Atlantic Quality Innovation Network (AQIN) Community Based Sepsis Initiative

Home Care & Hospice Association of New Jersey 2017 Annual Conference

June 23, 2017
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Program Objectives

At the conclusion of the presentation, participants should be able to articulate:

- The value of community based sepsis education
- Early signs and symptoms of sepsis
- Identification of groups at high risk for developing sepsis
- Early interventions for the treatment of sepsis
- Impact of sepsis on patients, families and our healthcare system
- Preventative measures for sepsis
- Strategies to increase sepsis knowledge in the community
AQIN / IPRO

- Atlantic Quality Innovation Network (AQIN)
  - New York (IPRO)
  - South Carolina (The Carolinas Center for Medical Excellence)
  - District of Columbia (Delmarva Foundation for Medical Care)

- The Centers for Medicare & Medicaid Services (CMS) Medicare Quality Improvement Organization for New York State

- National organization providing a full spectrum of healthcare assessment and improvement services that foster more efficient use of resources and enhance healthcare quality to achieve better patient outcomes

- Not-for-profit organization headquartered in Lake Success, NY and also has offices in Albany, NY, Hamden, CT, Camp Hill, PA, Morrisville, NC, Hamilton, NJ, San Francisco, CA.

Community Based Sepsis Initiative

Centers for Medicare and Medicaid Services (CMS) Special Innovation Project Award

- Two Year Contract
  - September 2015 – September 2017

- Performance Based Measures

- Atlantic Quality Innovation Network (AQIN) Based
  - New York (IPRO)
  - South Carolina (The Carolinas Center for Medical Excellence)
Sepsis

Sepsis is a life threatening condition that arises when the body’s response to an infection injures its own tissues and organs.

Sepsis is a leading cause of death and healthcare spending globally.

The word sepsis was first introduced by Hippocrates (460-370 BC), derived from the Greek word *sepsi*, meaning to "make rotten".


If Not Treated Promptly...

Sepsis can result in:

- Organ Failure
- Tissue Damage
- Death

For every hour that appropriate treatment is not administered, the mortality rate goes up by 8%
Why Community Based?

- >80% of sepsis cases originate outside of the hospital
- Sepsis has been identified as a condition for which mortality is a preventable outcome with early detection and treatment
- Only 55% of U.S. adults have heard of sepsis
- Sepsis diagnosis is often missed by healthcare providers
- Sepsis is the number one driver for 30 day hospital readmissions in New York State
- Sepsis treatment protocols and provider education are primarily focused on Emergency Departments and Critical Care Units

Forty-five Percent of Americans Have Never Heard of Sepsis
Home Health Role in Prevention, Early ID and Intervention

- The etiology, nature and scope of sepsis make prevention, rapid identification and treatment a public health imperative

- The home care population embodies patients at high risk for sepsis – especially those susceptible to infection (recurrent UTIs, pneumonia, cellulitis, etc.)

- Home healthcare providers are the critical link to preventing, recognizing, and treating sepsis

- Home health professionals are strategically positioned to increase overall community awareness related to sepsis

New York State Hospital Sepsis Regulations

- NY was the first state in the nation to enact Sepsis Regulations “Rory’s Regulations” in 2013

- Requires hospitals to have protocols for:
  - Recognizing early signs of Sepsis
  - Identifying high risk patients
  - Early treatment measures
  - Staff training
  - Metric analysis as a driver of change

- In August of 2016 Illinois signed “Gabby’s Law”

**Initiative Objectives**

- Reduce sepsis related morbidity and mortality in designated target regions
  - Albany and Syracuse Hospital Referral Regions in NYS
  - Charleston Region in SC
- Decrease sepsis related readmissions through pre-hospital provider education
- Increase early recognition of sepsis at the community level
- Highlight role of care coordination in reducing sepsis morbidity and mortality

