

# TEXAS HEALTH INFORMATION TECHNOLOGY

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## EMPLOYER NEEDS ASSESSMENT REPORT

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**TEXAS STATE UNIVERSITY-SAN MARCOS**

**SUSAN H. FENTON, PhD**  
**PROJECT DIRECTOR**

The Texas State University-San Marcos project staff wish to thank the Executive Committee for their support, expertise and assistance.

Texas HIT Workforce Development Project Executive Committee Members

Amerigroup, Ann-Marie Price and Celia Manlove  
Austin Community College, Kirk White and Pamela Stone  
Baylor College of Medicine, Jenifer Jarriel  
Capital Area Health Education Center, Becky Conditt  
CentrEast Regional Extension Center, Teneka Duke and Yvonne Sanchez  
CTG Health, J.A. "Joe" Miccio  
Dallas Community College District, Shannon Ydoyaga  
Gulf Coast Regional Extension Center, James Turley, PhD, RN  
Health Information Management and Systems Society, Col. Ralph Franco, MBA, MHA, FACHE, FHIMSS, DSHS, CISSP, CAP  
Houston Community College, Carla Tyson-Howard  
Midland Community College, Melinda Teel, RHIA, CCS  
North Texas Regional Extension Center, Sally Williams  
Office of e-Health Coordination  
Sandlot Solutions, Telly Shackelford and Terry Richardson  
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Texas Workforce Solutions Dallas County, Eric Griffin and Laurie Bouillion Larrea  
Texas Workforce Solutions Gulf Coast, Mary Koch and Rodney Bradshaw  
Texas Workforce Solutions South Plains, Martin Aguirre and Rocky Brown  
The University of Texas at Austin, Diane Kneeland, Ph.D. and Leanne H Field, Ph.D.  
The University of Texas Health Science Center at Houston, James Turley, RN, Ph.D., and Juliana Brixey, RN, Ph.D.  
The University of Texas System, Kenneth I. Shine, M.D.  
West Texas HIT Regional Extension Center, John Delaney and Mehdi Rais, M.D.

Texas State University-San Marcos Texas HIT Workforce Development Project staff:

Project Director:	Susan H. Fenton, Ph.D., RHIA, FAHIMA
Project Manager:	Elizabeth Joost
Project Secretary:	Cheryl Perez
Student Assistant:	Jimena Gongora

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## Executive Summary

The recently completed Health Information Technology (HIT) Employer Needs Assessment has demonstrated that Texas clinics and hospitals are conservatively estimated to need 9,500 HIT employees between now and 2013. Non-providers reported needing an additional 500 HIT employees by 2013, so it is conservatively estimated that Texas will need an additional 10,000 HIT workers by 2013.

According to a recent report by the Institute of Medicine (IOM), “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.”<sup>1</sup> The demand for healthcare professionals is growing. An estimated 10,000 additional HIT workers are needed in the \$103.6 billion dollar Texas healthcare industry between now and 2013. These professionals will help to support the implementation and effective use of electronic health records (EHRs) in hospital and provider settings.

As an evolving industry, HIT requires a workforce that possesses the skills to quickly react and adapt to diverse working environments, industry and regulatory changes. Texas has one of the largest physician populations in the nation, approximately 600 licensed hospitals, four of the nation’s largest metropolitan areas for attracting venture capital, thirteen state-supported local health information initiatives, and a number of private payors and associations offering support to physicians and others who are interested in adopting HIT. A strong healthcare industry, which requires a well-qualified HIT workforce, is necessary to support the large and growing Texas population.

The online survey queried HIT employers about the competencies they needed in their HIT workforce, as well as the numbers of HIT employees they were using in 2011, vacancies remaining in 2011, and the expected number of additional HIT employees they will be expecting to hire in 2013. Ninety-four (94) of 312 HIT employers responded. The respondents, both provider and non-provider, reported an additional 1,341 employees needed between 2011 and 2013. A conservative extrapolation was conducted using the average needed FTE by provider type multiplied by half the number of Texas clinics and half the number of Texas hospitals, revealing the need for an additional 9,500 HIT employees.

The HIT employers were also asked about the barriers they face when attempting to fill vacancies. Accessing qualified candidates; staff retention in a competitive market; lack of a well-defined HIT career ladder; the high cost of qualified consultants; and the lack of employee computer skills/ability to learn new skills were reported as barriers by more than 60% of the respondents.

Given the results of this study it is apparent the Texas HIT workforce is insufficient to meet the needs. This gap will only grow and the quality of care for Texas citizens will suffer if the stakeholders do not take action. Bridging this gap will require a **collaborative** effort between employers, educational providers, public organizations, and others to develop and implement a plan of action. The plan of action includes standardizing HIT roles, competencies and titles; developing common curriculum and training above and beyond the continuing education and health information management roles; as well as developing new models of education/employer collaboration to facilitate continued development of programs to meet employer needs in this fast-growing, evolving field.

## Introduction

According to a recent report by the Institute of Medicine (IOM), “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.”<sup>1</sup> The demand for healthcare professionals is growing, with an **estimated 10,000** additional health information technology (HIT) workers needed in the \$103.6 billion dollar Texas healthcare industry between now and 2013. These professionals will help to support the implementation and effective use of electronic health records (EHRs) in hospital and provider settings.

## Background

### Health IT vs. IT

There is a significant difference between information technology and health information technology (HIT) in the industry. Professionals in HIT must face:

- A highly regulated industry
- The need for high quality data
- A large number of diverse stakeholders
- Understanding of clinical workflow processes
- A business model centered around the patient
- New healthcare policy initiatives
- Rapidly changing technologies
- The unique value that healthcare has in our society

The U.S. Department of Health and Human Services Health Resources and Services Administration defines HIT as “the use of information and communication technology in healthcare. HIT can include: electronic health records, personal health records, email communication, clinical alerts and reminders, computerized decision support systems, hand-held devices, and other technologies that store, protect, retrieve and transfer clinical, administrative, and financial information electronically within health care settings.”<sup>2</sup>

## Economic Impact

As a leader in the nation in health information technology, Texas has the opportunity to spur our economic growth, create a more highly skilled workforce, and to attract additional healthcare industries in order to meet the current and future demands of the healthcare sector and increase the overall economic development in Texas. Making Texas a center for the emerging health information technology industry is a vision compatible with economic development policy in the state. In 2004, the Texas Workforce Commission, working in conjunction with Harvard economist Michael Porter and Texas economist Ray Perryman, identified six industry clusters as having unlimited potential for the state’s

future. HIT is considered an important industry in two of these clusters: biotech and life sciences and information and computer technology. The cluster initiatives are focused on three strategies: creating a skilled workforce, a competitive education system, and an effective commercialization process for products and technology.

The key stakeholders in health information technology who stand to benefit from these initiatives include:

- Patients
- Hospitals and other healthcare settings
- Healthcare providers (physicians, nurses, and other providers, labs, pharmacies)
- Payors
- Software vendors
- Monitors and regulators (state level, CMS, etc)
- Workforce system
- Educational entities
- Clinical and health services researchers

## Future Demand

As an evolving industry, HIT requires a workforce that possesses the skills to quickly react and adapt in diverse working environments. Texas has one of the largest physician populations in the nation, approximately 600 licensed hospitals, four of the nation's largest metropolitan areas for attracting venture capital, thirteen state-supported local health information initiatives, and a number of private payors and associations offering support to physicians and others who are interested in adopting HIT. From an employment standpoint, although the state is still developing the specific job titles associated with this industry, the Bureau of Labor Statistics is projecting a 20% increase in demand by 2018.<sup>3</sup> While this report identifies skills reportedly needed by HIT employers in the future, it is important to keep in mind that this field is in a constant state of change and different needs may emerge as the industry expands.

## Benefits of HIT

Some immediate benefits of HIT include providing the network infrastructure and workforce to ensure that hospitals, physicians, and other clinicians are able to qualify for Medicare/Medicaid EHR incentives. Without the support available to providers through infrastructure, these monetary incentives, possibly numbering into the billions, cannot be obtained.

In the long term, anticipated benefits include improved quality and safety by ensuring that providers have the right information at the right time. HIT will also increase patient access to health information, empowering patients to better manage their personal care, and decrease the amount of paperwork for both providers and patients.

## Survey Results

**Texas is conservatively expected to need an additional 10,000 HIT workers by 2013.** This gap is much larger than the original estimation that Texas would require an additional 3,500 HIT workers between 2010 and 2015 – the deadline for meaningful use. ONC has estimated an additional 50,000 workers needed by 2015. Combining this with Texas' representation in the national population led to a conservative estimate of 3,500 workers needed in Texas. The results from this survey have shown this to be grossly under-estimated. Supply cannot meet current demand.

The 56 providers who responded to the survey estimated they will need a total of 1,419 HIT workers by 2013. Consider that these 56 providers are a very small portion of the Texas healthcare provider industry. The Texas Medical Group Management Association (TMGMA) consists of 500 members with over 374 medical practices, with over 50,000 individual physicians (Kaiser-Permanente, [statehealthfacts.org](http://statehealthfacts.org)) and the Texas Hospital Association reports 592 hospitals. While some of the practices and hospitals are members of multi-facility systems, it is known that not all integrated delivery systems responded. Non-provider HIT employers also responded to the survey estimating they will need an additional 549 HIT workers by 2013. The average estimated need per hospital, as well as the average estimated need per clinic was used to extrapolate industry needs.

## Competencies Needed

Employers were asked about a wide range of HIT skills and whether they had staff with these skills or were hiring in 2011. Via the employer focus groups held prior to the survey the skills had been classified as basic, intermediate and advanced. The intermediate and advanced were presumed to have subsumed the levels below them.

Competency and skill needs by employers mirror many of the skills and competencies included in the ONC roles and Department of Labor competency model (see Figure 1) related to privacy and security, project management, and more generic health information skills. Details can be found in Appendix B – Detailed Survey Results. A difference was noted related to data management, data mining, data analytic, and similar skills and competencies. Twenty-six percent (26%) of employers indicated they would seek training for their staff related to data management and another 31% indicated they were seeking to hire these skills. So, more than half (57%) feel they need these skills in their organization. This unexpected finding illustrates the shifting nature of HIT workforce needs. This is expected to continue into the foreseeable future.

