The Challenge
(the problem you faced)

Our orthopedic and neurosurgery spine surgeons at Johns Hopkins Hospital believed there was opportunity to improve the value of lumbar fusion surgery. Their goal was to develop and implement an evidence and consensus based inpatient pathway of care to improve quality of care.
The Goal
(big picture of what you were aiming for with the innovation)

The goals of the spine surgeons were to decrease length of stay by 20% without increasing readmissions, increase patient satisfaction by 5% (recommend hospital) and decrease hospital acquired complications by 3%. 
The Execution
(what you did and how—specific steps/tasks to achieve the action)

• The spine clinical community considered existing evidence and gained consensus on a standard inpatient pathway of care for low level lumbar fusion for degenerative joint disease
• Educational materials were created for patients and staff
• A data dashboard was created for the effort to monitor LOS, complication, HCAHPS, variable direct cost
• Frequent data review with the clinical community
The Metrics
(quantify your results wherever possible)

<table>
<thead>
<tr>
<th></th>
<th>Pre-pathway</th>
<th>Post-pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average LOS</td>
<td>6.5 days</td>
<td>6.1 days</td>
</tr>
<tr>
<td>MHACs</td>
<td>8.0%</td>
<td>7.6%</td>
</tr>
<tr>
<td>Average variable direct cost</td>
<td>$27,945</td>
<td>$26,772</td>
</tr>
<tr>
<td>Patient Satisfaction</td>
<td>88.3 %</td>
<td>93.8 %</td>
</tr>
<tr>
<td>(recommend hospital)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### The Summary

**Title:** Clinical Community: Improving Value for Lumbar Spine Surgery  
**Team:** Renee Demski, Lisa Ishii, Annette Donawa, Matt Austin  
**Presenter:** n/a  
**Scope:** n/a

#### 1 | DEFINE AND MONITOR

<table>
<thead>
<tr>
<th>Improvement Category &amp; Measurement Description</th>
<th>Baseline</th>
<th>Goal</th>
<th>Qtr 1</th>
<th>Qtr 2</th>
<th>Qtr 3</th>
<th>Qtr 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality</strong> Length of Stay MHACs</td>
<td>6.5</td>
<td>5.0 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Service</strong> Patient Experience (HCAHPS) (recommend hospital)</td>
<td>88%</td>
<td>93%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost</strong> Decreasing Costs (variable direct cost)</td>
<td>$27,000</td>
<td>TBD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2 | PROBLEM AND GOAL STATEMENTS (SMART Probleme/SMART Goals)

1) Our length of stay for this patient population is higher than our peers. Our goal is to reduce length of stay by 25% over a one year period
2) Further, we will increase patient experience by 5% as measured by HCAHPS in the same period (recommend hospital)

#### 3 | ANALYSIS AND INVESTIGATION

1) We will monitor length of stay, costs and charges, and patient experience after implementation of a new clinical pathway.
2) As noted in “impact”, we have been unable to capture these data reliably due to our hospital conversion to Epic 7/1/2016
3) External benchmarking will allow us to measure performance as compared to our peers
4) We experienced delays in implementation due to leadership transition and EHR transition

#### 4 | IMPROVEMENT DESIGN AND IMPLEMENTATION

- Order set has been implemented for lumbar fusion: March 2016
- Clinical teams have been educated: April 2016
- Engaging house staff to help with pathway adherence: September 2016
- Development of patient education materials with pathway details: August-September 2016
- Associating pathway process measures and outcome measures: September 2016
- Partner with the newly forming musculoskeletal service line: September 2016
- Orderset into Epic: October 2016
- Onboard new spine surgery director: October 2016

#### 5 | IMPACT

Decreasing length of stay and working in a coordinated team fashion with clearly defined goals with increase the value of the care we provide. Further, we have seen that patient satisfaction increases as team coordination and patient education increases.