Quality Measurement and Improvement

Component 2 / Unit 7c

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

Role of IT and informatics

- Series of case studies demonstrate real-world use for quality measurement and improvement (Fowles, 2008)
- NQF developing
  - Structural measures for HIT use – nine measures include e-prescribing, interoperable EHR, care management, and quality registry (NQF, 2008)
  - Data sets and flows for automated quality measurement (NQF, 2009)
- Standards emerging for reporting
  - Quality Reporting Document Architecture (QRDA) for quality reports (Alschuler, 2007)
  - Hospital Quality Measures Format (HQMF or eMeasures) for individual measures (www.hqmf.org)

Some EHR use associated with better quality

- In inpatient settings
  - University Health Consortium (UHC) sites at HIMSS Analytics Stage 4 or higher adoption have higher scores on quality measures (HIMSS Analytics, 2006)
  - "Most wired" hospitals more likely to have higher better quality measures (H&HN, 2008)
- But not in outpatient settings
  - Presence of EHR not correlated with better quality in treatment of diabetes measures (Crosson, 2007) and 17 general ambulatory quality measures (Linder, 2007)
- Better quality "not automatic" and requires substantial effort (Baron, 2007)
  - For hospitals, may be due to overall strategy of process improvement?

## EHRs can augment data used in quality measures

- Coded information in EHR
  - Improves ability to assess diabetes quality measures (Tang, 2007)
  - Administrative (or "claims") data insufficient to calculate HEDIS measures – EHR data can improve accuracy of calculating HEDIS measures (Pawlson, 2007) and disease-specific mortality (Tabak, 1999)
- But some measures are in narrative text that is harder to access
  - In heart failure, important data inaccessible in clinical notes, especially exclusion data for medications (Baker, 2007)
  - Some data can be extracted by natural language processing (NLP) as effectively as manual abstractors in areas such smoking cessation advice (Hazlehurst, 2005), diabetic foot exam (Pakhomov, 2008), and CHF (Pakhomov, 2008)

Quality measurement will require interaction among different groups
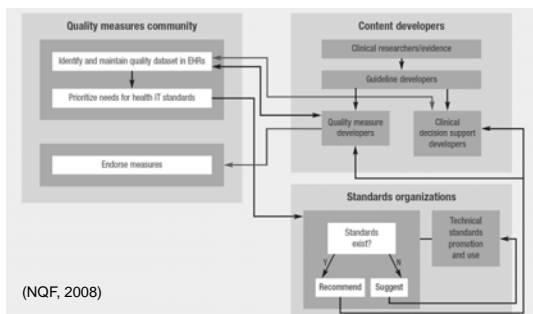
(NQF, 2008)

Results of current approaches

- What is being used?
- Some noteworthy partnerships
- Does better performance on measures lead to improved patient outcomes?
- What problems arise from current approaches?

What is being used?

- Major approaches to quality assessment and action
  - Internal feedback
  - Public reporting
  - Pay for performance (P4P)
- Public reporting
  - Many states, health plans, health systems, etc. reporting costs, mortality and/or complication rates, and other measures, e.g.,
    - New York Cardiac Surgery Reporting System (Jha, 2006)
    - State of Oregon reporting – http://www.oregon.gov/OHPPR/HQ/
    - Oregon Health & Science University – http://www.ohsu.edu/health/page.cfm?id=10009
- P4P
  - Widespread use in UK (Doran, 2006) and in US larger health plans (PWC, 2007), HMOs (Rosenthal, 2006), and state of Massachusetts (Mehrotra, 2007)

Some other noteworthy programs

- The Leapfrog Group
  - www.leapfroggroup.org
- Bridges to Excellence
  - www.bridgestoexcellence.org
- English Quality and Outcomes Framework
  - http://www.ic.nhs.uk/statistics-and-data-collections/audits-and-performance/the-quality-and-outcomes-framework

The Leapfrog Group

- Formed by private health care purchasers to improve quality of care they pay for
- First three leaps – only purchase health care from systems that
  - Use computerized physician order entry (CPOE)
  - Maintain adequate physician ICU staffing
  - Perform certain high-risk procedures in high-volume centers
- Subsequent leaps
  - Adoption of the 30 NQF safe practices
  - Hospital quality reporting
- Some skepticism – CPOE and high-volume procedures discussed elsewhere; ICU guidelines asserted to be based on weak evidence but grounded in common sense (Manthous, 2004)

