Quality Assessment and Improvement Curriculum

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August 2010

Quality Assessment and Improvement Curriculum Block 1 - Week 1

July to December 2010

Julie Oyler, MD
Lisa Vinci, MD
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Why Teach Quality Improvement?

- Professional duty of physicians to provide high quality of care
- ACGME Core Competencies
- ABIM recertification requirement
- Pay for Performance

ACGME Competencies

- **Patient Care**
- **Medical Knowledge**
- **Practice-Based Learning and Improvement**
  - that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care
- **Interpersonal and Communication Skills**
- **Professionalism**
- **Systems-Based Practice**
  - as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

http://www.acgme.org/acWebsite/home/home.asp

Certification

- Past
  - What is the history of the Internal Medicine Certification Process?
- Present
  - Why are there proposed changes for the recertification process?
- Future
  - What the recertification process looks like now after January 1, 2006?

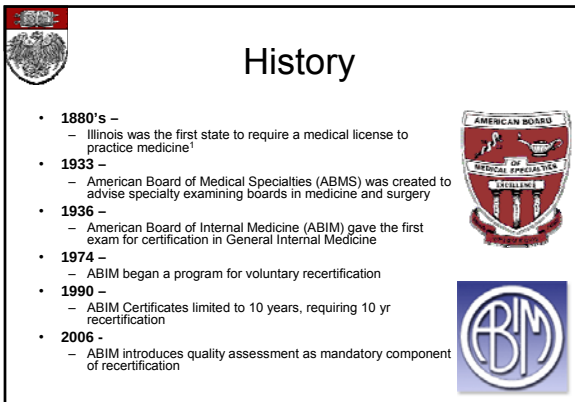
Licensure vs. Certification

- Licensure
  - Initial
    - 3 USMLE exams
    - Graduation from Accredited Medical School
    - One year of clinical practice
    - State regulated
  - Renewal
    - Every 3 years
    - No exam requirements
    - Continuing medical education requirements (IL requires 150hr/3 yrs)
    - Renewal fee
- Certification
  - Initial
    - Completion of Internal Medicine Residency Program
    - Internal Medicine Board Exam
    - Regulated by the American Board of Internal Medicine (ABIM)
  - Renewal
    - Every 10 years
    - Computerized Exam
    - Completion of modules

History

- **1880's –**
  - Illinois was the first state to require a medical license to practice medicine[1]
- **1933 –**
  - American Board of Medical Specialties (ABMS) was created to advise specialty examining boards in medicine and surgery
- **1936 –**
  - American Board of Internal Medicine (ABIM) gave the first exam for certification in General Internal Medicine
- **1974 –**
  - ABIM began a program for voluntary recertification
- **1990 –**
  - ABIM Certificates limited to 10 years, requiring 10 yr recertification
- **2006 -**
  - ABIM introduces quality assessment as mandatory component of recertification

[1] Practical Examinations for Licensure, *JAMA*, September 1, 2004 – Vol 292:9, p 1115



Time Limits for Certification for Members of the American Board of Medical Specialties (ABMS).*

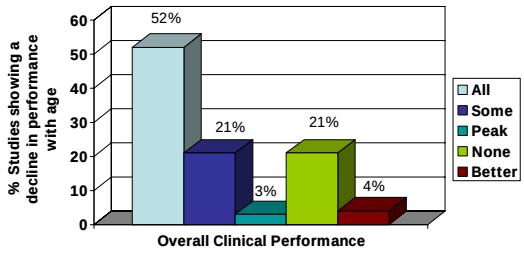
Board	Year of Incorporation	No. of General Certificates Issued, 1995–2004	Year of First Time-Limited General Certificate	Duration of Certificate (yr)
Allergy and Immunology†	1971	1,172	1989	10
Anesthesiology	1938	12,652	2099	10
Colon and Rectal Surgery	1935	500	1991	10
Dermatology	1932	3,011	1991	10
Emergency Medicine†	1976	10,063	1980	10
Family Medicine†	1969	32,507	1979	7
Internal Medicine†	1936	72,765	1990	10
Medical Genetics†	1980	662	1993	10
Neurological Surgery†	1940	1,311	1999	10
Nuclear Medicine†	1971	700	1992	10
Obstetrics and Gynecology†	1930	11,823	1986	6
Ophthalmology†	1917	4,754	1992	10
Orthopaedic Surgery†	1934	6,298	1986	10
Otolaryngology†	1924	2,919	2002	10
Pathology†	1936	5,206	2006	10
Pediatrics†	1933	27,709	1988	7
Physical Medicine and Rehabilitation†	1947	3,175	1993	10
Plastic Surgery†	1937	2,120	1995	10
Preventive Medicine†	1948	2,492	1998	10
Psychiatry and Neurology†	1934	14,802	1994	10
Radiology†	1934	12,432	1995, 2002†	10
Surgery	1937	9,043	1976	10
Thoracic Surgery	1950	1,421	1976	10
Urology†	1935	2,609	1985	10

Steinbrook, Robert, MD, "Renewing Board Certification", *NEJM*, November 10, 2005; 353(19):1994-1997

Present

- Why did the ABIM propose changes for the recertification process?
  - Clinical experience
  - Regional variation
  - Focus on Quality

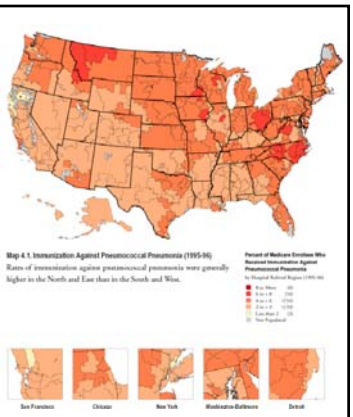
Study Results Relating Physician Age to Clinical Performance



Choudry, N. et al, "Systematic Review: The Relationship between Clinical Experience and Quality of Health Care," *Annals of Internal Medicine*, February 15, 2005; 142(4): 260-273

Regional Variation

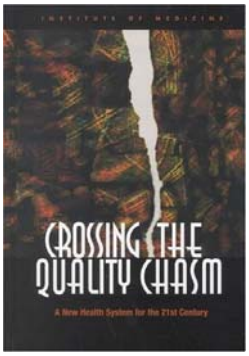
- Dartmouth Atlas
- Assessment of ambulatory care provided to Medicare enrollees
  - Underuse of preventive services
  - Use of preventative services ***not*** related to the supply of resources, overal spending levels



Wennberg, JE, et al., "The Quality of Medical Care in the United States: A Report on the Medicare Program," *The Dartmouth Atlas of Health Care*, 1999, pp 127-133

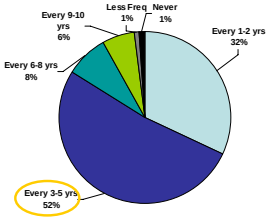
Increased Focus on Quality

- IOM
  - 2001 Report, "Crossing the Quality Chasm"
- Public demands for accountability
- Pay for performance environment
- Health Care Professionals Research Focus

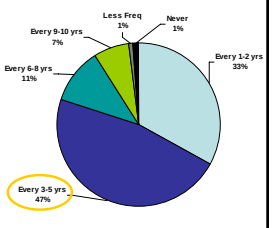


Public Focus on Physician Quality

How Often Should a Doctor be Re-Evaluated on their Qualifications?



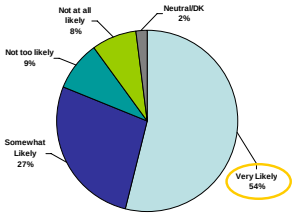
How Often Should a Doctor Pass a Written Test of Medical Knowledge?



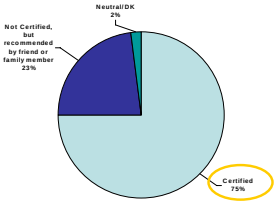
Survey Performed by Gallup, July 2003; N =1001, published in JAMA, Sept 1, 2004; 1038-1043

Public Focus on Physician Quality

Would You Find Another Doctor if your Current Doctor's Certificate Expired?



Would you Chose a Doctor Who is Certified or a Doctor Who is Not Certified but Recommended by a Trusted Friend or Family Member?



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Quality of Outpatient Health Care

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

The Quality of Health Care Delivered to Adults in the United States

Elizabeth A. McGlynn, Ph.D., Steven M. Asch, M.D., M.P.H., John Adams, Ph.D., Joan Keesey, B.A., Jennifer Hicks, M.P.H., Ph.D., Alison DeCristofaro, M.P.H., and Eve A. Kerr, M.D., M.P.H.

ABSTRACT

BACKGROUND
We have little systematic information about the extent to which standard processes involved in health care — a key element of quality — are delivered in the United States.

METHODS
We telephoned a random sample of adults living in 12 metropolitan areas in the United States and asked them about selected health care experiences. We also received written consent to copy their medical records for the most recent two-year period and used this information to evaluate performance on 439 indicators of quality of care for 30 acute and chronic conditions as well as preventive care. We then constructed aggregate scores.

From RAND, Santa Monica, Calif. (E.A.M., S.M.A., J.A., J.K., J.H., A.D.); the Veterans Affairs (VA) Greater Los Angeles Health Care System, Los Angeles (S.M.A.); the Department of Medicine, University of California Los Angeles, Los Angeles (S.M.A.); the VA Center for Practice Management and Outcomes Research, VA Ann Arbor Health Care System, Ann Arbor, Mich. (E.A.K.); and the Department of Medicine, University of Michigan, Ann Arbor (E.A.K.). Address reprint requests to Dr. McGlynn at RAND.

