Transforming Surgical Care to Achieve Better Health, Better Care & Better Cost: Geriatric Hip Fractures.

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Introduction:

At LVHN, a large initiative is being taken to transform surgical care to exceed national standards of quality measurement. One of the major three subdivisions is geriatric hip fractures. In the US, 350,000 hip fractures occur yearly with a healthcare spending of $15 billion in 2008.1 Orthopedic surgeons are confronted with both osteoporosis, which makes fixation of the fracture more difficult, and comorbidities, which can cause postoperative complications. Geriatricians specialize in treating comorbidities and are able to help improve the outcome of older patients with fragility fractures. The purpose of this project is to create an evidence based orthogeriatric clinical pathway to guide patient care through the continuum in pre-operative, intra-operative and post-operative care. The overall goal of the clinical pathway is to decrease length of the stay while still achieving high quality care.

Methods:

PubMed was searched between August 1, 2014 and January 15, 2015 using the keyword “hip fracture.” These terms were combined using “AND” with the following terms: “geriatric,” “multidisciplinary” and “co-management.” The term “orthogeriatric” was searched separately.

All studies with a multidisciplinary approach to elderly hip fracture patients including at least a geriatrician and an orthopedic surgeon were selected.

Studies were selected for inclusion if they met one of the following criteria: examination of clinical outcomes of elderly hip fracture patients, interdisciplinary team approach, involvement of a geriatrician, variables effecting length of stay or barriers of implementation. The included studies were also systematically searched for outcome parameters.

Geriatric hip fracture data was collected from LVHN – Cedar Crest LVHN – Muhlenberg for emergency hip fractures from January 2014 to October 2014.

Table 1. The average pre-operative length of stay, post-operative length of stay and total length of stay for patients 65 years and older at Lehigh Valley Health Network from January 2014.

<table>
<thead>
<tr>
<th></th>
<th>Average Pre-OP LOS (Days)</th>
<th>Average Post-OP LOS (Days)</th>
<th>Average Total LOS (Days)</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVHN Cedar Crest</td>
<td>1.25</td>
<td>4.23</td>
<td>5.48</td>
<td>35</td>
</tr>
<tr>
<td>LVHN Muhlenberg</td>
<td>1.48</td>
<td>4.41</td>
<td>5.89</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1.4</td>
<td>4.29</td>
<td>5.69</td>
<td>60</td>
</tr>
</tbody>
</table>

Results:

Cedar Crest has a slightly higher volume of hip fracture patients with a slightly lower average pre-operative, post-operative and total length of stay compared to Muhlenberg. The goal for the clinical pathway is to decrease the average total length of stay to 4.5 days from 5.69 days. The goal is to decrease pre-operative length of stay to 1 day from 1.4 days. The goal will be to decrease post-operative length of stay to 3.5 days from 4.29 days.

The Geriatric Hip Fracture Center is a model of the care that has been previously implemented with great success. At the University of Rochester School of Medicine and Dentistry, they have proven that this model is able to generate cost savings of about $18,000 per patient, decreasing length of stay to 4.6 days and decreasing in hospital complications to 10.3% while providing patients with high quality care.⁵

The clinical pathway provides the standardized guidelines for the multidisciplinary team from the emergency department until the patient is discharged. At the University of Hong Kong, Queen Mary Hospital, they developed a geriatric hip fracture clinical pathway with the same continuum and they were able to achieve a decrease in their length of stay from 12.1 days to 6.4 days, a slight decrease in complication rates and a decrease in mortality rate from 2.7% to 1.5%.⁶ Their study showed that preoperative length of stay was one of the most important factors that affected clinical outcomes. The shorter the preoperative time, the fewer the complications and the lower the mortality rate.⁷ The availability of a daytime trauma room helped make their whole management process run more efficiently.²

Conclusion:

The geriatric hip fracture clinical pathway was construed to improve the orthopedic department as well as to face the growing challenge from the elderly population. Multiple studies have shown that the use of a clinical pathway to provide multidisciplinary care to the geriatric hip fracture patients has proven to be effective in decreasing length of stay.

Patient demographics will be collected to evaluate the effect of patient variables on clinical outcomes. Outcome parameters will be measured to assess the efficacy of the clinical pathway. The data can be used to perform future studies, contribute new knowledge and allow appropriate modifications to be made. After implementation the cost saving potentials for the institution can be evaluated. Lastly, the use of a lean business flow model would also have a considerable effect on the cost savings and quality measures.

References: