Empowering front line providers to use clinical pathways and data to drive Quality Improvement

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Workshop Objectives

• To highlight two successful initiatives that demonstrate:
  o How frontline providers can use data to improve patient care
  o How best practice guidelines can be adapted locally by teams
  o An effective “bottom up” versus “top down” change management strategy
HEAD AND NECK PATHWAY
2009

- 53% atelectasis
- 30% pneumonia
- 100% < daily chest physio (despite consult)
- 34% volume overload
- 70% not mobilized to chair prior to POD 2
- Avg LOS 3 weeks
Confusion
What would you do?
Small group discussion

What would you do?
What we did:

- Identified problem
- Defined processes of care and best practice
- Described key performance measures
- Developed data collection strategy and ongoing monitoring
Results

<table>
<thead>
<tr>
<th>Event</th>
<th>Days (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to mobilization to chair</td>
<td>3.7</td>
</tr>
<tr>
<td>Time to tracheostomy decannulation</td>
<td>12.7</td>
</tr>
<tr>
<td>Hospital length of stay</td>
<td>22.4</td>
</tr>
</tbody>
</table>

Time to mobilization to chair: 3.7 days
Time to tracheostomy decannulation: 12.7 days
Hospital length of stay: 22.4 days
Results

Laryngoscope 2013, PRS 2014
### Inpatient Costs

<table>
<thead>
<tr>
<th></th>
<th>Control (CAD)</th>
<th>Pathway (CAD)</th>
<th>Incremental Cost (CAD)</th>
<th>Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean inpatient ward cost</td>
<td>$15,975</td>
<td>$10,756</td>
<td>- $5219</td>
<td>32.7 %</td>
</tr>
<tr>
<td>Mean return to OR cost</td>
<td>$883</td>
<td>$310</td>
<td>- $573</td>
<td>64.9 %</td>
</tr>
<tr>
<td>Mean ICU costs</td>
<td>$5,875</td>
<td>$5,498</td>
<td>- $377</td>
<td>6.4 %</td>
</tr>
<tr>
<td><strong>Mean total post-operative inpatient cost</strong></td>
<td><strong>$22,733</strong></td>
<td><strong>$16,564</strong></td>
<td><strong>- $6,169</strong></td>
<td><strong>27.1 %</strong></td>
</tr>
</tbody>
</table>

JOHNS 2013
# Post-discharge Utilization

<table>
<thead>
<tr>
<th></th>
<th>Control (n=60)</th>
<th>Pathway (n=54)</th>
<th>Ratio of Mean Counts (Pathway/Control)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ER visits</strong></td>
<td>20</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean per patient</td>
<td>0.33</td>
<td>0.5</td>
<td>1.52</td>
<td>0.171</td>
</tr>
<tr>
<td><strong>Outpatient visits</strong></td>
<td>443</td>
<td>248</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean per patient</td>
<td>7.4</td>
<td>4.6</td>
<td>0.62</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Inpatient admissions</strong></td>
<td>15</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean per patient</td>
<td>0.25</td>
<td>0.15</td>
<td>0.59</td>
<td>0.236</td>
</tr>
<tr>
<td><strong>Physician claims</strong></td>
<td>838</td>
<td>599</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean per patient</td>
<td>14</td>
<td>11.1</td>
<td>0.79</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Overall Encounters</strong></td>
<td>1316</td>
<td>882</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean per patient</td>
<td>22</td>
<td>16</td>
<td>0.67</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Head & Neck (in press)
What we learned:

• Goal is to be **better**… If you do enough “betters” you become the BEST
• Manage what you **measure**
• If you focus on quality, **savings** will follow
• High performing organizations use data to drive quality and innovation
• Empowering frontline providers data to identify variations in care
STROKE ACTION PLAN (SAP)
What is a “stroke unit” and why is it important?

- Multidisciplinary, specialized model of inpatient care for stroke
  - Associated with a 15% relative reduction in death
  - 5% relative reduction in disability for patients with stroke from multinational randomized trials
  - 20% reduction in length of stay
Figure 4.9. Patients Receiving Care in a ‘Stroke Unit’ (or in designated stroke beds)

* represents a statistically significant change from 04/05 at $p < 0.05$

Only ~55% of Albertans receiving and most of those in Urban centres
What is ESD?

