Navigation of the Major Treatment Room: A Look at Performance Improvement

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STATEMENT OF THE PROBLEM

- Providing timely care to patients experiencing life-threatening events from trauma or illness is critical to successful patient outcomes
- Patients require multiple interventions simultaneously - chaotic environment
- Not all nursing and medical staff were proficient or comfortable functioning in the Major Treatment (MT) room
- Staff identified need for more education and experience practicing in the MT Room
PURPOSE

To determine if education about the location of supplies and equipment improve nursing and medical staff’s knowledge and function in the MT room.
REVIEW OF LITERATURE

- Majority of references were outdated and referred to use of scavenger hunts for student or new hire orientation, as well as promotion of interdisciplinary collaboration (Virgin, S. et al. (1996). Nurse Educator, 21(5), 32-34)

- Examples supporting the use of educational activities in the healthcare environment using scavenger hunts in various capacities to improve environmental awareness (Nurse.com, October 10, 2011)

- To maximize efficiency, standardized organization allows for easy identification of critical items during different phases of the stabilization and maintenance of life support efforts by clinicians (Hohenhaus, S. et al (2005). Pediatric Emergency Care, 21(1), 71-75)

- Major gap in literature regarding the use and/or effectiveness of using this method to improve performance of staff practicing in a MT room in a Children’s ED
METHODS
PROJECT DESIGN

- Test retest design in 3 PDSA cycles
- Each cycle – 3 phases
  - Preparation
  - Education
  - Evaluation
- Participants (N = 168)
  - RNs
  - ED Technical Associates
  - Physician/Licensed Independent Practitioner (MD/LIP)
PREPARATION PHASE

- Focus on the environment of care
PREPARATION PHASE

- Identify individual, environmental and system barriers that contributed to inefficient MT room functioning
- Determine which items staff had most trouble locating
- Assure optimal placement of critical equipment and supplies
Identified Barriers

- Lack of access to MT room – due to role on unit (charge, triage, float, trauma, casual/full time, MD)
- Knowledge gap:
  - Inconsistent orientation of new staff to MT environment
  - Infrequent assignment to MT room
  - Updating, addition, and relocation of supplies
- Reluctance of certain staff to work in MT room (uncomfortable or nervous)
# 12 Items Difficult to Find Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Sucker</td>
<td>Cabinet 2</td>
</tr>
<tr>
<td>Sterile Instruments</td>
<td>Cabinet 2</td>
</tr>
<tr>
<td>Pressure Cable/Kits</td>
<td>Cabinet 3</td>
</tr>
<tr>
<td>60cc Cath Tip Syringe</td>
<td>Cabinet 4</td>
</tr>
<tr>
<td>Duncan Kit</td>
<td>Cabinet 11</td>
</tr>
<tr>
<td>LP Tray</td>
<td>Cabinet 11</td>
</tr>
<tr>
<td>500ml Mannitol</td>
<td>Cabinet 11</td>
</tr>
<tr>
<td>Umbi Tray</td>
<td>Cabinet 11</td>
</tr>
<tr>
<td>Peep Valve</td>
<td>Broselow Cart</td>
</tr>
<tr>
<td>Pacer Magnet</td>
<td>Burn cabinet</td>
</tr>
<tr>
<td>Dispensing Pin</td>
<td>IV cabinet</td>
</tr>
<tr>
<td>Transport Box</td>
<td>Top of Pyxis</td>
</tr>
</tbody>
</table>
## Preparation Cycles

<table>
<thead>
<tr>
<th>Cycle 1</th>
<th>Cycle 2</th>
<th>Cycle 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Based interventions on identified barriers</td>
<td>- Solicited feedback from staff</td>
<td>- Reviewed additional feedback from staff</td>
</tr>
<tr>
<td>- Inventoried MT room supplies</td>
<td>- Identified top 12 hard to find items</td>
<td>- Identified new supplies</td>
</tr>
<tr>
<td>- Organized supplies</td>
<td>- Used information to reorganize MT room for optimal placement of supplies</td>
<td>- Fine tuned supply location based on new information</td>
</tr>
<tr>
<td>- Numbered cabinets and drawers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Solicited feedback from staff
- Identified top 12 hard to find items
- Used information to reorganize MT room for optimal placement of supplies
- Reviewed additional feedback from staff
- Identified new supplies
- Fine tuned supply location based on new information
EDUCATION PHASE

- Created educational program for all nursing and medical staff
- Established creative methods to disseminate educational materials
- Provided 1:1 demonstrations of new MT room environment
# Education Phase Cycles

