Health Care's Journey to Greater Quality and Patient Safety

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Outline

I My Professional Journey

II High Cost Low Quality

III Changing Paradigm: Systems Approach to Quality Improvement and Cost Reduction

IV. Discussion

My Professional Journey

1965 – 1970	University of Wisconsin - Summer project - HHS Grant "Assessing Quality of Patient Care"
1970 – 1977	Henry Ford Health System - Operations Improvement
1977 – 1980	Harvard School of Public Health - Executive programs in health policy and management

My Professional Journey (cont'd)

1980 – 2006	Henry Ford Health System
1987	Dr. Deming course
1988	Launching CQI at HFHS
1988	Launching study group on quality
1989	Launching SHS
1989	Launching IHI
2006 – 2010	Blue Cross Blue Shield of Massachusetts

High Cost/Low Quality

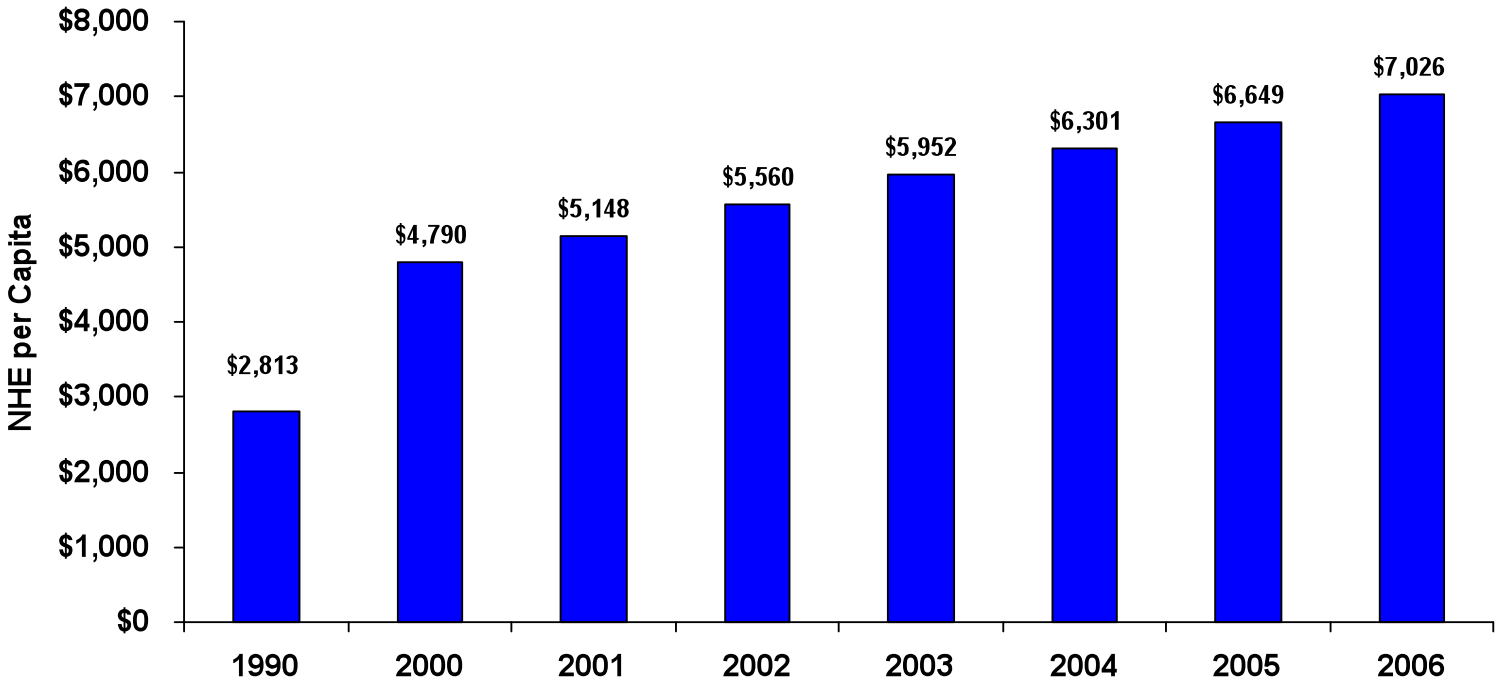
High Cost – Low Quality

- $2.7 trillion
- 16.7% GDP
- 460 peer reviewed studies from 1998 – 2006
- 30% waste - $700B
- Misuse, overuse, under use

