Leadership Workshop: Strategy for Health Care Delivery

Outcomes Measurement

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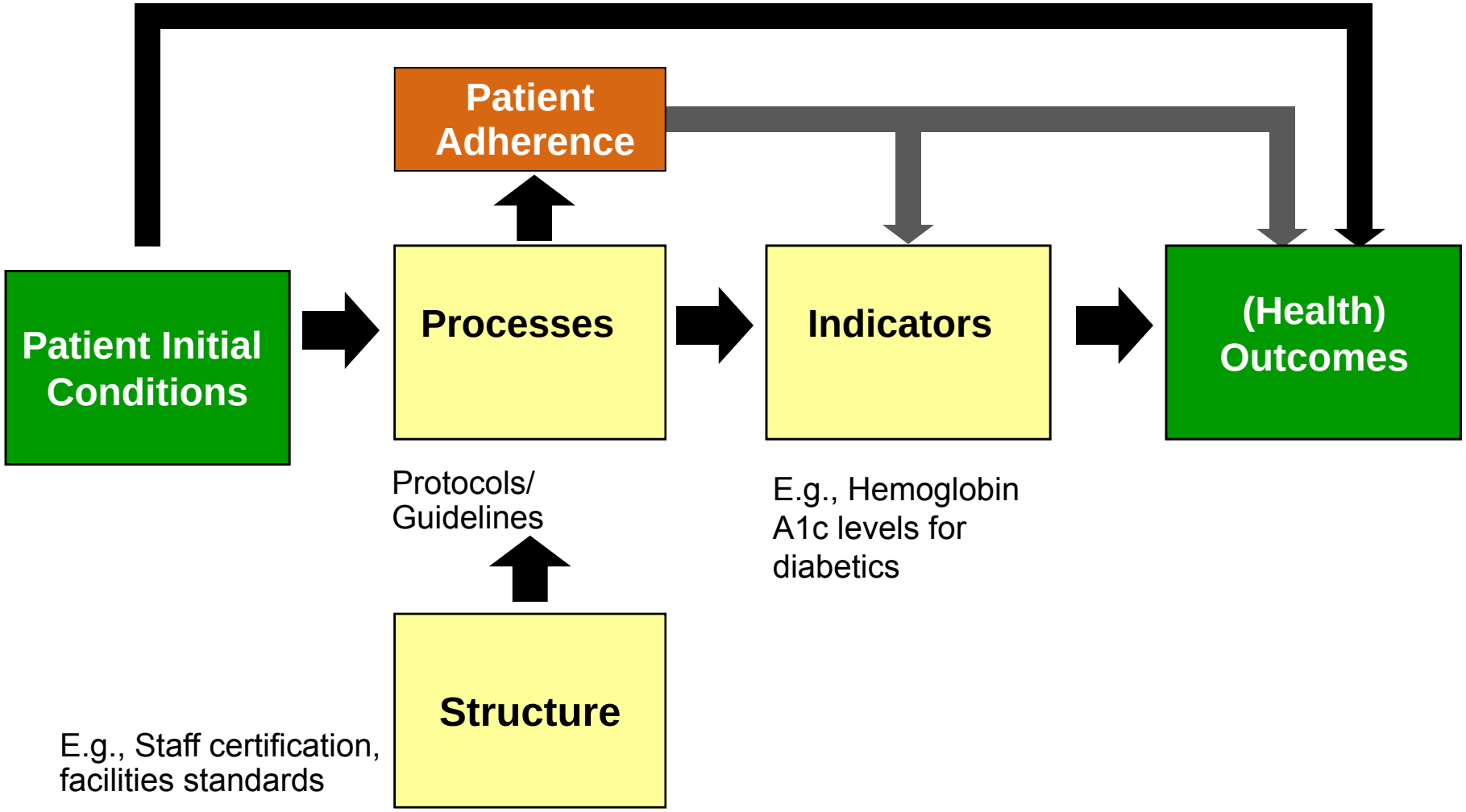
Creating a Value-Based Health Care Delivery System

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. Reimburse through Bundled Prices for Care Cycles
4. Integrate Care Delivery Across Separate Facilities
5. Expand Geographic Coverage by Excellent Providers
6. Build an Enabling Information Technology Platform

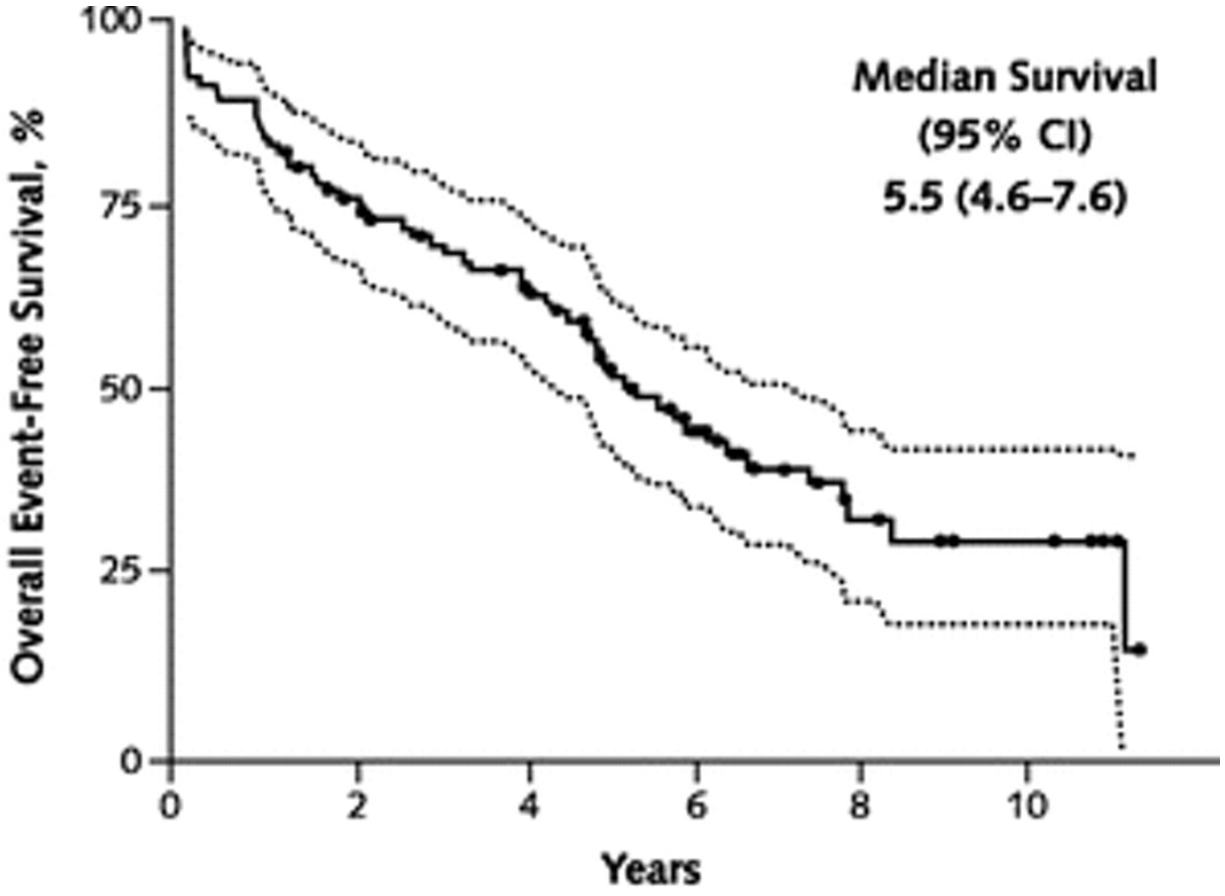
2. Measuring Outcomes and Cost for Every Patient

