Sepsis is most recently described as a “life-threatening organ dysfunction caused by a dysregulated host response to infection.” Sepsis is a leading cause of death of patients in the hospital. Patients with cancer are at increased risk of morbidity and mortality from sepsis. Studies have shown that delays in antibiotic therapy are associated with increased risk of death.

Prior to implementation of our project, we evaluated sepsis knowledge among nursing staff and physicians and time to antibiotics for patients with sepsis as a baseline. On a 21 point survey, HCH nurses answered an average of 4.8 points correctly recognizing and defining sepsis. The time from SIRS to antibiotics was 6.02 hours.

This poster describes a project to improve early recognition and treatment for patients with sepsis who are admitted to Huntsman Cancer Hospital (HCH) on the Medical Oncology (HCH4) and Bone Marrow Transplant/Hematology (BMT/Heme) Units.

METHOD

• Starting in December 2015, a comprehensive educational campaign was initiated to help nursing staff recognize patients with signs and symptoms concerning for sepsis and clinical decompensation.

• To identify decompensating patients with specificity and to avoid alert fatigue, we elected to use a modified Early Warning Score (mEWS, see Table 1) as our trigger for Epic to alert providers.

• On February 16, 2016 we implemented a mEWS alert into Epic (workflow described in Figure 1).

• 60 charts from July to December 2014 were reviewed for time from mEWS to antibiotic administration, mortality rate, ICU transfer rate and length of stay

• We manually reviewed 153 charts following implementation to evaluate the effect of the system on the measures listed above

• Means were compared using T-tests

RESULTS

HCH 4 (3/14/16 to 4/24/16)
• 51 alerts for a mEWS score of ≥4 on 38 patients
• Time for provider to bedside 10.26 minutes
• Antibiotics were started or changed on 17 patients
• Time to antibiotics was 5.9 hours → 2.14 hours (p=0.46)
• Length of Stay (LOS) 5.03 → 7.93 days (p=0.12)
• Deaths 3/20 → 6/38

BMT/Heme (3/14/16 to 4/24/16)
• 109 alerts for a mEWS score of ≥4 on 49 patients
• Time for provider to bedside 7.27 minutes
• Antibiotics were started or changed on 32 patients
• Time to antibiotics was 68.2 minutes → 41.5 minutes (p=0.09)
• Length of Stay (LOS) 17.99 → 16.25 days (p=0.58)
• Deaths 3/46 → 5/49

DISCUSSION

• Since implementation on both units, nurse advocacy and confidence has increased in addressing concerns to physicians on acutely ill patients

• Physician response has improved, either by phone or arrival to bedside

• Time to initiation of sepsis bundle (antibiotics, lactate, etc.) has decreased on both units

• It is too soon to determine if LOS has increased due to better treatment, or if there are other contributing factors.

FUTURE EFFORTS

• Staff are currently being resurveyed to assess retention of education, and general knowledge regarding sepsis

• Continue to collect data for at least 6 months before making any adjustments to mEWS protocol

• Creating an orientation module for new staff

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