Quality and Value in Orthopedics:
2014 Update for the Limb Lengthening and Reconstruction Society

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Disclosures

• Governance:
  – American Academy of Orthopedics Surgeons
    • Council on Research and Quality
    • Evidence Based Quality and Value Committee
  – Pediatric Orthopedic Society of North America
    • Board of Directors
    • Quality, Safety, Value Committee
  – Scoliosis Research Society
    • Program Chair

• Financial:
  – Stock owner: Abbott, GE, Hospira, Abbvie
Why the Push for Value?

• Professional, Press, Politicians are focused on the unsustainable growth of healthcare costs
• The US spends more than any other country on healthcare, and the costs are increasing

![U.S. Healthcare Costs Per Capita](chart)

*Source: Centers for Medicare and Medicaid Services*
Costs are Still Increasing Despite Passage of the Patient Protection and Affordable Care Act


- Total
- Hospital
- Physician
- Drugs

Enactment of “most” of the Affordable Care Act
The Increases have Outstripped Earnings Lowering Wages & Profits

Milliman Medical Index
(Annual Cost for Family of 4 w/ PPO Coverage)

- 2002: $9,235
- 2003: $10,168
- 2004: $11,192
- 2005: $12,214
- 2006: $13,382
- 2007: $14,500
- 2008: $15,609
- 2009: $16,771
- 2010: $18,074
- 2011: $19,393
- 2012: $20,728
- 2013: $22,030
Evidence Indicates All Our Spending Doesn’t Make Us Healthier

Healthcare Spending per capita vs. Average Life Expectancy Among OECD Countries

- USA
- Japan
- S. Korea
- Mexico
- Hungary

Total Expenditure on Health per capita in USD

Average Life Expectancy at Birth (Years)
While Physicians are Not the Largest Cost, We are Considered the Major Cost Drivers
Fee for Service is Blamed for Many Ills

• Payment for work level and risk
• No difference whether:
  – Service is warranted
  – Low or high quality
  – The treatment is effective
Another Large Expense: New Technology without Evidence of Improved Outcomes
Scoliosis Care Costs without significant improvement in outcomes (SRS scores)
That Which Cannot Go on Forever Must Come to an End

• Options:
  – Decrease the cost of healthcare
  – Redirect resources to healthcare from other priorities
  – Make care more cost effective
The Choice is Ours…

“The first, critical step (in healthcare reform) is physician leadership” - Mark McClellan, MD, PhD, testimony to Senate Finance Committee, May, 2010

• Either we find ways to stretch our healthcare dollars by improving quality and eliminating waste, or…

• Cost containment will be imposed on us by limiting access and cutting provider reimbursement
Is Healthcare the Product Needed?

- Companies, the Government and the Public are now asking:
  - Are we getting what we want for our dollars?
  - Does paying for **healthcare** buy us better **health**?
  - Do our expenditures make our company/constituents/family better off?
  - Can’t we guarantee good results?
Porter’s Critique: Lack of Competition Based on Value

• Today’s competition in health care is not aligned with value:

Financial success of system participants ≠ Patient Success

• Patient choice and competition for patients are powerful forces to encourage continuous improvement in value and restructuring of care

• Creating positive-sum competition on value is fundamental to health care reform
Why Value?

- Cost reduction, without regard to the outcomes achieved, is dangerous and self-defeating, leading to false “savings” and potentially limiting effective care.

- A focus on value, not just costs, avoids the fallacy of limiting treatments that are discretionary or expensive but truly effective.

What Do the Players Want?

- Patients – good health + money for other things
- Employers – an excellent workforce + money for other priorities
- Insurers – the ability to get policies + profits
- Providers – excellent patient care + income
- Government – pleased constituents + money for other priorities

Value can provide each of these, but the current pay for volume works against aligning these incentives
The New Mantra - Create Value

Value = Quality - Cost

- To Improve Value, you need to measure both Quality and Cost
- To Compete on Value, quality and cost information must be available to outsiders
Payors Are Already Changing the Game

• Bundled Payments
• Reference Pricing
• Employer Selection of National, High Quality Providers
• Physician Value-Based Modifier
• Value Based Purchasing
Bundled Payments

Total Knee Replacement Surgery

Multiple Insurance Payments
1. Consultation $200
2. Anesthesia $1,259
3. Surgery $3,500
4. Implants $4,500
5. Physical Therapy $925
6. OR, Recovery Rm, Hospital $16,000

Total $26,384

Bundled Payment
Total: $26,384
## Hospital Prices for TJA Before and After Reference Pricing at CalPERS

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<tr>
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<th>Pre-Implementation</th>
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<tr>
<td>Member Obligation</td>
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</table>
Prefer to Providers with High Quality

Free Cardiac And Spine Surgey
For Walmart Employees At
Six Hospitals

Los Angeles Times | BUSINESS
Companies go surgery shopping
Employers are sending workers on all-expenses-paid trips to top-performing hospitals that agree to low, fixed rates for surgery.
By Chad Terhune, Los Angeles Times

Boeing, Cleveland Clinic strike
bundled-payment deal
Cleveland Clinic has similar deals with six other companies
Physician Value-Based Modifier

- Clinical care
- Patient experience
- Population/Community Health
- Patient safety
- Care coordination
- Efficiency

- Quality of Care Composite
- Total per capita costs
- Per capita costs for beneficiaries with specific conditions

- Cost Composite
- Value Modifier Score
Value Based Purchasing is a Concept

• Use information on:
  – The quality of health care
    • including patient outcomes and health status
  – Cost outlays going towards health

• To reduce inappropriate care

• And identify and reward the best-performing providers.
What can physicians do?

