Session Objectives

- Describe the value and urgency of adding PROMs to the current set of clinical measures
- Provide examples of PROMs collection and utilization across a variety of conditions and across care segments and describe ways to integrate PROMs across service lines without interrupting patient flow or the timeliness of care
- Demonstrate how PROMs data can improve the value of care, guide clinical decision-making, and be aligned with emerging reimbursement requirements
Value

How do you measure the value of the patient care experience in your unit, department or organization?

IHI’s Work: Five Key Areas
Quality, Cost, and Value

Our Goal:
Encourage, empower, and enable health care delivery systems to provide truly value-based care that ensures the best health care. We strive to call out and address disparities in health and health care wherever they exist.

Workshop Objectives

1. Describe the value and urgency of adding Patient Reported Measures (PRMs) to the current set of clinical measures.
2. Introduce participants to examples of Patient Reported Measures (PRMs) collection and utilization across a variety of conditions and across care segments.
3. Demonstrate examples of Patient Reported Measures (PRMs) data improving the value of care and guiding clinical decision making.
4. Position participants to integrate PRMs across service lines without interrupting patient flow or delaying timeliness of care.
5. Move participants to align Patient Reported Measures (PRMs) work with emerging government regulations and population management initiatives.
Making the Case
Working Across Systems
Designing Workflow
Integrating into Clinical Decision Making

Kevin Little, PhD
Improvement Advisor, IHI

THE CASE FOR PATIENT REPORTED MEASURES
Value in Healthcare

Value = \frac{\text{Health outcomes}}{\text{Costs of delivering the outcomes}}

measures of pain and function are critical components of the health outcomes numerator

PRMs give the patient’s assessment of outcomes like pain and function; we combine these with traditional clinical data.

Improving Value

Value = \frac{\text{Health outcomes}}{\text{Costs of delivering the outcomes}}

<table>
<thead>
<tr>
<th>Cost of Delivering the Outcomes</th>
<th>Decrease</th>
<th>Stay the Same</th>
<th>Improve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases</td>
<td>decrease in value</td>
<td>decrease in value</td>
<td>?</td>
</tr>
<tr>
<td>Stays the Same</td>
<td>decrease in value</td>
<td>no change in value</td>
<td>Increase in value</td>
</tr>
<tr>
<td>Decreases</td>
<td>?</td>
<td>Increase in value</td>
<td>Increase in value</td>
</tr>
</tbody>
</table>
PRMs are key to Outcomes

Porter (2010) outlined three tiers of outcomes:
1. Health status achieved or retained
2. Process of Recovery from interventions/illness
3. Sustainability of Health

PROs typically inform Tiers 1 and 3

Types of PRM Instruments

Disease/Condition - specific health, e.g.
- Asthma Quality of Life Questionnaire
- WOMAC Osteoarthritis Index
- Kansas City Cardiomyopathy Questionnaire

Domain specific health, e.g.
- PROMIS Adult Fatigue, PROMIS Adult Social Support

Generic health, e.g.
- SF-36, VR-12, PROMIS-10, EQ-5D

Patient Experience, e.g.
- HCAHPS, CG-CAHPS, Canadian Patient Experiences Survey—Inpatient Care
PROMIS 10 Example, One Patient

Raw Score Global Physical Health: 15
T score: 47.7 with standard error 4.4
(U.S. general population average is 50, with standard deviation 10)

ICHOM

The International Consortium for Health Outcomes (ICHOM) applies Porter’s approach to value.

ICHOM develops standard sets of outcome measures, including PRMs, for a range of conditions, e.g.:  
- Lung Cancer  
- Depression and Anxiety  
- Cleft Lip and Palate  
- Advanced Prostate Cancer  
- Hip and Knee Osteoarthritis

More measure sets under development, see www.ichom.org
In the U.S., CMS is now emphasizing outcomes more than procedures

1. **Past**: CMS started patient experience reporting in 2007 (HCAHPS)
2. **Now**: more emphasis on health outcomes, reduced emphasis on procedure measures: in-patient and ambulatory settings.
3. **Soon**: hospitals will report patient-reported health status and outcomes from interventions.

---

Web summary for individual patient answering **EQ-5D**’s 5 questions and choosing a point on a 100 point health scale.

Information in context, relative to other people in a reference set matched to age and gender and country.

The ‘blockbuster drug of the century’ revealed in this issue!

The ‘drug’ is actually a concept…

- Patient engagement

What we would like healthcare to be…

“…a partnership among practitioners, patients and their families (when appropriate) to ensure that decisions reflect patients’ wants, needs and preferences and that patients have the education and support they need to make decisions and participate in their own care”
Organizational PRM Strategy

Key Considerations:
• How to decide what PRMS to collect across the system?
• How to build an infrastructure for use?
• Who to get on board and how to engage them?

