Healthcare Quality Research & Evaluation Strategies

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Agenda

I. Quality and the Healthcare Value Proposition
II. One Perspective on Where Health Care Quality Research & Evaluation Fit
III. Research Priorities ... follow the money
IV. Example of Research Agenda (Journey?) in Quality
What is Quality?
As consistent with the patient’s values and desires, and available resources quality healthcare is:

Doing the **Right Thing** (evidence-based),
for the **Right Patient**,
in the **Right Way** (technical competence),
at the **Right Time** (sequencing, timeliness),
with the **Right Resources** (efficiency)
Healthcare Value Proposition

Value = f(Cost + Experience Quality)

Cost = f(Direct / Indirect Expenditures and Opportunity Costs of Different Stakeholders)

Experience Quality = f(Outcomes, Technical Care, Touch Care, Process Experience,…)

Experienced Quality

Outcome Quality = f(Cure, Symptom Reduction, Functional Status Change, Survival…)

Technical Care Quality = f(Appropriateness, Timeliness, Personnel, Coordination, SOPs, Algorithms, Plant, Equipment, Supplies…)

Touch Care Quality = f(People, Time/Priority, Values…)

Process Experience Quality = f(Flow, Coordination Among and Communication Between Various Providers / Care Locations,…)

3 Stakeholders’ Perspectives on Assessing Healthcare Quality

- **Providers: Technical Quality**
  - “5 Rights”: Right Patient, Right Action, Right Time, Right Way, Right Person / Equipment
  - Process Focus > Outcome Focus

- **Patients: “Touch Quality”**
  - Communication, Coordination, Compassion, Respect, Personalization,
  - Time spent is key
  - Process Focus > Outcome Focus

- **Payers: Technical and Touch Quality**
  - Appropriateness, Timeliness, Affordability, Effectiveness, Satisfaction
  - Outcome Focus > Process Focus

Implications for Conducting Healthcare Quality Research & Quality

- **Different stakeholders view quality differently**
- **Variable units of analysis** … individual patients – patient groups, individual providers & organization – multiple combinations … one location – multiple geographic areas … cross-sectional - longitudinal
- Quality is multi-dimensional
- No absolute standard of quality…evolving
- Working in this area should keep you busy until retirement!
An Example of the Quality Improvement – Value Business Case

Medicare Payment For Selected Adverse Events: Building The Business Case For Investing In Patient Safety

By Chunliu Zhan, Bernard Friedman, Andrew Mosso and Peter Pronovost Health Affairs, 25, no. 5 (2006): 1386-1393 doi: 10.1377/hlthaff.25.5.1386

Data & Methods

• Data: 2002 Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS), … 2002 NIS file contains about 7.85 million uniform hospital discharge abstracts from 995 short-term, general hospitals in thirty-five states = 20%, stratified sample of nonfederal acute care U.S. hospitals.4

• Methods: AHRQ Patient Safety Indicators (PSIs) to identify adverse events during hospitalization.6 The AHRQ PSIs include twenty indicators with reasonable validity, specificity, and potential for fostering quality improvement.

### EXHIBIT 1
Adverse Events During Hospitalization Among Medicare Beneficiaries Age Sixty-Five And Older, 2002

<table>
<thead>
<tr>
<th>Type of event</th>
<th>Number of events in sample</th>
<th>National estimates</th>
<th>Incidence per 1,000 discharges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>SE</td>
</tr>
<tr>
<td>Decubitus ulcer</td>
<td>34,028</td>
<td>165,124</td>
<td>5,980</td>
</tr>
<tr>
<td>Iatrogenic pneumothorax</td>
<td>2,462</td>
<td>11,879</td>
<td>474</td>
</tr>
<tr>
<td>Postoperative hemorrhage and hematoma</td>
<td>1,585</td>
<td>7,657</td>
<td>366</td>
</tr>
<tr>
<td>Postoperative pulmonary embolism and deep vein thrombosis</td>
<td>7,705</td>
<td>37,234</td>
<td>1,884</td>
</tr>
<tr>
<td>Postoperative sepsis</td>
<td>1,387</td>
<td>6,682</td>
<td>376</td>
</tr>
</tbody>
</table>

**SOURCE:** Healthcare Cost and Utilization Project Nationwide Inpatient Sample, 2002.

**NOTES:** The denominators for different types of events vary depending on inclusion and exclusion criteria. SE is standard error.