The 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

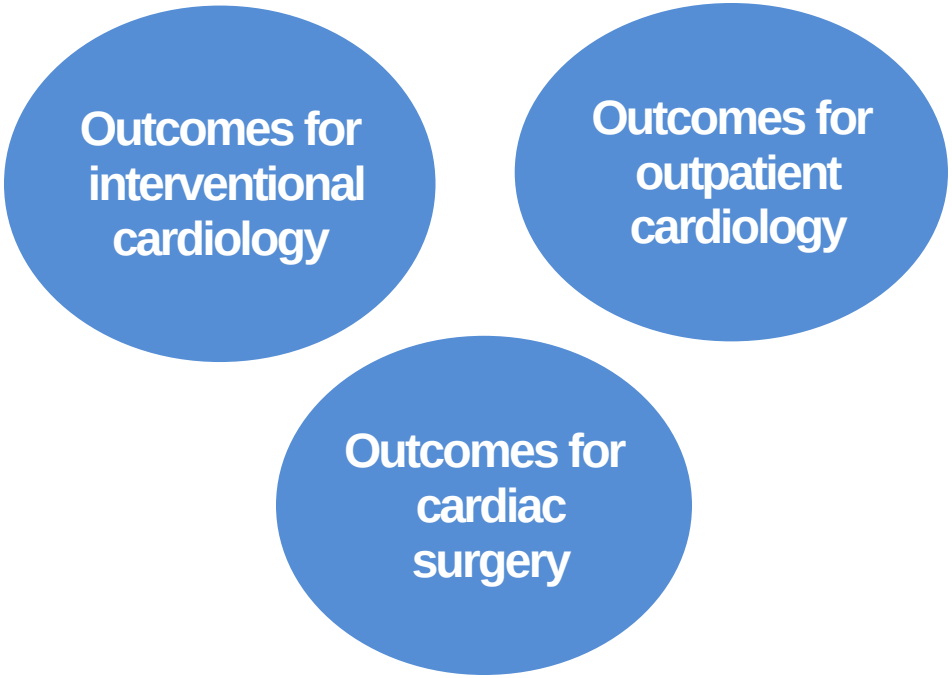
Shojania K G et al. Annals of Internal Medicine. 2007;147:224-233

Principles of Outcome Measurement

1. Outcomes should be measured by **medical condition** or **primary care patient segment**
2. Outcomes should reflect the **full cycle of care**
3. Outcomes are **multi-dimensional** and should include the health circumstances **most relevant to patients**
4. Measurement should include **initial conditions/risk factors** to allow for risk adjustment
5. Outcome measures should be **standardized across institutions** to enable comparison and learning

Conditions versus Procedures

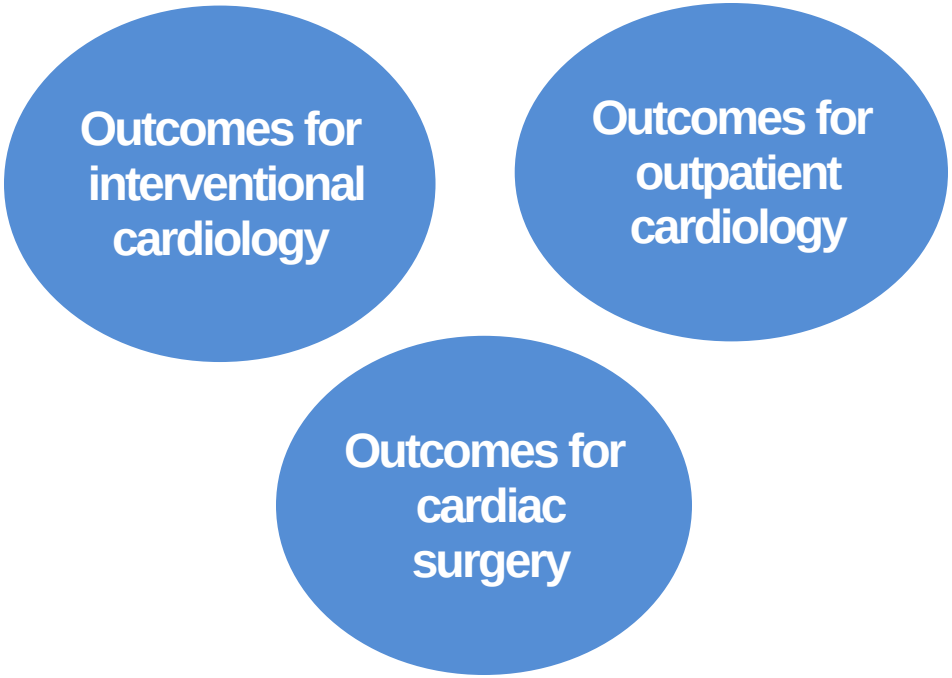
- Traditional model: Measure by **procedure or specialty**