Getting Started
• Solicit organizational buy-in and identify key stakeholders (including champions).
• Establish shared goals for PRMs/patient engagement.
• Inventory what, where, and how PRM data are currently being collected across your organization.
• Create a matrix, aligning similar measures (e.g., which measure(s) are being collected for quality of life).
• Look for commonality, opportunity for alignment, and gaps.
• Broker necessary agreements.
Outcomes That Matter to Patients

Tier 1
Health Status
Achieved or Retained

Survival
Degree of health/recovery

Tier 2
Process of Recovery

Time to recovery and return to normal activities
Disutility of the care or treatment process (e.g., diagnostic errors, ineffective care, and treatment-related discomfort)

Tier 3
Sustainability of Health

Sustainability of health/recovery and nature of recurrences
Long-term consequences of therapy (e.g., care-induced illnesses)

Mortality
Achieved clinical status
Achieved functional status
Care-related pain/discomfort
Complications
Reintervention/Readmission
Long-term clinical status
Long-term functional status
Long-term consequences of therapy

Source: Porter, Michael, "What is Value in Health Care?" New England Journal of Medicine, December 2010

Considerations for Moving Forward

- Are PRMs measuring what patients care about?
- Should we assess social determinants?
- Are the PRMs validated measures?
- Are the PRMS available in the public domain? If not, cost?
- Are translated versions available?
- What is the respondent burden?
- Do we need to address culture change?
- What is the method for data collection?
## PRM Collection

<table>
<thead>
<tr>
<th></th>
<th>Paper Interview</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantage</strong></td>
<td>Low cost</td>
<td>Efficient analysis</td>
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<td></td>
<td></td>
<td>Personal</td>
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<td></td>
<td>In depth</td>
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<td></td>
<td></td>
<td>Circumvents literacy</td>
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<tr>
<td></td>
<td></td>
<td>or visual handicap</td>
</tr>
<tr>
<td><strong>Disadvantage</strong></td>
<td>Data input req’d</td>
<td>Resource intensive</td>
</tr>
<tr>
<td></td>
<td>Missing data issues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonresponse issues</td>
<td></td>
</tr>
<tr>
<td><strong>In clinic</strong></td>
<td>Paper handout</td>
<td>In-person interview</td>
</tr>
<tr>
<td><strong>Outside clinic</strong></td>
<td>Paper mailing</td>
<td>Phone interview</td>
</tr>
</tbody>
</table>
Making the Case for a System Strategy

- Meaningful Use 3
- Medicare & Value-Based Purchasing
- Addressing the Root Cause of Quality Issues (e.g., avoidable readmissions, avoidable ED visits, “non-compliance”)
- Doing the right thing.

Kevin Little, PhD
Improvement Advisor, IHI

A LOOK AT WORKFLOW ISSUES
Clinical Use: Ideal State

- PRO data available on-demand to patient & provider in care-setting and on-line to look at current scores and trends (profiles), in context of "patients like me"
  
  *no lag between survey collection, score, and display*

- High Response rate (>90%) at multiple points across the care cycle

- Integrated with organization's EHR

Clinical Use: Our View

- All organizations should achieve the ideal.
- No organizations in a recent learning community could start from zero and achieve the ideal in 12 months.
- Recommendation: Keep the ideal in mind as you work in stages, thus reducing risks of dead-ends and costly rework.
Workflow questions: How will you...

1. Get Raw Data from Patients
   - initial (establish baseline)
   - follow-up (and promote high response rate)
2. Score/Transform Raw Data
3. Store patient records
4. Summarize individual patient score for individual patient
5. Summarize individual patient score for provider
6. Aggregate multiple patient scores for population management & QA/QI
7. Prepare reports for population management & QA/QI
Basic Choices

- Primary Technology: Paper, interview, digital?
  - Primary digital may still require interviews or paper for a small percent of your patients
  - You might start with paper and transition to digital
- Build your own tools or buy?
  - Patient Interface
  - Summary reporting for individual pts & QA/QI
  - Integration with EMR
  - Reporting to registries and regulators

Urban U.S. Hospital PRO Status

<table>
<thead>
<tr>
<th>PRO types collected</th>
<th>H/KOOS transitioned from WOMAC; SF-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures Tracked for Value Assessment</td>
<td>Pain, Function, Stiffness, overall health</td>
</tr>
<tr>
<td>Monthly Volume THA</td>
<td>~30</td>
</tr>
<tr>
<td>Monthly Volume TKA</td>
<td>~60</td>
</tr>
<tr>
<td>Manual or Automated Report?</td>
<td>Transitioning to 3rd party registry system &quot;now&quot;</td>
</tr>
</tbody>
</table>
Urban U.S. Hospital Example

• Standardized on 6 month and 12 month post-surgery follow-ups.
• 7 of 9 surgeons are employed by Hospital 3; rate of PRO pre-surgery use is now 80+% for these 7.
• On verge of launching data agreement with a registry service that will manage patient interface.