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### EXHIBIT 3
Medicare Payment For Adverse Events: Average Per Case And National Total, 2002

<table>
<thead>
<tr>
<th></th>
<th>Decubitus ulcer</th>
<th>Iatrogenic pneumothorax</th>
<th>Postoperative hemorrhage and hematoma</th>
<th>Postoperative pulmonary embolism and deep vein thrombosis</th>
<th>Postoperative sepsis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average payment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>including event</td>
<td>$15,998 (148)</td>
<td>$20,029 (625)</td>
<td>$22,682 (712)</td>
<td>$27,420 (383)</td>
<td>$44,884 (1,300)</td>
</tr>
<tr>
<td>excluding event</td>
<td>$15,223 (144)</td>
<td>$19,260 (597)</td>
<td>$20,412 (665)</td>
<td>$24,899 (362)</td>
<td>$36,003 (1,142)</td>
</tr>
<tr>
<td><strong>Average extra payment</strong> for event</td>
<td>$7.35 (39)</td>
<td>$1,369 (57)</td>
<td>$2,292 (96)</td>
<td>$2,520 (45)</td>
<td>$8,881 (295)</td>
</tr>
<tr>
<td><strong>Cases that changed payment upon removing event</strong></td>
<td>20%</td>
<td>24%</td>
<td>37%</td>
<td>35%</td>
<td>52%</td>
</tr>
<tr>
<td><strong>National total extra Medicare payment for event (millions)</strong></td>
<td>$125.0 (9.4)</td>
<td>$16.4 (1.2)</td>
<td>$17.5 (1.3)</td>
<td>$95.0 (0.6)</td>
<td>$59.2 (4.7)</td>
</tr>
</tbody>
</table>

**SOURCE:** Healthcare Cost and Utilization Project Nationwide Inpatient Sample, 2002.

**NOTE:** Standard errors are in parentheses.
## II. One Perspective on Where Health Care Quality Research & Evaluation Fit

The role of health services research & evaluation on improving health care quality
One Perspective on Where Health Care Quality Research & Evaluation Fits

Level of Proof Quality of evidence

I. Randomized Controlled Trial (Efficacy)

II-1. Controlled trials without randomization (quasi-experimental designs) (Effectiveness)

II-2. Cohort or case-control studies (Effectiveness)

II-3. Multiple time series (observational studies) or dramatic results (Effectiveness)

III. Agreement among respected authorities (anecdote / expert opinion) (Effectiveness)

Research on Healthcare Quality is the Study of the Consequences of Variation

- Assessing Occurrence of Variation
  - Outcomes (Mortality, Morbidity, Functional Status…)
  - Disparities
  - Resource Utilization
- Identifying Causes of Variation
  - Micro & Macro Level Structures (Micro & Macro)
  - Processes
- Measuring Effects of Variation
  - Mortality, Morbidity, Functional Status,
- Evaluating Interventions to Reduce Variation

A Few Reasons for Healthcare Variation

**Complexity**
- How many factors can the human mind simultaneously balance to optimize an outcome?
- “The complexity of modern American medicine exceeds the capacity of the unaided human mind”

- **Lack of valid clinical knowledge** - poor evidence
- **Reliance on subjective judgment** - Subjective evaluation is notoriously poor across groups or over time --Mark Chassin
- **Enthusiasm for unproven methods ... If it might work, do it ... Quality = spare no expense ...** (Eddy, James)
- **Clinical Uncertainty**
- **Regulatory & Payment Policies**
- **Patient Characteristics**
- …and so many more!
Example: Three Categories of Unwarranted Variations in Use of Effective Care and in Surgical Outcomes

1. Variation in use of effective care and in the outcomes of care such as surgical mortality rates. ... the result of defects in the processes of care — that is, poor quality due to medical error.

2. Variation that reflects the misuse of discretionary care. Most conditions can be treated in more than one medically valid way, ... In these situations there is no fixed, medically correct way that is right for every patient. Choosing the right treatment should depend on the patient’s own attitude toward the risks and benefits of each of the alternatives.

3. Variation that reflect differences in supplies of services... “supply-sensitive” services

Source: Wennberg: Unwarranted Variation Lecture Series

The Strong and Positive Association Between Hospital Beds and Hospitalization for Congestive Heart Failure and Hip Fracture

Because there is more discretion as to when to hospitalize a CHF patient, there is a strong correlation between bed supply and discharge rates. There is relatively little discretion as to whether a patient with a hip fracture needs hospitalization.

