Quality Metrics and Value-Based Care in Medicine
Goals for Today

Why am I talking with you?
Innovation in health care delivery – “delivery science”
The quality movement in health care and its implications
Value-based health care and measures that matter
How you can do it better than medicine did
Delivery Science in Health Care

Delivery science is study and design of systems, processes, leadership, and management to optimize health care delivery.

- Augmented human intelligence
- Economics
- Engineering
- Ergonomics
- Experiential learning
- Health care policy
- Health services research
- Human-centered design
- Information technology
- Knowledge management
- Population health
- Qualitative research
Evolution of Quality Measurement

**Emergence of Outcomes**  
1910s – 1940s
- Ernest Codman
  - Father of outcome measurement
  - Tracked patients with end result cards
  - Surgeons refused to participate
  - Left MGH to form own hospital
  - Codman’s work led to the formation of The Joint Commission

**Focus on Quality**  
1950s – 1980s
- Avedis Donebedian
  - Described the dimensions of health system quality as structure, process, and outcomes
  - Led to widespread measurement of structure and process
  - Little progress on outcome measurement

**Focus on Safety**  
1980s – 2000s
- Ken Shine – Don Berwick
  - Significant public pressure to improve after high profile never events (e.g. Libby Zion)
  - The Institute of Medicine released two reports – “To Err is Human” & “Crossing the Quality Chasm” – outlining new aims for care delivery that highlighted safety
  - Institute for Healthcare Improvement (IHI) (1991) founded to lead the improvement of health care throughout the world

**Focus on High Quality Hospitals**  
1990s
- Avery Comerow
  - U.S. News – Best Hospitals
  - First prominent effort to benchmark
  - Structure, process & outcomes adopted as the measurement framework
  - Systematic measurement of structural indicators
  - Process quality inferred from reputation surveys
  - Outcomes limited to inpatient mortality

**Focus on Performance Improvement**  
1990s
- Brent James
  - Healthcare looked to other industries to guide performance improvement including Six Sigma and Lean Management

Despite recognition of its importance, quality measurement was limited to nonexistent in 20th century healthcare
### Evolution of Quality Measurement

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Measuring Surgical Outcomes</td>
<td>Clifford Ko • VA program in 1990s (NVASRS) developed surgical outcome program • Private sector added in 2001 with ACS to do validated, risk adjusted measurement benchmarked over 30 day post operative period</td>
</tr>
<tr>
<td>2006</td>
<td>Introduction of the Value Agenda</td>
<td>Michael Porter • Outline six steps needed to achieve value • Spearheaded significant efforts around the world to implement value-based health care</td>
</tr>
<tr>
<td>2011</td>
<td>Creation of Standard Outcome Measure Sets</td>
<td>Porter, Larsson, Ingbar • Non-profit organization founded by individuals from three esteemed institutions • Purpose to transform health care systems worldwide by measuring and reporting patient outcomes in a standardized way</td>
</tr>
</tbody>
</table>
Elements of US Health Care Quality System

Professional licensure – state based

Accreditation

- The Joint Commission
- ISO 9000
- CMS through state programs
- Specialty center certifications – cancer, pediatrics, dialysis

All are essential elements for the health care reimbursement system in US

All depend upon use of performance measures
Elements of US Health Care Quality System

Reliable measures are essential to measure structure, processes, and results

Measure Development – medical specialty societies

Measure Endorsement – the National Quality Forum (NQF)

Measure adoption – payers

Measure development life cycle 12-24 months

Vast majority of NQF endorsed measures are process measures and structure measures – few outcomes
Evolving National Views on Reimbursement Reform

National movement toward value-based payment (VBP)

- Driven by healthcare reform and concerns regarding increasing healthcare costs
- Move away from fee-for-service, toward paying for value
- Reward outcomes and quality, not volume and procedures
- Drive incentives to control costs to providers – increase risk
Value Measurement is a National Priority

“…we want to change the way we pay, so that we reward the value of care and patient outcomes rather than the quantity of services.”

Sylvia Mathews Burwell
Former Secretary, Department of Health and Human Services
Health Affairs Blog, December 12, 2016
Demonstrating Value in Cancer Care

- **Publicly Report**
  on measures that are meaningful to patients, payers and providers

- **Create Transparency**
  around outcomes, processes, costs of care

- **Demonstrate Value**
  through public reporting of meaningful measures

- **Align Measures**
  for public reporting with measures used internally to improve care

- **Hold Ourselves Accountable**
  for delivering high-value care from patients’ perspective
Measure Development Considerations

More measures do not translate to better care, but increases administrative burden.

Fewer, high-level measures allow for more targeted focus on quality.

Ideally, 5-10 outcome measures per disease site, including patient-reported outcomes.

Timing vis-à-vis IT implementation is crucial.
Elements of US Health Care Quality System

Public reporting – patient choice, improvement by competition

ACA mandated cancer centers report on outcomes, processes, structure, efficiency, cost, and patient experience.