Hospital plans for good use of data

• Will link the registry patient ID to the Hospital Medical Record ID to allow extraction of patient descriptors--BMI, age, gender, …--so that patients do not need to enter such data on PRO forms.
• There is a weekly joints meeting that is the natural venue for summary data review (QA/QI).
Workflow Summary Points

• Provider needs to make the case to the patient that PROs will make a difference to care (K. Bozic)
  – key lever to increase response rates
• Staffing--whose job to manage data?
  – Orthopedic group 1 has 1 FTE to manage PROs for ~1000+ new patients per year (electronic system)
  – Orthopedic service 2 plans for 1 FTE triage nurse to handle 600+ new patients per year in 2015 (not fully electronic)
• Design survey collection for smooth visit flow (CHF clinic example: variation in survey times disrupted clinic flow--providers not happy)
• Future feature: Computer Adaptive Questioning to reduce burden on patients.
Patient-reported outcomes in TJR: Lessons learned for hospitals

David C. Ayers, MD
Patricia D. Franklin, MD MBA MPH

Department of Orthopedics and Physical Rehabilitation
UMass Medical School

Why PROs?

• Patients seek orthopedic care and interventions to
  • Relieve pain and
  • Improve function.
• Patients are the “experts” in pain and functional assessments--
  • Patient-reported outcome metrics.
Beyond technical success....patient experience

Satisfaction vs. PRO

• Patient experience is measured by satisfaction with the process of care. (interaction with clinicians; accommodations)

• Patient-reported outcomes measure patient experience with clinical outcome of the experience. (pain, function)
**SF36 (PROMIS)**

- **Physical Component (PCS)**
  - Physical Function
  - Bodily Pain
  - General Health

- **Mental Component (MCS)**
  - Mental Health
  - Role Emotional
  - Social Function
  - Vitality

**Condition-specific PROs**

**OA/TJR:**
- knee or hip pain and function tasks specific to the joint
- Examples:
  - WOMAC
  - HOOS/KOOS
    - Pain at rest, walking, climbing stairs
    - Difficulty getting in and out of car, descending stairs
PRO’s: The Future is Now

- Healthcare in the United States is moving from a volume-driven system to a value based reimbursement system.
- Value = Quality divided by Cost.
- Quality measured by PRO’s.
- PRO’s are the numerator of the value equation.

Exponential growth in TJR utilization: Outcome

- TJR procedures dramatically improve quality of life, relieve pain, improve function.
- Projected cost increase by 2015:
  - 340% to $17.4 billion for THR.
  - 450% to $40.8 billion for TKR.
- TJR procedures are #1 procedural cost in the Medicare budget.
- Patients under 65 years are fastest growing group of TJR patients.

Source: HCUP.net

©FORCE-TJR
How Can I Collect PRO’s in a Busy Practice?
Paper and Pencil and Manual Processes are not sustainable!

PRO’s Move Into Clinical Practice

• Pay for Performance Quality Reporting:
  Blue Cross of MA is currently paying hospitals a bonus for collection of pre-op and 9-12 month post-op PRO’s
• PRO data currently used for negotiations/discussions
Institute of Medicine: Vision for 21st Century

- Use information technology to support patient-centered, evidence-based decisions.

Collection of PRO Must Bring Value

- PRO must produce Value for visit
- Real time scoring
- CAT (IRT) enabled
- PRO data actionable for Shared Decision Making re: treatment decisions and results of previous treatment
- Part of routine clinical care
- Not “Research”
Integration PRO into Busy Practice

**Efficient** No Burden on Patient, Staff, Surgeon

**Home** (pre-visit); or Dedicated space outside waiting room

**Electronic** Collection; tablets, lap tops

Process of collecting and scoring PRO invisible to surgeons

Does not slow patient flow/into room/ room time/turnover

---

PRO’s Move into Clinical Practice

- Orthopaedic surgeon Reimbursement in US is increased by reporting PRO’s for TJR pts

- CMS: PQRS (Physician Quality Reporting System) voluntary MD reporting program that provides an incentive payment for satisfactory reporting data on quality measures furnished about Medicare patients