Cost Increases

Between 2000 and 2006 estimated per capita expenditures rose 47%

National Health Expenditures per Capita, 1990-2006

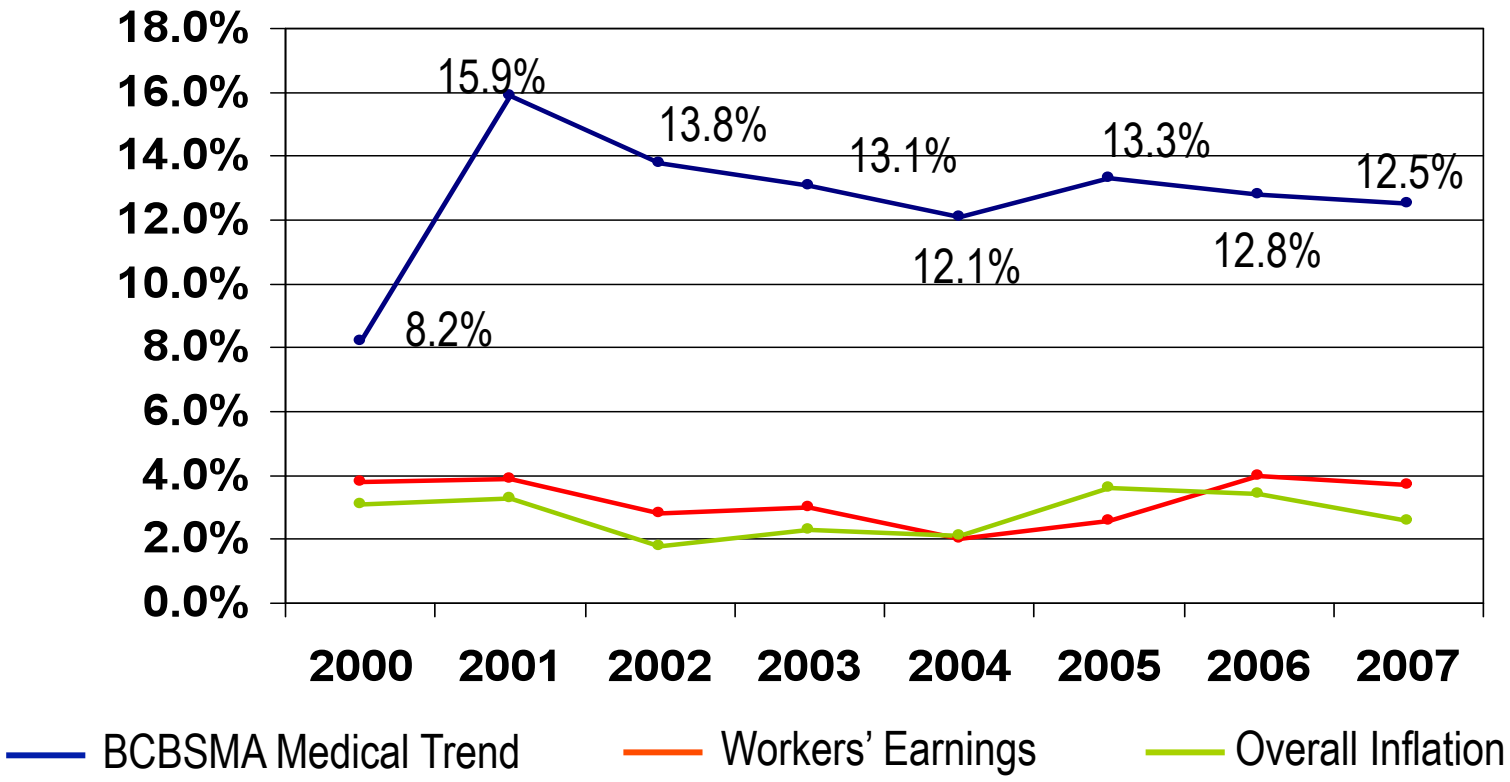


Health care's share of the GDP is projected to reach 20% by 2015

Source: Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group
Source: "National Health Spending In 2006: A Year Of Change For Prescription Drugs," February 2008
"Health Spending Projections Through 2015: Changes on the Horizon," February 2006

Medical Trend Outpacing Inflation

BCBSMA's medical cost trend is growing four times faster than workers' earnings, and nearly five times the rate of inflation.



Sources: BCBSMA, Bureau of Labor Statistics

National Scorecard on U.S. Health System Performance

Indicator	U.S National Rate	Benchmark Measure	Benchmark Rate	Score: Ratio of U.S. to Benchmark (%)
Mortality/1,000	115	Top 3 Countries	80.0	70
Infant Mortality/1,000	7	Top 3 Countries	2.7	39
Healthy Life Expectancy at age 60	16.6	Top 3 Countries	19.0	87
Children missed 11 or more school days	5.2	Top 10% states	3.8	74
Adults received screenings and preventive care (%)	49.0	Target	80.0	61

Commonwealth Fund, September 2006

National Scorecard on U.S. Health System Performance

Indicator	U.S National Rate	Benchmark Measure	Benchmark Rate	Score: Ratio of U.S. to Benchmark (%)
Chronic Disease under control (%)	52.0	90% Medicare Private Plans	82.0	61
Nursing Home residents with pressure sores (%)	16.0	Top 10% states	11.0	67
Ability to see doctor on same day or next day when sick (%)	47.0	Top 6 Countries	81.0	58
Easy to get care after hours without going to ER (%)	38.0	Top 6 Countries	72.0	53
Adults with no access problems due to cost (%)	60.0	Top 5 countries	91.0	66

Commonwealth Fund, September 2006

National Scorecard on U.S. Health System Performance

Indicator	U.S National Rate	Benchmark Measure	Benchmark Rate	Score: Ratio of U.S. to Benchmark (%)
Overuse/Waste (%)	22.0	Various	11.0	46
ER visits for conditions could have been treated by PCP (%)	26.0	Top 6 countries	6.0	23
% of National Health Expenditure on Health Administration	7.3	Top 3 Countries	2.0	28
Physicians using electronic records (%)	17.0	Top 3 Countries	80.0	21

Commonwealth Fund, September 2006

And the Latest Large American Study…

McGlynn, et al: *The Quality of Health Care Delivered to Adults in the United States*, NEJM 348:2645-264, June 26, 2003.

