Early Mobilization in the Pediatric Intensive Care Unit

**Project Aim**
To increase percentage of patients mobilized within the recommended time frame from 60% to 80% by December 2016.

**Interventions**
- Updated PICU admission order set to include activity orders
- Created, tested and implemented algorithm to identify patients eligible for early mobility (PDSA October 2015 - February 2016)
- Implemented patient scheduling in PICU (March 2016 - May 2016)
- Conducted educational sessions with nursing staff on importance of early and consistent mobilization
- Training interdisciplinary staff on how to safely mobilize critically ill patients (PDSA May 2016 - February 2016)
- Family faculty meeting with families to gain insight on their experience (PDSA June - August 2016)
- Family faculty met with nurses to give their views on benefits of mobilization

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**Using EMR Tools for Quality Improvement**

**Outcomes**
- % of patients with activity orders increased from 24% to 89%
- % of patients with PT, OT, SLP orders increased from 82% to 91%, 76% to 91% and 12% to 52% respectively
- % of patient mobilized within recommended time frame increased from 60% to 85%
- Time from PICU admission to mobilization decreased from 20 to 10 hours

**Lessons Learned**
Early mobilization in the PICU at NYULMC is feasible, safe, and very rewarding for all members of the interdisciplinary team, most importantly, the patient and family. There are several barriers to success of this initiative including the need to change the culture of the team, fear of device disconnection, and non-uniform application of sedation and weaning protocols. Due to the complexity of this change, the utilization of improvement science methodology has been integral.

**Next Steps**
Continue staff education and training (wheeling shifts) in an effort to increase consistency
Spread early mobility initiative to Congenital Cardiovascular Care Unit
Assess impact of early mobilization and intensity of service on discharge disposition and PICU and hospital LOS

**Conclusions**
EMR based sepsis alerts can enhance recognition of sepsis to trigger rapid interventions and treatment.

**Methods**
Retrospective review of EMR sepsis alert reports and compare to patients whose ICD-10 diagnosis of sepsis/septic shock.

**Results**
We implemented an EMR based sepsis alert in October of 2014. The alert would fire for all patients on the pediatric floors, pediatric ED and PICU. Between Oct 2013 and August of 2017, we had a total of 1,862 unique alerts. Of those alerts, 44 patients met the criteria for severe sepsis/septic shock. Of those alerts, patients who met the diagnostic criteria did not have sepsis alert firing in the EMR. Sensitivity and specificity for the alert were 75% and 94% respectively.

**Next Steps**
Creating a two tier alert with improved decision support tools to help providers choose the appropriate action and increase sensitivity and specificity of the alert.
Making the alert interruptive, forcing the provider to choose and act and not opt out of the alert.
Implementation of a team huddle at the time the alert fires.
Background
In FY14, the 35 End-of-Life Hematology-Oncology patients had 79 separate admissions and incurred a 56% operating margin during the last 60 days of life (Loss of $1.2 Million)

• There is an opportunity to improve the quality and value of care being provided to cancer patients, particularly within the last 60 days of life.

• Supportive Oncology is currently under-utilized; due to several factors, including: lack of standardization of how and when a consult should be called, as well as lack of education around the spectrum of services provided.

• The Mandatory Surprise Question (MSQ), Palliative Care Consult, and eMolst documentation are all available through our electronic medical record to ensure appropriate interventions for hematology and oncology patients.

Goals
Design a protocol to increase frequency of consults and breadth of supportive oncology services offered in an outpatient setting.

For inpatients ensure appropriate documentation of MSQ; anticipate Hematology: Yes (50%) / No (50%), Oncology: Yes (10%) / No (90%).Ensure 90% eMolst completion by patient discharge

Methods
Protocol developed including discussion of best practice, triggers and use of NCCN tool. Recurring reports of documentation outcome

• A panel of national experts developed the NCCN palliative care guidelines on which the tool is based

• Use of the NCCN "tool" to identify outpatients who may benefit from palliative care consultation has been previously reported in the literature. Estimated to be 10-15% in a solid tumor population.

A score of 5 or greater was used as "trigger" for referral to palliative care for outpatients with hematologic malignancies.

