



# Driving Outcomes

*Jens Deerberg-Wittram, MD*

*Kevin Little, PhD*



2:15 – 3:30 PM



# Learning Community Pre-Work Measures

*Kevin Little, PhD*



## Pre-work Measures Report

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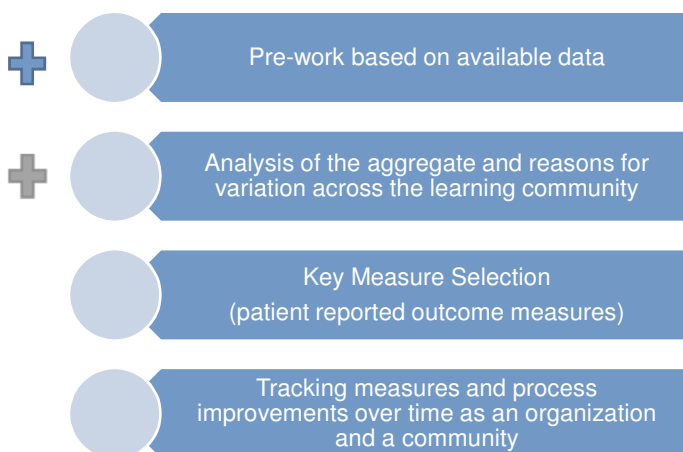
1. Initial summary of pre-work measures
2. Next steps
3. Appendix 1: Summary Plots (online)
4. Appendix 2: Measurement Context (online)



## Measurement Milestones

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## The Measures

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- Selection guided by Drs. DiGioia and Bozic
- Believed to be readily available in U.S. so no big burden for U.S. hospitals (apologies to our international colleagues)
- Provides initial look at performance variation among participants and versus national norms
- Informs our advice on measurement during process improvement phase
  - Which measures are available in < 30 days for "arbitrary" subset of surgeons?



## THA and TKA patients combined

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- Annual volume of procedures
- P-1 % Pre-surgery PRO administration
- P-5 % VTE/DVT Prophylaxis
- O-1 % Hospital Acquired Venous Thrombolism
- O-2 CMS Risk-adjusted 30-day readmission rate
- O-3 CMS Risk-adjusted complication rate
- B-1 Hospital HCAHPS "Willingness to Recommend" (all patients, not just THA and TKA)

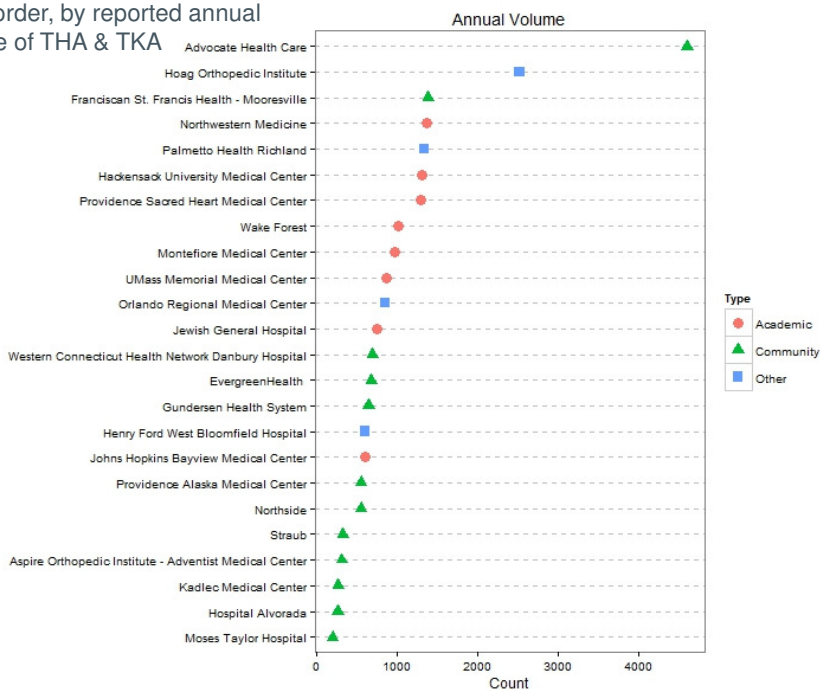


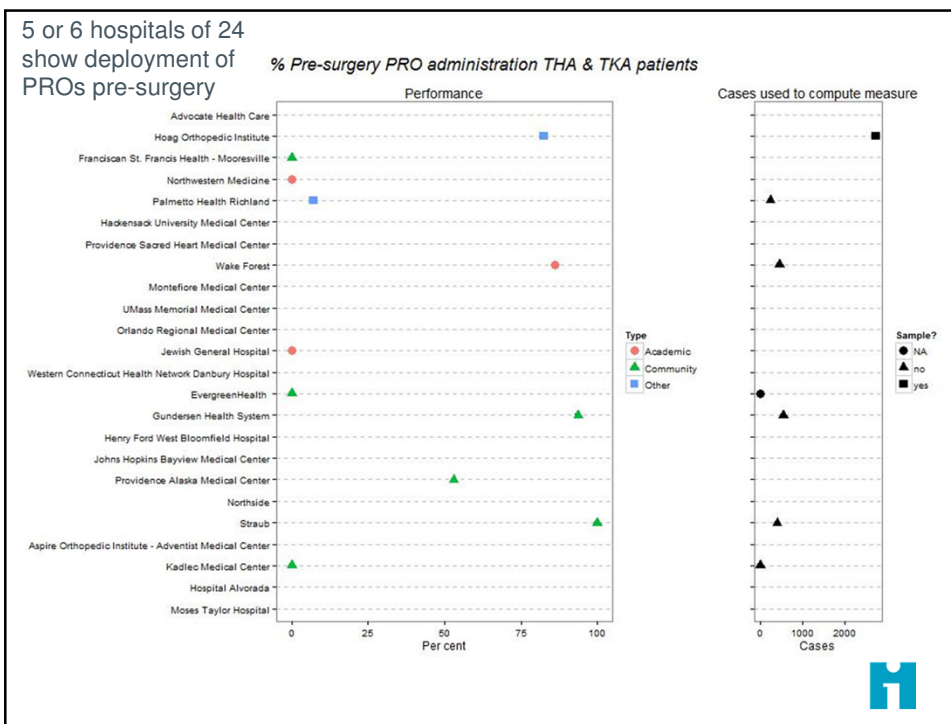
For THA and TKA patients as separate groups, all process measures

- % SCIP-Inf-1 Antibiotics given within 1 hour
- % SCIP-Inf-2 Appropriate Antibiotic
- % SCIP-Inf-3 Antibiotics stopped @ 24 hours
- Average Length of Stay
- % discharged to home
- % discharged to rehab--in patient
- % discharged to rehab--SNF



Rank order, by reported annual volume of THA & TKA





## Pre-work question: PRO deployment

Deployment Scale for PROs					
	Not explored	Started Discussion	Started collecting on some patients	Routinely collect PROs on patients	Collect and use to improve clinical care
<b>Count</b>	6	9	4	2	2

