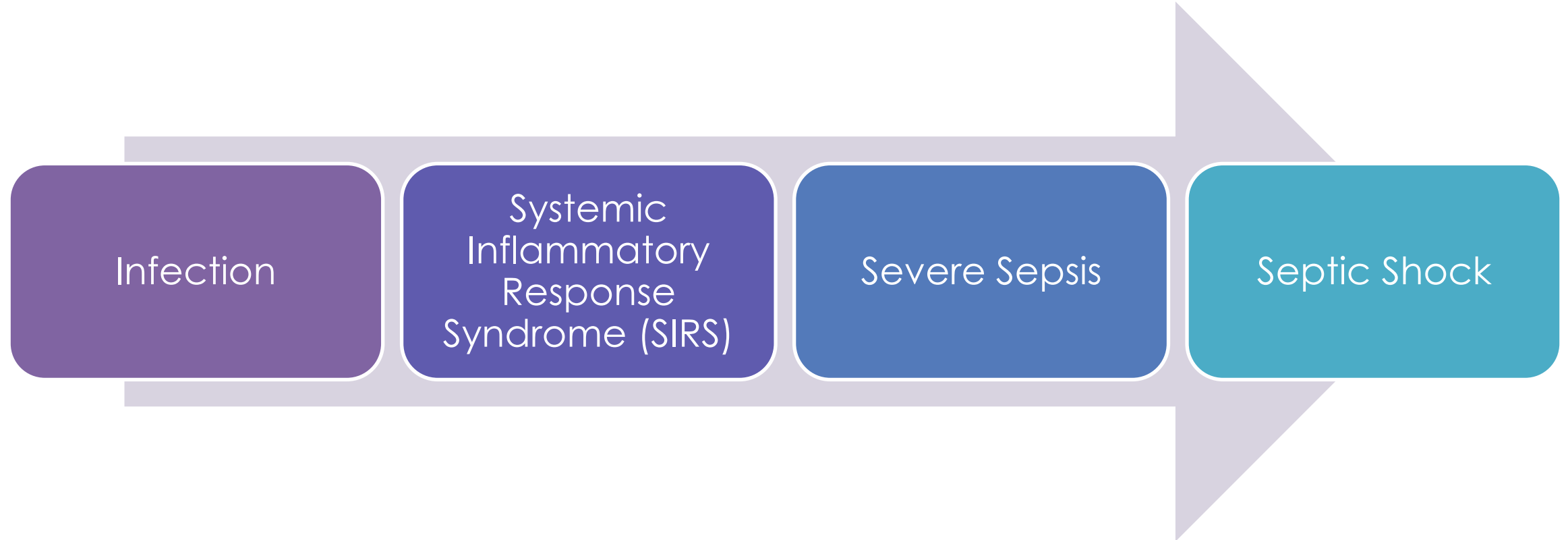
- Present the burden of sepsis in nursing home facilities
- Discuss steps to prevent sepsis in nursing home residents
- Describe interventions for the early recognition and management of sepsis
- Share Alliant Health Solutions quality improvement resources to support your infection prevention and control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

Sepsis



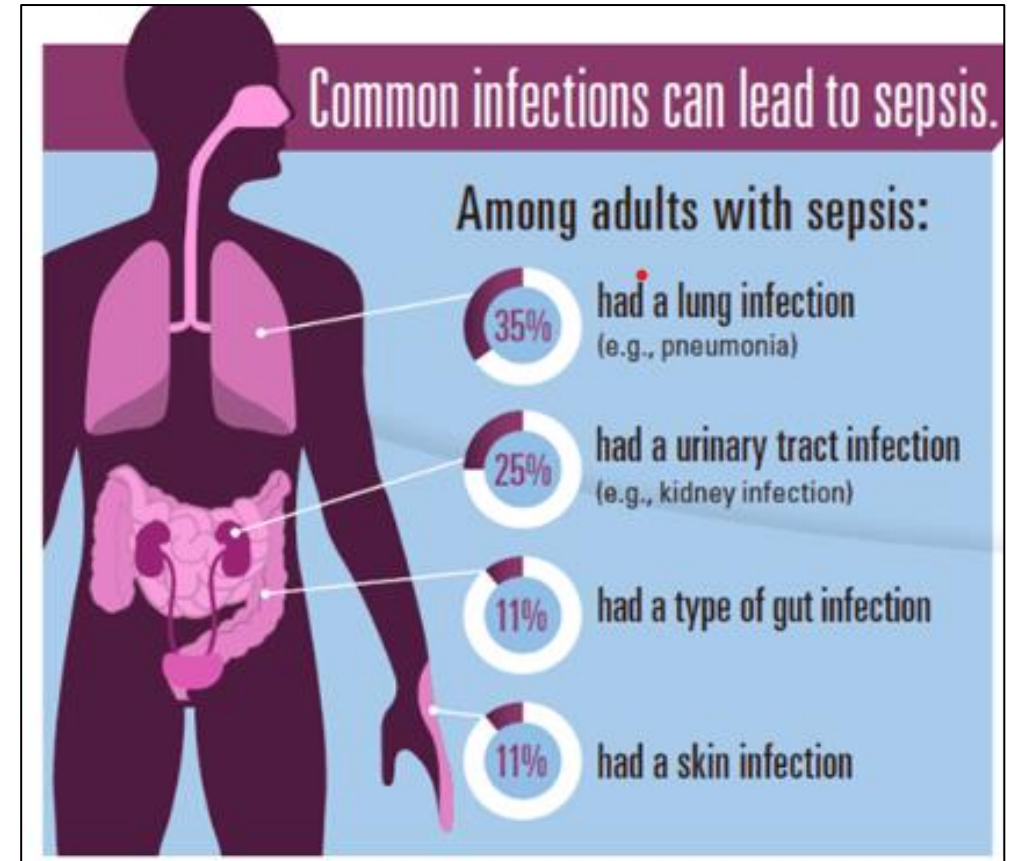
- Sepsis is the body's extreme response to an infection.
 - Happens when an infection triggers a chain reaction throughout the body
 - Life-threatening medical emergency
 - Rapidly leads to tissue damage, organ failure, and death

