ADVANCING SEPSIS CARE IN POST-ACUTE SETTINGS

RECOMMENDATIONS TO IMPROVE PREVENTION AND EARLY RECOGNITION OF SEPSIS

Massachusetts Sepsis Consortium

MARCH 2020

ABOUT THE MASSACHUSETTS SEPSIS CONSORTIUM

The Massachusetts Sepsis Consortium is a multi-stakeholder initiative aimed at reducing sepsis-related morbidity and mortality in Massachusetts. Convened by the Betsy Lehman Center for Patient Safety, the Consortium includes leaders from all sectors of the state's diverse health care community. Together, its members are working to identify strategic opportunities to improve sepsis outcomes in the state and bring collective resources to bear on this complex and persistent public health challenge.

State Agencies and Legislators

- Executive Office of Health and Human Services
- Betsy Lehman Center for Patient Safety
- Board of Registration in Medicine, Quality and Patient Safety Division
- Center for Health Information and Analysis
- Department of Public Health
- Health Policy Commission
- MassHealth
- Rep. Kate Hogan
- Sen. Jason Lewis
- Sen. Mark Montigny

Health Care Associations and Insurers

- Blue Cross Blue Shield of Massachusetts
- CRICO
- Coverys
- Healthcentric Advisors
- Home Care Alliance of Massachusetts
- Massachusetts Association of Health Plans
- Massachusetts Coalition for the Prevention of Medical Errors
- Massachusetts Emergency Nurses Association
- Massachusetts Health and Hospital Association
- Massachusetts Home Care
- Massachusetts Infectious Disease Society
- Massachusetts Medical Society
- Massachusetts Senior Care Association
- Society of Critical Care Medicine
- Steward Health Care

Sepsis Advocates and Patient Representatives

- National Family Council on Sepsis
- Rory Staunton Foundation
- Sepsis Alliance

THE POST-ACUTE SEPSIS STEERING COMMITTEE

The Betsy Lehman Center and the Massachusetts Sepsis Consortium are indebted to the members of the Post-Acute Sepsis Steering Committee, who devoted time, energy and expertise to develop the findings, recommendations and tools that are included in this report. In addition to hours of their time that was spent preparing for and participating in monthly scheduled meetings, members were called on frequently to review documents, and identify resources for the toolkit.

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- Home Care Alliance of Massachusetts
- Massachusetts Department of Public Health
- Massachusetts Health & Hospital Association
- Mass Home Care
- Massachusetts Senior Care Association

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We also want to thank the careful readers who took the time to review the Steering Committee report and recommendations prior to publication.

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TOOLKIT CONTRIBUTORS

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- Massachusetts Medical Society
- Minnesota Hospital Association
- Sepsis Alliance
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INTRODUCTION

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.[1] Sepsis is the leading contributor to hospital deaths and a top driver of inpatient spending in the United States, costing more than $24B in health care spending each year according to a 2016 analysis.[2] Newer studies, estimating the cost for Medicare patients alone, peg the 2018 cost of sepsis at $41.5 billion, which includes both inpatient care and post-sepsis skilled nursing care.[3] Those who survive sepsis may face long-term impairments and about a third of survivors die during the following year.[4]

In Massachusetts, sepsis is the tenth leading cause of death among adults[5] and also a top reason for hospital readmissions in all regions of the Commonwealth.[6] Sepsis is treatable if diagnosed and treated quickly, but the risk of mortality for patients with the most severe cases increases by 8 percent for every hour it goes without appropriate antibiotic treatment.[7]

Despite its impact, many 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.[8] As important, providers in all health care settings — from hospitals and emergency departments, to primary care offices and skilled nursing facilities — are not always as prepared as they could be to promptly identify and respond to people with sepsis.

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.

