Health Information Technology Employer Needs Survey: An Assessment Instrument for Workforce Planning

by Susan H. Fenton, PhD, RHIA, FAHIMA; Elizabeth Joost; Jimena Gongora; Davis G. Patterson, PhD; C. Holly A. Andrilla, MS; and Susan M. Skillman, MS

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 version 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. 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. 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.

Acknowledgments

The survey development team wishes to acknowledge the work of Cheryl Perez, who converted the survey from paper to the online format.
Susan H. Fenton, PhD, RHIA, FAHIMA, is the assistant dean of Academic Affairs at the University of Texas School of Biomedical Informatics in Houston, TX.

Elizabeth Joost is a project director in the Health Information Management Department at Texas State University in San Marcos, TX.

Jimena Gongora is a graduate research assistant in the Health Information Management Department at Texas State University in San Marcos, TX.

Davis G. Patterson, PhD, is a sociologist and research scientist in the Center for Health Workforce Studies at the University of Washington in Seattle, WA.

C. Holly A. Andrilla, MS, is a biostatistician and research scientist in the Center for Health Workforce Studies at the University of Washington in Seattle, WA.

Susan M. Skillman, MS, is the deputy director of the Center for Health Workforce Studies at the University of Washington in Seattle, WA.
Notes


### Table 1

Skills Identified by Focus Groups as Necessary for Future Workforce

<table>
<thead>
<tr>
<th>Healthcare Provider Core Competencies</th>
<th>Nonprovider Core Competencies</th>
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</thead>
<tbody>
<tr>
<td><strong>Basic/Entry-Level Skills</strong></td>
<td><strong>Basic/Entry-Level Skills</strong></td>
</tr>
<tr>
<td>Operational medical terminology knowledge</td>
<td>Customer service skills, communication and interpersonal skills, training</td>
</tr>
<tr>
<td>Basic desktop/computer skills, computer/Internet navigation</td>
<td></td>
</tr>
<tr>
<td>Understanding of how patient information should flow in clinical settings</td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate Skills</strong></td>
<td><strong>Intermediate Skills</strong></td>
</tr>
<tr>
<td>Knowledge of HIT products; familiarity with vendors; ability to negotiate contracts</td>
<td>Knowledge of HIT products; familiarity with vendors; ability to negotiate contracts</td>
</tr>
<tr>
<td>Knowledge of HIPAA; knowledge of state privacy and security regulations</td>
<td>Knowledge of data management, data mining, and data sharing</td>
</tr>
<tr>
<td>Understanding of “meaningful use” and which HIT system can produce the data needed for demonstrating compliance</td>
<td>Understanding of “meaningful use” and which HIT system can produce the data needed for demonstrating compliance</td>
</tr>
<tr>
<td>Problem solving and critical thinking skills needed to implement and use HIT systems (such as flowcharting, performing root cause analysis, and examining existing assumptions and evaluating evidence)</td>
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<tr>
<td>Advanced clinical knowledge and understanding of uses of HIT for patient management/education needs</td>
<td></td>
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<tr>
<td>Data management, data mining/report creation, and data sharing skills</td>
<td></td>
</tr>
<tr>
<td>Project management (such as initiating, planning, executing, and monitoring EHR/HIT-related projects)</td>
<td></td>
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<tr>
<td><strong>Advanced Skills</strong></td>
<td><strong>Advanced Skills</strong></td>
</tr>
<tr>
<td>Management skills to direct technical and nontechnical staff regarding EHR/HIT systems</td>
<td>Strategic planning and analysis skills; database system and design skills</td>
</tr>
<tr>
<td>Strategic thinking related to EHR/HIT implementation/management that is supportive of organizational goals and</td>
<td>HIT system implementation and management skills; software/hardware engineering skills</td>
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<tr>
<td>mission</td>
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<td>------------------------------------------------------------------------</td>
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<tr>
<td>Ability to effectively interact with senior management and above in HIT governance</td>
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<tr>
<td>Ability to use analytics/data from HIT systems for planning</td>
<td></td>
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<tr>
<td>Financial decision-making and negotiating skills for selecting HIT system purchases and maintenance plans that meet external and internal goals/resources</td>
<td></td>
</tr>
<tr>
<td>Ability to design HIT databases and systems; HIT software/hardware engineering, development, and/or system maintenance skills</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: EHR, electronic health record; HIPAA, Health Insurance Portability and Accountability Act; HIT, health information technology.
## Appendix A

### Tx HIT Workforce Employee Survey-Beta

**Texas Health Information Technology Workforce Survey**

Thank you for agreeing to take the Texas Health Information Technology (HIT) Workforce Needs Survey. Your input will assist Texas with the development of a HIT higher education plan for the entire state of Texas.

