

## EXECUTIVE SUMMARY

### Meeting the challenge of sepsis in Massachusetts

Sepsis is a vexing public health challenge that affects patients and families across Massachusetts and the health care system more broadly.<sup>1</sup> Sepsis is the body's overwhelming response to an infection, which triggers a chain reaction that can lead to tissue damage, organ failure and even death if not treated expeditiously.<sup>2</sup>

Sepsis is also:<sup>3</sup>

- A leading cause of death in hospitals
- A top driver of health care spending
- The number one reason for hospital readmissions

Despite its impact, most people do not know what sepsis is, what its symptoms are, what precautions to take to prevent it, or the importance of seeking treatment fast.

As important, providers in all health care settings—from hospitals and emergency departments, to primary care offices and nursing homes—are not always as prepared as they need to be to promptly identify and respond to people with sepsis. Indeed, Massachusetts is a middling performer on nationally available sepsis indicators, where the state ranked 25<sup>th</sup> in sepsis mortality in 2017<sup>4</sup> and is at the national average in providing timely care for patients with sepsis.<sup>5</sup>

Recognizing the need for a long term, systematic effort to coordinate a statewide response to sepsis, the Massachusetts Sepsis Consortium came together with the collective goal of improving sepsis outcomes throughout the Commonwealth.

### A task force reflecting the critical role of emergency departments in improving sepsis outcomes

The vast majority of people who develop sepsis experience their first symptoms at home or in another community setting, making hospital emergency departments and satellite emergency facilities an important point of entry and intervention.

For that reason, the Massachusetts Sepsis Consortium moved to create the Emergency Department Sepsis Protocols Task Force as its first order of business. The task force is a group of experts charged with reviewing the current state of sepsis care in Massachusetts emergency departments, identifying gaps and opportunities to improve care, and supporting hospitals by providing evidence-based strategies to improve early detection and treatment of sepsis.

The Consortium's report, *Advancing Sepsis Care in Emergency Medicine*, reflects the outcome of nine months of task force study and deliberation which has resulted in a set of recommendations and a toolkit of evidence-based best practices to improve sepsis care.

### Findings about the current state of sepsis care in emergency settings

To inform the report, the task force interviewed representatives from all 71 Massachusetts emergency departments and satellite facilities about sepsis care practices to inform its work.<sup>6</sup> Among the findings:

- **Adult screening and treatment**  
Most have sepsis screening tools and treatment protocols for adults, but consistent application of the tools and protocols remain a concern.
- **Pediatric screening and treatment**  
While more than 90 percent provide emergency care for children, only 13 percent have protocols for diagnosing and treating pediatric sepsis.
- **Data collection and feedback**  
Data collection on adult sepsis is closely tied to federal requirements for reporting on sepsis care; feedback to ED clinicians about performance on sepsis care varies.
- **Use of sepsis tools in electronic health records**  
Almost 30 percent of facilities view their EHR as a barrier to successful implementation of standardized screening and treatment protocols.



# Recommendations for improving sepsis care in emergency departments

The task force offers the following evidence-based recommendations for improving sepsis response and outcomes in Massachusetts hospital emergency departments and satellite emergency facilities grouped into seven aspects of sepsis care.

## ADULT SCREENING AND TREATMENT

Because early identification and treatment of patients with sepsis is critical to reducing sepsis-related morbidity and mortality:

- Adopt and implement an evidence-based screening tool to be used at initial evaluation of adult patients in the emergency department.
- Implement an evidence-based treatment protocol for adult patients that has time-specific treatment goals.
- Adopt nurse-driven testing protocols to enable nurses to initiate care for patients with suspected sepsis.
- Whenever possible, work with the hospital's electronic health record vendor to incorporate sepsis screening and treatment tools into the EHR.

## PEDIATRIC SCREENING AND TREATMENT

Because pediatric patients present with different symptoms than adults with sepsis and may require specialized care:

- Adopt and implement an evidence-based screening tool that can be used at initial evaluation of pediatric patients in the emergency department.
- Implement an evidence-based treatment protocol for pediatric patients that includes time-specific treatment goals.