Scoring occurs at first chemotherapy visit

Creation of a weekly “Heme Onc Inpatient Goals of Care” Report

NCCN “Tool”

<table>
<thead>
<tr>
<th>Screening Item</th>
<th>Points</th>
</tr>
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<tbody>
<tr>
<td>1. Presence of metastatic or locally advanced cancer</td>
<td>3</td>
</tr>
<tr>
<td>2. Functional status, according to ECOG performance status</td>
<td>3</td>
</tr>
<tr>
<td>3. Presence of severe or minor complications of chronic obstructive pulmonary disease (COPD), chronic obstructive pulmonary disease (COPD), chronic obstructive pulmonary disease (COPD), chronic obstructive pulmonary disease (COPD)</td>
<td>1</td>
</tr>
<tr>
<td>4. Presence of severe or minor complications of cardiomyopathy, chronic obstructive pulmonary disease (COPD), chronic obstructive pulmonary disease (COPD), chronic obstructive pulmonary disease (COPD)</td>
<td>1</td>
</tr>
<tr>
<td>5. Presence of palliative care problem</td>
<td>1</td>
</tr>
<tr>
<td>6. Symptoms uncontrolled by standard approaches</td>
<td>1</td>
</tr>
<tr>
<td>7. Patient or family seeks palliative care consult</td>
<td>1</td>
</tr>
<tr>
<td>8. Patient or family requests palliative care consult</td>
<td>1</td>
</tr>
<tr>
<td>9. Uncontrolled symptoms or complications requiring an increase in treatment intensity</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>0-15</td>
</tr>
</tbody>
</table>

Results

Conclusions
Outpatient: NCCN tool integrated into EMR. Uptake within hematologic malignancies found 5-10% of patients might benefit from palliative care evaluation. However, in response to limited resources a variation from the original design was implemented. The tool is not being used to generate automatic outpatient palliative consults. The hematology teams are doing most of their own primary palliative care interventions according to the needs identified by the tool and referring only cases that are difficult to manage.

Inpatient: Weekly reporting continues, which is summarized quarterly and shared with administration and faculty. Report confirmed expected differences between Hematology and Oncology. Report also revealed underutilization of a formal order placement for palliative consults within the EMR.
EHR–Mediated Real-Time Resident Evaluation

Jason C. Fisher, MD, FACS, FAAP

Background
ACGME has restructured the resident-evaluation process
• Focus on specialty-specific “Milestones” within the core competencies
• Development of departmental Clinical Competency Committees
• More explicit & transparent expectations of performance
• Facilitates better feedback
• Early identification of struggling residents

Problem
Our current surgical resident evaluation mechanisms provide an insufficient number of data points to accurately assess resident Milestone achievement, particularly with regard to technical operative skills.

Current State
Electronic evaluation system – New Innovations
• End-of-rotation summative comprehensive evaluation
• 10-12 rotations per year → data compiled to assess Milestones

Current State Barriers
• Procedural-based evaluations do exist but are currently paper-based.
  • Disproportionate use of end-of-rotation evaluations
  • Very long form (6 pages!)
  • Most surgeons rarely complete them on time
  • Subject to recall bias
  • Can be overwhelmingly subjective and lack specifics
  • Residents lack timely feedback; difficult to make real-time improvements
• Procedural-based evaluations
  • Requires pre-active resident to seek out attending for evaluation
  • Socially-awkward for attending and resident
  • Counter to OR culture after a challenging case, even with newer tech (iPad)
  • Still somewhat detailed form with attending reluctance

Goal
Generate a relatively large number of short, highly-focused procedural evaluations for a given surgical resident, without requiring the resident to broker this transaction at each occurrence, using a tool that allows even the busiest surgeon to easily complete.

Ideal State
• Attending surgeon automatically prompted to complete an evaluation at the conclusion of the operation
• Automatically fill form with procedural data and resident demographic data
• Extremely brief evaluation form (1-2 questions), structured in appropriate ACGME Milestone format
• Facilitated by mobile device application

EHR Mediated Promoting
• Discrete event in the EHR triggers the evaluation notification
  • Relevant form data transmitted from discrete EHR fields

Work Flow
Provider Push Notification and Mobile Assessment

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