21st Century Health Care: The Promise and Potential of a Learning Health System

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Evidence is being produced at an extremely rapid rate, but its incorporation into clinical practice is happening much more slowly.

Transparency efforts don’t offer enough usable data for decisions regarding a specific disease and selection of a treatment option.

We face an underperforming health care system and untenable cost forecasts.

Too often, the patient is an afterthought.
So, Where Does That Leave Us?

Making progress, but our destination is in the distance

- Progress in quality improvement and patient safety is taking place, but at a slow and uneven pace
- Payment based on quality and safety performance is not a passing fad
- Movement to patient-centered care* also an evolving process

*Institute of Medicine proposed 6 aims for the health care system: safe, effective, patient-centered, timely, efficient, and equitable. (Crossing the Quality Chasm, 2001)
Patient-Centered Care in an Era of System Transformation

- AHRQ Research and Priorities
- The Integration of Research and Practice
- Putting the Patient at the Center of Care
- Q & A
HHS Organizational Focus

NIH
Biomedical research to prevent, diagnose, and treat disease

CDC
Population health and the role of community based interventions to improve health

AHRQ
Long-term and system-wide improvement of health care quality and effectiveness
AHRQ Priorities

Patient Safety
- Health IT
- Patient Safety Organizations
- Patient Safety Grants (incl. simulation)

Effective Health Care Program
- Comparative Effectiveness Reviews
- Patient-Centered Outcomes Research
- Clear Findings for Multiple Audiences

Ambulatory Patient Safety
- Safety & Quality Measures, Drug Management, & Patient-Centered Care
- Survey of Patient Safety Culture
- Diagnostic Error Research

Medical Expenditure Panel Surveys
- Visit-Level Information on Medical Expenditures
- Annual Quality & Disparities Reports

Other Research & Dissemination Activities
- Quality & Cost-Effectiveness, e.g., Prevention & Pharmaceutical Outcomes
- U.S. Preventive Services Task Force
- MRSA/HAI
AHRQ’s TOP 3 Focus Areas

Patient Safety
- Build a “trustworthy” delivery system, minimize the impact of adverse events

Quality
- Focus on the National Quality Strategy and collaboration (HHS, private sector)

“Getting to HOW”
- Practical, evidence-based process improvements; implementation, dissemination and use
Overall, improvement in the quality of care remains suboptimal and access to care is not improving.

Few disparities in quality are getting smaller and almost no disparities in access are getting smaller.

Particular problem areas include cancer screening and management of diabetes.

Quality of care varies not only across types of care but also across parts of the country.

2012 Reports Coming Soon!
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A Learning Health System (LHS)

“... one in which progress in science, informatics, and care culture align to generate new knowledge as an ongoing, natural by-product of the care experience, and seamlessly refine and deliver best practices for continuous improvement in health and health care.”

Institute of Medicine
Components of an LHS

- Science and Informatics
  - Real-time access to knowledge, digital capture of the care experience
- Patient-Clinician Partnerships
  - Engaged, empowered patients
- Incentives
  - Incentives aligned for value, full transparency
- Culture
  - Leadership-instilled culture of learning, supportive system competencies

Best Care at Lower Cost: The Path to Continuously Learning Health Care in America
Institute of Medicine September 2012
Four ways big data can improve quality and efficiency:

- Expand capacity to generate new knowledge
- Help with knowledge dissemination
- Integrate systems biology into EHR data
- Deliver information directly to patients

Murdoch T, Detsky A. *The Inevitable Application of Big Data to Health Care*

All of this Leads to the Seamless Integration of Research and Practice

- Each interaction seamlessly draws from the best available knowledge
- The same interaction also improves the knowledge base on what works for individual patients
- Clinicians answer questions in a more personalized manner, in real time
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“Do something. If it works, do more of it. If it doesn’t, do something else.”

Franklin Delano Roosevelt
Implementing Evidence-Based Treatment Decisions

- Which treatments work, for which patients, and what are the trade-offs?
  - Patient-centered outcomes research informs decisions by providing evidence and information on effectiveness, benefits and harms

- How can evidence-based improvements be translated and shared with providers, patients?
  - Effective Health Care Clinician and Consumer Summaries
  - Continuing Medical Education
  - Center for Medicare and Medicaid Innovation; AHRQ Health Care Innovations Exchange
Multidisciplinary Science: EDM Forum Research Networks

11 Projects Using Electronic Health Research for CER/PCOR and QI

- Networks include between 12,000 and 7.5 million patients
- Potential reach of networks: Up to 50 million patients
- 38 CER studies
- Address all AHRQ priority populations and almost all AHRQ priority conditions

www.edm-forum.org
Early Findings: Recovery Act Delivery System Grants

- **Primary Care Reorganization** – Preliminary findings on reorganizations along the lines of the patient-centered medical home point to reductions in hospitalizations and other outcomes that may signal improvements in both quality and cost.