Cancer measure project for PPS exempt centers began in 2009 with formulation of the basics of the ACA – CMS consensus

The public reporting of cancer measures is now possible using Hospital Compare

Ten years – vast efforts by organizations and individuals results in a product that fails to address public needs
Value Based Health Care

The fundamental goal of health care is value for patients

Value = \frac{\text{Health outcomes that matter to patients}}{\text{Costs of delivering these outcomes}}

Value is created by managing a patient’s medical condition over the full cycle of care

Value = \frac{\text{The set of outcomes that matter for the condition}}{\text{The total costs of delivering these outcomes over the full care cycle}}

In primary and preventative care value is created by serving segments of patients with similar primary and preventative needs
Creating Value-Based Health Care Delivery
A Mutually Reinforcing Strategic Agenda

Re-organize care around patient conditions, into integrated practice units (IPUs) or population segments

Measure outcomes and cost for every patient

Move to value-based reimbursement models and ultimately bundled payments for conditions and primary care segments

Integrate multi-site care delivery systems

Integrate care across geography to improve value

Build an enabling information technology platform
Measure Outcomes for Every Patient
The Quality Measurement Landscape

- Patient Initial Conditions, Risk Factors
- Processes
- Indicators
- Outcomes

Patient Experience/Engagement / Adherence

Structures
E.g., Staff certification, facilities standards

Protocols/Guidelines

Outcomes are necessary to determine the importance of measuring other quality dimensions

E.g. PSA, Gleason score, surgical margin
ICHOM was founded to define standards for global outcomes measurement and accelerate adoption and international benchmarking.

**Where ICHOM come from**

Three organizations with the desire to unlock the potential of value-based health care founded ICHOM in 2012:

ICHOM is a nonprofit
- Independent 501(c)3 organization
- Ambitious yet achievable goals
- Global focus
- Engages diverse stakeholders

**ICHOM’s mission**

The mission
Unlock the potential of value-based health care by defining global Standard Sets of outcome measures that really matter to patients for the most relevant medical conditions and by driving adoption and reporting of these measures worldwide.

Value = Patient health outcomes achieved / Cost of delivering those outcomes
### Developing Outcome Measure Sets

#### Standard Sets Complete (2013)
1. Localized Prostate Cancer *
2. Lower Back Pain *
3. Coronary Artery Disease *
4. Cataracts *
5. Parkinson's Disease *
6. Cleft Lip and Palate *
7. Stroke *
8. Hip and Knee Osteoarthritis *
9. Macular Degeneration *
10. Lung Cancer *
11. Depression and Anxiety *
12. Advanced Prostate Cancer *

#### Standard Sets Complete (2014)
13. Breast Cancer *
14. Dementia *
15. Frail Elderly *
16. Heart Failure *
17. Pregnancy and Childbirth *
18. Colorectal Cancer *
19. Overactive Bladder *
20. Craniofacial Microsomia *
21. Inflammatory Bowel Disease *

#### Standard Sets Complete (2015-16)
22. Chronic Kidney Disease *
23. Congenital upper limb malformations *
24. Pediatric facial palsy *
25. Hypertension *
26. Inflammatory Arthritis *

#### Standard Sets Complete (2017-18)
27. Oral Health *
28. Hand and Wrist *
29. Congenital Heart Disease *
30. Diabetes *
31. Atrial Fibrillation *
32. Overall adult health *
33. Mental health Package *
34. Neonates *
35. Overall Pediatric Health *

* Published peer-reviewed journals (15)
Standard Set for Localized Prostate Cancer

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

A “Reference Guide” contains all the details to measure in a standard way the outcomes and case mix factors recommended.
Why measuring and reporting meaningful outcomes matters

Focussing on mortality alone…

5 year survival

94.0 94.0 95.0

Germany Sweden Best-in-class: Martini Klinik

Swedish data rough estimates from graphs; Source: National quality report for the year of diagnosis 2012 from the National Prostate Cancer Register (NPCR) Sweden, Martini Klinik, BARMER GEK Report Krankenhaus 2012, Patient-reported outcomes (EORTC-PSM), 1 year after treatment, 2010
Why measuring and reporting meaningful outcomes matters

Focussing on mortality alone…  …may obscure large differences in outcomes that matter most to patients

<Bar chart showing 5 year survival, 1 year incontinence, and 1 year severe erectile dysfunction for Germany, Sweden, and Martini Klinik.>

Swedish data rough estimates from graphs; Source: National quality report for the year of diagnosis 2012 from the National Prostate Cancer Register (NPCR) Sweden, Martini Klinik, BARMER GEK Report Krankenhaus 2012, Patient-reported outcomes (EORTC-PSM), 1 year after treatment, 2010
32 Countries
650+ Organizations
13 National Registries
Creating a Quality Measurement System

**Success Factors**
- Measure what matters - results
- Build consensus
- Demonstrate success
- Choose the right unit of measurement
- Work with the willing first

**Barriers to Success**
- Too many measures
- Meaningless measures
- Is it important?
- Is it actionable?
- Is it feasible?
- Poor consensus on measures
Discussion