Sepsis in the “Third Space”: The Hospitalist Perspective

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Objectives

• Discuss the hospitalist perspective of sepsis care on the wards

• Identify management challenges unique to the wards and suggest solutions

• Discuss common physician barriers and strategies for engagement

• Emphasize the importance of a collaborative, multidisciplinary sepsis care team
Where Do The Gains Live?

- Lead Time to Diagnosis
- Delivery of Proper Treatment
- Lead time to Diagnosis & Treatment

Historical Sepsis Improvement Efforts

- ED and ICU-focused (1\textsuperscript{st} and 2\textsuperscript{nd} spaces)
- Triage-based recognition
- Rapid implementation of lifesaving treatment
The Wards: The “Third Space” of Sepsis Care

• Wards ≠ ED or ICU

• Hospitalists ≠ intensivists or ED physicians

• Ward patients are different

• Staffing is different (RN, phlebotomy, RT)

• Resources vary by floor, time of day, day of week...
Why Are the Wards Different?

- For each aspect of management, key structural and resource factors unique to the wards present challenges to the timely delivery of sepsis care

- Specific attention must be paid to each step of management to engineer optimal delivery of care

- Transfer to another ward (e.g. ICU, progressive care) in the middle of resuscitation adds another layer of complexity
Sepsis on the Wards: Treatment Considerations
Prompt Diagnosis of Sepsis

• Goal: Diagnose sepsis as early as physiologically possible

• Barriers:
  • Rounds timing
  • Dyssynchrony with data (labs, vitals, assessment)
  • Bias (anchoring, availability)

• Solutions:
  • Protocolized screening
  • Sepsis ACT/RRT team
  • Electronic alerts (caution: alert fatigue/low specificity)
  • Multidisciplinary rounds
  • Partnership with nursing
Fluid Administration

• Goal: Delivery of at least 30 ml/kg crystalloid within 3 hours of diagnosis

• Barriers:
  • Fear of volume overload (CHF, renal failure)
  • Adequate IV access
  • Culture of fluid administration (100 ml/hr “bolus”)
  • Access to fluids
  • Nursing availability

• Solutions:
  • Order sets
  • Frequent reassessment
  • MD-RN communication
  • Sepsis response team
Antibiotic Administration

- Goal: Delivery of appropriate broad-spectrum antibiotics within 3 hours

- Barriers:
  - Pharmacy located remotely
  - Inappropriate antibiotics ordered (i.e. too narrow or too broad)
  - RN unaware of stat order
  - No standardized definition of “stat”
  - IV access (e.g. vancomycin)

- Solutions:
  - Stock common antibiotics on the wards
  - MD-RN communication
  - Sepsis response team
  - Order sets
  - Default commonly used antibiotics to “stat”
Obtain Blood Cultures Prior to Antibiotics

• Goal: Obtain two sets of blood cultures prior to antibiotic delivery and within 3 hours

• Barriers:
  • Lack of 24-hour phlebotomy
  • Difficult blood draws
  • Delays: Difficult choice
  • Lack of culture bottles

• Solutions:
  • Sepsis response team
  • Order sets
  • Increase phlebotomy coverage
  • Standardize responsibilities (e.g. who draws blood?)
Measure Serum Lactate

• **Goal:** Measure serum lactate (venous or arterial) within 3 hours of diagnosis

• **Barriers:**
  - Difficult IV access
  - Misconception regarding arterial vs. venous draw
  - Limited phlebotomy service hours
  - Lactate not ordered

• **Solutions:**
  - Sepsis response team
  - Order sets
  - Provider education
  - Increase phlebotomy services
Screen for Organ Dysfunction

- **Goal:** Screen for organ dysfunction in patients with sepsis or at risk for sepsis (e.g. Q-SOFA ≥2) as soon as recognized

- **Barriers:**
  - Difficult IV access
  - Appropriate labs not ordered
  - Phlebotomy blood draw times

- **Solutions:**
  - Provider education
  - Sepsis response teams
  - Order sets
Sepsis on the Wards

• The bottom line: The wards have limited resources compared with both the ED and the ICU and require careful attention to process redesign to ensure care is delivered in a timely manner
Quality Improvement and Sepsis
Antibiotics: Simplified Process Map

1. Physician Orders Antibiotics
2. Pharmacy Processes Order
3. Nurse Delivers Antibiotics
QI: Process Redesign Basics

• Assemble team comprised of those who complete the process steps

• Create a detailed map of the current process

• Look for areas of redundancy, waste, and error

• Redesign process

• Measure!
  • Outcome: Time to antibiotic infusion
  • Process: Time to order, pharmacy delivery
  • Balancing: Inappropriate antibiotics, C. diff rates, etc.
Sepsis and Quality

• As we get smarter, things should get simpler

• The goal of any quality improvement initiative should be to simplify care delivery – and make the process of delivering this care more reliable
Optimal Location of Care

• ICU vs. Wards?
  – Hospital- and patient-specific decision
  – Match care requirements to resources available

• My approach
  – Septic shock: ICU
  – Elevated lactate: Strongly consider ICU
  – High nursing care needs: ICU
  – Severe sepsis with normal lactate: Wards

• Important: This will vary for every hospital. Know the landscape!
Physician Engagement

• Physician resistance and/or reluctance is common
  • Skepticism re: definitions
  • Autonomy
  • Nuance of caring for the sick
  • Protocols = “Cookbook medicine”
  • Time investment

• Any successful sepsis initiative needs physician support
  • Timing
  • Utilization of order sets
  • Empowerment of RNs, RTs, other team members
Physician Engagement: How to do it?

• Know the “Lay of the Land”
  • Hospitalists
  • Primary Care Physicians
  • Specialists
  • Residents
  • Nurse Practitioners

• Identify a champion/partner
  • Formal project team/committee member

• Grand rounds, lectures, meetings
  • Epidemiology
  • Treatment timing
  • Anticipate questions
Physician Engagement: How to do it?

• Data: Curated references
  • Focus on areas of likely objection:
    • Fluid resuscitation, risk of mortality/potential benefit, timeliness

• Put the dissenters on the project

• Remember that everyone wants the same thing – only their roles/perspectives differ
  • “First, do no harm”
Sepsis on the Wards: The MD-RN Partnership

• As much as I hate to admit it, physicians are incredibly limited...
  • I rarely hang fluids
  • I rarely push medicines
  • I have never scanned a barcode
  • I don’t (usually) round on patients every hour

• Developing shared processes and improvement efforts is absolutely essential to proper care delivery
  • This is particularly critical on the wards
    • Dynamic teams
    • Team dynamics
Key Points

• Sepsis on the wards is incredibly common and associated with high mortality

• Recognition and treatment are hindered by key barriers unique to the wards

• Delivery of high quality sepsis care requires a multidisciplinary team with attention to process redesign
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