Any demographic information collected for the survey will only be used to better understand the different HIT workforce needs of the various types of HIT employers.

Study objective: To collect quantitative data regarding the HIT skills and knowledge needed, and the number of workers needed, now and planned in the future by:
- a. Health care providers (hospitals, clinics, physicians, clinical laboratory, pharmacies)
- b. Information technology and software companies
- c. Consulting companies
- d. Health plans and clearinghouses
- e. State and local government, especially public health

### Texas HIT Workforce Demand

1. **Organization type, size and location:**

   **At how many different locations or work sites do you employ people in, or from, Texas?**

   [Blank]

2. **What are the zip codes of the location of your practice/facility/business in Texas? (If you are reporting for multiple locations, please list zip codes for up to 3 locations.)**

   - **Location 1:**
     [Blank]
   - **Location 2:**
     [Blank]
   - **Location 3:**
     [Blank]

3. **How many total employees does your practice/facility/organization employ in Texas?**

   [Blank]
4. Which of the types below best describes your practice/facility/organization? (If you are reporting for an organization that has more than one location or type of facility, please provide responses that reflect all related sites in Texas.)

- [ ] Health care provider
- [ ] Laboratory
- [ ] Pharmacy
- [ ] Electronic health record (EHR) vendor
- [ ] Healthcare consulting company
- [ ] Other (please specify)

5. Because you responded, health care provider, please provide us with the choice below that best describes your facility? (If reporting for a health care system, please select “multi-facility system”.)

- [ ] Hospital
- [ ] Outpatient or ambulatory clinic
- [ ] Nursing home/skilled nursing facility
- [ ] Home health care
- [ ] Public or community health agency/department
- [ ] Multi-facility system
- [ ] Other (please specify)

6. Please provide us with the average number of weekly visits for your outpatient or ambulatory clinic.

7. Please provide us with the number of beds in your hospital facility.
8. Please provide us with the number of beds in your nursing home/skilled nursing facility.

9. Please describe your multi-facility system.

<table>
<thead>
<tr>
<th>EHR/HIT Resources (for health care providers)</th>
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</thead>
<tbody>
<tr>
<td>Please answer the following questions about your practice/facility’s current and expected future use of electronic billing and health information technology.</td>
</tr>
</tbody>
</table>

10. Currently, does your practice/facility submit any claims electronically (electronic billing)?
- [ ] Yes, all electronic
- [ ] Yes, part electronic and part paper
- [ ] No
- [ ] N/A - Unknown

11. Currently, does your practice/facility use an electronic medical record (EMR) or electronic health record (EHR) system? (Do not include billing records systems.)
- [ ] Yes, all electronic
- [ ] Yes, part electronic and part paper
- [ ] No
- [ ] N/A - Unknown

12. Please tell us the year your practice first installed an EHR system.
**Tx HIT Workforce Employee Survey-Beta**

13. Please tell us whether there are plans for installing a new EHR system by 2013.

- Yes
- No
- Unknown

**Adoption of EHRs, HIT, and "Meaningful Use"**

The American Recovery and Reinvestment Act (ARRA) of 2009 provides financial incentives to health care providers for the "meaningful use" of certified EHR technology to achieve health and efficiency goals.

14. Does your practice/facility currently have, or expect to have in the near future, one or more of the 3 main ARRA-specified components of Meaningful Use listed below? Please choose the most appropriate, as it applies to your practice/facility.

<table>
<thead>
<tr>
<th>Use a certified EHR in a meaningful manner? (Such as computerized physician order entry, clinical decision support, etc.)</th>
<th>Yes, currently implemented</th>
<th>Not currently implemented, but plan to have in use by 2013</th>
<th>Not currently installed, and no plans for acquiring or implementing by 2015</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participate in the electronic exchange of patient data through participation in a regional Health Information Exchange (HIE)?</td>
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<td>Participate in e-prescribing?</td>
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<td>Participate in the submission of lab or immunization data to public health?</td>
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<td>Participate in the exchange of data to facilitate patient care transfer between settings?</td>
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<tr>
<td>Use certified EHR technology to submit aggregate clinical quality and other measures? (Such as submission of clinical quality measures to CMS or to The Joint Commission.)</td>
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**Texas HIT Workforce Skills**

The next several pages will ask you about the different skills and knowledge needed by HIT workforce in your organization. The skills have been divided into Basic/Entry Level, Intermediate Level, and Advanced Level. These were compiled from employer focus groups conducted around the state of Texas; however, please do not hesitate to let us know if other, additional skills should be considered.

