Re-Engineered Discharge Vascular Pathway (REDVP): An approach to improving quality of care transition of patients with peripheral arterial diseases

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Introduction & Background

Peripheral Artery Disease (PAD) is a chronic disease that can have devastating outcomes if not managed efficiently. Patients who have undergone lower extremity bypass (LEB) for PAD are a significant consumer of healthcare resources (Siracuse et al., 2014; Wang et al., 2017). Hospital discharge affected by patients with PAD can result in decreased patient satisfaction, increased LOS and increased readmission rate (Damrauer, Gaffey, DeBord Smith, Fairman, & Nguyen, 2015; Siracuse et al., 2014; Wang et al., 2017).

Purpose & Aims

The purpose of this quality improvement (QI) project was to create a pathway using evidenced based intervention and streamline the LEB discharge process.

Aims:
- Increase the overall quality of care transition score
- Increase the satisfaction of patients
- Decrease hospital length of stay (LOS)
- Decrease 30-day readmission rate

Evidenced – based Intervention

Clinical practice guidelines (CPGs) and clinical pathways offer a structured approach to transitioning care. RED toolkit developed at Boston University and endorsed by AHRQ is an accessible and comprehensive resource that optimizes the discharge process.

Methods

Design: A two group pre- and post-intervention study. Settings: 30-bed inpatient step-down vascular surgical unit at a 900-bed non-profit academic tertiary hospital. Sample: Convenience sampling, patients admitted after LEB from October 2020 to December 2020. Procedure: Utilizing an adapted RED clinical pathway, called Re-Engineered Discharge Vascular Pathway (RED-VP). Outcome measures: Care Transitions Measure (CTM®-15), 4-item satisfaction survey, Hospital LOS, 30-day readmission rate.

Results

- 21 patients who underwent LEB surgery participated.
- 11 patients were assessed during the pre-intervention phase and 10 patients received the REDVP intervention.
- Overall median CTM 15 score, 73.3.
- Satisfaction rates increased, 73% to 100% (p= 0.02).
- Pre-intervention group, 90.9% had a hospital LOS > 7 days compared to the intervention group, 40% (p = 0.02).
- 30-day readmission rate was higher among the pre-intervention group (18%) compared to intervention group (10%).

Limitations

- Large inner-city hospital where many resources were reallocated to meet COVID-19 needs.
- Advanced practice providers took on an extra role by acting as a clinical coordinator and delegator of the task outlined in REDVP.
- Small sample size (n=21).
- Small group of providers.

Conclusion and Dissemination

- REDVP works for optimizing discharge flow for lower extremity bypass surgery.
- REDVP decreased variations in essential elements of discharging a patient home; medication reconciliation, wound care, scheduling follow up appointments, reviewing written discharge plan, contacting caregivers, scheduling outpatient services, and obtaining necessary medical equipment.
- Dissemination: Results will be presented to providers, leaders and the interdisciplinary team in a formal presentation.
- Training of providers and staff of REDVP will continue within the step-down vascular surgery unit and incorporated into other vascular surgery procedures.

Clinical Outcomes

<table>
<thead>
<tr>
<th>Clinical Outcomes</th>
<th>Pre-intervention Group (n = 11)</th>
<th>Intervention Group (n = 10)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall quality of care transition scores, Median (IQR)</td>
<td>66.7 (53.3, 66.6)</td>
<td>100 (78.8, 100)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Hospital Length of stay</td>
<td>Less than 7 days 1 (9.1%) 6 (60%)</td>
<td>0.02</td>
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<tr>
<td>More than 7 days</td>
<td>10 (90.9%) 4 (40.0%)</td>
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<tr>
<td>30-day readmission rate</td>
<td>2 (18.0%) 1 (10.0%)</td>
<td>0.54</td>
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References