Internal Medicine Certification

- First Certification
  - License
  - Board exam
  - $1000
- MOC
  - License
  - $1500
  - Self Evaluation
    - 100 Points
      - 20 Knowledge
      - 20 Practice Performance
      - 60 Elective
  - Examination
    - 1 for each certificate
    - Feedback

Practice Improvement Modules

- Available Now
  - Cancer Screening
  - Diabetes
  - Preventive Cardiology
  - Asthma
  - Hypertension
  - Care of the Vulnerable Elderly
  - Peer and Patient Survey
  - Clinical Supervision
  - Essentials of Quality Improvement
  - Hospital Care
  - Subspecialty PIM's
    - Colonoscopy
    - Arthritis
    - Osteoporosis
    - HIV
    - Hepatitis C
    - Chronic Kidney Disease
  - Communication
    - Primary Care
    - Subspecialty
    - Referring physician

Now on to our QI curriculum

Quality Curriculum Overview

Residency Year	Ambulatory Block Summer/Fall	Ambulatory Block Winter/Spring
PGY-2	**Block 1** Complete Cancer Screening Practice Improvement Module on 5 patients	**Block 2** Process Mapping PDSA Cycles Develop small quality improvement project
PGY-3	**Block 3** PDSA cycle Address Sustainability and Dissemination	**Block 4** Pay for Performance and QI lectures

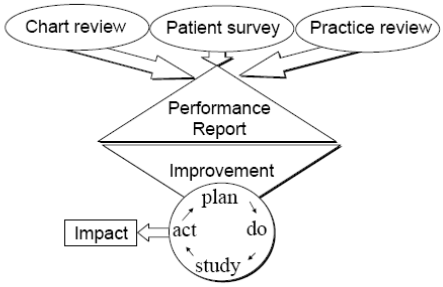
Goals

- The goal of the curriculum is:
  - learn how to assess the quality of care that you provide in your outpatient continuity clinic
  - learn how to develop and implement small changes to improve quality of care

During Ambulatory lectures:

- **Week 1:**
  - Complete QIKAT Pre-test on Quality Improvement Knowledge
  - Introduction to the Cancer Screening Practice Improvement Module (PIM)

Practice Improvement Modules



Cancer Screening Practice Improvement Module (PIM)

- **Part 1: Data Collection**
  - **Survey Patients**
    - about their health and preventive care. ABIM must receive at least 5 survey responses for each resident.
  - **Review Charts**
    - of patients who meet your inclusion criteria. These patients may or may not be the same patients for whom you distributed the patient survey. Each resident must review at least 5 charts.
  - **Examine Systems**
    - resident group will respond to questions about how your practice is currently structured and how you deliver care to your patients.
  - **Request Report**
    - of your summary data from the Board. This section will be enabled when the requirements for patient surveys, charts and the systems section have been met. Please allow 48 hours to process your report from the time you request it.

Cancer Screening PIM

- Patient Surveys
  - Over the next three weeks, ask every patient that you see in clinic if they would be willing to fill out a survey about the quality of care that they receive.
  - You only need 5 patients to complete the survey, but the more patients you ask, the more information you will receive.
  - Please give the survey to the patient either while you are away talking to your preceptor or at the end of the clinic visit.
  - The patients can turn the survey in at the front desk of DCAM 3B where they check out.
  - The patient survey data will be entered into the ABIM website by a data abstracter

Cancer Screening PIM

•Selecting Patients

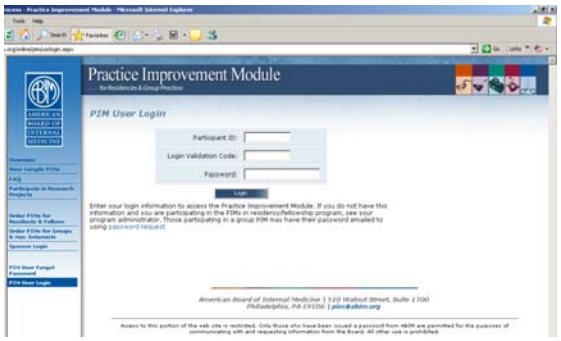
–Patients can be included in this module if:
- •Management decisions regarding their preventive care are made primarily by providers in the practice
- •They have been patients in the practice for at least one year
- •They have been seen by the practice within the past 12 months (not necessarily by you.)

–Patients should be excluded from this module if:
- •They receive primary or principal care from another physician; or
- •They are unable to complete the patient survey, even with assistance; or
- •They have a terminal illness or for whom preventive services are not indicated.

Cancer Screening PIM

- **Chart Reviews**
  - –Over the next 2 weeks please chose 5 patients on which to perform a chart review
  - –The ABIM recommends that you develop a prospective, sequential sample.
  - –(ie sequential patients that you see in clinic over the next few weeks, you should perform a chart reviews on.)

Chart reviews are performed on-line at the following website https://www.abim.org/online/pim/usrlogin.aspx



Summary Page

Click here to review charts

Review Charts

- You will enter data for 5 patients. (Patient ID: P1 to P5)
- Please use your initials and an the numbers 1-5 for the patient identifier.
- You should have 5 patient chart reviews completed by week 3

During Ambulatory lectures:

- **Week 2**
  - – **Introduction to Quality Lecture.**
  - – **Update on progress of chart reviews and patient surveys**

During Ambulatory lectures:

- **Week 3:**
  - **System Survey**
    - **Residents and faculty mentor will complete the systems assessment of the outpatient clinic setting together.**
  - **Residents should have 5 patient charts reviewed and 5 patient surveys turned in by this time.**

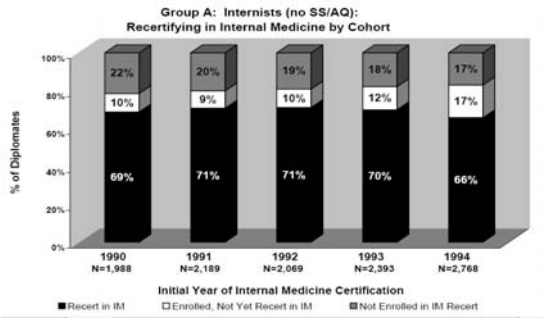
During Ambulatory lectures:

- **Week 4**
  - **Review results of** Cancer Screening **PIM quality measures as returned by the ABIM**
  - **Brainstorm 1-3 ideas for quality improvement projects resulting from the data as a group with the faculty mentor**

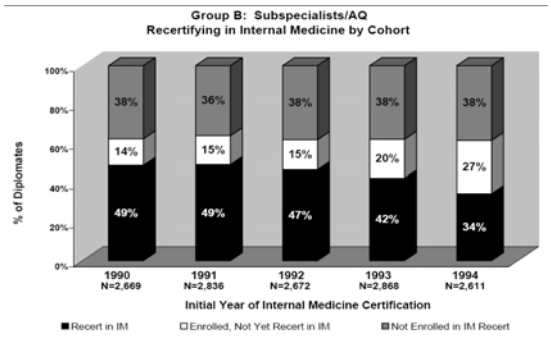
Questions?

- Any questions?

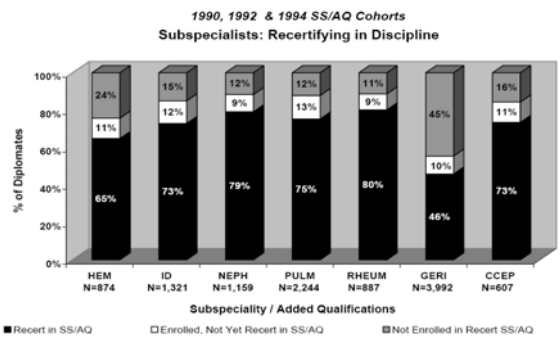
Rates of General Internist Recertification



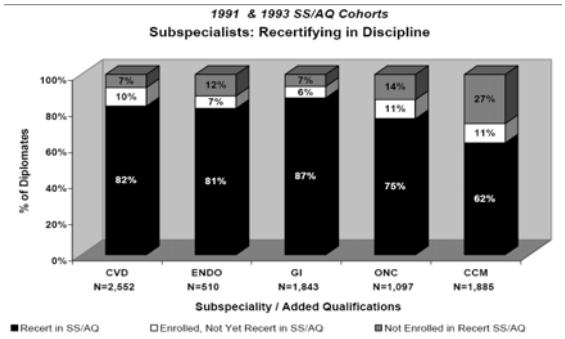
Rates of Subspecialist Recertification



Subspecialist Recertification by Discipline



Subspecialist Recertification by Discipline



Quality Assessment and Improvement Curriculum Block 1 - Week 2

July to December 2010

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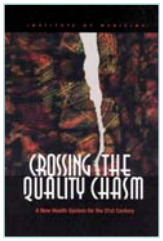
Introduction to Quality: From 30,000 Feet

What is Quality?

- In its seminal 2001 report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, the IOM defined quality as
  - "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge"

The Quality Chasm

The Health Care We Have……



...The Health Care We Could Have

Institute of Medicine Dimensions of Quality

STEEEP
- Safe
- Timely
- Effective
- Efficient
- Equitable
- Patient-centered

Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century*, 2001

What is Quality?

- STEEEP, i.e., all health care should be safe, timely, effective, efficient, equitable, and patient-centered
  - Patients should not be harmed by the care that is intended to help them (safe)
  - Care should be based on sound scientific knowledge (effective)
  - Care should be responsive to individual preferences, needs, and values (patient-centered)
  - Unnecessary waits and harmful delays should be reduced (timely)
  - Care shouldn't be wasteful (efficient)
  - Care shouldn't vary in quality because of patient characteristics (equitable)
- "For most people, STEEEP is where defining quality begins"

What is Quality?

- From those six elements the Chasm authors created 10 basic rules of health care, calling them "guides to the redesign of our current system"
  - Care based on continuous healing relationships
  - Customization based on patient needs and values
  - The patient as the source of control
  - Shared knowledge and the free flow of information
  - Evidence-based decision-making
  - Safety as a system property
  - The need for transparency
  - Anticipation of needs
  - Continuous decrease in waste
  - Cooperation among clinicians

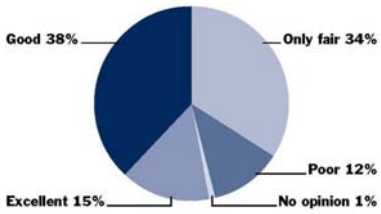
Stakeholder Perspectives on Quality

Technical quality

Interpersonal quality

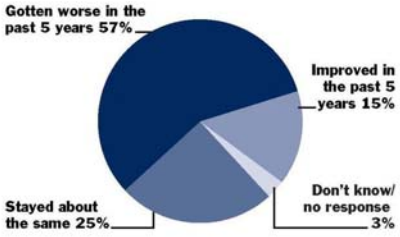
Cost-effectiveness

General Public: Rating of the Overall Quality of Health Care in the US (2001)



Sources: Gallup (*National Journal* Poll Track 2001). Sampling error +/-3 percent. Commonwealth Fund International Health Policy Survey (Blendon et al. 2001). Sampling error +/-4 percent.

Physicians: Rating of Their Ability to Provide Quality Health Care: 2000



Sources: Gallup (*National Journal* Poll Track 2001). Sampling error +/-3 percent. Commonwealth Fund International Health Policy Survey (Blendon et al. 2001). Sampling error +/-4 percent.