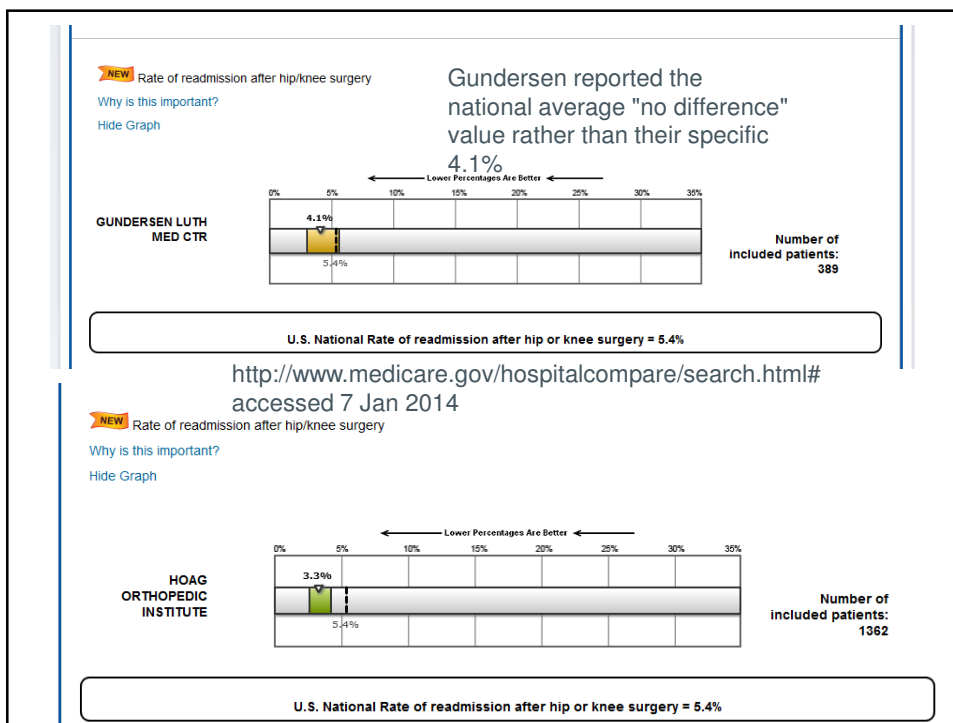
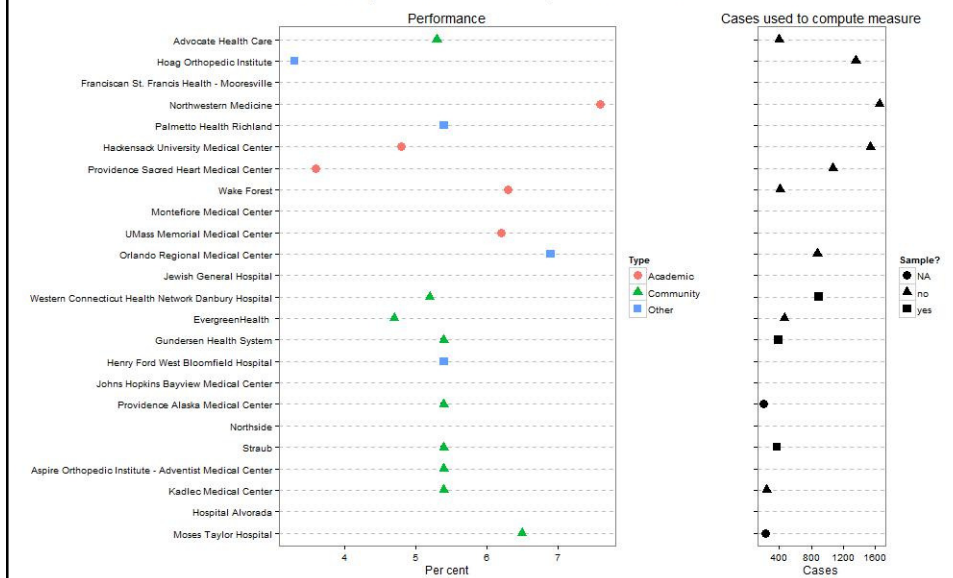
PRO	HOOS	KOOS	PROMIS 10	SF	PHQ	EQ-5D
<b>Count</b>	5	5	2	6	1	0

(Nine organizations responded)

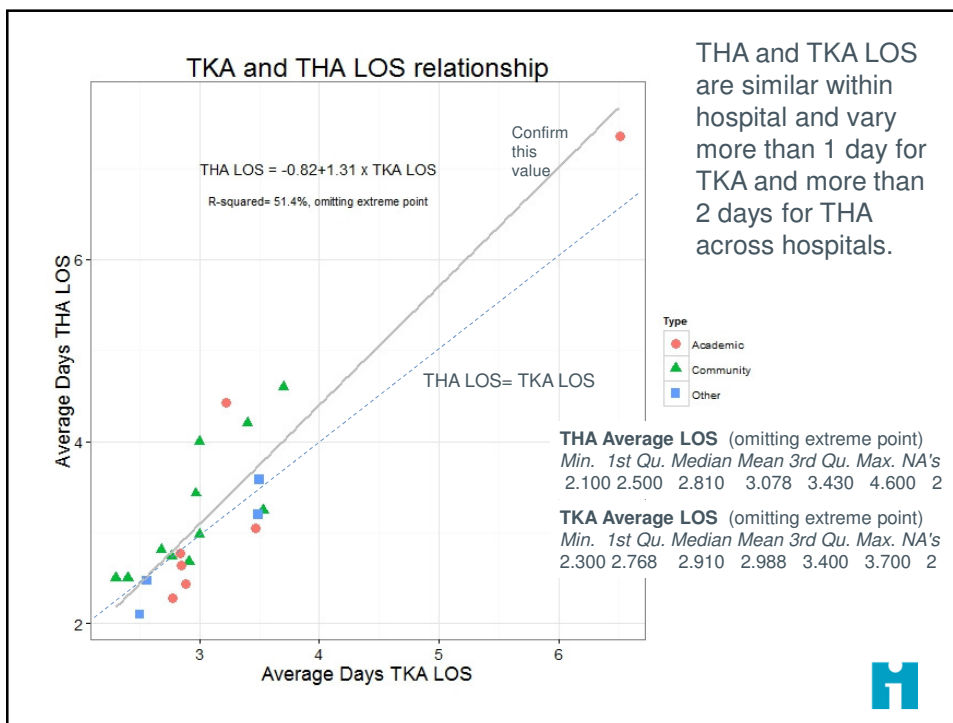
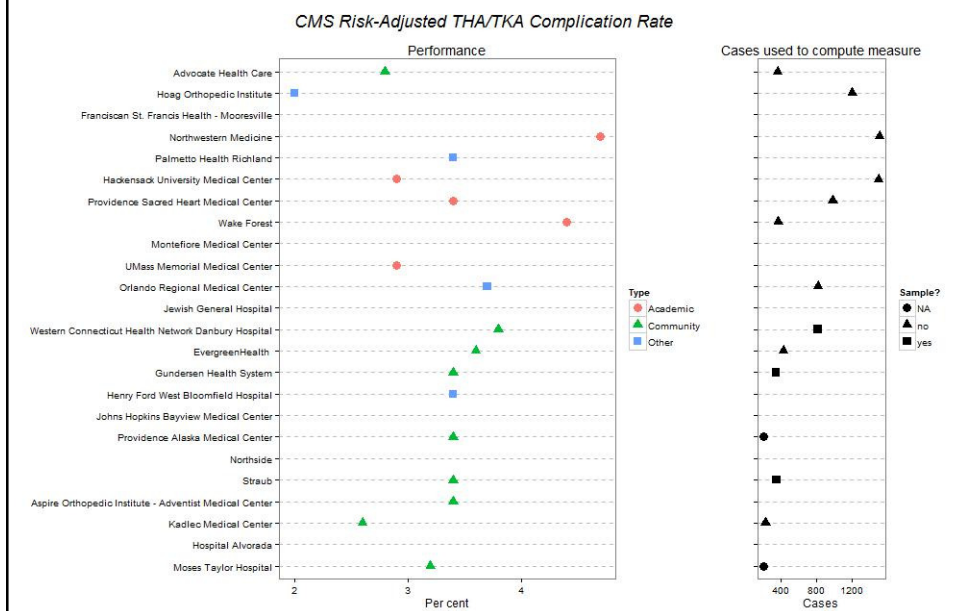
Other PROs: WOMAC (four organizations); Oxford Knee Score (one).

