

# Outcome Measurement

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Value Based Health Care Delivery Seminar  
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This presentation draws on *Redefining Health Care: Creating Value-Based Competition on Results* (with Elizabeth O. Teisberg), Harvard Business School Press, May 2006; “A Strategy for Health Care Reform—Toward a Value-Based System,” *New England Journal of Medicine*, June 3, 2009; “Value-Based Health Care Delivery,” *Annals of Surgery* 248: 4, October 2008; “Defining and Introducing Value in Healthcare,” *Institute of Medicine Annual Meeting*, 2007. Additional information about these ideas, as well as case studies, can be found the Institute for Strategy & Competitiveness Redefining Health Care website at <http://www.hbs.edu/rhc/index.html>. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means — electronic, mechanical, photocopying, recording, or otherwise — without the permission of Michael E. Porter and Elizabeth O. Teisberg.

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# Creating a Value-Based Health Care Delivery System

## The Strategic Agenda

1. Organize Care into **Integrated Practice Units (IPUs)** around Patient Medical Conditions
  - Organize primary and preventive care to serve **distinct patient segments**

2. Measure **Outcomes** and **Cost** for Every Patient

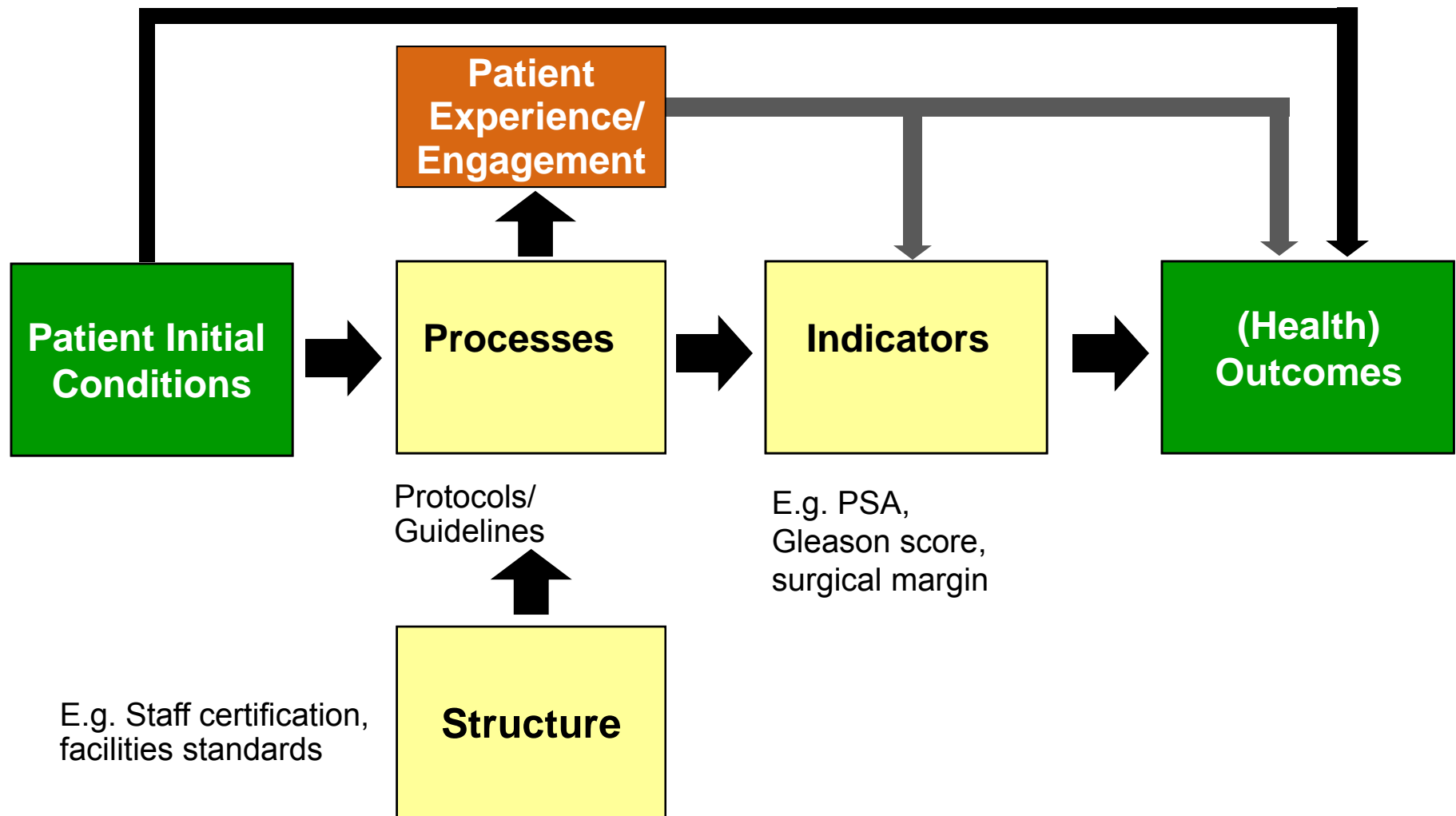
3. Move to **Bundled Payments** for Care Cycles

4. Integrate Care Delivery **Systems**

5. Expand **Geographic Reach**

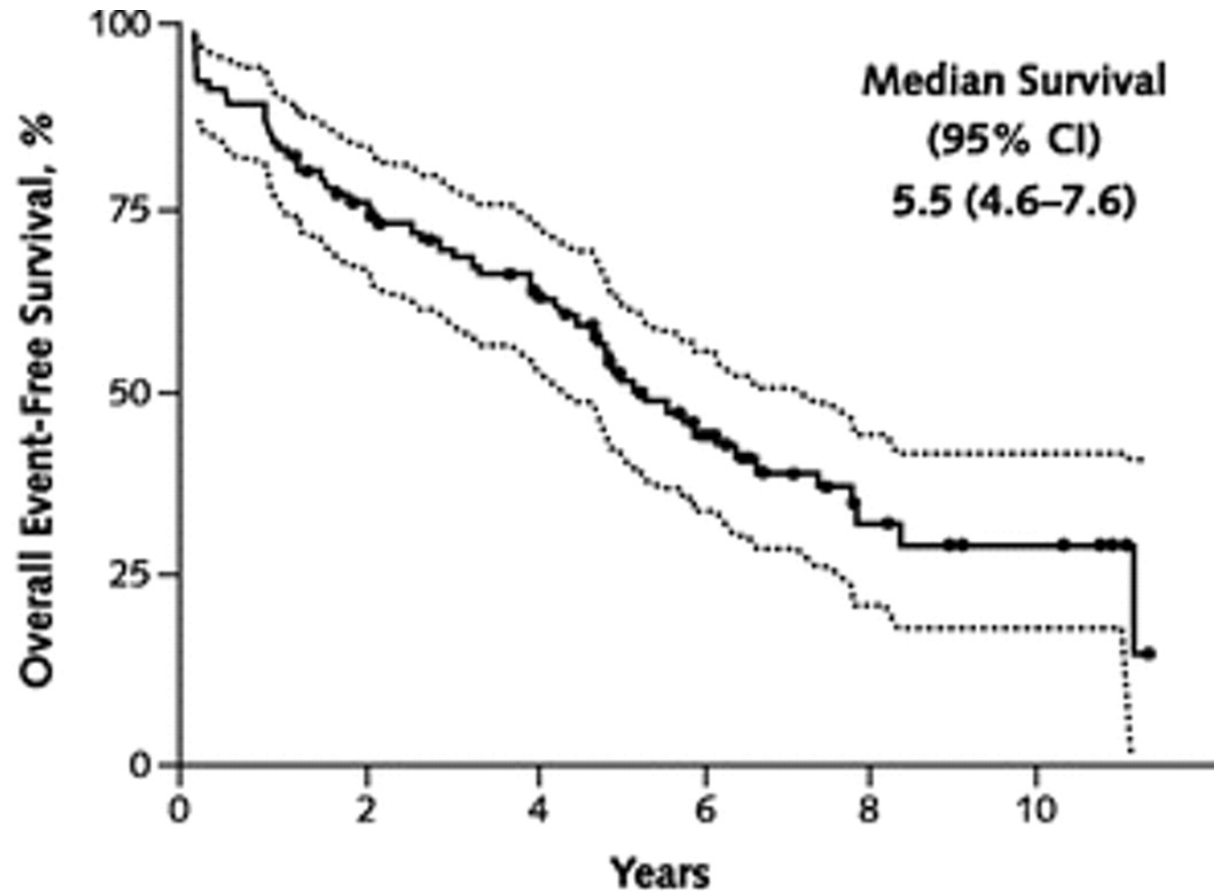
6. Build an Enabling **Information Technology Platform**