- **Hinders comparison** of different interventions on outcomes

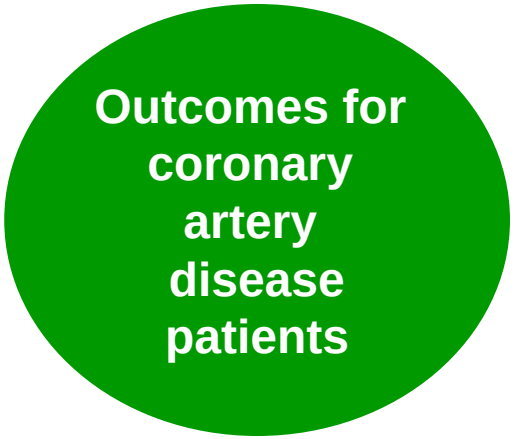
Conditions versus Procedures

- Traditional model: Measure by **procedure or specialty**



- **Hinders comparison** of different interventions on outcomes

- Value-based model: Measuring around the **underlying condition of the patient**



- Facilitates comparison of interventions and **selection of highest value treatment model**

Outcomes Should Be Measured Across The Full Care Cycle

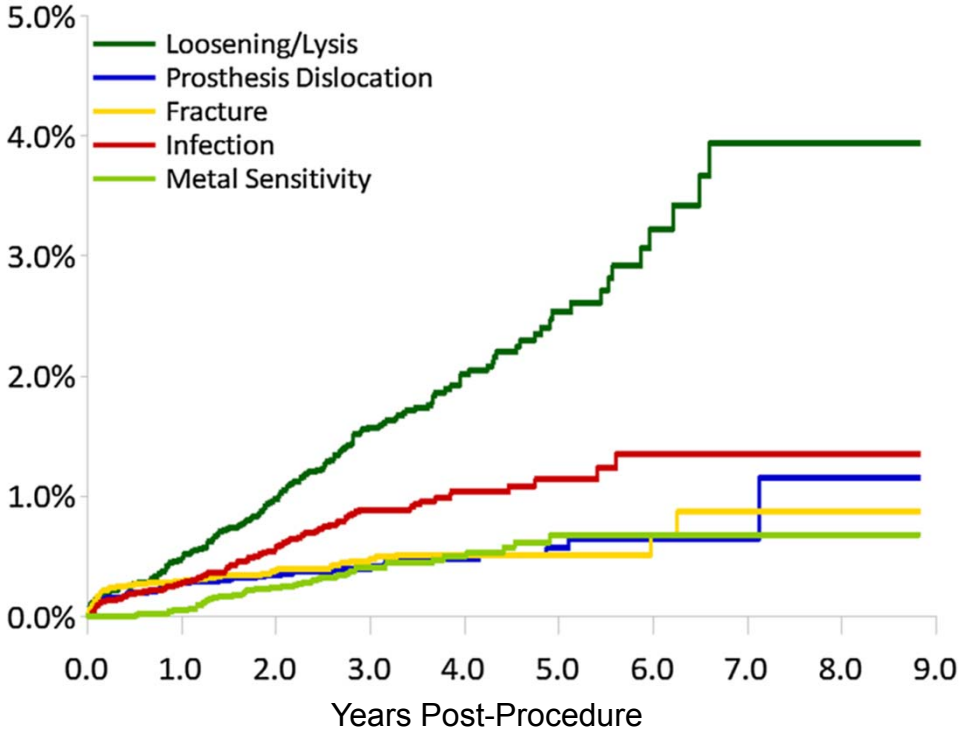
Acute Knee-Osteoarthritis Requiring Replacement

	MONITORING/ PREVENTING	DIAGNOSING	PREPARING	INTERVENING	RECOVERING/ REHABBING	MONITORING/ MANAGING
Informing and engaging	• Importance of exercise, weight reduction, proper nutrition	• Meaning of diagnosis • Prognosis (short- and long-term outcomes) • Drawbacks and benefits of surgery	• Setting expectations • Importance of nutrition, weight loss, vaccinations • Home preparation	• Expectations for recovery • Importance of rehab • Post-surgery risk factors	• Importance of rehab adherence • Longitudinal care plan	• Importance of exercise, maintaining healthy weight
Measuring	• Joint-specific symptoms and function (e.g., WOMAC scale) • Overall health (e.g., SF-12 scale)	• Loss of cartilage • Change in subchondral bone • Joint-specific symptoms and function • Overall health	• Baseline health status • Fitness for surgery (e.g., ASA score)	• Blood loss • Operative time • Complications	• Infections • Joint-specific symptoms and function • Inpatient length of stay • Ability to return to normal activities	• Joint-specific symptoms and function • Weight gain or loss • Missed work • Overall health
Accessing	• PCP office • Health club • Physical therapy clinic	• Specialty office • Imaging facility	• Specialty office • Pre-op evaluation center	• Operating room • Recovery room • Orthopedic floor at hospital/ specialty center	• Nursing facility • Rehab facility • Physical therapy • Home	• Specialty office • Primary care office • Health club

Care delivery	**Monitor**
	• Conduct PCP exam
	• Refer to specialists, if necessary
	Prevent
	• Prescribe anti-inflammatory medicines
	• Recommend exercise regimen
	• Set weight loss targets
		Imaging
		• Perform and evaluate MRI and x-ray
		  • Assess cartilage loss
		  • Assess bone alterations
		Clinical evaluation
		• Review history and imaging
		• Perform physical exam
		• Recommend treatment plan (surgery or other options)
			Overall prep
			• Conduct home assessment
			• Monitor weight loss
			Surgical prep
			• Perform cardiology, pulmonary evaluations
			• Run blood labs
			• Conduct pre-op physical exam
				Anesthesia
				• Administer anesthesia (general, epidural, or regional)
				Surgical procedure
				• Determine approach (e.g., minimally invasive)
				• Insert device
				• Cement joint
				Pain management
				• Prescribe preemptive multimodal pain meds
					Surgical
					• Immediate return to OR for manipulation, if necessary
					Medical
					• Monitor coagulation
					Living
					• Provide daily living support
					• Track risk indicators
					Physical therapy
					+ Daily or twice daily PT sessions
						Monitor
						• Consult regularly with patient
						Manage
						• Prescribe prophylactic antibiotics when needed
						• Set long-term exercise plan
						• Revise joint, if necessary