## HIT Employer Barriers

Employers were also asked about their perceived barriers to a well-qualified HIT workforce. The results presented here combine both providers and non-providers. A total of 72 respondents completed this portion of the survey, 40 providers and 32 non-providers. The identified barriers are:

- Lack of access to qualified candidates – 76% (40% reported as major)
- Turnover in a competitive market – 71%
- Lack of a well-defined HIT career ladder – 67%
- Consultants who understand needs are too expensive – 65%
- Lack of employee computer skills and ability to learn new skills – 62%
- Consultants who understand needs are not available – 53%
- Lack of baccalaureate or higher educational programs – 52%
- Lack of community college programs – 42%
- Insufficient online educational program delivery – 40%
- Poor software system usability – 38%
- Insufficient face-to-face non-degreed EHR/HIT training – 37%

It is clear that employers are experiencing challenges with recruiting, retaining, and training their HIT workforce.

## Conclusion

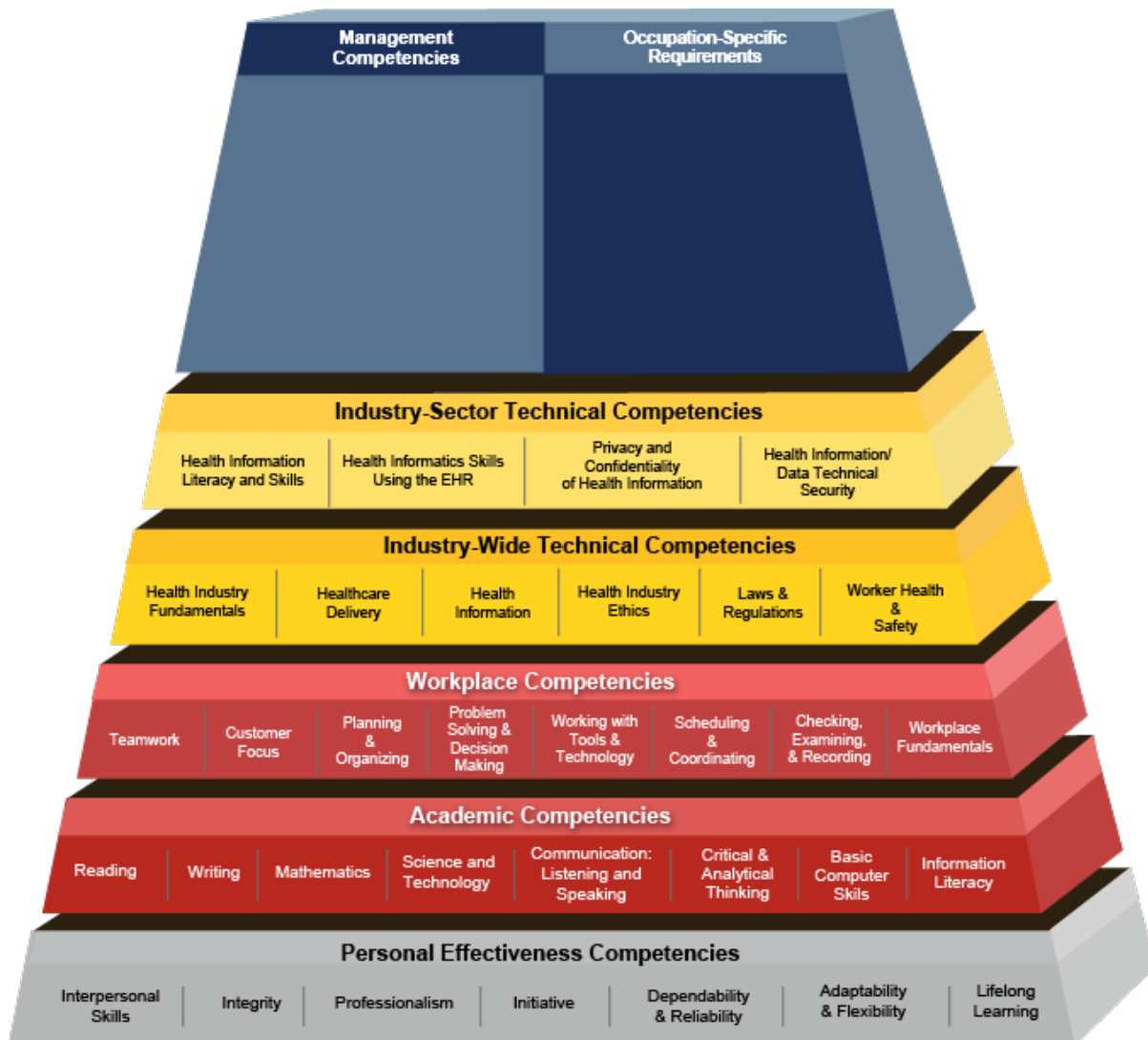
Given the results of this study it is apparent the Texas HIT workforce is insufficient to meet the needs. This gap will only grow and the quality of care for Texas citizens will suffer if the stakeholders do not take action. To bridge this gap and reduce the disparity will require a **collaborative** effort between employers, educational providers, public organizations, and others to develop and implement a plan of action. This includes:

- standardizing HIT roles, competencies, and titles;
- developing common curriculum and training above and beyond the ONC-funded continuing education and health information management roles; and
- developing new models of education/employer collaboration to facilitate continued development of programs to meet employer.

This is a fast-growing, evolving field. It will require educators, employers, and workforce developers working together to meet industry needs.



**Figure 1**  
**Health: Electronic Health Records (EHR)**  
**U.S. Department of Labor Competency Model**



## References

1. Institute of Medicine (IOM). *Health IT and Patient Safety: Building Safer Systems for Better Care - Institute of Medicine*. Washington, D.C.: The National Academies Press; 2012. Available at: <http://www.iom.edu/Reports/2011/Health-IT-and-Patient-Safety-Building-Safer-Systems-for-Better-Care.aspx>. Accessed February 3, 2012.
2. Health Resources and Services Administration. HRSA Health IT Adoption Toolkit. Available at: <http://www.hrsa.gov/healthit/toolbox/HealthITAdoptiontoolbox/index.html>. Accessed February 3, 2012.
3. U.S. Bureau of Labor Statistics. Medical Records and Health Information Technicians. Available at: <http://www.bls.gov/oco/ocos103.htm>. Accessed February 3, 2012.

## Appendix A: Tx HIT Workforce Employee Survey

Tx HIT Workforce Employee Survey-Beta							
Texas Health Information Technology Workforce Survey							
<p>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.</p> <p>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.</p> <p>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:</p> <ul style="list-style-type: none"><li>a. Health care providers (hospitals, clinics, physicians, clinical laboratory, pharmacies)</li><li>b. Information technology and software companies</li><li>c. Consulting companies</li><li>d. Health plans and clearinghouses</li><li>e. State and local government, especially public health</li></ul>							
Texas HIT Workforce Demand							
<p><b>1. Organization type, size and location:</b></p> <p><b>At how many different locations or work sites do you employ people in, or from, Texas?</b></p> <div><input type="text"/></div> <p><b>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.)</b></p> <table><tbody><tr><td>Location 1</td><td><input type="text"/></td></tr><tr><td>Location 2</td><td><input type="text"/></td></tr><tr><td>Location 3</td><td><input type="text"/></td></tr></tbody></table> <p><b>3. How many total employees does your practice/facility/organization employ in Texas?</b></p> <div><input type="text"/></div>		Location 1	<input type="text"/>	Location 2	<input type="text"/>	Location 3	<input type="text"/>
Location 1	<input type="text"/>						
Location 2	<input type="text"/>						
Location 3	<input type="text"/>						

Tx HIT Workforce Employee Survey-Beta	
<b>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.)</b>	
<input type="checkbox"/>	Health care provider
<input type="checkbox"/>	Laboratory
<input type="checkbox"/>	Pharmacy
<input type="checkbox"/>	Electronic health record (EHR) vendor
<input type="checkbox"/>	Healthcare consulting company
<input type="checkbox"/>	Other (please specify)
<input type="text"/>	
<b>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”).</b>	
<input type="radio"/>	Hospital
<input type="radio"/>	Outpatient or ambulatory clinic
<input type="radio"/>	Nursing home/skilled nursing facility
<input type="radio"/>	Home health care
<input type="radio"/>	Public or community health agency/department
<input type="radio"/>	Multi-facility system
<input type="radio"/>	Other (please specify)
<input type="text"/>	
<b>6. Please provide us with the average number of weekly visits for your outpatient or ambulatory clinic.</b>	
<input type="text"/>	
<b>7. Please provide us with the number of beds in your hospital facility.</b>	
<input type="text"/>	

Tx HIT Workforce Employee Survey-Beta	
<b>8. Please provide us with the number of beds in your nursing home/skilled nursing facility.</b>	
<input type="text"/>	
<b>9. Please describe your multi-facility system.</b>	
<input type="text"/>	
<b>EHR/HIT Resources (for health care providers)</b>	
Please answer the following questions about your practice/facility's current and expected future use of electronic billing and health information technology.	
<b>10. Currently, does your practice/facility submit any claims electronically (electronic billing)?</b>	
<input type="radio"/> Yes, all electronic	
<input type="radio"/> Yes, part electronic and part paper	
<input type="radio"/> No	
<input type="radio"/> N/A - Unknown	
<b>11. Currently, does your practice/facility use an electronic medical record (EMR) or electronic health record (EHR) system? (Do not include billing records systems.)</b>	
<input type="radio"/> Yes, all electronic	
<input type="radio"/> Yes, part electronic and part paper	
<input type="radio"/> No	
<input type="radio"/> N/A - Unknown	
<b>12. Please tell us the year your practice first installed an EHR system.</b>	
<input type="text"/>	

Tx HIT Workforce Employee Survey-Beta				
<b>13. Please tell us whether there are plans for installing a new EHR system by 2013.</b> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown				
<b>Adoption of EHRs, HIT, and "Meaningful Use"</b>				
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.				
<b>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.</b>				
	Yes, currently implemented	Not currently implemented, but plan to have in use by 2013	Not currently installed, and no plans for acquiring or implementing by 2013	Don't know
Use a certified EHR in a meaningful manner? (Such as computerized physician order entry, clinical decision support, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate in the electronic exchange of patient data through participation in a regional Health Information Exchange (HIE)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate in e-prescribing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate in the submission of lab or immunization data to public health?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate in the exchange of data to facilitate patient care transfer between settings?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Texas HIT Workforce Skills</b>				
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.				
<b>BASIC/ENTRY LEVEL EHR/HIT Workforce Skills (for health care providers)</b>				
The BASIC/ENTRY LEVEL SKILLS listed below may be relevant to selecting, implementing and maintaining EHR/HIT				