# The Quality Measurement Landscape



# Process Measurement is Not Enough

Overall survival time (95% CI) free of signals for updating.



Systematic reviews  
at risk, *n*

100      73      59      34      14      6

Shojania K G et al. *Annals of Internal Medicine*. 2007;147:224-233

# Principles of Outcome Measurement

1. Outcomes should be measured by **medical condition** or **primary care patient segment**
  - Not by **procedure, intervention, or specialty**

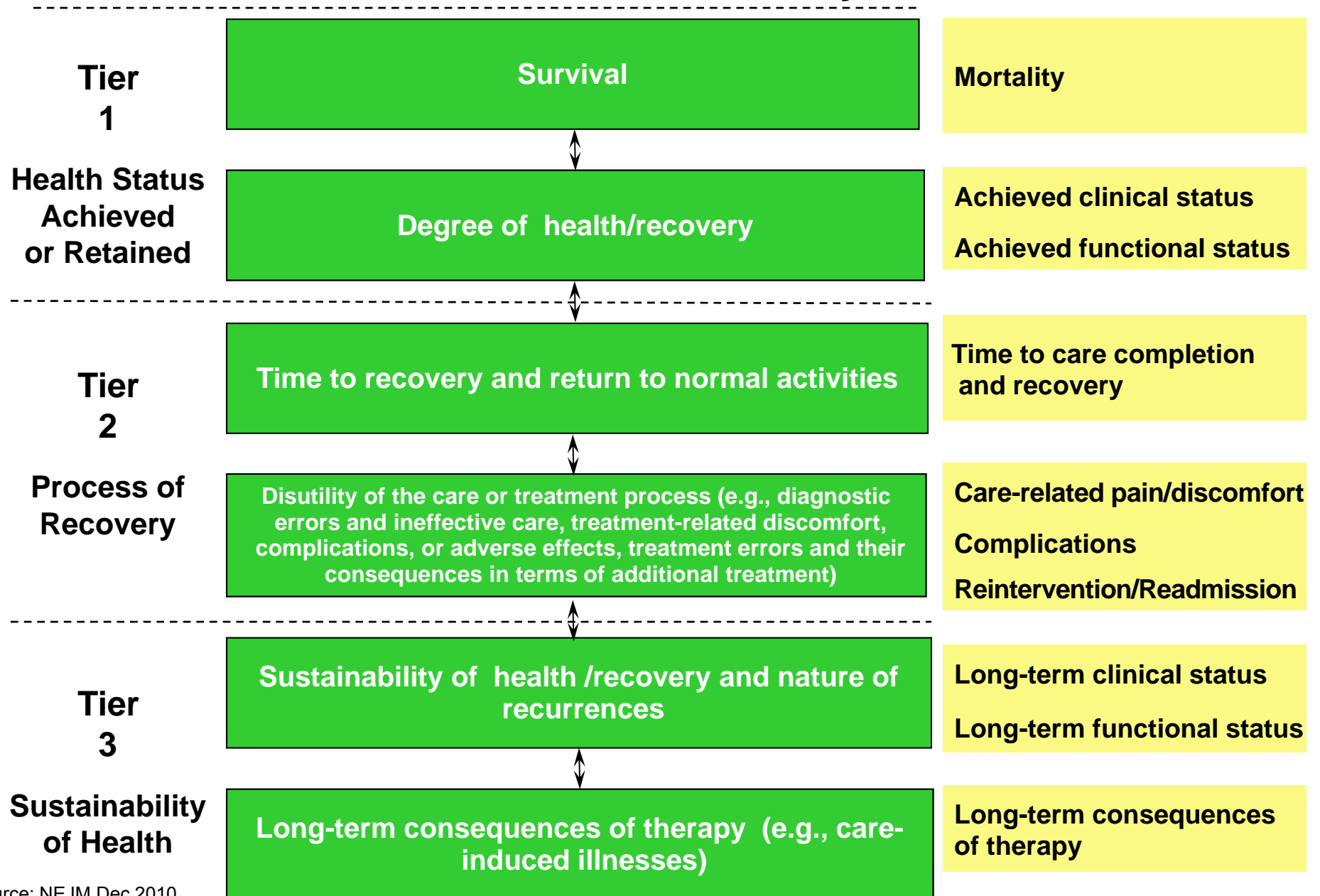
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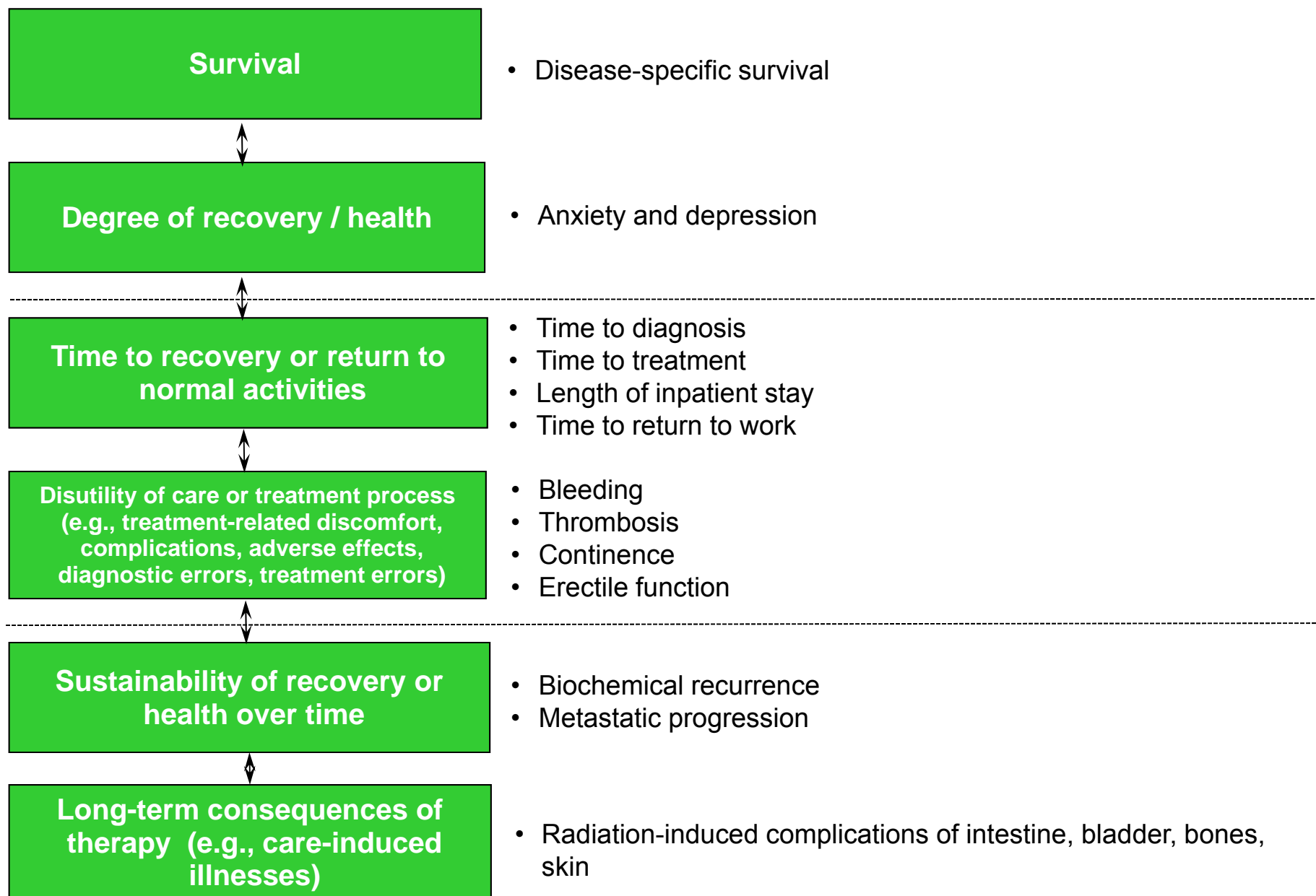
# The Outcome Measures Hierarchy: Dimensions