Measuring the Long-Term Results of Hip Replacement

Cumulative Incidence of Selected Complications

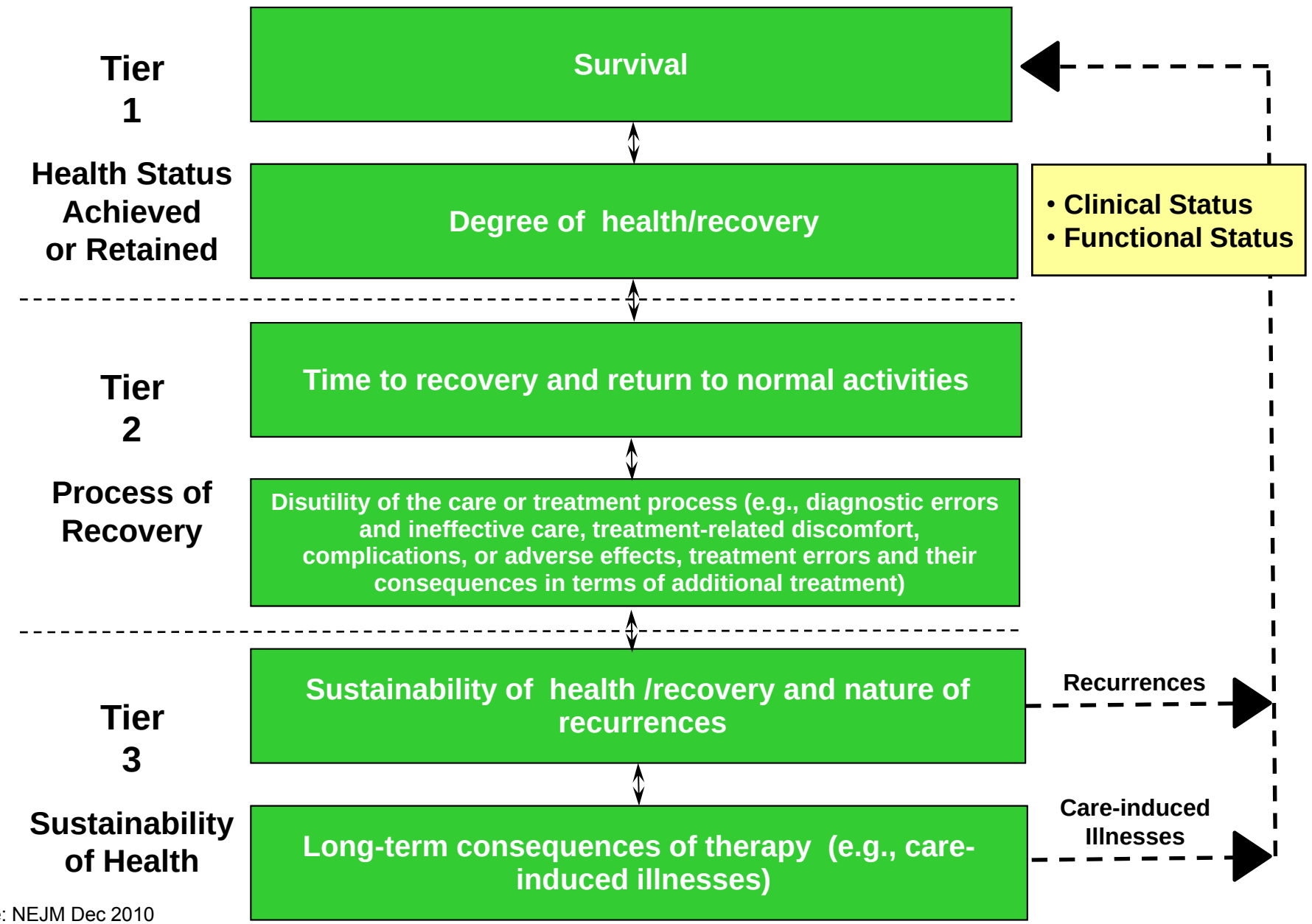


- Measurement often stops 30 days, 90 days, or a year post-intervention, but many critical outcomes that matter to patients **are revealed over time**

- Measuring across the full cycle of care is necessary for a **complete and accurate picture** of value delivered

Source: Graves S E et al. The Journal of Bone and Joint Surgery. 2011 Dec 21;93 (Supplement 3):43-47

The Outcome Measures Hierarchy



Source: NEJM Dec 2010

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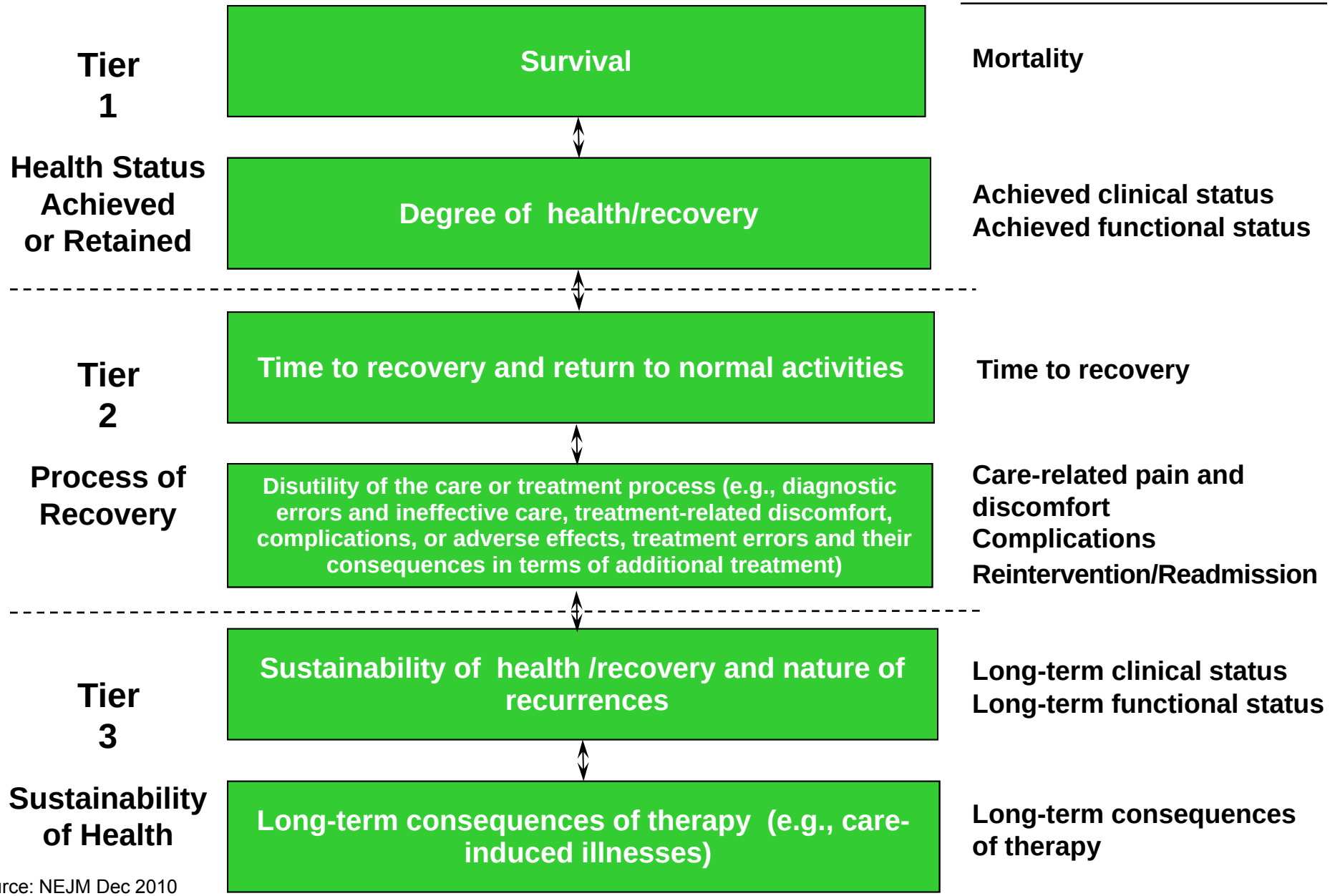