Quality of Health Care: Impact of Research

<u>Rand Study of Quality of Health Care</u>

Participants only received recommended care approximately <u>50%</u> of the time

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McGlynn, et al. *The Quality of Health Care Delivered to Adults in the United States*, N Eng J Med, 2003

Adherence to Quality Indicators, According to Mode

Mode	Total No. of Times Indicator Eligibility Was Met	Percentage of Recommended Care Received (95% CI)
Encounter/Intervention	4,329	73.4 (71.5-75.3)
Medication	8,389	68.6 (67.0-70.3)
Immunization	9,748	65.7 (64.3-67.0)
Physical Examination	19,428	62.9 (61.8-64.0)
Lab Test/Radiography	18,605	61.7 (60.4-63.0)
Surgery	312	56.9 (51.3-62.5)
History	6,711	43.4 (42.4-44.3)
Counseling	2,838	18.3 (16.7-20.0)

McGlynn, et al. *The Quality of Health Care Delivered to Adults in the United States*, N Eng J Med, 2003

Quality of Health Care: Impact of Research

THE WALL STREET JOURNAL

SCIENCE JOURNAL

By Sharon Begley

Too Many Patients Never Reap Benefits Of Great Research

David Brinker, 20 years old, was diagnosed with Type 1 diabetes at age 10, and for years was "on a disaster course," says the New York record-label executive. His endocrinologist labeled his case "uncontrollable," and offered no counseling on how to live with the disease, doing little but scribble out insulin prescriptions.

Three years ago, Mr. Brinker developed the beginnings of diabetic retinopathy, a common complication of poorly treated diabetes and a good way to go blind.

Crossing the Quality Chasm Recommendation:

Restructure clinical education consistent with principles of the 21st century health system across the continuum of undergraduate, graduate, and continuing education.

Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century*, 2001

Major Quality Initiatives

- Structural changes in delivery
  - Chronic disease management
  - Technological advances
    - CPOE, etc.
- New reimbursement models (P4P or "Q")
  - Need for measures for institutions and individual physicians

How does your doctor measure up?

Measurement: Process and Outcome Indicators

- **Measures**
  There are 3 types of measures used in quality work:

- **Structure**: Physical equipment and facilities
- **Process**: How the system works
- **Outcome**: The final product, results

Structure and process are easier to measure; outcome is more important.

Structure, Process, or Outcome?

Number of CT scanners at UCH.

Number of asthma patients with ED visits this quarter.

What percentages of patients received their immunizations?

Are there enough hospital beds to meet the community's demand in the event of a catastrophe?

How many of my diabetics are receiving yearly foot exams?

How many of my smoking patients have successfully quit?

Proxy Measures

- Sometimes you have to use a process measure instead of an outcome
  - Use a measurable process in place of one that is tougher to get
- How effective the members of your clinic group are in counseling for smoking cessation?
  - Details are embedded in free text in medical records
  - May choose instead to look at:
    - How many patients had "tobacco abuse" coded as a diagnosis
    - How many received prescriptions for Zyban or nicotine replacement
- While these clearly do not represent exactly what you want to look at, the presence of either does suggest that smoking cessation counseling did occur.

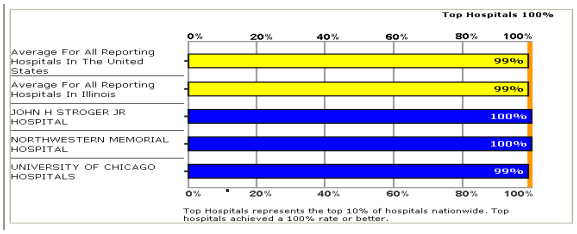
The Good and Bad of Measurement

- Allows baseline examination of performance
- Target improvement efforts
- Measurement itself can improve performance
  - Hawthorne effect
- Gaming the system
  - "Cherry-picking"
  - Meeting the measure but not affecting care
- May diminish focus on serious issues that are unmeasured
- Validity of measures
  - Outcomes measured may be affected by intrinsic patient factors (risk-adjustment)

Major Quality Initiatives

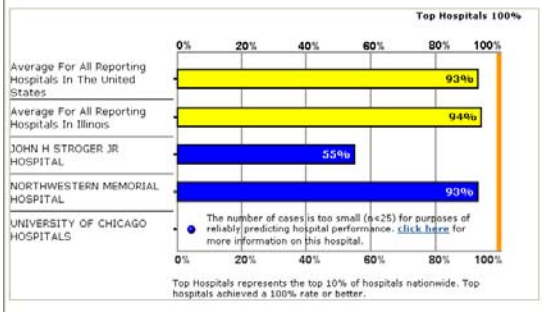
- Center for Medicare & Medicaid Services
  - Pay-for-performance program at the hospital level
    - Publicly available at http://hospitalcompare.hhs.gov
  - Demonstration program for individual physicians
- NCQA
  - HEDIS Measures (health plans)
- National Quality Forum and AQA
  - 26 measures for ambulatory care

Oxygen Administration



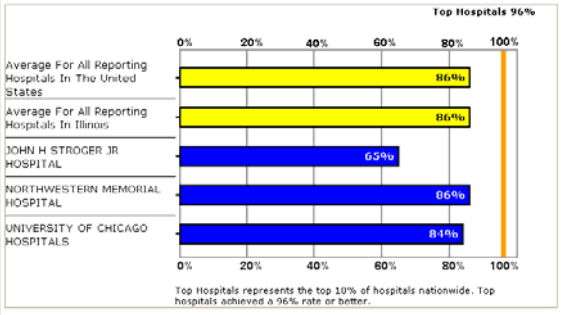
The rates displayed in this graph are from data reported for discharges July 2006 through June 2007.

Timely Antibiotic (<6h)



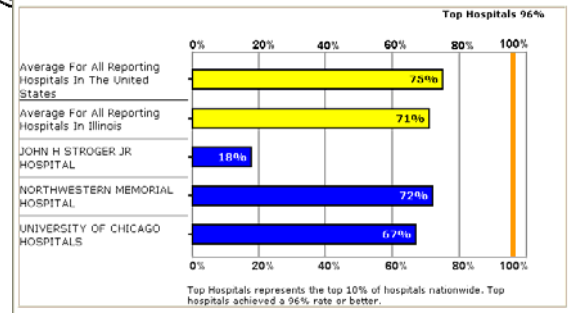
The rates displayed in this graph are from data reported for discharges July 2006 through June 2007.

Appropriate Antibiotic



The rates displayed in this graph are from data reported for discharges July 2006 through June 2007.

% Given Pneumovax



The rates displayed in this graph are from data reported for discharges July 2006 through June 2007.

Quality Assessment and Improvement Curriculum Block 2 - Week 1

January to June 2010

Julie Oyler, MD
Lisa Vinci, MD
Vineet Arora MD MAPP

Quality Improvement Fundamentals

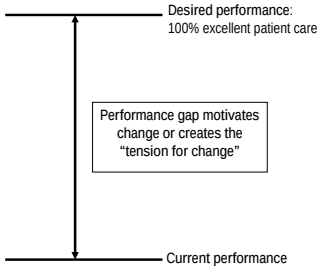
Today's Session

- Reflect on improvement ideas chosen during summer/fall ambulatory block
- Chose Quality Improvement goal for the month as a group
- Introduction to PDSA cycle
- Start PDSA worksheet for QI idea in small groups
- Introduction to Process mapping

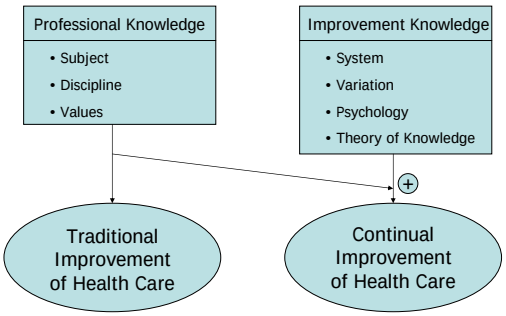
Why Improve Care?

- We know that the care we provide can be better
  - 44,000 to 98,000 individuals die from medical errors each year
    - » IOM, To Err is Human, 1999
  - As many as 2% of hospitalized patients experience major permanent injury or death from the medical care they receive
    - » IOM, To Err is Human, 1999
  - Errors occur in the outpatient settings too
    - Abnormal test results
    - Adverse drug reactions
    - No-shows
    - Referrals
    - Failure to diagnose
    - Vaccines and maintenance procedures
    - Patient education
      - » Maguire P. Strategies to tackle outpatient errors. *ACP-ASIM Observer* 2002
  - Americans receive 50 to 60% of recommended care
    - » McGlynn et al. The Quality of Health Care Delivered to Adults in the United States. NEJM. 2003; 348 (26)

The Tension for Change

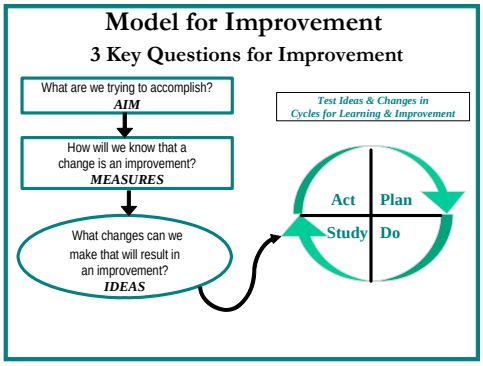


What Do We Need to Improve Care?



Model for Improvement

3 Key Questions for Improvement



See PDSA Worksheet

Getting Started on the PDSA Worksheet

- What were the improvement ideas you identified during summer/fall ambulatory block?
- Which should we work on for the month as a group?

What is Our Aim?

- Aim statements include:
  - A general description of what we want to accomplish
  - A description of the specific patient population that is the focus of the improvement efforts

Characteristics of a Good Aim Statement

- Clear
  - People reading the statement can understand it, without interpretation
- Numeric
  - Includes quantifiable measures that will be used to track progress
- Stretch
  - Set high enough so that it will have a significant impact on your patients, but not so high that it is unrealistic
- Focused
  - Specifically defined with clear boundaries
- Flexible
  - Allows several different solutions to the performance gap, rather than a single solution

What is the Current Process?