- 439 indicators of clinical quality of care
- 30 acute and chronic conditions, plus prevention
- Medical records for 6,712 patients
- Participants had received 54.9% of scientifically indicated care (Acute: 53.5%; Chronic: 56.1%; Preventive: 54.9%)

Conclusion: "The Defect Rate" in the technical quality of American health care is approximately 45%.

Hospital Acquired Infection

- Two million patients harmed each year
- 90,000 deaths per year
- Each infection represents an additional $15,000 in health care costs
- Current status – Reliability – 13%

Infection Type	Hospitals with Full Compliance*
Aspiration and ventilator associated pneumonia	38.5%
Central venous catheter related blood stream infection	35.4%
Surgical site infection	32.3%
Influenza	30.7%
Hand Hygiene	35.6%

** Leapfrog Group/National Quality Forum List of Safety Practices*

How Many More Studies Will It Take:

A Collection of Evidence that Our Health Care System Can Do Better

NEHI

New England Healthcare Institute, 2008

1998 - 2006

Changing Paradigm: Systems Approach to Quality Improvement and Cost Reduction

Changing Paradigm

High Cost Low Quality

To

High Quality Low Cost

Systems Approach to Quality and Cost

Lessons from Other Industries

1. Standardize work
2. Reliability theory – human factors
3. Quality improvement – error reduction
4. Process improvement
5. Use of information technology
6. Supply chain management
7. Outsourcing/Offshoring

Standardize Work

Riskiest places where errors happen

- Hand offs between providers
- From nurse to nurse at shift change
- From physician to nurse in operating room
- From surgery to intensive care unit

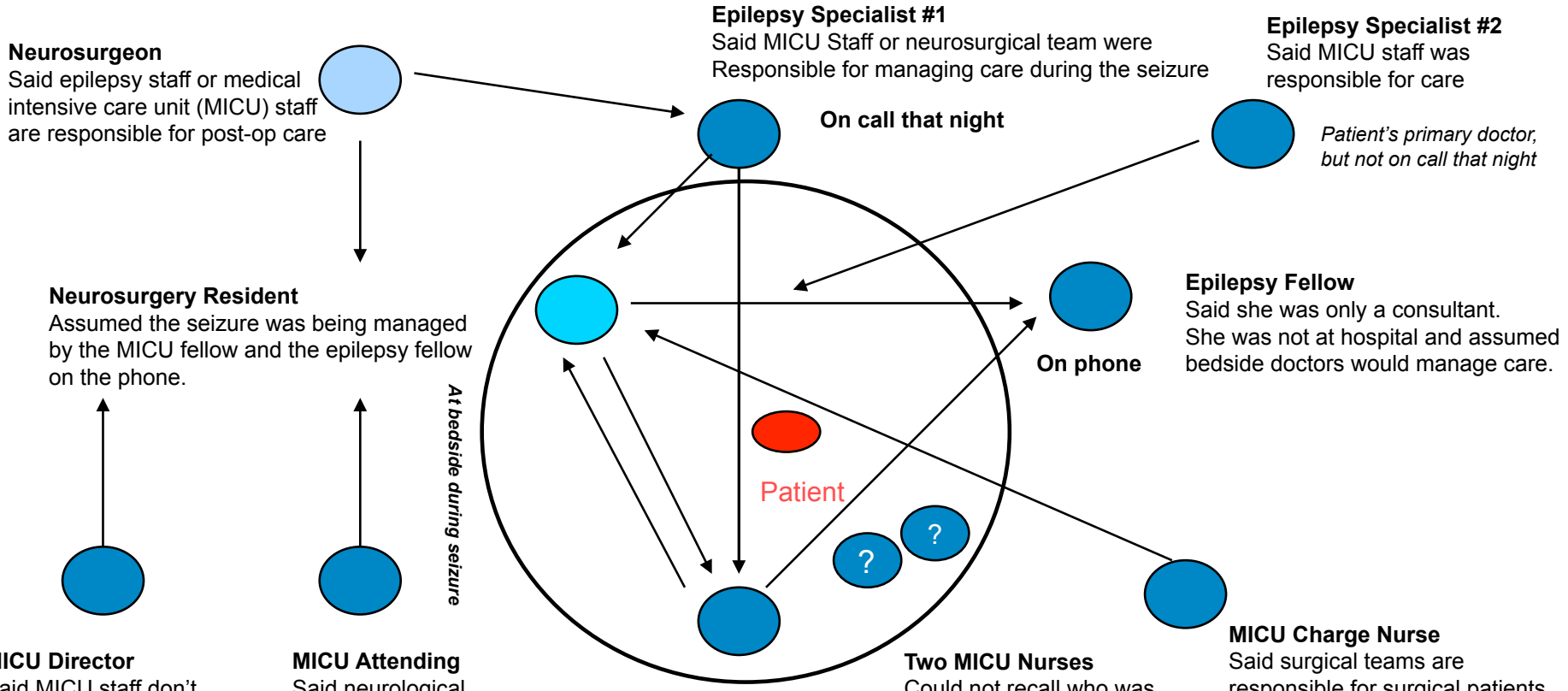
Critical information not passed on to receiving area

