

Health Information Technology Workforce: Overview and Needs

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Overview of talk

- Motivations, benefits, and barriers of health information technology (HIT)
- Recent research and its limitations
- HIT workforce needs in the ARRA era
- Conclusions

Motivations – why do we need more IT in health care?

- Quality – not as good as it could be (McGlynn, 2003; NCQA, 2008; Schoen, 2009)
- Safety – IOM “errors report” found up to 98,000 deaths per year (Kohn, 2000)
- Cost – rising costs not sustainable; US spends more but gets less (Angrisano, 2007)
- Inaccessible information – missing information frequent in primary care (Smith, 2005)

What are the benefits of HIT?

- Systematic review of 257 studies showed benefits (Chaudhry, 2006), mostly in
 - Adherence to guideline-based care
 - Enhanced surveillance and monitoring
 - Decreased medical errors
- Caveat: 25% of studies came from 4 institutions and few studies of commercial systems
 - Concerns about generalizability

In addition to benefits, there are barriers

(Hersh, 2004)

Health Care Information Technology Progress and Barriers

William Hersh, MD

IN THE 3 DECADES SINCE THE TERM "MEDICAL INFORMATICS" was first used, individuals working at the intersection of information technology (IT) and medicine have

in this issue of *JAMA*, Slack demonstrates the value that patient-physician e-mail can have in improving patient care, and also catalogs the incomplete but encouraging underlying evidence.¹¹ As with many applications of IT, the technology can improve the existing situation but also empower clinicians

- Cost
- Technical challenges
- Interoperability
- Privacy and confidentiality
- Workforce

Health Information Technology Coordinator. This builds on a refreshingly bipartisan consensus on the value of health care IT.^{8,9} It is no exaggeration to declare that the years ahead portend the "decade of health information technology."¹⁰

Informatics is poised to have a major impact in patient-clinician communication. In the Clinical Crossroads article

See also p 2255.

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to pay for such systems, namely physicians and other practice organizations, only see 11% of that return on investment. The rest goes to those who typically do not pay for

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What do we know about the HIT workforce?

- Traditional groupings of professionals
 - Information technology (IT) – usually with computer science or information systems background
 - Health information management (HIM) – historical focus on medical records
 - Clinical informatics (CI) – usually from health care backgrounds
 - Others – librarians, trainers, etc.
- Most studies have focused on professional groupings (usually IT or HIM staffing)

What do the data show?

Group	Quantitative	Qualitative
IT	US and UK: ~1 FTE per ~50 non-IT FTE ^{1,2,3} ; need for 40-50,000 more ^{4,5}	Knowledge of health care deemed essential ⁶
HIM	~170,000 now, increasing to ~200,000 by 2016 ⁷	Evolving role as technology changes ⁸
CI	Unknown; estimates of 10,000-13,000 clinical ^{9,10} and ~1,000 public health ¹¹	CMIO is example of a new position and is evolving ^{12,13}

¹Shaffer, 2008; ²Eardley, 2006; ³Hersh, 2008; ⁴Hersh, 2008; ⁵Monegain, 2009;

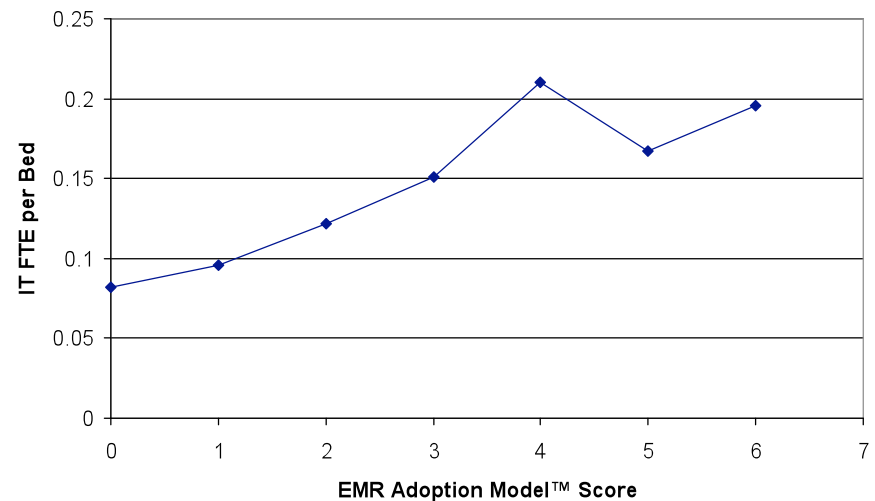
⁶Monegain, 2004; ⁷Dohm, 2007; ⁸AHIMA, 2003, ⁹Safran, 2005; ¹⁰Friedman, 2007;

¹¹Friedman, 2007; ¹²Leviss, 2006; ¹³Shaffer, 2008

How many IT personnel do we need?

(Hersh, 2008)

- Gap between health care entities at varying levels of HIT adoption based on HIMSS Analytics Database for IT personnel
 - 108,390 IT staff at current adoption at present
 - Would increase to 149,174 if all stages <4 hospitals moved to stage 4
 - Sound bite: Need for >40,000 more!



Clinical informatics

- Individuals who bring skills at intersection of health care and IT (Hersh, 2008; Hersh, 2009)
 - Focus more on information than technology
 - Likely to lead “meaningful use” of HIT
- Estimates of need
 - One physician and nurse in each US hospital (~10,000) (Safran, 2005)
 - About 13,000 in health care (Friedman, 2008) and 1,000 in public health (Friedman, 2007)
 - Limitation: Lack of Standard Occupation Code (SOC) (BLS, 2004)

HIT workforce needs for the ARRA agenda (i.e., health care reform)

- **ONC has estimated need for 50,000 workers**
(Monegain, 2009)
 - Educational level not clear
- **Categories of workers needed** (ONC, 2009)
 1. Implementation technical support staff
 2. Implementation support managers
 3. Workflow redesign specialists
 4. Clinical consultants
 5. Software support specialists
 6. Trainers

Conclusions

- HIT is impacting all areas of individual health, health care, public health, and biomedical research
- A requirement for its successful use and dissemination is a highly competent workforce, especially in CI
- We need research and policy attention to optimize the organization and education of this workforce