Psychosocial Effects on Spine Outcomes and Choosing the Right Patient for Surgery

Michael D. Daubs, M.D.
Professor and Chief
Division of Orthopaedic Surgery
University of Nevada School of Medicine
Las Vegas, Nevada

Disclosures

- Dupuy-Synthes Spine: royalties
Outline

• Biopsychosocial Model of Medicine
• Case
• Background Literature
• Why psychosocial issues are important to surgeons
• Performance evaluating distressed patients
• Clues to distress that are readily available in clinic
• Who is the ideal surgical candidate
• A concise, efficient psych screening questionnaire

Questions?

• Who cares about psychology?
• Why does it matter?
• If they have a significant orthopaedic/spine disorder - just treat it!
• Does patient selection affect outcomes?
• Do psychosocial factors affect outcomes?
  – Satisfaction?
• What is the ideal patient’s psychological/psychosocial make up?
• 74 year old female
• Failed TL fusion
• Nonunion L1-2, L4-5
  PI=49, PT=26, SS=23
  LL=8°, ThK=18, TL=28
  SVA=5mm
  ODI=46
  DRAM= Non Distressed

Case example

CT Scan
Intraoperative films

Positioning in OR Table

With Instrumentation

Fluoro

Postop

Fracture UIV (T10)

POD 5

6 weeks

9 months

Proximal Juxtaural Angle

PJA=8⁰

PJA=37⁰

PJA=53⁰

6 weeks

5 months
Revision T2-T11, +Extra Rods T8-12

Preoperative

Postoperative

NOT
1 Month Later

UIV Fracture

New Onset of Myelopathy

MRI

Myelopathy

C5-T3 Extension, T2 Laminectomy

2 years post

ODI=22

DRAM= Non Distressed

She loves me!

Lucky to have me as her Surgeon?
Biopsychosocial Model

Patient

Biological
- biochem
- pathology
- physiology

Psychology

Social

PATIENT REPORTED OUTCOMES

HOME
WORK
COMMUNITY

Background Literature
• Depression and Anxiety a factor in worst outcomes.
  • Smith JS ESJ 2013

• Psychological Predictors of Surgery Outcome
  ▪ Failure to return to work
  ▪ Failure to report improvement in pain
  ▪ Failure to report improved function

  Trief, Grant, Fredrickson. *Spine*, 2000

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**Does the Preoperative SRS Mental Health Domain Predict Clinical Outcomes in Adult Deformity Surgery?**

– 2 year follow up on 190 patients (PSO or SPO)
– SRS MH scores correlated with all other domains and ODI
– Lower MH scores (more distressed) predicted
  • Higher pain scores
  • Higher ODI
  • Lower satisfaction

Wang X, Lenke, Bridwell et al
2015 SRS Annual Meeting
Spine Surgery is a stressor

Post-traumatic stress symptoms after elective lumbar arthrodesis are associated with reduced clinical benefit

• 22% with PTSD

• Hart Spine 2013

Orthopaedic Literature


To what degree do shoulder outcome instruments reflect patients' psychologic distress?
Roh YH1, Noht JH, Oh JH, Baek GH, Gong HS.


Effect of depressive symptoms on perceived disability in patients with chronic shoulder pain.
Roh YH1, Lee BK, Noht JH, Oh JH, Gong HS, Baek GH.


Psychologic distress reduces preoperative self-assessment scores in femoroacetabular impingement patients.
Potter MD1, Wylie JD, Sun GS, Beckmann JT, Aoki SK.


Mental health and outcomes in primary total joint arthroplasty.
Lavender CJ1, Alperro JC, Brooks LG, Rossii MD.