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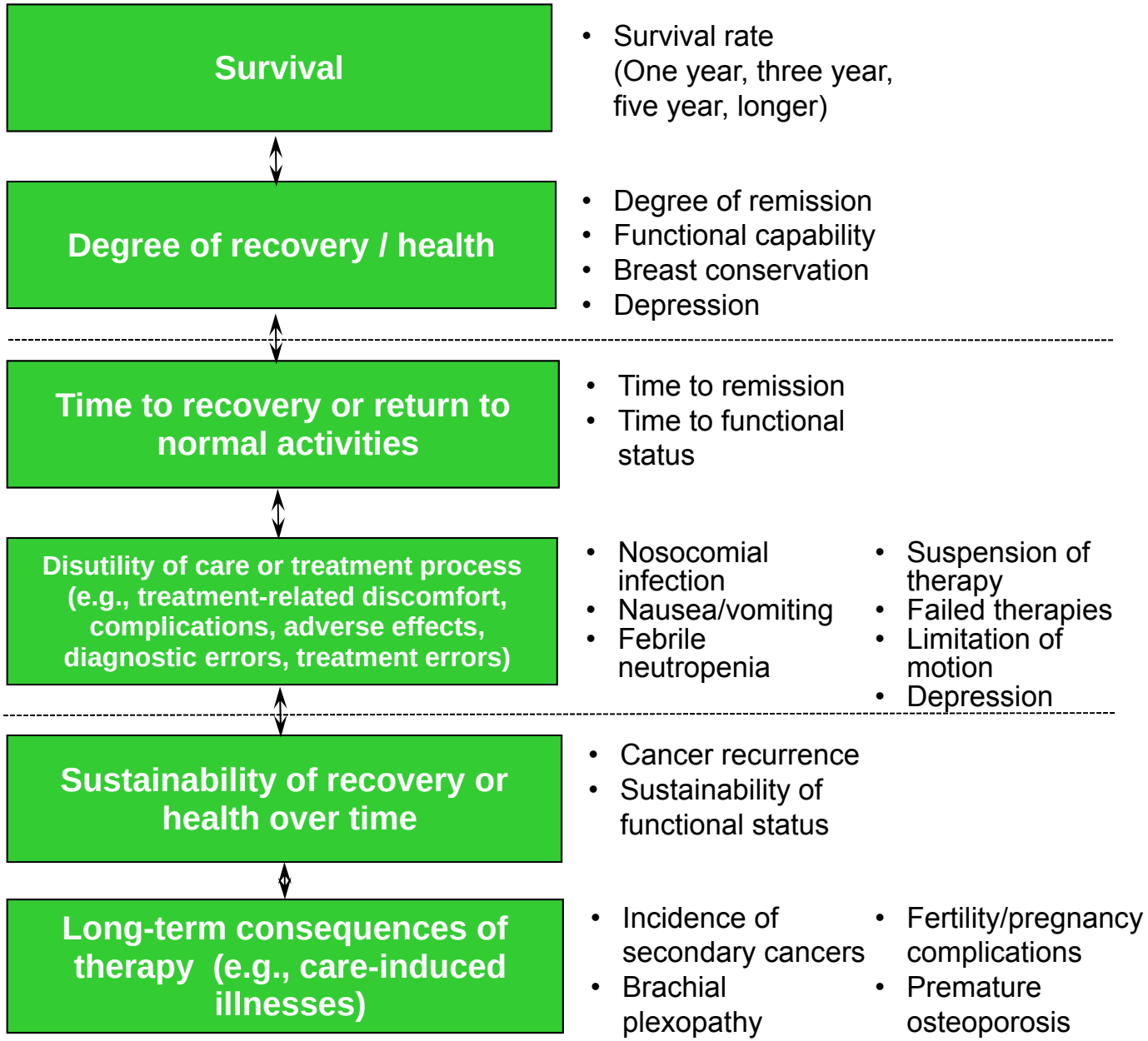
The Outcome Measures Hierarchy

