Introduction

Short peripheral catheters (SPC) are commonly used in acute care. The Infusion Nurses Society (INS) publishes standards to guide infusion therapy including SPC care (Gorski et al., 2016). SPCs rarely cause infection (Maki et al., 2006) but are reported to fail (35-50%) prematurely causing patient discomfort and adverse effects (Helm et al., 2015). SPC outcomes tracking is often manual and time intensive making it difficult to monitor the impact of practice change.

Purpose

1. Describe baseline unit-level SPC care based on survey and data extracted from the electronic health record.
2. Evaluate the impact of unit-level electronic health record (EHR) – based feedback to guide interventions to improve outcomes.

Theoretical Framework

An implementation science framework was used with the premise that providing feedback helps leaders to make/sustain practice changes.

Sample and Setting

• 919 bed, urban, quaternary Magnet, medical center in Midwest

Subjects:

• Nursing Units: Inpatient (n=24) & outpatient (n=4)
  - Bed size (X=25.5), RN Count (X=42.9/unit (R: 20 -110) - 1200 Total; BSN (X=75%), Certified (X=17.6%), Ultrasound trained (X=32%, 0-88%)
• Patients with SPCs: Time 1 (Q1-2 2017) & Time 2 (Q1 2018)

Methods

• A pre/post mixed methods study with IRB oversight
• Baseline unit-level practice survey
• Pre/post EHR-based retrospective patient-level data extraction

Preliminary Findings:

• Opportunity to increase implementation of INS best practices
• Removal rates for adverse outcomes were lower than published with routine removal at 96 hours
• Units were challenged to implement one practice change

Goals: Reduce Infiltration/Occlusions

• Improve dressing Integrity (n=19)
• Improve securement for high risk (n=3)
• Increase ultrasound inserts (n=2)
• Increase Insert Training (n=1)
• Change to StatLock securement (n=1)
• PACU & SDAS did not participate

Unit Interventions to Reduce Adverse Outcomes over 3 months

Outcomes

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>Time 1 (N= 12,631) – 6 months</th>
<th>Time 2 (N= 6,272) – 3 months</th>
<th>Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>Range</td>
<td>Count</td>
</tr>
<tr>
<td>Age (years)</td>
<td>63.7</td>
<td>16.8</td>
<td>14 - 105</td>
</tr>
<tr>
<td>Gender/Female</td>
<td>6,172</td>
<td>31.3</td>
<td>5,336</td>
</tr>
<tr>
<td>Race - White</td>
<td>9,820</td>
<td>82</td>
<td>5,100</td>
</tr>
<tr>
<td>Black/AA</td>
<td>1,709</td>
<td>14</td>
<td>942</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>504</td>
<td>2</td>
<td>230</td>
</tr>
<tr>
<td>BMI</td>
<td>30.3</td>
<td>6.2</td>
<td>9.9 – 126</td>
</tr>
<tr>
<td>LOS (days)</td>
<td>5.1</td>
<td>6</td>
<td>0 – 128</td>
</tr>
<tr>
<td>SPC Insert in 1</td>
<td>4,558</td>
<td>38</td>
<td>2,378</td>
</tr>
</tbody>
</table>

Findings – Implementation Results

• Patient characteristics similar (T2) – differences in BMI & OR inserts
• Statistical improvement achieved by one (1) unit with use of multiple strategies and limited barriers
• Clinical improvement was achieved by six (n=6) units with improved dressing integrity; Remaining units (n=18) with mixed results
• Report received high ratings for usability & accuracy with some use
• Units reported that "what worked well" was doing the intervention and seeing improvement with resistance to change as main barrier.

Limitations

• Large and diverse sample from a single institution
• Retrospective data extraction based on the accuracy of data entry (suggests that documentation reflects practice; Verification needed)

Conclusions / Implications

• SPC insertions are common but rarely evaluated
• Several units reduced adverse outcomes in T2
• T2 showed improvements with higher policy adherence
• Adverse outcomes remain lower than published rates
• Units reported that “what worked well” was doing the intervention and seeing improvement with resistance to change as main barrier.

References