Bridges to Excellence

- Consortium of stakeholders, also led by purchasers
  - Recent five-year summary (BTE, 2008)
- Principles
  - Reengineering care processes to reduce mistakes will require investments, for which purchasers should create incentives
  - Significant reductions in defects (misuse, underuse, overuse) will reduce the waste and inefficiencies in the health care system today
  - Increased accountability and quality improvements will be encouraged by the release of comparative provider performance data, delivered to consumers in a compelling way
- Bonuses paid to clinicians for adherence to quality measures and safety practices, paid for by purchasers (employers)
  - Example: Diabetes Care Link – achieving high performance care based on quality measures rewarded up to $100 per patient-year
    - Asserted to save employers up to $350 per patient-year

English Quality and Outcomes Framework (QOF)

- P4P program that ties 25% of pay to 129 quality indicators
- Initial assumption was 75% achievement but it was 97%, which increased costs (Doran, 2006)
  - Most quality improvement occurred during pre-evaluation period and has since leveled out (Campbell, 2009)
- Major "unintended consequence" has been excess focus on EHR and prompts for quality measures (as opposed to resentment in California) (McDonald, 2009)

Better performance on measures = better outcomes? Yes

- Patients choosing top-performing hospital or surgeon had one-half mortality of those who chose one in lowest quartile (Jha, 2006)
- Participation in HQA associated with lower mortality for MI, pneumonia, and CHF (Jha, 2006)
- Adopting Leapfrog practices associated with better quality and lower mortality for acute MI (Jha, 2008)

Better performance on measures = better outcomes? No

- Process measures in hospitals predict small differences in mortality in MI, CHF, and pneumonia (Werner, 2006)
- CHF measures of ACC/AHA have little relationship to mortality or rehospitalization rates (Fonarow, 2007)
- Participation of hospitals in MI P4P quality effort did not have improved quality of care or better outcomes (Glickman, 2007)

Public reporting effect on quality measures

- Systematic review finds scant evidence for documented benefit in quality of care (Fung, 2008)
- Combining public reporting with P4P improves performance on measures whereas reporting alone does not (Lindenauer, 2007)
- US general internists support financial incentives for quality though have concerns about public reporting, especially its impact on incentive to care for sicker or more complex patients (Casalino, 2007)

Challenges, limitations, and ethical issues

- Measurement issues
- Challenges for certain practice environments
- Ethical issues

Measurement issues

- Elderly patients often have complex co-morbidities that render recommendations in guidelines (and performance measures) inappropriate (Boyd, 2005)
  - UK system allows exclusions based on various factors, which does not appear to result in "gaming" system (Doran, 2008)
- Medicare patients' care dispersed among many physicians so hard to attribute quality (Pham, 2007)
- New results in clinical trials can render some measures obsolete (e.g., lowering cholesterol, diabetes) (Krumholz, 2008)
- Some measures have unintended consequences, e.g., time to first antibiotic dose in pneumonia (Wachter, 2008)
- We need standardized approaches to reporting and measurement, akin to GAAP approaches in accounting (Pronovost, 2007)

Challenges for certain practice environments

- Small numbers in small hospitals can inflate performance relative to large hospitals (O'Brien, 2008)
- "Safety-net" hospitals typically have lower quality but perform vital public function whose mission could be adversely affected by P4P (Werner, 2008) and worsen already existing disparities (Casalino, 2007)
- Small practices have limited time, multiple payers, and low capital investment (Landon, 2008)
  - Is it overly burdensome? (Vonnegut, 2007)

A number of ethical issues

- Patient consent
  - Treat as part of care or like research with human subjects protection (Lynn, 2007; Snyder, 2007; Miller, 2008)?
- Not paying for preventable complications
  - Some obvious (e.g., objects left in patients), others less so (e.g., ventilator-associated pneumonia) (Pronovost, 2008)
- Tensions between
  - "Customers" and "purchasers" in US system (Milstein, 2007)
  - "Needing to improve care and knowing how to do it" (Auerbach, 2007)
  - Physician internal motivations – not found to be adversely impacted in one UK study (McDonald, 2007)

How can we achieve a "high-performance" health care system?

- Shih, 2008
- Guided by principles
  - Patients have access to care and information but are also accountable
  - System must provide coordination of care and aim for continuous learning and improvement
- Policy recommendations include
  - Payment reform
  - Patient incentives
  - Regulatory changes
  - Provider training
  - Government infrastructure support
  - Health IT