**Performance Metrics** *(Medicare FFS Beneficiaries)*

**Outcome**
- Inpatient admissions
- Inpatient mortality
- LOS with and without mortality

**Process**
- Pre and post levels of sepsis knowledge - providers and community
- Number of media and public service events

**Proximal**
- Number of community educational sessions
- Number of community based provider educational sessions
- Number of attendees at educational sessions
Approach

Educate on the premise that **Sepsis is a Medical Emergency**

- Facilitate education and build awareness of sepsis among pre-hospital providers and caregivers using a Train-the-Trainer format
- Improve sepsis care transitions between pre-hospital, acute care and post-acute healthcare and community settings
- Focus education on high risk populations
- Educate physicians on early recognition of sepsis in the outpatient setting
- Utilize multiple media means to increase public awareness
  - TV
  - Radio
  - Billboards
  - Bus Tails
Train-the Trainer Model

- All training materials endorsed by AQIN Sepsis Advisory Board
- Regional training sessions attended by facility designated clinical educators
- Expectation: trained educators facilitate sepsis training for all staff at their organization
- Separate training materials provided for clinical and non-clinical staff
- Facilities encouraged to incorporate sepsis training into new employee orientation and annual staff competency programs
- Two hour training sessions and associated training materials provided free of charge by IPRO
- Ongoing staff support to all trained facilities provided by IPRO

Sepsis Training Content Outline

- Evidence supporting community based sepsis awareness
- Sepsis Alliance video “SEPSIS: EMERGENCY”
- Recognizing early signs/symptoms
- Identification of high risk populations
- Treatment strategies
- Post sepsis syndrome
- IPRO sepsis care management tools
- Preventative measures
- Facility based training process
IPRO Sepsis Training

- **Home Health Agencies** (clinical and non-clinical staff)
- **Skilled Nursing Facilities** (clinical and non-clinical staff)
- **Physician Practices** (non-physician staff that have direct patient contact: registration/scheduling, nursing, PCTs)
- **Dialysis Centers** (clinical and non-clinical staff)

Training Status

- **30 Regional Train-The-Trainer sessions**
- **9,341** pre-hospital providers and caregivers trained on Sepsis Awareness utilizing IPRO training tools
- **Plans to expand training to Diabetes Care Centers**

Why This is Important...

Sepsis: Emergency Video Available on Sepsis Alliance Website: [http://www.sepsis.org](http://www.sepsis.org)

**About Sepsis Alliance**

Sepsis Alliance is the leading nonprofit patient advocacy organization in North America promoting awareness of sepsis. Sepsis Alliance’s mission is to save lives by raising awareness of sepsis as a medical emergency. The organization hosts national and community events, distributes educational information, and promotes training and education of sepsis and its devastating effects. Sepsis Alliance also provides support by giving patients and family members information about sepsis and post sepsis syndrome. Sepsis Alliance, a 501(c)(3) charitable organization, is a GuideStar Gold Rated Charity.
Who Is At Risk for Sepsis?

Anyone with an infection!

Those at higher risk for developing sepsis include:

- People 65 or older
- Infants less than 1 year old
- People with chronic illnesses: diabetes, cancer, AIDS
- People with weakened immune systems
- People recently hospitalized
- People recovering from surgery
Early Signs of Sepsis

*Infection (confirmed or suspected) plus:*

- Fever
- Feeling very cold (hypothermia)
- Rapid heart rate
- Rapid breathing
- Shortness of breath
- Confusion or difficult to arouse
- Complaints of extreme pain
- Pale/discolored skin

*Patients typically have more than one of the above symptoms*

Other Early Signs May Include:

- Decreased blood pressure
  - (SBP <90mmHg or SBP decrease >40mmHg)
- Other signs of altered mental status
- Decreased urine output / dark, concentrated urine
  - (<0.5 ml/kg per hour)
- Abnormal lab tests
  - Increased lactate level >2mm/L
  - Increased creatinine >2mg/dL
  - Decreased platelet count <100,000
  - Coagulation abnormalities INR > 1.5 or PTT >60 secs
  - Hyperglycemia in absence of diabetes >120mg/dL
Common Infectious Diseases That May Progress to Sepsis