# The Outcome Measures Hierarchy

## Localized Prostate Cancer



# Measuring Multiple Outcomes

## Prostate Cancer Care in Germany

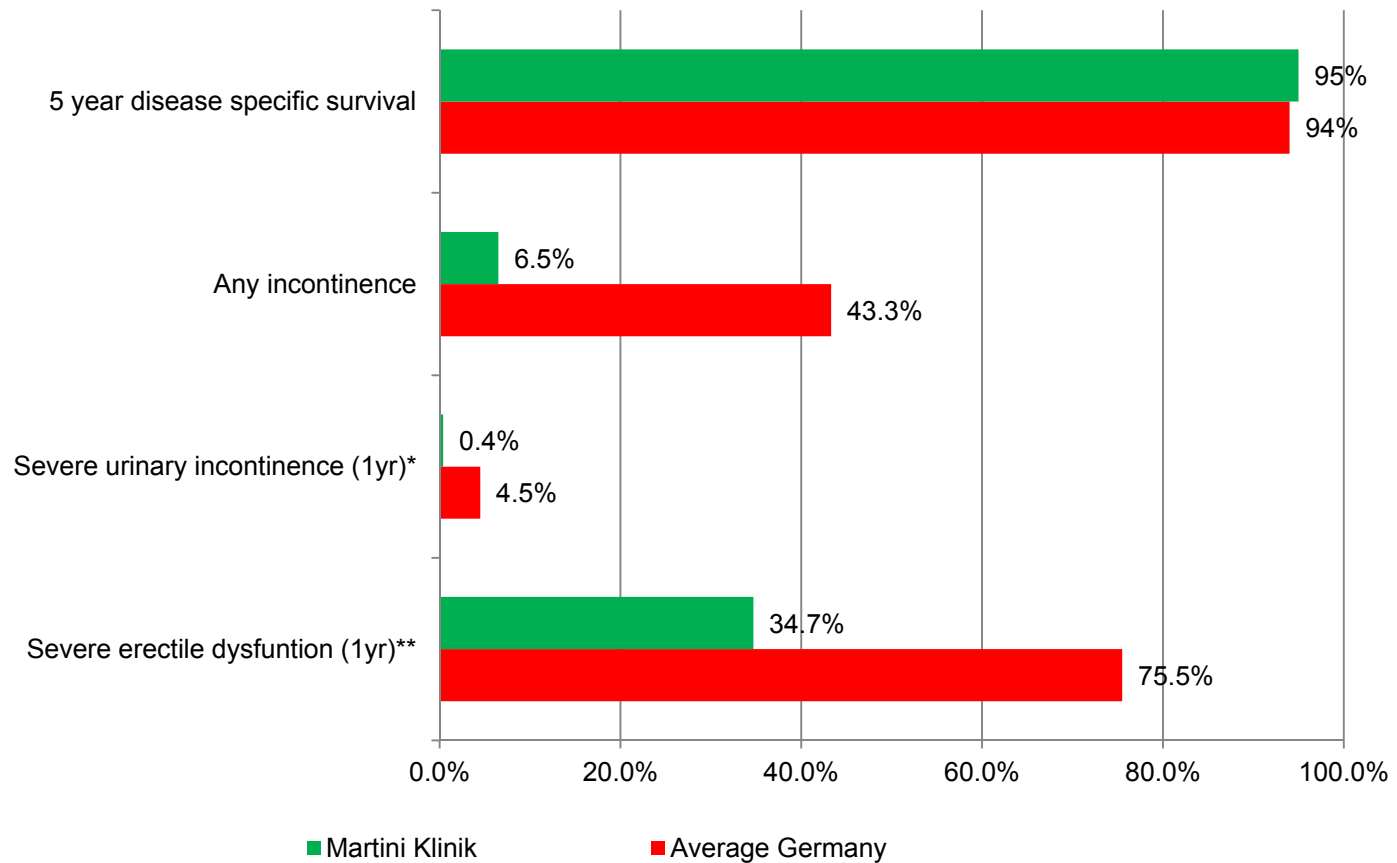
■ Average hospital    ■ Best hospital



Source: ICHOM

# Localized Prostate Cancer Outcomes

## Best Hospital versus German Average



\*more than 5 pads per day

\*\*including patients who were already fully dysfunctional prior to surgery

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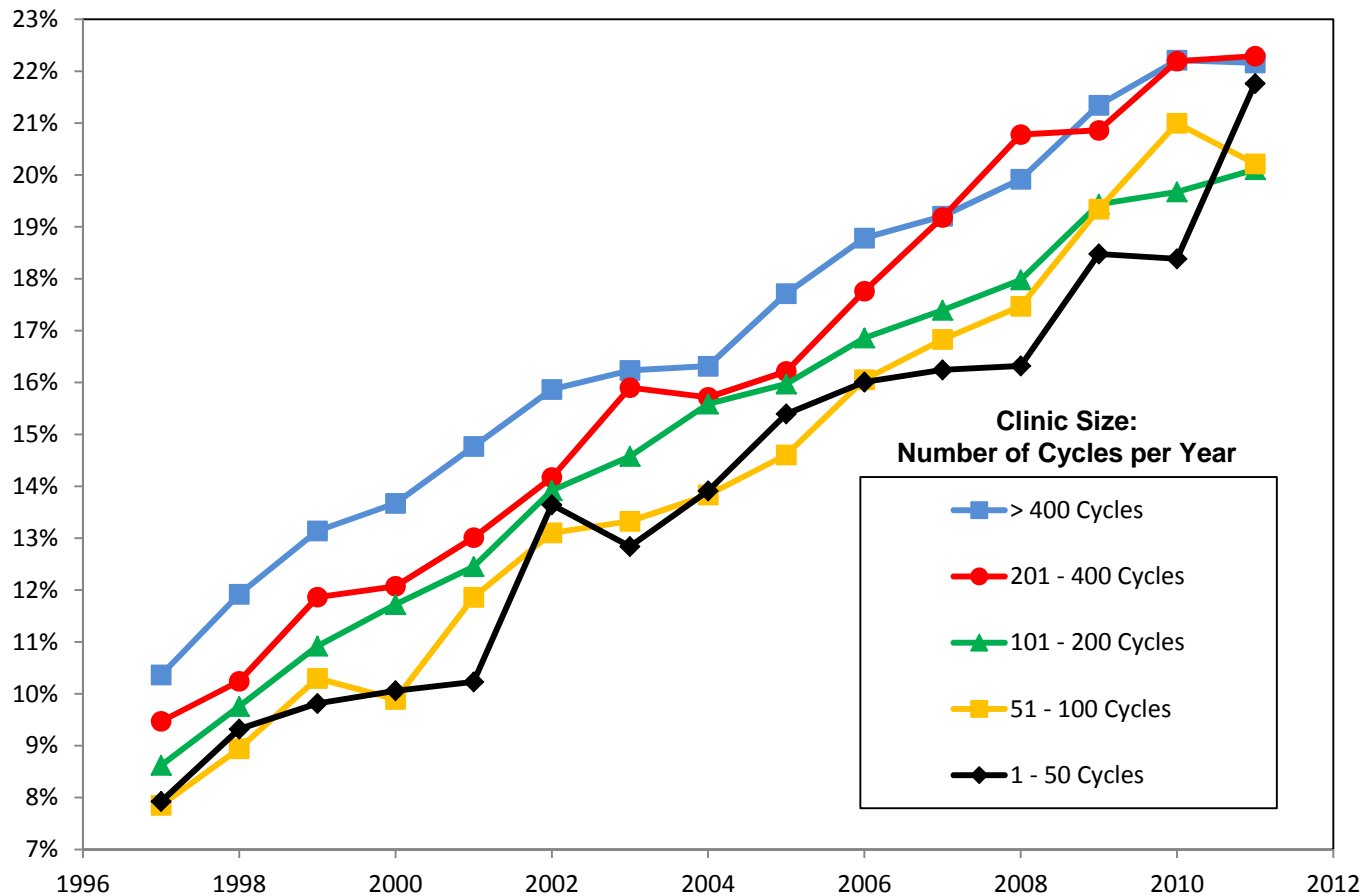
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5. **Standardized** outcome measures and risk factors to enable comparison and learning

# Comparing Outcomes Across Institutions/Sites

## In-vitro Fertilization Success Rates

Percent Live Births per Fresh, Non-Donor Embryo Transferred by Clinic Size  
Women Under 38 Years of Age, 1997-2011