Examples

- 25% of missed diagnoses in emergency rooms
  - Failure of positive lab test back to ordering physician
- Children's Hospital of Boston

Pointing the Finger

Both doctors at the scene and those in supervisory roles told federal investigators that other individuals or departments were responsible for managing the patient's treatment during the seizure. The patient did receive anti-seizure drugs, but not in high enough doses.



Globe Staff Graphic/Sean McNaughton

Standardize Work
Change Hand-Offs to Hand-Overs

Clarity of sequencing of steps

Designated person in charge of monitoring transfer

Developing protocols for each member of the team

Shift change knowledge exchange

- Bedside round
- Patient goal boards
- Medication review

Human factors – reliability improvement

- Face to face interaction
- Verbal communication/dialog
- Checklists
- Standardized work allows lower wage workers to do the task

Reliability Theory – Human Factors

Reliability = error free operations over time

Current evidence

- Four defects for every ten opportunities to deliver evidence-based care in physician's office practice
- One to two defects for every ten opportunities to deliver evidence-based care in hospital practice

Reliability Theory - Human Factors
Why Is Health Care So Unreliable?

We tend to rely on vigilance and hard work

We focus on outcomes rather than process

We fail to design and implement standard work

We do not learn from human factors science and reliability

We value individual freedom over reliable design

Reliability Theory - Human Factors
Improvement Concepts Associated with 10^{-1} Performance

10^{-1} = 1 or 2 failures out of 10 (80% - 90% reliable)

Common equipment

Standard order sheets

Personal check lists

Feedback of information on compliance

Awareness, training

Suggestions to work harder, pay closer attention

Reliability Theory – Human Factors
Improvement Associated with 10^{-2} Performance

10^{-2} = 5 failures out of 100 (95% reliable)

Decision aids/reminders built into the system

Default – desired action (based on evidence)

Redundant process utilized

Habits/patterns known and taken advantage of in the design

Process standardization based upon clear specifications

Reliability Theory – Human Factors Teamwork

Team training for teams working in critical areas

- OR
- Birthing units

Teams communication simulation

- Harvard simulation laboratory
- Objective
  - Improved communications
  - Improved hand offs
  - Culture

Top Gun crew training – Life Wing Partners

- Obstetrics department procedures and staff communications
- Fairview Hospital, MN
- Provena Hospital, IL

Quality Improvement – Error Reduction

Implementing Best Practices

Concept of bundles

- Surgical bundle
- VAP bundle

Elements of a bundle

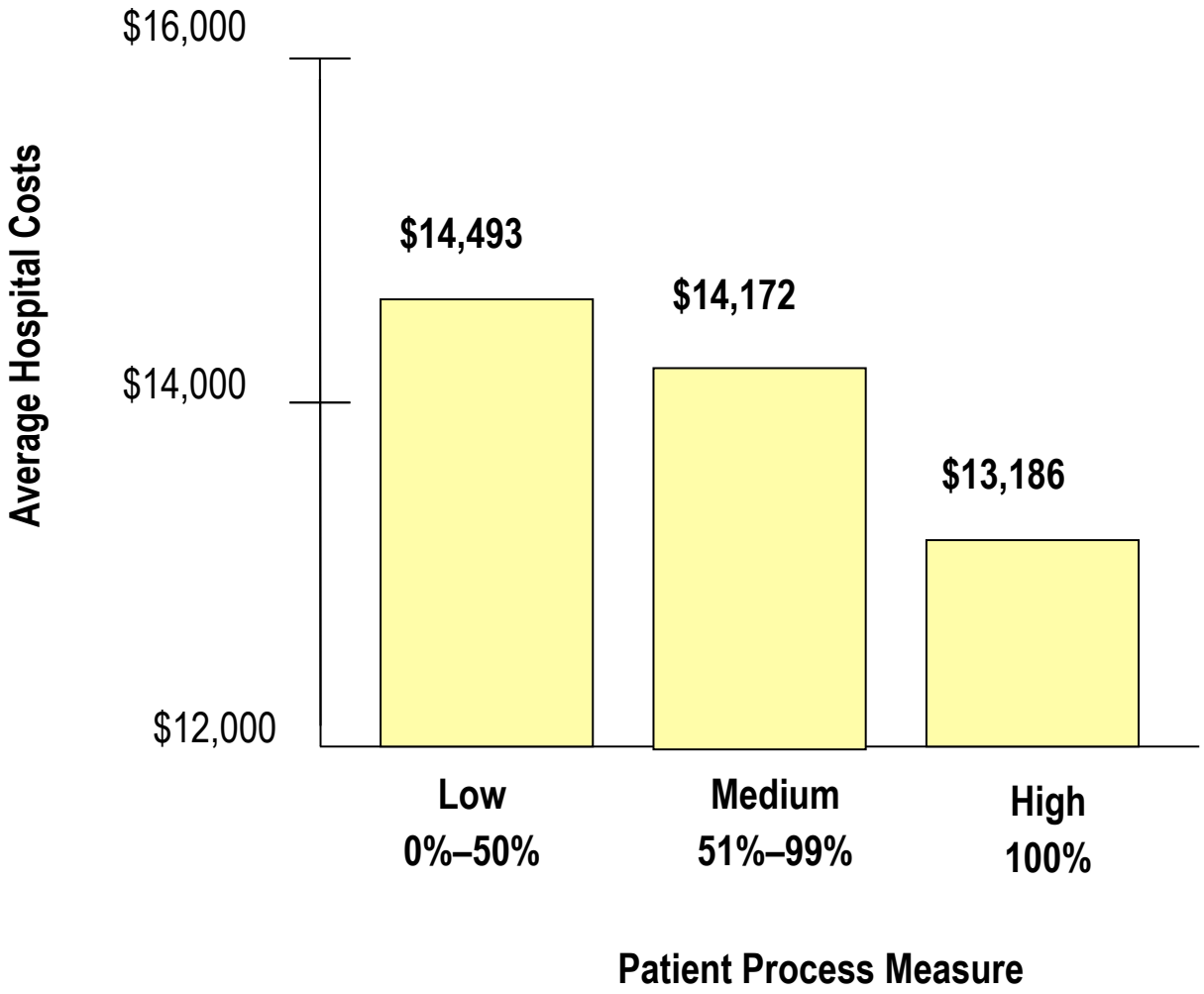
- Five steps must be done correctly
- Each step done accurately 90% of the time
- Overall reliability $(.90)^5$ = 59%