**Figure O-2.** 5.4% is U.S. national average in first reporting period ending June 2012. Several hospitals reported 5.4% as their observed value is "no different" than national average given CMS interval calculation. Back of the envelope: Values more than 2% different will have non-overlapping intervals.

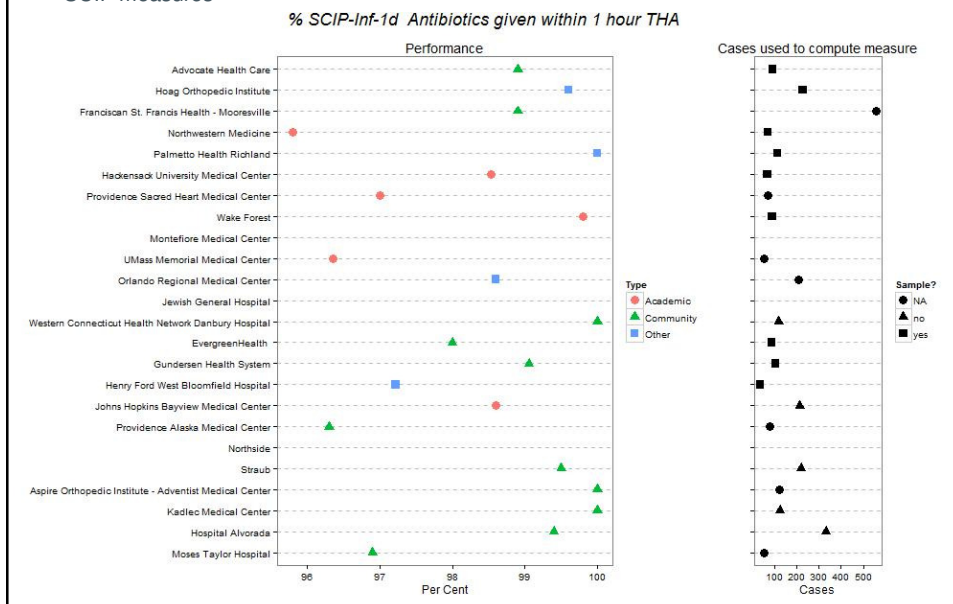
*CMS Risk-Adjusted THA/TKA 30-day Readmission Rate*



**Figure O-3** 3.4% is U.S. national average in first reporting period ending March 2012. As for readmissions, several hospitals reported the national figure rather than their observed value. Complication rate has similar pattern to Readmission Rate (Pearson correlation coefficient = 0.62), again Hoag and Northwestern are extreme values and will have non-overlapping intervals per CMS calculation.



**Figure P-2H** Some of the observed variation is from sampling but this measure may be a candidate for process tracking. Measure 1d shows the most variability of the three THA SCIP measures



**But SCIP 1d not readily available for subsets of surgeons in less than 30 days, using standard reports**

**Cycle between event and availability of Report**

	<30 days	30 to 60 days	60* to 90 days	> 90 days
Yes, easily		8	7	
Yes, with difficulty	1	3	2	1

\*Intended to have non-overlapping intervals but conclusion stands





## Additional Information Available Online

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- Appendix 1: Basic display of all 20 measures
- Appendix 2: Measurement context