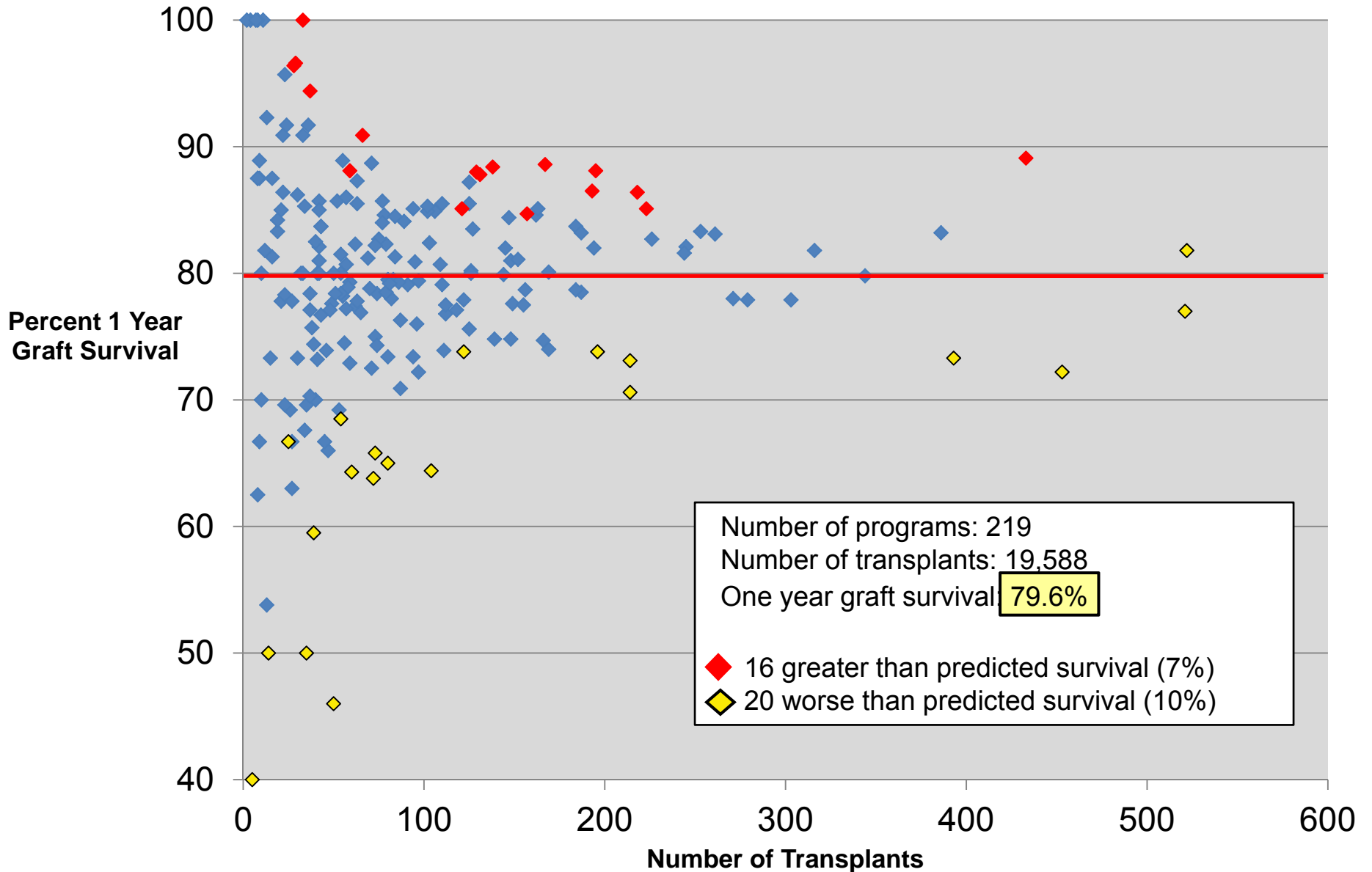


Source: Michael Porter, Saquib Rahim, Benjamin Tsai, *Invitro Fertilization: Outcomes Measurement*. Harvard Business School Press, 2008

Data: Center for Disease Control and Prevention. "Annual ART Success Rates Reports." <<http://www.cdc.gov/art/ARTReports.htm>>, Jul 2, 2013.