Tx HIT Workforce Employee Survey-Beta							
systems.							
<b>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.</b>							
	We have staff with these skills who did not need additional training	We obtained training for our staff so they have these skills	We hired new staff with these skills	We hired a contractor or consultant with these skills	We needed these skills, but were not able to access them	We do not need personnel with these skills	Not Applicable/Unknown
Operational medical terminology knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basic desktop/computer skills, computer/internet navigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understanding of how patient information should flow in clinical settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>BASIC/ENTRY LEVEL EHR/HIT Workforce Skills in 2013</b>							
<b>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?</b>							
	We have staff with these skills who will not need additional training	We plan to obtain training for our staff so they have these skills	We plan to hire new staff with these skills	We plan to hire a contractor/consultant with these skills	We do not expect to need personnel with these skills	Not Applicable/Unknown	
Operational medical terminology knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Basic desktop/computer skills, computer/internet navigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Understanding of how patient information should flow in clinical settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>INTERMEDIATE EHR/HIT Workforce Skills</b>							

Tx HIT Workforce Employee Survey-Beta							
The INTERMEDIATE LEVEL SKILLS listed below may be relevant to selecting, implementing and maintaining EHR/HIT systems.							
<b>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.</b>							
	We have staff with these skills who did not need additional training	We obtained training for our staff so they have these skills	We hired new staff with these skills	We hired a contractor or consultant with these skills	We needed these skills, but were not able to access them	We do not need personnel with these skills	Not Applicable/Unknown
Knowledge of HIT products, familiarity with vendors, ability to negotiate contracts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of HIPAA, state privacy and security regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understand "Meaningful Use" and which HIT system can produce the data needed for demonstrating compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced clinical knowledge and understanding of uses of HIT for patient management/education needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data management, data mining/report creation, and data sharing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project management (such as initiating, planning, executing, and monitoring EHR/HIT-related projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**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?						
	We have staff with these skills who will not need additional training	We plan to obtain training for our staff so they have these skills	We plan to hire new staff with these skills	We plan to hire a contractor/consultant with these skills	We do not expect to need personnel with these skills	Not Applicable/Unknown
Knowledge of HIT products, familiarity with vendors, ability to negotiate contracts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge of HIPAA, state privacy and security regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understand "Meaningful Use" and which HIT system can produce the data needed for demonstrating compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced clinical knowledge and understanding of uses of HIT for patient management/education needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data management, data mining/report creation, and data sharing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project management (such as initiating, planning, executing, and monitoring EHR/HIT-related projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>ADVANCED EHR/HIT Workforce Skills</b>						

Tx HIT Workforce Employee Survey-Beta							
The ADVANCED LEVEL SKILLS listed below may be relevant to selecting, implementing and maintaining EHR/HIT systems.							
<b>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.</b>							
	We have staff with these skills who did not need additional training	We obtained training for our staff so they have these skills	We hired new staff with these skills	We hired a contractor or consultant with these skills	We needed these skills, but were not able to access them	We do not need personnel with these skills	Not Applicable/Unknown
Management skills to direct technical and non-technical staff re: EHR/HIT systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strategic thinking related to EHR/HIT implementation/management that is supportive of organization goals and mission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to effectively interact with senior management and above in HIT governance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to use analytics/data from HIT systems for planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial decisionmaking and negotiating skills: for selecting HIT system purchases and maintenance plans that meet external and internal goals/resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to design HIT databases and systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HIT software/hardware engineering, development and/or system maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>ADVANCED LEVEL EHR/HIT Workforce Skills in 2013</b>							

**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 the skills you need?**

[illegible]

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.)

Tx HIT Workforce Employee Survey-Beta				
<b>21. Education and Training barriers to implementing and/or using EHRs/HIT</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Training employed staff is difficult because many lack strong computing skills and/or are slow to learn new skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic computer literacy training for staff is not readily available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-person staff training (non-degree) about how to use EHRs and HIT is not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-line (e.g., web-based) education programs for training staff how to use EHRs and HIT are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community college education programs for training staff how to use EHRs and HIT are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baccalaureate or higher level education programs for HIT-related skills are not readily accessible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources (including funds and/or release time) to train staff how to use EHRs and HIT are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>22. Consulting/Contract resource barriers to implementing and/or using EHRs/HIT</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Consultants and/or contract technical staff with understanding of the needs of our facility are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultants and/or contract technical staff with understanding of the needs of our facility are too expensive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>23. Recruiting and retention barriers to implementing and/or using EHRs/HIT</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Lack of a well-defined HIT career ladder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty accessing qualified candidates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competitive market makes it difficult to retain qualified staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>24. Management and decision-making barriers to implementing and/or using EHRs/HIT</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Software systems purchased are not well suited to our practice/organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>EHR/HIT Workforce Demand Introduction</b>				

### 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	
<b>28. Will you or have you used a consultant/contractor service for BASIC/ENTRY LEVEL EHR/HIT related tasks?</b>	
<input type="radio"/> Yes	
<input type="radio"/> No	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
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.	
<b>29. Total est. hours used to-date in 2011 for BASIC/ENTRY LEVEL.</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>30. Additional hours needed in 2011 for BASIC/ENTRY LEVEL (position advertised now or would be hired if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>31. In 2013, how many TOTAL hours do you estimate you will need for BASIC/ENTRY LEVEL?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	

Tx HIT Workforce Employee Survey-Beta	
Workforce Demand for FTE INTERMEDIATE LEVEL SKILLS: Office/clinical staff (working with vendors, negotiating EHR/HIT related contracts, managing data, generating HIT reports, etc.). Please provide your best estimate.	
<b>32. Total est. average monthly FTE employed in 2011 for INTERMEDIATE LEVEL EHR/HIT related tasks.</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>33. Additional FTE needed now for INTERMEDIATE LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>34. In 2013, how many TOTAL est. FTEs will you need for INTERMEDIATE LEVEL EHR/HIT?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>35. Will you or have you used a consultant/contractor service for INTERMEDIATE LEVEL EHR/HIT related tasks?</b>	
<input type="radio"/> Yes	
<input type="radio"/> No	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
Workforce Demand for Consultant/Contractor INTERMEDIATE LEVEL SKILLS: Office/clinical staff (working with vendors,	

Tx HIT Workforce Employee Survey-Beta	
negotiating EHR/HIT related contracts, managing data, generating HIT reports, etc.). Please provide your best estimate.	
<b>36. Total est. hours used to-date in 2011 for INTERMEDIATE LEVEL.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>37. Additional hours needed in 2011 for INTERMEDIATE LEVEL (position advertised now or would be hired if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>38. In 2013, how many TOTAL hours do you estimate you will need for INTERMEDIATE LEVEL?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
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	
<b>39. Total est. average monthly FTE employed in 2011 for INTERMEDIATE LEVEL EHR/HIT related tasks.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	
<b>40. Additional FTE needed now for INTERMEDIATE LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	
<b>41. In 2013, how many TOTAL est. FTEs will you need for INTERMEDIATE LEVEL EHR/HIT?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	
<b>42. Will you or have you used a consultant/contractor service for INTERMEDIATE LEVEL EHR/HIT related tasks?</b>	
<div><input type="radio"/> Yes</div> <div><input type="radio"/> No</div>	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
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	
<b>43. Total est. hours used to-date in 2011 for INTERMEDIATE LEVEL.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>44. Additional hours needed in 2011 for INTERMEDIATE LEVEL (position advertised now or would be hired if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>45. In 2013, how many TOTAL hours do you estimate you will need for INTERMEDIATE LEVEL?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
<p>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.</p>	

Tx HIT Workforce Employee Survey-Beta	
<b>46. Total est. average monthly FTE employed in 2011 for ADVANCED LEVEL EHR/HIT related tasks.</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>47. Additional FTE needed now for ADVANCED LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>48. In 2013, how many TOTAL est. FTEs will you need for ADVANCED LEVEL EHR/HIT?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>49. Will you or have you used a consultant/contractor service for ADVANCED LEVEL EHR/HIT related tasks?</b>	
<input type="radio"/> Yes	
<input type="radio"/> No	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
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	
<b>50. Total est. hours used to-date in 2011 for ADVANCED LEVEL.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>51. Additional hours needed in 2011 for ADVANCED LEVEL (position advertised now or would be hired if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>52. In 2013, how many TOTAL hours do you estimate you will need for ADVANCED LEVEL?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
<p>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.</p>	

Tx HIT Workforce Employee Survey-Beta	
<b>53. Total est. average monthly FTE employed in 2011 for ADVANCED LEVEL EHR/HIT related tasks.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	
<b>54. Additional FTE needed now for ADVANCED LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	
<b>55. In 2013, how many TOTAL est. FTEs will you need for ADVANCED LEVEL EHR/HIT?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	
<b>56. Will you or have you used a consultant/contractor service for ADVANCED LEVEL EHR/HIT related tasks?</b>	
<div><input type="radio"/> Yes</div> <div><input type="radio"/> No</div>	
<b>EHR/HIT Workforce Demand (for health care providers)</b>	
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	
<b>57. Total est. hours used to-date in 2011 for ADVANCED LEVEL.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>58. Additional hours needed in 2011 for ADVANCED LEVEL (position advertised now or would be hired if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>59. In 2013, how many TOTAL hours do you estimate you will need for ADVANCED LEVEL?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>EHR/HIT Workforce Skills Needed (for non health care providers)</b>	

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.)									
	We have/had staff with these skills who did not need additional training	We obtained training for our staff so they have these skills	We hired new staff with these skills	We hired a contractor or consultant with these skills	We plan to train persons on our staff to have these skills	We plan to hire new staff with these skills	We need to hire a contractor or consultant with these skills	No, we do not (did not) need personnel with these skills	Not Applicable/Unknown
Basic/Entry Level Skills: Customer service, communication and interpersonal skills, training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate Level Skills: Knowledge of HIT products, familiarity with vendors, able to negotiate contracts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate Level Skills: Knowledge of data management, data mining, and data sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate Level Skills: Understand "Meaningful Use" and if the current system can produce the data needed for compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced Level Skills: Strategic planning and analysis skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced Level Skills: Database and system design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced Level Skills: HIT systems implementation and management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced Level Skills: Software/Hardware engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.)									