**BASIC/ENTRY LEVEL EHR/HIT Workforce Skills (for health care providers)**

The BASIC/ENTRY LEVEL SKILLS listed below may be relevant to selecting, implementing and maintaining EHR/HIT
# Health Information Technology Employer Needs Survey: An Assessment Instrument for Workforce Planning

## Tx HIT Workforce Employee Survey-Beta

15. Which BASIC/ENTRY LEVEL SKILLS are relevant to your practice/facility and how did you access personnel with these skills? Please select all that apply.

<table>
<thead>
<tr>
<th>Skill</th>
<th>We have staff with these skills who did not need additional training</th>
<th>We obtained training for our staff so they have these skills</th>
<th>We hired new staff with these skills</th>
<th>We hired a contractor or consultant with these skills</th>
<th>We needed these skills, but were not able to access them</th>
<th>We do not need personnel with these skills</th>
<th>Not Applicable/Unknown</th>
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<tr>
<td>Operational medical terminology knowledge</td>
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<td>Basic desktop/computer skills, computer/internet navigation</td>
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<td>Understanding of how patient information should flow in clinical settings</td>
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## BASIC/ENTRY LEVEL EHR/HIT Workforce Skills in 2013

16. Which BASIC/ENTRY LEVEL SKILLS do you expect to be relevant to your practice/facility in the next 2 years (2013), and how do you expect you will access personnel with the skills you need?

<table>
<thead>
<tr>
<th>Skill</th>
<th>We have staff with these skills who will not need additional training</th>
<th>We plan to obtain training for our staff so they have these skills</th>
<th>We plan to hire new staff with these skills</th>
<th>We plan to hire a contractor/consultant with these skills</th>
<th>We do not expect to need personnel with these skills</th>
<th>Not Applicable/Unknown</th>
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<tbody>
<tr>
<td>Operational medical terminology knowledge</td>
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## INTERMEDIATE EHR/HIT Workforce Skills
**Tx HIT Workforce Employee Survey-Beta**

The INTERMEDIATE LEVEL SKILLS listed below may be relevant to selecting, implementing and maintaining EHR/HIT systems.

**17. Which INTERMEDIATE LEVEL SKILLS are relevant to your practice/facility and how did you access personnel with these skills? Please select all that apply.**

<table>
<thead>
<tr>
<th>Knowledge of HIT products, familiarity with vendors, ability to negotiate contracts</th>
<th>We have staff with these skills who did not need additional training</th>
<th>We obtained training for our staff so they have these skills</th>
<th>We hired new staff with these skills</th>
<th>We hired a contractor or consultant with these skills</th>
<th>We needed these skills, but were not able to access them</th>
<th>We do not need personnel with these skills</th>
<th>Not Applicable/Unknown</th>
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<tr>
<td>Knowledge of HIPAA, state privacy and security regulations</td>
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<tr>
<td>Understand 'Meaningful Use' and which HIT system can produce the data needed for demonstrating compliance</td>
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<td>Problem solving and critical thinking skills needed to implement and use HIT systems (such as flowcharting, Root Cause Analysis and examining existing assumptions and evaluating evidence)</td>
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**INTERMEDIATE LEVEL EHR/HIT Workforce Skills in 2013**
**Tx HIT Workforce Employee Survey-Beta**

18. Which INTERMEDIATE LEVEL SKILLS do you expect to be relevant to your practice/facility in the next 2 years (2013), and how do you expect you will access personnel with the skills you need?

<table>
<thead>
<tr>
<th>We have staff with these skills who will not need additional training</th>
<th>We plan to obtain training for our staff</th>
<th>We plan to hire new staff with these skills</th>
<th>We plan to hire a contractor/consultant to need personnel with these skills</th>
<th>We do not expect personnel with these skills</th>
<th>Not Applicable/Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of HIT products, familiarity with vendors, ability to negotiate contracts</td>
<td></td>
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<td>Understand &quot;meaningful use&quot; and which HIT system can produce the data needed for demonstrating compliance</td>
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**ADVANCED EHR/HIT Workforce Skills**
**Tx HIT Workforce Employee Survey-Beta**

The **ADVANCED LEVEL SKILLS** listed below may be relevant to selecting, implementing and maintaining EHR/HIT systems.

