**BACKGROUND**

- Early mobilization of patients reduces length of stay, decreases delirium, and improves patient outcomes after discharge.
- A previous PDSA found that Vidant Medical Center’s mobility protocol known as Greenville Early Mobility Scale (GEMS) was unclear on the exercises the patients should be performing.
- Specific issues occurred with bed-bound patients or patients the staff deemed difficult to mobilize.
- The ICU Mobility Protocol: VMC Early (IMPROVE) movement program was created to remedy these issues and increase documentation of patient’s mobility in the CICU.

**AIM STATEMENT**

We aim to have a 50% increase in the total number of times activity was documented and the total amount of GEMS level progression from July 2018 to March 2019.

**PROJECT DESIGN/STRATEGY**

- A total of 3 PDSA cycles / interventions were implemented to increase documentation and patient mobility from a time frame of July 2018 to March 2019.
  - **PDSA 1**: IMPROVE implemented with survey (October 2018)
  - **PDSA 2**: Educational poster with pamphlets outside patient doors (February 2019)
  - **PDSA 3**: EHR change to include levels 1A and 1B for documentation (March 2019)
  - **PDSA 4**: Laminated rounding aid placed outside patient doors (October 2019, January 2020)
- A retrospective analysis was performed with 20 patients randomly selected from a month to examine GEMS progression as well as amount of times activity had been documented by a provider.

**CHANGES MADE (PDSA CYCLES)**

### IMPROVE Routine
- **Exercise Routine**
  - **GEMS 1A**: Bed bound/Non-participatory: passive range of motion
    - a. Flexion and extension of elbow and shoulder: 10 min (40 reps per joint)
    - b. Flexion and extension of the knee and hip: 10 min (40 reps per joint)
  - **GEMS 1B**: Bed bound/Participatory: active range of motion
    - a. Pedal Exercise: for upper extremities: 30-60 min
    - b. Active leg exercises/return to sitting: 10 min (40 reps per joint)
  - **GEMS 2**: Able to get out of bed: active range of motion
    - a. Pedal Exercise: for lower extremities: 10 min
    - b. Bed to chair: active range of motion
  - **GEMS 3**: Able to walk in the hallway (100 feet)
    - a. Pedal Exercise: for lower extremities: 10-15 min
    - b. Chair to bed/bathroom: active range of motion
  - **GEMS 4**: Walking independently
    - a. Pedal Exercise: for upper extremities: 10 min
    - b. Chair to bed/bathroom: active range of motion
  - **GEMS 5**: Walking independently
    - a. Pedal Exercise: for lower extremities: 10 min
    - b. Chair to bed/bathroom: active range of motion

**RESULTS/OUTCOMES**

Figure 5: Plots the average GEMS progression per week during a specific month.

**NEXT STEPS**

- Continue to improve EHR by creating a drop down menu for mobility type, duration, and exercise aid below the GEMS score for workers to document patient activity.
- Our goal is to populate this data in a flowsheet in the EHR to easily track mobility over time for the patients in the CICU.
- Implemented a rounding aid seen in Figure 4; intervention is currently posted outside patient doors and will help display a patient’s mobility during rounds. Includes 1A and 1B levels for manual data collection.
- Consult with PT colleagues and nursing staff to elicit feedback on interventions and promote safe mobilization of patients.

**ACKNOWLEDGEMENTS**

We would like to thank the Vidant Medical Center, the healthcare workers of the CICU, Teachers of Quality Academy, and our patients for giving us a chance to improve the quality of healthcare they receive.

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*IMPROVE Movement: The Supplemental Exercise Program to Enhance ICU Mobility*

Chirag Patel, BS; Michael Ritchie, MD; Toni Holden, MSN, RN

**IMPROVE Movement Program supplement to GEMS in PDSA 1 and 2**

**ICU Out of Bed Plan**

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
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<tbody>
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<td>Independent</td>
<td>Staff needs:</td>
<td>GEMS Score</td>
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<td>1b</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Assist Device:</td>
<td></td>
<td>Mobilized</td>
<td>Today:</td>
<td></td>
<td></td>
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</tbody>
</table>

**LESSONS LEARNED**

- Aim statement not met; GEMS progression decreased by 2% and our activity documented increased by 44% from July 2018 to March 2019.
- Survey data indicated that on average nursing staff “somewhat agreed” IMPROVE clarified exercise needs and increased patient mobility.
- EHR change not complete by data collection; 1A and 1B levels from Figure 2 were not assigned in the data we presented.
- Difficulty tracking patient’s mobility as we had to examine each chart to find GEMS scores and manually count the amount of times activity was documented.