- A basic understanding of the current process is important because

Process → **Outcomes**

- To improve outcomes of care, you must make a change in the process of care

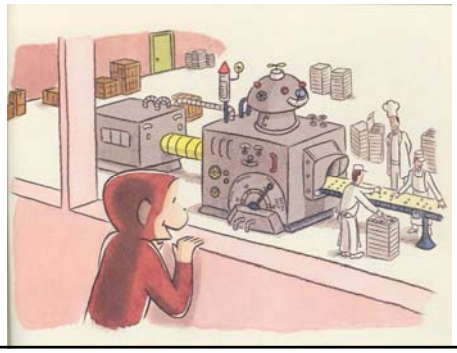
Process Mapping

- A process map or flowchart is a picture of the sequence of steps in a process
- Useful for
  - Planning a project
  - Describing a process
  - Documenting a standard way for doing a job
  - Building consensus about the process (correct misunderstandings about the process)

Process Mapping

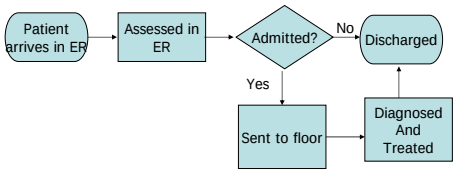
- Ovals are beginnings and endings
- Boxes are steps or activities
- Diamonds are questions
- Arrows show sequence and chronology

The View from the Catwalk



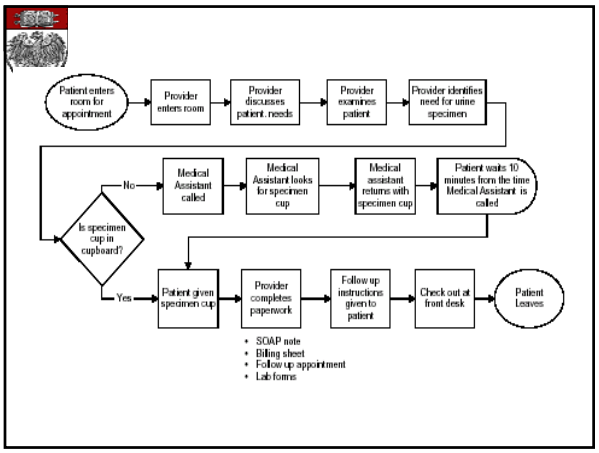
Process Mapping

- Can be “high-level” to get an overview of the process



Process Mapping

- Can also be very detailed and “drilled down” to show the details and roles



Process Mapping

- Detailed process maps are especially helpful to standardize and improve processes
- For use as an improvement tool, it is important to map the current process, not the desired process

What is the Current Process and How Can We Improve It?

- Once we have specified and analyzed the current process, we can identify potential changes that we think may be an improvement
- What Ideas Do We Have for Changing the Process to Get Better Results?
- Ideas can come from:
  - Analysis of the current process
  - Clinical literature that reports the evidence to support a change
  - Benchmarking against other “best practices”

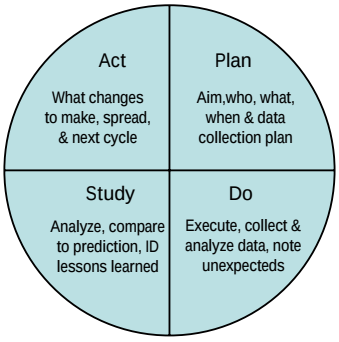
How Can We Pilot Test Our Improvement Idea?

- Finally, the team tests an idea for change, using the plan-do-study-act (PDSA) method, and asks:
  - How shall we PLAN the pilot?
  - What are we learning as we DO the pilot
  - As we STUDY what happened, what have we learned?
  - As we ACT to hold the gains or abandon our pilot efforts, what needs to be done?

Plan, Do, Study, Act Cycle

- The PDSA cycle provides a framework for efficient trial-and-error learning methodology
  - Small changes can have a big impact (thing about the effect on the system)
  - Choose carefully
  - Pilot test

Plan, Do, Study, Act Cycle *A Model for Improvement*



PDSA Cycle
A Model for Improvement

- Plan
  - Describe objective and specific change
  - Specify where it fits into the process flow
  - Who, does what, when, with what tools and training
  - Data collection plan: who measures what and displays how and where
- Do
  - Carry out the change

PDSA Cycle
A Model for Improvement

- Study
  - Make sure that you leave time for reflection about your test
  - Use the data and the experience of those carrying out the test to
  - Discuss what happened
  - Did you get the results you expected? If not, why not?
  - Did anything unexpected happen during the test?

PDSA Cycle
A Model for Improvement

- Act
  - Given what you learned during the test, what will your next test be? Will you make refinements to the change? Abandon it? Keep the change and try it on a larger scale?

Homework for Next Session

- Complete individual process map for chosen Quality Improvement goal

Quality Assessment and Improvement Curriculum
Block 3 - Week 3

July to December 2010

Julie Oyler, MD
Lisa Vinci, MD
Vineet Arora MD MAPP

Sustainability, Spread, & Organizational Change

Question

- When is a successful improvement not a success?

Answer

- When the gains achieved by the improvement evaporate, or when they fail to take root in other settings

End Goals in QI

- the 'ultimate goal' is to spread sustainable change
- consider both sustainability and spread for any QI project
  - but planning for each action is different
- Lack of sustainability
  - "improvement evaporation effect"
- Lack of spread
  - "islands of improvement"

Sustainability

- **Definition**
- When new ways of working and improved outcome become the norm
- Holding the gains and evolving, as required, definitely not going back

Assess Sustainability

- Barriers?
- Facilitators?

Project Factors for Sustainability…

Barriers	Facilitators
Sustainability is an afterthought	Built in a priori
Efforts only isolated to project period	Project as larger part of continual process
Project limited to specific environment	Adaptable to changing environment

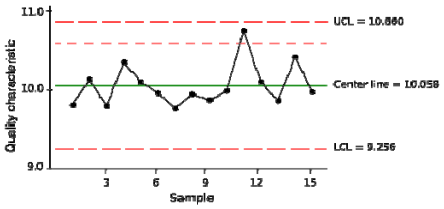
Staff Factors for Sustainability…

Barriers	Facilitators
Insufficient staff training and understanding	Continuous staff retraining
Staff not involved	Staff highly involved
Top down leadership	Staff owns project
Staff does not believe in improvement	Staff believes in improvement
Project negatively effects staff (i.e., workload)	Benefits spillover to staff (i.e., efficiency, morale)

Organizational Factors for Sustainability…

Barriers	Facilitators
Not consistent with mission of organization	Consistent with aims of organization
Leadership not interested	Leaders invested
Infrastructure not in place	Key infrastructure in place
No system in place for continuous evaluation and feedback	Able to continually evaluate and improve

Evaluation of Sustainability: Statistical Process Control Charts



- Maps quality measurement in a process versus time
- Center line= process mean
- Upper and lower limits indicate border of statistically unlikely
- Monitor how far from goal over time and take corrective action if slippage

Spread

- **Definition**
- Learning that takes place in one part of the organization is actively shared and acted upon by all parts of the organization
- Improvement knowledge generated anywhere in the healthcare system becomes common knowledge and practice across the healthcare system

Theory for Spreading Change

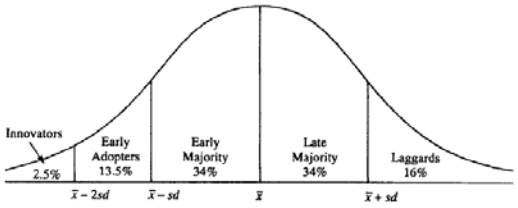
- Technical aspect --the nature of the change itself
- Social aspect --how people feel about doing it
- Involves:
  - disseminating information -people need to find out about it
  - overcoming thresholds for change -people need to get beyond emotional, structural and resource thresholds
- Important to consider:
  - How people adopt change?
  - How people find out about things?

Theoretical Foundations for Spread

- Diffusion of innovation theory
  - How people adopt change or innovations into practice
  - Who could be the champions?
- Social network theory
  - Connectedness of organizations and people
  - "silos" or highly connected organization
  - How does information travel?

Diffusion of Innovation

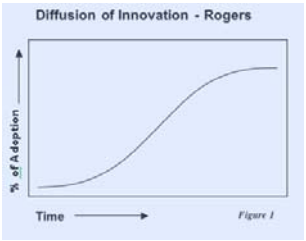
Figure 7-3. Adopter Categorization on the Basis of Innovativeness



Sociological Profiles of Technology Adoption

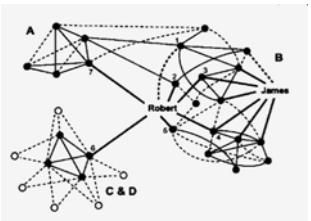
- innovators - venturesome, educated, multiple info sources, greater propensity to take risk
- early adopters - social leaders, popular, educated
- early majority - deliberate, many informal social contacts
- late majority - skeptical, traditional, lower socio-economic status
- laggards - neighbors and friends are main info sources, fear of debt

Diffusion of Innovation



- Cumulative (or society) adoption curve is then S shaped
- Goal is to decrease the amount of time on the bottom end…

Importance of Social Networks



- Measure of connectedness of people
- Exploits social learning theory
- Contagion
  - Group members adopt behavior and beliefs of other members
- Brokers
  - Member in multiple groups—powerful transmitter of information
  - May not be the leader

Social Networks & Medical Implications

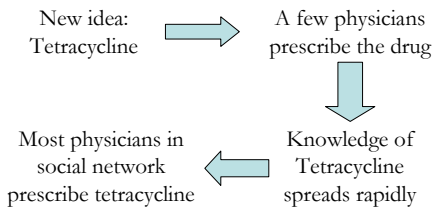
- Obesity
- Physician practice
  - Use of antibiotics

Social Network Theory vs. Replication to Diffuse Innovation around Chronic Care

- Diffusion of Innovation
  - A process by which change spreads throughout an organization
- Social Network Theory
  - A pattern of friendship, advice, communication and support which exists among the members of a social system that becomes the vehicle for spread
- Replication
  - Duplicating the changes/processes in another environment

Example of Social Network Theory

- 1966 Coleman *et al*. first demonstrated the spread of use of a medical treatment through a social network



Applications to Improvement

- Characteristics of ideal champions
  - Early adopters
  - Highly connected brokers
- Improvement collaboratives
  - Connections established a priori so innovations can spread

Barriers to Spread

- A 'not invented here' organizational culture
  - immediately rejects ideas that come from elsewhere
  - No system or desire to learn from other places
- Change is too complex or not a good fit
  - Generalizability
- Competing priorities
- Change not seen as solving the pressing problems of the moment
- Lack of communication about the new idea

Spreadable changes

- Ideas that spread more rapidly than others have attractive qualities:
  - Clear advantage compared to current ways
  - Compatibility with current systems and values
  - Simplicity of change and its implementation
  - Ease of testing before making a full commitment
  - Observability of the change and its impact
- Ideas commonly go through a process of 'reinvention' as they spread
- Spread not instantaneous

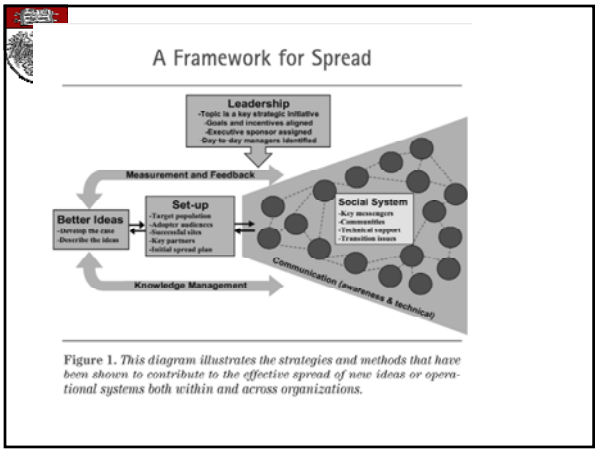


Figure 1. *This diagram illustrates the strategies and methods that have been shown to contribute to the effective spread of new ideas or operational systems both within and across organizations.*