<table>
<thead>
<tr>
<th>Cycle 1</th>
<th>Cycle 2</th>
<th>Cycle 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Created self-directed learning tool using PowerPoint slides</td>
<td>- Updated self-directed learning tool – hard to find items</td>
<td>- Reviewed additional feedback from staff</td>
</tr>
<tr>
<td>- Used email to disseminate PowerPoint</td>
<td>- Oriented new staff members</td>
<td>- Designated location for all new supplies</td>
</tr>
<tr>
<td>- Provided on-unit hard copy of learning tool for staff reference</td>
<td>- Used informal knowledge sharing among staff for hard to find items</td>
<td>- Fine tuned supply location based on new information</td>
</tr>
<tr>
<td>- 1:1 tours</td>
<td>- 1:1 tours</td>
<td>- 1:1 tours</td>
</tr>
</tbody>
</table>
Surgical Trays and Emergency Supplies
Cabinet 11 – Hard to find items
Repeat Cycles: What’s Different?

- Equipment moved to accommodate computers (WOWs)
- New placement and location highlighted
- Opportunity to communicate other relevant updates
EVALUATION PHASE

- Identify measures of success
- Create tools for measuring outcomes
- Repeat evaluation every 6 months
TESTING

- Created multiple *Randomized Scavenger Hunt Tools* to measure staff competency
- Each staff member selects a randomized list of 5 items from 75 combinations

**Example**

<table>
<thead>
<tr>
<th>Name: _____________</th>
<th>Role: ___________</th>
<th>Date: ______</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time: _____________</td>
<td>(5 minute limit)</td>
<td></td>
</tr>
</tbody>
</table>

- 4.5 OETT
- Suction tubing
- Duncan kit
- End tidal
- T&A hemorrhage tray
### Evaluation Phase Cycles

<table>
<thead>
<tr>
<th>Cycle 1</th>
<th>Cycle 2</th>
<th>Cycle 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Created Scavenger Hunt Tool – 5 randomly selected items per tool</td>
<td>▪ Repeated measurement at 6 month</td>
<td>▪ Repeated measurement at 12 month</td>
</tr>
<tr>
<td>▪ Established baseline performance</td>
<td>▪ Created and updated standard set for Scavenger Hunt Tool.</td>
<td></td>
</tr>
</tbody>
</table>
RESULTS
### Scavenger Hunt Duration in Minutes
By Participants (range)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Cycle 1 Minutes</th>
<th>Cycle 2 Minutes</th>
<th>Cycle 3 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN</td>
<td>0.47 - 5</td>
<td>0.30 - 5</td>
<td>0.25 – 4.1</td>
</tr>
<tr>
<td>EDT</td>
<td>15</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>MD</td>
<td>5</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>56</td>
<td>49</td>
</tr>
</tbody>
</table>
Scavenger Hunt Duration by Staff Type

Cycles 1 to 3 (Mean Minutes)

- All Staff: Cycle 1 = 1.96, Cycle 2 = 1.55, Cycle 3 = 1.15
- RN: Cycle 1 = 1.85, Cycle 2 = 1.57, Cycle 3 = 1.22
- EDTA: Cycle 1 = 1.83, Cycle 2 = 1.38, Cycle 3 = 0.6
- Medical Provider: Cycle 1 = 1.65, Cycle 2 = 1.63, Cycle 3 = 3.5
SUMMARY OF RESULTS

Times for all staff improved from 1.96 minutes (mean) to 1.15 minutes (mean)

- RNs: (N=100) 0.63 min (1.85 min to 1.22 min)
- EDTA: (N=36) 1.23 min (1.85 min to 0.6 min)
- MD/LIP: (N=32) 1.87 min (3.5 min to 1.63 min)
Staff report this project has led to:

- Increased desire to perform well during emergencies
- Increased comfort and efficiency in role/ functioning in MT room contributing to the overall safety of patients
- More teamwork and collaboration among all disciplines
- Fun and interactive method of learning
STAFF PERSPECTIVE

Project has helped to identify staff who require:

- More time assigned to the MT Room
- Additional mentoring/education
- Coaching to mentor others in the MT Room
DISCUSSION

- Use of a Scavenger Hunt technique is an effective interactive educational tool to increase the knowledge of supplies and equipment in a MT room of a pediatric ED.
- Repeated use of this technique enhances improvement over time
- Shared knowledge may lead to improved teamwork and enhanced efficiency in the provision of timely care to acutely ill children
- Project interventions are readily transferrable to other patient care areas throughout Yale-New Haven Health System and other organizations
Questions and Answers