Peripheral IV Septic Phlebitis Quality Improvement Project in Patan Hospital, Nepal

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Introduction

• Almost 80% of patients have a peripheral intravenous catheter (PIVC) when hospitalized, as a result, septic phlebitis is one of the most severe complications1
• A 2014 unpublished pilot study at Patan Hospital (PH) in Kathmandu, Nepal recorded the rate of septic phlebitis at 4%, almost four times the 0.5% recorded rate in a Western setting2,3
• Hospital-based educational interventions demonstrate effectiveness in reducing PIVC associated bloodstream infections4,5

Study Aims

• Conduct quality improvement study to improve care at PH
• Establish present PH septic phlebitis baseline
• Implement intervention to reduce rate of phlebitis

Methods

PHASE 1
• Observe all PIVC sites in medical, geriatric, and step-down wards at PH every day from July 2 to July 16, 2017
• Use nursing VIP phlebitis scale to evaluate each PIVC line for signs of phlebitis in addition to custom phlebitis sign scale
• Collect additional data via patient hospital charts (i.e. admission date, diagnosis, temperature (if VIP > 3), etc.)

PHASE 2
Implement “Plan” of “plan, do, study, act cycle” (PDSA) via presenting interventional data collection + analysis, and repeat PDSA cycle.

PHASE 3
Conduct “do, study, act” phases of PDSA cycle through intervention, post-interventional data collection + analysis, and repeat PDSA cycle.

REFERENCES


RESULTS

<table>
<thead>
<tr>
<th>Observed PIVC VIP Scores</th>
<th>Stage of Phlebitis</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No signs of phlebitis</td>
<td>221</td>
</tr>
<tr>
<td>1</td>
<td>Early signs of phlebitis</td>
<td>91</td>
</tr>
<tr>
<td>2</td>
<td>Early stage of phlebitis</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>Medium stage of phlebitis</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>Advanced phlebitis/thrombophlebitis</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Advanced stage of thrombophlebitis</td>
<td>0</td>
</tr>
</tbody>
</table>

Observed PIVC General Statistics

<table>
<thead>
<tr>
<th>Total patients</th>
<th>93</th>
</tr>
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<tbody>
<tr>
<td>Total PIVC lines</td>
<td>372</td>
</tr>
<tr>
<td>Dated</td>
<td>252</td>
</tr>
<tr>
<td>No date</td>
<td>120</td>
</tr>
<tr>
<td>PIVC Dwell Time (median PIVC only)</td>
<td>1.5 days</td>
</tr>
<tr>
<td>0-3 days</td>
<td>229</td>
</tr>
<tr>
<td>4-6 days</td>
<td>22</td>
</tr>
<tr>
<td>PIVCs indicating resiting (VIP&gt;2)</td>
<td>61</td>
</tr>
<tr>
<td>Indicated PIVCs resited within 24 hours</td>
<td>53</td>
</tr>
</tbody>
</table>

Image 1. Nursing VIP Phlebitis Scale

Discussion

• Phase 1 data collection revealed a decrease in septic phlebitis since the 2015 pilot study
• Data represents only current PIVC data in Nepal
• The rate of general phlebitis (16.44%) is higher than the 5% standard outlined by the Intravenous Nursing Society6
• Phase 2 consisted of distributing an interventional flyer outlining phase 1 findings and IV insertion technique to the participating wards along with addressing all queries from nurses in each department
• Post-interventional data has been collected for phase 3 and is currently being analyzed

Next Steps

• Statistically analyze post-interventional data
• Determine effectiveness of intervention based on final data collection

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References