TRAINING AND EMPLOYMENT NOTICE	NO. 14-11
	DATE November 2, 2011

TO: STATE WORKFORCE AGENCIES
STATE WORKFORCE ADMINISTRATORS
STATE WORKFORCE LIAISONS
STATE AND LOCAL WORKFORCE BOARD CHAIRS AND DIRECTORS
STATE LABOR COMMISSIONERS
STATE APPRENTICESHIP AGENCY DIRECTORS
ALL NATIONAL EMERGENCY GRANT RECIPIENTS
ALL TRADE ADJUSTMENT ASSISTANCE GRANT RECIPIENTS
ALL COMMUNITY-BASED JOB TRAINING GRANTEES
ALL DISCRETIONARY GRANTEES

FROM: JANE OATES
Assistant Secretary
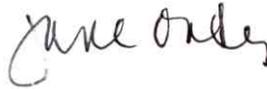
SUBJECT: U.S. Department of Health and Human Services and the U.S. Department of Labor, Employment and Training Administration (ETA) Efforts to Support the Implementation of Electronic Health Records (EHR).

1. Purpose. The purpose of this notice is twofold: 1) To introduce ETA's Competency Model for Health – Electronic Health Records (EHR), a resource for training and upgrading the skills of the health industry workforce impacted by the implementation of EHR; and 2) To provide a *Resource Guide for Health Information Technology*, a tool for supporting the workforce requirements anticipated during the widespread adoption of electronic health records.
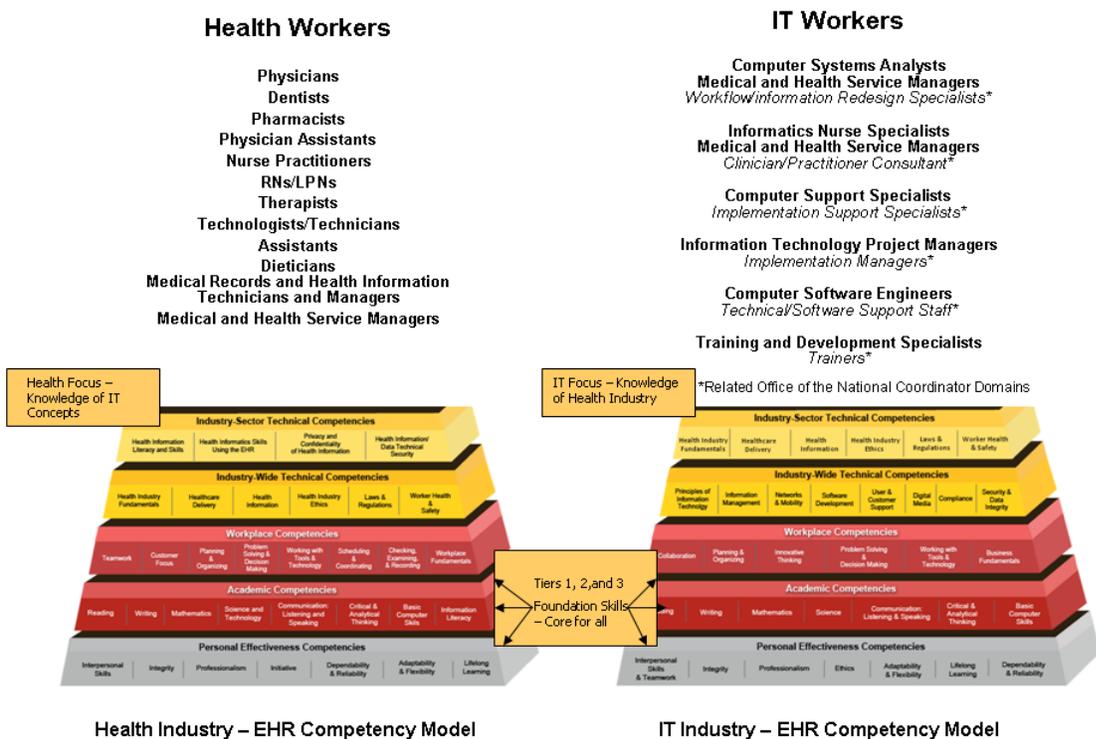
2. Background. The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act (ARRA) of 2009, promotes the adoption and meaningful use of health information technology (HIT) including the implementation of Electronic Health Records (EHR). The Department of Health and Human Services (HHS) Office of the National Coordinator for Health Information Technology's goal is for each person in the United States to have an electronic health record, or EHR, by 2014. The widespread adoption of electronic health records necessitates training and upgrading of skills for health practitioners and support workers who will interface with patients and their electronic health records at the point of care.

The healthcare industry as a whole – and especially the health information technology sector – has great promise for re-employing mid-career professionals with an IT, sales and marketing, or health background. There is an opportunity for the workforce system to participate in the ongoing efforts to prepare this emerging workforce. The supply and demand for these positions is dependent upon the regional economy and its concentration of healthcare industries and subsectors.   ETA is committed to providing you with an overview of this critical and emerging sector and providing tools and resources that will help you develop your own local and regional workforce strategy.

Electronic health records will become the primary means of documenting, transmitting, and securing patient information. The EHR goal will impact the day-to-day work for healthcare providers working in a variety of medical settings including medical and dental practices, rural and urban healthcare centers and clinics, hospitals, and laboratories. Implementing a national EHR system requires a workforce with leadership skills, project management ability, patience, and vision.

However, it is not only healthcare workers who will be impacted. Trained professionals with IT skills, as well as knowledge of the business and culture of health care, will be in demand, too. The following diagram illustrates the intersection of the Health and IT sectors related to the implementation of EHRs and the specific types of workers that will be interacting with EHRs.

Implementation of EHR - the Intersection of Health and IT

Health Workers

Physicians
Dentists
Pharmacists
Physician Assistants
Nurse Practitioners
RNs/LPNs
Therapists
Technologists/Technicians
Assistants
Dieticians
Medical Records and Health Information
Technicians and Managers
Medical and Health Service Managers

IT Workers

Computer Systems Analysts
Medical and Health Service Managers
*Workflow/Information Redesign Specialists**

Informatics Nurse Specialists
Medical and Health Service Managers
*Clinician/Practitioner Consultant**

Computer Support Specialists
*Implementation Support Specialists**

Information Technology Project Managers
*Implementation Managers**

Computer Software Engineers
*Technical/Software Support Staff**

Training and Development Specialists
*Trainers**

*Related Office of the National Coordinator Domains

Health Focus – Knowledge of IT Concepts

IT Focus – Knowledge of Health Industry

Tiers 1, 2, and 3 Foundation Skills – Core for all

Health Industry – EHR Competency Model

IT Industry – EHR Competency Model

3. Resources. ETA has worked closely with HHS, the Department of Education Office of Vocational and Adult Education, and subject matter experts in the health industry to develop an EHR industry competency model that documents the IT competencies for health workers who will interface with the new technology daily. All of ETA's competency models can be found at the Competency Model Clearinghouse (CMC) Website at http://www.careeronestop.org/competencymodel/pyramid.aspx?EHR=Y.

Local Health Information Technology Regional Extension Centers (HITRECS) offer technical assistance, guidance and information on best practices to support and accelerate healthcare providers' efforts to become meaningful users of EHRs. There are an estimated 70 HITRECs supporting primary care providers in achieving meaningful use of EHRs and enabling nationwide health information exchange in a defined geographic area.

4. Action Requested. States and grantees should distribute this technical assistance information to the appropriate staff and encourage its use in local efforts to prepare the health EHR workforce. ETA is asking for your assistance with two key activities:

First, please share the EHR model and materials with your organization's key stakeholders especially the workforce investment boards for their use in developing workforce planning strategies. The EHR model is posted and available for downloading on the Competency Model Clearinghouse (CMC) Web site at
http://www.careeronestop.org/competencymodel/pyramid.aspx?EHR=Y.

Second, ETA encourages you to collaborate with your local Health Information Technology Regional Extension Centers. See Attachment B for a complete list of HITRECs to determine if there is a center in your vicinity. If you have a HITREC in your region, we encourage you to convene interested stakeholders as soon as possible including health care employers, State Offices of Rural Health, and educators to discuss this critical workforce:

- Describe the types of occupations associated with Health IT/EHR professions and the skills needed to perform successfully in these roles;
- Locate sources of Health IT/EHR training, assessment vouchers and employment opportunities; and
- Learn about transferrable skills and work experiences from a prospective Health IT employer using the Health – EHR competency model.

5. Inquiries. Questions concerning this Training and Employment Notice should be directed to businessrelations@dol.gov.

6. Attachments.
Attachment 1: The EHR Competency Model is a resource for program planners, curriculum developers, and business service representatives in articulating the changing needs of the healthcare workers who will be impacted by the implementation of EHR.

Attachment 2: A *Resource Guide for Health Information Technology* is a reference providing program planners and service providers with practical information about the HHS Office of the National Coordinator for Health Information Technology and its initiatives and grant investments to prepare the emerging Health-IT workforce.