**19. Which ADVANCED LEVEL SKILLS are relevant to your practice/facility and how did you access personnel with these skills? Please select all that apply.**

<table>
<thead>
<tr>
<th>Skill Description</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
<th>Not Needed</th>
<th>Not Applicable/Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management skills to direct technical and non-technical staff to EHR/HIT systems</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic thinking related to EHR/HIT implementation/management that is supportive of organization goals and mission</td>
<td></td>
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<tr>
<td>Ability to effectively interact with senior management and above in HIT governance</td>
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<tr>
<td>Ability to use analytics/data from HIT systems for planning</td>
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<tr>
<td>Financial decisionmaking and negotiating skills for selecting HIT system purchases and maintenance plans that meet external and internal goals/resources</td>
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<tr>
<td>Ability to design HIT databases and systems</td>
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<tr>
<td>HIT software/hardware engineering, development and/or system maintenance</td>
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</tbody>
</table>

**ADVANCED LEVEL EHR/HIT Workforce Skills in 2013**
## Tx HIT Workforce Employee Survey-Beta

### 20. Which ADVANCED LEVEL SKILLS do you expect to be relevant to your practice/facility in the next 2 years (2013), and how do you expect you will access personnel with these skills you need?

<table>
<thead>
<tr>
<th>Management skills to direct technical and non-technical staff for EHR/HIT systems</th>
<th>We have staff with these skills who will not need additional training</th>
<th>We plan to obtain training for our staff so they have these skills</th>
<th>We plan to hire new staff with these skills</th>
<th>We plan to hire a contractor/consultant with these skills</th>
<th>We do not expect to need personnel with these skills</th>
<th>Not Applicable/Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic thinking related to EHR/HIT implementation/management that is supportive of organization goals and mission</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ability to effectively interact with senior management and above in HIT governance</td>
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<tr>
<td>Ability to use analytics/data from HIT systems for planning</td>
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<tr>
<td>Financial decisionmaking and negotiating skills for selecting HIT system purchases and maintenance plans that meet external and internal resources</td>
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<td></td>
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<tr>
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</tbody>
</table>

### Factors Affecting Use of HIT (for health care providers)

Please indicate the extent to which you consider each of the following workforce issues to be a barrier to EHR and HIT implementation and/or use. (If you have not implemented an EHR or HIT, please indicate how much of a barrier each issue presents even if you have no plans to implement a system.)
### 21. Education and Training barriers to implementing and/or using EHRs/HIT

| Training employed staff is difficult because many lack strong computing skills and/or are slow to learn new skills | Major barrier | Minor barrier | Not a barrier | N/A |
| Basic computer literacy training for staff is not readily available |  |  |  |  |
| In-person staff training (non-degree) about how to use EHRs and HIT is not available |  |  |  |  |
| Online (e.g., web-based) education programs for training staff on how to use EHRs and HIT are not available |  |  |  |  |
| Community college education programs for training staff on how to use EHRs and HIT are not available |  |  |  |  |
| Bachelor’s or higher level education programs for HIT-related skills are not readily accessible |  |  |  |  |
| Resources (including funds and/or release time) to train staff on how to use EHRs and HIT are not available |  |  |  |  |

### 22. Consulting/Contract resource barriers to implementing and/or using EHRs/HIT

| Consultants and/or contract technical staff with understanding of the needs of our facility are not available | Major barrier | Minor barrier | Not a barrier | N/A |
| Consultants and/or contract technical staff with understanding of the needs of our facility are too expensive |  |  |  |  |

### 23. Recruiting and retention barriers to implementing and/or using EHRs/HIT

| Lack of a well-defined HIT career ladder | Major barrier | Minor barrier | Not a barrier | N/A |
| Difficulty accessing qualified candidates |  |  |  |  |
| Competitive market makes it difficult to retain qualified staff |  |  |  |  |

### 24. Management and decision-making barriers to implementing and/or using EHRs/HIT

| Software systems purchased are not well suited to our practice/organization | Major barrier | Minor barrier | Not a barrier | N/A |
## Tx HIT Workforce Employee Survey-Beta

For the next set of questions, please provide your best estimate of the amount of staff resources with the specified skills that your practice/facility uses now for EHR/HIT implementation and operation, how much more it could use, and what your needs will be by 2013.

1 FTE is approximately 2080 hours per year, 173.3 hours per month, or 40 hours per week. You can also indicate that no personnel with the skills are needed and/or that you cannot answer the question.

Use FTE (for staff) or hours (for consultant/contractor).

### EHR/HIT Workforce Demand (for health care providers)

**BASIC/ENTRY LEVEL SKILLS:** Office/clinical staff (patient data entry, preparing patient care summaries, etc.). Please provide your best estimate.

