Crossing the Quality Chasm:
The Role of Information Technology

Janet M. Corrigan, PhD, MBA

Institute of Medicine

Studies Documenting the "Quality Gap"

- Over 70 studies documenting quality shortcomings

  (Schuster et al., RAND, 1999)

- Large gaps between the care people should receive and the care they do receive
  - true for preventive, acute and chronic
  - across all health care settings
  - all age groups and geographic areas

The Time for Change has Come

"The burden of harm conveyed by the collective impact of all of our health care quality problems is staggering."

IOM Roundtable on Quality, 1998

"The health care industry is plagued with overutilization of services, underutilization of services and errors in health care practice."

Presidential Advisory Commission, 1998

"Tens of thousands of Americans die each year from errors"
IOM Quality of Health Care in America Committee, 1999

Fundamental Change is Needed

- "The current care systems cannot do the job. Trying harder will not work. Changing systems of care will."

- "Information technology must play a central role in the redesign of the health care system if a substantial improvement in quality is to be achieved over the coming decade."

IOM, Crossing the Quality Chasm, 2001

Major Forces Influencing Health Care

Expanding Knowledge Base

"Current practice depends upon the clinical decision-making capacity and reliability of autonomous individual practitioners, for classes of problems that routinely exceed the bounds of unaided human cognition."

Daniel R. Masys, M.D.

2001 IOM Annual Meeting

Delivery System Increasingly Inadequate

- Dearth of clinical programs with necessary infrastructure

- Chronic Care Delivery Model (Wagner, 1996)
  - Systematic approach

  - Attention to information and self-management needs of patients

  - Multi-disciplinary teams

  - Coordination across settings and clinicians, and over time

  - Unfettered and timely access to clinical information

Health-Related ITApplications

- Clinical Care

- Consumer Health

- Health services, biomedical and clinical research

- Public Health

- Professional Education

- Administrative and financial transactions

IT Applications: e-health delivery

- Current model of delivery is based on face-to-face encounters
  - resource intensive
  - *slowwwww*
  - physician-oriented

- Over 830 million visits annually to physicians' offices in the U.S.

E-health Applications:
The Evidence is Thin but Building

- Consumer reminder systems improve compliance

  - mothers receiving computer-generated reminders had 25% higher on-time immunization rate for their infants (Alemi, 1996)

E-health Applications:
The Evidence is Thin but Building

Disease management --Asthma

Internet-based home asthma telemonitoring (spirometry self-testing with prompt exchange of information between patients and providers) can be successfully implemented in a group of patients with no computer background (Finkelstein, 2000)

E-health Applications:
The Evidence is Thin but Building

Disease management -- Diabetes

T-IDDM: Telematic Management of Insulin Dependent Diabetes

- distributed computer-based system with patient unit and medical unit
- data collection and transmission (e.g., glucose monitoring)
- clinician and patient communication
- knowledge management and decision support (time series analysis of blood glucose data)

(Bellazzi, 2001; Pavia, Italy)

Clinical Decision Support Systems

- Computerized decision support can improve quality and decrease costs by
  - Pointing out redundancies
  - Suggesting alternatives
  - Identifying errors of omission
  - Emphasizing important abnormalities
  - Making guidelines accessible

IT Applications:
Reducing Medication Errors

- The key to reducing medication errors is the wise use of computerized systems

- Anywhere from 28 to 95 percent of ADEs can be prevented through computerized systems
    – Cullen et al, 1995
    – Bates et al, 1997
    – Bates et al, 1995
    – Bates et al, 1999
    – Evans et al, 1994

IT Applications:
Reducing Redundant Lab Tests

9% of redundant lab tests at a hospital could be eliminated using a computerized system

(Bates, 1998)

IOM Committee Recommendation

- Call for renewed national commitment to building an information infrastructure to support care delivery, consumer health, public accountability, public health, research, and clinical education.

- Goal: elimination of most handwritten clinical data by 2010

IOM IT Initiative

Data Standards Project

- Oct 2001 – Sept 2003
- Sponsor: AHRQ
- Focus on data sources for patient safety reporting
- Develop a detailed plan to facilitate the development of data standards for the collection, coding and classification of patient safety information

IOM IT Initiative

National Health Information Infrastructure Project

- Under development
- Three components:
  - Leadership and workforce capacity
  - Standards
  - Capital and financing issues