- Financial penalties have been scheduled for MD’s not participating in “voluntary PQRS reporting”
Pt. #2 Left TKR on 5/7/2012

Visits: 11-09; 11-10; 11-11; 3-12
Decrease in PCS 18 points to 33

Surgery: 5-2012

Post TKR: 10-23-12  5 months
Increase PCS 21 points to 54

Unusual Pain can reflect TJR Failure (before Revision)

• Metal on metal hip implants- early pain/disability was first sign of implant failure.
• New Zealand registry reported a 7 times greater revision rate among patients with increased pain at 12 months after TJR.
• FORCE-TJR data reporting both early pain and function (poor implant performance) and revision rates.
Pre and 6 month pain: primary THR
**Uniform pain relief**

Why a TJR registry? Link to PROs?

- Cardiac surgery (STS), renal transplant (UNOS), general surgery (NSQIP) all have national registries where risk-adjusted comparisons of your practice to national benchmarks are prepared and returned.
- Mortality, complications…. Not PROs.
- In contrast, TJR outcomes include pain relief and functional gain…. At 6-12 months!
- New challenges to hospital.
FORCE-TJR

MISSION
Independent, unbiased, expert data collection and reporting to guide best TJR surgical practices to assure patients achieve optimal pain relief and functional gain with minimal adverse events and implant failures.

Registry GOALS
• Establish national consortium of 120+ orthopedic surgeons representing all regions of the U.S. and varied hospital and patients.
• Track patients annually for decades.
• Complete data on ALL patients.
• Develop national norms.

A registry should complement office PRO collections
1. Compare your patients to national TJR patient mix
2. Compare your pre- and post-op PROs to RISK-ADJUSTED national norms
3. Compare your risk-adjusted outcomes: post-op events, revisions to national norms.
EMR limitation #1: Missing PRO data and TJR risk factors

- Need x-ray, physical exam, PLUS patient pain/function
  - Knee x-ray
    - Which EMR? Dictations vary?
    - Inconsistent metrics on OA severity
  - Physical exam/range of motion
    - Multiple dictation styles
    - Different formats in PCP, surgeon, PT
  - Not all medical and musculoskeletal comorbid conditions recorded
- OA severity not included in ICD codes

EMR limitation #2: No patient-reported outcomes

- Which EMR? Hospital? Surgeon? Long-term relationship is with surgeon
- Patients cannot enter data directly into EMR
  - (HIPPAA issues)
- Portals have uneven use in TJR patients
  - (mean age=66 years)
- EMR PRO capture from email: **20% post-op**
  (Source: Michigan and CA TJR registry- both use hospital-EMR email PRO)
EMR limitation #3: miss ER and readmissions at non-surgical hospital

*25% of all 30-day readmissions go to non-surgical hospital; Patient reports; Dx validated on chart
Follow patients regardless of where they seek care and if insurance changes.

FORCE-TJR registry avoids these limitations

1. Direct-to patient retention strategies—long term outcomes across residence/hospitals (WHI)
2. Patient Consent—no regulatory/HIPPA issues in releasing clinical data from multiple hospitals, doctor offices, long term outcomes
3. Patient Benefit- Engage to self-monitor own outcomes over time (not just for research)
   - 67% respond immediately at 6 and 12 months
   - 86% completion with additional reminders and calls (as need)
FORCE-TJR avoids EMR limitations (2)

Surgeon/Hospital Benefits:
4. Consistent PRO timing - direct to patient (at home; email/web and scannable paper);
   – Not dependent on clinical visit/schedule
   – Independent of patient location
5. Not limited by change in clinician (PCP or surgeon) or if revision surgeon is at different hospital

FORCE-TJR: National Outcome Benchmarks (PRO, readmission)

SITE SELECTION:
• 5 core high volume sites
• Random sample of surgeons billing CMS in 2009; Stratified by geographic region; Invited 250 to reach target (N=150)
• BENCHMARKS represent the US; intentional sample of sites.
### Executive Summary Quality Comparative Reports: 3 Questions

**Patient mix:**

1. How do my patients compare to patients at other sites on key risk-adjustment factors?

![BMI Chart](chart.png)
Surgeon Decisions

Patient Selection and Timing of TJR:

2 How do my patients compare to other sites on pre-TJR pain and function?

Patient Outcomes

TJR patient-reported outcomes:

3. How do my risk-adjusted 6 and 12 month pain and function compare to other sites?
FORCE-TJR registry: Data Use

• FORCE-TJR, as a CMS qualified Reporting Registry, can submit PQRS. Reporting in 2014 avoids the payment adjustment in 2016.

