The Spine Care Continuum

Toward an evidence based care pathway for spine conditions utilizing a team approach
Project Triggers
Goals of Spine Care

• To provide evidence based medicine that effectively treats patients’ pain and disability

• To provide care that gives patients a sense of satisfaction

• To provide care that accomplishes both of the above at a reasonable and transparent cost with good outcomes
Why is this difficult?

• Favorable – 80+ % recover within 6 weeks, although recurrence may affect up to 40% within 6 months
• Fewer than 5% will have serious systemic pathology.
• This is why so many different interventions appear to be effective for acute back pain, including those with no supporting evidence and regardless of the etiology.
Barriers?

The System Technology Information “Miracles” Expectations What is a good outcome?
Radiology

- MRI is sensitive
  - A large % of asymptomatic adults will have MRI abnormalities
  - No prospective studies for context
  - Patients have access to their MRI reports without the context and have a natural desire for a definitive answer.
  - They are strongly influenced by a perception of disability created by the MRI report.
Review of 3110 asymptomatic patients

Table 2: Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients

<table>
<thead>
<tr>
<th>Imaging Finding</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disk degeneration</td>
<td>37%</td>
<td>52%</td>
<td>68%</td>
<td>80%</td>
<td>88%</td>
<td>93%</td>
<td>96%</td>
</tr>
<tr>
<td>Disk signal loss</td>
<td>17%</td>
<td>33%</td>
<td>54%</td>
<td>73%</td>
<td>86%</td>
<td>94%</td>
<td>97%</td>
</tr>
<tr>
<td>Disk height loss</td>
<td>24%</td>
<td>34%</td>
<td>45%</td>
<td>56%</td>
<td>67%</td>
<td>76%</td>
<td>84%</td>
</tr>
<tr>
<td>Disk bulge</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
<td>69%</td>
<td>77%</td>
<td>84%</td>
</tr>
<tr>
<td>Disk protrusion</td>
<td>29%</td>
<td>31%</td>
<td>33%</td>
<td>36%</td>
<td>38%</td>
<td>40%</td>
<td>43%</td>
</tr>
<tr>
<td>Annular fissure</td>
<td>19%</td>
<td>20%</td>
<td>22%</td>
<td>23%</td>
<td>25%</td>
<td>27%</td>
<td>29%</td>
</tr>
<tr>
<td>Facet degeneration</td>
<td>4%</td>
<td>9%</td>
<td>18%</td>
<td>32%</td>
<td>50%</td>
<td>69%</td>
<td>83%</td>
</tr>
<tr>
<td>Spondylolisthesis</td>
<td>3%</td>
<td>5%</td>
<td>8%</td>
<td>14%</td>
<td>23%</td>
<td>35%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Radiology Thoughts

• Degenerative disc changes do not equal degenerative disc disease
• Disc bulges without nerve compression don’t cause radiculopathy
• Cauda equina compression doesn’t equal cauda equina syndrome
• Foraminal stenosis is not lumbar stenosis
• Annular fissures aren’t surgical
Please shade areas that are painful, numb, or weak
Patients’ Bill of Rights

• Patients are told they have the right to pain control and they hear that they have the right to no pain
  – Data shows narcotics aren’t a good long term strategy and carry risks of OD, SE
  – Other modalities may be underutilized.

• Smoking, obesity, secondary gain, untreated psychosocial issues may be dismissed by patients
Our Vision

Patient-Centered Medical Neighborhood

- Rehab
- Neurosurgeons
- Pain Specialists
- Persistent Pain

Providence Patient-Centered Medical Home
Continuous, meaningful relationships with a clinical team founded on:
- A comprehensive approach to health
- Patient engagement
- Anticipating patients’ needs
- Coordinating care with others
- Easy access to appointments and other information
- Exceptional standards of care and service
- Caregiver-patient partnership

Spine Care Continuum Pilot
Specialist Triage
Patient Navigation
Outcome Measures

Current State
High Cost
High Utilization

Future State
Right Care, Right Time
Lower overall spend
PBSI-PMG Spine Care Pilot Scope