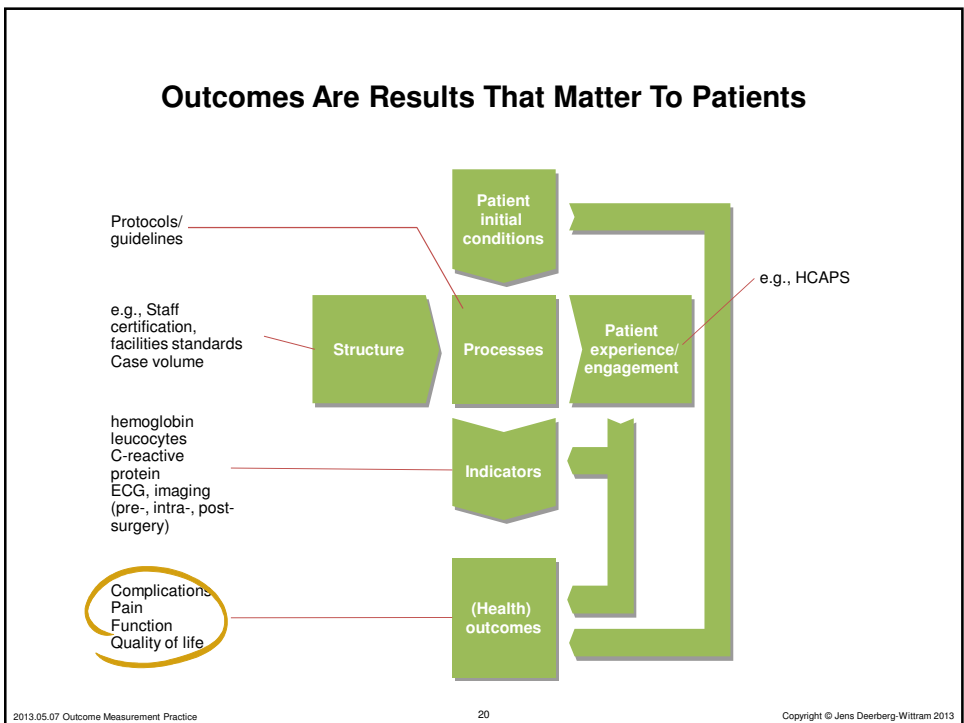
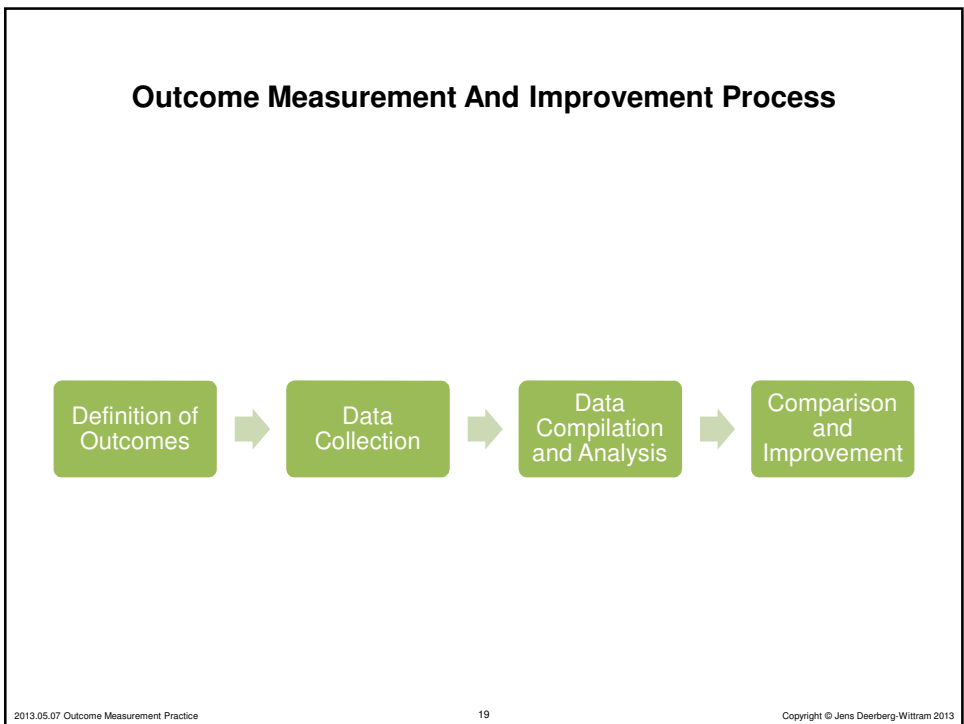


## Putting Outcome Measurement into Practice

Jens Deerberg-Wittram

International Consortium for Health Outcomes Measurement

*January 9th, 2014*



## Definition Of Outcomes

### Working groups

- are **led by an experienced clinician** (not necessarily a physician) who has a deep knowledge of the medical condition and who is a true advocate for outcome measurement
- are supported a **project leader from quality management department**
- consist of dedicated people from **different professional groups, across specialties**, including **outcome experts**
- meet regularly to define and improve **outcome measures, risk adjustment** factors and **validated instruments**
- Involve **patients** and their perspective into their indicator sets
- Should **meet and compare with peers** on national and international level

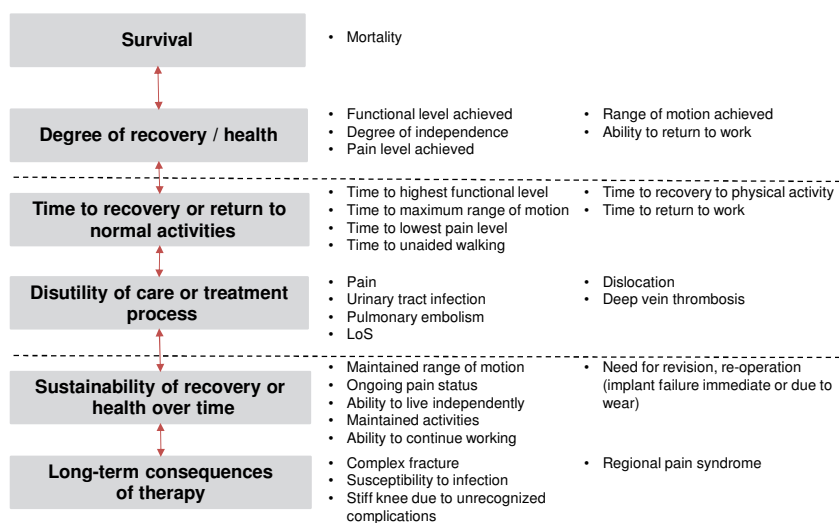
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## Outcomes Need To Be Measured On Different Level

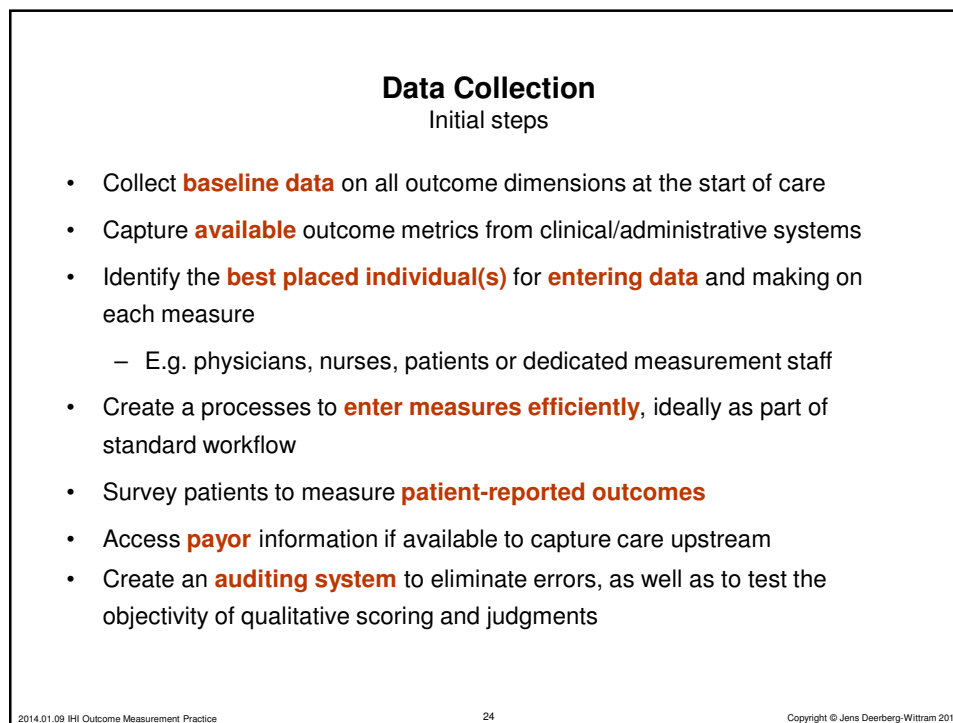
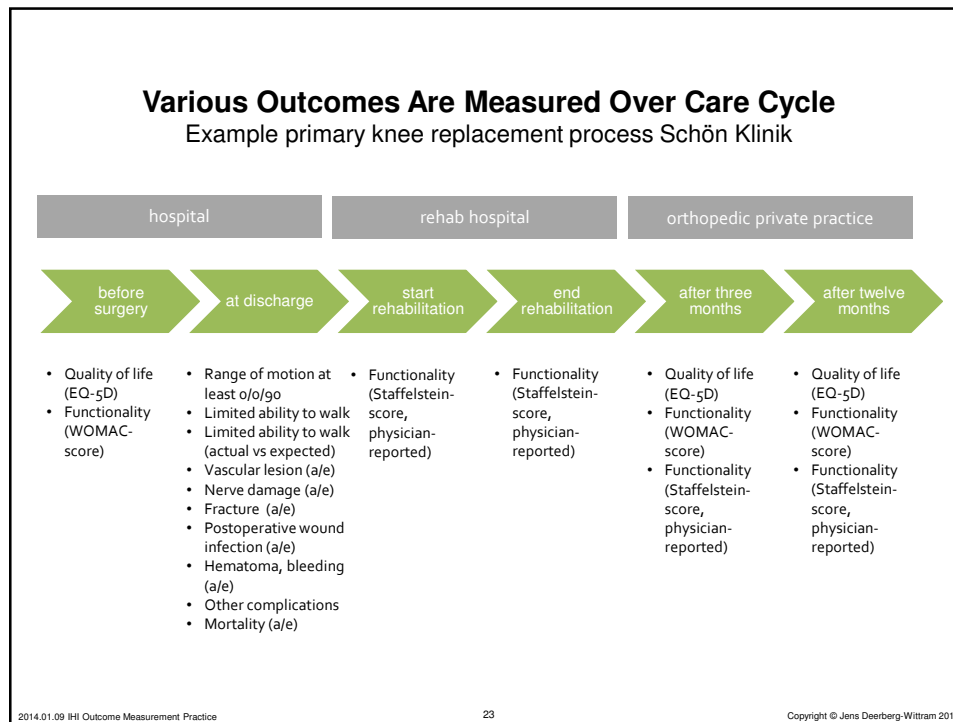
### Porter's Outcome Hierarchy