Breast Cancer

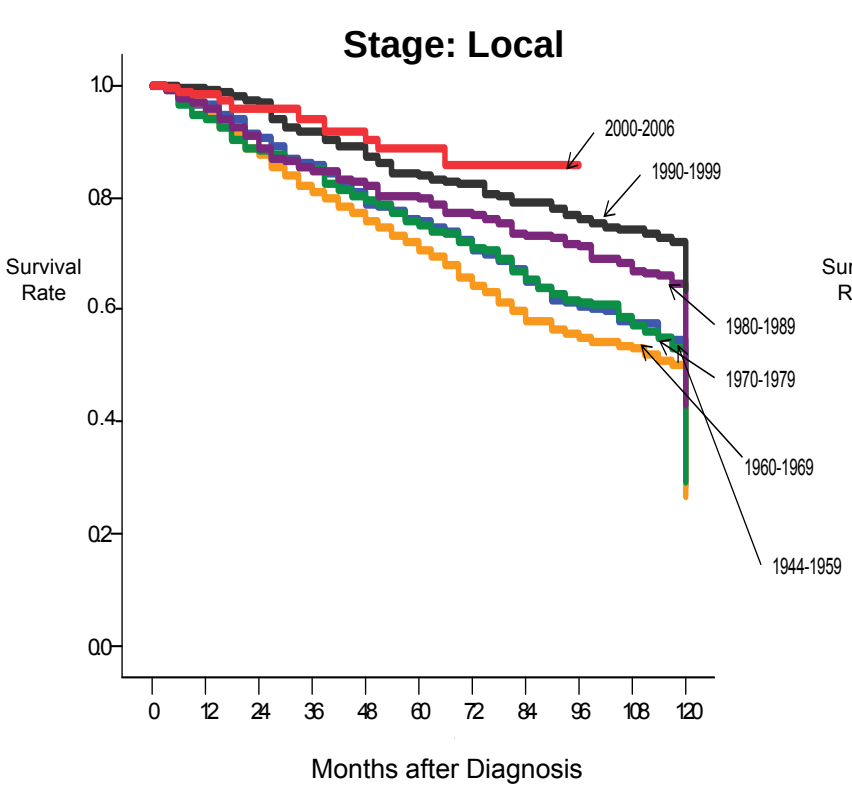


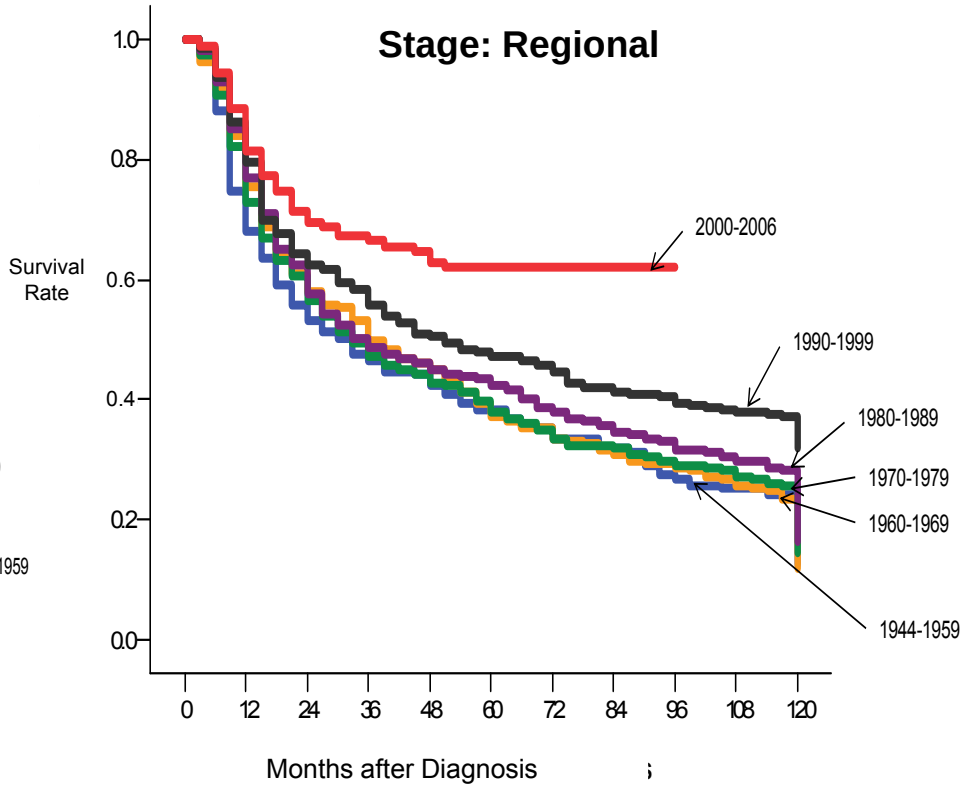
Initial Conditions/Risk Factors

- Stage upon diagnosis
- Type of cancer (infiltrating ductal carcinoma, tubular, medullary, lobular, etc.)
- Estrogen and progesterone receptor status (positive or negative)
- Sites of metastases
- Previous treatments
- Age
- Menopausal status
- General health, including co-morbidities
- Psychological and social factors

