Sepsis Bundles: Implementation Strategies

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Objectives

- Use Model for Improvement to establish a framework for implementation of sepsis bundles
  - Identifying the team
  - Setting aims
  - Establishing measures
  - Selecting changes
  - Testing changes

Implementation of Sepsis Bundles

- Sepsis bundles are associated with lower mortality
- So…….
- How can we implement them?
- How can we get front line providers to change practice?

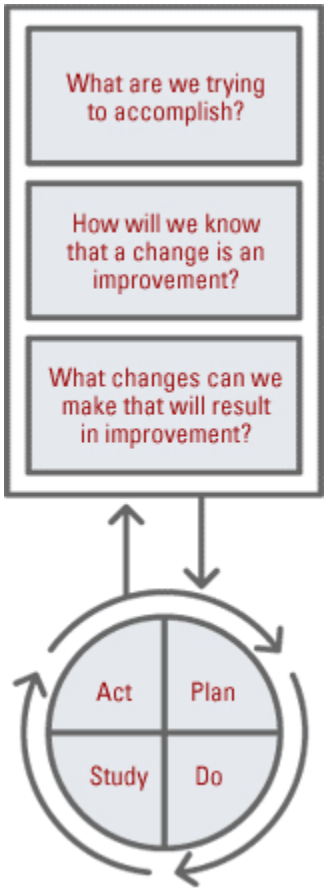
Step 1: Identify your team

- Overall leadership team
  - Emergency Department MD and RN
  - Critical Care MD and RN
  - Administration
  - IT
- Each step will likely require additional participants
  - Pharmacy
  - RT
  - Lab

Requirements for Team Members

- Commitment to change
- Adequate time
- Reliable
- Ability to work with others
- Flexible

Model for Improvement



Setting Aims

Establishing Measures

Selecting Changes

Testing Changes

Setting Aims: Overall Goal

- Ineffective aims statement:
  - **“Improve the care of patients with severe sepsis or septic shock”**
  - Vague
  - No time frame
- Effective aims statement:
  - **“Achieve a a 25 percent reduction in sepsis mortality within the next 5 years”** (SSC Campaign)
  - Specific
  - Measurable

Setting Aims:

- Don’t try to do it all at once
- Break it down into manageable pieces
  - Pick an area of focus
    - Administer antibiotics within 3 hours to patients with severe sepsis at least 75% of the time
    - Administer at least 30ml/kg fluid bolus within one hour
    - Measure lactate at time of triage for patients who meet SIRS criteria

Setting Aims

- Set high, but achievable goals
  - For example:
  - Goal: 80% of patients with severe sepsis will receive antibiotics within 3 hours of presentation to the emergency department
    - If you are starting from 50%, 100% compliance may not be an appropriate initial goal
    - As your team improves, increase the goal