- Pneumonia
- Skin Infections (cellulitis)
- Urinary Tract Infections
- Post-partum Endometritis
- Influenza
- *Clostridium difficile* (C.diff) Enteritis
- Tick Borne Infections especially in the immunocompromised

Centers for Disease Control and Prevention (CDC): “Sepsis is a Medical Emergency”

August 2016: CDC releases a report in *Morbidity & Mortality Weekly Report (MMWR)* about sepsis, emphasizing the importance of prevention and early recognition

“Many people have never heard of sepsis, and clinicians can be slow to recognize it. Awareness is critical, because the slightest delay in treatment of sepsis can mean the difference between life or death.”

*CDC Director Tom Frieden, MD, MPH*

[https://www.cdc.gov/mmwr/volumes/65/wr/mm6533e1.htm](https://www.cdc.gov/mmwr/volumes/65/wr/mm6533e1.htm)
Sobering Statistics

- 7 out of 10 sepsis patients had recently interacted with a HCP
- Mortality rate for Severe Sepsis is 29% which is greater than:
  - AMI (25%)\(^2\)
  - Stroke (23%)\(^3\)
  - Trauma (1.5%)\(^4\)
- 18 million people die of Sepsis worldwide every year
- Sepsis is the leading cause of childhood deaths
- Sepsis is the most expensive condition treated in U.S. hospitals\(^5\)
- Sepsis kills 258,000 Americans annually\(^6\)

**Early diagnosis of Sepsis is often missed **

Consumption of Healthcare Resources

- Sepsis: Most Expensive Condition Treated in U.S. Hospitals\(^1\)
  - $24 billion spent each year treating sepsis in hospitals
  - In-hospital mortality rate eight times higher than other diagnoses

- Costs Related to Long-term Impacts of Sepsis\(^2\)
  - Significant subsequent medical care and services
  - High re-hospitalization rate
  - Delayed return to work

1. AHRQ Agency for Research and Quality
2. Medicare Fee for Service Data
Patients Hospitalized for Sepsis

- Are more severely ill than those hospitalized for other conditions
- Have considerably longer lengths of stay in the hospital than those hospitalized for other conditions (median=10 days)¹
- Are more likely to die during hospitalization compared to those hospitalized for other conditions

¹. MMWR Vol.65 Aug.2016

Considerations for the Elderly

- Elderly constitute 1/5 of the US population but 2/3 of patients admitted to the hospital with Sepsis¹
- Risk factors specific to this demographic
  - Increased incidence of chronic co-morbidities²
  - Prone to UTIs- a common source of sepsis
  - Malnutrition is common in the elderly³
  - Increased incidence of colonization by drug resistant bacteria assoc w.:⁴
  - Declining immune functionality (more susceptible to infections)

¹. Crit Care Med. 2006;34:15-21
². Crit Care Med. 2007;35:1244-1250
Initial Treatment - Evidence Based

Consistent with Surviving Sepsis Campaign\(^1\)

**Within 3 Hours of Presentation**\(^*\)
- Measure blood lactate level
- Obtain blood cultures **(prior to giving antibiotics)**
- Administer broad-spectrum IV antibiotics
- Administer 30ml/kg crystalloid for hypotension or lactate≥4mmol/L

**Recommended within 1\(^{st}\) hour of recognition**

**Within 6 Hours of Presentation of Septic Shock**
- Administer vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥65mmHg
- For persistent hypotension (MAP<65) or initial lactate ≥4mmol/L, reassess volume status and tissue perfusion
- Repeat lactate level if initial level was elevated

\(^*\)Time of presentation is defined as the time of triage in the emergency department or, if presenting from another care venue, from the earliest chart annotation consistent with all the elements of severe sepsis or septic shock ascertained through chart review

Antibiotic Stewardship vs. Treating Sepsis

Not a Conflict in Strategies!