Tx HIT Workforce Employee Survey-Beta				
<b>61. Education and Training barriers to implementing and/or using EHRs/HIT.</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Training employed staff is difficult because many lack strong computing skills and/or are slow to learn new skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic computer literacy training for staff is not readily available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-person staff training (non-degree) about how to use EHRs and HIT is not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-line (e.g., web-based) education programs for training staff how to use EHRs and HIT are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community college education programs for training staff how to use EHRs and HIT are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baccalaureate or higher level education programs for HIT-related skills are not readily accessible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources (including funds and/or release time) to train staff how to use EHRs and HIT are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>62. Consulting/Contract resource barriers to implementing and/or using EHRs/HIT.</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Consultants and/or contract technical staff with understanding of the needs of our facility are not available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultants and/or contract technical staff with understanding of the needs of our facility are too expensive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>63. Recruiting and retention barriers to implementing and/or using EHRs/HIT.</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Lack of a well-defined HIT career ladder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty accessing qualified candidates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competitive market makes it difficult to retain qualified staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>64. Management and decision-making barriers to implementing and/or using EHRs/HIT.</b>				
	Major barrier	Minor barrier	Not a barrier	N/A
Software systems purchased are not well suited to our practice/organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>EHR/HIT Workforce Demand (for non health care providers)</b>				



### 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.	
<b>69. Total est. hours used to-date in 2011 FOR BASIC/ENTRY LEVEL.</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>70. Additional hours needed in 2011 for BASIC/ENTRY LEVEL (position advertised now or would be hired if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>71. In 2013, how many TOTAL hours do you estimate you will need for BASIC/ENTRY LEVEL?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>EHR/HIT Workforce Demand (for non health care providers)</b>	
Workforce Demand for FTE INTERMEDIATE LEVEL SKILLS: Technical/non-clinical staff (sales, customer service, data analysis).	

Tx HIT Workforce Employee Survey-Beta	
<b>72. Total est. average monthly FTE employed in 2011 for INTERMEDIATE LEVEL EHR/HIT related tasks.</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>73. Additional FTE needed now for INTERMEDIATE LEVEL EHR/HIT related tasks (position advertised now or would be if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>74. In 2013, how many TOTAL est. FTEs will you need for INTERMEDIATE LEVEL EHR/HIT?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>75. Will you or have you used a consultant/contractor service for INTERMEDIATE LEVEL EHR/HIT related tasks?</b>	
<input type="radio"/> Yes	
<input type="radio"/> No	
<b>EHR/HIT Workforce Demand (for non health care providers)</b>	
Workforce Demand for Consultant/Contractor INTERMEDIATE LEVEL SKILLS: Technical/non-clinical staff (sales, customer service, data analysis). Please provide your best estimate.	

Tx HIT Workforce Employee Survey-Beta	
<b>76. Total est. hours used to-date in 2011 for INTERMEDIATE LEVEL.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>77. Additional hours needed in 2011 for INTERMEDIATE LEVEL (position advertised now or would be hired if resources were available).</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>78. In 2013, how many TOTAL hours do you estimate you will need for INTERMEDIATE LEVEL?</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. Hours (please specify)</div><div></div></div>	
<b>EHR/HIT Workforce Demand (for non health care providers)</b>	
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.).	
<b>79. Total est. average monthly FTE employed in 2011 for EHR/HIT related tasks.</b>	
<div><input type="radio"/> None</div> <div><input type="radio"/> Don't Know</div> <div><div><input type="radio"/> Total Est. FTE (please specify)</div><div></div></div>	

Tx HIT Workforce Employee Survey-Beta	
<b>80. Additional FTE needed now for EHR/HIT related tasks (position advertised now or would be if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>81. In 2013, how many TOTAL est. FTEs will you need for EHR/HIT?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. FTE (please specify)	
<input type="text"/>	
<b>82. Will you or have you used a consultant/contractor service for EHR/HIT related tasks?</b>	
<input type="radio"/> Yes	
<input type="radio"/> No	
<b>EHR/HIT Workforce Demand (for non health care providers)</b>	
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.).	
<b>83. Total est. hours used to-date in 2011.</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	

Tx HIT Workforce Employee Survey-Beta	
<b>84. Additional hours needed in 2011 (position advertised now or would be hired if resources were available).</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>85. In 2013, how many TOTAL hours do you estimate you will need?</b>	
<input type="radio"/> None	
<input type="radio"/> Don't Know	
<input type="radio"/> Total Est. Hours (please specify)	
<input type="text"/>	
<b>COMMENTS</b>	
<b>86. Please provide any additional comments you have regarding the workforce needed to successfully implement and use Health Information Technology in Texas.</b>	
<input type="text"/>	
<b>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.</b>	
<input type="text"/>	
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.	

## Appendix B: Detailed Survey Results

Ninety-six survey responses were logged in Survey Monkey. Two of the responses did not include any data beyond the initial demographic data and were removed from the analysis. This left 94 valid responses from 312 survey recipients for an overall response rate of 30.13%. Response rates by organizational type, along with the response rate within each category, can be found in Table 1.

**Table 1: Survey Recipients and Response Rates**

Organization Type	Number in Population	Percentage of Population	Number Responded	Percentage Responding	Percentage of Responses
Health Care Provider	170	54.49%	56	32.94%	59.57%
Laboratory	3	0.96%	1	33.33%	1.06%
Pharmacy	1	0.32%	0	0.00%	0.00%
EHR Vendor	16	5.13%	3	18.75%	3.19%
HC Consulting Company	57	18.27%	8	14.04%	8.51%
Other	65	20.83%	26	40.00%	27.66%
TOTAL	312	100.00%	94	30.13%	100.00%

The “Other” respondents represent the breadth of healthcare stakeholders. They include a durable medical equipment (DME) manufacturer, healthcare IT staffing agency, educators, medical billing, health information exchange, public policy, state agency, corrections and professional association representative, among others.

The location of the survey respondents using zip code was collected. The map of survey respondents is seen in Figure 2.

Self-reported zip codes were used to determine the metropolitan versus non-metropolitan location. Zip codes were classified as metropolitan based upon population density (> 100,000 persons and the presence of 4-year universities). Nearly 70% of the responses were from metropolitan areas. The majority of the non-metropolitan respondents, 22 (81.5%), were providers. The remainder were Other (3 ) or Consulting Company (2). The survey response breakout by metropolitan status is found in Table 2.

**Table 2: Metropolitan Status of Respondents**

Respondent Location	Frequency	Percentage
Not enough info	2	2.13%
Nonmetropolitan	27	28.72%
Metropolitan	65	69.15%
TOTAL	94	100.00%

**Figure 2: Map of Survey Respondents**





## Appendix B: Detailed Survey Results

The healthcare providers responding were ambulatory care clinics, multi-facility systems or hospitals as outlined in Table 3 below. Additionally, 6 (30%) of the ambulatory care clinics; 4 (27%) of the multi-facility systems; and 10 (77%) of the hospitals were from the nonmetropolitan areas. The multi-facility systems in the nonmetropolitan areas consisted of critical access and community hospitals aligned with rural health clinics.

**Table 3: Healthcare Provider Types**

Healthcare Provider Type	Frequency	Percentage
Outpatient or ambulatory clinic	20	35.71%
Multi-facility system	15	26.79%
Hospital	13	23.21%
Other	4	7.14%
Home health care	2	3.57%
Nursing home/skilled nursing facility	1	1.79%
Public or community health agency/department	1	1.79%
TOTAL	56	100.00%

**HIT COMPETENCIES AND WORKFORCE NEEDED**

Employers were asked about a wide range of HIT skills and whether they had staff with these skills or were hiring in 2011. Additionally, employers were asked to look out to 2013 and project their HIT workforce needs. The details of employer needs by competency level are outlined below and illustrated in Table 4.

Basic Skills: The majority of HIT employers (54.3%) indicated that their staff have the necessary basic HIT skills of medical terminology, basic computer skills, and understanding how patient information should flow in clinical settings. Only 33% indicated they would obtain this type of training for their staff. The HIT employers indicated they used 1,156 FTE and 54 full-time consultants with these skills, while they needed 65 additional FTE now and would require an additional 644 FTE and use 53 full-time consultants with basic skills in 2013. The HIT employee numbers by HIT employer type are found in Table 5, with the HIT employee numbers by competency are in Table 6.

**Table 4: HIT Workforce Skills by Competency Level**

Category	BASIC	INTMED 1	INTMED 2	INTMED 3	ADV 1	ADV 2	ADV 3	ADV 4
<b>Staff Currently Possessing Skills</b>	54.30%	44.00%	32.00%	33.00%	37.00%	29.00%	38.00%	30.00%
<b>Employers to Obtain Training Now</b>	33.00%	26.00%	26.00%	33.00%	28.00%	20.00%	28.00%	18.00%
<b>Hiring Staff with Skills</b>	---	22.00%	31.00%	19.00%	20.00%	27.00%	26.00%	20.00%
<b>Hiring Consultants with Skills</b>	---	---	15.00%	14.00%	14.00%	21.00%	17.00%	20.00%
<b>Expected to Have 2013</b>	---	26.00%	32.00%	33.00%	37.00%	17.00%	38.00%	30.00%
<b>Expected to Train 2013</b>	---	22.00%	33.00%	33.00%	28.00%	19.00%	21.00%	18.00%
<b>Expected to Hire 2013</b>	---	13.00%	22.00%	19.00%	20.00%	10.00%	11.00%	12.00%
<b>Expecting to Hire Consultants 2013</b>	---	---	15.00%	10.00%	14.00%	11.00%	---	14.00%

Intermediate Skills: The survey asked about many more intermediate skills. They have been grouped for easier understanding.

Intermediate Group 1 included the intermediate skills of HIT knowledge, an understanding of the Health Information Portability and Accountability Act (HIPAA or privacy and security), and project management skills. Forty-four percent (44%) of HIT employers indicated they have staff with these skills; with 26% indicating they will obtain training for their staff and 22% indicated they had hired staff with these skills. For 2013 HIT employers are projecting the same percentages for staff having these skills or obtaining training. However, 13% of employers expect to hire staff with these 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. Only 32% of HIT employers reported having employees with these skills; with 26% obtaining training, 31% hiring staff with these skill and 15% hiring consultants to obtain these skills. For 2013, thirty-two (32%) percent of employers expect to have staff, with 33% expecting to obtain training, 22% expecting to hire and 15% hiring consultants.

