Cost-Effective Reduction of Acute Care Utilization using Home-Based Heart Failure Program
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Abstract Category: Home and Community Based Care

Keywords: Heart Failure; Cost Reduction; Home healthcare
Introduction

• Heart Failure is the number one cause of hospital readmissions among Veteran Affairs (VA) patients.

• We implemented a home-based RN/LPN team who provided short-term, intensive CHF case management in collaboration with a cardiologist with the goal of reducing 30-day readmissions, ER visits, and hospitalizations.

• Performing a retrospective study, we evaluated ER visits, admissions, 30-day readmission rates, and total inpatient days for 108 CHF patients at the Indianapolis VA Medical Center enrolled in the home-based CHF program from May 2016-September 2017.

• We compared patients’ acute care utilization six months prior to the program, during the program, and at six months post-program discharge using chi squared test.
Results and Discussion

• When comparing all HF patients (21% 30-day readmission rate) admitted at our VA with the 108 patients enrolled, the difference in 30-day readmissions was significant (p < .001), with only 7% of our patients having a 30-day readmission within the first 30 days of enrollment into the program.

• When comparing our study population itself six months pre-program versus during program, there was a large reduction in ER visits and admissions per patient during the program (0.537 vs. 0.361) and (1.63 vs. 0.296).

• When comparing 6 months pre-program vs. during program enrollment and 6 months post-program discharge, the number of total inpatient days per person was drastically reduced (9.31 vs. 1.33) (9.31 vs 2.73).

• Using the average cost of one day in the hospital, $3,400, the VA saved approximately $22,372 per patient during our study and a total annual cost savings of $4,619,348.
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<table>
<thead>
<tr>
<th>Total # of patients enrolled=108</th>
<th>6-months Pre-Enrollment Days/Visits</th>
<th>During Enrollment Days/Visits</th>
<th>6-Months Post-Enrollment Days/Visits</th>
<th>Difference between Pre-Enrollment vs. During Enrollment per patient</th>
<th>Difference between 6 months pre-enrollment vs. 6 months post enrollment per patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-day Readmission</td>
<td>44</td>
<td>7</td>
<td>18</td>
<td>0.407 vs. 0.065</td>
<td>0.407 vs. 0.167</td>
</tr>
<tr>
<td>ER Visits</td>
<td>58</td>
<td>39</td>
<td>60</td>
<td>0.537 vs. 0.361</td>
<td>0.537 vs. 0.556</td>
</tr>
<tr>
<td>Admissions</td>
<td>176</td>
<td>32</td>
<td>66</td>
<td>1.63 vs. 0.296</td>
<td>1.63 vs. 0.611</td>
</tr>
<tr>
<td>Inpatient Days</td>
<td>1006</td>
<td>144</td>
<td>295</td>
<td>9.31 vs. 1.33</td>
<td>9.31 vs. 2.73</td>
</tr>
</tbody>
</table>
Conclusions

• Short-term, intensive home-based teams for high-risk Veterans with CHF can reduce ER visits, admissions, 30-day readmissions, and the number of inpatient days and be highly cost-effective.

• This home-based care model must also be noted for showing significant effect persisting after the formal program/intervention ended as there was a continued sizable reduction 6 months post-program discharge in total inpatient days.
Acknowledgments

Support Staff of the Home-Base Care Team: Andrew Nagel, Rebecca Kafer, Kevin Lee, and Michael Sha