- Understand payment models and prepare for them
- Measure and know your costs
  - Most of us do not even know our costs
  - You must know your costs before you can eliminate unnecessary ones
- Measure and Improve your Outcomes
  - Improve process and minimize complications
  - Know your outcomes
  - Identify and use the most effective treatments
Costs – The Easier Part

• Identify the cost of the entire process of care
• Direct Costs
  – Physician/Imaging/Labs
  – Hospital
  – Therapies
  – Medications
  – Revisions
  – Complications
• Physicians and hospitals have parts of this data
• Insurers have broader information and could potentially work with providers to delineate costs
Newer Tools: Time-driven Activity-based Costing (TDABC)

**PROCESS MAP FOR INITIAL OFFICE VISIT**

- Patient Check In
  - Patient checks in
  - Patient fills out paperwork
- Waiting Room
  - Patient assessment performed
- Exam Room
  - Take X-rays
- X-Ray Room
  - Bring patient to education room
- Education Room
  - Patient checks out

**ACCUMULATE COSTS ACROSS A PATIENT’S COMPLETE CARE CYCLE**

<table>
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<tr>
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<th>Minutes</th>
<th>Cost/minute</th>
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<tr>
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**Total Cost:** $266.08

**Surgical Procedure**

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<td>Anesthesiologist</td>
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<tr>
<td>RN*</td>
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<td>Technician</td>
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<td>Operating Room</td>
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**Total Cost:** $1752.15

**Follow-Up or Postoperative Visit**

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<td>CA*</td>
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<tr>
<td>ASR*</td>
<td>$X_4$</td>
<td>$Y_4$</td>
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**Total Cost:** $73.66

*RN = Registered Nurse; CA = Clinical Assistant; ASR = Ambulatory Service Representative*

**Source:** Meg Abbott, MD, and John Meara, MD, Boston Children’s Hospital.
Indirect Costs - Harder

- Lost wages
- Lost productivity
- Disability payments
- Childcare
- Transportation
- Etc.

• Employers have access to much of this data
• Providers and Insurers do not
Institute of Medicine’s goals for the health care delivery system

STEEEEP:

- Safe
- Timely
- Effective
- Efficient
- Equitable
- Patient-centered
Quality – How should we define it?

• Quality outcomes are defined by what matters to the patient and society

• This is an opportunity for specialty societies to:
  – Determine proper outcomes instruments
  – Identify best diagnostics and treatments
  – Providing the information to members
Example – 12 y.o. girl undergoing a left 6cm femoral lengthening

**Costs:**
- Imaging
- Implants
- Hospital and anesthesia
- Readmissions
- Medications
- Physical therapy
- Clothing modifications
- Transportation
- Time family misses work
- School district costs for tutor

**Outcomes:**
- Patient and Parent Satisfaction
- Ability to participate in activities
- Pain
- Need for future procedures
- Activity limitations
- Home/school/work difficulties from the procedure
- Appearance
- Improved ability to work in the future
Good Process is NOT the same as good quality
- but it can help you get there

- SCIP measures
- HEDIS
- Following Clinical Practice Guidelines or Appropriate Use Criteria
- Checklists
Developing Good Processes - Become Aware of the PDSA Cycle

A powerful very labor intensive method of improving care
The Problem with PDSA in Orthopedics

- You need good data
  - What are you measuring?
- Statistical change often requires larger numbers than organizations have
- Assuming process change equals quality improvement
- Rapid cycle PDSA is limited in orthopedic care to short term, easily measured, locally acquired processes.
Improve Process and Minimize Complications

• You must track problems to improve them:
• NSQIP – a currently available tool
  – ACS
  – National Surgical Quality Improvement Program
  – Excellent for specific orthopedic procedures and early complication rates
Follow Clinical Practice Guidelines and Appropriate Use Criteria