Intermediate Group 3 skills included an understanding of the federally required “meaningful use” standard and systems to prove compliance with those standards, as well as clinical knowledge and an understanding of HIT use for patient care purposes. One-third, or 33%, of HIT employers reported having staff with these skills. Another 33% reported obtaining training for their staff, while 19% hired staff with these skills and 14% hired consultants. Looking out to 2013 employers responded very

similarly when it came to their staff skills, training and hiring staff; however, only 10% expected to hire consultants for meaningful use and related skills.

The HIT employers indicated they current employ 545 FTE and 21 full-time consultants for all intermediate skills. They report needing 242 additional FTE, but almost no consultants now. However, their 2013 reported needs for intermediate skills are 492 FTE and 21 full-time consultants.

Advanced Skills: Employers were also asked about advanced skills which either tended to be focused on management or strategic issues or highly technical in areas such as database design and software development.

Advanced Group 1 includes the ability implement and manage HIT in ways which support strategic plans, as well as use data and analytics (as might be produced by the intermediate workforce) for planning and management purposes. Both currently and projected for 2013, employers reported 37% of their staff with these skills. Twenty-eight (28%) reporting obtaining training for these skills, with 20% hiring staff and 14% hiring consultants.

Advanced Group 2 skills were focused on database and systems design to support organizational goals. Currently, 29% of employers indicated they had staff with these skills, while 20% have obtained training, 27% have hired staff and 21% have hired consultants. Interestingly, all of these numbers declined for 2013 with 17% indicating they would have staff with database skills, 19% obtaining training, 10% planning to hire staff and 11% hiring a consultant.

Advanced Group 3 skills included management skills related to directing technical and non-technical staff, interacting effectively with senior management, as well as financial decision-making and contract negotiation skills. Although 38% of employers indicated they have staff with these skills, 28% still reported obtaining training, with 26% reporting making staff hires and 17% hiring consultants in this area. For the future, 38% expected to have staff with these skills, though only 21% expected to obtaining training, with even fewer (11%) expected to either hire staff or hire contractors.

Advanced Group 4 consisted of skills such as HIT software and hardware engineering, development and system maintenance. Thirty percent (30%) of employers reporting having staff with these skills, while 18% obtained training. Twenty percent (20%) expected to hire staff with 20% also expecting to hire consultants. Interestingly, 23% reported these skills were not needed or not applicable. The future projections were similar; except that only 12% expected to hire staff and only 14% expected to hire consultants.

The number of advanced FTE employed in 2011 totaled 564, with 20 full-time consultants. Employers reported needing an additional 293 FTE , but only 3 full-time consultants with advanced skills in 2011. A total of 149 FTE and 9 full-time consultants with advanced skills will be needed in 2013.

**Table 5: HIT Workforce Used and Estimated Needed, but Not Available**

<b>Category</b>	<b>Hospital (N=13)</b>	<b>Clinics (N=20)</b>	<b>Home Health (N=1)</b>	<b>Multifacility Systems (N=16)</b>	<b>Other Providers (N=6)</b>	<b>Provider Total (N=56)</b>	<b>NonProvider Total (N=38)</b>	<b>TOTAL (N=94)</b>
HIT FTE Used in 2011	59	465	1	477	519	1521	732	2253
HIT FTE Additional Need in 2011	31	154	2	30	15	232	368	600
HIT FTE Additional Need in 2013	93	566	2	414	34	1109	176	1285
HIT FTE Consultants Used in 2011	0	3	0	91	0	94	0	94
HIT FTE Consultants Additional Need in 2011	0	0	0	2	0	2	0	2
HIT FTE Consultants Additional Need in 2013	0	2	0	74	0	76	5	81
<b>TOTAL</b>	<b>124</b>	<b>722</b>	<b>4</b>	<b>520</b>	<b>49</b>	<b>1419</b>	<b>549</b>	<b>1968</b>
<b>Average</b>	<b>10</b>	<b>36</b>				<b>46</b>		<b>46</b>

**Table 6: HIT Workforce Used and Estimated Needed, but Not Available, by Competency Level**

<b>Category</b>	<b>Basic</b>	<b>Intermediate</b>	<b>Advanced</b>	<b>Total</b>
HIT FTE Used in 2011	1156	545	564	2265
HIT FTE Additional Need in 2011	65	242	293	600
HIT FTE Additional Need in 2013	644	492	149	1285
HIT FTE Consultants Used in 2011	54	21	20	95
HIT FTE Consultants Additional Need in 2011	0	0	3	3
HIT FTE Consultants Additional Need in 2013	53	21	9	83

### Appendix B: Detailed Survey Results

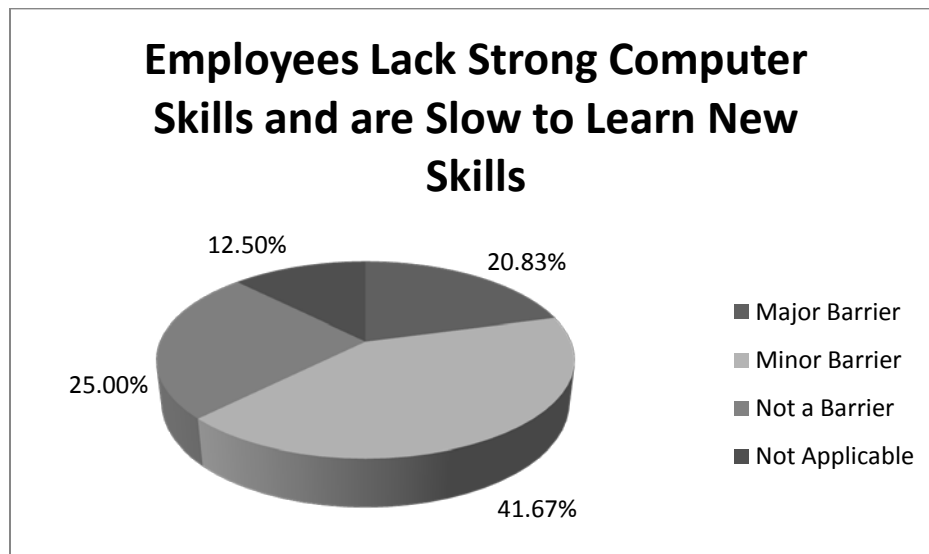
The 56 providers who responded to the survey estimated they will need a total of 1,419 HIT workers by 2013. Consider that these 56 providers are a very small portion of the Texas healthcare provider industry. The Texas Medical Group Management Association (TMGMA) consists of 500 members with over 374 medical practices, with over 50,000 individual physicians (Kaiser-Permanente, [statehealthfacts.org](http://statehealthfacts.org)) and the Texas Hospital Association reports 592 hospitals. While some of the practices and hospitals are members of multi-facility systems, it is known that not all integrated delivery systems responded. Non-provider HIT employers also responded to the survey estimating they will need an additional 549 HIT workers by 2013. The average estimated need per hospital, as well as the average estimated need per clinic was used to extrapolate industry needs. This extrapolation results in an estimated need of 9,500 HIT workers needed by Texas hospitals and clinics. Adding in the 500 needed by non-providers and it is conservatively estimated that Texas will require an additional 10,000 HIT workers through 2013.

## Appendix C: Barrier Details

Employers were also asked about their perceived barriers to a well-qualified HIT workforce. The results presented here combine both providers and non-providers. A total of 72 respondents completed this portion of the survey, 40 providers and 32 non-providers.

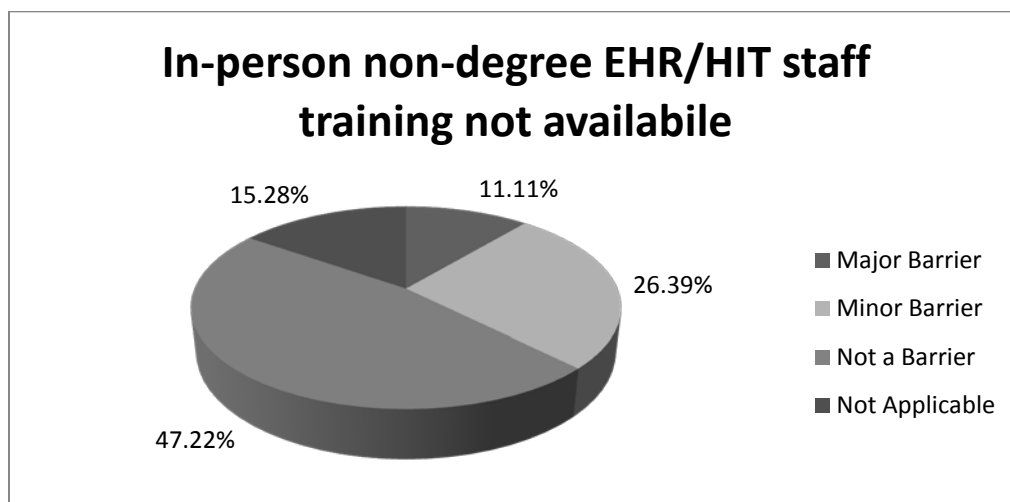
Figure 3 reveals that 62% of the respondents felt a lack of employee computer skills and ability to learn new skills were a barrier to the effective adoption of HIT.

**Figure 3: Training Employed Staff is Difficult**



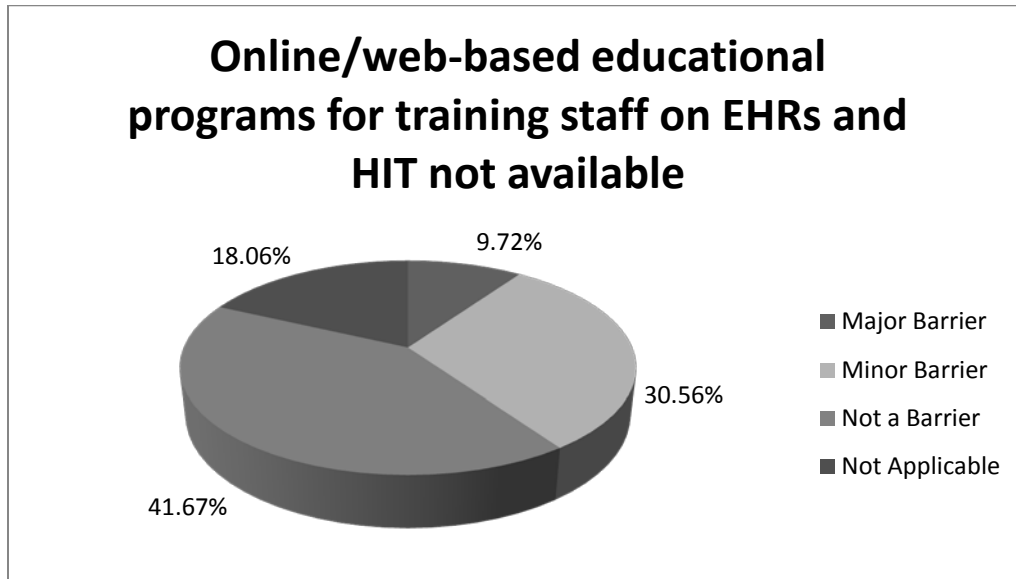
In Figure 4 it is clear that only 37.5% of the respondents perceive a lack of in-person non-degreed EHR/HIT training to be a barrier to effective HIT adoption.

