

Subjects: Health Information Technology, HIT workforce
Assignment: Review and summarize studies that project health IT workforce needs.
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Health Information Technology Workforce: Literature Review

Introduction

Health information technology (HIT) has been touted as a means to lower the cost of health care and increase efficiency and quality. However, implementing electronic health records (EHRs) in physicians' offices and developing the information networks to connect them will require a large skilled workforce. Speaking in 2004, then National Coordinator for HIT, Dr. David Brailer, voiced concern that "we have a huge manpower crisis coming down the road" (Hersh, 2006). A shortage of professionals who are able to implement and maintain HIT could compromise the anticipated benefits. However, there are many people who, with the right training, could contribute to the HIT workforce including individuals with more general information technology (IT) experience, health information managers, and clinical health care professionals.

The existing body of literature that examines the training, education, and workforce requirements needed to establish nationwide HIT is in its infancy and reflects the biases of its authors. The efforts by professional health information management associations favor certifying health care professionals. Academics suggest that graduate programs can effectively address the anticipated shortage. A comprehensive look at multiple solutions has yet to be attempted.

This paper summarizes the existing studies and reports on the HIT workforce and notes what components of the workforce were examined, what methodologies of study were used, what conclusions were reached, and what recommendations were made.

Literature Review

American Health Information Management Association and American Medical Informatics Association. *Building the Workforce for Health Information Transformation* (2006).

This report focuses on the training needs of health information specialists and clinical professionals who will use HIT. American Health Information Management Association (AHIMA), recognizing that the number of trained health information specialists is not keeping up with the pace of projected demand, hosted a HIT workforce summit in November, 2005. The summit participants included stakeholders from academia, professional associations, and provider organizations, as well as business professionals and government officials. The participants were asked to develop recommendations to ensure that: (a) the nation has a trained workforce specializing in applied clinical information, information technology, and information management; (b) employees in all areas of health care have basic IT skills; (c) and all citizens and patients have the ability to use HIT to manage their health care.

The recommendations endorsed at the summit included:

- Create incentives to include informatics in performance and reward systems for health care providers and encourage the health care workforce to see health information competencies as professional goals.
- Escalate advocacy regarding the importance of the health information specialist workforce.
- Utilize innovative learning environments with robust HIT for continuing education and training for health care information specialists.
- Prepare a strong health information specialist workforce through formal education, ensuring faculty competencies, and marketing careers to young students.
- Disseminate tools to enable the health care workforce to share information and best practices.
- Engage consumers as key stakeholders by informing the public about the importance of HIT.

The report also offers specific steps for government, employer, vendor, academic, association, and health care workforce stakeholders to take in order to meet HIT workforce needs.

American Health Information Management Association and American Medical Informatics Association. *Joint Workforce Task-Force Health Information Management and Informatics Core Competencies for Individuals Working With Electronic Health Records (2008).*

This report is a follow up to a recommendation made in the 2006 AHIMA report, *Building the Workforce for Health Information Transformation*, that stakeholders convene a joint taskforce to define competencies for those who use electronic health records (EHRs) in their daily work. The report identified competencies in five categories that can help train a workforce to use of an EHR, access health information in a network or health information exchange, or implement and install an EHR. These competency areas are: health information literacy and skill, health information skill using an EHR, privacy and confidentiality of health information, health information/data technical security, and basic computer literacy skills. The information in this report is intended for use by policy makers and vendors to help ensure that clinical professionals are receiving training to build the necessary competencies it will take to make implementation successful.

To encourage the development of models for training and education in these core competencies, the joint taskforce developed the EHR Core Competencies Matrix Tool. The Matrix Tool can be used to support the design of programs, serve as a reference, plan professional development, develop employee orientation programs, and improve health professional academic curricula. It is targeted to address the competencies that are required for health care professionals, information technologists, administrative staff, and laboratory technicians.