Hospital Acquired Infection

Surgical Bundle: Reducing Post Surgical Infections

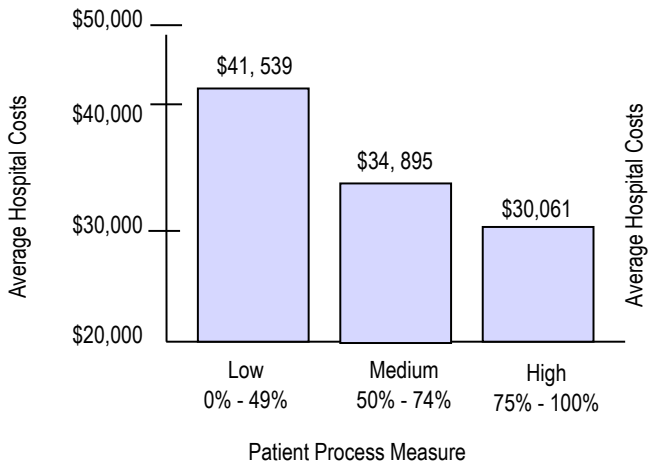
1. Antibiotic use consistent with guidelines
2. Antibiotic initiated within one hour prior to surgical incision
3. Antibiotic discontinued within 24 hours of surgery
4. Patient hair clipped – NOT shaven
5. Keep patient warm

Performance Pays: Higher Quality, Lower Costs
Premier Quality Demonstration Project

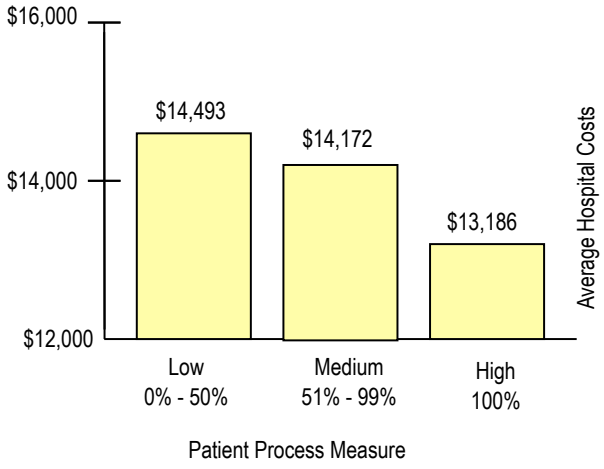


Performance Pays: Higher Quality, Lower Costs
Premier Quality Demonstration Project