Attachment 1: Electronic Health Record (EHR) Competency Model

Electronic Health Records (EHR)

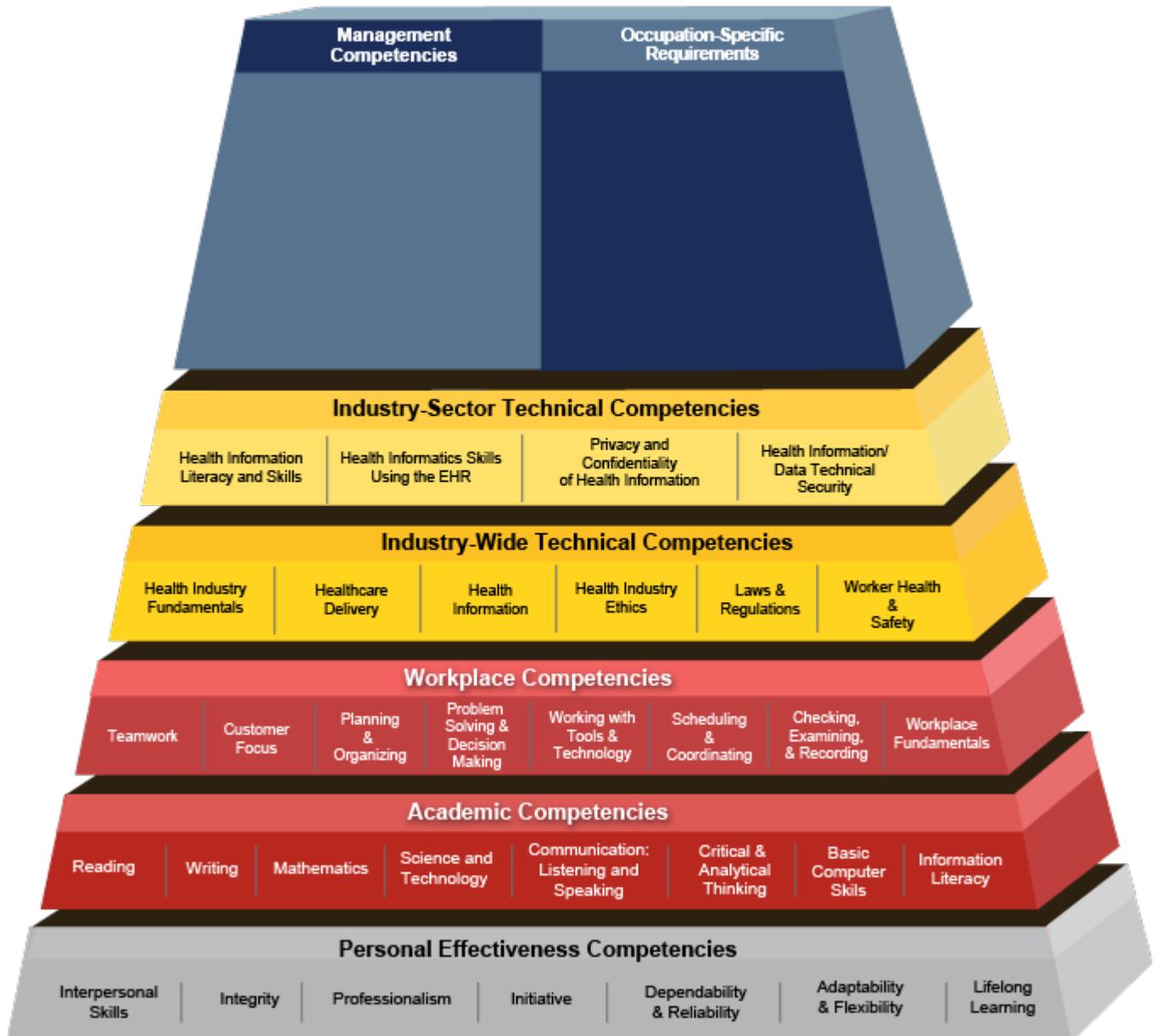The model is available on the Competency Model Clearinghouse Web site
http://www.careeronestop.org/competencymodel/pyramid.aspx?EHR=Y

Management Competencies	Occupation-Specific Requirements

Industry-Sector Technical Competencies

Health Information Literacy and Skills	Health Informatics Skills Using the EHR	Privacy and Confidentiality of Health Information	Health Information/ Data Technical Security

Industry-Wide Technical Competencies

Health Industry Fundamentals	Healthcare Delivery	Health Information	Health Industry Ethics	Laws & Regulations	Worker Health & Safety

Workplace Competencies

Teamwork	Customer Focus	Planning & Organizing	Problem Solving & Decision Making	Working with Tools & Technology	Scheduling & Coordinating	Checking, Examining, & Recording	Workplace Fundamentals

Academic Competencies

Reading	Writing	Mathematics	Science and Technology	Communication: Listening and Speaking	Critical & Analytical Thinking	Basic Computer Skills	Information Literacy

Personal Effectiveness Competencies

Interpersonal Skills	Integrity	Professionalism	Initiative	Dependability & Reliability	Adaptability & Flexibility	Lifelong Learning

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About the Model

The Electronic Health Records (EHR) Competency Model is depicted in a graphic consisting of several tiers. The arrangement of the tiers in a pyramidal shape is not meant to be hierarchical, or to imply that competencies at the top are at a higher level of skill. The model's shape represents the increasing specialization and specificity in the application of skills as you move up the tiers. Tiers 1-5 have been developed and are divided into blocks. The blocks represent competency areas, that is, the applied skills, knowledge, abilities essential to successful performance in the increasingly electronic environment of the health industry. A table of the competency definitions and associated key behaviors follows the graphic.

Tiers 1 through 3 contain foundation competencies, which form the foundation needed to be ready to enter the workplace.

Tier 1 – Personal Effectiveness Competencies are shown as hovering below the pyramid because these competencies are essential for all life roles. Often referred to as "soft skills," personal effectiveness competencies are generally learned in the home or community and reinforced and honed at school and in the workplace. They represent personal attributes that may present some challenges to teach or assess.

> **Competency** – A cluster of related knowledge, skills, and abilities that affects a major part of one's job (a role or responsibility), that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development.

Tier 2 – Academic Competencies are critical competencies primarily learned in a school setting. They include cognitive functions and thinking styles. Academic competencies are likely to apply to all industries and occupations.

Tier 3 – Workplace Competencies represent motives and traits, as well as interpersonal and self-management styles. They generally are applicable to a large number of occupations and industries.

Tiers 4 and 5 contain industry competencies, which are specific to an *industry or industry sector.* Cross-cutting industry-wide technical competencies make it possible to create career lattices within an industry wherein a worker can move easily across industry sub-sectors. Rather than narrowly following a single occupational career ladder, this model supports the development of an agile workforce.

Tier 4 – Industry-Wide Technical Competencies represent the knowledge and skills that are common across sectors within a broader industry. These technical competencies build on, but are more specific than, competencies represented on lower tiers.

Tier 5 – Industry-Sector Technical Competencies represent a sub-set of industry technical competencies that are specific to an industry sector.

The upper tiers represent the specialization that occurs within specific *occupations* within an industry. Information on occupational competencies is available through O*Net OnLine (http://online.onetcenter.org/).

Tier One – Personal Effectiveness Competencies

1. <u>Interpersonal Skills</u>: Demonstrating the ability to work effectively with others.

Demonstrating concern for others
- Show sincere interest in others and their concerns
- Demonstrate sensitivity to the needs and feelings of others
- Look for ways to help people, and pitch in to help others

Demonstrating insight into behavior
- Recognize and accurately interpret the verbal and nonverbal behavior of others
- Show insight into the actions and motives of others
- Recognize when relationships with others are strained

Maintaining open communication
- Maintain open lines of communication with others
- Encourage others to approach him/her with problems and successes
- Establish a high degree of trust and credibility with others

Respecting diversity
- Demonstrate sensitivity and respect for the opinions, perspectives, customs, and individual differences of others
- Value diversity of people and ideas
- Deal with a wide range of people with flexibility and open-mindedness
- Listen to and consider others' viewpoints
- Work well and develop effective relationships with diverse personalities

2. <u>Integrity</u>: Displaying accepted social and work behaviors.

Behaving ethically
- Abide by a strict code of ethics and behavior
- Choose an ethical course of action and do the right thing, even in the face of opposition
- Encourage others to behave accordingly

Acting fairly
- Treat others with honesty, fairness, and respect
- Make decisions that are objective and reflect the just treatment of others

Taking responsibility
- Take responsibility for accomplishing work goals within accepted timeframes
- Accept responsibility/accountability for one's decisions and actions and for those of one's group, team, or department
- Attempt to learn from mistakes

3. Professionalism: Maintaining a professional demeanor at work.

Demonstrating self-control

- Demonstrate self-control by maintaining composure and keeping emotions in check even in very difficult situations
- Deal calmly and effectively with stressful situations

Professional appearance

- Maintain a professional demeanor
- Dress appropriately for occupation and its requirements
- Maintain appropriate personal hygiene
- Wear appropriate identification
- Remain free from substance abuse

Maintains a positive attitude

- Project a professional image of oneself and the organization
- Demonstrate a positive attitude towards work
- Take pride in one's work and the work of the organization

4. Initiative: Demonstrating a willingness to work.

Persisting

- Pursue work with energy, drive, and a strong accomplishment orientation
- Persist and expend extra effort to accomplish tasks even when conditions are difficult or deadlines are tight
- Persist at a task or problem despite interruptions, obstacles, or setbacks

Taking initiative

- Go beyond the routine demands of the job
- Take initiative in seeking out new work challenges and increasing the variety and scope of one's job
- Seek opportunities to influence events and originate action
- Assist others who have less experience or have heavy workloads

Setting challenging goals

- Establish and maintain personally challenging but realistic work goals
- Exert effort toward task mastery
- Bring issues to closure by pushing forward until a resolution is achieved

Working independently

- Develop own ways of doing things
- Perform effectively even with minimal direction, support or approval and without direct

supervision
- Strive to exceed standards and expectations
- Exhibit confidence in capabilities and an expectation to succeed in future activities

5. <u>Dependability and Reliability</u>: Displaying responsible behaviors at work.