Accelerating Spread

- Involve early adopters who will then bring others in the organization along
  - "train the trainer" approach
- Tailor and customize messages using help of local champions; build on existing networks
- Understand and work with needs and problems
  - Flexible approach
- Invite people to observe before committing
- Invest in infrastructure
- Leaders support but not direct the spread

Organizational Change

Overarching Concept of Our QI Work

- We are moving our Academic Health Center toward a "Learning Organization"
  - First order change vs second order change
  - Single, Double, and Triple Loop Learning

The Learning Organization

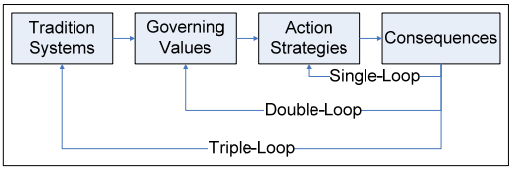
- A learning organization continuously tests experience and transforms that experience into knowledge that is accessible to the whole organization and relevant to its core purpose
  - Are you organized around inquiry?
  - Do you continuously test your experiences?
  - Are you producing knowledge?
  - Is the knowledge shared?
- A "Learning Organization" is one in which people at all levels, individually and collectively, are continually increasing their capacity to produce results they really care about

First Order Change vs Second Order Change

- There are 2 types of change
  - 1st order change occurs within a given system which itself remains unchanged
  - 2nd order change changes the system

–Watzlawick et al (1974)

Single, Double, and Triple Loop Learning



- Single Loop Learning
  - I need to do better at what I'm currently doing
- Double Loop Learning
  - Why am I doing this? Is there a better way?
- Triple Loop Learning
  - How do we integrate and institutionalize these ideas?

Argyris (1993); Nielsen (1996); Senge (1990, 1994)

Keys to Individual Change

- The ADKAR model (Prosci)
- Requires 5 building blocks for change to be realized successfully on an individual level.
  Awareness – of why the change is needed
- **Desire** – to support and participate in the change
- **Knowledge** – of how to change
- **Ability** – to implement new skills and behaviors
- **Reinforcement** – to sustain the change

Keys to Organizational Change

Formula for Change (Beckhard and Gleicher)

D x V x F > R

D = Dissatisfaction with how things are now;
V = Vision of what is possible;
F = First, concrete steps that can be taken towards the vision
R = Resistance

Need D, V, and F to drive change

Conclusion

- Ultimately aim for sustainable, spreadable changes in improvement work
- Consider the ability of individuals and organizations to change in sustaining and spreading this work
  - May need to organizational culture this to sustain and spread changes

Quality Assessment and Improvement Curriculum Block 4 - Week 1

January to June 2010

Julie Oyler, MD
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History, Policy, and Theory of P4P

(with a short primer on the payment system)

The History of P4P

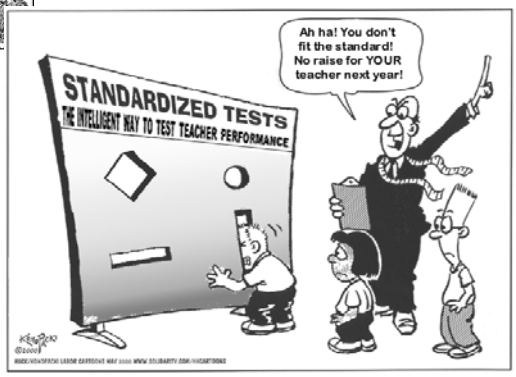
- Not a new idea
- Business model of merit pay
  - People who do better earn more
- Is it appropriate for industries that are not traditionally “businesses”
- First experiments in teaching/education
  - “Merit Pay” British Experiment (circa 1710)

Merit Pay: British Experiment

- Teacher salaries based on student test scores in reading, writing, math
- Obsession over rewards and punishments
- Curriculums narrowed to include testable basics
  - Drawing, science, and music disappeared
- Teaching became more mechanical
  - Drill and rote repetition produced the "best" results.
- Temptation to falsify results (many did)
- Plan was ultimately dropped

US Merit Pay Experiments…

- 1969 Texarkana scandal
  - Students given transistor radios
  - Teachers given raises
  - Performance on tests rose quickly
  - Students taught only to take the test and cheating scandals
  - System dismantled
- 1998 Kentucky Board of Education
  - dropped its statewide teacher-bonus program
  - Lawsuits & protests about teachers focusing more on bonuses than teaching



"Merit Pay" in Healthcare

- Known as Pay for Performance
  - Also could be pay for reporting, pay for quality
  - Or "value-based purchasing"
- Lots of recent interest especially by payers (largest Medicare) due to 2 major forces

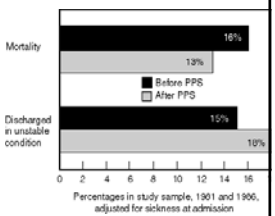
P4P- potential solution to 2 major problems?

- **Focus on improving quality (IOM)**
  - P4P is potential solution to improving quality
- **Context of rising healthcare costs**
  - Payers view P4P as cost-containment mechanism
  - "value-based purchasing"

Quick Aside About Payment System for US Healthcare

Quick Review of Payment System

- 1970's Medicare (largest payer) Fee for Service
  - Incentive is to do more
  - Concern for unnecessary costs
- 1983 Prospective Payment System
  - Rewards short lengths of stay due to caps per diagnosis (DRG)
    - "Quicker-sicker" problem
  - Concern for inability to properly "risk-adjust" in teaching hospitals
    - Higher indirect GME payments



Quick Review of Payment System

- Dollars allocated for each service (inc procedures) are decided using ratios
  - Relative Value Units (RVUs)
  - updated q5 years by AMA group made up of medical society physician reps
    - Specialists overrepresented
- MedPAC=payment advisory commission decides the amount ($) allocated to Medicare
  - Distribution det by RVUs
  - $ for physician services linked to SGR (marker of general economic growth)
    - Critique: healthcare inflation outpaces general inflation

P4P Models

- Current proposals are "add-ons" to current payment system
- Incentive types
  - Reward vs penalty (new money vs. take money away)
  - Absolute vs. relative improvement (most are absolute cutoff so that low performers are not eligible)
- Level of operation
  - Hospital/institution level
  - Group level
  - Individual physician level
- Specific Examples in more detail next week
  - CMS Initiatives

Important Points to Understand about P4P

Important Assumptions for P4P

1. **Quality can be measured**
2. **Adherence to measure will improve desired outcome**
3. **Money is a motivator that will improve performance**
4. **Measuring and improving is cost-effective**

Assumptions for P4P

1. Quality can be measured

Some measurement issues to consider:

1. Is the measure or the "proxy" that is being measured reflect the care received?
2. What is unmeasured?
   - Quality of care for complex medical care or for zebra cases (those that are not easily categorized)
3. How to measure quality for many processes?
   - Composite measures (uncoordinated care with many elements)
   - All or nothing measures (coordinated care that depends on each other)

Types of Quality Measures

Measures

There are 3 types of measures used in quality work:

- **Structure**: Physical equipment and facilities
- **Process**: How the system works
- **Outcome**: The final product, results

3 general principles

- *Structure and process are easier to measure than outcomes*
- *Processes are easiest to improve*
- *Outcomes are most important but may be affected by other things*

What is a "good" quality measure?

National Quality Forum endorsement criteria:

- Adaptable– can be used by different organizations
- Feasible – able to obtain from available data
- Reliable – different people will agree on when it is met or not
- Valid – measures what it is supposed to
- Linked to Meaningful Outcomes – improves patients' lives or health
- Discriminates Real Differences in Performance- can tell the good from the bad
- Usable- makes sense to consumers

NQF
National Quality Forum

Select Efforts to Develop Q Measures

- Ambulatory Quality Alliance-
  - American Academy of Family Physicians (AAFP)
  - American College of Physicians (ACP)
  - America's Health Insurance Plans (AHIP)
  - Agency for Healthcare Research and Quality (AHRQ)
- AMA Physician Consortium for Performance Improvement
  - > 100 national/state medical specialty societies
  - ABMS and member boards; also AHRQ & CMS
- ACOVE
  - RAND investigators

Is Pressure Ulcer Prevalence a Good Measure of Nursing Home Quality?

Thoughts…

NH Quality PU Example

- Pressure ulcers as a marker of NH quality
- BUT low prevalence PU NH DID NOT have better adherence to Q measures
- In fact, high prevalence PUs did a better job with ordering pressure reduction surfaces and documentation

…Prevalence of PUs not a good marker of NH quality

Assumptions for P4P

2. Adherence to measure improves outcomes

- Other factors (i.e. confounders) are heavily influencing outcomes make it difficult to make valid comparisons across performers
  - Risk adjustment only adjusts for those things that are measured
- Could meet the measure and not improve care
  - Proxy is poor and not related to outcomes
  - Possible to meet the measure through workarounds
    - "Check the box mentality"
    - Especially with the low hanging fruit of improving documentation as the proxy for a care process

Do Hospitals who perform better on CMS Quality Measures have better mortality rates in those conditions?

AMI, CHF, CAP

Hospital Performance on CMS Q Measures and Mortality

Table 4. Proportion of Hospitals Performing in the 75th Percentile or Above and Absolute Reduction in Risk-Adjusted Mortality Rates Between Hospitals Performing Above the 75th Percentile and Hospitals Performing Below the 25th Percentile on All Reported Measures

		Based on All Reported Measures					
		Hospitals Performing in the 75th Percentile or Above vs Hospitals Performing Below the 25th Percentile*					
		Inpatient		30 d		1 y	
	Hospitals Performing in ≥75th Percentile,%	ARR	*P* Value	ARR	*P* Value	ARR	*P* Value
AMI	8.5	0.008	.06	0.011	.01	0.018	.008
Heart failure	14.0	−0.013	.06	−0.038	.45	−0.022	.87
Pneumonia	8.1	0.014	<.001	0.003	.09	0.013	<.001

Abbreviations: AMI, acute myocardial infarction; ARR, absolute risk reduction.
*Adjusted for hospital characteristics.

Assumptions for P4P

3. **Money is a motivator that will improve performance**
   - Psychology of reward vs punishment
   - Rewards create "extrinsic motivation"
     - Only doing it for the $ (or reward)
       - Improvement only with continued rewards
     - vs. Intrinsic motivation (inherently want to make it better)
       - More desirable for longterm gains
   - Risk of creating automotons or assembly line workers
     - Everyone does everything the same way to maximize receiving reward

Right now, your salary does not depend on how many patients you see in clinic…

Imagine you are paid more per patient you see in your clinic

What would happen?