Psychological factors effect self- assesment and outcomes.
Patient Satisfaction

Association Between Patient-Reported Measures of Psychological Distress and Patient Satisfaction Scores in a Spine Surgery Patient Population
A.M. Abtahi, MD; D.S. Brodie, MD; B.D. Lawrence, MD; C. Zhang, MS; W.R. Spiker, MD

• Distressed patients reported lower treatment satisfaction scores
• Distressed patients reported lower satisfaction with their provider

The Atlantic

The Problem With Satisfied Patients
A misguided attempt to improve healthcare has led some hospitals to focus on making people happy, rather than making them well.
Our Future

• Physicians will be evaluated and reimbursed based on:
  – Outcomes – Patient improvement
  – Quality
  – Resource Use – costs
  – EHR

• Ultimately CMS wants providers to take on financial risk for the type of care they provide - “skin in the game”

SGR Repeal Creates Two Tracks for Providers

Providers Must Choose Enhanced FFS\(^1\) or Accountable Care Options

**Merit-Based Incentive Payment System**

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015:H2 – 2019:</td>
<td>0.5% annual update</td>
</tr>
<tr>
<td>2018:</td>
<td>Last year of separate MU, PQRS, and VBM penalties</td>
</tr>
<tr>
<td>2020 – 2025:</td>
<td>Frozen payment rates</td>
</tr>
<tr>
<td>2020:</td>
<td>-5% to +15%(^1) at risk</td>
</tr>
<tr>
<td>2022 and on:</td>
<td>-9% to +27%(^1) at risk</td>
</tr>
<tr>
<td>2019:</td>
<td>Combine PQRS, MU, &amp; VBM programs: -4% to +12%(^1) at risk</td>
</tr>
<tr>
<td>2021:</td>
<td>-7% to +21%(^1) at risk</td>
</tr>
</tbody>
</table>

**Advanced Alternative Payment Models\(^2\)**

<table>
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<th>Year</th>
<th>Description</th>
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<tr>
<td>2015:H2 – 2019:</td>
<td>0.5% annual update</td>
</tr>
<tr>
<td>2019 - 2024:</td>
<td>5% participation bonus</td>
</tr>
<tr>
<td>2019 - 2020:</td>
<td>25% Medicare revenue requirement</td>
</tr>
<tr>
<td>2021 and on:</td>
<td>Ramped up Medicare or all-payer revenue requirements</td>
</tr>
</tbody>
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1. Fee for service.
2. Positive adjustments for professionals with scores above the benchmark may be scaled by a factor of up to 3 times the negative adjustment limit to ensure budget neutrality. In addition, top performers may earn additional adjustments of up to 10 percent. APM participants who are close to but fall short of APM bonus requirements will not qualify for bonus but can report MIPS measures and receive incentives or can decline to participate in MIPS.

Source: The Medicare Access and CHIP Reauthorization Act of 2015; Advisory Board analysis.
New Law Strengthens Move To P4P Incentives

Builds on Trend of Increasing Provider Accountability Even Within FFS

Merit-Based Incentive Payment System (MIPS) Summary

- Sunsets current Meaningful Use, Value-Based Modifier, and Physician Quality Reporting System (PQRS) penalties at the end of 2018, rolling requirements into a single program
- Adjusts Medicare payments based on performance on a single budget-neutral payment beginning in 2019
- Applies to physicians, NPs, clinical nurse specialists, physician assistants, and certified RN anesthetists
- Includes improvement incentives for quality and resource use categories

MIPS Performance Category Weights

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
<th>2019+</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHR Use Meaningful Use measures</td>
<td>25%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Quality PQRS measures</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care coordination, patient satisfaction, access measures</td>
<td>15%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Resource Use Cost measures</td>
<td></td>
<td></td>
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APM Bonus Rewards Participation in New Models

Option Signals Policymakers' High Expectations for Risk-Based Models

Advanced Alternative Payment Model (APM) Summary

- Requires significant share of provider revenue in APM with two-sided risk, and quality measurement; or in some cases participation in certified patient-centered medical homes (PCMHs)
- Provides financial incentives (5% annual bonus in 2019-2024) and exemption from MIPS requirements
- Includes partial qualifying mechanism that allows providers that fall short of APM requirements to report MIPS measures and receive corresponding incentives or to decline to participate in MIPS

Required Percentage of Revenue Under Risk-Based Payment Models

<table>
<thead>
<tr>
<th>Year</th>
<th>Option 1</th>
<th>Option 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-2020</td>
<td>25%</td>
<td>N/A</td>
</tr>
<tr>
<td>2021-2022</td>
<td>20%</td>
<td>N/A</td>
</tr>
<tr>
<td>2023 and on</td>
<td>75%</td>
<td>75%</td>
</tr>
</tbody>
</table>