Fulfilling obligations
- Behave consistently and predictably
- Fulfill obligations reliably, responsibly, and dependably
- Diligently follow through on commitments and consistently meet deadlines
- Demonstrate regular and punctual attendance

Attending to details
- Check work to ensure that all essential details have been considered
- Notice errors or inconsistencies that others have missed, and take prompt, thorough action to correct errors

Complying with policies
- Follow written and verbal directions
- Comply with organizational rules, policies, and procedures

6. <u>Adaptability & Flexibility</u>: Displaying the capability to adapt to new, different, or changing requirements.

Employing unique analyses
- Employ unique analyses and generate new, innovative ideas in complex areas
- Integrate seemingly unrelated information to develop creative solutions
- Develop innovative methods of obtaining or using resources when insufficient resources are available

Entertaining new ideas
- Remain open to considering new ways of doing things
- Actively seek out and carefully consider the merits of new approaches to work
- Embrace new approaches when appropriate and discard approaches that are no longer working

Dealing with ambiguity
- Take effective action when necessary without having to have all the necessary facts in hand
- Change gears in response to unpredictable or unexpected events, pressures, situations and job demands
- Change plans, goals, actions or priorities to deal with changing situations

7. <u>Lifelong Learning</u>: Displaying a willingness to learn and apply new knowledge and skills.

Demonstrating an interest in learning
- Demonstrate an interest in personal learning and development
- Seek feedback from multiple sources about how to improve and develop, and modify behavior based on feedback or self-analysis of past mistakes

Participating in training
- Take steps to develop and maintain knowledge, skills, and expertise necessary to achieve positive results
- Participate fully in relevant training and professional development programs
- Pursue opportunities to develop knowledge and skills

Anticipating changes in work
- Anticipate changes in work demands and searches for and participates in assignments or training that address these changing demands
- Treat unexpected circumstances as opportunities to learn

Identifying career interests
- Take charge of personal career development by identifying occupational interests, strengths, options and opportunities
- Make insightful career planning decisions based on integration and consideration of others' feedback, and seek out additional training to pursue career goals

Tier 2 – Academic Competencies

1. <u>Reading</u>: Understanding written sentences and paragraphs in work-related documents.

Comprehension

- Locate, understand, and interpret written information in prose and in documents such as manuals, reports, memos, letters, forms, graphs, charts, tables, calendars, schedules, signs, notices, applications and directions
- Understand the purpose of written materials
- Attain meaning and comprehends core ideas
- Locate definitions of unfamiliar terms
- Critically evaluate and analyze information in written materials
- Integrate and synthesize information from multiple written materials

Attention to detail

- Identify main ideas, implied meaning and details, missing information, and trends
- Note details, facts, and inconsistencies

Application

- Integrate what is learned from written materials with prior knowledge
- Apply what is learned from written material to follow instructions and complete specific tasks
- Apply what is learned from written material to future situations

2. <u>Writing</u>: Using standard English to compile information and prepare written reports.

Organization and development

- Prepare reports that are easy to understand using proper terminology
- Communicate thoughts, ideas, information, messages and other written information, which may contain technical material, in a logical, organized, and coherent manner
- Present ideas that are well developed with supporting information and examples

Mechanics

- Use standard syntax and sentence structure
- Use correct spelling, punctuation, and capitalization
- Use appropriate grammar (e.g., correct tense, subject-verb agreement, no missing words)
- Write legibly
- Proof read finished documents for errors

Tone

- Write in a manner appropriate for industry
- Use language appropriate for the target audience
- Use appropriate tone and word choice (e.g., writing is professional and courteous)

3. <u>Mathematics</u>: Using principles of mathematics to solve problems.

Quantification
- Read and write numbers
- Count and place numbers in sequence
- Recognize whether one number is larger than another

Computation
- Add, subtract, multiply, and divide with whole numbers, fractions, decimals, and percents
- Calculate averages, ratios, proportions and rates
- Convert decimals to fractions
- Convert fractions to percents

Measurement and estimation
- Take measurements of time, temperature, distances, length, width, height, perimeter, area, volume, weight, velocity, and speed
- Use and report measurements correctly
- Convert from one measurement to another (e.g., from English to metric or International System of Units (SI), or Fahrenheit to Celsius)

Application
- Perform basic math computations accurately
- Translate practical problems into useful mathematical expressions
- Use appropriate mathematical formulas and techniques

4. <u>Science and Technology</u>: Using scientific methods and technology to solve problems.

Comprehension
- Understand basic scientific principles and how to use commonly available technology
- Understand the scientific method (i.e., identifies problems, collects information, forms opinions and draws conclusions)
- Knowledge of Biology, Chemistry, Nutrition, Anatomy, Physiology, Physics

Application
- Understand overall intent and proper procedures for set-up and operation of equipment
- Apply basic scientific principles and technology to complete tasks

5. <u>Communication – Listening & Speaking</u>: Giving full attention to what others are saying and speaking in English well enough to be understood by others.

Speaking
- Express information to individuals or groups taking into account the audience and the nature of the information (e.g., technical or controversial)

- Speak clearly and confidently
- Speak using common English conventions including proper grammar, tone, and pace
- Track listener responses and reacts appropriately to those responses
- Effectively use eye contact and non-verbal expression

Listening
- Receive, attend to, interpret, understand, and respond to verbal messages and other cues
- Pick out important information in verbal messages
- Understand complex instructions
- Appreciate feelings and concerns of verbal messages

Two-way communication
- Practice meaningful two-way communication (i.e., speak clearly, pay close attention and seek to understand others, listen attentively and clarify information)
- Attend to nonverbal cues and respond appropriately

Persuasion/influence
- Influence others
- Persuasively present thoughts and ideas
- Gain commitment and ensure support for proposed ideas

6. Critical & Analytical Thinking: Using logic, reasoning, and analysis to address problems.

Reasoning
- Possess sufficient inductive and deductive reasoning ability to perform job successfully
- Critically review, analyze, synthesize, compare and interpret information
- Draw conclusions from relevant and/or missing information
- Understand the principles underlying the relationship among facts and apply this understanding when solving problems

Mental agility
- Identify connections between issues
- Quickly understand, orient to, and learn new assignments
- Shift gears and change direction when working on multiple projects or issues

7. Basic Computer Skills: Using a computer and related applications to input and retrieve information.

Comprehending the basics
- Understand and efficiently use basic computer hardware (e.g. Pcs, printers) and software (e.g. Word processing software, spreadsheet software) to perform tasks
- Understand common computer terminology (e.g., program, operating system) and possess familiarity with the fundamental capabilities of computers

Entering data

- Enter data into computer files quickly, with an acceptable degree of accuracy
- Double check data entry carefully
- Notice when data are missing or look wrong
- Take steps to ensure computer files are complete and accurate

Preparing documents

- Use word processing programs to create, edit, and retrieve document files
- Type materials quickly and accurately
- Check work carefully and identify/correct typographical errors
- Use basic reference materials and tools (e.g., spell check) to ensure accuracy

Keyboarding and word processing

- Skillfully use word-processing software
- Streamline document processing by employing a variety of common software functions
- Use correct style and format, even when confronted by uncommon requirements that deviate from standard guides
- Consult appropriate manuals when uncertain about the correct style and format

Internet applications

- Effectively use the internet and web-based tools to manage basic workplace tasks (e.g., timekeeping, maintaining employee records, conducting information searches)
- Understand and perform internet functions requiring the use of log-in and password information
- Understand and comply with guidelines surrounding internet usage
- Understand and comply with information security processes and guidelines

E-mailing

- Compose professional e-mails to communicate business-related information to coworkers, colleagues, and customers
- Understand the company e-mail system and its basic functions (e.g., replying to/forwarding messages, using electronic address books, attaching files)
- Ensure that key stakeholders are kept informed of communications by copying (i.e., "ccing") them on important e-mails when appropriate

Spreadsheets

- Use spreadsheet software to enter, manipulate, edit and format text and numerical data
- Effectively create and save worksheets, charts, and graphs that are well organized and useful

8. <u>Information Literacy</u>: Functional and critical thinking skills related to information, media, and technology.

Locate and Evaluate Information
- Locate information efficiently (time) and effectively (sources)
- Evaluate information critically and competently
- Review information obtained for relevance and completeness
- Recognize important gaps in existing information
- Take steps to eliminate those gaps

Use and Manage Information
- Use information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- Organize/reorganize information as appropriate to get a better understanding of a problem

Analyze Media
- Understand both how and why media messages are constructed, and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors

Tier 3 – Workplace Competencies

1. <u>Teamwork</u>: Working cooperatively with others to complete work assignments.

Acknowledging team membership and role
- Accept membership in the team
- Identify the roles of each team member
- Show loyalty to the team
- Determine when to be a leader and when to be a follower depending on what is needed to achieve the team's goals and objectives
- Encourage others to express their ideas and opinions
- Identify and draw upon team members' strengths and weaknesses to achieve results
- Learn from other team members

Establishing productive relationships
- Develop constructive and cooperative working relationships with others
- Exhibit tact and diplomacy and strive to build consensus
- Show sensitivity to the thoughts and opinions of other team members
- Deliver constructive criticism and voice objections to others' ideas and opinions in a supportive, non-accusatory manner
- Respond appropriately to positive and negative feedback

Identifying with the team and its goals
- Identify the goals, norms, values, and customs of the team
- Cooperate with others and contribute to the group's effort
- Use a group approach to identify problems and develop solutions based on group consensus
- Effectively communicate with all members of the group or team to achieve team goals and objectives

Resolving conflicts
- Bring others together to reconcile differences
- Handle conflicts maturely by exercising "give and take" to achieve positive results for all parties
- Reach formal or informal agreements that promote mutual goals and interests, and obtain commitment to those agreements from individuals or groups

2. <u>Customer Focus</u>: Actively looking for ways to meet customer or client needs.