Altrum Institute and NHII Advisors. *Nationwide Health Information Network (NHIN) Workforce Study (2007).*

The United States Department of Health and Human Services commissioned a study to estimate quantitatively the workforce requirements for achieving the widespread implementation of EHRs. The preliminary study looked at three categories of activities for which workforce needs are anticipated: implementing EHRs in physician offices, implementing EHRs in hospitals and other facilities, and building the health information infrastructure (HII).

Assuming a 5-year time frame, the results shows that between 3,900 and 11,300 new individuals will be needed to install EHRs in approximately 400,000 physician offices. The estimated 4,000 hospitals that need EHRs will require 28,600 implementation specialists. Finally, the study found that 420 people will be needed to build the HII.

The authors noted that this study should be considered preliminary and imprecise because it is based on such a small sample: four focus groups and five site visits with eight physicians, four hospitals, and two communities. However this study represents the first effort of its kind and will hopefully lead to more research in this area.

William Hersh, MD and Dr. Adam Wright. "Characterizing the Health Information Technology Workforce: Analysis from the HIMSS Analytics™ Database" AMIA Annual Symposium Proceedings (2008).

Doctor William Hersh, the Chair of the Department of Medical Information & Clinical Epidemiology at the Oregon Health & Science University, has written extensively in recent years on HIT workforce issues (see: Hersh 2006, Hersh 2004, and Hersh 2002). This paper represents his and Dr. Adam Wright's first attempt to quantify the HIT workforce and project future needs.

This study uses the Healthcare Information Management and Systems Society (HIMSS) Analytics™ Database to look at three types of health information professionals: information technology, health information management, and biomedical informatics. The authors found that there are currently about 108,390 IT professional working in health care settings in America. They estimate that to achieve high levels of nationwide HIT adoption, an additional 40,784 IT professionals will be required to sustain these systems.

Robert D. Atkinson, Daniel Castro, and Stephen J. Ezell, "The Digital Road to Recovery: A Stimulus Plan to Create Jobs, Boost, Productivity and Revitalize America" The Information Technology Innovation Foundation (2009).

The Information Technology Innovation Foundation (ITIF) wrote this report to provide supporting evidence for government investment in IT infrastructure as part of a national stimulus plan. The report looks at three areas of IT infrastructure: broadband networks, the smart power grid, and HIT.

ITIF estimated direct jobs, indirect jobs, and network effect jobs that would be created by a one year \$10 billion HIT stimulus package. They estimate that 43,400 jobs would be created through direct spending by hospitals and health care providers on HIT. Additionally, they estimate that 115,670 jobs would be created indirectly through the intermediate inputs involved in creating hardware, software, and IT services. Finally, ITIF used a network multiplier to estimate the number of jobs that will be created when new products and service are developed as a result of the implementation of HIT. These network effect jobs could be created by advances in medical research, drug discovery and evaluation, and services that emerge for individuals to use personal health records. ITIF estimated that these jobs could number as high as 53,025, for a total of 212,105 jobs created by increased HIT spending.

Bureau of Labor and Statistics, "Medical Records and Health Information Technicians," *Occupational Outlook Handbook, 2008-09 Edition* (2008).

In addition to job growth in HIT, the Bureau of Labor Statistics (BLS) projects greater than average job growth for medical records professionals and health information technicians. The BLS projected that the field would grow from 170,000 employees in 2006, to 200,000 employees in 2016. These projections were calculated before the economic stimulus plan was considered. With growth in the use of EHRs there will be an exceptionally high demand for medical record professionals and health information technicians who are proficient with the new systems.

Discussion

The studies and papers summarized above represent some of the nascent works in what will inevitably be a much broader body of literature. When incentive spending and HIT plans funded by the ARRA take

effect, the issue of HIT workforce shortages and health care workforce competencies are sure to be examined more closely by academics, policy makers, the vendor community, and other stakeholders.

At this point it is difficult to conclusively estimate what increase in HIT workforce will be required in the next several years. However, it is certain that the public and private sector needs to work together to ensure that the supply of skilled HIT professionals does not hinder health information technology goals.

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