**Figure 4: Non-degree In-person Staff Training**



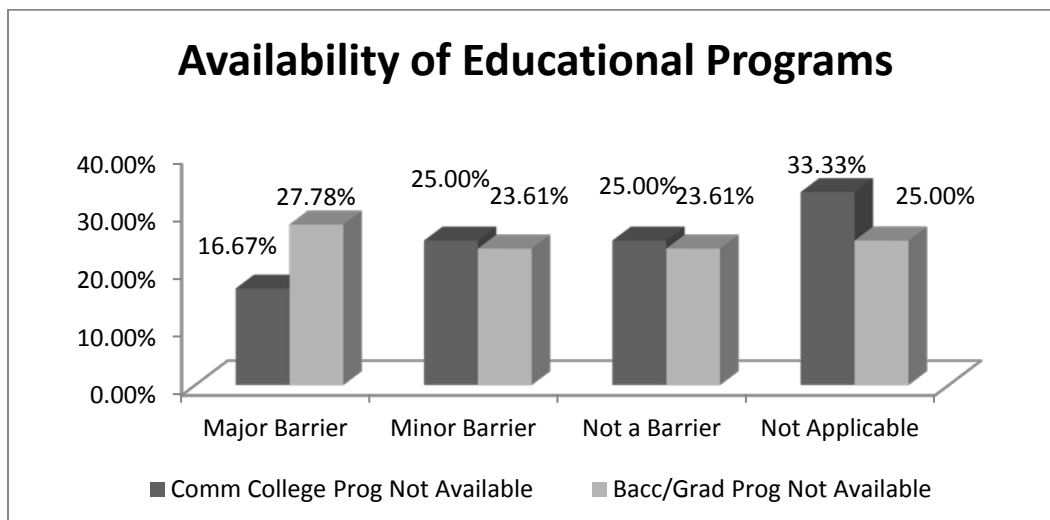
The next question asked about online or web-based training to inform later discussions of educational program delivery. Slightly more than 40% (40.2%), as seen in Figure 5, of the respondents felt a lack of online educational programs was a barrier.

**Figure 5: Non-degree Online Staff Training**



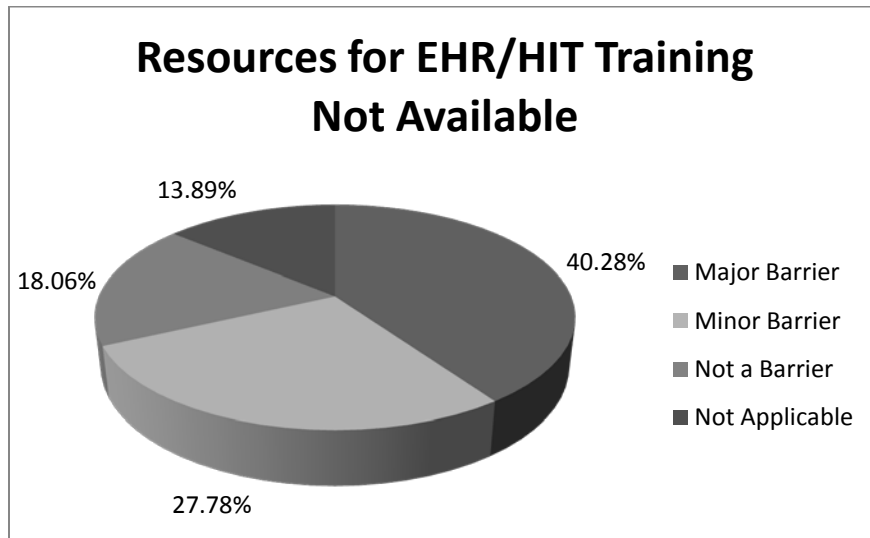
The next two questions focused on the availability of formal higher education. Figure 6 is notable since 10% more of the respondents indicated that a lack of baccalaureate or higher level education programs for HIT-related skills was a major barrier and 8% fewer felt this level of higher education was not applicable to them. Overall, almost 42% feel lack of community college programs is a barrier, while almost 52% believe a lack of baccalaureate or higher level programs is a barrier.

**Figure 6: Formal Higher Education Program Availability**



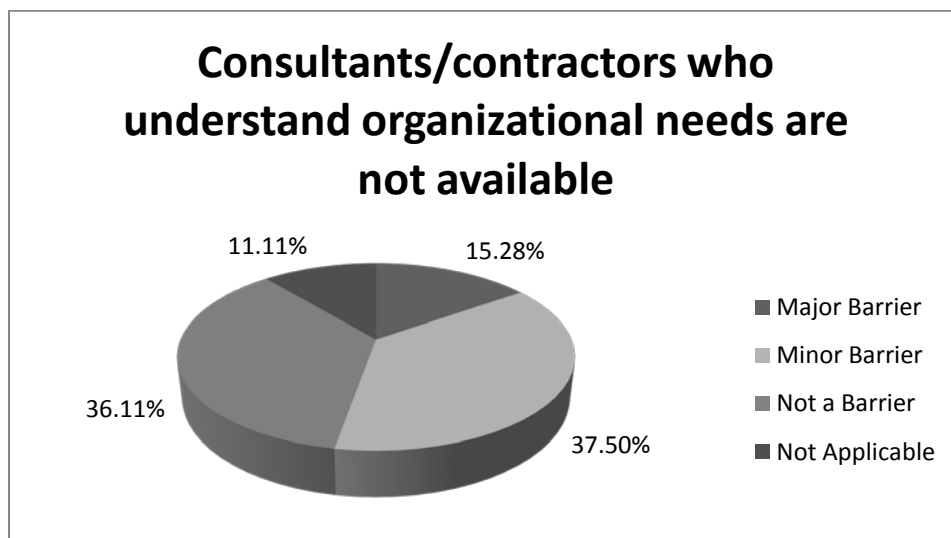
The section on training and education barriers ended with a question related to the resources, including funds and/or release time) allotted for EHR/HIT training for staff. As Figure 7 reveals, slightly greater than 68% of respondents perceived the lack of training resources, money or time, to be a barrier for the effective adoption of HIT.

**Figure 7: Resources to Train Staff on EHR/HIT**



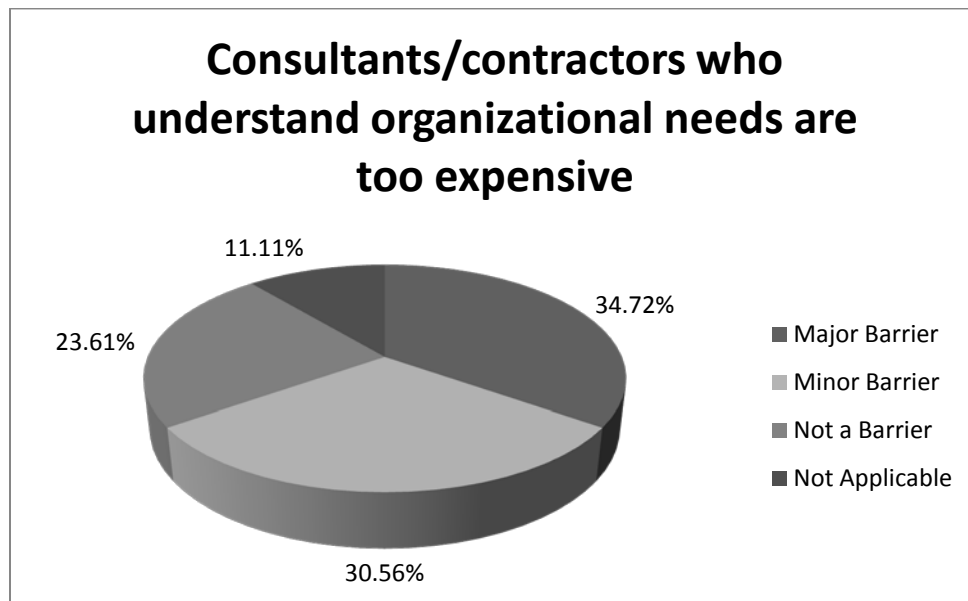
Respondents were asked two questions related to the utilization of consultants or contract staff. As Figure 8 and 9 reveal, almost 53% believe consultants who understand their organizational needs are not available. An additional 12%, for a total of just over 65%, report that those consultants who do understand their needs are too expensive.

**Figure 8: Consultants Understanding Needs**



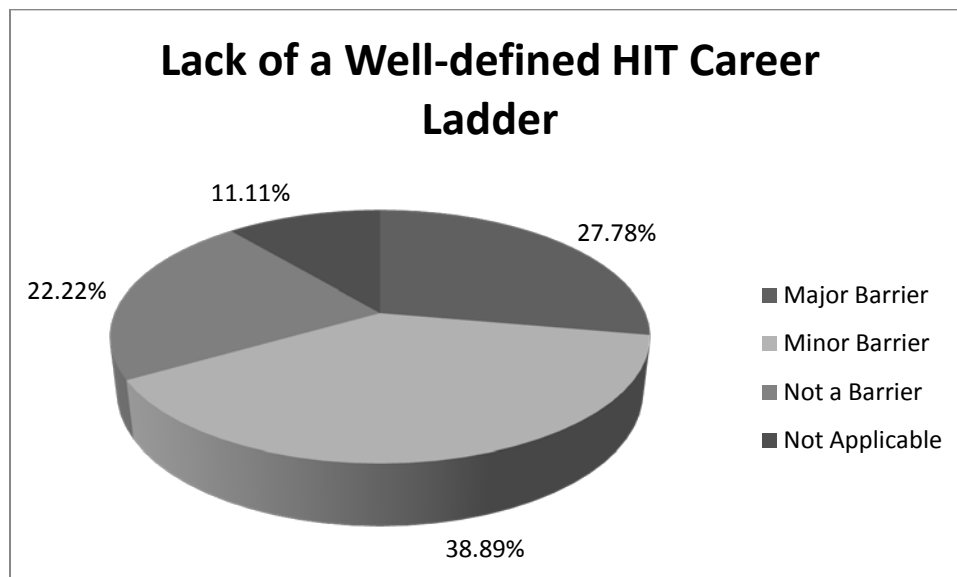


**Figure 9: Consultants Who Understand Needs are Too Expensive**



Respondents were also asked about recruiting and retention barriers which might impact EHR/HIT adoption. As can be seen in Figure 10, nearly 67% of respondents perceive the lack of a well-defined HIT career ladder to be a barrier.