• In 2015, FORCE will be a Qualified Clinical Data Registry (QCDR), allowing for the submission of new quality measures, identified by FORCE and its members.

• US News and World Reports is acknowledging hospitals (and surgeons) who belong to FORCE-TJR.

Run Chart for 6 month POST-TKR Pain
IHI Improvement Collaborative

Site A 6 month post-op KOOS pain score TKR

©FORCE-TJR
**FORCE-TJR**: Comprehensive PROs, Post-Op Events, Revisions, Refined Risk Adjustment

### EXTERNAL DATA USES

1. Comparative reports to prepare for public reporting
2. Use of PROs for incentives, private insurer/ACO models
3. PQRS/CMS incentives, report to avoid payment adjustments

### Hospital DATA USES

1. Quality monitoring
   - Patient risk factors
   - Pre-op pain/function
   - 30 day readmissions
   - 90 day complications
   - Revisions
   - Post-op pain/function

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**PRO Summary**

- PRO’s have moved into Clinical Practice
- Transition from Volume based to Value based
- PRO’s measure the numerator in the Value Equation; important measure of quality and outcomes
- Join a PRO-based, PQRS-approved registry such as FORCE-TJR to facilitate PRO scoring and benchmarking for you
Contact information

- David.ayers@umassmemorial.org
- Patricia.franklin@umassmed.edu
- Force-tjr@umassmed.edu
- 855-993-6723 (855-99FORCE)

If your organization already uses PRMs…

1. Is there a business case or charter somewhere that explains why PROs are worth the effort?
2. If yes to item 1, does the business case or charter convince you that PRM’s are worth the effort?
3. If no to item 1, what points should your business case or charter include?
If your organization already uses PRM’s in one department or service line

1. Observe a patient answering the questions for an initial PRM survey.
   - How is the patient informed/requested to answer the questions?
   - How long does the process take?
   - How does technology (paper, digital, interview) help or hurt?
2. Repeat item 1 for four more patients. Any patterns?
3. Draft a value-stream map of PRM data acquisition (either for individual care planning or population management & QA/QI)
   - Describe the request to the patient and associated problems
   - Flow chart main steps from request to data display/use
   - Estimate time required and time delays between steps

If your organization is interested in PROs but has not started…

1. Try it yourself: Answer questions for a PRM instrument (e.g. PROMIS-10 or EQ-5D).
2. EMR check: Find out how your EMR will handle PRM data acquisition, scoring, display and sharing.
3. In the U.S.: Talk to your orthopedic group about getting started with PRM’s…CMS has plans!

Under contract to CMS, Yale-CORE is developing patient-reported outcome (PRO)-based hospital performance measure for patients undergoing total hip and knee arthroplasty (THA/TKA).
- Converted diverse Technical Expert Panel of orthopedic surgeons, nurses, and rehabilitation experts, purchasers, and patients to provide input on key decisions.
- Obtained general stakeholder input through interim public comment field in Spring 2014.
- THA/TKA PROM currently in development.

PRO-Based Measure Decisions to Date

- Include patients undergoing elective primary THA/TKA.
  - Intended for hospital-level CMS reporting programs.
- Collects generic and joint-specific non-proprietary PROMs.
  - PROMs-Gloval, VA-12, HOOS, KOOS.
  - Expert prioritized greater value of compliance information over fashion at this stage in measure development.
- Collect PROMs 90 days prior to and 270-365 days after THA/TKA.
  - Allows flexibility across clinicians while aligning with common clinical practice patterns.

Slide images to right from Dr. Patrick Conway, CMS CMO
ICHOM Conference 14 Nov 2014, Cambridge, MA
Questions & Discussion

Workshop Reference & Resources

- Broderick J E et al (2013) "Advances in Patient-Reported Outcomes: The NIH PROMIS® Measures", eGEMS, 1, 1, Article 12
  http://repository.academyhealth.org/cgi/viewcontent.cgi?article=1015&context=egems
- EDM Forum on PROs: Presentations and Summary at http://www.edm-forum.org/edmhome/publications/viewdocument/?DocumentKey=0745f102-1c34-4375-bc8a-8566b34f76c8
- Glossary on PRO Methods Group available at www.cochrane-pro-mg.org
- Health and Quality-of-Life Outcomes: The Role of Patient-Reported Measures
- Patient Reported Outcomes Measurement Group, Instrument Types
  http://phi.uhce.ox.ac.uk/inst_types.php  accessed 17 November 2014
- PROMIS Instruments http://www.nihpromis.org/measures/availableinstruments
- PROMIS scoring
- RAND Surveys & Tools. All free and available for public use.
  http://www.rand.org/health/surveys_tools.html#tools