Making Adult Spinal Deformity Surgery Sustainable In the Era of Healthcare Reform

UCSF Techniques in Complex Spine Surgery 2015

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• Orthofix- consultant, speakers bureau
• Nuvasive-consultant, speakers bureau
• K2M-consultant, speakers bureau
• Medtronic- consultant, speakers bureau
• Stryker-consultant, speakers bureau
Making Spinal Deformity Surgery Sustainable

SRS Half Day Course, Oct 1 2015, Minneapolis

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The payor perspective
The Problem for Healthcare Purchasers
Lack of transparency, predictability and accountability

When purchasing healthcare, both quality and price are under the table.

An avalanche of unnecessary medical care is harming patients physically and financially.

- Atul Gawande,
New Yorker, May 11, 2015
The Problem for Healthcare Purchasers
Lack of transparency, predictability and accountability

... the occurrence of surgical complications was associated with higher hospital contribution margins.
-Eappen, et al, JAMA, April 17, 2013

Surgeons and hospital should drive reform!
Since we aren’t driving reform, guess who is?

State hospital comparison, WA

<table>
<thead>
<tr>
<th>Admitting Hospital</th>
<th>How do rates of readmission for any reason vary by admitting hospital</th>
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<tbody>
<tr>
<td></td>
<td>Using a standardized score that calculates observed versus expected rate, taking into consideration sample size, hospital volume, and severity of illness. The hospital with the highest readmission rate is highlighted in yellow.</td>
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PS Region Summary:
- **Admissions**: 14,706
- **Observed readmission rate**: 9.2%
- **Expected readmission rate**: 6.24%
- **% of Admits with an outpatient visit within 30 days**: 76.3%
- **% of Admits with an outpatient visit within 30 days of initial admission**: 70.9%

State Summary:
- **Admissions**: 15,450
- **Observed readmission rate**: 6.6%
- **Expected readmission rate**: 6.34%
- **% of Admits with an outpatient visit within 30 days**: 65.1%
- **% of Admits with an outpatient visit within 30 days of initial admission**: 53.4%

**Hospital 1000**
- **2nd Quarter**: 537
- **3rd Quarter**: 537
- **4th Quarter**: 252
- **5th Quarter**: 532
- **6th Quarter**: 532
- **7th Quarter**: 532
- **8th Quarter**: 532
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**Hospital 1001**
- **2nd Quarter**: 532
- **3rd Quarter**: 532
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**Hospital 1002**
- **2nd Quarter**: 532
- **3rd Quarter**: 532
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**Hospital 1003**
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- **3rd Quarter**: 532
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**Hospital 1004**
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**Hospital 1005**
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**Hospital 1006**
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**Hospital 1007**
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**Hospital 1008**
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**Hospital 1009**
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**Hospital 1010**
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**Hospital 1011**
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**Hospital 1012**
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**Hospital 1017**
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Admission rates within 30 days are calculated using the CMS HEDIS 2013 30-Day All-Cause Readmissions specifications. Based on Washington Health Alliance databases of hospital inpatient discharges from January 1, 2013, June 2014.
Strategies for a center of excellence in spine surgery

- Multidisciplinary care model for choosing the best patients and mitigating risk
- Knowing when to say “NO”
- Building a “complex spine team” that consists of “complex spine” specific anesthesia and medicine
- Two attending surgeons for 3 column osteotomies

Transforming Healthcare, Eliminate Variability, Enfranchise Safety
Standard Work

"Without standards, there can be no improvement."

– Taiichi Ohno
Founder of the Toyota Production System

In your center, are there 5 different standards on choosing an operative patient?

Building cars?

When you fly an airplane or buy a car, you expect SAFETY
The Virginia Mason Quality Equation:

\[ Q = A \times \left( \frac{O + S}{W} \right) \]

**Q:** Quality  
**A:** Appropriateness  
**O:** Outcomes  
**S:** Service  
**W:** Waste
Eliminates provider variability
Appropriateness criteria for all surgeons
Transparency
Multidisciplinary
Best practices
3 fold improvement in the worst complications
How the Seattle Spine Team Approach is born and made standard work?

Requirements for Transformation

Technical & Human Dimensions of Change

Sense of Urgency

Visible & Committed Leadership

Aligned Expectations

Shared Vision

Spine surgery in America today!
Standardizing Care for High-Risk Patients in Spine Surgery
The Northwestern High-Risk Spine Protocol

- Dedicated spine physicians representing multiple specialties
- Working in teams
- Standardization of pre, during and post phases

The true incidence of intra and postoperative complications is greatly underestimated due to the lack of prospective data collection
Debate: Degenerative Scoliosis
To Operate or Not to Operate

Behrooz A. Akbarnia, MD,* James W. Ogilvie, MD,† and K. W. Hammerberg, MD‡

- Major surgical complications 56%-75%
- Unplanned reoperation rates 18-58%
- Unproven benefits regarding improvement of HRQOL

Is adult spinal deformity surgery sustainable from the payor perspective in 2015

- Risk of pulmonary or cardiac complications is significant

- Increased LOS, cost to patient and society, compromised outcomes

- Our spine procedures are getting more complex (revision, # levels, age of patient)