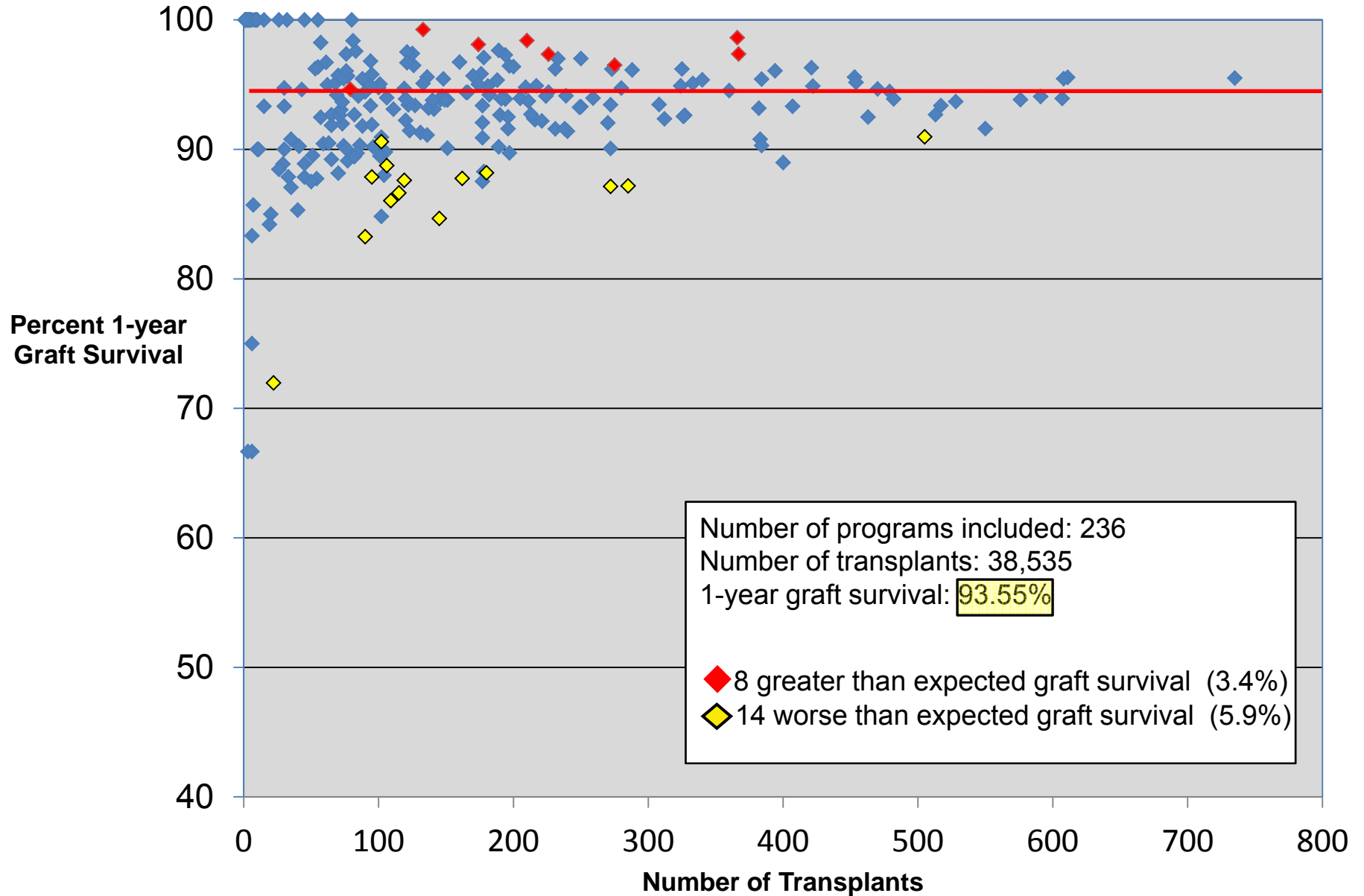
# Comparing Outcomes across Centers

## Adult Kidney Transplants, US Centers, **1987-1989**



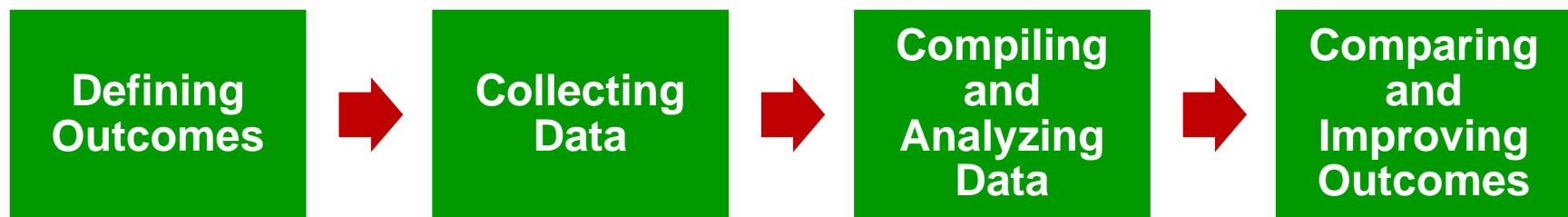
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## Adult Kidney Transplants, US Centers, **2008-2010**