Understanding customer needs
- Demonstrate a desire to understand client/patient needs
- Listen to what clients/patients are saying and asks questions as appropriate

Providing personalized service

- Provide prompt, efficient, and personalized assistance to meet the requirements, requests, and concerns of clients/patients
- Provide thorough, accurate information to answer clients/patients' questions
- Actively look for ways to help clients/patients by identifying and proposing appropriate solutions and/or services
- Establish boundaries as appropriate for unreasonable client/patient demands

Acting professionally

- Deal with internal or external customers in a pleasant, courteous, and professional manner
- Develop constructive and cooperative working relationships with clients/patients, and display a good-natured, cooperative attitude
- Deal with difficult clients/patients in a calm and empathetic manner
- Represent the organization to the public

Keeping customers informed

- Follow up with clients/patients
- Keep clients/patients up to date about decisions that affect them

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3. Planning & Organizing: Planning and prioritizing work to manage time effectively and accomplish assigned tasks.

Planning

- Approach work in a methodical manner
- Plan and schedule tasks so that work is completed on time
- Keep track of details to ensure work is performed accurately and completely
- Work concurrently on several tasks
- Anticipate obstacles to project completion and develop contingency plans to address them
- Takes necessary corrective action when projects go off-track

Prioritizing

- Prioritize various competing tasks and perform them quickly and efficiently according to their urgency
- Find new ways of organizing work area or planning work to accomplish work more efficiently

Allocating resources

- Estimate resources needed for project completion
- Allocate time and resources effectively and coordinate efforts with all affected parties
- Keep all parties informed of progress and all relevant changes to project timelines

Project Management

Project management requires team work, team building, goal setting, organization, adaptation, communication

4. Problem Solving & Decision Making: Applying critical-thinking skills to solve problems by generating, evaluating, and implementing solutions.

Identifying the problem

- Anticipate or recognizes the existence of a problem
- Identify the true nature of the problem by analyzing its component parts
- Evaluate the criticality of the situation
- Use all available reference systems to locate and obtain information relevant to the problem
- Recall previously learned information that is relevant to the problem
- Document the problem and corrective action

Locating, gathering, and organizing relevant information

- Effectively use both internal resources (e.g., internal computer networks, manuals, policy or procedure guidelines) and external resources (e.g., internet search engines) to locate and gather information
- Examine information obtained for relevance and completeness
- Recognize important gaps in existing information and take steps to eliminate those gaps
- Organize/reorganize information as appropriate to gain a better understanding of the problem
- Refer the problem to appropriate personnel when necessary

Generating alternatives

- Integrate previously learned and externally obtained information to generate a variety of high-quality alternative approaches to the problem
- Use logic and analysis to identify the strengths and weaknesses, the costs and benefits, and the short- and long-term consequences of different approaches

Choosing a solution

- Choose the best solution after contemplating available approaches to the problem
- Make difficult decisions even in highly ambiguous or ill-defined situations

Implementing the solution

- Commit to a solution in a timely manner, and develop a realistic approach for implementing the chosen solution
- Observe and evaluate the outcomes of implementing the solution to assess the need for alternative approaches and to identify lessons learned

5. <u>Working with Tools & Technology</u>: Selecting, using, and maintaining tools and technology to facilitate work activity.

Selecting tools

- Select and apply appropriate tools or technological solutions to frequently encountered problems
- Carefully consider which tools or technological solutions are appropriate for a given job, and work with IT to consistently choose the best tool or technological solution for the problem at hand
- Set up and adjust equipment
- Monitor equipment and alert IT department if system is malfunctioning

Keeping current

- Demonstrate an interest in learning about new and emerging tools and technologies
- Seek out opportunities to improve knowledge of tools and technologies that may assist in streamlining work and improving productivity
- Read technical operating, service, or repair manuals to identify information

Troubleshooting

- Clean, inspect, and maintain equipment
- Troubleshoot tools and technologies
- Identify possible defects or other problems

6. <u>Scheduling & Coordinating</u>: Making arrangements and scheduling appointments.

Informing

- Respond to the schedules of others affected by arrangements
- Inform others of arrangements, giving them complete, accurate and timely information
- Ensure that others receive needed materials in time

Verifying

- Take steps to verify all arrangements
- Recognize problems, generate effective alternatives, and take corrective action

Coordinating in distributed environments

- Coordinate schedules of colleagues, co-workers, and clients to ensure that inconvenience is minimized and productivity is enhanced
- Leverage technology (e.g., internet, teleconference) to facilitate information sharing in distributed work environments

Shiftwork

- Disseminate crucial information in an organized manner to rapidly bring employees up to speed at the start of their shifts

- Ensure that employees are updated on work completed on past shifts and work that still needs to be completed

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7. <u>Checking, Examining, & Recording</u>: Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic format.

Completing forms
- Select and complete appropriate forms quickly and completely
- Attend to and follow through on important information in paperwork
- Forward or process forms in a timely and accurate manner

Obtaining information
- Obtain appropriate information, signatures, and approvals promptly
- Verify that all information is complete and accurate before forwarding materials

Maintaining logs
- File documentation in accordance with agency requirements
- Keep logs, records, and files that are up-to-date and readily accessible
- Update logs, files, and records, noting important changes in status

Detecting errors
- Detect and correct errors and inconsistencies even under time pressure
- Identify vague or ambiguous documentation
- Route to appropriate person to correct documentation

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8. <u>Workplace Fundamentals</u>: Knowledge of basic business principles, trends, and economics.

Situational awareness
- Understand the organization's mission and functions
- Recognize one's role in the functioning of the organization and understand the potential impact one's own performance can have on the success of the organization
- Grasp the potential impact of the organization's well-being on employees

Business ethics
- Demonstrate respect for coworkers, colleagues, and customers
- Act in the best interest of the client/patient, the organization, the community, and the environment
- Comply with applicable laws and rules governing work and reports loss, waste, or theft or company property to appropriate personnel

Tier 4 – Industry-Wide Technical Competencies

> **1. Health Industry Fundamentals: Knowledge of the basic components and emerging principles and concepts that impact the Health industry.**

Critical Work Functions

- Understand the culture of the Health Industry: the key stakeholders, command and control processes, and workflow, and the concept that errors or negligence may result in harm to the patient
- Understand how changes in laws, regulations, or policies; or new and emerging technologies, impact the industry
- Understand the components of the Health Industry and services provided by each
- Identify one's role in the department, organization, and overall health environment

Technical Content Areas

Components of the Health Industry

Practitioners – Such as offices of:

- Physicians and Osteopaths
- Dentists
- Chiropractors
- Optometrists
- Podiatrists
- Physical and Occupational Therapists
- Psychologists
- Audiologists
- Speech and Language Pathologists

Treatment Facilities

Hospitals – Such as:

- Medical and Surgical
- Psychiatric and Substance Abuse
- Specialty
- Critical Access and Long Term Acute Care

Outpatient Centers

- Medical and Diagnostic Laboratories
- Ambulatory Surgery Centers
- Home Healthcare Services
- Other Ambulatory Services

Nursing and Residential Care Facilities – Such as:
- Skilled Nursing Facilities
- Residential Facilities for People with Disabilities
- Residential Care Facilities (assisted living) for the Elderly

Health Industry Related – Such as:

Public Health Agencies

Health Research Organizations

Pharmaceutical research companies

Health industry product vendors

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2. Healthcare Delivery: Knowledge of the practices and procedures used to deliver quality patient care.

Critical Work Functions

- Describe the organizational structure and functions of major components of healthcare delivery
- Understand and implement patient safety practices that promote quality health outcomes, patient security, and health information security
- Understand the basic healthcare delivery models and their impact on work processes and information exchange.
- Differentiate among types of health insurance
- Understand the importance of licensure and scope of practice
- Understand patient rights and responsibilities
- Maintain professional boundaries
- Secure and maintain certification and licensure requirements for duties as required

Technical Content Areas

Roles and Responsibilities of Health Industry Workers in Healthcare Delivery Models, such as:

- Physicians, Surgeons, and Osteopaths
- Dentists
- Hospitalists
- Physician Assistants
- Nurse Practitioners
- Registered Nurses
- Licensed Practical Nurses
- Nurses Aides
- Therapists
- Laboratory Technologists
- Technicians
- Dieticians
- Pharmacists

Purpose and Functions of:

- Diagnostic Procedures
- Patient Safety Procedures
- Radiology and Scans
- Laboratory Tests
- Therapeutic Procedures
- Pharmaceutical Dispensing Procedures

Use of new technology e.g. Telehealth

- Diagnoses
- Monitoring
- Treatment

Scope of Practice

- Licensure, accreditation and certification requirements
- State and federal legislation/statues that govern the delivery of health services
- Impact one's own performance can have on the success of the organization

Health Insurance

- Health insurance options (HMO, PPO, EOP, POS, etc.)
- Medicaid/Medicare compliance guidelines
- Record-keeping (such as billing records, appropriate health documentation.)
- Confidentiality and accuracy of insurance information

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3. Health Information: Knowledge of types of health information and rules and regulations surrounding their use.