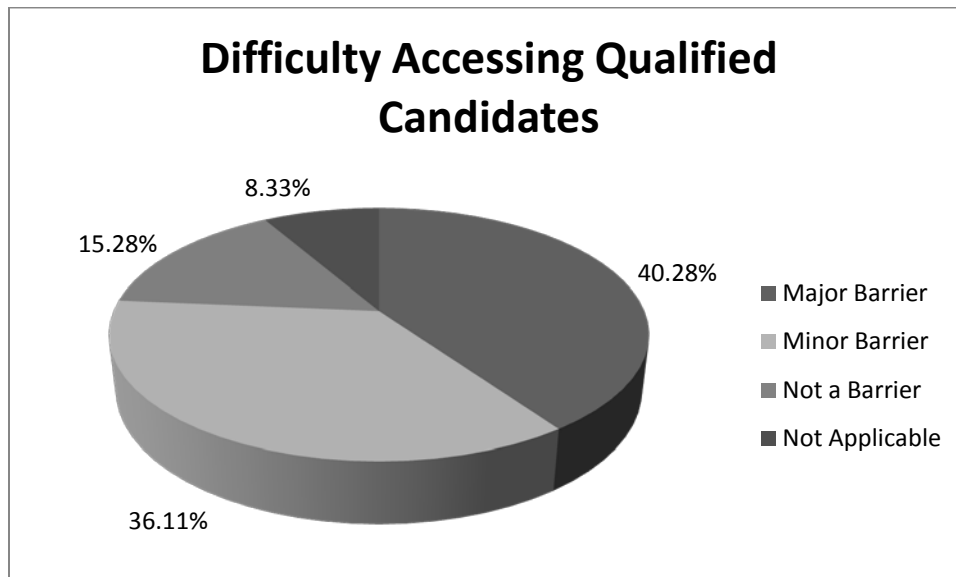
**Figure 10: Lack of a Career Ladder**



Appendix C: Barrier Details

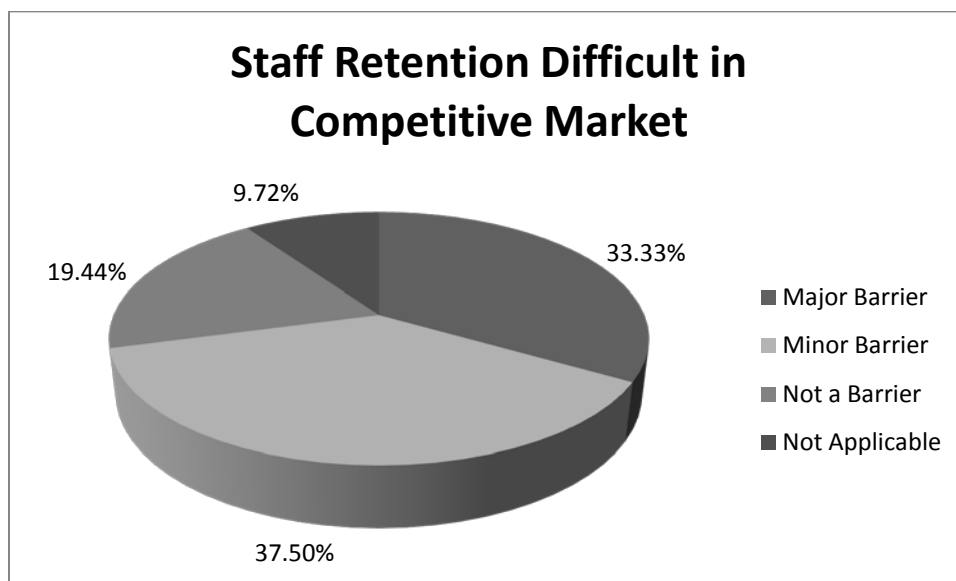
Figure 11 is even more stark, revealing that 76% of respondents find accessing qualified candidates to be a barrier to EHR/HIT adoption. More importantly, over 40% perceive access to qualified candidates to be a major barrier.

Figure 11: Access to Qualified Candidates



Almost 71% of the respondents believe staff retention is difficult in the current competitive HIT market, though slightly more (37.5%) believe it is a minor, rather than a major (33%) barrier, as see in Figure 12.

Figure 12: Impact of a Competitive Market



Appendix C: Barrier Details

The final barrier question related to the usability of software systems for a given practice or organization. Only 38% of respondents felt this was a minor or major barrier to the adoption of EHR/HIT.

## Appendix D: Study Methods

The study of human subjects was approved through Texas State University's Institutional Review Board (IRB) according to Federal guidelines.

The HIT Employer Needs Assessment consisted of two phases: focus groups and an online survey.

The focus group phase of the Texas HIT Employer Needs Assessment began the assessment of current and future HIT workforce needs across the state. Methods used included face-to-face and online HIT Employer Focus Groups. The face-to-face focus group sessions were held in: Austin, Brownsville, College Station, Dallas/Fort Worth, El Paso, Houston, Lubbock, and San Antonio. Additional focus groups were conducted with rural providers and nursing informatics professionals using Adobe Connect web conferencing software.

A qualitative research method, or inquiry method, for the initial phase of this project was chosen as no data-based evidence of employer needs was available. Groups such as the American Health Information Management Association (AHIMA) and the American Medical Informatics Association (AMIA) have published competencies for health information technology workers; however, these were developed from consensus-based work groups, rather than data gathering. The Office of the National Coordinator for Health Information Technology (ONC) funded workforce training for 12 health information technology roles as a part of the Health Information Technology for Economic and Clinical Health (HITECH) provisions in the 2009 American Recovery and Reinvestment Act (ARRA) legislation. However, these were developed primarily from persons with experience implementing health information technology in academic medical centers, rather than with data from HIT employers.

In late 2011 the U.S. Department of Labor released the Electronic Health Records Competency Model seen in Figure 1. While the full report found at <http://www.careeronestop.org/competencymodel/pyramid.aspx?EHR=Y> details the many resources reviewed to create the model, there is little documented evidence of direct employer input regarding the knowledge and skills or numbers needed.

HIT Employers were targeted for participation in the focus groups:

- *Healthcare providers (hospitals, clinics, physicians, clinical laboratories, pharmaceutical companies)*
- *Information technology and software companies*
- *Consulting companies*
- *Health plans and clearinghouses*
- *State and local government, especially public health*
- *Target HIT Employers:*
- *Rural Hospitals*
- *Rural Clinics*
- *Skilled Nursing Facilities & Long Term Care Facilities*

Appendix D: Study Methods

- *Ambulatory Clinics*
- *Large Hospital Systems*
- *Clinical Laboratories*
- *State & Local Government*
- *Healthcare Consulting Companies*
- *Healthcare Clearinghouses*
- *Mid-Sized Hospitals*
- *Home Health*
- *Nursing Informatics*
- *Military & VA*
- *Academic Medical Centers*

The group compositions included CIO's, Medical Office Managers, CEO's, and Nurse Informaticists, a representative sample of Texas HIT employers.

**Preparation of the Materials**

Prior to setting up the Focus Group meetings, a professional Focus Group facilitator was hired and conference calls were conducted to determine the ideal responder, the preferred number of attendees and the type of questions that were needed. A topic guide, seen in Figure 13 (over 4 pages), was prepared which provided the framework for the meetings. It included an introduction by the facilitator describing the purpose of the Focus Groups and a brief explanation regarding the meeting process which included notifying participants that the meetings were being recorded, reassurance that the recordings would remain confidential and there were no right or wrong answers and requesting that each participant speak one at a time.

Participation flyers and forms were emailed to potential respondents who fit the stakeholder requirements, which, depending on the organization type, might be the Chief Information Officer (CIO), Office Manager, Nurse Informaticist, or other responsible person. Persons interested in participating in a focus group completed the registration form and returned it to us via email to the designated HIT email address: [hitworkforce@txstate.edu](mailto:hitworkforce@txstate.edu). Local workforce development boards and universities in the selected cities were contacted to determine whether they had the capacity to host a focus group at their location. They also provided assistance with outreach to qualified responders from the targeted HIT Employer organizations. A list of organizations providing assistance is found in Table 7. The HIT Workforce Executive Committee also participated in the invitation process by inviting potential participants from their HIT employer contacts. A separate focus group session was held for the Executive Committee during the Austin face-to-face meeting in May 2011 providing valuable feedback.

Prior to a focus group session participants were asked to fill out a form designed to gather demographic data such as the healthcare market or location, the organization type and size, the size of the community, the types of issues HIT employers are facing currently and/or expect to face in the future, and the status of the organization's EHR implementation. An additional question requested feedback on the competencies needed for HIT workforce.

**Figure 13**

**HEALTH INFORMATION TECHNOLOGY (HIT) FOCUS GROUPS**

**TOPIC GUIDE**

**I. INTRODUCTION**

*A. BACKGROUND NOTES:*

- HIT is where the internet was in the 90's (wild, wild west)
- Overall want to understand what Texas Employer needs are related to HIT workforce
- Likely doing a lot within the HIT industry; working your way through
- Want to have the right type of workforce (skills) – now and for the future
- Want to have the Right type of training so that employers have employees with the right competencies
- Foundational work – to make all the computer technology work

*B. Purpose of group: The purpose of this discussion is to learn about your attitudes, needs and desires, perceptions and interests relating to Health IT*

- main focus on people whose job is totally concerned with the HIT (example would be network security, systems analyst, data analyst, CIO, health information manager, etc.)
- rather than clinical or other staff (such as front-line physicians, nurses and other therapists) who use health IT as a tool.
- END GOAL : We will be building a survey from the focus group information.