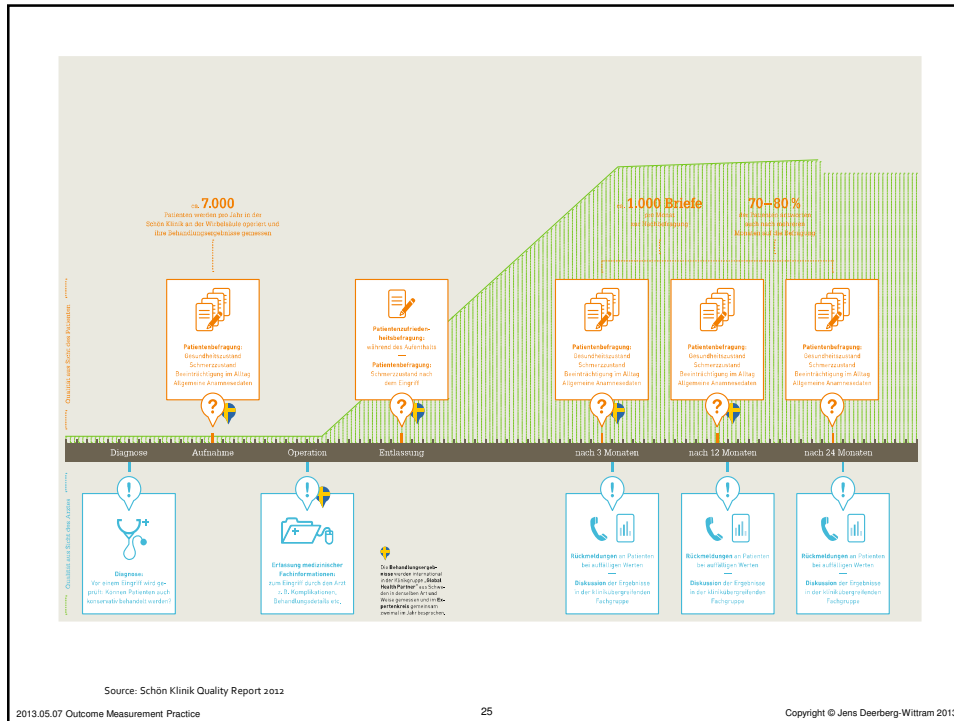


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## Collecting Outcome Data: Moving to a Real-time System

### EMR Capture

- Modify the **EMR** to allow efficient collection of clinician-reported measures
  - E.g. standardized, medical-condition specific templates

### Patient-Reported Outcomes

- Create tablet and web-based tools to **gather patient-reported outcomes**
  - E.g. Dartmouth Spine Center tablets, patient portals

### Long Term Tracking

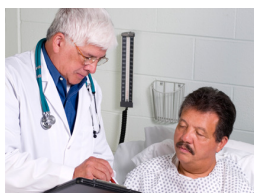
- Develop practical **patient tracking** methods to follow patients over extended time periods
  - Links to registries, payor and government databases (e.g., worker's compensation, unemployment, death records)

## Duke Oncology and Partners make PROM collection simple by integrating into patient's care and existing workflow



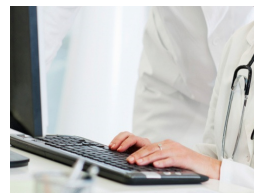
### While waiting, patient fills in survey on tablet (illustrative) with integrated instructions

+ e.g., Partners HealthCare has developed an instruction video, delivered on iPad, instead of the staff



### Report printed or viewed on screen to quickly inform clinicians about the patient's condition, to use in clinical setting

+ Patient can report information they are not comfortable to discuss



### Integrate additional data needed such as "Review of Systems" and save data to health info system to reduce documentation time

+ Partners uses pdf of patients report attached to the EHR  
+ Duke Oncology uses data export directly to their data warehouse

Minimize time spent by admin. staff during surveying

Reduce time upfront & focus the clinician's interaction

Capture info. for existing documentation needs

Source: Interview Duke University Health System Oncology Group and Partners HealthCare, HIT Policy Committee Clinical Documentation Hearing February 2013, Abernethy, A.P., et al. "Management of gastrointestinal symptoms in advanced cancer patients: The rapid learning cancer clinic model", Curr Opin Support Palliat Care, 2010 March, 4(1), 36-45

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## Compiling and Analyzing Outcome Data

- Compile outcomes data and initial conditions in a **centralized registry or database**
  - Data should be structured around patients and their **medical conditions**, not visits or episodes
- Report to **external disease registries** if available
- Create reports covering **risk-adjusted patient cohorts** over time
- Compare outcomes **across providers and locations**
- **Refine** the measures, collection methods, and risk-adjustment factors over time

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## Partners Healthcare Has Integrated PROM Reports Into Their Patient Portal And EHR Record For Real-time Use

Patient and doctor can both access report real-time


Report provides simple visual form with definition, indicator and trend

**Physician access through EHR**




Electronic Health Record  
LMR

On-Site




iPad

Remote



Patient Gateway  
Patient Portal

Mail



Patient Name: [REDACTED]

Visit Date: [REDACTED]

Clinic Name: [REDACTED]


**PARTNERS HEALTHCARE** FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL AND MASSACHUSETTS GENERAL HOSPITAL

### Patient-Reported Outcomes Snapshot for Patients having a Cardiac Surgery

Thank you for completing the Patient-Reported Outcomes Snapshot. This report includes your scores in five areas of your health based on the answers you gave. Your score will be compared to a national population that includes patients of all ages and of different health status.

