Shifting from Volume to Value: Opportunities and Challenges for the Field of Orthopaedic Surgery

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- American Association of Hip and Knee Surgery (Health Policy, EBPC)
- Orthopaedic Research and Education Foundation (Board of Trustees)
- American Joint Replacement Registry (Board of Directors)
In Our Nation: A Tale of Healthcare

“It is the best of times…”

Unprecedented advances in medical technology, treatments, and pharmaceuticals can improve population health.

Key Challenges in U.S. Health Care System

“It is the worst of times…”

The state of public health, unsustainable health care costs, the quality of medical care delivered and access to services challenge clinical care and overall health.

Unsustainable Cost

- 20% of GDP by 2021
- $700B waste across U.S. system
- 2x cost for care, various facets mentioned.

Variation in Quality

- 45% care inconsistent with recommended guidelines
- $210B unnecessary services
- 3x variation in hospital days in last 6 months of life

Lack of Coordination

- 19.6% Medicare hospital readmissions
- $45B annual costs for avoidable complications
- $91B redundant administrative practices
- 20% of GDP by 2021
Problems with US Healthcare System

- Emphasis on health care, not health
- Fragmented delivery, payment systems
- Medical error/defensive medicine
- ‘Medical arms race’
- Moral hazard

Lack of Competition Based on Value

- Patient choice and competition for patients are powerful forces to encourage continuous improvement in value and restructuring of care
- Today’s competition in health care is not aligned with value

Financial success of System participants ≠ Patient success

- Creating positive-sum competition on value is fundamental to health care reform

Primary Goal: Improve Value

Value = \frac{Outcome}{Cost}

“Value in health care must be around the patient, not around the system.”

Outcomes: Quality, safety, convenience, etc.

Slide courtesy of Michael Porter, PhD

ZAGAT SURVEY

Primary Goal: Improve Value
Empower stakeholders with better information

- Tools for efficient, real-time data capture
- Transparency of cost, quality
- Actionable, easy to understand/use, risk adjusted

Reorganize delivery, payment system around patient-centered value (not volume)

- Align stakeholder incentives around value
- Increased accountability for providers, patients

Leadership from the medical profession

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<table>
<thead>
<tr>
<th>Improving the Value of Information and Communication Technologies in Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Needs</strong></td>
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<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>EHRs</td>
</tr>
<tr>
<td>- A universal programming interface</td>
</tr>
<tr>
<td>- Universal patient identifiers</td>
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<tr>
<td>- Improved documentation, data analysis</td>
</tr>
<tr>
<td>HIEs</td>
</tr>
<tr>
<td>- Federates for sustainability</td>
</tr>
<tr>
<td>- Support from HIE vendors, targeting sharing of HIE data</td>
</tr>
<tr>
<td>Patient Portals</td>
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<tr>
<td>- Patient being brought into the EHR with better design and training</td>
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<tr>
<td>- Greater provider engagement</td>
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<tr>
<td>- Leverage HIEs</td>
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<tr>
<td>Telemedicine</td>
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<tr>
<td>- Sustainable payment models</td>
</tr>
<tr>
<td>- Clear rules of engagement</td>
</tr>
<tr>
<td>Social Media</td>
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<tr>
<td>- Consensus on rules of engagement for providers</td>
</tr>
<tr>
<td>- Better data mining tools</td>
</tr>
<tr>
<td>Mobile and Wearable Devices</td>
</tr>
<tr>
<td>- A universal programming interface</td>
</tr>
<tr>
<td>- Improved infrastructure</td>
</tr>
<tr>
<td>- More rigorous research</td>
</tr>
<tr>
<td>- Integration with EHRs and HIEs</td>
</tr>
<tr>
<td>Patient Access and Data</td>
</tr>
<tr>
<td>- Updates to match current technologies</td>
</tr>
<tr>
<td>- Sharing of information on breaches and standardization of best practices</td>
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Empowering Patients to be Better Consumers

“Give the consumers money. Give them information so they’re smart shoppers. Enable transparency, and get out of the way.”