• Evidence-based CPGs tell us if a procedure or service works
• AUCs specify when or on whom it’s appropriate to perform that procedure or service
<table>
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<th>CPGs</th>
<th>AUCs</th>
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<tr>
<td>• Treatment of Osteoarthritis of the Knee</td>
<td>• Distal Radius Fractures</td>
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<tr>
<td>• Prevention of Implant Infection in Patients Undergoing Dental Procedures</td>
<td>• Full-Thickness Rotator Cuff Tears</td>
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<tr>
<td>• Preventing VTE in TH/ATKA</td>
<td>• Osteoarthritis of the Knee</td>
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<tr>
<td>• Pediatric Supracondylar Humerus Fractures</td>
<td>• Pediatric Supracondylar Humerus Fx</td>
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<td>• OCD of the Knee</td>
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<td>• Management of Rotator Cuff Problems</td>
<td>• ACL Injury</td>
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<td>• Osteoporotic Spinal Compression Fx</td>
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<tr>
<td>• Diagnosis of Periprosthetic Joint Infections</td>
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<tr>
<td>• Acute Achilles Tendon Rupture</td>
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</tr>
<tr>
<td>• Distal Radius Fractures</td>
<td></td>
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<tr>
<td>• Glenohumeral Joint Osteoarthritis</td>
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<tr>
<td>• Pediatric Diaphyseal Femur Fractures</td>
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<tr>
<td>• Treatment of Carpal Tunnel Syndrome</td>
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<td>• Diagnosis of Carpal Tunnel Syndrome</td>
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<td>• DDH</td>
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<td>• ACL Injury</td>
<td></td>
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<tr>
<td>• Hip Fx</td>
<td></td>
</tr>
<tr>
<td>• Knee Arthroplasty</td>
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# AAOS AUC Mobile App

## Indication Profile

**Symptom Severity**
- Mild Symptoms
- Moderate Symptoms
- Severe Symptoms

**American Society of Anesthesiologists (ASA) Status (comorbidities)**
- ASA 1
- ASA 2
- ASA 3

**Identifiable Factors that Negatively Affect Healing**
- Present
- Absent

**Identifiable Factors that Negatively Affect Outcome**
- Present
- Absent

**Tear Size and Retraction: Southern California Orthopaedic Institute (SCOI) Classification (Snyder Classification)**
- C1: Small, complete tear
- C2: Moderate tear
- C3: Large, complete tear
- C4: Massive rotator cuff tear

**Atrophy/Fatty Infiltration**
- G 0-2
- G 3-4

**Response to Previous Treatment**
- Response
- No Response

## Treatment Recommendations

- **Repair**
- **Non-Operative**
- **Partial Repair and/or Debridement**
- **Reconstruct**
- **Arthroplasty**

[Submit]
Checklists

- Have potential to put evidence into clinician’s hands at the bedside
- Require commitment to actually make them work
- Difficulties with many current EMRs
How Do We Improve Outcomes?

• Use the best evidence available in deciding on diagnostic or therapeutic options.
• We need to measure outcomes before we can improve them.
• What should we measure?
  – Ideally, results that matter to patients
  – Patient Related Outcomes Measures (PROM)
Shared Decision Making Tools

Should I Take Antibiotics Before My Dental Procedure?

Introduction
You have an orthopedic implant (joint replacement, metal plates or rods, etc.) from a previous orthopaedic surgery.
- A potential complication of these implants is bacterial infection, which occurs in approximately 1-3% of patients. These infections require more surgery as well as antibiotic usage for an extended period of time. Most infections occur around the time of the procedure (within one year), but some have occurred much later.
- In theory, late implant infections are caused by the spread of the bacteria from the blood stream to the implant. Unfortunately, there is no clear scientific evidence to support this theory. We know that many patients with orthopedic implants frequently have bacteria in their blood that does not spread to their implants.

• Can help patients identify which outcomes, and therefore which treatments are most important to themselves.
Which PROM should you use?

- AAOS MODEMS?
- SF36?, Oswestry, PedQL
- POSNA?, GMF
- Oxford?
- PROMIS (Patient Reported Outcomes Measurement Information Systems)
  - CAT format makes administration easy
  - NIH is vested in its success
  - Adult physical activity is developed
  - Pediatric physical activity is in development
CER - Comparative Effectiveness Research

- As part of the Economic Stimulus Package, AHRQ charged with developing CER

- PPACA - 2$/person fee on insurance companies to fund PCORI (Patient Centered Outcomes Research Institute).

- The evidence is generated from studies that compare drugs, medical devices, tests, surgeries or ways to deliver health care.
Why CER?

• Recognizes importance of patient centered outcomes.

• CER provides opportunity for quality, non-randomized studies to receive substantial financial support.
Registries as part of CER

- Registries are potentially more generalizable than RCTs
- Can accommodate a much larger range of treatments.
- It can incorporate new technologies
Combining PDSA Cycle with Clinical Pathways - SCAMPs

“Evidence” Based Standard Assessment & Management

Knowledge or Innovation Based Deviation

Predicted Outcome

Unexpected Outcome

Unnecessary Resource Utilization

Selected Information Captured In All Categories

Data analysis and frequent (q 6 month) literature review allows for SCAMP modification and improvement
Value cannot be a passing fad

• The rising costs are forcing changes
• Payors are changing how they work to drive down costs and create happy customers
• Learning the tools to identifying the best care and improving processes will put you ahead of the curve.
• We need to understand costs of the entire process of care
• We need to know our patient outcomes
• Failure to respond is our own peril
• Providing excellent care is what drives most physicians.

• In a value focused system, volume and income should follow promoted high quality care at a lower cost.

• It’s important to be at the table rather than being the dinner.