- Can we minimize the risk of complications with preop or perioperative optimization?
“Not enough cerebral time spent before surgery”

• Live preop evaluation
  – Pulmonary
  – Cardiac
  – Nutritional
  – Psychologic, all patients need eval before surgery
  – Social, preop complex spine class for patients
• Preparation for surgery

• Ted Wagner MD, UW

The Seattle multidisciplinary live conference

From 2010-2015, 1100 patients discussed, all with proposed complex spinal surgical procedures

In attendance: Neurosurgery, Ortho Spine, Medicine, Complex Spine Anesthesia, Physiatry-Rehab, Psychiatry, Nurses, PAs, Research staff, visiting healthcare providers
IMAST COPENHAGEN 2011: A multidisciplinary preoperative adult spinal deformity conference leads to a significant rejection rate

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Complex spine protocol

- All adult spinal deformity patients get presented at least 6-8 weeks prior to surgery.
- Committee consists of orthopaedic spinal surgeons, neurosurgeons, internal medicine, physiatry, and anesthesia.
- We have an approximate 25% no go rate based on this conference, usually anesthesia and medicine issues. This NO GO RATE IS INCREASING IN 2013 AND 2014.
- THIS IS STANDARD WORK. YOU CANNOT GO FORWARD WITH SURGERY UNTIL THE CASE HAS BEEN PRESENTED AT THE MULTIDISCIPLINARY CONFERENCE.
All deformity patients get:

• DEXA Scanning. Hesitant to operate if T<-2.5, consider Forteo, endocrine consult, etc first
• Neuropsych testing: Green-yellow-orange-red (ORANGES AND REDS DO NOT GO TO SURGERY)
• Formal 2.5 hr class on the rehab associated with complex spine surgery
• Live presentation in front of the conference
• Every member of the conference gets an equal vote as to the suitability of the case—REMOVE PERVERSE ECONOMIC INCENTIVES!!

All patients get formal neuropsych evals

• Comorbid psychological conditions in at least 50 percent of spine patients
• History of opiate medication use addressed
• Home situation addressed
• Social support addressed
• Does the patient actually understand the risk after the 2.5 hr spine class
• Does the surgeon have time to do this on his/her own? Does “Send them to the internist” get this done
Surgical rate for adult scoliosis 2008-2012 amongst 870,000 GH-Medicare enrollees in Pacific Northwest USA, “JUST SAY NO”

Sethi, Wernli, Andersen, et al, IMAST 2014, Submitted Health Svcs Research

On teams.....

- A complex spine anesthesia team is defined
- No begging and pleading for TXA, FFP, etc
- The same anesthesiologists evaluate the patients at a live multidisciplinary conference
2 attending surgeons?

- Cardiac surgery position statement recommends two surgeons
- “A minimum of two qualified cardiac surgeons is required”
- “Complex operating room environment“ requires teams

http://www.facs.org/fellows_info/guidelines/cardiac.html

2 attending spine surgeons?

- WRVU culture, “quantity over quality”
- Run 2 rooms, benefits the residents and fellows, really???, what if this was your mom or dad?
- Perverse healthcare economics where hospitals enfranchise more implant heavy spinal fusion surgery
So how does this dual surgeon thing work??

1. Find a buddy
2. Work together putting the patient at the top of the pyramid
3. Realize that your stress is significantly improved and complex spine surgery can be an enjoyable endeavor for the surgeon
4. Study your outcomes and present/publish them so that your administrators and payors make working together easy from the $$ standpoint.
Bundles and spine surgery
Selected elements of each component

- Document disability despite conservative care
  Oswestry Index; collaborative team consultation
- Ensure fitness for surgery
  13 safety standards; shared decision-making
- Provide elements of high quality surgery
  6 standards including SCIP guidelines
- Facilitate rapid return to function
  Measure patient-reported functional outcomes

Warranty provision of bundle
No additional payment for avoidable readmissions

1. Seven-day window of accountability
   a. Acute myocardial infarction
   b. Pneumonia
   c. Sepsis
2. Thirty-day window of accountability
   a. Surgical site bleeding
   b. Wound infection
   c. Pulmonary embolism
   d. Death
3. Ninety-day window of accountability
   a. Mechanical complication related to surgery
   b. Infection of implant
Coming over the horizon
More transparency, predictability and accountability

1. Obligatory participation in bundles
   CMS bundle for total joint replacement
2. Credentialing surgeons by complication rate
   Bree Collaborative bundle for CABG
3. Complication rates of surgeons on-line
   ProPublica web site open to public

High Value Healthcare Collaborative
In conclusion, we have to do better

- Choosing patients better, we can’t fix everything, we have to say “NO” much more than we currently do
- Remove perverse fee for service incentives, e.g. empower the team AND the surgeon.
- Reward centers who do it better and standardize care, this is already happening
- Surgeons lead the efforts, not administrators or outside parties

This a life changing intervention!

58 yo female D, LL-PI++, PT++, SVA++  Preop PI-LL=45 degrees, SVA-9 cm+, L3  PSO
Let's improve the sustainability of operations for the sake of our patients!

Thank you

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