Navigating Sepsis in an Elective Orthopedic Surgery Environment

Hospital for Special Surgery
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- 215 bed hospital located on the Upper East Side of Manhattan
- 36 operating rooms accommodating more than 30,000 surgeries annually
- Nationally ranked No. 1 for Orthopedics and No. 3 for Rheumatology by U.S. News & World Report (2017-2018)
Hospital for Special Surgery Sepsis Committee

- Sean Garvin, MD, Anesthesiology
- Anna Distad, Quality Management Specialist, Quality & Accreditation, Committee Chair

Multidisciplinary Committee:
- Quality and Accreditation
- Anesthesiology
- Infection Control
- Laboratory Services
- Information Technology
- Pharmacy
- Physician Assistant
- Academic Training
- Nursing – Intensive Care, Education
Evolution of Our Sepsis Journey

○ Background
  ○ In alignment with NYS law and CMS SEP-1 measure
    ○ Establish protocol to facilitate early recognition, diagnosis, and treatment of patients with sepsis
    ○ Ensure prompt medical evaluation and provision of 3 and 6 hour bundle

○ History
  ○ 3Q13 > Sepsis Committee established
  ○ 4Q13 > Sepsis Protocol and Order sets developed. MEWS integrated in EMR
  ○ 2014-2015 > Concurrent CDI monitoring of documentation and coding of sepsis cases.
  ○ 2016 > Sepsis Navigator added to EMR
  ○ 2016 > Automated repeat lactate orders if >2
  ○ 1Q17 > templated notes for Attending documentation
  ○ 2Q17 > Perfect Serve implementation and Point of care testing: ABG, Hct and Lactate

○ Problem Identification
  ○ Upon initial implementation of the new measure, varying physician practices and adoption of the new practice yielded poor compliance with meeting CMS requirements for sepsis monitoring
Challenges & Barriers

- Timely diagnosis documentation of sepsis once patient is ruled in for screening
  - After patient rules in, often times even though appropriate testing is ordered, the diagnosis is often delayed
- Lack of ER setting
  - As HSS has no ER, our sepsis cases are typically discovered on inpatient units and in the ICU
  - It is difficult to standardize the practice of physicians and in some case escalate bundle components (i.e. provider assessment, etc.)
- Infrequency of sepsis cases at HSS
  - Although we have many positive screening tools, HSS typically only has 1-2 severe sepsis and/or septic shock cases per quarter
  - Leads to provider non-familiarity with protocols
- Despite hardwiring in EMR—providers can order outside of order sets.
- Physician hesitation to order high volumes of fluids in post-operative patients
  - A common theme in patients that fail to meet the measure is the ordering of fluids in patients with hypotension
  - As HSS treats a typically older population whose course is often complicated by acute renal failure and/or fluid volume overload, our providers are hesitant to resuscitate at the high volumes of IV fluids that the measure calls for
New Initiatives

- Operational workflow changes to facilitate more standardized sepsis monitoring process and ultimately support better patient care
  - Order set changes
    - 3 order sets consolidated to 1
    - Addition of SOFA scoring to nominalize severity of patient’s presentation
  - Best Practice Alerts in medical record
    - Cueing of providers to repeat lactate, advise of appropriate antibiotic therapy, etc.
  - Nov 2017 - Implementation of sepsis response team
Epic utilization of the sepsis dashboard allows providers to view all sepsis-related documents in one work tab of the medical record.

Addition of the SOFA scoring system to the sepsis order set will allow providers to gauge the severity of the patient’s presentation.
After provider is notified of positive MEWS, the patient is screened and provider determines assessment and if further workup is required.

Based on the assessment, the provider will be cued to initiate elements of the measure bundle.
Other elements of the sepsis navigator include vital signs from the last 24 hours, results review, and a review of current and previous screening tools.
Order sets specifically outline CMS guidance during order entry and provide alerts to provider when variance is noted.
Successful Strategies & Tips

- Implementation of new medical record in February 2016
  - Transition from Clinicis to Epic has allowed much more order and documentation customization and has much more capability to cue and alert providers of necessary elements of sepsis protocols

- Implementation of the sepsis navigator in 2016
  - Allowed providers to view sepsis-related documentation in one place
  - Minimized lack of order entry and/or duplication

- Institution of automatic lactate order when value is >2 in 2016
  - Minimized the amount of failures related to lost follow-up with positive initial values

- Implementation of Perfect Serve in April 2017
  - New communication platform has allowed for faster alert and escalation of positive sepsis screenings
Performance & Goals

- HSS’s volume of septic patients remains low.
- Although substantial process improvements have been noted, performance remains poor because clinician’s perception of diagnosis impacts timing of interventions
  - This is hindered by belief that SOFA score is more accurate and actionable than SIRS criteria
  - Postoperative state muddies clinical picture, i.e. is hypotension and tachycardia due to postop state vs. other clinical process
- Goals:
  1. Improve timely diagnosis
  2. Improve workflows for each discipline
  3. Decrease waste—i.e. over testing for patients who don’t need it—in setting of CMS value measures like MSPB
Key Lessons Learned

- Implementation of state-required measure has proven to require creative, innovative, and open-mindedness in order to perform successfully.
- Improvements continue to be noted across institutions, ultimately resulting in support of better patient care.
Steps for Hardwiring & Spread

- Finalization of workflow process
- Active involvement of subject matter experts
- Use of effective educational tools (i.e. tip sheets, classroom training, and computer-based modules)
- Launch of Sepsis Response Team
  - Beginning in November 2017, a sepsis alert team will be implemented
  - Comprised of an ICU attending, the ICU charge nurse, a lab technician, and pharmacy, the response team will be notified when a hospitalist determines that a patient needs to be transferred to higher level of care
  - Will hasten the timely transfer and treatment of sepsis presentation
- Go-live scheduled for November 7, 2017
Contact Information

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