25. **Total est. average monthly FTE employed in 2011 for BASIC/ENTRY LEVEL EHR/HIT related tasks.**

- None
- Don't Know
- Total Est. FTE (please specify) [ ]

26. **Additional FTE needed now for BASIC/ENTRY LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).**

- None
- Don't Know
- Total Est. FTE (please specify) [ ]

27. **In 2013, how many TOTAL est. FTEs will you need for BASIC/ENTRY LEVEL EHR/HIT?**

- None
- Don't Know
- Total Est. FTE (please specify) [ ]
### Tx HIT Workforce Employee Survey-Beta

28. **Will you or have you used a consultant/contractor service for BASIC/ENTRY LEVEL EHR/HIT related tasks?**

- [ ] Yes
- [ ] No

### EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for Consultant/Contractor BASIC/ENTRY LEVEL SKILLS: Office/clinical staff (patient data entry, preparing patient care summaries, etc.). Please provide your best estimate.

29. **Total est. hours used to-date in 2011 for BASIC/ENTRY LEVEL.**

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. Hours (please specify)

30. **Additional hours needed in 2011 for BASIC/ENTRY LEVEL (position advertised now or would be hired if resources were available).**

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. Hours (please specify)

31. **In 2013, how many TOTAL hours do you estimate you will need for BASIC/ENTRY LEVEL?**

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. Hours (please specify)

### EHR/HIT Workforce Demand (for health care providers)
Health Information Technology Employer Needs Survey: An Assessment Instrument for Workforce Planning

Tx HIT Workforce Employee Survey-Beta

32. Total est. average monthly FTE employed in 2011 for INTERMEDIATE LEVEL EHR/HIT related tasks.

- None
- Don't Know
- Total Est. FTE (please specify)

33. Additional FTE needed now for INTERMEDIATE LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).

- None
- Don't Know
- Total Est. FTE (please specify)

34. In 2013, how many TOTAL est. FTEs will you need for INTERMEDIATE LEVEL EHR/HIT?

- None
- Don't Know
- Total Est. FTE (please specify)

35. Will you or have you used a consultant/contractor service for INTERMEDIATE LEVEL EHR/HIT related tasks?

- Yes
- No

EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for Consultant/Contractor INTERMEDIATE LEVEL SKILLS: Office/clinical staff (working with vendors,
Tx HIT Workforce Employee Survey-Beta

36. Total est. hours used to-date in 2011 for INTERMEDIATE LEVEL.

- None
- Don't Know
- Total Est. Hours (please specify)

37. Additional hours needed in 2011 for INTERMEDIATE LEVEL (position advertised now or would be hired if resources were available).

- None
- Don't Know
- Total Est. Hours (please specify)

38. In 2013, how many TOTAL hours do you estimate you will need for INTERMEDIATE LEVEL?

- None
- Don't Know
- Total Est. Hours (please specify)

EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for FTE INTERMEDIATE LEVEL SKILLS: Technical/non-clinical staff (IT support for maintaining computing systems, working with vendors, negotiating EHR/HIT related contracts, managing data, generating HIT reports, installing networks, assuring security, managing system access, etc.). Please provide your best estimate.
### Tx HIT Workforce Employee Survey-Beta

**39. Total est. average monthly FTE employed in 2011 for INTERMEDIATE LEVEL EHR/HIT related tasks.**

- None
- Don’t Know
- Total Est. FTE (please specify)

**40. Additional FTE needed now for INTERMEDIATE LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).**

- None
- Don’t Know
- Total Est. FTE (please specify)

**41. In 2013, how many TOTAL est. FTEs will you need for INTERMEDIATE LEVEL EHR/HIT?**

- None
- Don’t Know
- Total Est. FTE (please specify)

**42. Will you or have you used a consultant/contractor service for INTERMEDIATE LEVEL EHR/HIT related tasks?**

- Yes
- No

### EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for Consultant/Contractor INTERMEDIATE LEVEL SKILLS: Technical/non-clinical staff (IT support for maintaining computing systems, working with vendors, negotiating EHR/HIT related contracts, managing data, generating HIT reports, installing networks, assuring security, managing system access, etc.). Please provide your best estimate.
# Tx HIT Workforce Employee Survey-Beta

43. Total est. hours used to-date in 2011 for INTERMEDIATE LEVEL.

- None
- Don't Know
- Total Est. Hours (please specify)

44. Additional hours needed in 2011 for INTERMEDIATE LEVEL (position advertised now or would be hired if resources were available).