- Regina Herzlinger, PhD

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Measuring Quality in Healthcare

- Not a new concept
- Renewed interest in quality
- Controversial
- Sources of data
- Methodological issues
- Accessibility, relevance, accuracy, and actionability of information

"Every patient should be followed up "long enough to determine whether the treatment has been successful, and then to inquire 'if not, why not?' with a view to preventing similar failures..."

- Ernest Codman, MD (1934)
“More needs to be done to streamline and harmonize quality metrics. There is far too much variability in the large array of quality metrics being promoted by multiple payers, both commercial and public…Many of these metrics are not validated, nor is there accuracy in the data being reported back to physicians.”

Who Will Define ‘Quality’ in Healthcare?

*Sinaiko and Rosenthal, AJMC, 2010

Quality Measurement Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Characteristics</th>
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<tbody>
<tr>
<td>Structural</td>
<td>Adoption of EMR (e.g., Meaningful Use)</td>
</tr>
<tr>
<td></td>
<td>- Easy to define</td>
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<tr>
<td></td>
<td>- Difficult to manipulate</td>
</tr>
<tr>
<td></td>
<td>- Correlation with quality, outcomes?</td>
</tr>
<tr>
<td>Process</td>
<td>SCIP measures (e.g., AHA, JVT prophylaxis)</td>
</tr>
<tr>
<td></td>
<td>- Easy to define</td>
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<tr>
<td></td>
<td>- Actionable</td>
</tr>
<tr>
<td></td>
<td>- Allow feedback</td>
</tr>
<tr>
<td></td>
<td>- Clinical relevance</td>
</tr>
<tr>
<td></td>
<td>- Correlation with quality, outcomes?</td>
</tr>
<tr>
<td>Patient Experience</td>
<td>HCAHPS, Press Ganey</td>
</tr>
<tr>
<td></td>
<td>- Patient-focused</td>
</tr>
<tr>
<td></td>
<td>- Influenced by patient expectations and engagement</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Utilization of services, LOS, Easy to measure</td>
</tr>
<tr>
<td></td>
<td>- Correlation with quality?</td>
</tr>
<tr>
<td>Outcome</td>
<td>Complications (e.g., infection, readmissions, reoperations)</td>
</tr>
<tr>
<td></td>
<td>- Best measure of quality</td>
</tr>
<tr>
<td></td>
<td>- Difficult to measure</td>
</tr>
<tr>
<td></td>
<td>- Risk adjustment</td>
</tr>
<tr>
<td></td>
<td>- Limited feedback</td>
</tr>
<tr>
<td></td>
<td>- Lag time</td>
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Johnston et al., 2013, Patient-reported outcomes in meta-analysis Part 1: assessing risk of bias and combining outcomes. Health and Quality of Life Outcomes.

Which Outcomes are Important to Measure?

Why Measure Outcomes?

Data Considerations

- Value, Clinical Relevance
- Feasibility of Measurement
Empowering Patients, Providers with Data

Recommendation #1
Define quality measures for your practice
• Focus on outcomes that matter to patients

Develop infrastructure to measure outcomes
• Clinical data registries

Use outcomes data for continuous quality improvement, public reporting, value-based payment
• Increase transparency of cost, outcomes

“The best competition I have is against myself to become better.
- John Wooden
Clinical condition: e.g., osteoarthritis, headache, back pain

Post-Acute: Outpatient

Inpatient

Patient Engagement

Attributes:
• Staffed by dedicated multidisciplinary team
• Joint accountability for outcomes and costs
• Shared information platform
• Single administrative & scheduling structure
• Services colocated to the extent possible

Primary Care Physicians
Hospitals
Outpatient Physiatrists
Orthopaedic Surgeons
Imaging Centers