• Systematic study of
  – 439 indicators of clinical quality of care
  – 30 acute and chronic conditions, plus prevention
  – Medical records for 6712 patients
• Participants received 54.9% of scientifically indicated care (Acute: 53.5%; Chronic: 56.1%; Preventive: 54.9%)
• Conclusion: The “Defect Rate” in the technical quality of American health care is approximately 45%!

And More Examples…Changing Purchaser Expectations

• Employers as Healthcare Purchasers Demanding Better Quality and Safety
  – Leapfrog Group’s 3 Quality and Safety Leaps: Intensivist ICU Staffing, Evidence-Based Referrals, CPOE
• P4P: Pay for Performance … creating incentives for providing care based on best available evidence
  – CMS: 3-Condition, 10-Indicator “Voluntary” Reporting Project, Premier Indicator Project
  – P4P Initiatives: Over 50 Physician, 32 Hospital, 18 Health Plan … many focused on processes linked to evidence based medicine
Emerging P4P Strategies to Improve Healthcare Quality and Safety

Who To Target with Incentives
- Individual Physicians
- Medical Groups
- Hospitals
- Physician-Hospital Organizations
- Integrated Delivery Systems

Incentive Options
- Direct Financial Incentives
  - Quality Bonus / Penalty
  - Performance Based Pay
  - Performance Based Fee Schedules
  - Quality Improvement Grants
  - Payment for Preventive Services
  - Variable Cost Sharing
- Indirect Financial Incentives
  - Provider Performance Profiling
  - Publicizing Provider Performance
  - Quality Improvement Technical Assistance
  - Reduced Administrative Burden
  - Restrict Provider Panel Size

What is Focus of Incentive

III. Research Priorities … follow the money
Selected Funding Sources for Healthcare Quality Research & Evaluation

- AHRQ – Agency for Healthcare Research & Quality
- HRSA – Health Resources and Services Administration
- CMS – Center for Medicare & Medicaid Services
- VA-HSR&D
- NSF – National Sciences
- RWJF – Robert Wood Johnson Foundation
- Kellogg Foundation
- Commonwealth Foundation

Research Priorities for the Agency for Healthcare Research and Quality (AHRQ)

Patient-centered care research focusing on the redesign and evaluation of new care processes and interventions for sicker individuals that could lead to improvements in care through patient activation or empowerment, improved patient-provider interaction and communication, and improved navigation and coordination.

Specific strategies could include, but are not limited to, electronic clinical communication, self-management programs, medication therapy management programs, web-based applications for patients and/or health care providers, shared decision-making programs; enhanced case-management, and multi-disciplinary team approaches.
Examples of Potential Research of Interest to AHRQ

- Approaches to providing coordinated, patient-centered care to individuals with multiple co-morbid conditions over time and in multiple health care settings.
- The relationship of the “medical home” to health care access and to improved health care quality and outcomes for patients with multiple health conditions.
- Strategies for the assessment and treatment of multiple high risk health behaviors (including lack of physical activity, unhealthy diet, and tobacco use) and providing multiple evidence-based preventive services in primary care settings.
- Effective methods for managing polypharmacy in individuals with multiple co-morbidities including patient centered medication therapy management programs.

More Examples of Potential Research of Interest to AHRQ

- Methods of providing health education and teaching self-management skills to patients with multiple co-morbid conditions and high risk behaviors.
- Strategies to reduce racial, ethnic and socioeconomic disparities in the care of sicker adults.
- Optimal methods of organizing health care teams in primary care, including the roles of various health professionals in the care of patients with multiple co-morbid conditions; implications for medical education and health professions training.
- The short- and long-term financial implications of providing coordinated, patient-centered care to individuals with multiple health conditions, including at-risk populations, such as the near-elderly and Medicaid populations.
- Translating effective research strategies to improve chronic illness care into cost-effective health system improvements.
- Consequences of pay-for-performance strategies on quality, cost, and access to care for patients with multiple co-morbidities; identification of pay-for-performance program characteristics most closely associated with quality improvement and efficiency gains in this population.

**AHRQ Small Research Grant Program (R03)**
- Pilot and feasibility studies; secondary analysis of existing data; small, self-contained research projects; development of research methodology; and, development of new research technology.