- None
- Don't Know
- Total Est. Hours (please specify)

45. In 2013, how many TOTAL hours do you estimate you will need for INTERMEDIATE LEVEL?

- None
- Don't Know
- Total Est. Hours (please specify)

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# EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for FTE ADVANCED LEVEL SKILLS: Office/clinical staff (direct clinical and non-clinical staff in HIT systems implementation and management, use reports from HIT systems for planning, carry out strategic planning for future use of HIT, etc.). Please provide your best estimate.
### Tx HIT Workforce Employee Survey-Beta

46. **Total est. average monthly FTE employed in 2011 for ADVANCED LEVEL EHR/HIT related tasks.**

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. FTE (please specify)

47. **Additional FTE needed now for ADVANCED LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).**

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. FTE (please specify)

48. **In 2013, how many TOTAL est. FTEs will you need for ADVANCED LEVEL EHR/HIT?**

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. FTE (please specify)

49. **Will you or have you used a consultant/contractor service for ADVANCED LEVEL EHR/HIT related tasks?**

- [ ] Yes
- [ ] No

### EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for Consultant/Contractor ADVANCED LEVEL SKILLS: Office/clinical staff (direct clinical and non-clinical staff in HIT systems implementation and management, use reports from HIT systems for planning, carry out strategic planning for future use of HIT, etc.). Please provide your best estimate.
Tx HIT Workforce Employee Survey-Beta

50. Total est. hours used to-date in 2011 for ADVANCED LEVEL.

- None
- Don't Know
- Total Est. Hours (please specify)

51. Additional hours needed in 2011 for ADVANCED LEVEL (position advertised now or would be hired if resources were available).

- None
- Don't Know
- Total Est. Hours (please specify)

52. In 2013, how many TOTAL hours do you estimate you will need for ADVANCED LEVEL?

- None
- Don't Know
- Total Est. Hours (please specify)

EHR/HIT Workforce Demand (for health care providers)

Workforce Demand for FTE ADVANCED LEVEL SKILLS: Technical/non-clinical staff (designing custom databases, developing and adapting HIT systems for specific uses, designing custom software and hardware, etc.). Please provide your best estimate.
Health Information Technology Employer Needs Survey: An Assessment Instrument for Workforce Planning

**Tx HIT Workforce Employee Survey-Beta**

53. Total est. average monthly FTE employed in 2011 for ADVANCED LEVEL EHR/HIT related tasks.

- None
- Don't Know
- Total Est. FTE (please specify) [ ]

54. Additional FTE needed now for ADVANCED LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).

- None
- Don't Know
- Total Est. FTE (please specify) [ ]

55. In 2013, how many TOTAL est. FTEs will you need for ADVANCED LEVEL EHR/HIT?

- None
- Don’t Know
- Total Est. FTE (please specify) [ ]

56. Will you or have you used a consultant/contractor service for ADVANCED LEVEL EHR/HIT related tasks?

- Yes
- No

**EHR/HIT Workforce Demand (for health care providers)**

Workforce Demand for Consultant/Contractor ADVANCED LEVEL SKILLS: Technical/non-clinical staff (designing custom databases, developing and adapting HIT systems for specific uses, designing custom software and hardware, etc.). Please provide your best estimate.
Tx HIT Workforce Employee Survey-Beta

57. Total est. hours used to-date in 2011 for ADVANCED LEVEL.

- None
- Don't Know
- Total Est. Hours (please specify)

58. Additional hours needed in 2011 for ADVANCED LEVEL (position advertised now or would be hired if resources were available).

- None
- Don't Know
- Total Est. Hours (please specify)

59. In 2013, how many TOTAL hours do you estimate you will need for ADVANCED LEVEL?

- None
- Don't Know
- Total Est. Hours (please specify)

EHR/HIT Workforce Skills Needed (for non health care providers)
Health Information Technology Employer Needs Survey: An Assessment Instrument for Workforce Planning

## Tx HIT Workforce Employee Survey-Beta

60. The skills listed below may be relevant to selecting, implementing and maintaining EHR/HIT systems. Which skills are relevant to your business/organization and how did you/do you plan to access personnel to deliver them? (Check all that apply in each category.)

