Length of stay benchmarks for inpatient rehabilitation after stroke at Parkwood Hospital

Matthew Meyer, Eileen Britt, Heather McHale, Dr. Robert Teasell
Background

• Administration in Parkwood’s neuro-rehabilitation unit were concerned that:

I. No standardized benchmarks for LOS existed
II. Use of mean LOS for program evaluation was inappropriate
III. LOS could be reduced without negatively impacting patient outcomes
Objectives

• To develop benchmarks for LOS that account for:
  I. Patient severity
  II. LOS outliers
  III. Maintenance/improvement of patient outcomes

• And also......
  IV. Challenge staff to reduce LOS through open dialogue and improved efficiency
  V. Didn’t require any additional data collection
Methods

• Work began in late summer 2009
• NRS data from Parkwood was retrieved for all stroke patients admitted between April 2005 and March 2008 (N=643).
• Patients were retrospectively divided into RPG groups
• Median LOS targets were established for each RPG
Methods

1. $\text{FIM}^\circ \ \text{EFFICIENCY} = \frac{\text{FIM}^\circ \ \text{GAIN}}{\text{LOS}}$

2. $\text{LOS} = \frac{\text{FIM}^\circ \ \text{GAIN}}{\text{FIM}^\circ \ \text{EFFICIENCY}}$

3. $\text{TARGET \ LOS} = \frac{\text{MEAN \ FIM}^\circ \ \text{GAIN}}{1.0}$
Methods

• Targets were then brought to members of the rehabilitation team to check that they were reasonable and attainable.

• All targets were below current averages (none were felt to be too long).

• Targets that were felt to be too short were recalculated using a 0.75 FIM efficiency target.
Initial Targets

- As a result of this process, the following LOS targets were established and included into team rounds starting in October 2009

<table>
<thead>
<tr>
<th>Median LOS Benchmark (days)</th>
<th>1100</th>
<th>1110</th>
<th>1120</th>
<th>1130</th>
<th>1140</th>
<th>1150</th>
<th>1160</th>
</tr>
</thead>
<tbody>
<tr>
<td>48*</td>
<td></td>
<td></td>
<td></td>
<td>24*</td>
<td></td>
<td></td>
<td>10*</td>
</tr>
</tbody>
</table>
Implementation

• **Targets are not fixed end dates**
• As a median target, the objective was to send 50% of patients home by the target
• On admission, patient RPG and targeted date of discharge were calculated
• Discharge date was used to facilitate discussion about patient progress and discharge planning
• If target date passed, discussion turned to patient goals and what was needed to meet them
Evaluation

- After 1 year, patient outcomes were compared to outcomes from the previous year.

<table>
<thead>
<tr>
<th></th>
<th>Pilot Benchmarks</th>
<th>Comparison Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oct09-Sept10</td>
<td>Oct08-Sept 09</td>
</tr>
<tr>
<td>Patient N</td>
<td>262</td>
<td>238</td>
</tr>
<tr>
<td>Age (± SD)</td>
<td>66.4 (6.3)</td>
<td>66.1 (15.5)</td>
</tr>
<tr>
<td>Female (%)</td>
<td>44.3%</td>
<td>49.6%</td>
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<tr>
<td>Hemorrhagic (%)</td>
<td>12.6%</td>
<td>14.3%</td>
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<tr>
<td>Mean LOS ± SD (Median)*</td>
<td>35.3 ± 22.5 (30)</td>
<td>41.2 ± 27.5 (36)</td>
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<tr>
<td>Mean FIM™ gain ± SD (Median)</td>
<td>22.1 ± 16.1 (20)</td>
<td>23.9 ± 17.5 (21)</td>
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<td>Discharged Home N (%)</td>
<td>212 (80.9)</td>
<td>193 (81.4)</td>
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Further Evaluation

- No differences in severity (by RPG) were noted between years

- Reductions in LOS were noted in each RPG and were statistically significant in 1100, 1140, 1150, 1160

- No statistically significant difference in mean FIM gain or discharge destination was noted in any group
Other Considerations

• Targets were designed to promote efficiency
• During the pilot year, two program changes occurred:

I. Community Stroke Rehabilitation Teams (CSRT)

II. Improved access to evening/weekend therapy
Re-Evaluation

- Targets were re-evaluated using 1 year results
- Targets should continue to challenge team members to improve
- Targets must be reasonable and patient-centered
# Revised Targets

## Original Targets

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Discussion

- Ongoing evaluation of targets is necessary
- Duplication at other sites would help to validate targets
Questions?

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