Existing Model: Organize by Specialty and Discrete Service

Reorganizing the Delivery System Around Value

A "Personalized" Post-Acute Care Selection Tool

- Problem: Need to determine optimal choice of post-discharge setting and exact facility (for SNF and inpatient rehab) after TJR
- Solution: Algorithm to navigate patients to post-discharge facilities based on
  • Claims data
  • SNF Star Rating
  • Hospital Compare data
  • Census data

- Model predicts outcome and cost based on historic hospital's performance, neighboring post-acute care facilities performance, and patient clinical/demographic data
- Predicts outcomes and cost six times better than a generic risk-adjustment model

Source: Accordion Predictive Care Optimizer (APRICOT) by Accordion Health

Population Health Management: Appropriateness

Gastroenterologist specialist care is effective and cost-effective compared to care provided by generalists
Population Health Management: ‘Downstreaming’ Care

Population Health Management: Patient Engagement

Measures an individual’s propensity to engage in positive health behavior. - Skolasky et al (2013)

Patient Activation

Figure 1. The interdependencies of shared accountability in patient care management. Correlate quality improvement, and HEDIS, socioeconomic status.
Postoperative Findings

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>F-value</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Pain Relief</td>
<td>0.048</td>
<td>0.311</td>
</tr>
<tr>
<td>Better Symptom Relief</td>
<td>0.021</td>
<td>0.272</td>
</tr>
<tr>
<td>Higher Mental Health Scores</td>
<td>&lt;0.001</td>
<td>0.057</td>
</tr>
<tr>
<td>Higher Patient Satisfaction</td>
<td>0.023</td>
<td>0.048</td>
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Patient Engagement: Shared Decision Making

In SDM process both physician and patient make necessary contributions to the dialogue.

Patient contributes personal input of their tolerance for risk, preferences for lifestyle, and guiding values.

Physician provides expert clinical knowledge of conditions, treatment options and associated risks, benefits + limitations of evidence.

<table>
<thead>
<tr>
<th>Intervention vs control</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Knowledge</td>
<td>Higher</td>
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<tr>
<td>Decision stage</td>
<td>Further along in decision</td>
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<tr>
<td>Patient Satisfaction</td>
<td>Slightly higher (NS)</td>
</tr>
<tr>
<td>Surgeon Satisfaction</td>
<td>Higher</td>
</tr>
<tr>
<td>Consultation time</td>
<td>Slightly longer (NS)</td>
</tr>
<tr>
<td>Treatment decision</td>
<td>Predominantly surgery (NS)</td>
</tr>
<tr>
<td>Pre/Post Intervention</td>
<td>Higher</td>
</tr>
<tr>
<td>Patient confidence ask 7's</td>
<td>Higher</td>
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Recommendation #2

- Develop patient-centric, disease-based **Integrated Practice Units**
- Train, engage surgeons in population health management
  - Define *appropriateness* of diagnostic, therapeutic interventions
  - ‘Downstreaming’ care
- Implement *Patient Engagement*, Shared Decision Making, Patient Activation tools

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**Role of the Payment System in Improving Value**

- Bundled Payments
- Accountable Care Organizations
- Centers of Excellence
- Reference Pricing

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**Value-Based Payment**

Reduce/eliminate *non value-added* care

- Unnecessary care
- Inappropriate variation in care
- Avoidable complications,/readmissions/reoperations
- Excess cost due to variation in price

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*Source: Brandeis Analysis of 2012 CMS Data*
**Cost Variation in Hip and Knee Arthroplasty**

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<tbody>
<tr>
<td>107%</td>
<td>16%</td>
<td>46%</td>
<td>18%</td>
<td>151%</td>
<td>173%</td>
<td>173%</td>
<td>169%</td>
<td>151%</td>
<td>173%</td>
</tr>
</tbody>
</table>

For hip replacements, Austin is #18 in the nation in the cost differential ranking.