<table>
<thead>
<tr>
<th>Basic/Entry Level Skills: Customer service, communication and interpersonal skills, training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate Level Skills: Knowledge of HIT products, familiarity with vendors, able to negotiate contracts</td>
</tr>
<tr>
<td>Intermediate Level Skills: Knowledge of data management, data mining, and data sharing</td>
</tr>
<tr>
<td>Intermediate Level Skills: Understand &quot;Meaningful Use&quot; and if the current system can produce the data needed for compliance</td>
</tr>
<tr>
<td>Advanced Level Skills: Strategic planning and analysis skills</td>
</tr>
<tr>
<td>Advanced Level Skills: Database and system design</td>
</tr>
<tr>
<td>Advanced Level Skills: HIT systems implementation and management</td>
</tr>
<tr>
<td>Advanced Level Skills: Software/hardware engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>We have had staff with these skills who did not need additional training</th>
<th>We obtained training for our staff so they have these skills</th>
<th>We hired new staff with these skills</th>
<th>We hired a contractor or consultant with these skills</th>
<th>We plan to train personnel on our staff to have these skills</th>
<th>We plan to hire new staff with these skills</th>
<th>We need to hire a contractor or consultant with these skills</th>
<th>No, we do not (did not) need personnel with these skills</th>
<th>Not Applicable/Unknown</th>
</tr>
</thead>
</table>

## Factors Affecting Use of HIT (for non health care providers)

Please indicate the extent to which you consider each of the following workforce issues to be a barrier to EHR and HIT implementation and/or use. (If you have not implemented an EHR or HIT, please indicate how much of a barrier each issue presents even if you have no plans to implement a system.)
### 61. Education and Training barriers to implementing and/or using EHRs/HIT.

| Training employed staff is difficult because many lack strong computing skills and/or are slow to learn new skills | Major barrier | Minor barrier | Not a barrier | N/A |
| Corps computer literacy training for staff is not readily available | ☐ | ☐ | ☐ | ☐ |
| In-person staff training (non-degree) about how to use EHRs and HIT is not available | ☐ | ☐ | ☐ | ☐ |
| Online (e.g., web-based) education programs for training staff about how to use EHRs and HIT are not available | ☐ | ☐ | ☐ | ☐ |
| Community college education programs for training staff about how to use EHRs and HIT are not available | ☐ | ☐ | ☐ | ☐ |
| Baccalaureate or higher level education programs for HIT-related skills are not readily accessible | ☐ | ☐ | ☐ | ☐ |
| Resources (including funds and/or release time) to train staff about how to use EHRs and HIT are not available | ☐ | ☐ | ☐ | ☐ |

### 62. Consulting/Contract resource barriers to implementing and/or using EHRs/HIT.

| Consultants and/or contract technical staff with understanding of the needs of our facility are not available | Major barrier | Minor barrier | Not a barrier | N/A |
| Consultants and/or contract technical staff with understanding of the needs of our facility are too expensive | ☐ | ☐ | ☐ | ☐ |

### 63. Recruiting and retention barriers to implementing and/or using EHRs/HIT.

| Lack of a well-defined HIT career ladder | Major barrier | Minor barrier | Not a barrier | N/A |
| Difficulty accessing qualified candidates | ☐ | ☐ | ☐ | ☐ |
| Competitive market makes it difficult to retain qualified staff | ☐ | ☐ | ☐ | ☐ |

### 64. Management and decision-making barriers to implementing and/or using EHRs/HIT.

| Software systems purchased are not well suited to our practical organization | Major barrier | Minor barrier | Not a barrier | N/A |

---

**EHR/HIT Workforce Demand (for non health care providers)**
Tx HIT Workforce Employee Survey-Beta

Please provide your best estimate of the amount of staff resources with the skills below that your business/organization uses now for EHR/HIT implementation and operation, how much more it could use, and what your needs will be by 2013. Use FTE (for staff) or hours (for consultant/contractor).

Workforce Demand for FTE BASIC/ENTRY LEVEL SKILLS: Technical/non-clinical staff (IT support for maintaining computing systems, customer service etc.).

65. Total est. average monthly FTE employed in 2011 for BASIC/ENTRY LEVEL EHR/HIT related tasks.

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. FTE (please specify) [ ]

66. Additional FTE needed now for BASIC/ENTRY LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. FTE (please specify) [ ]

67. In 2013, how many TOTAL est. FTEs will you need for BASIC/ENTRY LEVEL EHR/HIT?

- [ ] None
- [ ] Don’t Know
- [ ] Total Est. FTE (please specify) [ ]

68. Will you or have you used a consultant/contractor service for BASIC/ENTRY LEVEL EHR/HIT related tasks?

- [ ] Yes
- [ ] No

EHR/HIT Workforce Demand (for non health care providers)
Tx HIT Workforce Employee Survey-Beta

Workforce Demand for Consultant/Contractor BASIC/ENTRY LEVEL SKILLS: Technical/non-clinical staff (IT support for maintaining computing systems, customer service etc.). Please provide your best estimate.

