## Impact of a Nurse-Driven Sepsis Screening Protocol on Incidence of Sever Sepsis in Patients Managed by a Hematology-Oncology Ambulatory Clinic

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### Background
- Severe sepsis occurs in 14-45% of patients with cancer admitted for infection.
- This retrospective analysis showed 45% of patients screened positive for sepsis, but only 8.4% had confirmed infection.
- Existing studies on international sepsis guidelines exclude cancer patients from evaluation (Claessens et al, 2013)

### Objectives
- Evaluate feasibility and efficacy of a nurse-driven sepsis protocol in an hematology-oncology ambulatory clinic.
- Baseline demographic and adherence to sepsis best practices in patients with infection admitted from clinic.
- Evaluate applicability of international screening criteria within this population and adjust as needed.
- Compare incidence of adverse outcomes in patients before and after protocol implementation.
- Evaluate fidelity of protocol

### Methods
- **Phase I:** Baseline data in randomly selected patients (n=38) admitted for possible infection (7/2012-3/2013)
- **Phase II:** Protocol implementation
  - Nurse-initiated screening
  - Nurse-activated standing orders
  - Clinician-support algorithm
- **Phase III:** Evaluate protocol fidelity and applicability of international sepsis screening criteria (n=79) (4/2014-5/2014)
- **Phase IV:** Utilize data and evidence-based literature to develop oncology-specific sepsis screening criteria
- **Phase V:** Compare incidence of adverse outcomes at baseline and after protocol implementation; verify protocol maintenance (7/2014-4/2015)
  - Randomly selected patients (n=40) admitted for possible infection
  - Re-examine adverse patient outcomes

### Results
- **Phase I:** Baseline adherence to the protocol was 0%; Lactate drawn in 1/38 patients.
- **Phase II/III:** protocol adherence was 82.5%; no missed cases of sepsis
  - **Phase IV:** Revised screening criteria developed
- **Johns Hopkins Oncology Revised Sepsis Screening Criteria**

### Conclusions
- Standards for early detection and management of sepsis can be successfully implemented in the oncology ambulatory setting.
- Implementing a nurse initiated sepsis protocol in oncology is feasible and has the potential to positively influence outcomes.
- Oncology-specific sepsis screening criteria can reduce false screen positives without missing true cases of sepsis.
- Early detection of sepsis is related to higher number of SIRS criteria at onset, but less severe consequences such as hypotension and organ failure.

### Future Directions
- Oncology-specific screening criteria need to be evaluated for sensitivity and specificity in a powered study.
- Modified sepsis screening criteria may reduce work associated with sepsis screening and evaluation without missing true sepsis patients.
- Evaluate SOFA/dSOFA guidelines for specificity and sensitivity in oncology populations

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### Selected References

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