- Urgent antibiotic therapy is needed for bacterial infections to prevent progression to sepsis and septic shock
- Growing focus on appropriate use of all antibiotics both in and out of the hospital
- Empiric prescribing for upper respiratory tract infections and non-specific febrile and viral syndromes
Post Sepsis Syndrome

Affects up to 50% of sepsis survivors

- Higher risk for patients with an ICU or extended hospital stay
  - Impaired cognitive function—especially among older patients
  - Mobility impairments (muscle weakness)
  - Amputations
  - Hallucinations
  - Loss of self-esteem
  - Increased dependency on others

- Significant Impact on Caregivers
  - Inadequate hospital discharge education on what to expect during recovery
  - Difficulty accessing follow-up community treatment
  - Cost
  - Disruption to their lives

Care Coordination Tools to Improve Outcomes

- Home Care Association of NYS Adult Sepsis Screening Tool & Protocol
- AQIN Sepsis Zone Tool
- AQIN Quick Reference Tool for Clinicians

“There’s implicit recognition that just being a good clinician is probably not enough (to identify at risk patients); you need a system in place to help recognize patients early.”

Home Care Association of NYS (HCA)
Adult Sepsis Screening Tool & Protocol

- Four part webinar series on the application of the first-of-its-kind in the nation, Adult Sepsis Screening Tool for HHAs
  - Available to all NYS home health agencies through HCA (with licensed agreement)
  - Webinars presented in collaboration with HCA of NYS, Sepsis Alliance, NYS Department of Health and CDC to provide training on use of the tool

- Introduced at all IPRO Home Health Train-the-Trainer training sessions

- To be completed at: SOC, ROC & every visit

- Tool interventions are recommended and not a substitute for treatment or advice from a HCP

Crosswalks to mandatory NYS Emergency Department Sepsis Protocol

Already included in Vital Signs and Nursing Assessment

Patient with infection but no systemic symptoms: provide patient with Sepsis Zone Tool
SCREENING QUESTIONS

The following three question areas on the tool will provide the clinician with clinical information to determine if the patient meets sepsis criteria or if the patient is at risk for sepsis.

1 Determine Infection:
   - Does the patient’s history, physical examination or other findings suggest an infection or potential source of infection?
   - Document confirmed or potential source of infection if applicable.
     a. If “YES,” specify and select one or more suspected sources from the list.
     b. If “YES,” and the source or potential source of the infection is not listed, use the text box to describe.
     c. Examples of source or potential source of infections are:
        - Foul catheters
        - Vascular catheters
        - Open wounds
        - Implanted devices (e.g., pacemaker)
     d. If the patient does not have any existing, suspected or potential source of infection answer “NO.”

2 Identify Systemic Criteria:
   - Responses are based on objective data obtained from physical examination of the patient.
   - Refer to the list of systemic criteria on Sepsis Screen Tool for parameters (Fever, Tachycardia, Tachypnea). Are 2 or more present?
     a. If “YES,” mark all that apply.
     b. Answer “NO” if 1 or no systemic criteria are present.

3 Identify New Onset Organ Dysfunction:
   - Answer “YES” if ANY new onset sepsis-related organ dysfunction or pain is present:
     a. Neurological
     b. Lung
     c. Kidney
     d. Cardiovascular
     e. New onset of pain

**IF RESPONSES TO QUESTIONS 1, 2 AND 3 ARE “NO” THEN SCREENING IS COMPLETE FOR THE VISIT**

**REPEAT SEPSIS SCREEN TOOL AT NEXT VISIT.**

The sepsis screening tool to which this protocol applies is the property of the Home Care Association of New York State, Inc. (HCA). It is being used, copy and/or distributed this tool in whole or in part without the express written permission of HCA. HCA makes no warranty associated with the use of this tool with respect to detection of sepsis risk, sepsis at any stage, clinical procedure or outcome, nor any implied warranty on behalf of any entity using this tool. Any use of the tool is subject to the terms of the license agreement between HCA and the authorized licensee under that agreement.