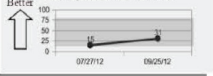
**Physical Function** is defined as one's ability to carry out various activities, ranging from self-care (activities of daily living) to more challenging and vigorous activities that require increasing degrees of mobility, strength, or endurance. A higher score is related to better health. Most people report a score between 15 and 79.

**Your Most Recent Score**




51

**Your Physical Health Over Time**




**Mental Health** refers to emotional symptoms including depression, anxiety, irritability or rage, as well as contentment and joyfulness. It also refers to your satisfaction with social interactions and your general impressions of yourself including your self-esteem. A higher score is related to better health. Most people report a score between 19 and 82.

**Your Most Recent Score**



23

**Your Mental Health Over Time**



**PROM pilot program demonstrating that ease of access and timeliness of reports encourage further reporting and use**

Source: Interview with Partners HealthCare PROMs Program, Partners HealthCare HIT Policy Committee Clinical Documentation Hearing February 2013  
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## Reporting Outcomes

- Begin with **internal reporting to clinicians**
  - Comparing outcomes of care teams or physicians over time, then across locations
  - Move from blinded to unblinded data at the individual provider level
- **Expand reporting** over time to include referring providers, payers, and patients
  - An agreed upon **path to external transparency** of outcomes
- Work with provider peers, payers, and government to **standardize reporting measures and methods**
- Ultimately, **universal reporting of standardized measures** will be the strongest driver in value improvement

## SART IVF Registry Houses A Database On Their Website, With Performance Of Each ART Clinic

**IVF SUCCESS RATES**

[Find a Clinic](#) ←

[IVF Success Rates](#)

[National Data Summary](#)

Easy navigation to clinic-specific data in your area

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**Search For Clinics By Zipcode**

Starting Zip

Maximum Distance (in Miles)

Within 50 miles of 90210 there were 28 clinics.

Clinic Name	City	State	Zip	Cycles
<a href="#">Southern California Reproductive Center</a> ←	Beverly Hills	CA	90210	310
<a href="#">California Center for Reproductive Health Beverly Hills Reproductive Fertility</a>	Beverly Hills	CA	90210	310
<a href="#">UCLA Fertility Center</a>	Los Angeles	CA	90095	310

Public data creates accountability for data accuracy and promotes action among physician groups

**Click on measures for definition e.g., Percentage of cycles resulting in pregnancies**

Procedure Frequency	Diagnosis Frequency
IVF 100%	Tubal Factor 6%
GIFT 0%	Male Factor 14%
ZFT 0%	Other Factor 18%
ICSI 55%	Ovarian Dysfunction 6%
Unstimulated <1%	Diminished Ovarian Reserve 27%
PGD 29%	Unknown Factor 9%
	Endometriosis 1%
	Multiple Female Factor 9%
	Uterine Factor

Source: [www.sart.org](http://www.sart.org), interview with Society of Assisted Reproductive Technologies (SART) Registry leaders and technology provider Redshift Technologies Inc.  
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## STS Reports Data On Physician Groups Using A Report Card, With Composite Metric And Star Rating

### Search CABG Data by Group

Group name:

Year: July 2010 - June 2011 | State: CA |

Name ▲	Overall Composite Score (?)	Absence of Operative Mortality (?)	Absence of Major Morbidity (?)	Use of Internal Mammary Artery (?)	Receipt of Required Perioperative Medications (?)
Adamson and Dembitsky Medical Corporation San Diego, CA	★★	★★	★★	★★	★ ←
California Cardiovascular and Thoracic Surgeons Ventura, CA	★★	★★	★★	★★	★★
Cardiac Surgeons at Glendale Adventist Glendale, CA	★★	★★	★★	★★	★★
Cardiac Surgeons at Providence Saint Joseph Medical Center Burbank, CA	★★	★★	★★	★★	★★
Cardiothoracic Surgeons at Providence Holy Cross Medical Center Mission Hills, CA	★★	★★	★★	★★	★★★

**Click for definition of the AVR Overall Composite Star Ratings:**  
 "Surgical performance is measured based on a combination of the NQF-endorsed isolated AVR mortality measure and the same morbidity outcomes that make up the NQF-endorsed CABG morbidity measures... Participants receive a score for each of the two domains, plus an overall composite score, which is calculated by "rolling up" the domain scores into a single number. In addition to receiving a numeric score, participants are assigned to a rating category designated by one to three stars."

STS provides patients with national, risk-adjusted benchmarks against which to gauge a provider's results

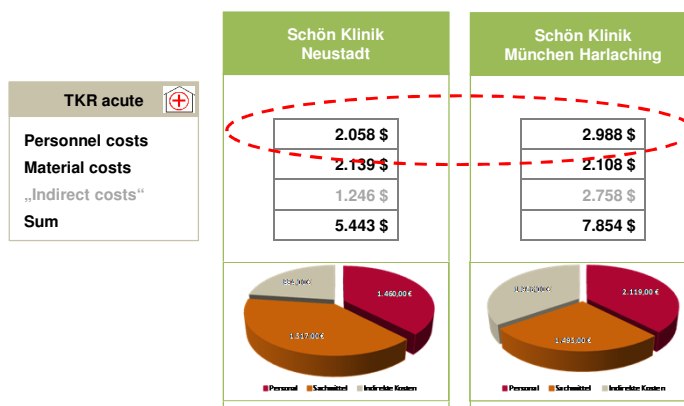
Note: Public reporting is voluntary since 2011. CABG = Coronary artery bypass grafting. Source: Society of Thoracic Surgeons website, interview with STS  
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## Data Comparison and Improvement

- Convene **regular meetings** to analyze outcome variations and trends
  - Create an environment that allows **open discussion of results** with no repercussions for participants willing to learn and make constructive changes
- Utilize outcomes analysis to investigate **process improvement and potential care innovations**
- Collaborate with external registries and leading national and international providers to **benchmark performance and compare best practices**
- Combine outcome data with **care cycle costing** data to examine opportunities for value improvement through better efficiency, reducing redundancy, and eliminating activities that do not contribute to outcome improvement