**Providers Bear More Risk**

**Principles for Successful Implementation of Value-Based Payment**

A Strategy for Successful Implementation of Bundled Payments in Orthopaedic Surgery

Kevin J. Bozic, MD, MBA
Lorrayne Ward, MBA, MPP
1. Assess Cultural, Operational Readiness

A. Risk tolerance
B. Data systems, Sharing
C. Trust, Alignment
D. Leadership

2. Identify Clinical, Administrative Champions

3. Define the Episode for which you Accept Risk

Knee Replacement Definition
Episode Time Windows

Further Pre Window
Close Pre Close Post Further Post Window
90 Days 30 Days 45 Days 90 Days 120 Days
Knee Replacement Surgery
4. Define Performance Metrics, Gainsharing Models

5. Understand Care From the Patient’s Perspective

6. Measure the Actual Costs of Care Delivery
7. Use Data to Identify Opportunities for Improvement

A) Evidence based vs. consensus

8. Redesign Care to Improve Quality, Reduce Cost

9. Price/Market Episode of Care Program
10. Evaluate Results, Iterate

Cost pressures are not going away
- Waste in the system (variability in cost, outcomes)
- Physicians are in the best position to identify waste, opportunities for improvement
- Opportunity to redesign care, improve value, but also share rewards
- Will require increased accountability, leadership, risk tolerance, access to data!

Result: Increased financial success for providers, value for patients

Why am I Bullish on Value-Based Payment Strategies?
- Cost pressures are not going away
- Waste in the system (variability in cost, outcomes)
- Physicians are in the best position to identify waste, opportunities for improvement
- Opportunity to redesign care, improve value, but also share rewards
- Will require increased accountability, leadership, risk tolerance, access to data!

US Health Expenditures: 1965-2020

Los Angeles Times

Employer Based Initiatives

Wal-Mart, Lowe's, PBGH form network for 'no-cost' knee/hip replacements

DIRECT TO EMPLOYER

New Breakthrough (Obamacare, PBO) Established

Healthcare Collaborative, 4 states, 100 hospitals, together, now on scale, programs
What Do We Have To Lose?

Fee-for-Service (RVU, DRG) System:
- Improved efficiency, decreased time = lower reimbursement
- No consideration of outcome, value

Value-based approaches

Fee-for-service

Provider Financial Performance

Recommendation #3

- Prepare for Payment System Transformation
  - More granular cost, outcomes measurement
  - Greater integration/alignment across providers
  - Experiment with new payment methodologies

The Choice is Ours…

“Medical care must be provided with the utmost efficiency. To do less is a disservice to those we treat, and an injustice to those we might have treated.”
- Sir William Osler

- Either we find ways to stretch our healthcare dollars by improving value, or...
- Cost containment will be imposed on us by limiting access and cutting provider reimbursement
Leadership Opportunity for Orthopaedics

“Control your own destiny or someone else will” – Jack Welch

How Will Value Transform Healthcare?

• Bundled Payments
• Gainsharing
• Accountable Care Organizations

Patient Engagement
• Cost sharing and value-based benefit design
• Shared decision making

Data Driven Decision Making
• Incentives for Outcomes Reporting
• Emphasis on PROMs
• RCTs
• Registries
• More efficient data capture

Transparency/Accountability
• Public Reporting of Costs, Quality
• Performance Based Payment
• Value Based Competition
• Conflict of interest disclosure and resolution

Value is Agnostic to Practice Setting
• Private practice
• Solo/small group
• Single specialty
• Hospital-based
• Multi-specialty group
• Integrated delivery network
• “Academic” practice
Are You Ready for Value-Based Healthcare?

- Focus on sustainable, patient-centric value creation
- Credible data!
  - Cost
  - Outcomes
- Well-defined goals, performance metrics
- Leadership!!

Thank You!!

The University of Texas at Austin
Dell Medical School

A Learning Health System

BEST CARE AT LOWER COST

"Americans would be better served by a more nimble health care system that is consistently reliable and that constantly, systematically, and seamlessly improves."

Clinical Care
- Continuous measure, iterate, and improve care delivery systems and outcomes
- Single mission: Improve Health and Healthcare

Research
- Teach health system improvement and engage learners in meaningful improvement work

Education