

Meaningful Use of Health Information Technology Requires a Competent Workforce

William Hersh, MD

Professor and Chair

Department of Medical Informatics & Clinical Epidemiology

Oregon Health & Science University

Portland, OR, USA

Email: hersh@ohsu.edu

Web: www.billhersh.info

Blog: informaticsprofessor.blogspot.com

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1

Use of information is critical to improving health and healthcare

- Improved use of information is essential for quality, safety, and integration of care
 - This is even more imperative with ARRA/HITECH and ACA legislation
- Biomedical and health informatics is the discipline of improving healthcare, biomedical research, and public health through better use of information (Hersh, 2009)
 - It's about information, not technology
- Competency in informatics varies by group
 - Clinicians (Stead, 2010; Shortliffe, 2010)
 - Informaticians (Hersh, 2010)
- Physicians are not luddites: 72% use smartphones (Dolan, 2010)



2

We have entered a new “ARRA” of health IT and informatics



“To lower health care cost, cut medical errors, and improve care, we’ll computerize the nation’s health records in five years, saving billions of dollars in health care costs and countless lives.”

First Weekly Address
Saturday, January 24, 2009



3

Implications of the new “ARRA” for health IT and informatics

- Health Information Technology for Economic and Clinical Health (HITECH) Act of the American Recovery and Reinvestment Act (ARRA) (Blumenthal, 2010)
 - Incentives for “meaningful use” of electronic health records (EHRs) by physicians and hospitals (up to \$27B)
 - We have a long ways to go: ~10% complete adoption by physicians (Hsaio, 2010) and hospitals (Jha, 2010)
 - Direct grants administered by federal agencies, including workforce development (\$2B)
- Patient Protection and Affordable Care Act (ACA) initiatives require IT and informatics, e.g., accountable care organizations (ACOs), value-based purchasing, etc.



4

What do we know about the informatics workforce?

- Systematic reviews show benefit for HIT interventions but many studies done in small number of academic centers (Garg, 2005; Buntin, 2011)
- Problematic health IT implementations well-known, with failure often attributable to lack of understanding of clinical environment and workflow (Leviss, 2010; Einbinder, 2010)
- Case study: implementation of computerized physician order entry (CPOE) showed adverse consequences
 - Mortality rate increased from 2.8% to 6.6% at Children’s Hospital of Pittsburgh Pediatric ICU (Han, 2005)
 - Increased mortality not seen at other academic centers (Del Baccaro, 2006; Jacobs, 2006)
 - Pittsburgh adverse outcome may have been avoided with adherence to known “best practices” (Phibbs, 2005; Sittig, 2006)

5



Who is the HIT workforce?

- Three historical groups of HIT professionals
 - Information technology (IT) – usually with computer science or information systems background
 - Health information management (HIM) – historical focus on medical records
 - Clinical informatics (CI) – often from healthcare backgrounds
- A challenge: with exception of HIM, no standard occupational classification (SOC)

6



How many IT personnel do we have and do we need?

- IT – to reach level of known benefit and meaningful use, may need 40,000 (Hersh, 2008)
- HIM – from US Bureau of Labor Statistics occupational employment projections 2008-2018 (BLS, 2009)
 - Medical Records and Health Information Technicians (RHITs and coders) – projected 20% growth in next 10 years
- CI – growing number of individuals who combine clinical knowledge and informatics skills
 - Analysts, trainers, support staff, etc.
 - Recognition of growing role of CMIO and other CI leaders (Leviss, 2006; Shaffer, 2010), leading to proposal for medical subspecialty (Detmer, 2010)

7



What competencies must informaticians have? (Hersh, 2009)

Health and biological sciences:

- Medicine, nursing, etc.
- Public health
- Biology

**Competencies required in
Biomedical and Health
Informatics**

Management and social sciences:

- Business administration
- Human resources
- Organizational behavior

Computational and mathematical sciences:

- Computer science
- Information technology
- Statistics

8



ONC estimates need for 50,000 in HITECH Workforce Development Program

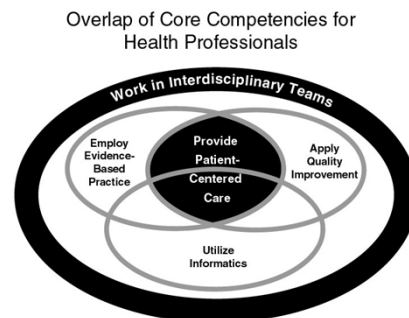
- Community College Consortia to Educate Health Information Technology Professionals Program (\$70M)
 - Five regional consortia of 70 community colleges offering short-term training for 10,000 individuals per year
- Curriculum Development Centers Program (\$10M)
 - Five universities collaboratively developing (with community college partners) HIT curricula for 20 components (courses)
 - One of the five centers (OHSU) additionally funded as National Training and Dissemination Center
 - Curriculum now available: www.onc-ntdc.info
- Competency Examination for Community College Programs (\$6M)
 - Developing competency examinations based on the six community college job roles
- Program of Assistance for University-Based Training (\$32M)
 - Funding for education of individuals requiring university-level training at nine universities (including OHSU)
 - Emphasis on short-term certificate programs delivered via distance learning



9

Informatics now viewed as a core competency for health professionals

- According to IOM, the modern health professional must have competency in informatics as part of larger goal to provide patient-centered care (Greiner, 2003)
- Informatics competency is not just computer literacy
 - The “Google generation” (aka, “digital natives”) does not necessarily have good information skills (CIBER, 2008)



10

Competencies and workforce development for clinicians

- Growing recognition that healthcare professionals need
 - Basic computer literacy
 - Competency with primary and secondary uses of information (Stead, 2010; Shortliffe, 2010)
 - e.g., quality measurement and improvement, evidence-seeking, collaboration, etc.
- Some noteworthy initiatives (Hersh, 2010)
 - AAMC MSOP (1998) – details old but framework still valid
 - AMIA-AHIMA Core Competencies for Individuals Working with Electronic Health Records (2008)
 - Also nursing (Gugerty, 2009), public health (CDC, 2009), nutrition (Hogge, 2010) and others

11



For more information

- Bill Hersh
 - <http://www.billhersh.info>
- Informatics Professor blog
 - <http://informaticsprofessor.blogspot.com>
- OHSU Department of Medical Informatics & Clinical Epidemiology (DMICE)
 - <http://www.ohsu.edu/informatics>
 - <http://oninformatics.com>
- OHSU financial assistance for informatics training
 - <http://www.informatics-scholarship.info>
- What is BMHI?
 - <http://www.billhersh.info/whatis>
- Office of the National Coordinator for Health IT (ONC)
 - <http://healthit.hhs.gov>
- American Medical Informatics Association (AMIA)
 - <http://www.amia.org>

12