Early Supported Discharge (ESD)

- Patients leave hospital earlier to deliver rehab services in their own homes
  - 26% reduction in length of stay
  - 10% reduction in mortality
  - 16% reduction in the need for nursing home care
- Involves a multidisciplinary team
- The potential to avoid the need for admission to a rehab facility
What is The Stroke Action Plan?

Neither of these models of care are available in rural or small urban areas!

- Early Supported Discharge (ESD)
  - 5 small urban centres
- Stroke Unit Equivalent Care (SUEC)
  - 14 rural centres
- Utilizing a learning collaborative model
  - Data and scorecarding
IHI Learning Collaborative Model

- Driven by **front line staff, clinicians, and administration**
- Didactic Learning
  - What is an Improvement Collaborative?
  - Stroke best practices – indicators & implementation
  - Various Educational sessions
- Group learning
  - Curb-side consultations
  - Small group discussions
  - Report outs
- Planning improvement
  - Site-specific action plans
  - Data collection and scorecarding
## Balanced Scorecard Methodology

**QUALITY DIMENSIONS:**
- ACCESSIBLE
- APPROPRIATE
- EFFICIENT
- SAFETY
- ACCEPTABLE
- ACCEPTABLE
- SAFETY
- SAFETY

**SELECTED MEASURE:**
- Median wait from hospital to specialty intake
- % patients for whom order sets/protocols were implemented on admission
- Reduction acute care length of stay
- % of Caregivers who feel that the stroke survivor is safe in their home.
- % of stroke patients who feel they participated in the decision making about their treatment
- % of acute stroke patients who were provided with written stroke information
- % of stroke patients who are screened for depression
- % of stroke patients receiving swallowing screen

**Performance Level**

<table>
<thead>
<tr>
<th>WEIGHTING (%)</th>
<th>10%</th>
<th>10%</th>
<th>10%</th>
<th>10%</th>
<th>10%</th>
<th>10%</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT STATUS</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Baseline</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Mandatory Metrics**

<table>
<thead>
<tr>
<th>PERFORMANCE LEVEL</th>
<th>10 (Targeted Ideal)</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 days</td>
<td>2.0</td>
<td>2.1</td>
<td>2.2</td>
<td>2.3</td>
<td>2.45</td>
<td>2.6</td>
<td>2.75</td>
<td>3.0</td>
<td>3.5</td>
<td>4.0</td>
</tr>
<tr>
<td>100%</td>
<td>92%</td>
<td>87%</td>
<td>72%</td>
<td>57%</td>
<td>42%</td>
<td>28%</td>
<td>27.3%</td>
<td>9 (7.4%)</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>9.0/8.3</td>
<td>77</td>
<td>73</td>
<td>70</td>
<td>65</td>
<td>60</td>
<td>55</td>
<td>50%</td>
<td>40%</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>9.0/8.5</td>
<td>95</td>
<td>90</td>
<td>85</td>
<td>80</td>
<td>75</td>
<td>70</td>
<td>60%</td>
<td>50%</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>9.5/8.0</td>
<td>95</td>
<td>90</td>
<td>85</td>
<td>80</td>
<td>75</td>
<td>70</td>
<td>60%</td>
<td>50%</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>9.4/4.0</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>8.0/8.3</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>7.0/5.0</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>6.0/4.0</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>5.0/3.0</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>4.0/2.0</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>3.0/1.0</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10%</td>
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</tbody>
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**Optional Metrics**

- ACHIEVED! TEAM TO CELEBRATE SUCCESS

= Real time feedback for front-line staff on quality improvement
SAP - Data

- Standardized orderset use 48% to 77%
- Rehab assessment within 48 hours – 74% to 88%
- Median LOS 6 days to 5 days
- Swallowing screens before first oral intake – 28% to 68%
- ESD patients per year -- 0 to 161
- SUEC patients per year – 0 to 850 across all sites
Improving Patient Satisfaction with Inpatient Care

(APSS vs SUEC)*

SUEC posts impressive satisfaction but only a 10% overall sample (29/300 patients sampled). *
Improving Patient Satisfaction with Care after Discharge to the Community (APSS vs SAP ESD)

SAP ESD satisfaction is 97%! Impressive considering this is a more severely affected group than the APSS group on the average. Robust sampling.
PATIENT AND PROVIDER PERSPECTIVE
SAP - Summary

• Describe
Questions
Thank You