HEALTH INFORMATION TECHNOLOGY EMPLOYER NEEDS SURVEY: AN ASSESSMENT INSTRUMENT FOR WORKFORCE PLANNING

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Abstract

The widespread implementation of electronic health records (EHRs) has resulted in an increased need for a well-trained health information technology (HIT) workforce. The Texas HIT Workforce Development Project was initiated with an assessment of HIT employer needs as one of the major goals. The researchers were required to develop a new survey because no existing tool could be found. From the results of HIT employer focus groups, the team determined that quantitative outcome measures for the survey should include HIT skills categorized as basic, intermediate, or advanced. Other data collected included employer-perceived barriers related to the HIT workforce, as well as a determination of the number of employees needed presently and in the future. The development process for the resulting survey instrument is described here. The survey tool was utilized for the planned assessment and is now made available for others to use.

Keywords: health information technology, workforce, workforce development, informatics, electronic health records

Introduction

According to a recent report by the Institute of Medicine, "We are at a unique time in health care. Technology—which has the potential to improve quality and safety of care as well as reduce costs—is rapidly evolving, changing the way we deliver health care. At the same time, health care reform is reshaping the health care landscape."[1] Thus, there is an increasing need to understand how health information technology (HIT) will play a role in the evolving field of healthcare.The incentive program for the meaningful use of the electronic health records (EHRs), which is funded by the Health Information Technology for Economic and Clinical Health (HITECH) Act as part of the American Recovery and Reinvestment Act of 2009, includes investment in workforce development.[2] In response to the HITECH Act, the current HIT workforce will need to evolve and must possess the skills to quickly react and adapt to the future workplace surroundings, industry needs, and regulatory changes.[3] In 2010, Dr. William Hersh stated, "We have little data that characterizes the HIT workforce and, in particular, how it is best trained and deployed for optimal use of the technology."[4]

The Texas HIT Workforce Development Project, funded by a Wagner-Peyser grant and supported by the Texas Workforce Commission, was initiated in part to address the need for HIT workforce data. One of the project's goals was to conduct a statewide assessment of workforce needs of all HIT industry stakeholders in order to understand the knowledge and skills needed by HIT

employers, as well as the number of workers needed now and in the future. The initial phase of the project began with focus groups to describe the knowledge and skills needed. A result of the focus group findings was the development of a survey tool to gather quantitative data regarding HIT workforce characteristics as well as HIT employers' perceived barriers to recruiting and retaining a well-qualified HIT workforce. The survey development process is described here, and the beta versin of the final survey is provided (see Appendix A) in the hopes that other researchers and individuals interested in HIT will find it beneficial.

Background

Focus Groups

The research team decided to utilize HIT employer focus groups to gather the initial qualitative data needed to build a relevant survey. An extensive search of the literature and background provided by the Office of the National Coordinator for Health Information Technology regarding workforce funding opportunities did not reveal current employer needs assessments related to HIT knowledge and skills. The study was approved by Texas State University's Institutional Review Board (IRB) according to federal guidelines.

Twelve focus groups were conducted. Nine were held in communities across the state, and three additional focus groups were conducted via web conferencing. The details regarding the focus group topic guide, recruitment, and other aspects of the focus group methodology have been published elsewhere.[5] The desired knowledge and skills derived from focus group feedback are listed in Table 1.

The HIT employer focus groups confirmed the need for a skilled and a diverse workforce to effectively implement HIT for various healthcare providers and related organizations, including public health organizations.

Methods

The HIT employer needs assessment survey was constructed through an iterative development process that involved repeated review, face validity review, and testing, as described in the following sections.

Survey Creation

The Washington, Wyoming, Alaska, Montana, Idaho (WWAMI) Center for Health Workforce Studies (CHWS) assisted the Texas HIT Workforce team with the survey development. The focus group results were used to inform the creation of a quantitative survey in an effort to determine HIT employers' needs for workers with specific skills.

The survey development team analyzed transcripts of the focus group sessions and the facilitator's whiteboard notes looking for patterns and trends in the HIT employers' feedback. The data were narrowed down to significant knowledge and skill domains, topics, and specific questions. The CHWS and the Texas HIT Workforce team created the initial survey on paper, with the expectation that it would ultimately be administered online.