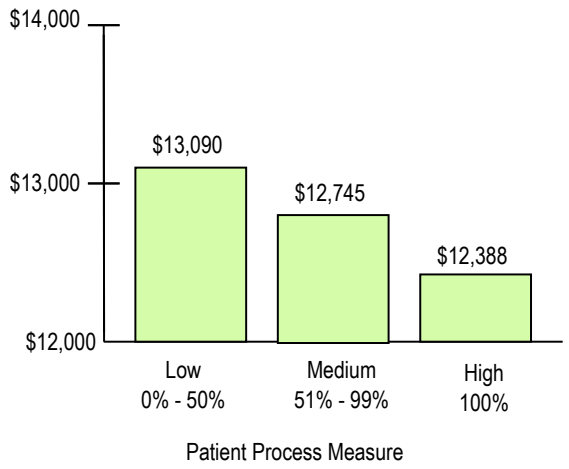
Hospital Costs for Heart Bypass Surgery



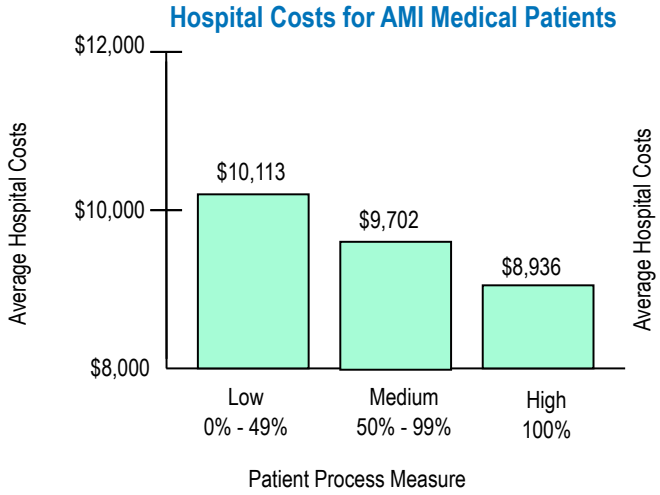
Hospital Costs for Hip Surgery Patients



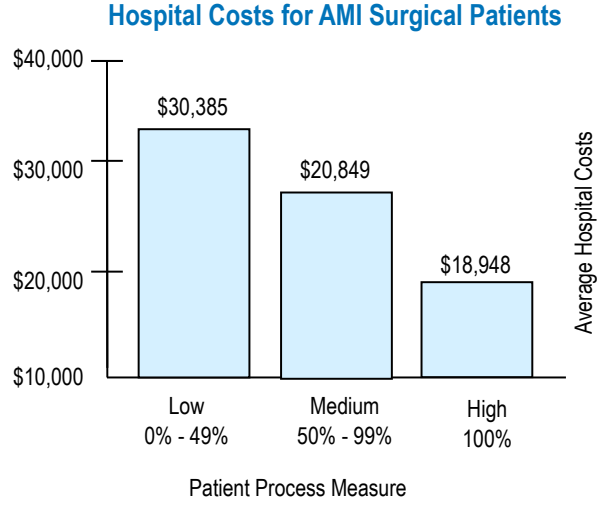
Hospital Costs for Knee Surgery Patients



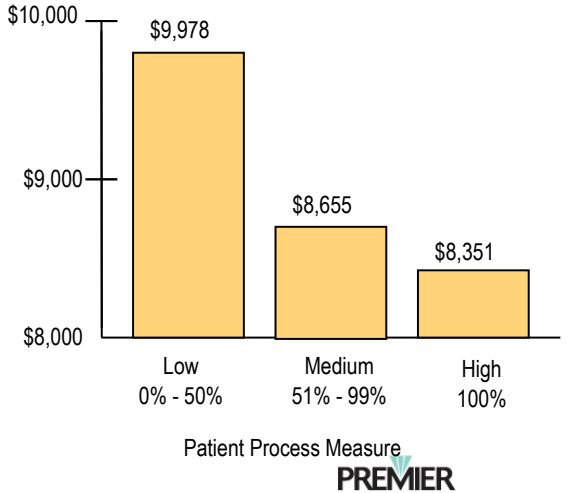
Hospital Costs for AMI Medical Patients



Hospital Costs for AMI Surgical Patients



Hospital Costs for Pneumonia Patients



PREMIER

Process Improvement

What is your mental model for improving operations?

- No initiatives – keep complaining
- Use band-aids to solve problems
- Use a consultant
- Engage the front line staff

What is your strategy to engage patients and family members?

What is your strategy for use of technology to improve efficiency and effectiveness?

- Making appointments
- Pre visit
- Visit
- Between Visits
- Post visit

Process Improvement - Patient Flow

Patients waiting in emergency room for beds

Patients waiting in ICU/Recovery for beds

Lack of systems approach to understand patient flow, causes of bottle-necks, priority of moving patients through the system

Special problems for high occupancy hospitals

Examples

- Lucille Packard Children's Hospital, California
  - 3100 more patient days
  - 7.5% increase in patient days
  - Hospital occupancy > 90%
- St. Luke's Episcopal Hospital, Houston
  - 5.1% added patient days
  - Improved bed turnaround time by 76%

Process Improvement – Patient Flow

Impact of Poor Patient Flow Management

Emergency room overflow

Work overloads on nursing staff

Longer length of stay

Stress and errors

Patients on wrong floors

Use of Information Technology

e-Ticket – Customers doing the work

e-Appointments

e-Patient self history

e-Visits with physicians

e-Prescribing

Automated prescription refill

Supply Chain Management

EHCR: Efficient Health Care Response

- Processing costs - $23B
- Savings potential - $11B

High Variability

- Supply expenses: 14-20% of expenses

IHI Supply Chain Breakthrough Project

- 75 best practices

Outsourcing/Offshoring

Utilizing expertise of another company

Scale advantage

Examples

- UPS managing supply chain for other companies
- Marriott managing cafeterias
- Bio-medical equipment maintenance
- Labor cost advantage
- Examples
  - IT centers
  - Call centers
  - Dictation
  - Accounts management

Discussion

Quality

1. What is your definition of quality?
2. What about your physicians and clinical personnel?
3. What about your front line personnel?
4. What about your patients? What do they expect?
5. How are you developing a shared vision for quality?
6. What are your promising the community in regard to quality of care in your mission, vision and value statements?