## Neustadt Has Significantly Lower Costs Than Munich



(1) numbers disguised

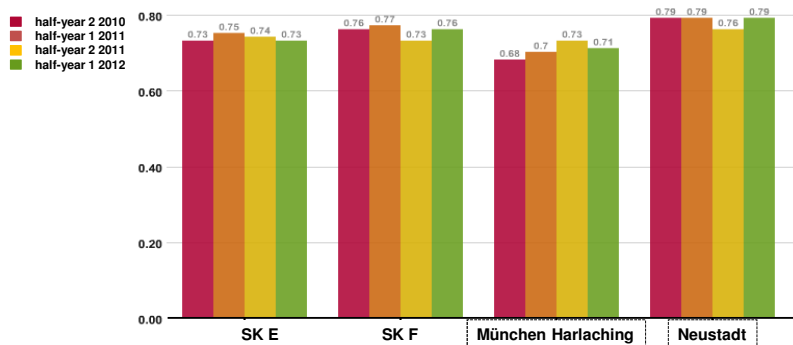
### Cost Differences Are Mainly Driven By Process Times

Process (exa.)	Schön Klinik Neustadt	Schön Klinik München Harlaching
Review anesthesia options	27	55
Nursing admission	35	28
Anaesthesia	74	141
Surgical procedure	367	706
Post-op. X-ray (2x) <sup>(1)</sup>	25 <sup>(2)</sup>	35
Nursing care	647	696
Medical care	49	125
Therapeutical care	168	257
Sum (min.)	1.392	2.043

(1) without transportation service (2) numbers still have to be validated

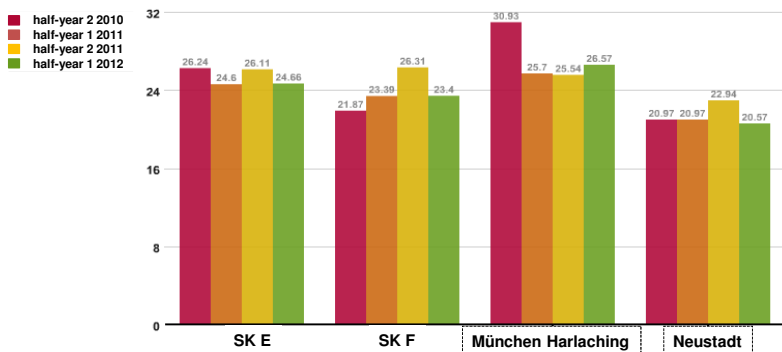
### Despite Lower Costs QoL Best In Neustadt

Total Knee Replacement (acute)  
EQ-5D after 3 months (average)

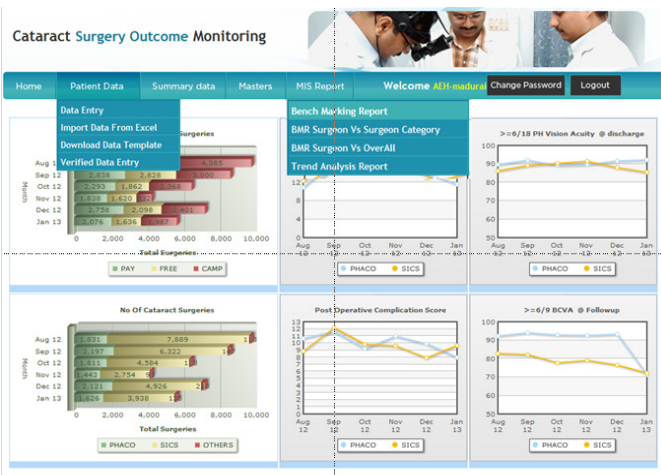


## WOMAC In Neustadt Again With Better Results

Total Knee Replacement (acute)  
WOMAC after 3 months (average)



## Aravind Clinic Created A Internal Web Portal For Physicians To Review Their Outcomes



Web portal evolved from Excel-based reports, as physicians required more user-friendly tools

Source: Aravind Eye Care Hospitals Cataract Surgery Outcome Monitoring training document illustrative report view

## Aravind Engages Full Team In Outcome Review

Regular Meetings Key To Achieving Culture Shift And Change

Weekly meetings convene clinicians to discuss process, quality and outcomes

Sample quality meeting agenda highlights importance of clinical engagement and action



**Physicians, nurses and assistants involved in weekly outcome discussion**

- i. Start meeting with previous weeks minutes – follow-up items
- ii. Review overall data – free and paid patients
- iii. Look at complications and outcomes
- IV. Look at each cases risk factors and surgeon, technique, how was it managed (to protocol) in order to asses causes of variation
- V. Brainstorm systems or ideas to prevent future complications and issues to track
- VI. End of meeting – raise any other issues and provide summary of next steps

Source: Interview with Aravind Eye Care Hospitals India, Aravind webiste

## Information about ICHOM

## ICHOM is a nonprofit dedicated to accelerating development and impact of outcomes measurement

ICHOM 's three co-founders



...launched ICHOM as a nonprofit

- Independent 501(c)3 organization
- Idealistic and ambitious goals
- Global focus
- Engages diverse stakeholders



Our mission:

We are transforming health care by empowering clinicians worldwide to measure and compare their patients' outcomes and to learn from each other how to improve.

## ICHOM organizes Working Groups to define Standard Sets of outcomes we recommend all providers track



ICHOM facilitates a process with international physician and registry leaders and patient representatives to develop a global Standard Set of Outcomes for relevant medical conditions