Critical Work Functions

- Understand the role and importance of health information
- Identify and understand health documentation requirements
- Identify and understand health insurance documentation requirements
- Maintain the security and confidentiality of patient records, per HIPAA & other related regulations
- Understand the two-way flow of information and data through the medical organization (originating with both patient and provider)
- Ensure documentation in health records reflect completeness, accuracy, timeliness, appropriateness, quality, integrity, and authenticity as required.
- Use medical terminology within a scope of practice in order to interpret, transcribe and communicate information, data and observations
- Use appropriate procedures for submitting and accessing medical information through a Health Information Exchange
- Transmit documents (via internet or fax) in a secure manner

Dispose of patient information and records appropriately

Technical Content Areas

The Medical Health Record (paper, electronic, hybrid)

- History - What care has been provided and what is outstanding
- SOAP (Subjective, Objective, Assessment, Plan)
  - Outcomes of care provided and responses to the plan of care
  - Current patient status & assessments
  - Support decisions based on assessments to drive new plans of care
- Diagnoses
- Treatments, Procedures
- Progress notes
- Laboratory results
- Consents
- Nursing and other therapeutic monitoring reports
- Administrative and referral documentation
- Discharge summary and instructions

Health Information Exchange

- Software
- Access, retrieval, and submission procedures

Medical terminology foundations

- Diagnostic and procedure terms
- Roots, prefixes, suffixes, eponyms
- Abbreviations
- Acronyms

Record keeping and documentation procedures

- Confidentiality
- Release of information documentation

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4. Health Industry Ethics: The discipline of evaluating and applying the merits, risks, and social concerns of activities in the field of health care.

Critical Work Functions

- Act in the best interests of the client/patient
- Report and prevent abuse and neglect
- Protect confidentiality of client/patient records
- Differentiate between ethical and legal issues impacting health care
- Make ethical decisions
- Respect clients rights and responsibilities
- Demonstrate an awareness of cultural competence in the context of cultural, social, and ethnic diversity

Technical Content Areas:

- Morality and ethics as they relate to health industry outcomes
- Ethical and legal issues impacting the health industries
- Confidentiality
- Problem solving techniques when confronted with ethical dilemmas or issues
- Problem sensitivity – the negative consequences of action/inaction
- Malpractice, liability, and negligence
- Expressed, informed, implied, and involuntary consent
- Patient's Bill of Rights
- National Standards on Culturally and Linguistically Appropriate Services (CLAS)
- Cultural sensitivity
- Language assistance services (e.g., bilingual staff and interpreter services)
- Service area demographics

5. Laws and Regulations: Knowledge of relevant local, state, and federal laws and regulations that impact the Health industry

Critical Work Functions:

- Apply the fundamentals of privacy and confidentiality policies and procedures
- Comply with applicable federal and state laws, policies, regulations and legislated rights of clients
- Practice responsibly within the ethical framework of the Patients' Bill of Rights
- Understand the legal responsibilities, limitations, and implications of actions
- Comply with policies and requirements for documentation, information security and record keeping
- Keep up to date on standards and government regulations
- Follow agency/facility policies and procedures

Technical Content Areas:

Client/Patient

- Client/Patient Bill of Rights
- Good Samaritan Law
- Client/patient advocacy

Laws and Regulations – Such as:

- Relevant state and local laws and regulations
- Privacy and confidentiality policies and procedures
- Protected Health Information (PHI)
- Health Insurance Portability and Accountability Act of 1996 (HIPAA) and updates
- Occupational Safety and Health Administration (OSHA)

- ▪ Clinical Laboratory Improvement Amendments (CLIA) Regulations
- ▪ Needle Stick Prevention Act
- ▪ Emergency medical treatment and active labor act (EMTALA) regulations

Voluntary Accreditation
- ▪ Joint Commission regulations
- ▪ American Osteopathic Association regulations

6. Worker Health and Safety: The procedures and protocols necessary to ensure a safe and healthy work environment.

Critical Work Functions:
- ▪ Understand and follow established personal safety, security, and environmental practices
- ▪ Ensure that equipment is being used safely
- ▪ Comply with local, state, federal, and organization health, safety, security, and environmental policies and regulations
- ▪ Follow emergency procedures and protocols

Technical Content Areas:
- ▪ Disease prevention/Infection control/Universal Precautions
- ▪ Safety signs, symbols, and labels
- ▪ Material Safety Data Sheets

Tier 5 – Industry-Sector Technical Competencies

1. <u>Health Information Literacy and Skills</u>: Knowledge of the existing and emerging principles and concepts of health records.

Critical Work Functions

- Describe the principles of structure, design, and use of health information (such as individual, comparative reports, and trended data).

- Differentiate between the types of patient health records (such as paper-based, electronic health record, personal health record)

- Be aware of complex workflows practiced in the delivery of patient care and in related business operations in order to efficiently and optimally migrate to a computerized environment

- Communicate health/medical information using standard definitions, vocabularies, terminologies and/or relevant data sets as used in the organization's health information systems

- Demonstrate knowledge of health information systems used by the organization including resources, routes, and flow of information

- Describe e-health initiatives as they relate to business and consumers (e.g., personal health, scheduling, screenings, evaluations, assessments)

- Identify barriers associated with computerized health data

- Know and apply policies and procedures regarding release of any patient-specific data to authorized users

Technical Content Areas

- Content and uses of health information
- Knowledge of: anatomy, physiology, disease processes, pharmacology, and medical terminology
- Content and format of types of medical records
- Organization policy regarding storage and transfer of information
- Health data sets (for example OASIS, HEDIS, UHDDS)
- Health terminologies and classification systems
- Health information systems
- Interoperability

2. <u>Health Informatics Skills Using the EHR</u>: Using technology to control and safeguard the collection, organization, structure, processing and delivery of health information.

Critical Work Functions

- Understand use of technology in maintaining electronic health records
- Create and update documents within the electronic health record (EHR) and the personal health record (PHR) using electronic tools and applications (including portable computing

- devices, word processing, spreadsheet, database, and desktop presentation applications)
- Locate and retrieve information in the electronic health record for various purposes
- Understand the organization's mission and functions as it pertain to its EHR's application and its meaningful use
- Utilize mainstream software to complete job-specific tasks, and understand the interaction between mainstream and EHR technology.
- Follow security and privacy policies and procedures to the use of networks, including intranet and Internet.
- Follow confidentiality and security measures to protect electronic health information.
- Differentiate between primary and secondary health data sources and databases
- Identify classification and systematic health-related terminologies for coding and information retrieval
- Know the policies and procedures related to populating and using the health data content within primary and secondary health data sources and databases
- Resolve minor technological problems associated with using an EHR
- Utilize basic IT "troubleshooting" processes to identify the root cause of an IT-related problem
- Utilize IT Help Desk for problem resolution where necessary to maximize efficiency & effectiveness

Technical Content Areas
- Computerized Provider Order Entry (CPOE)
- Quality improvement and reporting
- E-Prescribing
- Specialized health information software applications (e.g., computer-based documentation systems for point-of-care, computerized physician order entry, coding)
- Mainstream software applications (e.g., spreadsheets, databases, email, Web 2.0, mobile applications)
- Hardware and communication technologies and formats related to personal health records

3. Privacy and Confidentiality of Health Information: Using standard documentation procedures to collect and communicate appropriate health information within legal and regulatory requirements.

Critical Work Functions
- Identify and apply legal and regulatory requirements related to the use, access, and disclosure of protected health information
- Explain legal responsibility, limitations, and implications of actions
- Identify what constitutes authorized use of protected health information
- Report any possible breaches of confidentiality in accordance with organizational policies

Technical Content Areas

- Legal and regulatory requirements for the storage and transfer of information
- Client/Patient Bill of Rights
- Client/Patient advocacy
- Protected Health Information (PHI)

4. Health Information/Data Technical Security: Applying confidentiality and electronic security measures to store and protect health information.

Critical Work Functions

- Adhere to applicable policies and procedures for the use of networks, including intranet and internet applications to facilitate the electronic health record (EHR), personal health record (PHR), public health records
- Implement administrative , physical, and technical safeguards
- Follow access protocols for entry to an electronic health record
- Understand and apply fundamental documentation requirements in the electronic creation and recordkeeping environment
- Recognize components of risk management, contingency planning, and data recovery procedures
- Report any possible breaches of confidentiality in accordance with organizational policies
- Resolve minor technology problems associated with using an electronic information application

Technical Content Areas

- Documentation principles and requirements
- Data storage and retrieval
- Data accessibility
- Data recovery procedures
- Data integrity (business continuity, disaster recovery, encryption, ID management)
- Security policies and procedures
- Privacy, confidentiality, legal, and ethical issues