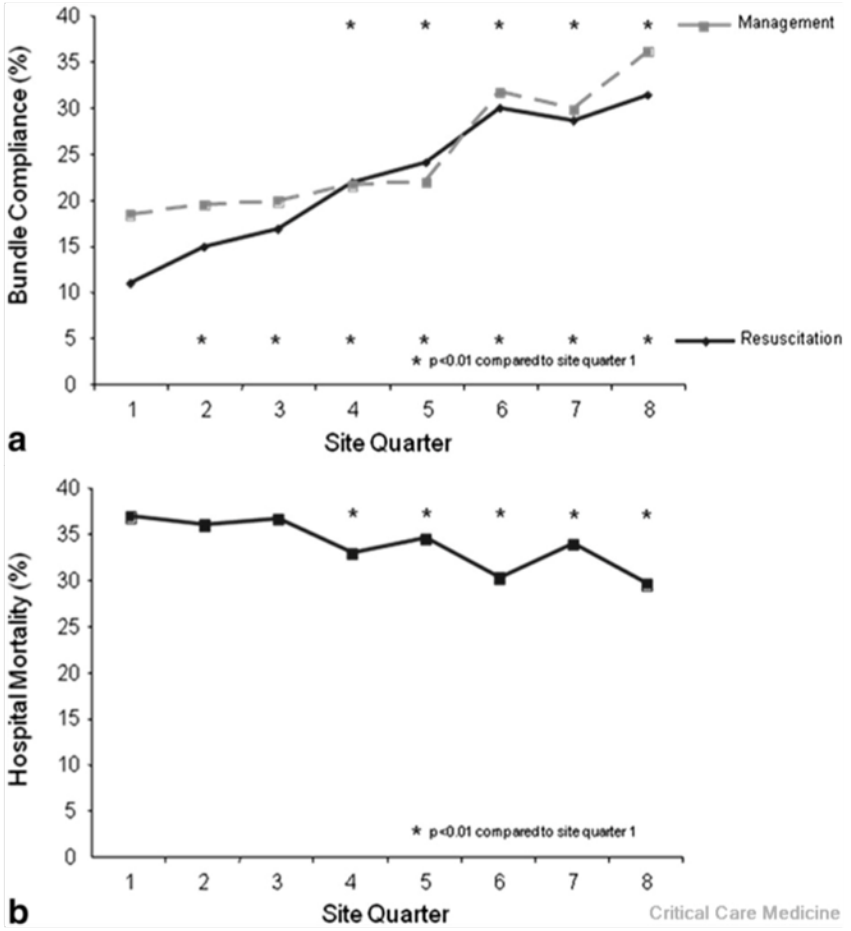
Setting Aims

- Publicize the goal
  - Everyone should know what the team is trying to accomplish
  - Post on units
  - Discuss:
    - In staff meetings
    - On rounds
    - In the break room

Establishing Measures

Use the Surviving Sepsis Campaign bundle elements

Levy CCM 2010



Establishing Measures

- Resuscitation bundle
  - Measure serum lactate
  - Draw blood cultures prior to antibiotic administration
  - Administer broad spectrum antibiotic within 3 hours of ED admission and within 1 hour of non-ED admission

SSC Guidelines 2008

Establishing Measures

- Resuscitation bundle
  - In the event of hypotension and/or a serum lactate > 4 mmol/L:
    - Deliver a minimum of 20 ml/kg of crystalloid or an equivalent
    - Apply vasopressors for hypotension not responding to initial fluid resuscitation to maintain mean arterial pressure (MAP) > 65 mm Hg

SSC Guidelines 2008

Establishing Measures

- Resuscitation bundle
  - In the event of persistent hypotension despite fluid resuscitation (septic shock) and/or lactate > 4mmol/L
    - Achieve a central venous pressure (CVP) of >_ 8 mm Hg
    - Achieve a central venous oxygen saturation (ScvO2) _> 70 % or mixed venous oxygen saturation (SvO2) _> 65 %

SSC Guidelines 2008

Selecting Changes

- What changes can we make that will result in improvement?

Selecting Changes

- Pick an area of focus with an aim and a measure
- Example: Measure serum lactate in patients presenting with severe sepsis or septic shock
  - What is the current process?
    - Who, what, when, where, how?
    - What are the gaps in the current process?
  - How can current process be improved?
    - More consistent
    - More efficient

Selecting Changes

- Use your analysis of current process to focus your intervention
  - If current process is serum lactate measurement depends on MD recognition and order, consider:
    - RN driven protocol
    - Standing orders
  - If current process is that serum lactate has to be specifically added to ABG order, consider:
    - Making lactate part of standard reported values on all ABGS

Protocolization

- Improves consistency of process
- Improves efficiency of process
- Improves patient outcome in a variety of situations
  - Administration of effective antibiotics
  - Sepsis bundles

Developing a protocol

- There are many examples available
  - Google “sepsis protocol”
- Use examples to help you develop yours
- Should be adapted to local environment
  - Local work flow
  - Staffing patterns
  - Experience
  - Technology

Developing a protocol

- Get buy-in
  - Users must be involved in development
- Get feedback
  - During development
  - During implementation
  - Post-implementation
- Use feedback to improve the protocol
- Keep it simple
  - More steps = More opportunity for error

Protocol Development: Feedback

- One approach:
  - Lakeland Regional Medical Center in Florida
  - Leadership group develops working draft of protocol
  - Poster size version and pens posted in each unit that will use the protocol
  - 2 week feedback period
  - Prize to unit that has the most comments

www.sccm.org/Podcasts/SCCMPOD157.mp3

Testing Changes

- Decide from the start who will collect data
  - Have administration at the table
- Use the data to feedback to front line staff
- Use data to refine the process
  - Examine why process may be failing
  - i.e. If antibiotics can't be given within 3 hours because of delay coming from pharmacy then just telling ED staff to get antibiotics in won't work
    - Need to address the underlying cause

Testing Changes

- Publicize the data
  - Post it in staff rooms
  - Review it at quality management and departmental meetings
- Recognize success!
  - Helpful if recognition comes from higher ups

Tips

- Don’t expect everything to change at once
- Don’t let the perfect be the enemy of the good
  - Start the process
  - Refine it as you go along
- Changing culture takes time
  - ….and lots and lots of effort
  - ….But, it’s worth it!
    - Your patients will thank you

Tips

- When you encounter an obstacle
  - Ask what is underlying cause and try to address it
    - Naysayers
    - Competing priorities
    - Too busy
    - Insufficient support
  - Don’t give up
    - Make the case again and again if necessary

Resources

- www.survivingsepsis.org
- http://www.ihi.org/knowledge/Pages/HowtoImprove/
- http://www.ihi.org/knowledge/Pages/Changes/ImplementtheSepsisResuscitationBundle.aspx