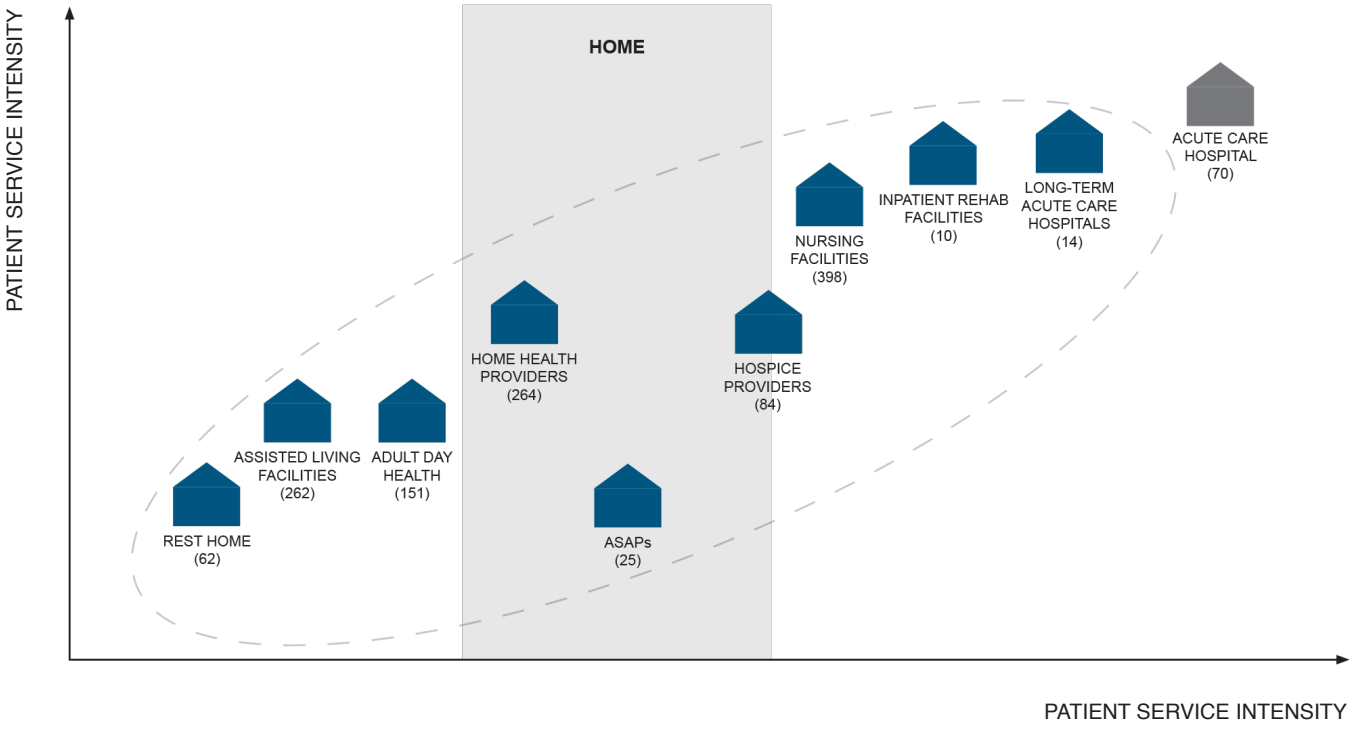
The Post-Acute Sepsis Steering Committee was established to focus explicitly on increasing awareness among post-acute providers about sepsis and encouraging adoption of best practices and evidence-based tools to prevent sepsis and screen for sepsis in post-acute settings.

THE POST-ACUTE CONTINUUM

The post-acute provider continuum is comprised of a diverse mix of provider organizations, including long-term acute hospitals, inpatient rehabilitation facilities, skilled nursing facilities, home health services, rest homes, adult day health programs, and community-based supports for elders and people living with disabilities. The care provided by these organizations varies in both frequency and intensity, ranging from the intensive, inpatient care provided in long-term acute care hospitals and inpatient rehabilitation hospitals to semi-annual community-based home visits provided by aging services access points (ASAPs). Home health agencies provide critical health care services to individuals in their homes, while skilled nursing facilities, assisted living facilities and rest homes provide varying levels of care in a residential setting.

Similarly, the types of workers who provide care or services to this population of residents varies widely and includes physicians and advanced practice clinicians as well as nurses, social workers, certified nurse aides, home health aides and personal care homemakers.