Resources Reviewed

Developer	Resource	URL
Alaska Vocational Technical Center	Certified Nurse Assistant	http://www.avtec.alaska.edu/CNA-A.htm
American Association of Colleges of Nursing	Curriculum Standards	http://www.aacn.nche.edu/Education/curriculum.htm
American Health Care Association	Competencies for Senior Nurse Leaders in LTC	http://www.ahcancal.org/quality_improvement/leadership_excellence/Documents/competencies_report.pdf
American Health Information Management Association	Registered Health Information Administrator Competency Statements	http://www.ahima.org/downloads/pdfs/certification/RHIA_Job_Analysis.pdf
American Health Information Management Association	Registered Health Information Technician Competency Statements	http://www.ahima.org/downloads/pdfs/certification/AHIMA%20RHIT%20Job%20Analysis%20Report_with%20Addendum.pdf
American Health Information Management Association	Certified Coding Associate	http://www.ahima.org/downloads/pdfs/certification/CCA%20Exam%20Blueprint%20Crosswalk.pdf
American Health Information Management Association	Certified in Healthcare Privacy and Security	http://www.ahima.org/downloads/pdfs/certification/CHPS_Content_Outline.pdf
American Health Information Management Association	Joint Work Force Task Force: Health Information Management and Informatics Core Competencies for Individuals Working with Electronic Health Records (AMIA/AHIMA)	http://www.ahima.org/schools/FacResources/RESOURCEworkforce_2008.pdf
American Medical Informatics Association	Health Informatics Master's Degree	http://www.ahima.org/schools/FacResources/CurriculumMapHI_2010.pdf
American Society of Health Informatics Managers	Certified Health Informatics Systems Professional (CHISP) Certification	http://ashim.org/certification/
Association for Healthcare Documentation Integrity	Certified Medical Transcriptionist	http://www.ahdionline.org/ProfessionalPractices/BestPracticesandStandardGuidelines/CompensationforMedicalTranscriptionists/MedicalTranscriptionistJobDescriptions/tabid/278/Default.aspx
Austin Community College	ACAP Reports for: Addictions Counseling, Clinical Assistant, Dental Assistant, Dental Hygienist, Hemodialysis Technician, Licensed Vocational Nurse, Medical Assistants, Medical Coding Specialist, Medical Lab Technician, Medical Transcriptionist, Molecular Diagnostics, Paramedic, Patient Access Representative, Pharmacy Technician, Phlebotomy Technician, Registered Nurse, Sterile Processing Technician	http://irt.austincc.edu/ids/curriculum/acapReport.php
Bellevue Community College	Medical Informatics	http://bellevuecollege.edu/programs/degrees/proftech/medit/
California Department of Education	Health Science and Medical Technology Industry Sector	http://www.cde.ca.gov/ci/ct/sf/documents/ctestandards.pdf

Center for Excellence for Information and Computing Technology	Description of Healthcare Informatics Certificate	http://www.coeforict.org/research/health/
Center for Public Health Informatics	Competencies for Public Health Informaticians 2009	http://www.cphi.washington.edu/resources/PHICompetencies.pdf
Certification Commission for Healthcare Information Technology	An Introduction to Health IT Certification	http://ehrdecisions.com/wp-content/files/CCHITIntroToHealthIT20090324.pdf
Cincinnati State Technical and Community College	Health Information Technology (HIM)	http://www.cincinnatistate.edu/real-world-academics/academic-divisions/health-public-safety/programs-certificates-1/hps-curriculum/health-information-management-technology-curriculum
College of Direct Support	Community Support Skill Standards	http://www.collegeofdirectsupport.com/CDS50/content/CDSContent/csss.htm
Commission on Accreditation for Health Informatics and Information Management Education	Curriculum Requirements for Health Information Management	http://www.cahiim.org/policiescurriculum.html
Cosumnes River College (Los Rios Community College)	Health Information Technology Course Descriptions (Curriculum)	http://www.crc.losrios.edu/Areas_of_Study/Careers_and_Technology/Health_Information_Technology/Courses.htm
Cuyahoga Community College	Health Information Management (curriculum)	http://www.tri-c.edu/programs/healthcareers/healthinformation/Pages/ProgramSequenceHealthInformationManagement.aspx
Education Development Center, INC	IT Across Careers	http://itac.edc.org/
Healthcare Education Industry Partnership	Healthcare Core Curriculum	http://www.healthforceminnesota.org/Programs/Curriculum/
Healthcare Information and Management Systems Society	Web site	http://www.himss.org/ASP/index.asp
Hospital Corporation of America	Code of Conduct	http://hcaethics.com/CPM/Code%20Of%20Conduct%20Booklet.pdf
Institute for Caregiver Education	Nursing Assistant Training Curriculum	http://www.caregivereducation.org/products/products.htm
Job Corps	Certified Electronic Health Record Specialist Module	Hard Copy
National Alliance for Direct Support Professionals	NADSP Competency Areas	https://www.nadsp.org/dsp-credentialing/15-competency-areas.html

National Association of State Directors of Career Technical Education	Career Cluster Resources for Health Science; Human Services; and Science, Technology, Engineering and Math	http://www.careerclusters.org/
National Center for Healthcare Leadership	NCHL Health Leadership Competency Model	http://www.nchl.org/ns/documents/CompetencyModel-short.pdf
National Consortium on Health Science and Technology Education	Health Sciences Framework	http://www.healthscienceconsortium.org/health_science_cluster.php
National Consortium on Health Science and Technology Education	National Healthcare Foundation Standards and Accountability Criteria	http://www.healthscienceconsortium.org/healthcare_standards.php
National Consortium on Health Science and Technology Education	Health Informatics Pathway Standards and Accountability Criteria	http://www.healthscienceconsortium.org/docs/health_info_pathway.pdf
National Organization of Nurse Practitioner Faculties	Nurse Practitioner Core Competencies	http://www.nonpf.org/displaycommon.cfm?an=1&subarticlenbr=14
North Carolina Community College System	Health Information Technology Curriculum Standard	http://www.nccommunitycolleges.edu/Programs/docs/Curric_Standards/45/A45360_Health_Info_Tech_FA11_v3.pdf
Northern Virginia Community College	Health Information Technology, Associate in Applied Science Degree	http://www.nvcc.edu/curcatalog/programs/pdf/HLT-HIM-AAS.pdf
Office of Apprenticeship	Work Process Schedules for: Home Health Aide, Diet Therapy Specialist, Diagnostic Imaging Specialist, Dental Assistant, Health Services Management, Medical Laboratory Technician, Medical Service (Nurse, Licensed Practical), Optometry, Pharmacy Specialist, Public Health Specialist, Health Support Specialist, Medical Coding, Medical Transcriptionist,	http://www.careeronestop.org/CompetencyModel/search.aspx
Ohio Department of Education	Health Science Technical Content Standards	http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEPrimary.aspx?page=2&TopicRelationID=1769
Oregon Department of Education	Health Informatics Knowledge and Skill Statements	http://www.ode.state.or.us/teachlearn/subjects/oregonskillsets/healthserv/hlthadminoper/focusarealevel/hlthinfomaticsfaksall.pdf
Passaic County Community College	Health Information Technology (Course list)	http://prod.campuscruiser.com/q?pg=departments_listCourses&tg=DepartmentListCourses&action=reset&cmp=F22.0-27.0_7&cx=22.173-27.14336
Pitt Community College	Health Information Technology Degree or Diploma (curriculum and core competencies)	http://www.pittcc.edu/academics/programs/health-sciences/health-information-technology/HIT.pdf
Rochester Institute of Technology	Medical Informatics Curriculum	http://www.ist.rit.edu/pagefiles/MICSMS_Worksheet.pdf

Southern Illinois Collegiate Common Market	Health Information Technology Curriculum	http://www.siccm.com/HIT%20CURRICULUM.htm
St. Petersburg College	A.S. Healthcare Informatics Program (Curriculum)	http://www.spcollege.edu/program/HCINF-AS
St. Petersburg College	Healthcare Informatics Certificate (Curriculum)	http://www.spcollege.edu/program/HCINF-CT
Tennessee Department of Education	Health Informatics	http://state.tn.us/education/cte/hs/prof_curr/doc/hs_healthinform_profstu.pdf
Tidewater Community College – Virginia Beach Campus	Associate of Applied Science Degree: Health Information Management (Curriculum)	http://www.tcc.edu/academics/divisions/healthprofessions/hit/packet.PDF
University of Alabama at Birmingham	Health Information Management , Bachelor of Science (Curriculum)	http://main.uab.edu/shrp/default.aspx?pid=32639
US Department of Health and Human Services	Health Information Technology Web Site	http://www.hhs.gov/healthit/
US Department of Health and Human Services	National Standards on Culturally and Linguistically Appropriate Services (CLAS)	http://minorityhealth.hhs.gov/templates/browse.aspx?lvl=2&lvlID=15
US Department of Labor Job Corps	Training Achievement Record (TAR) for Certified Electronic Health Record Specialist	Hard Copy
US Department of Labor Occupational Information Network	O*NET Reports for: Registered Nurse, Personal and Home Care Aide, Home Health Aide, Medical Assistant, Medical Records and Health Information Technicians, Pharmacy Technician, Dental Assistant, Dental Hygienist, Physical Therapist, Mental Health and Substance Abuse Social Worker, Rehabilitation Counselor, Medical and Public Health Social Worker, Surgical Technologist, Occupational Therapist, Physician Assistant, Medical Transcriptionists, Medical Secretaries, Health Educator, Medical Equipment Repairer, Informatics Nurse Specialists	http://www.onetonline.org/find/industry?i=62&g=Go
Western Interstate Commission for Higher Education	A Closer Look at Healthcare Workforce Needs in the West: Health Information Technology	http://www.wiche.edu/pub/11530
Wisconsin Department of Public Instruction	Health Science Portfolio	http://dpi.wi.gov/cte/doc/healthsc.doc

Attachment 2: *A Resource Guide for Health Information Technology*

A *Resource Guide for Health Information Technology* is a reference providing program planners and service providers with practical information about the HHS Office of the National Coordinator for Health Information Technology (ONC) and its initiatives and grant investments to prepare the emerging Health-IT workforce.

Table of Contents

Background

> The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act (ARRA) of 2009, promotes the adoption and meaningful use of health information technology (HIT). The Office of the National Coordinator for Health Information Technology (ONC) located within the Office of the Secretary for the U.S. Department of Health and Human Services (HHS) is charged with coordinating the nationwide efforts to implement and use the most advanced health information technology to enable the electronic exchange of health information. The ONC set a goal for the utilization of an Electronic Health Record (EHR) for each person in the United States by 2014. To support this objective, the ONC has coordinated a suite of investments to educate health information technology professionals.