# Putting Outcomes and Measurement into Practice



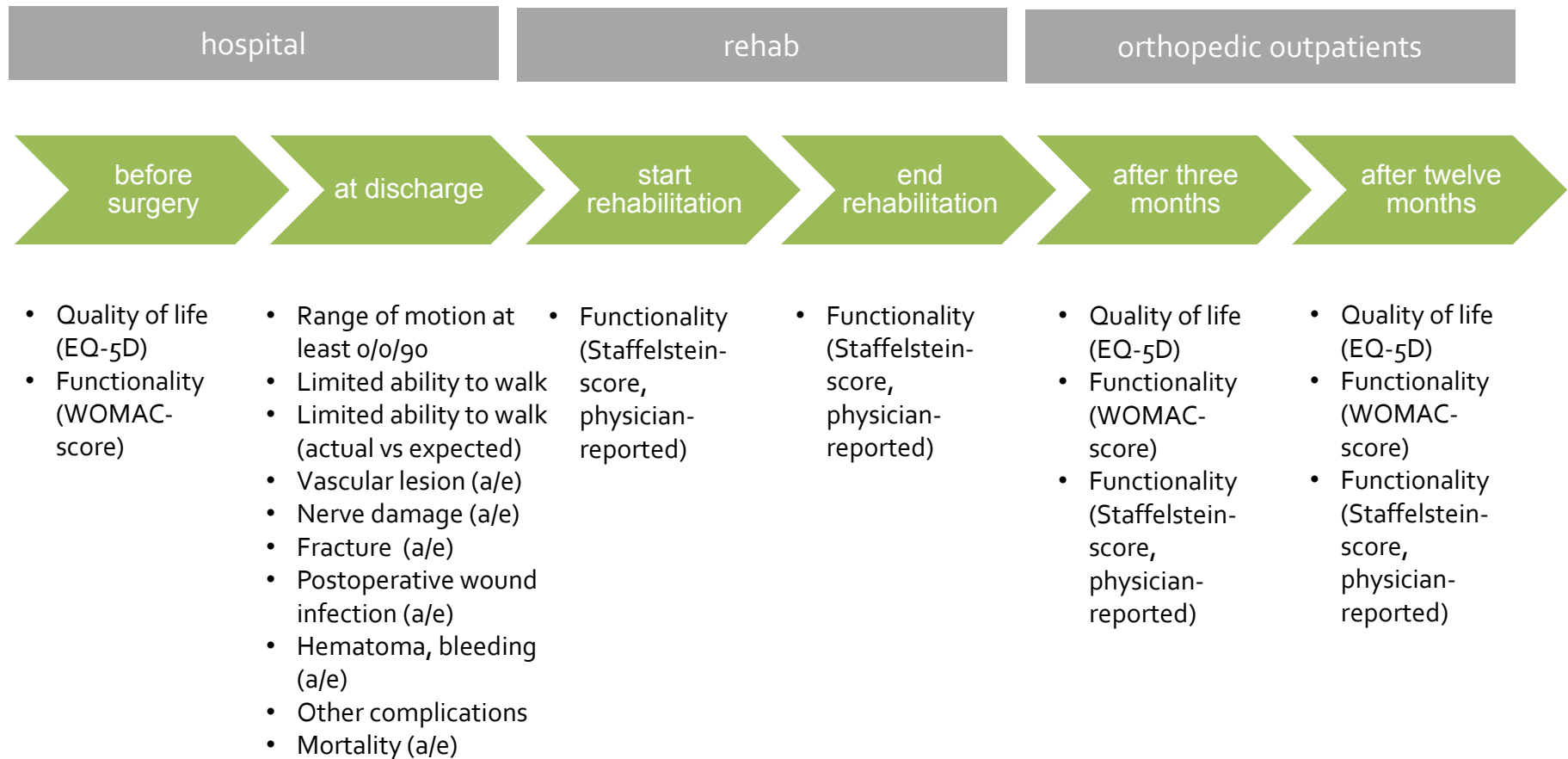
# Defining Outcomes

## Working groups

- **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
- Supported by a project leader from **quality management department** or other unit
- Consisting of dedicated people from **different professional groups, specialties**, and including **outcome experts**
- Who meet regularly to define and improve **outcome measures, risk adjustment** factors and **validated instruments**
- Involving **patients** and their perspective into defining measures
- Incorporating **meeting and comparing with peers** on national and international level

# Outcomes Over the Care Cycle

## Example primary knee replacement process at Schön Klinik



# Collecting Data

## Initial steps

- Collect **baseline data** on all outcome dimensions at the start of care
- Capture available outcome metrics from **clinical/administrative systems**
- Identify the **best placed individual(s)** for entering data and making on each measure
  - E.g. physicians, nurses, patients or dedicated measurement staff
- Create a processes to **enter measures efficiently**, ideally as part of the standard workflow
- **Survey patients** to measure patient-reported outcomes
- Access **payor** information if available to capture care upstream
- Create an **auditing system** to eliminate errors, as well as to test the objectivity of qualitative scoring and judgments

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

## Paper and Pencil

- Lack of automation is **not** a reason to delay starting

## EMR Capture

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

## Capturing Patient-Reported Outcomes

- Paper surveys can be highly effective and scanned
- 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
  - Letters with paper surveys
  - Internet surveys
  - Data capture during follow up visits
  - Incentives and phone reminders
  - 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 it into patient's care and existing workflow



**While waiting, the patient fills in survey on a tablet (illustrated) with integrated instructions**

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

**Minimize time spent by admin. staff during surveying**



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

- + Patient can report information they are not comfortable to discuss

**Reduce time upfront & focus the clinician's interaction**



**Integrate additional data needed such as "Review of Systems" and save data to the 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

**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

## 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
- 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
- Report to **external disease registries** if available

# Comparing and Improving Outcomes

- Begin with **internal reporting to clinicians**
  - Comparing outcomes of physicians or care teams **over time**
  - Comparing **across locations**
  - Move from **blinded** to **unblinded** data at the individual provider level
- **Expand reporting** over time to referring providers, payers, and eventually 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



# Society of Thoracic Surgeons Website

## Physician Group Report Card: Composite Metric and Star Ratings

### Search CABG Data by Group

Group name	Year:	State:			
<input type="text"/>	July 2010 - June 2011	CA	<input type="button" value="Submit"/>		
Name ▲	Overall Composite Score (?)	Absence of Operative Mortality (?)	Absence of Major Morbidity (?)	Use of Internal Mammary Artery (?)	Receipt of Required Perioperative Medications (?)
<a href="#">Adamson and Dembitsky Medical Corporation</a> <i>San Diego, CA</i>	★★	★★	★★	★★	★
<a href="#">California Cardiovascular and Thoracic Surgeons</a> <i>Ventura, CA</i>	★★	★★	★★	★★	★★
<a href="#">Cardiac Surgeons at Glendale Adventist</a> <i>Glendale, CA</i>	★★	★★	★★	★★	★★
<a href="#">Cardiac Surgeons at Providence Saint Joseph Medical Center</a> <i>Burbank, CA</i>	★★	★★	★★	★★	★★
<a href="#">Cardiothoracic Surgeons at Providence Holy Cross Medical Center</a> <i>Mission Hills, CA</i>	★★	★★	★★	★★	★★★★