- Surgeon consult and RN navigation to support PMG PCP-Medical Home
- PCP remains the quarterback of care and determines treatment and referral plans
- Establish outcome measures and utilize shared decision making

- Direct line
  - Assess
  - Conservative Tx
  - Imaging
    - Conservative Tx
    - Aggressive Tx
  - Pain Education
  - Surgeon consult to PCP
  - Patient Navigation
  - HVHC Shared Decision Making
  - Outcome measures
  - Persistent Pain 2013
RN Navigation

- Role of RN Navigator
  - Enrollment
  - Communication to PCP, specialists
  - Monitors patient during active treatment to identify barriers, provide education and shared decision making, and collect outcomes

- Impact of RN Navigation
  - As a result of RN navigation, the following trends have been noticed:
    - Expedited appointment with specialist when indicated
    - Minimize barriers to care
    - PCP may change treatment plan
    - Shared decision making
Project Participation

• Live at 25 Clinics

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
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<tbody>
<tr>
<td>2014</td>
<td>71</td>
</tr>
<tr>
<td>2015</td>
<td>504</td>
</tr>
<tr>
<td>2016</td>
<td>732</td>
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<td>2014</td>
<td>134</td>
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<tr>
<td>2015</td>
<td>260</td>
</tr>
<tr>
<td>2016</td>
<td>303</td>
</tr>
</tbody>
</table>


• 3 RN navigators, 2 intake specialists
• Reviewing about 70-80 patients each month.
• Planning to expand to remaining Northern Oregon PMG clinics in 2017
Duration of symptoms prior to SCC intake
Sept 2013-Oct 2016 (n= 1314)
Interventions tried prior to SCC intake
Sept 2013-Oct 2016 (n= 1314)
Modifiable Risk Factors
if surgeon referral requested

**BMI**
- BMI > 40 is a significant risk factor for surgery
- Important to counsel patients on weight management and continuing to walk/exercise

**Smoking Cessation**
- Important to start smoking cessation counseling early – insurers may require <=6 mon smoke free
- Smoking is linked to increased pain
- Smoking correlates with poor spinal fusions - spine registry

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**BMI at SCC Intake Sept 2013-Oct 2016 (n=1292)**

- < 19: 0.5%
- 19 to 24: 9.7%
- 25-29: 13.7%
- 30-34: 30.7%
- 35-39: 25.4%
- > 40: 20.0%

**Smoking Status at Intake Sept 2013-Oct 2016 (n=1314)**

- Smoker: 3.9%
- Non Smoker: 96.8%
- Unknown: 2.1%
Most Common SCC Recommendations
Sept 2013-Oct 2013
n=1314
Introducing Spine Therapy Exercise Program (STEP) 
At St. Vincent’s Hospital Sports Therapy

Providence STEP is a standardized, evidence based exercise program designed for all spine patients (cervical, thoracic, and lumbar). The program focuses on restoring functional movement and strength along with providing education on pain management strategies.

Participation in the program includes:

► Comprehensive evaluation by a physical therapist to assess both physical and behavioral limitations so that the care plan is directed appropriately for the patient’s stage of healing and tailored to their motivational level.

► Providence’s Persistent Pain education including video, classes or one on one therapy with Persistent Pain therapist.

► Individual therapy program to meet the patient’s needs including guided resistance training and flexibility program. The program has goals and limitations for resistance based on the patient’s ideal body weight for age and gender. The goal of the program is to transition the patient to an independent exercise program.

This program empowers each participant with the knowledge, coping skills, confidence, and physical strength to manage their condition.
To date, we are improving the transit time to appropriate care with a trend toward decreasing costly care of limited benefit.

We are showing provider satisfaction and using standard outcome measures to determine improvement clinical outcomes and PRO.
Additional Options

Shared Decision Making

• Tools that can be offered to patients
• Reinforces conservative treatment
• Prepares patients for surgeon consult
• Most patients report that SDM tools are helpful
The Update – cost, outcomes
Patient Satisfaction

Generally positive feedback.
Some confusion with navigation vs. treatment outcome.