## PATIENT MANAGEMENT

Have processes in place to reassess patients at regular intervals, escalate care when necessary, and hand-off care to another department:

- Establish a mechanism to prompt escalation of care within the facility, and, when appropriate, to stabilize and transfer to a facility able to provide a higher level of care.
- Develop a strategy for appropriate communication during transitions of care regarding the care of patients with sepsis.
- Adopt a strategy for reassessment of patients at regular intervals.

### Sepsis resources for Massachusetts emergency departments

The task force also spent many months aggregating, reviewing and deliberating on evidence-based tools and best practices that hospitals in Massachusetts and beyond have successfully deployed to improve sepsis care in their EDs and satellite emergency facilities.

The full report and accompanying toolkit provides specific strategies, case studies, and other practical resources to help hospitals meet the task force recommendations.

Find the report and tools at [BetsyLehmanCenterMA.gov/initiatives/sepsis](https://BetsyLehmanCenterMA.gov/initiatives/sepsis)

## APPROPRIATE ANTIBIOTIC USE

Given the known public health threats associated with overuse of antibiotics, provide guidance on appropriate antibiotic treatment, including selection, reevaluation or de-escalation of antibiotics:

- Develop hospital-specific antibiotic guidelines for use in treating patients with sepsis.
- Establish a mechanism for reevaluating a patient’s antibiotic treatment based on culture results and provide guidance regarding reassessment and de-escalation of antibiotic treatment when appropriate.

## STAFF EDUCATION AND FEEDBACK

Underscore the reminders to “think sepsis,” know the sepsis treatment protocol, and provide care expeditiously:

- Educate ED clinical staff on sepsis policies and procedures during the onboarding process and at least annually to ensure that care is standardized and reflects current guidelines and recommendations.
- Develop a mechanism to provide regular feedback to ED clinicians on adherence to sepsis policies and procedures and patient outcomes.

## DATA COLLECTION AND QUALITY IMPROVEMENT

Collect data to understand current performance and identify opportunities for improvement:

- Collect, review and analyze ED-specific data related to the care of patients with sepsis.
- Assemble a multi-disciplinary sepsis team to regularly review data, develop improvement strategies and update hospital sepsis policies.

## PATIENT EDUCATION

Because patients diagnosed with, or at risk for developing sepsis, are unlikely to have all of the information they need about this poorly-understood condition:

- Provide patients who are at-risk of developing sepsis post-discharge information about the signs of sepsis and clear instructions about when they need to seek medical care.
- Provide patients and families who have been diagnosed with sepsis materials about the condition so they know what it is and what to expect.

<sup>1</sup>Betsy Lehman Center analysis of MA All Payer Claims Database, 2015. Analysis from HealthCentric Advisors, 2018. <sup>2</sup>Centers for Disease Control and Prevention, 2018. What is sepsis? Available: <https://www.cdc.gov/sepsis/what-is-sepsis.html>. <sup>3</sup>Mayr FB, Talisa VB, Balakumar V, Chang CH, Fine M, Yende S. Proportion and cost of unplanned 30-day readmissions after sepsis compared with other medical conditions [published online January 22, 2017]. JAMA. doi:10.1001/jama.2016.20468. <sup>4</sup>Centers for Disease Control and Prevention. National Center for Health Statistics, Septicemia Mortality by State, 2016. Available: [https://www.cdc.gov/nchs/pressroom/sosmap/septicemia\\_mortality/septicemia.htm](https://www.cdc.gov/nchs/pressroom/sosmap/septicemia_mortality/septicemia.htm). <sup>5</sup>Centers for Medicare and Medicaid Services, Inpatient Quality Reporting Program, 2018. Internal analysis completed by the Betsy Lehman Center for Patient Safety. <sup>6</sup>Survey included key informant interviews with all acute hospitals in Massachusetts, completed by Betsy Lehman Center staff July-Dec 2018.



# Massachusetts Sepsis Consortium

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