Quality of Design vs. Quality of Conformance

Designing a race car
vs. a car for consumers

Ford/Jaguar Lemans
race car

Ford Focus

Headlines: Detroit News, Sunday, Oct. 13, 2002

"Ford fights to fix tarnished Focus"

- US version plagued with problems
- Engine compartment fires
- Vehicle stallings
- Collapsing front suspension
- Air bag burns – car fires
- Accidental air bag deployment
- Wheel separation

Hospital Performance Metrics

Measure	Indicator	2008 Actual	2009 Target
Net Revenue	$		
Operating Profit	$		
Philanthropy/Gifts	$ Cash		
Patient Satisfaction	% of patients very satisfied		

Hospital Performance Metrics (cont'd)

Measure	Indicator	2008	
		Rate	Number of Cases
Hospital Mortality	% of patients		
Readmission Rate	% of patients		
Surgical Infection Rate	% of patients		
Ventilator Associated Pneumonia	% of patients		
Patient Falls	Falls/1,000 patient days		
Patient Safety	Adverse events/ 1,000 patient days		
Employee Safety	Cases w/lost work days/100 FTE/YR		

Transparency

How widely are you sharing your quality results throughout the organization?

Board

Medical Staff

Employees

Community

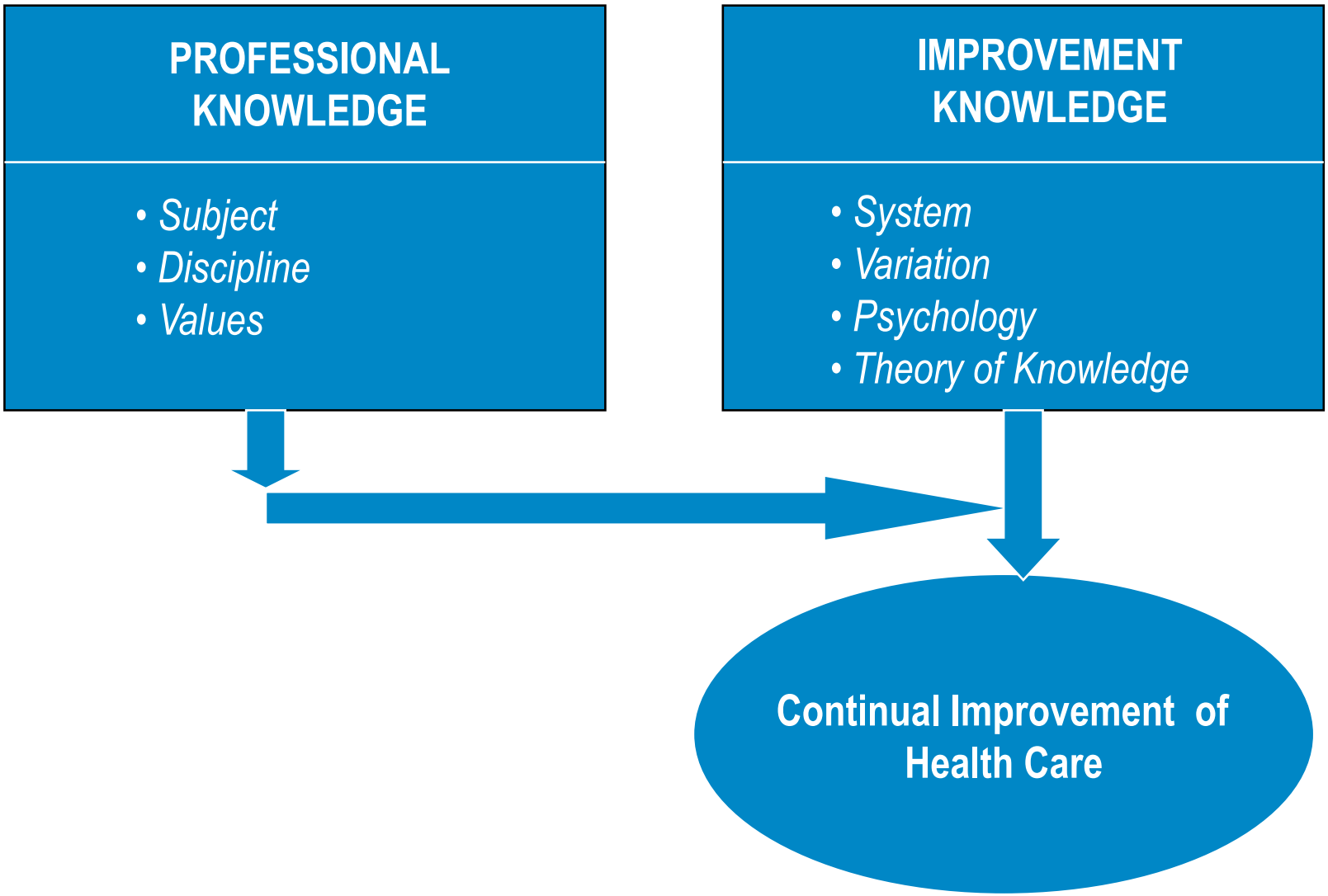
Organizational Excellence

1. What is your strategy to create and sustain organizational excellence?

2. Do you have an area that excels in quality and patient satisfaction? Why is this area achieving great results?

3. How are you communicating your plans to achieve excellence throughout the organization?

Professional Knowledge vs. Improvement Knowledge



Improvement Knowledge

1. How are you making sure that the organization is learning about “knowledge for improvement”?

2. How are you learning about improvement?

Framework for Improvement

Will – Ideas – Execution

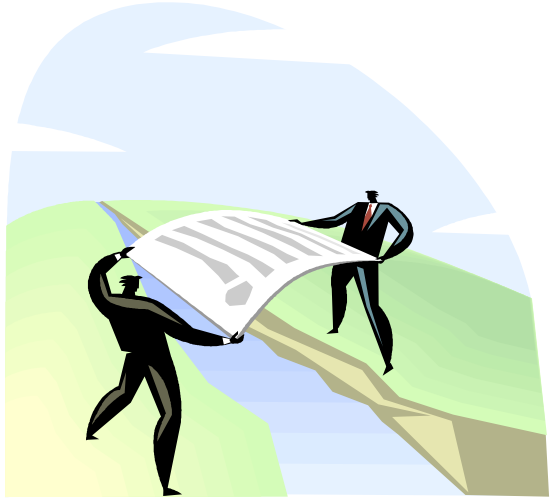
Will	-	At all levels
	-	Especially the will at the Board, top Management and Clinical Leadership level to make a new way of working attractive and the status quo uncomfortable
Ideas	-	Within organization
	-	Outside the organization
	-	Scanning for best practices

Execution

The discipline of getting things done

Main reason organizations fail

It is the gap between what
leaders want to achieve
and the ability of their
organizations to
deliver it



Gap Between Knowing and Doing

People think they know what to do but they don't

Talk substitutes for action

Fear prevents acting on knowledge

Knowledge does not easily get transferred within organizations (NIH syndrome)

Knowledge is transferred through social interactions

Knowledge that is actually implemented is much more likely to be acquired from ***learning by doing*** than by reading, listening or thinking

Role of Leadership

Developing a quality vision

Creating a shared vision within the organization

Making organizational vision relevant and understandable at all levels

Fostering open dialog at all levels