#### 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

# Outcome Improvement Process

- Convene **regular meetings** to analyze outcome variations and trends
  - Create a culture that allows **open discussion of results** with no repercussions for participants willing to learn and make constructive changes
- Collaborate with external registries and leading national and international providers to **benchmark performance and compare best practices**
- Utilize outcomes analysis to prioritize and guide **process improvement** and **potential care innovations**
- Combine outcome data with **TDABC at the condition level** to examine opportunities for value improvement through eliminating activities that do not contribute to outcomes

# Standardizing Outcome Measurement by Medical Condition

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

ICHOM 's co-founders



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

## ICHOM's Mission:

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

# ICHOM Working Groups

- Define standard outcome sets all providers should 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**




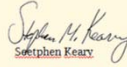
### ICHOM Standard Set

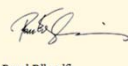
	<u>Outcomes</u>	<u>Measures</u>
Tier 1	<input type="checkbox"/> Outcome 1 <input type="checkbox"/> Outcome 2	▶ Measure 1 ▶ Measure 2
Tier 2	<input type="checkbox"/> Outcome 3 <input type="checkbox"/> Outcome 4	▶ Measure 3 ▶ Measure 4
Tier 3	<input type="checkbox"/> Outcome 5 <input type="checkbox"/> Outcome 6	▶ Measure 5 ▶ Measure 6

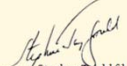
We declare that we endorse this set of outcomes, and will work to get this implemented within our organization within the next 3 years. We recommend everyone in the field of outcome measurement to endorse this set as their outcomes.


  
Hoid Dikdafi

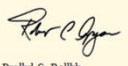
  
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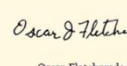
  
Stephen Keary

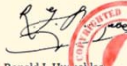
  
Pzaul Dksadfi


  
Stephen Tyalskdf

  
Anders Klarsboom

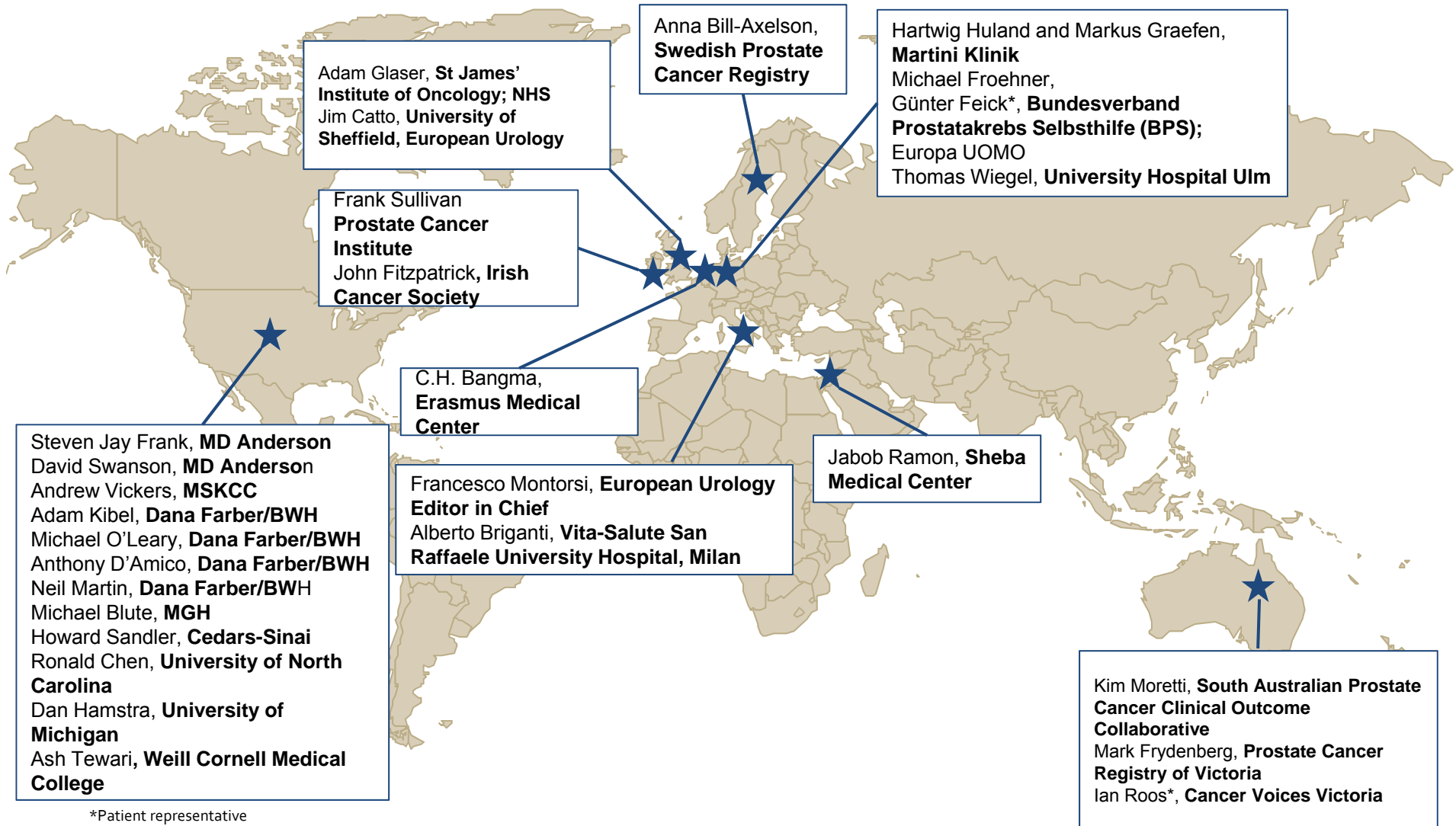
  
Preiki C. Ralikk

  
Oscar Fletcherde

  
Ronald J. H...