FIGURE 1: The continuum and number of post-acute care provider organizations in Massachusetts



CRUCIAL ROLE OF POST-ACUTE PROVIDERS

Post-acute providers play an important role in caring for patients who are at risk of developing sepsis and those who are recovering from sepsis. People who receive care from providers in the post-acute continuum — those with multiple chronic health conditions, individuals over the age of 65, medically fragile children, and people living with disabilities — are all at higher risk of developing sepsis.[9] According to a Centers for Disease Control and Prevention (CDC) study of adult patients hospitalized for sepsis, the vast majority of people who developed sepsis — 80 percent — experienced the onset of symptoms outside the hospital setting.[10] In the same sample, 18 percent of those diagnosed with sepsis experienced the onset of symptoms in a skilled nursing facility.[11]

Preventing the underlying infections that lead to sepsis with hand hygiene, proper wound care, and recommended vaccinations for both health workers and people in their care is key to reducing overall morbidity and mortality related to sepsis.[12] Failing that, early recognition and expeditious treatment of sepsis can help to improve outcomes.[13] Though not all post-acute providers may have the staffing or expertise to begin treatment of sepsis, they are often working most closely with vulnerable populations and are well-positioned to recognize the subtle changes in a patient's condition that could indicate the beginning of an infection that may result in sepsis.[14]

Post-acute providers also play a critical role in helping patients recover from sepsis and in preventing hospital readmissions for sepsis. There are 1.4 million Americans each year who survive sepsis and they are 1.5 times more likely than those with a non-sepsis diagnosis to be readmitted within 30 days of discharge.[15,16]

While about 40 percent of sepsis survivors are discharged home without services, 28 percent receive home health services and 25 percent receive skilled nursing services, either in a skilled nursing facility, or at home.[17] Older sepsis survivors tend to experience on average 1 to 2 new limitations on their daily activities of living (e.g., bathing, dressing) after hospitalization, often necessitating home health visits.[18] Evidence suggests that a home health nursing visit within the first 48 hours post-discharge, followed by a visit from a physician within a week of discharge may reduce the likelihood of readmission by 7 percent among sepsis patients.[19]

In Massachusetts, where 30-day hospital readmissions are higher than the national average, sepsis is the top diagnosis among patients readmitted after a hospital stay.

Post-sepsis syndrome, which is experienced by about half of all people who recover from sepsis, is characterized by long-term physical effects such as amputations, or psychological effects, such as post-traumatic stress disorder, anxiety and difficulty sleeping.[20] Post-acute providers can help patients understand the potential for post-sepsis syndrome and ensure that patients are referred to primary care for evaluation of any "new physical, mental, and cognitive problems," a review of their medications, and long-term management of their symptoms.[21] Finally, in Massachusetts, where 30-day hospital readmissions are higher than the national average, sepsis is the top diagnosis among patients readmitted after a hospital stay. Since patients recovering from sepsis are at a higher risk of being readmitted, the post-discharge time a very important period for survivors.[22]

UNDERSTANDING THE CURRENT STATE OF SEPSIS PRACTICE

In addition to completing a review of the published literature on sepsis in post-acute settings, the Post-Acute Sepsis Steering Committee conducted two surveys to help inform its recommendations and to shape the tools accompanying this report:

1. A survey of provider organizations to understand the current state of sepsis readiness among post-acute providers, asking questions about current screening practices, sepsis education opportunities for staff and the perceived barriers to better sepsis care.
2. A survey of direct care nurses, certified nurse aides, and home care aides, focused on understanding perceptions of sepsis among these members of the post-acute workforce.

