



Safety Action Bundle: Sepsis

Background

- Sepsis is a major public health concern. In the United States, sepsis is diagnosed in over one million patients each year.¹ Sepsis is not only expensive, with cost of treatment estimated at \$20.3 billion in 2011, the mortality rate for patients diagnosed with sepsis is 28-50%.¹
- The incidence of sepsis is increasing. In 2014, 11% of patients discharged from an acute care hospital had a sepsis diagnosis.² The increasing incidence is most likely due to an aging population, greater numbers of patients with multiple comorbidities, and health care providers' increased recognition and diagnosis.³
- In addition, patients who survive sepsis often have long-term physical, psychological, and cognitive disabilities with significant health care and social implications.³
- While sepsis itself cannot be eradicated, health systems that make an effort to follow an evidence-based protocolized response are able to drastically reduce sepsis mortality.²

Aim

To reduce the incidence of sepsis mortality by 40% by September 23, 2016.

**Hospitals already at goal should focus on maintenance and hardwiring.*

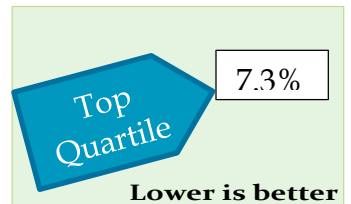
Measures

Outcome: Hospital deaths related to Severe Sepsis and Septic Shock (based on ICD9 or ICD10 Coding) excluding Comfort Care. Data

Source: CHARS. **D**

Outcome: Post-operative Sepsis (PSI-13) per AHRQ Quality Indicator reporting requirements. **D**

Process: Sepsis (SEP-1) per Centers for Medicare and Medicaid (CMS) reporting requirements. **D**



Core Strategies


Definition **D**

Reference **i**

Tool **X**

Patient and Family Engagement

- Educate patient and family on sepsis and sepsis care bundles and how they can engage in the process.
- Encourage and support patient and family participation in care planning and decision making via a post sepsis resuscitation care conference. Use this time to discuss prognosis, goals of care and end of life directives as appropriate; initiate within 72-hours of ICU admission.

	<ul style="list-style-type: none"> □ When an opportunity for improvement is identified, interview all staff, patient, and family for their input regarding process improvements.
Culture	<ul style="list-style-type: none"> □ Promote a blame-free environment where individuals are able to report errors or near misses without fear of reprimand or punishment. □ Encourage collaboration across ranks and disciplines to seek solutions for patient safety problems. □ Identify medical and front-line staff champions. □ Promote transparency of sepsis data results by displaying on units, to the board and to the public.
Leadership	<ul style="list-style-type: none"> □ Set aims, goals and timelines for practice changes. Engage front-line staff in adopting best practices into current workflow. □ Identify administration, clinical leaders and healthcare providers to champion evidence based sepsis care. □ Utilize the role of a Sepsis Coordinator to oversee process improvement and bundle compliance. □ Educate staff and medical providers regarding the significance of sepsis and your facility's sepsis protocols. □ Identify and address barriers to sepsis bundle compliance. □ Leverage the EHR and technology to support 3- and 6-hour bundles that use an "opt-out" process instead of an "opt-in" for all bundle elements. □ Encourage development and use of a mechanical ventilation protocol in compliance with current best practices (i.e. ARDSnet protocol) for prevention and treatment of acute lung injury or acute respiratory distress syndrome. □ Enlist key stakeholders such as physicians, bedside nurses, pharmacists, laboratory personnel, respiratory therapists, patients and families (where able) on improvement teams to work together in the development of protocols, workflows, peer education programs and performance review. □ Consider a public awareness campaign (i.e. "Time is Life") to heighten early recognition and understanding.
Reliable Early Detection	<ul style="list-style-type: none"> □ Implement a sepsis screening tool for use on all patients presenting to the emergency department with a possible infection. Consider the use of a visual cue to trigger completion of bundle elements for patients who screen positive (i.e. a sepsis clock).  □ Implement a sepsis screening tool as part of the standard workflow on all units that are likely to have patients at-risk for sepsis; i.e. medicine, oncology, surgery, intensive care, etc. □ Consider use of qSOFA calculator to quickly and easily identify patients at risk of a poor outcome.