Vandy Peds Resident Clinic Study

TABLE 2. Influence of Mode of Payment on Clinical Practice Volumes

Practice Volume	Physician Group		*P* Value
	Fee-for-Service	Salary	
Av no. of patients enrolled/physician	43.4	55.1	<.05
Av no. of patient visits attended/physician	111.6	104.8	
% of visits attended by patient's primary physician (continuity)	86.6	78.3	<.05
Emergency room visits/enrolled patient/physician	0.12	0.22	<.01
Av no. of visits/enrolled patient/physician			
Scheduled	3.69	2.83	<.01
Completed	2.70	2.21	<.05
Sick, primary	0.95	0.98	
Sick, follow-up	0.33	0.24	
Well child	1.42	0.99	<.01

California Experiment P4P

Table 3. Quality Improvement After the Quality Incentive Program (QIP) and Bonus Payments to California Groups With High, Middle, or Low Baseline Performance*

Quality Domain†	Total PacifiCare Members	Pre-QIP Rate, %	Post-QIP Rate, %	Improvement (Post–Pre), % (SE)	*P* Value	Bonuses Paid in Year 1, $‡
Cervical cancer screening						
Group 1 (n = 50)	597 091	53.6	56.0	2.5 (0.8)	.001	436 618
Group 2 (n = 32)	287 610	40.8	48.1	7.4 (2.4)	.001	127 632
Group 3 (n = 52)	305 041	23.0	34.1	11.1 (3.9)	.002	26 859
Mammography						
Group 1 (n = 43)	557 119	72.3	73.0	0.7 (0.9)	.22	383 370
Group 2 (n = 50)	384 852	64.9	67.2	2.3 (1.0)	.01	88 787
Group 3 (n = 40)	244 270	52.6	59.1	6.6 (4.1)	.05	987
Hemoglobin A$_{1c}$ testing						
Group 1 (n = 46)	547 687	75.4	77.1	1.8 (1.2)	.07	360 155
Group 2 (n = 26)	231 157	62.2	64.8	2.7 (2.3)	.12	101 619
Group 3 (n = 56)	305 450	39.4	49.2	9.8 (2.7)	<.001	53 218

- Bonus was relatively small for a physician
  - roughly $25/pt eligible
- Lowest performing groups had least chance of obtaining bonuses but most likely to improve
  - Intrinsically motivated to not look so bad?

Assumptions for P4P

4. **Measuring and improving is cost-effective**
   - Need to take into account all possible costs needed
     - Costs of measurement (staff, etc.)
     - Cost of improvement (inc labor, materials, etc.)
   - Measuring effectiveness
     - Margin of improvement that is observed (or expected)
     - Value placed on making an improvement in this area to all stakeholders (payors/patients/providers etc.)
   - What makes sense will depend on resources available to the organization and value of improvement

Unintended Consequences

- **Punishes those that care for sickest or resource constrained**
  - Assumes everyone is on an equal playing field
    - Only risk-adjust what is measured
- **Promotes gaming**
  - "Cherry-picking"
  - workarounds
- **Focus on measure but not underlying care process**
  - "Check the box mentality"
- **Creates tunnel vision**
  - Diminish focus on other serious issues that are unmeasured

Case Study: NY Cardiac Surgery Experiment with Public Reporting

NY Cardiac Surgery Report Cards

- New York State Cardiac Surgery Reporting System (CSRS)
  - Began in 1991 to rate cardiac surgeons and hospitals
- Used Risk-adjusted Mortality Rate as the "performance measure"
  - Also adjusted for pt factors known to be independent risk of death: low EF, lt main dz, unstable angina, CHF, COPD, comorbidities

What happened when Cardiac Surgery Report Cards (Risk adjusted mortality rates) were made public?

Uproar…

- Intensely debated program
  - Concerns of cherry-picking with high risk patients unable to access care
  - Could worsen disparities
  - Anecdotes of physicians refusing to operate on high risk people or leaving to practice
  - Stories of patients going to Ohio to get CABG

Disparities after Public Reporting

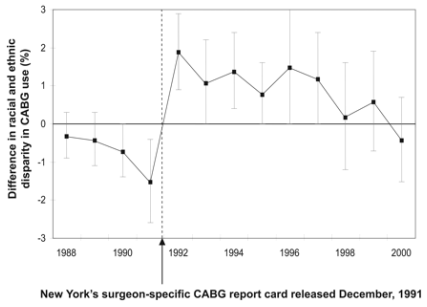


EXHIBIT 7
Percentage Of Surgeons Leaving Practice After Publication Of Report, By Performance Category

Baseline report (release year)	Performance in baseline report (%): Top quartile	Second quartile	Third quartile	Fourth quartile	OR (95% CI), *p* value
1989–1991 report (1992), left during 1993–1994	0	10	15	20	4.2 (0.8, 22.1), *p* = .09
1991–1993 report (1995), left during 1996–1997	4	9	4	22	2.3 (0.5, 11.0), *p* = .31
1992–1994 report (1996), left during 1997–1998	4	0	4	13	4.0 (0.5, 35.0), *p* = .21
1993–1995 report (1997), left during 1998–1999	11	7	11	29	2.1 (0.6, 8.3), *p* = .27
1994–1996 report (1998), left during 1999–2000	4	7	7	19	1.4 (0.3, 6.7), *p* = .72
All years summary	5.1 (n = 128)	6.7 (n = 128)	8.0 (n = 127)	21.3 (n = 127)	3.5 (1.35, 9.01), *p* = .01

SOURCE: Authors' analyses of data from the New York State Cardiac Surgery Reporting System.
NOTES: Adjusted for age, location of medical school (domestic versus foreign), number of surgeries performed in year prior to publication of report card, and years of experience. Based on data for leaving practice in the year after release of report card. OR is odds ratio. CI is confidence interval.

Table 2.—Awareness, Knowledge, and Use of the *Consumer Guide* (N = 474)

	No. (%)
Aware of *Consumer Guide*	93 (20)
Aware prior to surgery	56 (12)
Exposure to *Consumer Guide*	
Heard of it	37 (8)
Seen a copy	19 (4)
Report knowledge of hospital ratings	18 (4)
Report that information was a major or moderate influence in choice of hospital	11 (2)
Report correct rating of hospital	4 (1)
Report knowledge of surgeon or surgical group rating	7 (2)
Report that information was major or moderate influence in choice of surgeon or surgical group	4 (1)
Report correct rating of surgeon or surgical group	4 (1)
Discussed *Consumer Guide* with surgeon or other physician	6 (1)

Do Patients Make Decisions Using Report Cards?

Questions?

Quality Assessment and Improvement Curriculum
Block 4 - Week 2

January to June 2010

Julie Oyler, MD
Lisa Vinci, MD
Vineet Arora MD MAPP

Pay for Performance: Reality Check

Important Assumptions for P4P

1. **Quality can be measured**
2. **Adherence to measure will improve desired outcome**
3. **Money is a motivator that will improve performance**
4. **Measuring and improving is cost-effective**

P4P Features

- Incentive types
  - Bonus - additional money
  - Penalty- take money away
  - Public reporting (shame)
- Level of operation
  - Hospital/institution
  - Group level
  - Individual physician
- Measure type
  - Process
  - Outcome
  - Structure

Types of Quality Measures

Measures
There are 3 types of measures used in quality work:

- **Structure**: Physical equipment and facilities
- **Process**: How the system works
- **Outcome**: The final product, results

3 general principles

- *Structure and process are easier to measure than outcomes*
- *Processes are easiest to improve*
- *Outcomes are most important but may be affected by other things*

Problems with measures

- Clinical practice guidelines (CPG) to quality measures
  - Efficacy vs effectiveness
    - Co-morbidity
    - Severity of illness
    - Age
  - Patient preference (pt-provider communication)
  - "Clinical judgment"

Data sources

- Internal vs External source of audit (Joint-Commission-both)
- Electronic vs Manual extraction
  - Electronic
    - Claims data
    - EMR
  - Chart review
- Sample vs Complete data set

Pay for Reporting

- Bonus or penalty
- Providers report data on compliance with certain measures
  - Compliance= performance + documentation
- Payment made based on reaching certain level of reporting
- Bridge or preparatory to actual P4P

Current Programs

- Medicare- Pay for reporting
  - Hospitals
    - Hospital Quality Initiative
  - Ambulatory Settings
    - Physician Quality Reporting Initiative
- Private Insurance-BC/BS of Illinois- indirect pay for performance

Hospital Quality Initiative

- Background:

"*The Initiative is intended to (a) empower consumers with quality of care information to make more informed decisions about their health care, and (b) encourage providers and clinicians to improve the quality of health care.*"

- Sponsor: CMS/Medicare and Hospital Quality Alliance (HQA)

www.**cms.hhs.gov**/HospitalQualityInits

HQI- Structure

- Hospitals voluntarily submit data
  - 10 "starter set" measures
  - Additional measures added later
- "Broadly accepted hospital quality measures"
  - Input from Joint Commission, the hospital industry, National Quality Forum (NQF), and the Agency for Healthcare Research Quality (AHRQ)
    - Consensus of multiple stakeholders

HQI- Incentive

- Incentive:
  - Reduction in annual payment update for hospitals that do not submit
  - $2.4 million/yr
- Incentive level: Hospital
  - Avoid penalty
- Action level: Mostly physician

HQI Measures- MI

- Aspirin at arrival
- Aspirin prescribed at discharge
- ACE inhibitor or ARB for left ventricular systolic dysfunction
- Adult smoking cessation advice/counseling
- Beta blocker prescribed at discharge
- Beta blocker at arrival
- Thrombolytic agent received within 30 minutes of hospital arrival
- Primary Percutaneous Coronary Intervention within 120 minutes of hospital arrival
- 30-day AMI mortality (outcome)

HQI Measures- Heart Failure

- Left ventricular function assessment
- Discharge instructions
- ACE inhibitor or ARB for left ventricular systolic dysfunction
- Adult smoking cessation advice/counseling
- 30-day HF mortality (outcome)

HQI- Pneumonia

- Oxygenation assessment (dropped)
- Pneumococcal vaccination status
- Blood culture performed in emergency department before first antibiotic received in hospital
- Adult smoking cessation advice/counseling
- Initial antibiotic received within 4 hours of hospital arrival (changed to 6 hrs)
- Appropriate initial antibiotic selection
- Influenza vaccination
- 30-day Pneumonia mortality (pending NQF endorsement)

HQI Results

- **www.HospitalCompare.hhs.gov**
  - Public and **others** can use data to compare hospitals
- Does reporting improve quality?
- Is there a meaningful difference in outcomes between the best and worst performing hospitals?