1. Risk-based contracts with Medicare Advantage plans count toward the all-payer requirement category.
Patient Satisfaction and Outcomes

- Impacted by psychosocial factors
- Eventually the risks of treating these patients will be OURS!
- We better figure this out

Clinical Impression Versus Standardized Questionnaire: The Spinal Surgeon’s Ability to Assess Psychological Distress

By Michael D. Daubs, MD, Alpesh A. Patel, MD, Stuart E. Willick, MD, Richard W. Kendall, DO, Pamela Hansen, MD, David J. Petron, MD, and Darrel S. Brodke, MD

- 22% of patients presenting to a spine clinic were noted to have high levels of psychological distress
- Surgeons performed poorly when predicting who was distressed
  - Depression and anxiety

(Daubs et al JBJS 2010)
Literature Summary

• Surgery itself is a big stressor (PTSD)
• Patients with psychological distress - depression and anxiety may not do as well with surgery
• Less satisfied with care and providers
• We aren’t so good at detecting distress
• Who is the Ideal candidate psychologically?
• How do we identify them?

Clinical predictors of psychological distress in patients presenting for evaluation of a spinal disorder  
Daubs et al. The Spine Journal 2014

• 379 patients
• Used a psychological screening questionnaire - DRAM
• Evaluated clinical data for clues to detect psych distress in our patients
DRAM
Distress Risk Assessment Method

- Combined 2 patient reported questionnaires
  - Modified Somatic Perception Questionnaire (MSPQ)
  - Modified Zung Depression Index

- Developed 4 Risk Categories for psychological distress based on Dram Score

Main, Waddell et al. *Spine*, 1992
DRAM
Distress Risk Assessment Method

Categories based on scoring

- N Normal
- R At-risk
- DD Distressed Depressive
- DS Distressed Somatic

Relative Risk (RR) for poor outcomes in regard to pain relief, disability, and work status

Main, Waddell et al. Spine 1992
Results

Diagnosis and DRAM

- Degenerative
  - 42% AR
  - 20% DD/DS

- Deformity group
  - 42% AR
  - 18% DD/DS

- Trauma/Tumor
  - 40% AR
  - 20% DD/DS

Results

Predictors of DRAM categories

- Normal (N)
  - ODI < 45
  - VAS < 5

- At-Risk (AR)
  - 45 < ODI < 57
  - VAS 5 to 7
Predictors of DRAM categories

- Distressed Depressed (DD)
- Distressed Somatic (DS)
  - ODI > 58
  - VAS > 7
  - History of prior surgery
  - History of depression

Results

VAS At Presentation

- N
- AR
- DD/DS

\[ p < 0.05 \]
Study Conclusion

- Patients with severe psychological distress have a documented history of depression and/or anxiety and/or other psych ailments

- A majority of patients with severe psychological distress are actively taking anti-depressants

Study Conclusion

- Patients with severe psychological distress report significantly higher levels of pain (VAS) and functional disability (ODI) compared to normal group with similar pathology.
Predictors of DRAM categories

- Distressed Depressed (DD)
- Distressed Somatic (DS)
  - ODI > 58
  - VAS > 7
  - History of prior surgery
  - History of depression
Who is the Ideal Psychological Candidate for Surgery?

- No Depression
  - Not actively taking anti-depressant
- Low anxiety
- Reported pain not too high on VAS
  - 7 to 8
- ODI or other measures of function not too limited (<60)
- Minimal number of prior surgeries

Ideal Screening Questionnaire for Psych Distress

- Low number of questions
- Accurate
- Predictive
- Spine Surgeons Surgical Psych Questionnaire (SSPQ-1)
SSPQ-1
Do You Feel Lucky?

• Yes!
• Reflects optimism and empowerment
• The “Right Stuff” to get through potential complications, recovery, and still feel improved... and satisfied!

Thank You

Red Rock Mountains, Las Vegas
Evaluated Good and Poor outcomes following decompressive surgery

- 76% Good
- 24% Poor

Only predictor for poor outcomes FABQ-PA, Fear avoidance –Physical activity