	<ul style="list-style-type: none"> □ Include a sepsis screening process into the rapid response team (RRT) activation response. □ Develop a process for escalation of positive sepsis screen to appropriate healthcare providers using the SBAR format.
Initiate 3-hour Bundle	<ul style="list-style-type: none"> □ Consider nurse initiated protocols – including lab orders and initiation of fluid resuscitation – for patients with a positive sepsis screen. □ Develop processes to expedite resulting of lactate levels. Assure the lab staff are alerted when lactate specimens are collected. Consider instituting use of point of care testing for lactate results that are emergently needed to drive decisions for care. □ Institute a standard protocol for immediate notification of the provider for a lactate level greater than 4 mmol/L. □ Consider developing order sets that bundle lactate level and blood culture orders. □ Ensure trained staff are available to draw blood cultures prior to initial administration of antibiotics. □ Utilize the healthcare facility’s antibiogram to determine the most effective broad-spectrum antibiotic for administration. Use this antibiotic as the first line of defense and administer within one hour of the initial diagnosis. Develop protocols and order sets in which the recommended antibiotics are embedded. □ Assure that the protocol-recommended antibiotics are available in the ED and critical care areas to allow for rapid administration. □ Identify and reinforce the appropriate order for antibiotic administration ensuring patients receive the broadest and most rapidly infused antibiotic first. □ Develop protocols and order sets for rapid fluid administration. Consider use of a balanced fluid (i.e. LR) for fluid resuscitation. □ Consider using a standardized hand-off tool for communication between departments to assure continuity in sepsis resuscitation.
Initiate 6-hour Bundle	<ul style="list-style-type: none"> □ Develop protocols and order sets to support the 6-hour Bundle. □ Use visual cues to indicate that a patient has been diagnosed with sepsis or septic shock (i.e. sepsis clock, environmental color cues such as specially colored blanket/sheets/gown). □ Utilize smart pump technology for vasopressor infusions. Ensure appropriate vasopressor choice by utilizing clinical decision support technology. □ For hypotension not responding to fluid administration, consider expeditious initiation of vasopressor infusions via peripheral lines until safe central line access can be obtained. □ Hardwire a process to ensure consistent documentation of volume status and tissue perfusion reassessments.

Performance and Variation	<ul style="list-style-type: none"> □ Present your performance compared to others to the board and other key stakeholder groups. □ Establish an audit process to monitor adherence to bundles.
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Moving Towards Zero

Standardize Evidenced Based Practice Across the Continuum	<ul style="list-style-type: none"> □ Hardwire a process to ensure completion of the initial 3-hour bundle within one hour of sepsis identification in the hospital. □ Develop a next-day huddle process with involved staff to review for adherence to timely completion of bundle elements for patients identified with sepsis. □ Consider unit level sepsis champions to promote early identification and treatment of sepsis. Support and empower champions with necessary education and training. □ Consider development of an ICU Alert Team to facilitate early resuscitation and aggressive care for the critically ill. The team can assume care of sepsis patients being admitted to ICU while still in the ED. □ Schedule regular multidisciplinary all-sepsis collaborative meetings to discuss challenges and progress. □ Collaborate with urgent cares, emergency medical teams and skilled nursing facilities to identify sepsis and initiate treatment. Utilize the Sepsis Coordinator to promote early detection and interventions in pre-hospital settings. □ Look for opportunities to embed the electronic health record with decision support alerts across the care continuum that notify healthcare staff when the patient's condition is mirroring sepsis. □ Antimicrobial Stewardship: Re-evaluate antibiotic choices at 48-72 hours on the basis of culture results and clinical data. Consider the use of procalcitonin levels or similar biomarkers to assist in the discontinuation of antibiotics in patients who initially appeared septic, but have no subsequent evidence of infection.
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Developed by the Washington State Hospital Association's Partnership for Patients. For more information visit our website at www.wsha.org

Key Resources

1. Health Research & Educational Trust (2016, January). Severe Sepsis and Septic Shock Change Package: 2016. Chicago, IL: Health Research & Educational Trust. Accessed at www.hret-hen.org
2. Butcher, L. *Stepping Up Against Sepsis* Hospitals and Health Networks. 2016. Retrieved from <http://www.hhnmag.com/articles/6730-stepping-up-against-sepsis>
3. Singer M, Deutschman CS, Seymour C, et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). *JAMA*. 2016;315(8):801-810. doi:10.1001/jama.2016.0287

Additional Resources

Dellinger RP, Levy MM, Rhodes A, et al: Surviving Sepsis Campaign: International guidelines for management of severe sepsis and septic shock: 2012. *Crit Care Med*. 2013; 41:580-637 and *Intensive Care Med* 2013; 39:

Health Research & Educational Trust (2016, January). Severe Sepsis and Septic Shock Change Package: 2016. Chicago, IL: Health Research & Educational Trust. Accessed at www.hret-hen.org

Schwarz, Evan. "In Sepsis, Fluid Choice Matters - Emergency Physicians Monthly." *Emergency Physicians Monthly*. N.p., 8 May 2015. Accessed at <http://epmonthly.com/article/in-sepsis-fluid-choice-matters/#REF>

Severe Sepsis Bundles. Institute for Healthcare Improvement, n.d. Web. 9 May 2016. <http://www.ihc.org/resources/Pages/Tools/SevereSepsisBundles.aspx>.