69. Total est. hours used to-date in 2011 FOR BASIC/ENTRY LEVEL.

☐ None
☐ Don't Know
☐ Total Est. Hours (please specify)

70. Additional hours needed in 2011 for BASIC/ENTRY LEVEL (position advertised now or would be hired if resources were available).

☐ None
☐ Don't Know
☐ Total Est. Hours (please specify)

71. In 2013, how many TOTAL hours do you estimate you will need for BASIC/ENTRY LEVEL?

☐ None
☐ Don't Know
☐ Total Est. Hours (please specify)

EHR/HIT Workforce Demand (for non health care providers)

Workforce Demand for FTE INTERMEDIATE LEVEL SKILLS: Technical/non-clinical staff (sales, customer service, data analysis).
## Tx HIT Workforce Employee Survey-Beta

### 72. Total est. average monthly FTE employed in 2011 for INTERMEDIATE LEVEL EHR/HIT related tasks.

- None
- Don't Know
- Total Est. FTE (please specify)

### 73. Additional FTE needed now for INTERMEDIATE LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).

- None
- Don't Know
- Total Est. FTE (please specify)

### 74. In 2013, how many TOTAL est. FTEs will you need for INTERMEDIATE LEVEL EHR/HIT?

- None
- Don't Know
- Total Est. FTE (please specify)

### 75. Will you or have you used a consultant/contractor service for INTERMEDIATE LEVEL EHR/HIT related tasks?

- Yes
- No

---

## EHR/HIT Workforce Demand (for non health care providers)

Workforce Demand for Consultant/Contractor INTERMEDIATE LEVEL SKILLS: Technical/non-clinical staff (sales, customer service, data analysis). Please provide your best estimate.
<table>
<thead>
<tr>
<th>Tx HIT Workforce Employee Survey-Beta</th>
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<tbody>
<tr>
<td>76. Total est. hours used to-date in 2011 for INTERMEDIATE LEVEL.</td>
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<tr>
<td>77. Additional hours needed in 2011 for INTERMEDIATE LEVEL (position advertised now or would be hired if resources were available).</td>
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<td>78. In 2013, how many TOTAL hours do you estimate you will need for INTERMEDIATE LEVEL?</td>
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<thead>
<tr>
<th>EHR/HIT Workforce Demand (for non health care providers)</th>
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<tbody>
<tr>
<td>Workforce Demand for FTE ADVANCED LEVEL SKILLS: Technical/non-clinical staff (designing custom databases, developing and adapting HIT systems for specific uses, designing custom software and hardware, etc.).</td>
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<tr>
<td>79. Total est. average monthly FTE employed in 2011 for EHR/HIT related tasks.</td>
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### Tx HIT Workforce Employee Survey-Beta

**80. Additional FTE needed now for EHR/HIT related tasks (position advertised now or would be if resources were available).**

- None
- Don't Know
- Total Est. FTE (please specify)

**81. In 2013, how many TOTAL est. FTEs will you need for EHR/HIT?**

- None
- Don't Know
- Total Est. FTE (please specify)

**82. Will you or have you used a consultant/contractor service for EHR/HIT related tasks?**

- Yes
- No

### EHR/HIT Workforce Demand (for non health care providers)

Workforce Demand for Consultant/Contractor ADVANCED LEVEL SKILLS: Technical/non-clinical staff (designing custom databases, developing and adapting HIT systems for specific uses, designing custom software and hardware, etc.).

**83. Total est. hours used to-date in 2011.**

- None
- Don't Know
- Total Est. Hours (please specify)
Tx HIT Workforce Employee Survey-Beta

84. Additional hours needed in 2011 (position advertised now or would be hired if resources were available).
   ○ None
   ○ Don't Know
   ○ Total Est. Hours (please specify)

85. In 2013, how many TOTAL hours do you estimate will need?
   ○ None
   ○ Don't Know
   ○ Total Est. Hours (please specify)

COMMENTS

86. Please provide any additional comments you have regarding the workforce needed to successfully implement and use Health Information Technology in Texas.

87. As a "Thank You" for taking part in the survey we would like to send you a brief summary of the findings prior to the official release of the full report. If you would like to receive this summary please provide your email here. This email address will ONLY be used to send you the summary.

Thank you for taking the time to complete the Texas HIT Workforce Needs Assessment. Your input is essential to help us learn more about EHR/HIT workforce needs in Texas.