Quality Improvement in Medical Education

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GIM Grand Rounds
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How Did We Get Here?

- IOM 1999: To Err is Human
- 2001: Crossing the Quality Chasm
  - Safety
  - Effectiveness
  - Patient-Centeredness
  - Timeliness
  - Efficiency
  - Equity
Obstacles and The Future

- Changes in Crossing the Quality Chasm would be not be easy
  - Health care leaders are not well-equipped to lead systemic change
  - Professional education lacked a systems view
- ACGME: Core Competencies
- ABIM: Practice Performance assessment

Berwick. Health Affairs, 21(3). 2002
Agenda

- QI in medical education
- A model for QI education in the inpatient setting
- Clinician educators and teaching QI
Defining QI

- **Purpose**
  - To assess or improve a process, program, or system, OR
  - To improve performance as judged by established/accepted standards.

- Involves change in human behavior
- Driven by experiential learning
# Quality Improvement vs. Research

<table>
<thead>
<tr>
<th></th>
<th>Research</th>
<th>QI/QA</th>
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<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>To test a hypothesis OR to establish clinical practice standards where none are already accepted</td>
<td>To assess or improve a process, program, or system OR to improve performance as judged by established/accepted standards</td>
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<tr>
<td><strong>Starting Point</strong></td>
<td>To answer a question or test a hypothesis</td>
<td>To improve performance</td>
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<td><strong>Benefits</strong></td>
<td>Knowledge sought may or may not benefit current subjects, but may benefit future patients</td>
<td>Knowledge sought directly benefits a process/program/system, and may or may not directly benefit patients</td>
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QI Can be Taught and Learned

- Review of 39 published QI curricula
  - Learners: medical or nursing students, residents, faculty, non-clinical
  - Educational outcomes: improvement in tested or perceived knowledge, skills, confidence
  - Clinical outcomes: generally positive; mostly process improvement
  - Conclusion: Using a variety of QI teaching strategies can improve knowledge, attitudes, and participation in QI activities

Boonyasai, et al. JAMA, 298(9); 2007.
What is QI Knowledge?

- IHI defined 8 knowledge domains
  - Customer/beneficiary knowledge
  - Variation and measurement
  - Leading, following, and making changes in healthcare
  - Collaboration
  - Developing, new locally useful knowledge
  - Health care as a process or system
  - Social context and accountability
  - Professional subject matter

Competencies addressed by QI

- Practice-Based Learning and Improvement
  - Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.
Competencies addressed by QI

- Systems-Based Practice
  - Residents must 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.

- Communication
  - Work effectively with others as a member or leader of a health care team or other professional group
# Framework for Teaching QI

- Customer/beneficiary knowledge
- Variation and measurement
- Leading, following, and making changes in healthcare
- Developing, new locally useful knowledge
- Health care as a process or system
- Social context and accountability
- Collaboration

Framework for Teaching QI

- Progression of skill and knowledge as opposed to phases of education
  - Novice
  - Advanced beginner
  - Competent

- Can be applied to medical students, residents, faculty

Teaching QI Success

- QI curricula have been undertaken at many academic institutions

- Trainees can learn
  - QI knowledge content
  - Implement successful change
  - Participate in the dissemination and sustainability of QI efforts
Both UME and GME levels
- Majority of GME are in IM residency programs

Setting
- Mostly ambulatory settings

Duration
- Few longitudinal experiences
- Most incorporated into 1 month block electives
2012
The ultimate everyday notebook.

1982
An Inpatient Model for Teaching QI

- 2010 Pilot: QI curriculum based in the inpatient setting
  - Longitudinal, Team-based projects
  - Hospitalist residents + Preclinical medical students + Faculty mentors
  - Relevant hospital committees
  - Foundational didactics
  - Structured implementation and guidance
Learning Objectives

- Define quality improvement (QI) (K)
- Rate the importance of QI improvement in the hospital setting as important (A)
- List the major steps of Model for Improvement (K)
- Explain the economic reasons for why QI is important within a health care system (K)
- Understand how to engage stakeholders for QI processes (K)
- Describe elements of leading change in a health care system (K)
- Create a fishbone diagram to analyze a health care problem (S)
- Define metrics relevant to their quality improvement projects (K)
- Explain the concept of PDSA (K)
- Design a QI project within an inpatient setting (P)
- Implement a QI project within an inpatient setting (P)
- Work within an interdisciplinary or interprofessional setting to accomplish a QI goal (S)
- Present results of their QI project to a large audience (S)
Projects – Pilot Year

- Improvement of the Quality and Timeliness of Discharge Summaries
- A Physician-Centered Initiative to Decrease Inpatient Falls
- Reducing Informal Restraints for the Frail Elderly Patient.
- Target Stroke: Improving the Time to TPA for Stroke Alerts
100% of 13 learners agreed or strongly agreed that they are able to:

- List the steps of a PDSA cycle
- Plan a PDSA cycle
- Describe QI tools for interpreting data
- Interpret QI data graphically
- Apply the most appropriate data tool

QIKAT and SFPAT to be administered at the end of year
Results: Scholarly Outcomes

- Regional HM Meeting
- National meeting presentations
  - IHI Annual meeting
  - International Stroke Conference
  - SHM Annual meeting
- All participants earned IHI’s Advanced QI Certificate
Results: Clinical Outcomes

- Educational module on discharge summaries introduced into residency curriculum
- Partnered with ACTI in efforts to implement an institution-wide discharge summary template
- New stroke protocol implemented for stroke alerts
  → Time to TPA ↓ to 48 from 70 minutes
- Target Stroke Honor Roll application submitted
- Integration of falls risk notification as a “banner” for each patient’s electronic medical record
Residents and students are apt learners of QI

Experiential component is key

Faculty mentors benefit
Role of Academic Faculty

- Intersection of patient care and trainee education
  - IM faculty many opportunities to touch a learner – fellows, residents, students
  - Leaders of clinical teams
  - Academicians!
Challenges

- Perceived specialized skill set
- Time constraints
- Scholarly value
- Culture and engagement
Strategies

- Lifelong learning.
- Start at home, start small.
- Share with everyone.
QI = Scholarship
- SQUIRE guidelines
- IRB recognize differences
- Promotional criteria at academic institutions

Funding /Support
- AHRQ, COHO, CHF
- Professional organizations: SHM, IHI
QI - Here to Stay?
Thank you!

- Questions?