POST-ACUTE PROVIDER ORGANIZATION SURVEY

The first survey reached post-acute provider organizations, including skilled nursing facilities, inpatient rehabilitation hospitals, long term acute care hospitals, home health agencies, and community-based programs such as aging services access points. It was completed by 129 respondents:

- One half of respondents reported that they provide education or training on sepsis to their employees at least once a year.
- One third of survey respondents indicated that their organization had a process in place to screen patients for sepsis.
- Of those who indicated that they had a screening tool, only 23 percent said that they had a protocol or guidelines for providers to follow when the patient meets the screening criteria

- When asked about barriers or challenges that their organization faced in implementing new practices in sepsis care, the most common answers included:
  - Not enough time (38.6%)
  - Insufficient staffing (35.7%)
  - Lack of awareness about the seriousness of sepsis (34%)
  - Limited functionality of the electronic health records system (25.7%)
  - Perception that sepsis is not a problem (20%).
- When asked to identify the top three resources or tools that would be most helpful providers chose:
  - Written educational materials for staff (78%)
  - Written educational materials for patients and families (53.4%)
  - Educational webinars (52.9%)
  - Model screening tools (38.6%)
  - Model treatment protocols or guidelines (25.7%).

POST-ACUTE STAFF SURVEY

In addition to the survey of provider organization leadership, the Steering Committee conducted a survey that sought to understand more about knowledge and attitudes of direct care staff relative to sepsis. The questionnaire was tailored to three audiences: nurses, certified nurse aides, and home health aides. The goal of the surveys was to understand whether the workforce members were familiar with sepsis and its symptoms and to gauge whether they felt their supervisor would take their concerns about a patient or client's health seriously.

NURSES

Forty-seven nurses completed the post-acute workforce survey on sepsis. Twenty-five (54%) were RNs, 19 (41%) were LPNs and 2 identified as "other." The nurses who completed the survey worked for provider organizations across the continuum, including home care agencies, skilled nursing facilities, home health, inpatient rehabilitation facilities, long term acute care hospitals, ASAPs, and hospice providers. When asked whether they had the "knowledge and skills to recognize signs of sepsis," respondents either "strongly" agreed (72%) or "somewhat" agreed (28%). When asked about whether a supervisor (MD, nurse practitioner or physician assistant), would "listen and follow-up" on a concern raised by the nurse, 91% indicated that the provider would do so "always" (43%) or "most of the time" (48%). The remaining respondents (4 or 8.7%) said that the provider would listen to them and follow up "some of the time." Eighty-seven percent of respondents (n=41) reported they would like to learn more about sepsis and eighty-five percent (n=40) reported they prefer to learn new skills or information "in-person, during a designated team meeting, training session or in-service."

DIRECT CARE WORKERS

A total of 53 direct care workers completed the post-acute workforce survey on sepsis. This included 32 certified nurse aides, 22 home health aides, 12 homemakers, 9 personal care homemakers, and 3 who identified as "other." Sixty percent of the workers were current employees of a home care agency and 38 percent were employed by a skilled nursing facility at the time of the survey. In addition to these organizations, the direct care workers also worked for home health agencies, adult day health programs, hospice care organizations and long term acute care hospitals. Eighty-eight percent felt confident that they notice when a patient/client's health status changes for the worse and eighty-nine percent "strongly" agreed that if they report to their supervisor about a patient's change in status, the supervisor will listen and follow-up. Regarding specific knowledge about sepsis, direct care workers were less confident than nursing staff. Twenty-nine percent of respondents had never heard of sepsis and 30 percent disagreed with the statement that they "have the knowledge and skills to recognize signs of sepsis." Seventy-three percent of direct care workers indicated that they had no previous training on sepsis. Finally, when asked about learning new things for their job, 92 percent agreed that they prefer to receive new information and skills through in-person trainings.

In summary, the workforce survey respondents, though they represent a small sample of the total post-acute workforce, showed a high degree of confidence in their ability to recognize changes in their patient/client's condition, a high degree of confidence in the likelihood that providers would follow-up on patients with a change in condition and an interest in learning new skills through in-person trainings at work.

RECOMMENDATIONS

Understanding that the post-acute provider continuum is vast, complex and diverse, the recommendations below are tailored to different groups of providers to ensure that expectations are aligned with competencies and resources.

1. **To improve prevention of sepsis, all organizations in the post-acute continuum should:**

   - Provide educational materials to their staff about sepsis emphasizing the importance of preventing sepsis through proper infection control and expressing concerns when a resident/patient demonstrates a change in health status.
   - Adopt policies regarding recommended vaccinations for patients and staff in order to reduce the incidence of conditions that can lead to sepsis.
   - Share materials about sepsis with patients and their families, particularly if they are at high risk of developing sepsis.