**AHRQ Health Services Research (R01, R18 Demonstration Projects)**
- 1) Supporting Improvements in Health Outcomes, 2) Improving Quality and Patient Safety, and 3) Identifying Strategies To Improve Access and Foster Appropriate Use and Reduce Unnecessary Expenditures.

**Capacity Building**
- AHRQ Individual Awards For Postdoctoral Fellows (F32)
- AHRQ Grant Program for Large Conference Support (R13 & U13)
- Small Grant Program of Conference Support (R13)
- AHRQ Minority Research Infrastructure Support Program (M-RISP)
- AHRQ Grants for health Services Research Dissertation (R36)
- Mentored Clinical Scientist Development Awards
- Independent Scientist Awards
- Economic Evaluation in HIV and mental Disorders Prevention

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**AHRQ Primary Announcements (11/12/06)**
(AHRQ is the sole sponsor of the RFA)

- **RFA-HS-07-008 Coordinating Center for AHRQ Centers for Education & Research on Therapeutics (CERTs) Program (U18)**
- **RFA-HS-07-004 Centers for Education & Research on Therapeutics (CERTs) Program (U18)**
- **RFA-HS-07-001 Consume Assessment of Healthcare Providers and Systems (CAHPS III (U18)**
### AHRQ co-sponsored announcements are those PAs for which there are multiple sponsors, including AHRQ.

<table>
<thead>
<tr>
<th>Announcement ID</th>
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<tbody>
<tr>
<td>PA-06-481</td>
<td>Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellowships (F31) to Promote Diversity in Health-Related Research</td>
</tr>
<tr>
<td>PAR-06-377</td>
<td>Women's Mental Health in Pregnancy and the Postpartum Period (R21)</td>
</tr>
<tr>
<td>PAR-06-376</td>
<td>Women's Mental Health in Pregnancy and the Postpartum Period (R01)</td>
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<tr>
<td>PAR-06-247</td>
<td>Community Participation In Research (R21) Updated Contact Information</td>
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<tr>
<td>PAR-05-081</td>
<td>Research on Emergency Medical Services for Children</td>
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<tr>
<td>PAR-05-026</td>
<td>Community Participation in Research Updated Contact Information</td>
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<td>PAR-04-117</td>
<td>Understanding and Promoting Health Literacy (R03)</td>
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<td>PAR-04-116</td>
<td>Understanding and Promoting Health Literacy (R01)</td>
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<tr>
<td>PAR-04-077</td>
<td>Research Partnerships for Improving Functional Outcomes</td>
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<tr>
<td>PAR-04-017</td>
<td>Studies of the Economics of Cancer Prevention, Screening, and Care</td>
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<tr>
<td>PAR-04-012</td>
<td>Cancer Surveillance Using Health Claims-based Data System</td>
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<tr>
<td>PAR-02-153</td>
<td>Translation Research for the Prevention and Control of Diabetes</td>
</tr>
<tr>
<td>PAR-99-015</td>
<td>Cancer Surveillance Using Health Claims-Based Data System</td>
</tr>
</tbody>
</table>

### RWJF

**Address the objectives of one or more of the Foundation's current interest areas:**
- Addiction Prevention & Treatment
- Building Human Capital
- Childhood Obesity
- Disparities
- Health Insurance Coverage
- Nursing
- Pioneer
- Public Health
- Quality Health Care
- Tobacco Use & Exposure
- Vulnerable Populations

**Fall within the guidelines of the types of projects or activities that we fund:**
- Service demonstrations
- Gathering & monitoring of health-related statistics
- Public education
- Training and fellowship programs
- Policy analysis
- Health services research
- Technical assistance
- Communications activities
- Evaluations
Commonwealth Fund The Quality Improvement and Efficiency Program

- Develop valid measures of physician clinical performance
- Examine and evaluate incentives to foster quality and efficiency
- Build the capacity for change in the health care system

Questions?
One Perspective on Where Health Care Quality Research & Evaluation Fits

Research on Quality: Access, Organization, Outcomes, Efficiency, Effectiveness, Technology, Workforce...

Health Services & Policy Research & Evaluation (Effectiveness)

Health Care Practices

Translational Research

Basic Sciences Clinical Trials (Efficacy)

Healthcare Regulation & Policy