Developing a Health IT Workforce

The use of technology across the health and human services industry is fragmented. Although some providers have implemented medical records management software, there is still an extensive use of hard copies for forms exchanged between doctors, labs, hospitals, clinics and other health and human services providers. The use of technology for information exchange has proven to save administrative time, contain costs, and reduce errors. Health and human service providers are currently taking advantage of a unique opportunity to implement and meaningfully use EHRs.

The federal government has committed unprecedented resources to support the adoption and use of EHRs. The installment of an EHR system now is a solid investment for the future because:

- **It's where the profession is going:** 90% of medical students consider it important or very important to have an EHR where they choose to practice.[8]

- **It's what patients want:** Four out of five adults believe that online personal health records would be beneficial in managing their health and health care.[9]

- **It makes coordinated care a reality:** EHRs are an essential component of health care innovation efforts such as the Patient Centered Medical Home and Accountable Care Organizations.

- **Incentives now available:** For healthcare providers that are eligible, there is a limited window of opportunity to take advantage of Medicare and Medicaid EHR Incentive Programs designed to support the implementation of certified

EHRs. A fully functional certified EHR will be essential to participation in both public and private pay-for-performance programs expected in the future.

Due to the legislative timeline and incentives to health providers to be early adopters of EHR, many health and human services providers are changing existing workflows and processes to effectively implement EHR. Some have only just begun, while others have not yet started.

Building a Regional Partnership

The information found in this resource is provided for use by workforce investment partners to support collaboration with the Health Information Technology Regional Extensions Centers (HITRECs) and schools in the Health and Human Services Office of the National Coordinator (HHS ONC) Community College Consortia (see Attachment C) to educate, assess, and employ the workforce required for EHR implementation efforts. In support of this collaboration, we have developed an EHR competency model, and the blocks represent competency areas, that is, the applied skills, knowledge, abilities essential to successful performance in the increasingly electronic environment of the health industry. The EHR model is posted and available for downloading on the Competency Model Clearinghouse (CMC) Web site at http://www.careeronestop.org/competencymodel/pyramid.aspx?EHR=Y.

We are asking workforce system leaders in regional areas to convene with interested stakeholders including health care employers and educators to discuss this critical workforce with the Health Information Technology Regional Extension Centers (HITRECs). HITRECS offer technical assistance, guidance and information on best practices to support and accelerate health care providers' efforts to become meaningful users of Electronic Health Records (EHRs). There are an estimated 70 HITRECs supporting primary care providers in achieving meaningful use of EHRs and enabling nationwide health information exchange in a defined geographic area. See Attachment B for a complete list of HITRECs to determine if there is a Center in your vicinity.

Rural health providers and State Offices of Rural Health, face special geographic challenges in their effort to deliver quality care. The realities of distance and attracting and retaining qualified professionals, can complicate health care delivery. The widespread adoption of Health information technology (health IT) can help ameliorate some of those problems. However, rural health care providers face several barriers to health IT implementation. These include:
- Lack of broadband internet access;
- Limited career pathways for the health information workforce ; and
- Insufficient financial capital to implement electronic health record (EHR) systems.

The ONC has developed a Rural Health IT Adoption Toolbox available on-line at http://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/index.html that

includes useful information about getting started, program planning, and project staffing and management.

The HITREC is a resource to help foster regional collaboration to meet the following objectives:

- Describing the types of occupations associated with Health IT/EHR professions in your region and the skills needed to perform successfully in these roles;
- Locating sources of Health IT/EHR training, assessment vouchers and employment opportunities; and,
- Learning about transferrable skills and work experiences from prospective Health IT employers.

The outcomes from a coordinated approach include:

- Establishing a plan for continued collaboration with HITRECs;
- Developing a process for working with local employers that have employment opportunities; and,
- Identifying training opportunities by working with local education providers.

About this Resource

This resource has four sections that will guide your conversation:

- Developing a Health IT Workforce
- Understanding Health IT Occupations
- Education and Employment Resources
- Appendices:
    - Key Definitions
    - Health Information Technology Regional Extension Centers (HITRECs)
    - Health and Human Services Office of the National Coordinator (HHS ONC) Community College Consortia Members

Understanding Health IT Occupations

Successful EHR implementation requires enhanced workforce skills at several junctures:
- Project management during implementation
- Training and staff support for ongoing operation and maintenance
- New and enhanced skills for staff who interact daily with new technology

ONC initiatives and investments focus on training the IT workforce who will provide support for the implementation and maintenance of EHR. Over the past year the Employment and Training Administration (ETA) has worked with federal agencies and industry partners to identify the core competencies required to develop the training needed to prepare new and existing healthcare workers with the knowledge and skills to effectively use EHR. Refer to the EHR Competency Model for more information on the knowledge and skills required of the healthcare workforce. The Intersection of Health and IT in Figure 1 demonstrates the commonality of foundation competencies and the distinction in focus in the industry wide and industry technical competencies. Health workers need a broad knowledge of the health industry supplemented with IT concepts; whereas the Health-IT worker needs a strong background in IT concepts as they might apply to the culture and business of healthcare delivery.

Figure 1.

Implementation of EHR - the Intersection of Health and IT
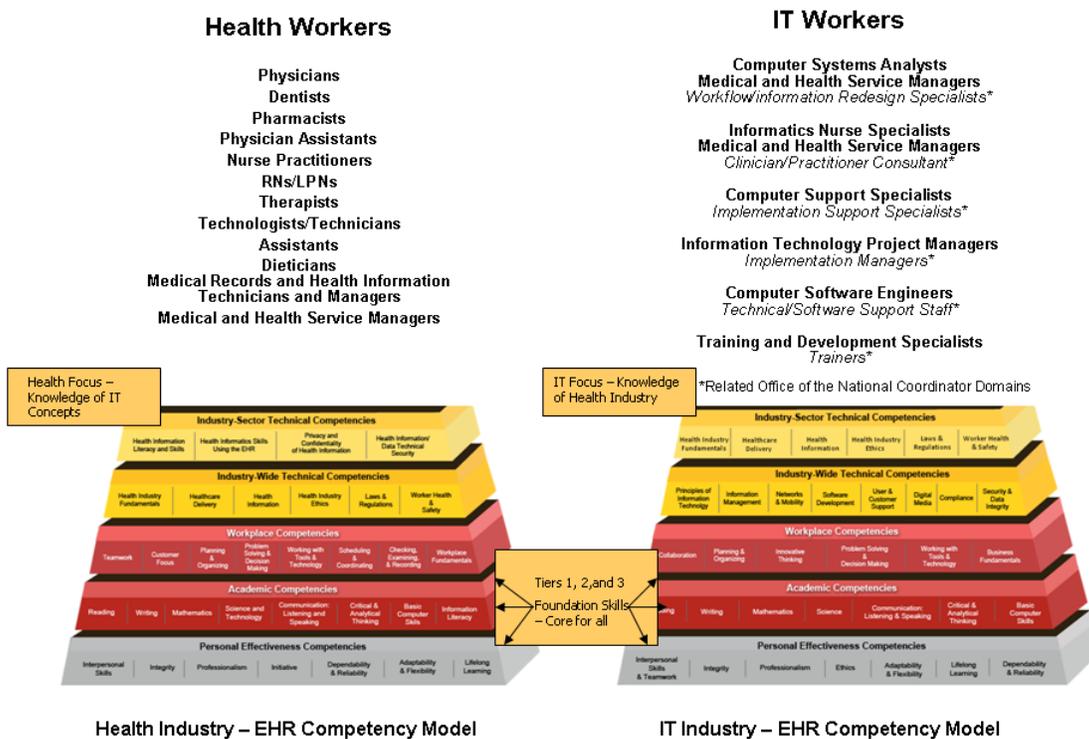
A Health IT worker (depicted to the right in Figure 1) is someone who is qualified to support the adoption and implementation of Electronic Health Records (EHRs), information exchange across health care providers and public health authorities, and the redesign of workflows within health care settings to gain the quality and efficiency benefits of EHRs. It is anticipated that implementation efforts will be supported a mobile project management team, as well as a permanent support staff at a health provider's location.

Mobile Project Management Team Positions

The project management team must have leadership skills, management ability, patience, and vision. The team must realize that the implementation of a health IT system is a large, multifaceted project that will not always go as planned. The ability to deal with frustration constructively and seek opportunities in the face of adversity is a definite asset. Good communication skills, both verbal and written communication skills among team members and with the administration are essential for ensuring that a project is well managed and organized. With the increasing complexity of clinical system implementations, the need for well trained, skilled project managers is expected to increase.