<table>
<thead>
<tr>
<th>Satisfaction Questions</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>Satisfaction with RN navigator calls</td>
<td>42%</td>
<td>40%</td>
<td>8%</td>
<td>1%</td>
<td>3%</td>
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<tr>
<td>Satisfaction with information and support</td>
<td>40%</td>
<td>42%</td>
<td>10%</td>
<td>4%</td>
<td>1%</td>
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<tr>
<td>Overall satisfaction with spine care</td>
<td>36%</td>
<td>41%</td>
<td>11%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Would recommend this spine program to my friends &amp; family</td>
<td>38%</td>
<td>40%</td>
<td>9%</td>
<td>4%</td>
<td>3%</td>
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**Net Promotor score: 38%**

<table>
<thead>
<tr>
<th></th>
<th>Promotor</th>
<th>60</th>
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<tbody>
<tr>
<td>Passive</td>
<td>80</td>
<td>50%</td>
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<tr>
<td>Detractor</td>
<td>12</td>
<td>8%</td>
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<tr>
<td>Blank</td>
<td>7</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>159</td>
<td>100%</td>
<td></td>
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**Please rate our overall program, using a scale of 0 to 10. '0' = worst possible and '10' = best possible.**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Value</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>0%</td>
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<td>2</td>
<td>4</td>
<td>1.9%</td>
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<td>3</td>
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<td>1.6%</td>
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<td>9</td>
<td>33</td>
<td>21.5%</td>
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Claims Analysis

• Last ran July 2016
  – index image (MRI/CT) completed between Sept 2013 and June 2016 (claims are 6 mo prior to image and 12 months post image)

• Patients are excluded for urgent symptoms: clinical cauda equina (not purely radiologic), for spinal tumor, spinal infections, under current treatment plan with specialist. Noncompliant patients were excluded.

• Spend is calculated from the amount allowed for the PHP claim

• Many limitations, but first attempt to look at this data in our system
SCC Claims: Surgical Rate
SCC Claims Analysis: Mean Overall Spend

Mean Overall Spend

- Baseline PHP Medicare (n=435)
  - Mean: $6,768.94
- SCC Enrolled PHP Medicare (n=247)
  - Mean: $3,437.41
- Baseline Commercial PHP (n=614)
  - Mean: $9,329.41
- SCC Enrolled Commercial PHP (n=234)
  - Mean: $6,926.59
SCC Outcomes 2015 - 2016 YTD

Non-Surgical Back: Avg ODI
Initial ODI: 38.86
ODI 3mo: 31.88
ODI 6mo: 28.01
ODI 12mo: 33.00

Surgical Back: Avg ODI
Pre Op ODI: 40.82
ODI_3mo: 22.66
ODI_6mo: 23.84
ODI_12mo: 16.00

Non-Surgical Neck: Avg NDI
Initial NDI: 40.22
NDI 3mo: 31.40
NDI 6mo: 28.08
NDI 12mo: 22.48

Surgical Neck: Avg NDI
Pre Op NDI: 24.00
NDI_3mo: 25.50
NDI_6mo: 11.14

Percent of Non-Surgical Back Patients with Greater than 10 Point Change in ODI Score
- 3 Month ODI: 42.3%
- 6 Month ODI: 43.6%
- 12 Month ODI: 35.4%

Enrollment by Month

<table>
<thead>
<tr>
<th>Month</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolled</td>
<td>62.3%</td>
<td>58.1%</td>
<td>62.9%</td>
</tr>
<tr>
<td>Not enrolled</td>
<td>37.7%</td>
<td>41.9%</td>
<td>37.1%</td>
</tr>
</tbody>
</table>

Enrollment by Year

<table>
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</table>
SCC

• Improved pathway to care with expedited access to appropriate therapy
• Data shows decreased cost, improved patient and provider satisfaction
• Opportunities for research to establish evidence based guidelines
  – Factors that influence outcome
• A consistent product systemwide