HQI Results

Table 3. Risk-Adjusted Mortality Rates for Hospitals Performing in the 25th and 75th Percentiles and Absolute Reduction in Risk-Adjusted Mortality Rates Between Hospitals in the 25th and 75th Percentiles for Each Measure*

	Inpatient Mortality				30-Day Mortality				1-Year Mortality			
	Percentile				Percentile				Percentile			
	25th	75th	ARR	P Value	25th	75th	ARR	P Value	25th	75th	ARR	P Value
Acute myocardial infarction												
At admission												
Aspirin	0.074	0.068	0.006	<.001	0.127	0.121	0.006	.001	0.269	0.254	0.015	<.001
β-Blocker	0.074	0.069	0.005	<.001	0.127	0.121	0.006	<.001	0.268	0.257	0.011	<.001
At discharge												
Aspirin	0.075	0.072	0.003	.002	0.126	0.122	0.004	.001	0.265	0.255	0.010	<.001
β-Blocker	0.071	0.067	0.004	<.001	0.126	0.121	0.005	<.001	0.265	0.255	0.010	<.001
ACE inhibitor for LV dysfunction	0.079	0.076	0.003	.04	0.123	0.119	0.004	.04	0.258	0.251	0.008	.007
Composite score	0.074	0.069	0.005	<.001	0.127	0.121	0.006	<.001	0.269	0.257	0.012	<.001
Heart failure												
Assessment of LV function	0.029	0.027	0.001	.02	0.079	0.077	0.002	.01	0.313	0.311	0.002	.05
ACE inhibitor for LV dysfunction	0.031	0.031	0	.44	0.080	0.082	−0.002	.03	0.316	0.320	−0.003	.04
Composite score	0.029	0.027	0.001	.03	0.079	0.078	0.001	.02	0.313	0.311	0.002	.08
Pneumonia												
Oxygenation assessment	0.042	0.041	0.001	<.001	0.098	0.098	0	.37	0.291	0.290	0	.36
Pneumococcal vaccination	0.044	0.042	0.002	.05	0.099	0.098	0.001	.20	0.292	0.287	0.005	.007
Timing of initial antibiotic therapy	0.043	0.035	0.007	<.001	0.098	0.093	0.005	<.001	0.291	0.281	0.010	<.001
Composite score	0.042	0.038	0.005	<.001	0.098	0.097	0.001	.05	0.291	0.288	0.003	<.001

Abbreviations: ACE, angiotensin-converting enzyme; ARR, absolute risk reduction; LV, left ventricular.
*Mortality rates are adjusted for hospital characteristics.

Werner and Bradlow. *JAMA.* 2006;296:2694-2702

Hospital Quality Incentive Demonstration Project

- Background:
  - Premier Inc - Alliance of hospitals that collects quality data
  - Used data from HQI for 260 hospitals to identify the top 20%
- Sponsor: CMS/Medicare/Premier
- From pay for reporting to pay for performance
- Incentive:
  - 2% bonus for top 10%
  - 1% bonus for second 10%
- Incentive Level: Hospital
- Action Level: Physicians mostly

Hospital Quality Incentive Demonstration Project

Table 1. Quality Measures Shared by the Hospital Quality Alliance and Hospital Quality Incentive Demonstration.*

Acute myocardial infarction
Percentage of patients who were given aspirin on arrival
Percentage of patients who were given an ACE inhibitor or ARB for left ventricular systolic dysfunction
Percentage of patients for whom aspirin was prescribed at discharge
Percentage of patients who were given a beta-blocker on arrival
Percentage of patients for whom a beta-blocker was prescribed at discharge

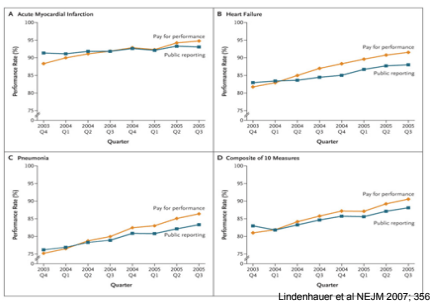
Heart failure
Percentage of patients who were assessed for left ventricular function
Percentage of patients who were given an ACE inhibitor or ARB for left ventricular systolic dysfunction

Pneumonia
Percentage of patients who were assessed for oxygenation
Percentage of patients who were given initial antibiotics within 4 hours after arrival
Percentage of patients who were assessed and given pneumococcal vaccination

* ACE denotes angiotensin-converting enzyme, and ARB angiotensin-receptor blocker.

Lindenhauer et al NEJM 2007; 356;486

Hospital Quality Incentive Demonstration Project- Results



Lindenhauer et al NEJM 2007; 356;486

Hospital Quality Initiative/Premier Project

- Benefits?
- Unintended Consequences?

Unintended Consequences

- Diversion of resources
- Improved compliance with measures did not always translate to improved outcomes (antibiotics for pneumonia)
- Over treatment- abx for pneumonia
- Hospitals in poor areas fared worse- lost $ further weakening the safety net
- Focused on a few areas (cardiac, pneumonia, surgical care)

Medicare "Do Not Pay"

- Deficit Reduction Act of 2005
- If patients develop any of these medical problems during their hospital stays, Medicare will not reimburse the hospital at the higher rate.
- It will still pay to treat the primary diagnosis and other complications.
- The rule does not alter payment for the physicians who provide that care.
- CMS estimates the effort will reduce Medicare spending by only about $21 million per year.
  - 0.1% of total cost of care for these problems.

Medicare "Do Not Pay"

- Stage III, IV pressure ulcers
- Fall or trauma resulting in serious injury
- Vascular catheter-associated infection
- Catheter-associated urinary tract infection
- Foreign object retained after surgery
- Certain surgical site infections
- Air embolism
- Blood incompatibility
- Certain manifestations of poor blood sugar control
- Certain deep vein thromboses or pulmonary embolisms

Physician Quality Reporting Initiative (PQRI)

- Sponsor: Medicare/CMS
- Incentive: 2% bonus on all Part B allowable Medicare charges
- Incentive level: Physician
- Action Level: Physician
  - report at point of care (challenging with more measures)

PQRI Structure

- Individual providers choose 3 measures
- Must report on 80% of relevant patients
- Modifier codes allow for pt/system factors
- ICD-9 (diagnosis) codes determine denominator
- Initial reporting period= 7/07-12/07
- Providers who report data on 80% of patients receive bonus

PQRI Measures- 2008

Screening for Future Fall Risk-Description: Percentage of patients aged 65 years and older who were screened for future fall risk (patients are considered at risk for future falls if they have had 2 or more falls in the past year or any fall with injury in the past year) at least once within 12 mo

Chronic Obstructive Pulmonary Disease (COPD): Spirometry Evaluation - Description: Percentage of patients aged 18 years and older with a diagnosis of COPD who had spirometry evaluation results documented

Chronic Lymphocytic Leukemia (CLL): Baseline Flow Cytometry -Description: Percentage of patients aged 18 years and older with a diagnosis of CLL who had baseline flow cytometry studies performed

Chemotherapy for Stage III Colon Cancer Patients -Description: Percentage of patients aged 18 years and older with Stage IIIA through IIIC colon cancer who are prescribed or who have received adjuvant chemotherapy during the 12 month reporting period

Plan of Care for ESRD Patients with Anemia

Description: Percentage of patient calendar months during the 12-month reporting period in which patients aged 18 years and older with a diagnosis of end stage renal disease (ESRD) who are receiving dialysis have a Hgb ≥ 11g/dL OR have a Hgb < 11 g/dL with a documented plan of care for anemia

PQRI Measures

HCV Genotype Testing Prior to Therapy

Description: Percentage of patients aged 18 years and older with a diagnosis of chronic hepatitis C who are receiving antiviral treatment for whom HCV genotype testing was performed prior to initiation of treatment

Disease Modifying Anti-Rheumatic Drug Therapy in Rheumatoid Arthritis

Description: Percentage of patients aged 18 years and older who were diagnosed with rheumatoid arthritis and were prescribed, dispensed, or administered at least one ambulatory prescription for a disease modifying anti-rheumatic drug (DMARD)

Chronic Kidney Disease (CKD): Laboratory Testing (Calcium, Phosphorus, Intact Parathyroid Hormone (iPTH) and Lipid Profile)

Description: Percentage of patients aged 18 years and older with a diagnosis of advanced CKD (stage 4 or 5, not receiving Renal Replacement Therapy [RRT]), who had the following laboratory testing ordered at least once during the 12-month reporting period: serum levels of calcium, phos, iPTH, and lipid profile

HIT- Adoption/Use of e-Prescribing

Description: Documents whether provider has adopted a qualified e-Prescribing system and the extent of use in the ambulatory setting. To qualify this system must be capable of **ALL** of the following: long list

PQRI Results

- Most PCP physicians met reporting goal per our records
- Department of Medicine should receive about $30,000 in bonus payments
- Dr. Vinci - $400
  - 250 Medicare visits in 6 months
- Difficult to access CMS data or $

PQRI

- Benefits?
- Unintended Consequences?

PQRI

- Benefits
  - Built infrastructure
  - Data collection
  - Provider experience
- Unintended Consequences
  - Additional work
  - Diversion of resources
  - Small bonus

PQRI program results

- 109,349 (15.7%) attempted to participate
- ER, ophtho, anesthesia most successful
- Mean payment $630
- Hard wired codes into billing systems
- PCPs not successful in general
  - Revised reporting for primary care (lowered bar)
  - Report on 15 consecutive patients

Susan Nedza HQS 402; 7/21/08

Issues of Attribution or “Whose job is it any way”

- Medicare patients and continuity
  - Claims data for 1.79 million pts/ 3 yrs
  - 35% of visits were with PCP
  - Median of 2 PCPs and 5 specialists
  - 4 different practices
  - For 33% of pts changed assigned physician (most visits) yearly

Pham et al NEJM 2007;1130

Private Payers
BC/BS of Illinois

- UCMC "participates" in a P4P program
- Approx $16 million bonus available in 2007
- Quality report card
  - HQA measures- Hospital Compare
  - BC/BS Patient satisfaction
  - BC/BS Physician satisfaction
  - Centers of Excellence
  - Leap Frog measures (ICU staffing, CPOE, NQF)
  - BC/BS Blue Star network ranking

BCBS Annual Hospital Profile

- University of Chicago points from BCBS Blue start program shown

Blue Cross/Blue Shield of Illinois

- http://www.bcbsil.com/PDF/blue_star_report.pdf
- AHRQ Inpatient Patient Safety Indicators:

A. Patient Safety Indicators
1. Selected Infections Due to Medical Care (PSI 7)
2. Postoperative Pulmonary Embolism or Deep Vein Thrombosis (PSI 12)
3. Postoperative Respiratory Failure (PSI 11)
4. Postoperative Sepsis (PSI 13)
5. Obstetric Trauma – Vaginal Delivery Without Instrument (PSI 19)
6. Decubitus Ulcer (PSI 3)
7. Death Among Surgical Inpatients with Serious Treatable Complications (PSI 4)
8. Accidental Puncture or Laceration (PSI 15)

The Future

- Value-based purchasing (VBP) of hospital services
  - Value=Quality/Cost
  - Global payment (physician and hospital)
  - Threshold and incremental improvement
  - Outcomes focused (inpatient and 30d mortality)
- PQRI expanded?
- More P4P from other private insurers
  - Follow CMS

Never events- NQF

- Unambiguous—clearly identifiable and measurable, and thus feasible to include in a reporting system;
- Usually preventable—recognizing that some events are not always avoidable, given the complexity of health care;
- Serious—resulting in death or loss of a body part, disability, or more than transient loss of a body function; and
- Any of the following:
  - Adverse and/or,
  - Indicative of a problem in a health care facility's safety systems and/or,
  - Important for public credibility or public accountability.

