EP19EO – Nurses are involved in the facility- or system-wide approach focused on proactive risk assessment and error management.

Provide one example, with supporting evidence, of an improvement in patient safety that resulted from a nurses' involvement in facility- or system-wide proactive assessment or error management. Supporting evidence must be submitted in the form of a graph with a data table that clearly displays the data.

Example 1: Sepsis Alert: Medical Emergency Team (MET) Nurse Involvement in Implementation

Background/Problem:

Identifying, treating and effectively managing patients with sepsis improves our sepsis mortality and therefore is a key organizational priority. Sepsis currently afflicts about 750,000 Americans every year, and the number of cases continues to grow. An estimated 28-50% of those patients die, making sepsis the tenth leading cause of death in the United States. UVA patients are no exception; sepsis is a leading cause of inpatient mortality and significantly contributes to our overall mortality index, length of stay and costs. The mortality index for sepsis patients was higher than desired for UVA patients.

The Acute Care Subcommittee of the Patient Care Committee commissioned the Sepsis Steering Committee in the fall of 2011 to lead the organization through an enhancement of the existing "Management of Adult Sepsis" guidelines. This enhancement included an implementation of a Best Practice Alert (BPA) pilot to test the technical aspects of the BPA within the electronic medical record. The BPA process provides surveillance of key indicators of systemic inflammatory response syndrome (SIRS) within the electronic medical record and alerts healthcare team members when they access an adult acute care patient's record. The team is then provided with an order set for decision support to determine the appropriate intervention. The pilot was conducted on two adult acute care medical units beginning in January 2012. The new BPA process of proactive risk assessment for patients with signs of sepsis triggered the necessary evaluation to initiate sepsis interventions.

Goal Statement:

Reduce sepsis-related mortality as measured by the mortality index (observed / expected) through rapid identification of signs of sepsis and early effective intervention.

Description of the Intervention / Initiative / Activity(ies):

In April 2012, the Sepsis Steering Committee evaluated the pilot data, and the results provided the foundation to further refine the alert system prior to a house wide initiative.

The Sepsis Steering Committee facilitated and coordinated the efforts surrounding the SIRS BPA project. MET nurses were involved at every level of activity and are central to the ongoing identification of goals, program design, implementation and evaluation of the BPA and response. The committee used their feedback as clinicians to make adjustments following the pilot. Specifically, they recognized that the clinical nurse may be in various stages of identifying the at-risk patient. The MET team provided examples of pathways that would be required for newly identified patients and those patients who have already been identified and are undergoing an escalation of care when a BPA fires. These specific examples were incorporated into the BPA.

MET members: Anita Olinga, RN; Blee Moffett, Nurse Manager; Jill FrancisParr, RN; Matthew Henrich, RN and Barbara Baxter, RN.

In September 2012, the implementation of the BPA was expanded to all adult acute care units. When a nurse, nursing student, patient care assistant, PT/OT, RT, pharmacist or licensed independent practitioner (LIP) accesses a patient record, the record is scanned and the BPA is generated if four out of four SIRS criteria are met:

- Temperature <= 35 **or** >=38.3 (in past 24 hours)
- Heart rate > 90 (most recent)
- Respiratory rate > 20 (most recent) **or** PaCO2 < 32 (most recent in last 24 hours)
- White blood cell count > 12k **or** < 4k **or** Bands > 10% (most recent in last 24 hours)

EP19EO Figure 1: Sepsis BPA Screenshot

The information contained in the BPA was specifically crafted to provide guidance to any of the disciplines receiving the alert. In every case, this includes the directive to activate MET nurses to initiate early intervention. These rapid response team nurses play a crucial role by responding to each alert and following protocols and standing orders to effect immediate interventions that manage the condition or prevent further deterioration.

MET nurses, in concert with the patient's primary team and pharmacists, gather information and intervene to comply with the early goal-directed therapies outlined in the IHI's "sepsis bundle."

In the great majority of cases, bedside nurses initiate the activation of MET services based upon the physiologic changes synthesized by the bedside nurse as well as nursing anecdotes that something is "different" without pinpointing a specific change. However, in a certain percentage of all MET deployments, the MET nurses note and act upon changes to the patients' conditions as a result of proactive rounding, follow-up visits or other reasons not resulting directly from a clinical nurse consult. In these cases, the MET nurses intervene by notifying the primary care team of their discoveries.

Participants:

EP19EO Table 1: Participants, Sepsis Steering Committee

Name	Discipline	Title	Department
Blee Moffett	Nursing	Nurse Manager	MET Team
Matthew Henrich	Nursing	RN Clinician IV	MET Team
George Hoke	Physician	Assistant Professor of Medicine	General Medicine-Hospitalist
Stephanie Mallow-Corbett	Pharmacy	Director, Pharmacy Clinical Care Services	Pharmacy
Joel Anderson	Nursing	Director, Nursing, Adult Medical-Surgical Care	Patient Care Services
Scott Anderson	Pharmacy	Senior Pharmacy Application Analyst	Pharmacy
Denise Barth	Nursing	Nurse Manager	3 West
Jason Lyman	Statistics	Assistant Professor, Division of Clinical Informatics	Health Evaluation Sciences
Laurie Brock	Nursing	Nurse Informaticist	Electronic Medical Record
Andrea Caulfield	Nursing	Director, Nursing, Adult Critical Care and Inpatient Heart	Patient Care Services
Mike Brennan	Information Technology	Manager, IS Decision Support Systems	Health System Technology Services
Amy Mathers	Physician	Assistant Professor of Medicine	Infectious Disease
Forrest Calland	Physician	Assistant Professor of Surgery	Acute Care Surgery
Rebecca McMullen	Quality Improvement	Performance Improvement Project Management Coordinator	Performance Improvement
Daryl Gress	Physician	Associate Professor of Neurology	Neurology
John Voss	Physician	Professor of Medicine	General Internal Medicine

Outcome(s):

The result of these combined efforts has been a reduction of sepsis mortality. Clinical nurses are engaged in the proactive assessment of patients exhibiting signs of sepsis to initiate early intervention and prevent patient harm.

EP19EO Figure 2: Sepsis Mortality When Sepsis Diagnosis Not Present on Admission (1Q12-3Q13)

Sepsis Mortality
Sepsis Diagnoses - Not Present on Admission

	1Q12	2Q12	3Q12	4Q12	1Q13	2Q13	3Q13
UVA Sepsis Mortality	3.30	2.76	3.21	2.76	2.41	2.66	2.24