- **Bundled Payments** – Implementation barriers encountered in one evaluation in CA (final report due 9/13).

- **State Drug Formularies** – Accountable Care Organizations operating across state lines face divergent policies that may affect operations and patients (final report due 9/13).

www.ahrq.gov/qual/deliverysys/arragraneeppubs.htm
Some AHRQ PCOR projects focus on leveraging the capacity of EHRs and databases to expand the ability to conduct patient-centered outcomes research and improve clinical decisions nationwide

- PRospective Outcome Systems using Patient-specific Electronic data to Compare Tests and therapies (PROSPECT)
- Distributed Research Networks
- Enhanced Registry Projects
AHRQ Health Care Innovations Exchange

Web-based repository of cutting-edge service innovations

- Electronic learning hub for sharing innovations, bringing innovators and adopters together
- Searchable database featuring successes and failures, expert commentaries, lessons learned
- Designed to help "agents of change" improve quality

www.innovations.ahrq.gov
Series of reports summarizing the evidence on quality improvement strategies for chronic conditions and other priorities:

- Bundled Payment
- Health Disparities
- Patient-Centered Medical Home
- Public Reporting
- Medication Adherence

http://www.ahrq.gov/clinic/tp/gapbundtp.htm
Although health care reform has begun, these questions remain:

- How is evidence on safety and quality improvement integrated into the new environment?
- How has the nature of evidence changed?
- How do these changes affect patients, providers, payers?
- How do we ensure that these changes are beneficial?
- How are improvements put into practice?
What Should the New Model Look Like?

That remains to be determined, although overall things to consider include:

- Stakeholders are engaged more and more when the strategic decisions are being made
- Making evidence available earlier and during different intervals of a project
- Thinking of publication as one step in the continuing process to get results into the hands of those who need it rather than the end of the research cycle
- Testing multiple conclusions in the field rather than waiting until there is a ‘right’ answer
Majority of ICUs stopped central line-associated bloodstream infections (CLABSI) for up to 2 years after using AHRQ-funded quality initiative

Comprehensive Unit-based Safety Program (CUSP) implemented through Keystone ICU project in Michigan hospitals (large and small)

60% of 80 ICUs evaluated went 1 year w/o infection; 26% went 2 years or longer

Keystone tools include:

- Promoting a culture of safety
- Improving communications among ICU staff
- Using checklist to promote practice of CDC guidelines

CUSP Cuts CLABSIs by 40 Percent in 1,100 Hospital Units

- Nationwide patient safety project
  - Developed at Johns Hopkins, tested in Michigan
  - Implemented in more than 1,100 hospital units

- Results:
  - CLABSIs reduced from 1.903 infections per 1,000 central line days to 1.137 per 1,000 days
  - Savings: more than 500 lives, $34 million in costs

- New toolkit for implementation

Regional Collaborations Between Hospital and Clinicians

- Blue Cross Blue Shield of Michigan Value Partnerships
  - Incentive and support structure has generated high levels of provider participation
  - Programs focused on spine surgery and episodes of care are being added this year

“If early results from the Michigan initiative hold up, such programs may represent a rare triple win: professional satisfaction and preserved autonomy for physicians; lower costs for payers; and better outcomes for patients.”

Health Affairs 30, No. 4 (2011): 636-645
HIE Saves Lives

“This patient has a prior history of MRSA”

- MRSA prevention program* at six Indianapolis hospitals participating in a statewide Health Information Exchange
- Uses Patient Administration (ADT) messages at the time of admission to identify prior evidence of MRSA
- Identified patients isolated immediately
- RESULT: MRSA infections in Indianapolis have dropped by two-thirds

*Indianapolis Coalition for Patient Safety
Are We “All In?”

- Charting the path to high quality, affordable care: data, infrastructure, evidence, focus on patients: A Team Sport!
- Building strong partnerships with national, state and local organizations
- Empowering patients, clinicians and policymakers with timely and useful information
The late University of Texas football coach Darrell Royal, when an assistant coach argued against benching a talented, but inconsistent quarterback because he had so much potential: "Potential means you ain’t done it yet."
Thank You

AHRQ Mission
To improve the quality, safety, efficiency, and effectiveness of health care for all Americans

AHRQ Vision
As a result of AHRQ's efforts, American health care will provide services of the highest quality, with the best possible outcomes, at the lowest cost

www.ahrq.gov