Quality Measurement and Improvement

Component 2 / Unit 7b

Overview

- State of the quality of care
- Definitions and operationalization of quality measurement and improvement
- Quality measures
- Role of information technology (IT) and informatics
- Results of current approaches
- Challenges, limitations, and ethical issues
- Quality measurement and improvement under meaningful use

Definitions and operationalization

- What is healthcare quality? Different views…
- From Blumenthal (1996)
  - Donabedian, 1988: "That kind of care which is expected to maximize an inclusive measure of patient welfare, after one has taken account of the balance of expected gains and losses that attend the process of care in all its parts."
  - Lohr, IOM, 1990: The "degree to which health services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge."
- In era of rising costs and concerns about quality, physicians and the healthcare system must have public accountability (Lanier, 2003)
- Research and practice still evolving (Berwick, 2008; Miller, 2009)

Donabedian (2002) model of quality

- Three categories
  - Structural – factors that make it easier or harder to deliver high-quality care, e.g., hospital location, volume, association with teaching hospital
  - Process – factors describing healthcare content and activities, e.g., adherence to screening, guidelines, etc.
  - Outcomes – changes attributable to care, e.g., mortality, morbidity, functional status
- Implemented and measured at different levels at an institution, e.g., individual, department, organization

Examples in Donabedian's model

	Individual	Department	Organization
Structural	-Professional certification -Credential review	-Staffing analysis -Equipment safety checks	-Licensure -Fire safety inspections
Process	-Peer review -Performance evaluations -Productivity monitors	-Review of performance indicators -Flow process analysis	-Infection surveillance -Review of utilization data
Outcome	-Practice profiles -Rework required	-Error/complication rate analysis	-Mortality rates -Quality sanctions

Process vs. outcomes

- In general, want to focus on outcomes
  - Represents what actually happens to patient
  - But difficult to measure and have confounding factors
- Do we know about relationship between them?
  - In acute coronary syndromes, there is strong correlation between process and outcome measures (Peterson, 2006)
  - In other areas, however, there is not a strong relationship between satisfaction with care ("global ratings") and its technical quality (Chang, 2006)
  - The science behind care also changes, e.g., recognition that too tight of control (HgbA1C) in diabetes can be detrimental (Aron, 2009)
  - There is not always consensus, e.g., "drugs to avoid" in the elderly (Steinman, 2009)

Ideal quality measures

- Landon, 2003 – should be
  - Evidence-based
  - Agreed-on standards for satisfactory performance
  - Standardized specifications
  - Adequate sample size for reliable estimates
  - Adjustment for confounding patient factors
  - Care attributable to individual physician
  - Feasible to collect
  - Representative of activities of specialty
- "In God we trust, all others bring data"
  - Edward Deming, statistician (1900-1993)

Other definitions and issues

- Pay for performance (P4P) (Rowe, 2006)
  - Often equated with quality assessment but is just one approach (Rosenthal, 2008)
  - Based on notion that healthcare should be held accountable financially and otherwise
- Value-based purchasing (Leapfrog, 2007)
  - Application of P4P
  - Uptake among employers (major purchasers of healthcare in US besides governments) modest so far (Rosenthal, 2007)

A sampling of current quality measures

- Warning: There are many sets and acronyms, and they change constantly
  - We are still "early" in the science of quality improvement (Berwick, 2008)
  - "Science" defined in an IOM report (2006)
- Many measures have been developed, reflecting various perspectives
  - AHRQ maintains clearinghouse – www.qualitymeasures.ahrq.gov
  - Growing consensus that standard sets are needed for each perspective
- We will view them from following perspectives
  - Health plans
  - Outpatient
  - Inpatient

Measures for health plans

- Called out because of historic role
- Health Plan Employer Data and Information Set (HEDIS) by NCQA provides 60 measures that evaluate health plans, particularly health maintenance organizations
- NCQA annual reports calculate lives saved based on outcomes from adherence

HEDIS categories and example measures

- Effectiveness of care
  - Childhood and adult immunizations
  - Use of beta blockers after myocardial infarction
  - Screening for various types of cancer
  - Comprehensive diabetes care
- Access/availability of care
  - Access to preventive health services
  - Availability of primary care providers
  - Initiation of prenatal care
- Satisfaction with care
  - Member satisfaction surveys
- Use of service
  - Rate trends

Measures for outpatient setting

- Standardization around Ambulatory Care Quality Alliance (AQA, www.aqaalliance.org) providing "starter set" of measures
  - Endorsed by major primary care associations (ACP, AAFP) as well as health plans (AHIP)
- Physician Quality Reporting Initiative (PQRI, http://www.cms.hhs.gov/pqri/) of Medicare
  - Extra 2% reimbursement each for
    - Reporting on large number of measures (153 in 2009)
    - Use of e-prescribing

AQA measures

- Fall into eight main categories
  - Prevention
  - Coronary artery disease
  - Heart failure
  - Diabetes
  - Asthma
  - Depression
  - Prenatal care
  - Quality measures addressing overuse or misuse
- Not meant to denote "standard of care" but only to provide sample of quality

AQA prevention measures

- Breast Cancer Screening – % screened in last two years
- Colorectal Cancer Screening – % with appropriate screening
  - Several possible tests, e.g., sigmoidoscopy, colonoscopy, etc.
- Cervical Cancer Screening – % screened in last two years
- Tobacco Use – % queried about use in last two years
- Advising Smokers to Quit – % counseled to quit
- Influenza Vaccination – % aged 50-64 who received
- Pneumonia Vaccination - % who ever received

AQA diabetes measures

- HbA1C Management – % with diabetes having in last year
- HbA1C Management Control – % with diabetes having value < 9
- Blood Pressure Management – % with diabetes having blood pressure under 140/90
- Lipid Measurement – % with diabetes screened
- LDL Cholesterol Level (<130mg/dL) – % with diabetes with level <130mg/dL
- Eye Exam – % with diabetes having in last year

Measures for inpatient settings

- Hospital Quality Alliance (HQA, www.hospitalqualityalliance.org)
  - Collaboration among CMS, Joint Commission, and others to create a starter set of quality measures for various conditions (four initially)
  - In Hospital Compare Project, hospitals voluntarily provide quality information that can be accessed via a Web site – www.hospitalcompare.hhs.gov
  - Consists of two programs based on reporting to CMS
    - Reporting Hospital Quality Data for Annual Payment Update (RHQDAPU) – for HQA data; not participating in 2010 results in 2% Medicare reimbursement reduction
    - Hospital Consumer Assessment of Healthcare Providers and Systems (HCAPHS) – reporting of patient satisfaction at hospitals

HQA categories and examples

- Myocardial infarction
  - Aspirin at arrival and discharge
  - Inpatient mortality
- Heart failure
  - Discharge instructions
  - Evaluation of left ventricular systolic function
- Pneumonia
  - Time to blood cultures and antibiotics
  - Pneumococcal and influenza vaccinations
- Surgical infection prevention
  - Prophylactic antibiotics
  - Prophylaxis for deep venous thrombosis

Other inpatient quality initiatives

- National Surgical Quality Improvement Program (NSQIP – www.acsnsqip.org)
  - Effort of American College of Surgeons to measure, risk-adjust, and improve quality of surgical care
- University HealthSystem Consortium (UHC – www.uhc.edu)
  - Quality measurements to benchmark academic medical centers
  - Measured by "green dots" and "red dots" (½ to 2)