Physician and registry leaders

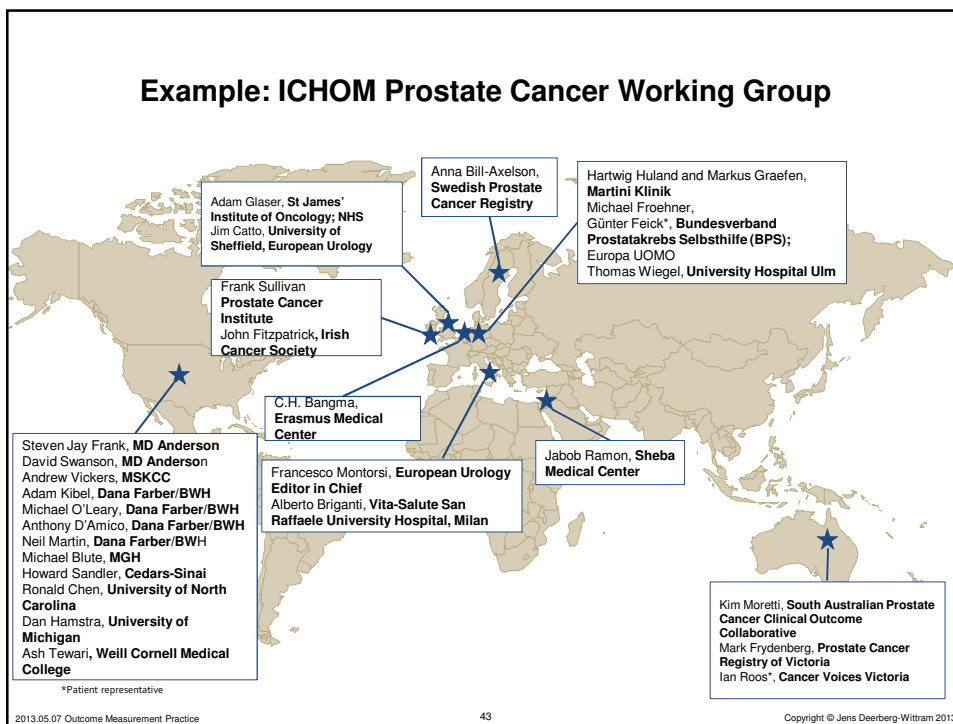


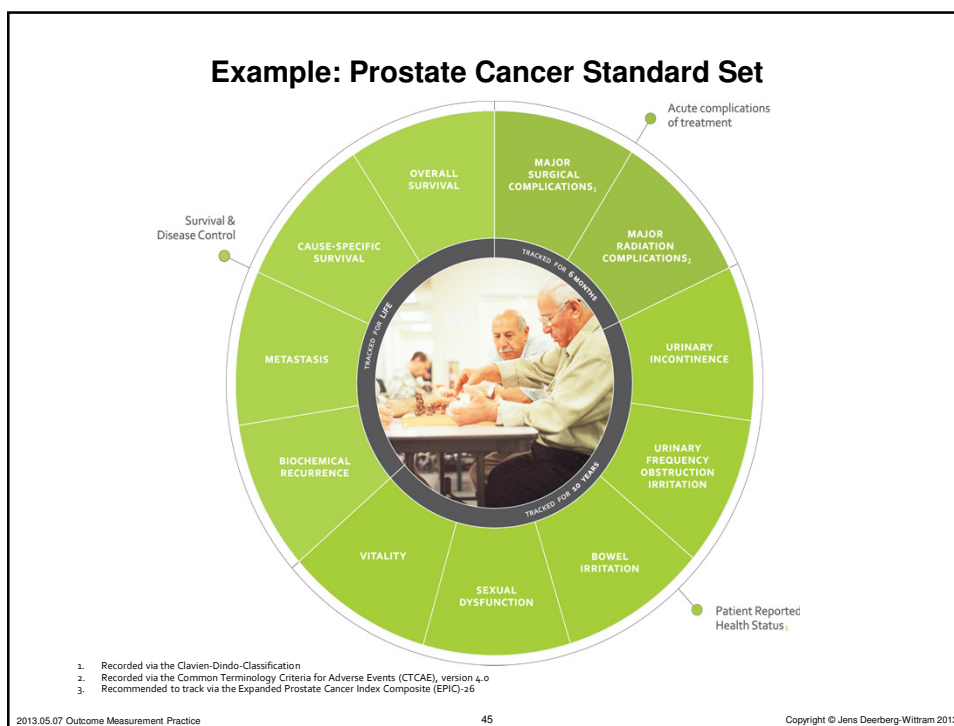
Patient representatives



ICHOM Standard Set	
Outcomes	Measures
<b>Tier 1</b>	<input type="checkbox"/> <i>30-day mortality</i> <input type="checkbox"/> <i>30-day readmission</i> <input type="checkbox"/> <i>30-day return to hospital</i> <input type="checkbox"/> <i>30-day mortality (excluding 30-day readmission)</i>
<b>Tier 2</b>	<input type="checkbox"/> <i>30-day mortality (excluding 30-day readmission)</i> <input type="checkbox"/> <i>30-day readmission</i> <input type="checkbox"/> <i>30-day return to hospital</i> <input type="checkbox"/> <i>30-day mortality (excluding 30-day readmission)</i>
<b>Tier 3</b>	<input type="checkbox"/> <i>30-day mortality (excluding 30-day readmission)</i> <input type="checkbox"/> <i>30-day readmission</i> <input type="checkbox"/> <i>30-day return to hospital</i> <input type="checkbox"/> <i>30-day mortality (excluding 30-day readmission)</i>

We declare that we endorse this set of outcomes, and will work to get this implemented within our organization within the next 2 years. We understand ourselves to be fully committed to ensure this set of outcomes.





## Once Standard Set Is Defined, ICHOM Working Group Goal Is To Drive Adoption

### Flyer

- Beautifully designed rendition of ICHOM Standard Set
- Promoted at conferences, Harvard health care courses, and on the ICHOM website

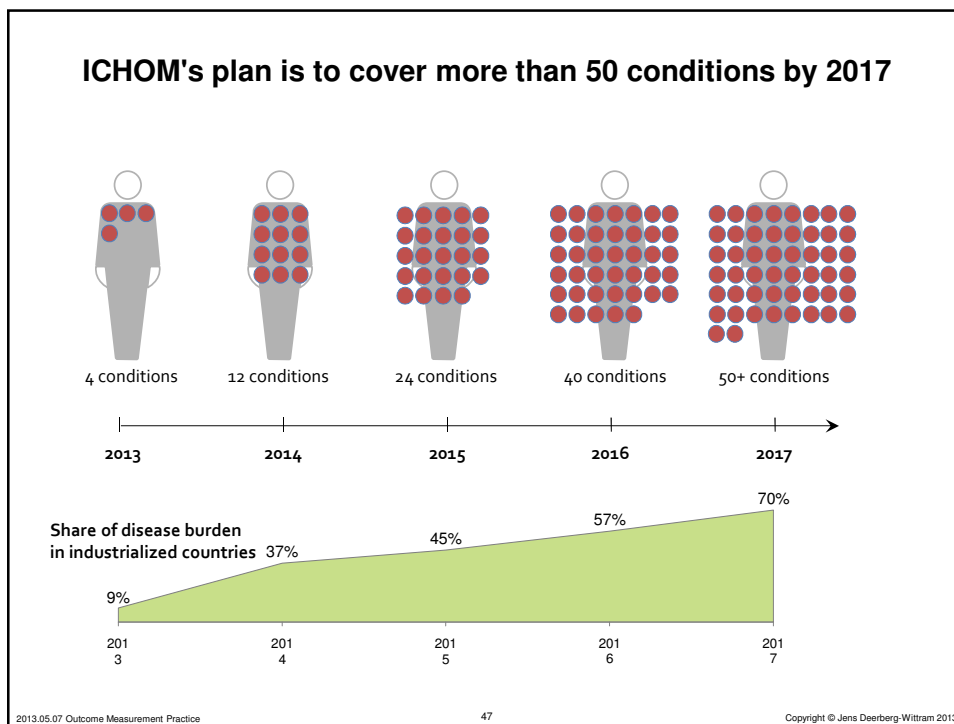
### User Manual

- Full detail of Standard Set for institutions interested to start collecting or payors looking to integrate into reimbursement programs
- Includes definitions, inclusion and exclusion criteria, time points for data collection, and index events

### Academic Publication

- Announces the Standard Set to the medical community
- Explains process to arrive at Standard and motivation for each outcome and risk factor selected

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**For more information please visit [www.ichom.org](http://www.ichom.org)**

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**01** Who is ICHOM      **02** Why outcomes      **03** How we work

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# Next steps

*Kevin Little, PhD*



## Next Steps

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- Add late pre-work submissions, revise displays for pre-work data
- Develop preliminary recommendations for measure set(s) during process improvement phase
  - We won't wait for portals and EHR integration, may be manual/local db registry, e.g. Schön Klinik example