Comparing Outcomes over Time

MD Anderson Oral Cavity Cancer Survival by Patient Registration Year

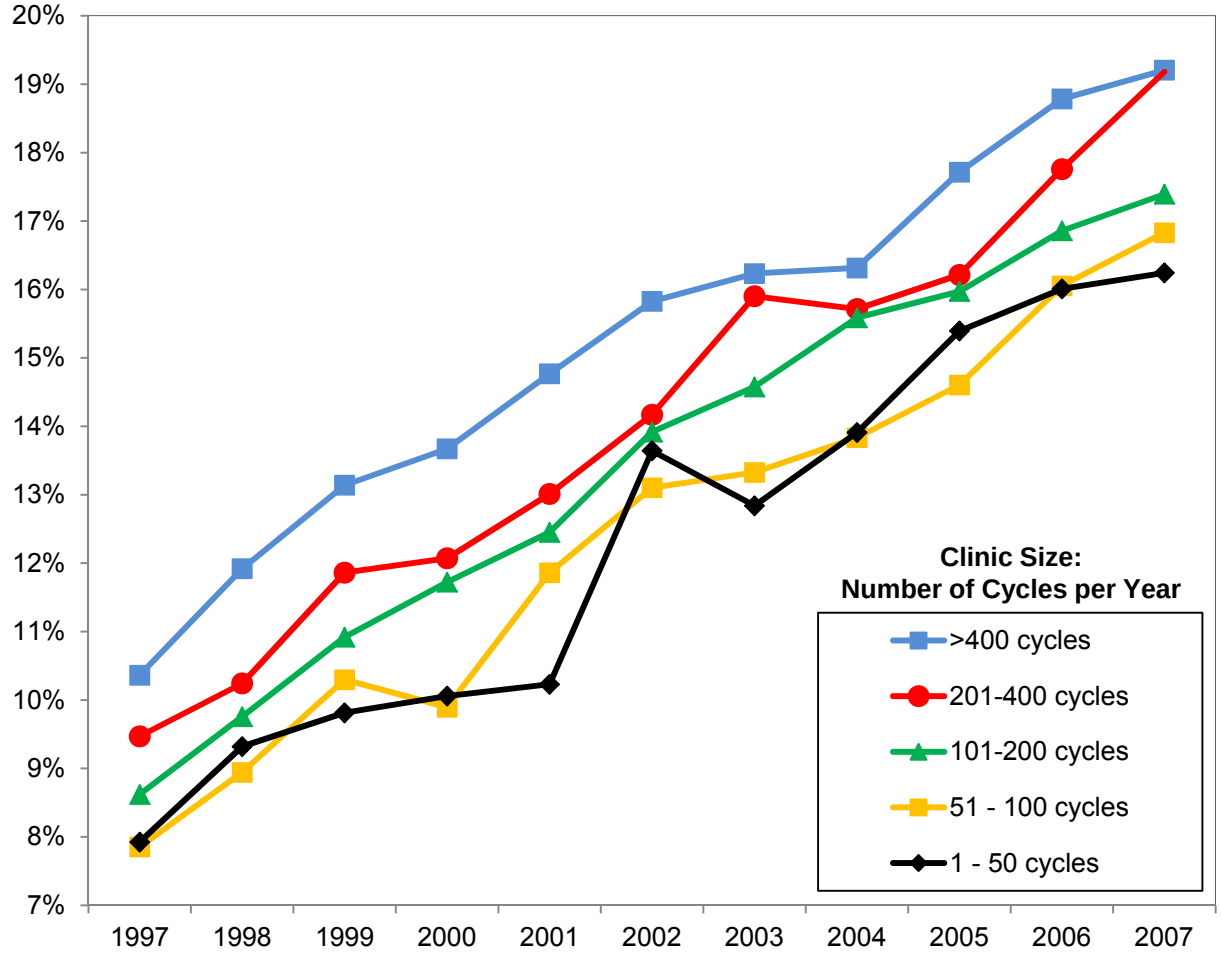




Source: MD Anderson Cancer Center

Comparing Outcomes across Centers
In-vitro Fertilization

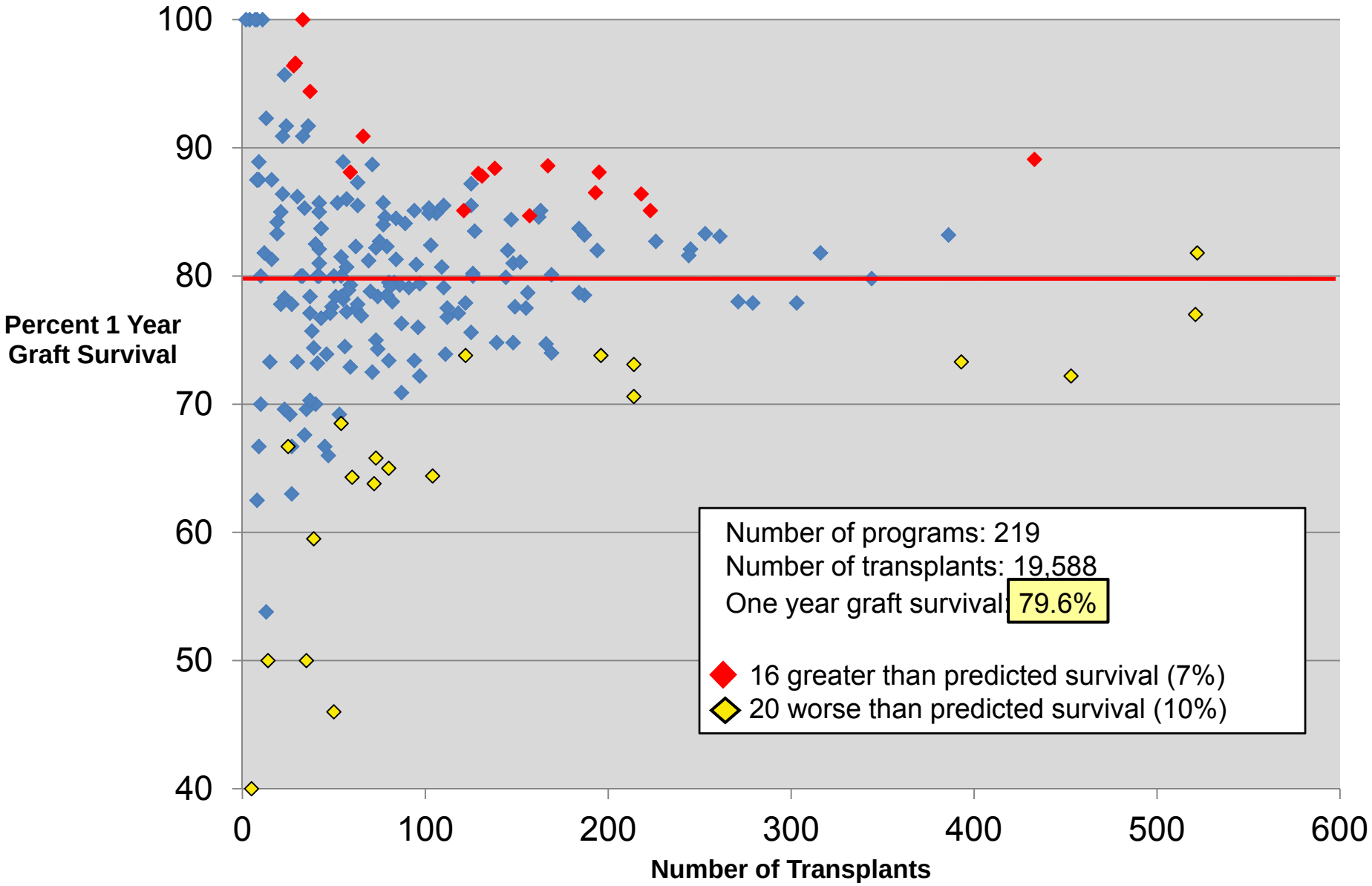
Percent Live Births per Fresh, Non-Donor Embryo Transferred by Clinic Size
Women Under 38 Years of Age, 1997-2007



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>, Dec. 12, 2010.