# ICHOM Prostate Cancer Working Group



# ICHOM Standard Set for Localized Prostate Cancer: Outcomes



## Treatment approaches covered

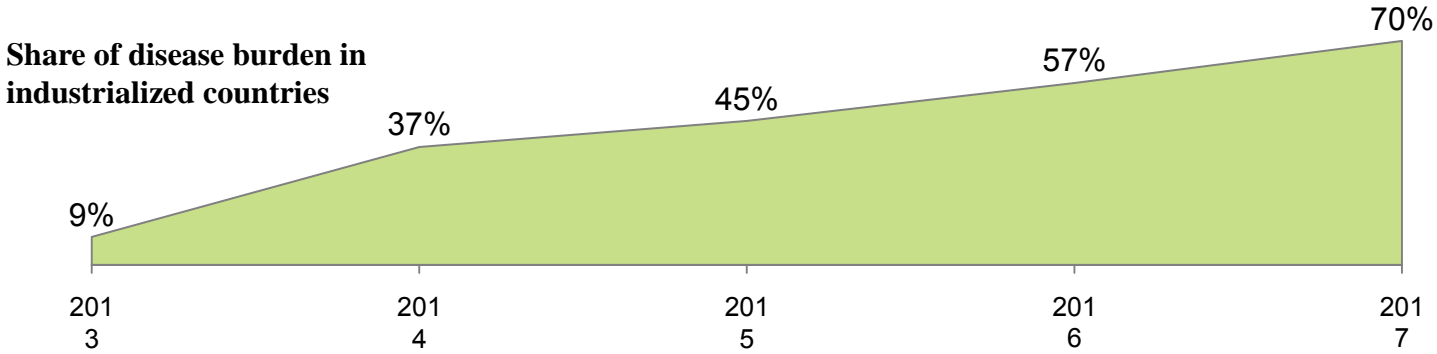
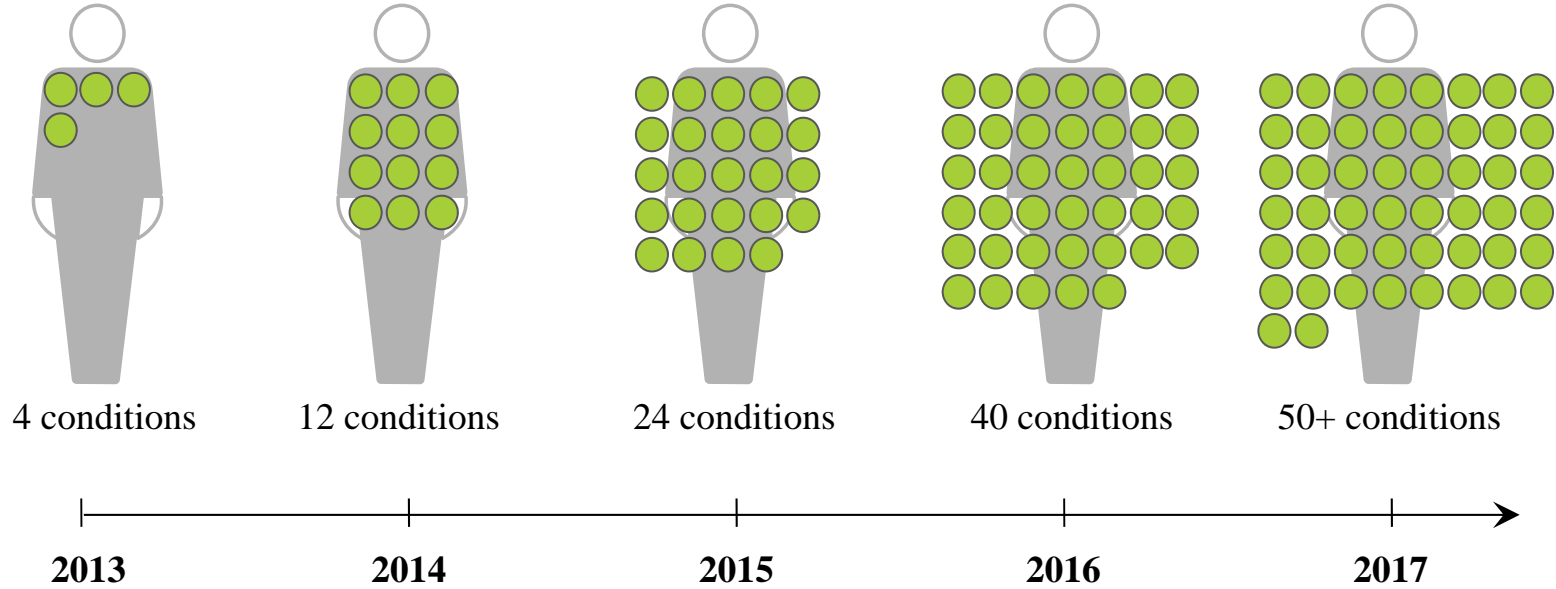
- Watchful waiting
- Active surveillance
- Prostatectomy
- External beam radiation therapy
- Brachytherapy
- Androgen Deprivation Treatment
- Other

- Patient Reported Outcomes
- Physician Reported Outcomes

Details: (1) Clavien-Dindo-Classification, (2) Common Terminology Criteria for Adverse Events (CTCAE), version 4.0. (3) Expanded Prostate Cancer Index Composite (EPIC)-26

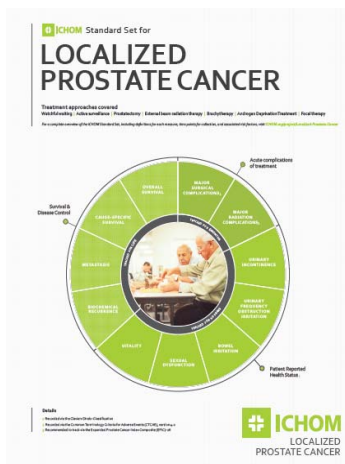
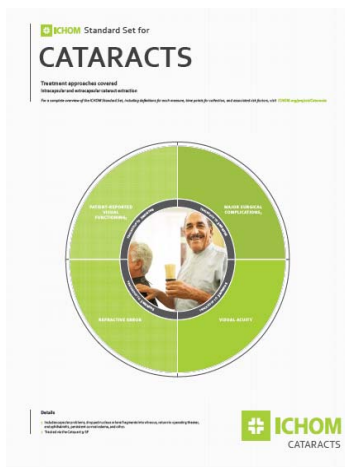
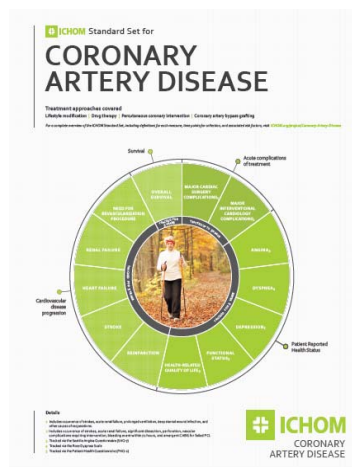
© 2013 ICHOM. All rights reserved. When using this set of outcomes, or quoting therefrom, in any way, we solely require that you always make a reference to ICHOM as the source so that this organization can continue its work to define more standard outcome sets.

# ICHOM's Plan: Having Standard Sets covering 70% of the Disease Burden by 2017





# In our first year, we've successfully developed Standard Sets in four conditions, and now we are ramping up quickly



## Conditions targeted for 2014

- Parkinson's disease
- Lung cancer
- Advanced prostate cancer
- Depression and anxiety
- Cleft lip and palate
- Hip and knee osteoarthritis
- Stroke
- Macular Degeneration
- ...



## Getting Involved

- **Attendance** in ICHOM events and courses
- **Adoption** of standard outcome sets
- **Seconding** staff to be ICHOM fellows
- **Encouraging senior clinicians** to join working groups
- **Supporting** ICHOM directly and via societies, consortia, and other groups

[www.ichom.org](http://www.ichom.org)