Making the future attractive – “Pull”

Making the status quo uncomfortable – “Push”

Role of Leadership (cont'd)

Setting breakthrough performance goals

- Reduction of Hospitality Mortality
- Improving patient satisfaction
- Reduction of hospital readmission
- Reducing hospital acquired infection

Developing a portfolio of projects to support the goal

Deployment of resources – selection of project leader

Establishing an oversight and learning system

Role of Leadership (cont'd)

Reframe Operating Values

"To renew and reinterpret values that have been encrusted with hypocrisy, corroded by cynicism, or simply abandoned; and to generate new values when needed"

John Gardner

Role of Leadership – Cultural Change in a Macro-Organization

Resistant to Improvement

Suspicious – why?

We will get laid off

- Only senior management benefits

Employees told what to do

- Managers do the thinking
- Heavy use of consultants
- Here is how to improve”

Open to Improvement

Trust

We will share the benefits

- Job security
- Shared bonus

Employees do the thinking

- Lead improvement
- Management facilitates

Role of Leadership – Cultural Change in a Macro-Organization

Resistant to Improvement

Why we can not do it
- Short of staff

Unfinished projects
- Long cycles

Mental model
- Quality is improved with technology

Open to Improvement

Satisfaction from accomplishment
- Target = “Best in Class”

Short cycles of improvement
- Many ideas tested

Mental model
- Operational excellence
- Patient satisfaction
- Best in class

Engage CFO in Quality

Cost of poor quality

Cost of surgical infection

Cost of patient falls

Cost of ventilator associated pneumonia

Build a business case for quality

- Investment in quality and ROI
- Process improvements lead to quality improvement and efficiency

Build Organizational Capability for Improvement

Process Improvement Skills

Reliability

Patient Flow, Bottleneck Operations

Agility and Speed

Key Lessons Learned

1. Quality Improvement is a continual journey at all levels.

2. It is not about technology – it's about reliability and operational excellence.

3. Projects for quality improvement are easy. Creating a culture of improvement is hard work.

4. Projects alone will not create or sustain organizational operational excellence.

5. Leadership engagement at all levels is a necessary requirement for success and not optional.

Key Lessons Learned (cont'd)

6. Content and subject matter knowledge is not a substitute for knowledge for improvement .

8. Leadership vision, a shared vision and values that are visible and practiced, drive and sustain improvement.

9. Strategic quality plan with defined metrics, drivers of improvement and projects aligned to the drivers.

12. Organizational capability building is the task of senior leadership.

13. Knowing vs. doing gap is big - Execution