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FOLLOW-UP

Positive findings for ANY of the 3 Screening Questions requires follow-up.

Each Follow-Up item provides direction for the clinician’s follow up.

**The Patient Meets Criteria for Infection:**
If the answer to #1 is “YES” AND the answers to #2 and #3 are “NO”:
   - Educate the patient on the signs and symptoms of sepsis and provide the patient with “Early Signs and Symptoms of Sepsis” education sheet (Attachment C).

**The Patient Meets Criteria for MD Notification:**
If the answers to question #2 and/or #3 are “YES”:
   - Educate the patient on the signs and symptoms of Sepsis and notify MD of your findings and document.

**The Patient Meets Criteria for Sepsis:**
If the answers to questions #1 and #2 are “YES,” and answer to #3 is “NO,” the patient meets criteria for Sepsis:
   - Notify provider
   - Educate the patient on the signs and symptoms of Sepsis and treatment
   - Obtain MD order to draw CBC
   - Document

**The Patient Meets Criteria for SEVERE Sepsis:**
Answers to questions #1, #2 and #3 are “YES.” Patient has met criteria for infection, systemic involvement and sepsis-related organ dysfunction:
   - Notify provider
   - Educate patient on signs and symptoms of Sepsis and treatment
   - Have patient transported to emergency department for evaluation
   - Contact receiving emergency department to provide report
   - Document
**Sepsis Zone Tool**

**English and Spanish**

Patient information sheet to self-monitor for the early signs and symptoms of sepsis

Provide this for patients that have either been diagnosed with an infection or are at high risk for developing an infection
HCA Adult Sepsis Screen Tool

For more information on the HCA Adult Sepsis Screening Tool and Protocol Please contact Al Cardillo, Executive Vice President of the Home Care Association of New York State
acardillo@hcanys.org

Physician Education

Early Recognition of Sepsis in the Outpatient Setting
- Education by Dr. Alan Sanders, Infectious Diseases expert and AQIN Sepsis Advisory Board member
- Role of the practitioner, patient and family in the earliest phases of sepsis
- Presented at American College of Physicians Meetings: Albany and Syracuse

Physician Based Community Based Sepsis Webinar
(Also found in the Webinar section on IPRO Sepsis Web Page stopsepsisnow.org)
Quick Reference for Clinicians

IPRO will provide laminated Rapid Assessment Guides to physician offices

They can be posted in exam rooms for quick reference

Preventative Measures

Simple measures you can take!

- Practice good hand hygiene
- Try to avoid infections
- Treat infections promptly
- Get vaccinated!
- Maintain good overall health

Share & introduce the AQIN brochure “Sepsis: Every Minute Counts!”

English & Spanish
Challenges and Opportunities

- No “Gold Standard” diagnostic test exists for sepsis
- Sepsis is a syndrome dependent on pathogen factors as well as host factors
- Sepsis-induced organ dysfunction may be hidden (organ dysfunction should be considered in any patient with infection)
- Diagnostic errors/misses are a major factor in potential progressive infection as well as medical malpractice claims/awards

Significant opportunity to educate the public!

Accomplishments

- Train the Trainer program
- HCA Adult Sepsis Screening Tool & Protocol
- Physician presentations and webinars
- Sepsis education for nursing & radiology students
- Community based presentations
- Educational tools for clinicians and the general public
- Sepsis campaigns
- Collaboration with key project partners
- AQIN Sepsis Advisory Board
Resources:

IPRO Sepsis Initiative
http://stopsepsisnow.org

Surviving Sepsis Campaign:
http://www.survivingsepsis.org/Pages/default.aspx

Centers for Disease Control (CDC):
http://www.cdc.gov/sepsis/clinicaltools/index.html

Sepsis Alliance:
http://www.sepsis.org/

Rory Staunton Foundation:
https://rorystauntonfoundationforsepsis.org/

Questions

Feedback

Recommendations