2. **To help patients plan for their care, all organizations in the post-acute continuum should:**

   - Partner with patients and their family members to complete an advance care plan (or identify, obtain a copy, and document an existing plan) that conveys the patient's goals, values and preferences for their care should they become acutely ill.
   - Educate patients and assist with completing all necessary documents to carry out the patient's advance care plan, providing copies as requested.

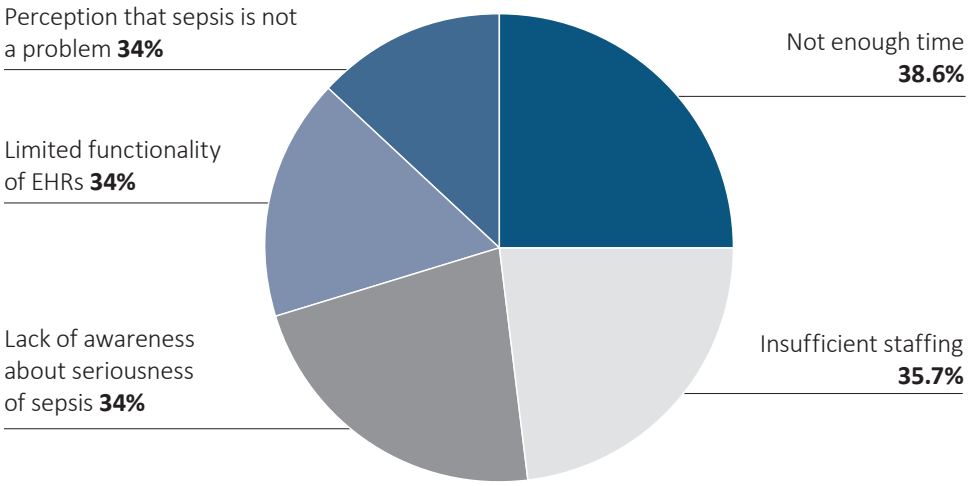
3. To improve early detection of sepsis, all organizations in the post-acute continuum should:

- Adopt an evidence-based tool for staff to use to assess changes in a patient's health status.
- Have a system in place for notifying a supervisor if a staff member notices a change in the patient's health status.
- Share materials about sepsis with patients and their families, particularly if they are at high risk of developing sepsis.
- Establish a mechanism for prompt escalation of care, and, when appropriate, to stabilize and transfer to a provider able to provide a higher level of care.
- Develop a strategy for appropriate hand-offs and communication regarding the care of patients with sepsis.

4. In addition, post-acute providers with capacity to begin treatment of sepsis should:

- Adopt an evidence-based treatment protocol that has time-specific treatment goals for clinicians to follow when there is a suspicion of sepsis.
- Provide regular education and training for staff on the provider organization's sepsis protocol.
- Educate patients and families that have been diagnosed with sepsis about the condition so they know what it is, what to expect and when to seek additional care.

FIGURE 2: Challenges faced when implementing new practices in sepsis care



CONCLUSION

Sepsis is a complex and persistent public health challenge that requires the focus and attention of clinicians, health care facilities, health care consumers, researchers and policymakers. Post-acute providers serve an important role in preventing sepsis, ensuring early identification and treatment of sepsis and helping sepsis survivors both recover and get connected to ongoing care. Implementing the recommendations will improve sepsis outcomes in Massachusetts. However, increasing sepsis awareness and improving practices among post-acute providers is only one piece of the larger puzzle. Providers across the continuum of care need to be able to recognize the early signs of sepsis and ensure that patients receive expeditious care. In the months and years ahead, the Massachusetts Sepsis Consortium, with the support of the Massachusetts health care community, will continue to address the challenges sepsis poses in all settings.

Post-acute providers serve an important role in preventing sepsis, ensuring early identification and treatment of sepsis and helping sepsis survivors both recover and get connected to ongoing care.

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