Comparing Outcomes across Centers

Adult Kidney Transplants, US Centers, 1987-1989



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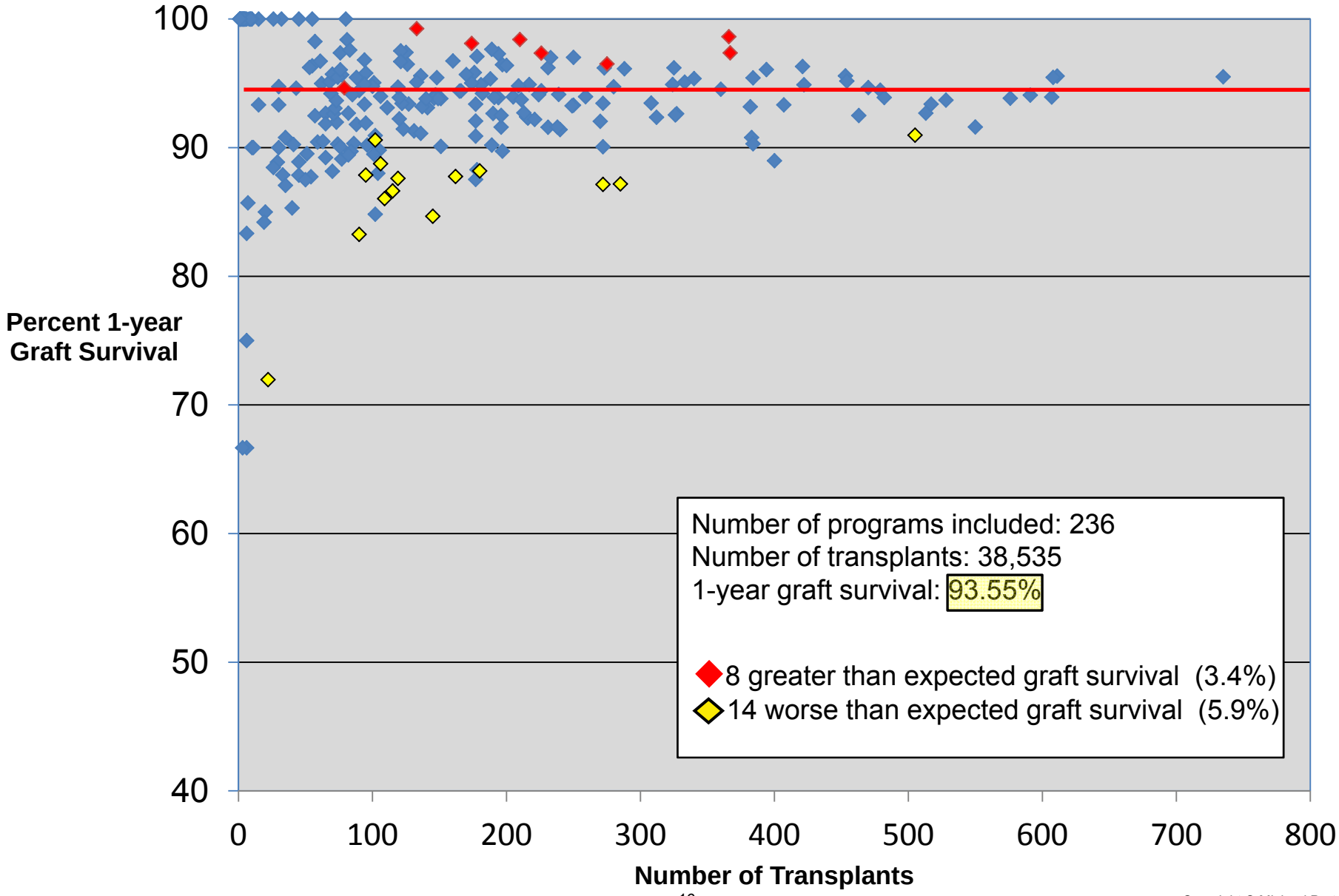

Steps to Creating an Outcomes Measurement System

1. Designing outcome measures
2. Collecting outcome data
3. Compiling and analyzing outcomes
4. Reporting
5. Driving improvement

1. Designing Outcome Measures

- Define the **medical condition**
- Establish an **outcome measures team** including physicians, nurses and skilled staff involved in the care cycle
- Create a **care delivery value chain** (CDVC) for the condition
- Use the **outcome hierarchy** to define a comprehensive set of **outcome dimensions**, and **specific measures**
  - Engage patients to understand the outcomes **that matter to them**
- Tie the **outcome measures to the CDVC** to check for completeness and start to identify the causal connections between activities and each outcome

The Care Delivery Value Chain

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- Identify the **set of initial conditions** or **risk factors** necessary to control for patient differences

- Utilize ICHOM data on outcome measures and risk adjustment **to identify international best practices**

2. Collecting Outcome Data: Initial Steps

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

- **Chart review** and **paper-based forms** are starting points in initiating and expanding the measures tracked

2. 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)

3. Compiling and Analyzing Outcomes

- 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

4. Reporting

- Begin with **internal reporting to providers**
  - Comparing outcomes over time, then across locations
  - Move from blinded to unblinded data at the individual provider level
- **Expand reporting** over time to include referring providers, payors, and patients
  - An agreed upon **path to external transparency** of outcomes
- Work with provider peers, payors, and government to **standardize reporting measures and methods,** including
  - Standardized metrics
  - Method of stratification/risk adjustment
  - Unit of analysis (individual physician vs. group practice)
  - Process for improving metrics

- Ultimately, **universal reporting of standardized measures** will be the strongest driver in value improvement

5. Driving 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

Enabling Universal Outcomes Measurement:
Leverage Points for Government

- **Incentivize** outcomes measurement and reporting
  - Payment incentives for **reporting**
  - **Required** reporting for participation in **new reimbursement models**
  - **Required** reporting for **all** reimbursement
- Incorporate requirements for outcome measurement (and reporting) into **certification** of programs and physicians
- Remove **policy hurdles** that impede outcome measurement and registry development and implementation (e.g., complex privacy rules, lack of definitive patient identifiers)

Enabling Universal Outcomes Measurement:
Leverage Points for Government, Cont

- Provide **seed funding and guidelines** for registry development
- Promulgate a **medical condition taxonomy** to facilitate standardization
- Strengthen **IT standards** to allow easier exchange of consistent information across data sources
  - Rules to require/encourage **payor information sharing with providers** on individual patients to enable longer-term tracking
- **Stimulate or mandate EMR improvements** that enable efficient data-entry workflow and easy extraction of outcome measures
- Recognize **ICHOM standards** for **minimum sets of measures** and **metric definitions** to accelerate outcome measurement adoption and encourage standardization

Enabling Universal Outcomes Measurement:
Leverage Points for Patients, Payors, and Employers

Payors

- Become active **consumers** of outcome data to inform contracting and guide subscriber choices
- Introduce **incentives** for outcome reporting and registry participation
  - Tie pay-for-performance programs initially to **reporting of outcomes**, but eventually to outcomes themselves

Employers

- Use purchasing power to require outcomes reporting by medical condition **as a condition for contracting**

Patients

- Work with providers to define the outcomes that **matter to patients** by medical condition
- Expect **outcomes data** as part of provider selection