Higher Acuity
Outpatient Spine Surgery

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Acuity Definition

• Simple:
  – lumbar decompression, kyphoplasty, cervical foraminotomy

• Middle:
  – laminoplasty, ACDF

• Complex:
  – ADR, ALIF, PSF, LLIF
  – Keep for 23 hours

Dr. Bray. Lessons on performing high acuity cases in ASC. Orthopedic, Spine & Pain Management Driven ASC’s. 10
Outpatient Criteria

• Criteria
  – Live 30 minutes from a hospital
  – BMI<42
  – Cardiology evaluation
  – Caregiver for 24 hours after surgery
  – ASA: Low to moderate

30 Day Readmissions for ACDF

- NSQIP Database from 2012-2014
  - 17,088 patients with elective ACDF
    - 545 (3.2%) Readmissions
      - 293 (53.8%) Nonsurgical site related reasons
        » Neuropsychiatric 44
        » Cardiovascular 39
        » Pneumonia 37
      - 184 (33.8%) Surgical site related
        » Infection 42
        » Hematoma 42
        » Dysphagia 32
      - 84 Undocumented

Spine Cases (2011 - 2016)

- Total cases 1136
  - 2011 - 78
  - 2012 - 169
  - 2013 - 187
  - 2014 - 221
  - 2015 - 259
  - 2016 - 227

% Increase

- 0%
- 50%
- 100%
- 150%
- 200%
- 250%

Year:
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
<table>
<thead>
<tr>
<th>Case Type</th>
<th>Number</th>
<th>Male</th>
<th>Female</th>
<th>Average Surgical Time (min)</th>
<th>Average Recovery Time (hour &amp; min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumbar decompression</td>
<td>648</td>
<td>396</td>
<td>252</td>
<td>56</td>
<td>1:47</td>
</tr>
<tr>
<td>Lumbar decompression &gt;2 levels</td>
<td>93</td>
<td>52</td>
<td>41</td>
<td>68</td>
<td>1:54</td>
</tr>
<tr>
<td>ACDF</td>
<td>179</td>
<td>92</td>
<td>87</td>
<td>54</td>
<td>2:03</td>
</tr>
<tr>
<td>ACDF &gt;2 levels</td>
<td>81</td>
<td>36</td>
<td>45</td>
<td>87</td>
<td>3:13</td>
</tr>
<tr>
<td>ADR</td>
<td>86</td>
<td>43</td>
<td>43</td>
<td>73</td>
<td>2:27</td>
</tr>
</tbody>
</table>
## Higher Acuity Cases

<table>
<thead>
<tr>
<th>Case Type</th>
<th>Number</th>
<th>Male</th>
<th>Female</th>
<th>Average Surgical Time (min)</th>
<th>Average Recovery Time (hour &amp; min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACDF &gt;2 levels</td>
<td>81</td>
<td>36</td>
<td>45</td>
<td>87</td>
<td>3:13</td>
</tr>
<tr>
<td>Spinal Cord Stimulator</td>
<td>38</td>
<td>21</td>
<td>17</td>
<td>66</td>
<td>2:01</td>
</tr>
<tr>
<td>Lumbar fusion</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>106</td>
<td>2:16</td>
</tr>
</tbody>
</table>
## Complications

<table>
<thead>
<tr>
<th>Issue</th>
<th>Number</th>
<th>Male</th>
<th>Female</th>
<th>Average Surgical Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dural tear</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>Death</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfusion</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Transfers

- Spinal cord stimulator (3)
  - Pain control x2
  - Neurologic changes x1
- ACDF (1)
  - Anesthesia reaction
4 C’s To Think About

• Care
• Competency
• Cost
• Complications
Care

• Always keep your patient safe.
• Resist the temptation to stretch your indications for financial gain.
Competency

• How do you know if you can safely perform an outpatient case safely?
• Look at YOUR own results.
  – Review YOUR outpatient data!
  – Review YOUR complications!
  – Review YOUR operative times!
Cost

- Understand the surgery center reimbursement for your cases
  - Facility reimbursement for the procedure
- Control your costs
  - Staffing time
    - Efficiency in staff scheduling/fast track options
  - Implant costs
    - Disposable associated costs
    - Shipping
  - Supply costs
    - Case cost by surgeon
    - Materials management
- Biologic costs
- Special equipment
  - Cell saver
  - Neuromonitoring
Cost

• Examples of a profitable vs non profitable case.
  • Artificial disc replacement (higher cost) –
    – Poor contract 50% loss on case
  • Double level ACDF (higher cost) -
    – Good contract 77% net profit on case
• Decompression (lower cost) –
  – Good contract 82% net profit on case
Cost Continued - Trending

<table>
<thead>
<tr>
<th>Costs per Case: Implants and Supplies 2011 to Current</th>
<th>% Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACDF</td>
<td>-44%</td>
</tr>
<tr>
<td>Artificial Disc</td>
<td>-21%</td>
</tr>
<tr>
<td>Decompressions</td>
<td>-28%</td>
</tr>
</tbody>
</table>
### Spine Profit and Loss to the Center

#### Spine Payer Mix

<table>
<thead>
<tr>
<th>Spine Payer Mix</th>
<th>OON</th>
<th>In-network</th>
<th>Medicare</th>
<th>MVA</th>
<th>Work Comp</th>
<th>Self Pay</th>
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</thead>
<tbody>
<tr>
<td>2011</td>
<td>62%</td>
<td>24%</td>
<td>0%</td>
<td>7%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>2012</td>
<td>58%</td>
<td>21%</td>
<td>3%</td>
<td>11%</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>2013</td>
<td>21%</td>
<td>61%</td>
<td>1%</td>
<td>8%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>2014</td>
<td>28%</td>
<td>61%</td>
<td>1%</td>
<td>2%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>2015</td>
<td>18%</td>
<td>68%</td>
<td>6%</td>
<td>4%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>2016</td>
<td>13%</td>
<td>72%</td>
<td>9%</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
</tr>
</tbody>
</table>

#### Spine Annual Net Income

% Center Net Annual Income

- 2011: 0%
- 2012: 5%
- 2013: 10%
- 2014: 15%
- 2015: 20%
- 2016: 25%
Complications

• Be prepared!
• Have a plan in place
• Vascular injury
  – ALIF/TLIF/LLIF
• Bowel injury
  – LLIF
• Cord injury
  – SCS, VCF
Conclusion

• Higher acuity spine surgery can be performed safely.

• Remember the 4C’s
  – Care
  – Competency
  – Cost
  – Complications
Thank You