Sepsis: Clinical Progression

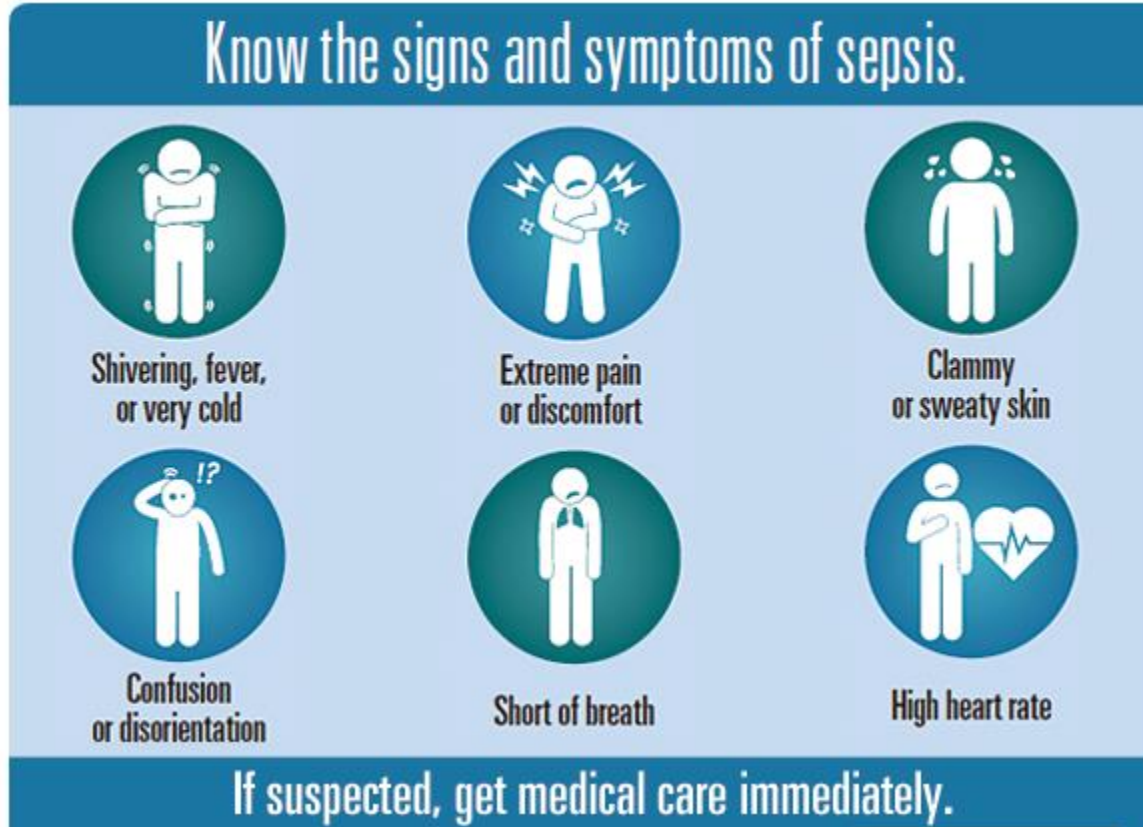


Sepsis Facts

- 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: 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: 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.

Prevent Sepsis and Improve Early Recognition



SEPSIS EARLY IDENTIFICATION AND TREATMENT PATHWAY

Assess for Infection and SIRS

Does the patient have a possible or active infection?

Symptoms or signs of infection can include:

- Fever/chills
- Cough/shortness of breath
- Cellulitis/wound drainage
- Changes in urine (volume, painful urination, color, odor)

Does the patient have 2 or more of the SIRS criteria?
(SIRS= Systemic Inflammatory Response Syndrome)

SIRS Criteria include:

- Hyperthermia >38.3 C or >101.0 F
- Hypothermia <36 C or <96.8 F
- Change in mental status
- Tachycardia >90 bpm
- Tachypnea >20 bpm
- Leukocytosis (WBC >12K)
- Leukopenia (WBC <4K)

Yes to both? Think SEPSIS!

Prepare to contact medical provider:

- Review the record for medications, allergies, recent infections or antibiotic use
- Note the patient's advance directive or care wishes (if comfort care, suggested interventions below)
- Complete sepsis SBAR

Contact the medical provider

Prepare for these possible interventions to be completed as soon as possible:

- Transfer to higher level of care
- Draw Labs: Lactate, CBC w/ diff, blood cultures
- Establish IV access
- Administer broad spectrum intravenous antibiotics

For hypotension SBP less than 90 mmHg or lactate greater than 4:

- Administer IV fluid bolus at 30 ml/kg

Monitor the patient and notify the medical provider of any worsening or progression of sepsis.

Comfort Care Interventions:

- Pain control
- Medications to lower fever
- Frequent repositioning
- Frequent oral care
- Offer fluids (if tolerated)



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 μ L-1 or
<4,000 μ L-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

μ L

Lactate >2 mmol/L

(18.0 mg/dl)

Coagulopathy (INR >1.5 or

aPTT >60 secs)



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:

- Lung
- Urinary tract
- Skin
- Gastrointestinal tract

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.

Thank You for Your Time!
Contact the AHS Patient Safety Team
patientsafety@allianthealth.org



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