*C. Ground rules: One at a time, all participate, no cell phones/pagers*

*D. Audio-taping, confidentiality, no right or wrong answers*

*E. Independent of group sponsor*

**II. INTRODUCTION OF PARTICIPANTS**

*A. Name and Organization*

- Job Title/function
- Length of time in this job
- Years Working in the Field
- How you got into field
- Brief overview of organization/City/Size
- WHERE ORGANIZATION IS ON ADOPTION MODEL

*B. Interest in Health Information Technology*

**III. OVERVIEW OF HIT INDUSTRY**

*A. Current Trends you see in Health Information Technology WORKFORCE within your organization.*

- Role of Information Technology within healthcare delivery organizations
- How large of a priority within organizations (extremely high to not a priority at all)
  - Why a priority/not a priority?

Appendix D: Study Methods

*B. FRUSTRATIONS/BARRIERS*

*C. HOW IMPORTANT IS: A well-trained workforce capable of developing, implementing, and evaluating health information technology (HIT) in your healthcare related facility.  
(Description from 2010 Hersh article)*

- Extremely important (5)
- Somewhat Imp (4)
- Neutral (3)
- Not too important (2)
- Not important at all (1)

*D. Needs for the future for the HIT workforce – General overview; ask open-ended first and then probe*

- Immediate
- 3-5 years
- Long term

*E. CURRENT TRENDS  
COMPLY WITH*

- Is your workforce ready?
- How will you get ready?
- What do you need?

**IV. HIT WORKFORCE**

*A. Description of Current Work Force*

*B. Do you currently have HIT workforce*

- What types
- How many
- What is their level of competency?
- How well have they been trained?
- What type of background do they have?
- What type of training have they received?
  - Training Source
    - Higher Education in HIT
    - Migrate to position within organization
    - Continuing Education
    - On the Job training?
- What types of HIT workforce (roles or general skill sets) do you need now?
  - For each type, how many would you need?
  - What type of background, either experiential or educational would you expect them to have?
  - What would be the ideal type of worker instead of a set of skills that would normally require a lot of different workers?
  - What can you afford?
  - Are you experiencing challenges with paying and retaining your HIT workforce?

Appendix D: Study Methods

- What types of HIT workforce (roles or general skill sets) do you anticipate needing in 3-5 years?
  - For each type, how many would you anticipate needing?
  - What type of background, either experiential or educational would you expect them to have

*C. Compensation Model*

- How is the compensation model changing?
- What is the impact on the use of health information?
- Anticipate organizations electronically reporting quality measures or trying to implement population health monitoring would have new HIT workforce needs. From the perspective of their organization.
  - Pay for Performance
  - Use of incentives to be able to perform more (tasks)
  - Other the Windows

**V. Target segments of the workforce using EHRs - who are the primary users?**

*A. Clinically focused: Physicians, nurses, therapists, pharmacy, etc.*

- Basic Computer Literacy Skills
  - What types of job titles require these skills?
  - What are the core competencies needed here?
    - Demonstrate basic computer operating procedures such as login the computer and logoff, opening, closure and saving files.
    - Demonstrate proficiency in operating environment.
    - Resolve minor technical problems associated with use of computers.
    - Demonstrate Internet/intranet communication skills.
    - Access and use a Web browsing application.
    - Demonstrate use of email, addressing, forwarding, attachments, and netiquette.
    - Identify and use icons, windows, and menus.
- Health Informatics skills using EHRs
  - What types of job titles require these skills?
  - What are the core competencies needed here?
    - Create and update documents within the electronic health record (EHR) and the personal health record (PHR).
    - Locate and retrieve information in the electronic health record for various purposes.
    - Perform data entry of narrative information.
    - Locate and retrieve information from a variety of electronic sources.
    - Know the policies and procedures related to populating and using the health data content within primary and secondary health data sources and databases.
    - Apply appropriate documentation management principles to ensure data quality and integrity.
    - Use software applications to generate reports.
    - Know and apply appropriate methods to ensure the authenticity of health data entries in electronic information systems.
    - Use electronic tools and applications for scheduling patients.



Appendix D: Study Methods

*B. Administrative personnel, human resources, clerical staff, data analysts, public health workers, emergency medical personnel, medical assistants, dietary workers, lab or radiology techs, nurse aids....*

- Basic Computer Literacy Skills
  - What types of job titles require these skills?
  - What are the core competencies needed here?
    - Demonstrate basic computer operating procedures such as login the computer and logoff, opening, closure and saving files.
    - Demonstrate proficiency in the Windows operating environment.
    - Resolve minor technical problems associated with use of computers.
    - Demonstrate Internet/intranet communication skills.
    - Access and use a Web browsing application.
    - Demonstrate use of email, addressing, forwarding, attachments, and netiquette.
    - Identify and use icons, windows, and menus.
- Health Informatics skills using EHRs
  - What types of job titles require these skills?
  - What are the core competencies needed here?
    - Create and update documents within the electronic health record (EHR) and the personal health record (PHR).
    - Locate and retrieve information in the electronic health record for various purposes.
    - Perform data entry of narrative information.
    - Locate and retrieve information from a variety of electronic sources.
    - Know the policies and procedures related to populating and using the health data content within primary and secondary health data sources and databases.
    - Apply appropriate documentation management principles to ensure data quality and integrity.
    - Use software applications to generate reports.
    - Know and apply appropriate methods to ensure the authenticity of health data entries in electronic information systems.
    - Use electronic tools and applications for scheduling patients.

**VI. FINAL COMMENTS**

*A. What other issues or topics do we need to cover related to HIT Workforce Development?*

Prost Marketing, Inc.

May 2011

END OF FIGURE 13.

**Table 7: Focus Group Partnering Organizations**

Focus Group Date	Location	Partnering Organization
April 20, 2011	Webinar	Texas A&M Rural & Community Health Institute & Texas Organization of Rural & Community Health
May 9, 2011	Lubbock	Workforce Solutions South Plains & WTxHITREC
May 16, 2011	Webinar	North Texas Regional Extension Center
May 18, 2011	Austin	TX HIT Workforce Executive Committee
May 19, 2011	Austin	Texas e-Health Alliance & Texas Health and Human Services Commission
May 23, 2011	El Paso	Workforce Solutions Upper Rio Grande
June 1, 2011	Brownsville	Workforce Solutions Cameron
June 8, 2011	Webinar	Texas Nurses Association
June 15, 2011	College Station	CentrEast Regional Extension Center
June 20, 2011	San Antonio	Workforce Solutions Alamo & Bexar County Medical Society
July 6, 2011	Houston	Gulf Coast Regional Extension Center
July 13, 2011	Webinar	
July 18, 2011	Dallas	North Texas Regional Extension Center

Focus groups were conducted in relaxed settings in the afternoon and early evening with light snacks and beverages available. The focus group sessions were recorded. Participants were informed of the recording, as well as the fact that no names would be published.

After feedback from the Austin Executive Committee focus group session, questions were added by the facilitator to break out the desired HIT knowledge, skills and abilities into the following categories: beginning, intermediate and advanced HIT workforce rather than clinical vs. administrative. Each successive level of competency builds on the previous category for the HIT workforce. The group also determined that HIT worker job titles were not clarifying descriptors (possibly because there are no standard job titles and job descriptions for HIT Workforce).

Following the focus groups, the recordings were downloaded into TRACS, a secure, online collaborative tool. The transcriptionist was able to retrieve the recordings from TRACS and transcribe the focus group audio recordings using Windows Media Player.

### **Focus Group Results**

An average of 5 people attending each focus group; the online focus groups had an attendance of 8 people per session.

The themes and patterns which emerged from the answers in the meetings are found below:

### **Health Care Provider Core Competencies**

#### **Basic/Entry Level Skills**

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

#### **Intermediate Level Skills**

- Knowledge of HIT products, familiarity with vendors, ability to negotiate contracts
- Knowledge of HIPAA, state privacy and security regulations
- Understand “Meaningful Use” and which HIT system can produce the data needed for demonstrating compliance
- 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)
- Advanced clinical knowledge and understanding of uses of HIT for patient management/education needs
- Data management, data mining/report creation, and data sharing skills
- Project management (such as initiating, planning, executing, and monitoring EHR/HIT-related projects)

#### **Advanced Level Skills**

- Management skills to direct technical and non-technical staff re: EHR/HIT systems
- Strategic thinking related to EHR/HIT implementation/management that is supportive of organization goals and mission
- Ability to effectively interact with senior management and above in HIT governance
- Ability to use analytics/data from HIT systems for planning
- Financial decision-making and negotiating skills: for selecting HIT system purchases and maintenance plans that meet external and internal goals/resources
- Ability to design HIT databases and systems
- HIT software/hardware engineering, development and/or system maintenance

### **Non-provider Core Competencies**

**Basic/Entry Level Skills:** Customer service, communication and interpersonal skills, training

**Intermediate Level Skills:**

- Knowledge of HIT products, familiarity with vendors, able to negotiate contracts
- Knowledge of data management, data mining and data sharing
- Understand “Meaningful Use” and which HIT system can produce the data needed for demonstrating compliance

**Advanced Level Skills:**

- Strategic planning and analysis skills
- Database system and design
- HIT systems implementation and management
- Software/hardware engineering

The focus groups were conducted to inform the creation of a quantitative survey in an effort to determine HIT employer need for workers with specific skills. The qualitative data gathered through the statewide focus groups provided the background information for developing a survey by continuing the discovery of “What knowledge, skills, and abilities do HIT Employers need their HIT Workforce Professionals to possess both now and in the future?”

**Survey Preparation and Distribution**

The Washington, Wyoming, Alaska, Montana, Idaho (WWAMI) Center for Health Workforce Studies (CHWS) assisted the Texas HIT Workforce team with development of the online survey. This was deemed necessary as no existing HIT workforce survey was available. A paper version of the online survey is included as Appendix A. The survey was created in paper as seen in the attachment. It underwent several rounds of hard copy review by grant staff, WWAMI staff and the Executive Committee. The survey was then loaded into the online survey tool, Survey Monkey. The tool was tested by WWAMI staff and selected members of the Executive Committee for usability.

A database of 312 HIT employers was created by Texas State grant staff. The staff and the Executive Committee elected to utilize this distribution method in order to be able to determine the response rate and population statistics. The breakout of the types of HIT employers which received the survey link are found in Appendix B, Table 1.

The survey was distributed to the 312 HIT employers via email on September 30, 2011. Follow-up emails encouraging non-responders to complete the survey were sent via email on October 10<sup>th</sup> and October 17<sup>th</sup>. The survey was closed on October 28, 2011 with a total of 96 responses, or 30.77%, were logged in Survey Monkey. Responses did not include any identifying demographics. The detailed results are found in Appendix B.