HQI -New for 2009

- Heart failure 30-day risk standardized readmission measure
- Failure to rescue !!
- Surgery patients on a beta-blocker prior to arrival who received one during the perioperative period
- Death among surgical patients with treatable serious complications !!
- Adult collapsed lung
- Postoperative wound reopening
- Accidental puncture or laceration
- Abdominal aortic aneurysm mortality rate
- Hip fracture mortality rate
- Mortality for a composite of selected medical conditions
- Mortality for a composite of selected surgical procedures
- Complication and patient safety for a composite of selected indicators
- Participation in a systematic database for cardiac surgery

UCMC Bonus Potential

In order to achieve maximum payout of the proposed bonuses, UCMC must continue to make improvements in the measures listed below.

Financial data shown.

Quality Assessment and Improvement Curriculum Block 4 - Week 4

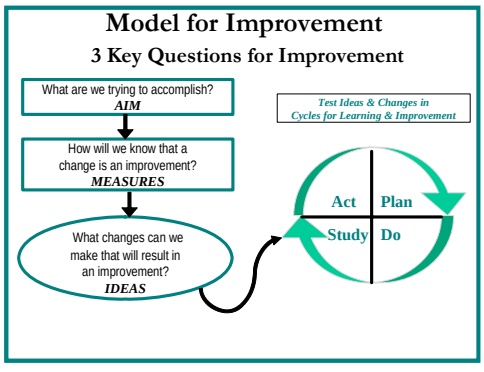
January to June 2010

Julie Oyler, MD
Lisa Vinci, MD
Vineet Arora MD MAPP

Quality Assessment and Improvement Summary

Today's Goals

- Review Basic QI principles
- AIM game with new scenarios



What is Our Aim?

- Aim statements include:
  - A general description of what we want to accomplish
  - A description of the specific patient population that is the focus of the improvement efforts

Characteristics of a Good Aim Statement

- Clear
  - People reading the statement can understand it, without interpretation
- Numeric
  - Includes quantifiable measures that will be used to track progress
- Stretch
  - Set high enough so that it will have a significant impact on your patients, but not so high that it is unrealistic
- Focused
  - Specifically defined with clear boundaries
- Flexible
  - Allows several different solutions to the performance gap, rather than a single solution

What is the Current Process?

- A basic understanding of the current process is important because

Process ⟶ **Outcomes**

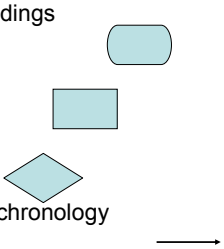
- To improve outcomes of care, you must make a change in the process of care

Process Mapping

- A process map or flowchart is a picture of the sequence of steps in a process
- Useful for
  - Planning a project
  - Describing a process
  - Documenting a standard way for doing a job
  - Building consensus about the process (correct misunderstandings about the process)

Process Mapping

- Ovals are beginnings and endings
- Boxes are steps or activities
- Diamonds are questions
- Arrows show sequence and chronology



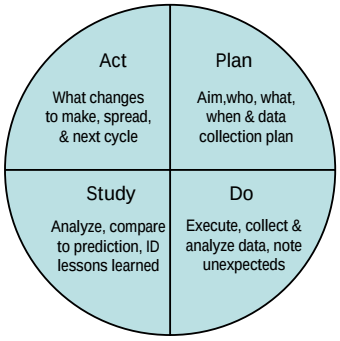
How Can We Pilot Test Our Improvement Idea?

- Finally, the team tests an idea for change, using the plan-do-study-act (PDSA) method, and asks:
  - How shall we PLAN the pilot?
  - What are we learning as we DO the pilot
  - As we STUDY what happened, what have we learned?
  - As we ACT to hold the gains or abandon our pilot efforts, what needs to be done?

Plan, Do, Study, Act Cycle

- The PDSA cycle provides a framework for efficient trial-and-error learning methodology
  - Small changes can have a big impact (thing about the effect on the system)
  - Choose carefully
  - Pilot test

Plan, Do, Study, Act Cycle
A Model for Improvement



PDSA Cycle
A Model for Improvement

- Plan
  - Describe objective and specific change
  - Specify where it fits into the process flow
  - Who, does what, when, with what tools and training
  - Data collection plan: who measures what and displays how and where
- Do
  - Carry out the change

PDSA Cycle
A Model for Improvement

- Study
  - Make sure that you leave time for reflection about your test
  - Use the data and the experience of those carrying out the test to
  - Discuss what happened
  - Did you get the results you expected? If not, why not?
  - Did anything unexpected happen during the test?

PDSA Cycle
A Model for Improvement

- Act
  - Given what you learned during the test, what will your next test be? Will you make refinements to the change? Abandon it? Keep the change and try it on a larger scale?

AIM Game

Scenario #1

- IM resident visits Ecuador where he went to under-served rural areas near the border of Colombia. He works with a group of four doctors, a NP, and a pharmD to set up make-shift clinics for 4 days to treat common medical problems. He collects some data to monitor the efficiency and safety of the rural clinics.
- On the first day, the clinic was very inefficient and had unmanageable bottlenecks in the clinic flow. Patients were registered by a volunteer, triaged by a nurse and then seen by a physician/NP. After the physician had made a diagnosis, a prescription was given and the patients were sent to the pharmacy.
- Patients were waiting in line for the pharmacy so long that it was difficult to move patients out of the exam rooms. The one pharm D was overwhelmed with the number or scripts written by the 4 doctors and 1 NP. The medication was in large bottles, so the pharm D had to count and package appropriate medication after the patient presented the prescription.

# of Patients Seen/Day	Day #1
Doctor TW	28
Doctor JY	26
Doctor DK	13
Doctor IW	18
Doctor DW	15
NP	n/a
Total Patients Seen/Day	100
Total Minutes/Patient	6
	Registration
MIN/PATIENT	1
	Triage
MIN/PATIENT	
Nurse S	10
Nurse J	5
Nurse D	7
Total Nurse Avg	7.3
	MD
MIN/PATIENT	
Doctor TW	12
Doctor JY	20
Doctor DK	20
Doctor IW	15
Doctor DW	20
NP	n/a
Total Doc/NP Avg	17.4

Total Patient Minutes/Day	
Doctor TW	336
Doctor JY	520
Doctor DK	260
Doctor IW	270
Doctor DW	300
NP	n/a
Total Doc/NP Avg	1740
	PharmD
MIN FROM LAST PT SEEN BY MD TO LAST SCRIPT FILLED	
	125
Reasons for Pharm Delay on Day1-->	
1) Poor Access to meds	
2) No control (patient distractions)	
3) No pre-packaging	
4) Inexperience	
5) Safety Checks	
6) Limited Personnel	
Problem after clinic day 1	
bottleneck of patients waiting for scripts	

Scenario #1

- Please answer each of the following questions as if you were developing a program to investigate and improve the problem presented above:
- What would be the aim?
- What would you measure to assess the situation?
- Identify on change that might be worth testing:

Scenario #1

- Aim: To decrease the pharmacy wait time at the end of the day by 50%
- Measure: Minutes from last patient seen by MD to Last script filled in the pharmacy
- Change: Pre-package common medication doses prior to clinic to reduce “in clinic” pharmacy work.

Actual results

- Interventions used day 2-4
- Obtained private room and tables
- Gatekeeper to keep patients out of pharm space
- Pre-packaged commonly dispensed meds each night before clinic
- Added 1-2 more pharm techs for days 2-3 (by rotating Doctor DW and translator to help in pharm as needed and rotating NP to serve as extra doctor as needed, depending on bottlenecks)

- Pharmacy wait time improved (time last pt seen by md to last script filled)
- Day 1 125min
- Day 2 63min
- Day 3 39min
- Day 4 45min

Scenario #2

- PCG attendings and residents have been using separate lab follow-up protocols. Some MD’s send letters to patients, some MD’s make phone calls, some MD’s have their nurses involved in patient follow-up. New patient satisfaction rules from insurance companies are beginning to require timely feeback to patients. The clinic leadership would like to streamline the follow-up protocols to ensure that patients receive follow-up in a timely matter. If patients receive results within 2 weeks of their test date, the clinic will receive a 10% bonus from major insurance companies. Current lab follow-up time measurements show that letters are received by patients by 2-3 weeks. MD’s usually finish the letters within 1 week, but clinic staff processing and mail protocols delay the arrival of the letters by 1 week. MD phone calls usually happen in a more timely fashion, however, there is often no documentation of patient follow-up. Similarly, nurse follow-up on lab results is documented in nursing notes that are not a part of the electronic medical record.

Scenario #2

- Please answer each of the following questions as if you were developing a program to investigate and improve the problem presented above:
- What would be the aim?
- What would you measure to assess the situation?
- Identify on change that might be worth testing:

Scenario #2

- Aim: To decrease written patient follow-up to less than 2 weeks.
- Measure: Measure date lab test performed to date lab results sent.
- Change: To set aside 2 hours every morning for clinic personnel to mail lab follow-up letters.

QI projects turn P4P

Developing a P4P model for QI projects

- CMS PQRI 2009 Measures included:

http://www.ama-assn.org/ama/pub/category/17493.html

P4P model for QI projects

- Break into groups to develop a P4P model for the PCG clinic to reap the benefits of reporting this measure.
- Remember to address:
  - Incentive types – bonus/penalty/public reporting
  - Data sources – internal/external, electronic/manual, point-of-care/retrospective, sample/complete data
  - Benefits vs unintended consequences