The team began drafting a written survey in June 2011 and produced a draft questionnaire after five to six weeks of intensive work. The survey underwent several rounds of hard copy review by grant staff, CHWS staff, and volunteers from the Texas HIT Workforce Executive Committee. Weekly conference calls were used during this development phase to help map out the analytic strategy, guide the process, and interpret results. The process involved a great deal of discussion and revision of the tool. For example, the researchers felt that HIT employers at different levels of EHR adoption might have varying HIT workforce needs; thus, a few questions regarding EHR adoption status and intentions were included. However, the survey was not intended to be an EHR adoption survey, so those questions were kept to a minimum. Additionally, the desired knowledge and skills garnered from the focus groups ranged widely from clinical training and experience to data architecture and programming skills, data analysis and management skills, and advanced skills including HIT strategic planning and contract negotiation. Given the fear that a very long survey would prevent people from responding, the skills and knowledge were grouped together, with the categorization reviewed by HIT employers and educators on the Texas HIT Workforce Executive Committee. The team also held several discussions to determine the best methods to capture current HIT use, current needs, and future needs.

The basic skills were the smallest category and focused on entry-level or foundational skills as follows:

- Operational medical terminology knowledge
- Basic desktop/computer skills and computer/Internet navigation
- Understanding of how patient information should flow in clinical settings

Questions regarding intermediate skills were divided into three groups:

- Intermediate Group 1 included the intermediate skills of HIT knowledge, an understanding of the Health Insurance Portability and Accountability Act (HIPAA) or privacy and security, and project management skills.
- Intermediate Group 2 included the intermediate skills of data management, data mining/report creation, and data sharing, as well as problem solving and critical thinking.
- Intermediate Group 3 skills included an understanding of the federally required standards for meaningful use of EHRs and systems to prove compliance with those standards, as well as clinical knowledge and an understanding of HIT use for patient care purposes.

Employers were also asked about advanced skills, which tended either to be focused on management or strategic issues or to be highly technical skills in areas such as database design and software development. Questions regarding advanced skills were divided into four groups:

- Advanced Group 1 included the ability to implement and manage HIT in ways that support strategic plans, as well as to use data and analytics (such as might be produced by the intermediate workforce) for planning and management purposes.
- Advanced Group 2 skills were focused on database and system design to support organizational goals.
- Advanced Group 3 skills included management skills related to directing technical and nontechnical staff and interacting effectively with senior management, as well as financial decision-making and contract negotiation skills.
- Advanced Group 4 skills consisted of HIT software and hardware engineering, development, and system maintenance skills.

The survey development team agreed that there would be value in asking HIT employers about their perceived barriers to recruiting and retaining a well-qualified HIT workforce. The survey concluded with questions regarding the number of full-time employees needed both now and in the future.

Noncontent Considerations

Survey design specifics not visible in Appendix A include the addition and use of a progress bar that indicated to responders what percentage of questions they had completed, as well as the use of branching once respondents chose their employment setting. The progress bar feature was added to encourage completion because the survey was considered lengthy. Some questions were required to continue the survey, and "previous," "next," and "done" navigation buttons were included, while the "exit" button was hidden. The question regarding employment setting was used to determine whether to have the respondent indicate the level of EHR implementation and to ask about setting-specific skills and knowledge.

Testing

After the survey was developed on paper, it was loaded into the online survey tool, SurveyMonkey. The tool went through a beta testing process by CHWS staff and selected members of the Texas HIT Workforce Executive Committee for usability and logical flow. Testers took approximately 15 minutes to complete the survey during pilot tests. While the survey development team is well aware of the usual need for statistical reliability and validity testing, the limitations of funding and time constraints did not allow for this. The beta version of the online survey is shown in Appendix A. This version does not differ from the final version, which was the one actually distributed to Texas employers.

Discussion

The survey tool created for this project is distinctive because no comparable survey tool for assessing HIT employer workforce needs was found. The development process for this survey did have limitations including the lack of testing for reliability, as well as the lack of testing for content validity and item consistency.

Although the US Department of Labor has publicized an Electronic Health Records Competency model, it is a summary of previous competency specification efforts.[6] Even though the Department of Labor document contains a long list of resources reviewed, the Texas HIT Workforce research team was unable to find quantitative data or other documentation indicating that the competencies were developed using data from employers. While many of the domains and skills were similar, this survey, developed on the basis of employer focus groups, contains areas not included in the Department of Labor competency model, such as contract negotiation and strategic planning related to HIT.

The HIT workforce survey tool helps to fill the gap in the availability of data related to HIT workforce needs. In addition to the survey's use for the Texas study, a modified version of the tool has been used in a study of rural providers' HIT workforce needs by the Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) Rural Health Research Center. The rural HIT survey tool is not included here. Interested persons are encouraged to contact the WWAMI Rural Health Research Center for additional information.

Conclusion

This survey was developed to enable Texas to quantify the state's HIT employer needs and barriers in a fast-growing, always-changing HIT environment. The survey development team believes that the tool has value for researchers in other states and in other countries who wish to conduct their own studies. These researchers are invited to utilize the survey, either as is or with improvement.

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Notes

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