Impact on Outcomes and Resource Utilization of:
7 Days Per Week Admissions and Inpatient Rehabilitation Therapy (7-DART)
Among Patients Admitted to a Specialty Rehab Hospital

OUR VISION: TO BE AT THE FOREFRONT OF SPECIALIZED REHABILITATION CARE
Embarking on the 7-DART Project

Clinical Staff

Information technology

Patient Registration

Community partners

Finance

Human resources

Decision Support and Research

Management

Patients and Families
Agenda

• Overview of St. John’s Rehab
• 7-DART Model
  • Research
  • Next Steps
• Questions
St. John’s Rehab

2008 Fiscal Stats

- **In-patients**
  - 160 Beds
  - 2,443 discharges
  - Active Rehab LOS 21.3 days

- **Out-patients**
  - 41,317 attendances
Patient populations

✓ Burn
✓ Orthopedic
✓ Neurological
✓ Trauma
✓ Amputation
✓ Cardiac
✓ Oncology
✓ Organ transplant
✓ Complex Care
Objective

To determine the impact on outcomes and resource utilization of a model of 7 Days Per Week Admissions and Inpatient Rehabilitation Therapy (7-DART)
## Goals

<table>
<thead>
<tr>
<th>TRADITIONAL MODEL</th>
<th>Objectives</th>
<th>7 DART MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 days/week admissions and discharges</td>
<td>INCREASE</td>
<td>7 days/week admissions and discharges</td>
</tr>
<tr>
<td>5 days/week therapy</td>
<td>INCREASE</td>
<td>7 days/week therapy</td>
</tr>
<tr>
<td>1.6 days on average waiting for admission</td>
<td>DECREASE</td>
<td>Reduction in days waiting for admission</td>
</tr>
<tr>
<td>21.3 days Active Rehab LOS</td>
<td>DECREASE</td>
<td>Decrease by average of 1 day</td>
</tr>
<tr>
<td>Optimal functional outcomes</td>
<td>MAINTAIN</td>
<td>Optimal functional outcomes</td>
</tr>
</tbody>
</table>
7-DART Implementation

Musculoskeletal
Feb. 1, 2009

Amputee/Transplant/Cardiac
Jun. 6, 2009

Neurology/Oncology
May 9, 2009

Trauma/Burns
July 4, 2009

Perform Research
Operational Framework to Support Implementation

- Patient Flow and Access
- Communication and Engagement
- 7 Day Admission and Rehab Therapy
- Performance/Deliverables/Research
- Model of Care/Staffing
- Resource Utilization

St. John's Rehab Hospital
Rebuilding people's lives
# Study Methods

## Retrospective review of functional outcome and utilization data - 1921 patients

<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Control (n = 947)</th>
<th>Study (n = 974)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions and rehabilitation therapy</td>
<td>5 days per week</td>
<td>7 days per week</td>
</tr>
<tr>
<td>Patients admitted and discharged between</td>
<td>Feb-Sept 2008</td>
<td>Feb-Sept 2009</td>
</tr>
</tbody>
</table>

*Data Source: NRS*
**Results... Demographics**

**Retrospective review of functional outcome and utilization data - 1921 patients**

<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Control (n = 947)</th>
<th>Study (n = 974)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>72.53 ± 12.19 years</td>
<td>72.16 ± 13.75 years</td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>32.73%</td>
<td>34.50%</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>67.27%</td>
<td>65.50%</td>
</tr>
<tr>
<td><strong>Male:Female ratio</strong></td>
<td>1:2.05</td>
<td>1:1.90</td>
</tr>
</tbody>
</table>

Data Source: NRS
## Results... Outcomes

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Control</th>
<th>Study</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Admissions</td>
<td>947</td>
<td>974</td>
<td>2.9% P = 0.38</td>
</tr>
<tr>
<td>Weekend Admissions</td>
<td>85</td>
<td>136</td>
<td>60% P &lt; 0.001</td>
</tr>
<tr>
<td>Total Discharges</td>
<td>803</td>
<td>822</td>
<td>2.4% P = 0.51</td>
</tr>
<tr>
<td>Weekend Discharges</td>
<td>73</td>
<td>138</td>
<td>89% P &lt; 0.001</td>
</tr>
<tr>
<td>Workload per Patient LOS</td>
<td>77.6 hrs</td>
<td>81.3 hrs</td>
<td>4.8%</td>
</tr>
<tr>
<td>FIM™ Score Change</td>
<td>22.7%</td>
<td>20.4%</td>
<td>Similar P=0.07</td>
</tr>
</tbody>
</table>

Data Source: NRS & Workload
Results...Trends

**Total Admissions 2.9% Increased**

**Weekend Admissions 60.0% Increased**

**Total Discharges 2.4% Increased**

**Weekend Discharges 89.0% Increased**
### Results... After 7 Months (Sept. 2008 vs. Sept. 2009)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Control</th>
<th>Study</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting Time for Rehab</td>
<td>1.32 days</td>
<td>1.01 days</td>
<td>0.31 day</td>
</tr>
<tr>
<td>Average Length of Stay</td>
<td>21.5 days</td>
<td>19.5 days</td>
<td>2 days</td>
</tr>
<tr>
<td>Average Cost per Patient</td>
<td>$11335.8</td>
<td>$10271.2</td>
<td>$1064.5</td>
</tr>
</tbody>
</table>

**Total Average Savings in Rehab for September 2009:**

\[ $1,064.5 \times 206 = $219,295.24 \]

Data Source: NRS
Conclusions

The New Model of 7-DART during 8 months has:

- Increased the number of admissions
- Increased the number of discharges
- Increased the rehabilitation workload per patient
- Reduced rehab hospital length of stay

This successful pilot program demonstrates support for the 7-DART model
Focused Evaluation on:

– **Patient Satisfaction**
– **Staff Satisfaction**
– **Feedback from stakeholders**
– **Analysis of referral patterns**
– **Case costing analysis**
Partners in Action

Central LHIN

Community Partners

Patient and Their Family

Management and Board of Directors

All Clinical and Support Staff
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Questions