These members of the workforce will support implementation at specific locations, for a period of time, and when their work is done, will move on to new locations. They might be employed by regional extension centers, hospitals, critical access hospitals, provider offices, vendors, or state/city public health agencies. The team would consist of:

Position	Workers in this role will:	Past experience and anticipated training required:
Implementation support specialists	• execute implementation project plans • install hardware (as needed) • configure software to meet practice needs • incorporate usability principles into design and implementation	Experience in information technology or information management Three to six month certificate training for individuals with technical training
Practice workflow and information management redesign specialists	• conduct user requirements analysis to facilitate workflow design; • integrate information technology functions into workflow; • document health information exchange needs; • design processes and information flows that accommodate quality improvement and reporting; • work with provider personnel to	Backgrounds in health care (e.g., as a practice administrator) or in information technology, but are not licensed clinical professionals Three to six month certificate training for health care or information management backgrounds

	implement revised workflows; and • evaluate process workflows to validate or improve practice's systems	
Clinician consultants	• suggest solutions for health IT implementation problems in clinical and public health settings; • address workflow and data collection issues from a clinical perspective, including quality measurement and improvement; • assist in selection of vendors and software; and • advocate for users' needs, acting as a liaison between users, IT staff, and vendors.	Similar to the "redesign specialist" role listed above but brings to bear the background and experience of a licensed clinical and professional or public health professional Three to six month certificate training for health professionals
Implementation managers	• apply project management and change management principles to create implementation project plans to achieve the project goals • interact with office/hospital personnel to ensure open communication with the support team • lead implementation teams consisting of workers in the roles described above • manage vendor relations, providing feedback to health IT vendors for product improvement	Experience in health and/or IT environments as well as administrative and managerial experience. Training in any of the above plus administrative experience

Permanent Support Staff

Staff of healthcare delivery and public health sites will be needed for the ongoing support and facilitation of health IT systems across the health care industry, in organizations such as office practices, hospitals, health centers, long term care facilities, health information exchange organizations and state and local public health agencies. These workers provide the support needed to train the health workers in the new processes and procedures to help them become efficient and meaningful users of that technology. Permanent support staff might include:

Position	Workers in this role will:	Past experience and anticipated training required:
Clinician leaders: Chief Medical Informatics/ Information Officer (CMIO) Chief Nursing Informatics Officer (CNIO)	• develop strategic plans for clinical systems and information management • align clinical system capabilities with organizational needs • oversee IT governance • ensure that developments are in line with global trends in medicine, informatics and information technology	Medical Health Service Manager or Informatics Nurse Specialists One year certificate or masters degree in informatics on top of licensed health care/public health professional status
Technical/software support staff	• interact with end users to diagnose IT problems and implement solutions • document IT problems and evaluate the effectiveness of problem resolution • support systems security and standards	Previous experience information technology or information management Six month certificate training for technical specialists
Trainers	• use a range of health IT applications, preferably at an expert level • communicate both health and IT concepts as appropriate • assess training needs and competencies of learners • design lesson plans, structuring active learning experiences for user • track training records of the users and develop learning plans for further instruction	Experience as a health professional or health information management specialist. Classroom experience as a trainer in the classroom is also desired. Six month certificate program for health professionals or health information management specialists
Health Information Management and Exchange Specialists	• support the collection, management, retrieval, exchange, and/or analysis of information in electronic form, in health care and public health organizations	Bachelors and masters degrees in Health Information Management and related fields.
Health Information Privacy and Security Specialists	• ensure the privacy and security of health information	Bachelors or Masters degree in information science

These individuals will be highly-trained and highly-specialized for academic faculty positions and research and development in various public, non-profit and for profit sectors of the health care industry. This workforce might include:

Position	Workers in this role will:	Past experience and anticipated training required:
Research and development scientists	• support efforts to create innovative models and solutions that advance the capabilities of health IT • conduct studies on the effectiveness of health IT and its effect on health care quality	Doctoral degrees in informatics or masters degrees for health professionals
Programmers and software engineers	• be cross-trained in IT and health domains, thereby possessing a high level of familiarity with health domains to complement their technical skills in computer and information science	Masters programs combining information/computer science and health domains
Sub-specialists	• have a knowledge of IT, and deep knowledge drawn from disciplines (ethics, economics, business, policy and planning, cognitive psychology, and industrial/systems engineering) that inform health IT policy or technology	Masters or doctoral training in such fields as ethics, human factors, interfaces, cognitive psychology, industrial/systems engineering

Education and Employment Resources

Training the Workforce through Community College Consortia

Over the past year the ONC provided funding to the **Community College Consortia** to develop or improve non-degree health IT training programs that can be completed in six

months or less. The ONC collaborated with the Department of Education to establish a technical assistance team that provided direction and support to the member institutions. The Consortia comprises five regional groups of more than 70 member community colleges in all 50 states. Each college developed the admission criteria for the certificate programs designed to train mid-level career professionals for Health-IT positions.

In late April 2011, HHS announced that 2,280 health information technology professionals graduated from community colleges with 3,000 graduates expected by the end of summer. These graduates represent a portion of the initial health IT workforce that will be trained through the HHS workforce development program this year. Many of the graduates have prior backgrounds in health care or information technology. They will be seeking employment with health providers to implement EHR systems in provider and hospital settings.

Workforce Boards and One-Stop Career Centers are encouraged to collaborate with these colleges around training opportunities and to develop strategies for assisting the graduates to find employment. Appendix C contains a complete listing of participating colleges with contact information.

Health-IT Competency Exam

Potential Health-IT workers will generally require additional training to compete for the openings on implementation and support teams. In April 2010, ONC awarded $6 million in a two-year cooperative agreement to [Northern Virginia Community College (NOVA)](#) to develop health information technology (health IT) competency examinations for each of the positions on the implementation support team. These HIT Pro exams developed in partnership with Pearson Vu can be taken at 230 Pearson Professional Centers around the country. The competency exams were developed to confirm that an applicant has the experience and skills required to meet the nation's need for health information technology workers. For additional information visit the HIT Pro site at http://www.hitproexams.org/.

The ONC is using the colleges in the Community College Consortia to reach out to perspective students, but would also like to use state and local workforce agencies to access those individuals who are not enrolled in the Consortia program and have health care or IT backgrounds. The ONC has provided funds for 27,500 vouchers that enable individuals to take free exams. For more information about the availability of vouchers see http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__competency_examination_program_(2)/1809

Employment Resources

Potential sources for the graduate to seek employment include, but are not limited to: hospitals, community health centers, medical offices, regional extension centers, State

Offices of Rural Health (SOHR), vendors, managed service providers, and consulting firms.

The following resources might be consulted to enhance the customary job search techniques such as networking, job clubs, and Web searches.

	Resource	Web link
Niche Job Board	HIMSS JobMine	http://onchitjobs.himss.org/home/index.cfm?site_id=12238 Post Jobs Search Job Listings Post Resumes
Regional Extension Centers	RECs	Contact List – Appendix B http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__rec_program/1495
Health Care Services Hospitals Nursing Home	Employer Locator	http://www.acinet.org/employerlocator/employerlocator.asp?nodeid=18 Search by Industry Select Hospitals and Social Assistance Select a State Select Facility Type
State Offices of Rural Health	Directory of State Offices and Associations	http://www.hrsa.gov/ruralhealth/about/directory/index.html
EHR Product Vendors	Certified Health-IT Product List	http://onc-chpl.force.com/ehrcert Search for Vendors View vendor Web site for Career Opportunities
Managed Service Providers	CompTIA	http://www.comptia.org/membership/communities/healthcareIT.aspx

Career Exploration

There are numerous career information and exploration Web sites, but there are two that were created with IT in mind.

Health Information Careers developed by the Healthcare Information and Management Systems Society (HIMSS) is a resource to assist current Health-IT professionals to learn, grow, and advance in their careers. See http://www.himss.org/ASP/CareerServicesHome.asp

Health Information Careers developed by the American Health Information Management Association (AHIMA) is a resource for health information professionals to learn how to use their knowledge of information technology and records management to form the link between clinicians, administrators, technology designers, and information technology professionals. See http://www.hicareers.com/

Appendix A: Key Definitions

Electronic Health Record (EHR)

Health IT includes the use of electronic health records (EHRs) instead of paper medical records to maintain people's health information. The widespread use of a system of electronic health records (EHR) will provide access to a patient's total health information supporting better health care decisions, and more coordinated care. A portable EHR makes a patient's health information available when and where it is needed.

Electronic Health Records (EHRs) are longitudinal electronic records of patient health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports. The EHR automates and streamlines the clinician's workflow because it generates a complete record of a clinical patient encounter. EHRs can also support the collection of data for uses other than clinical care, such as billing, quality management, outcome reporting, public health disease surveillance and reporting.[1]

EHRs can support better follow-up information for patients – for example, after a clinical visit or hospital stay, instructions and information can be effortlessly provided to the patient and reminders for other follow-up care can be sent easily or even automatically to the patient. EHRs can improve patient and provider convenience – patients can have their prescriptions ordered and ready even before they leave the provider's office, and insurance claims can be filed immediately from the provider's office.

Electronic Health Record Technology is defined for the purposes of the Medicare and Medicaid Incentive Programs. The software technology must offer the necessary technological capability, functionality, and security to meet the *meaningful use* criteria.

Electronic Medical Record (EMR)

Sometimes people use the terms "Electronic Medical Record" or "EMR" when talking about Electronic Health Record (EHR) technology. Very often an Electronic Medical Record or EMR is just another way to describe an Electronic Health Record or EHR. Health providers and software or application vendors sometimes use the terms interchangeably.

There is, however, a distinction between EMR and EHR. The EMR can be thought of as the recording of patient information and medical findings in an electronic format. In plain terms it is an electronic version of a patient's chart maintained by medical professionals or treatment facilities. The EMR is specific to and generally the property of the provider. There are numerous software applications available for EMR. EHR technology products and systems are secure, can maintain data confidentially, and can work with other systems to share information. It is the requirement that EHRs have the capability to share information with other systems that separates them from EMRs.

Personal Health Records (PHR)

In addition to EMRs and EHRs, you may come across the term Personal Health Record, or PHR. A Personal Health Record (PHR) is an electronic record of health information maintained by the patient. A PHR might contain information about medical conditions, allergies, medications, and doctor or hospital visits. The PHR makes it possible for the patient to store in one place and share information with others as needed. The patient controls how the information is used and who can access it.

PHRs are usually accessed through the Internet so information is available anytime or anywhere.   See http://www.medicare.gov/navigation/manage-your-health/personal-health-records/personal-health-records-overview.aspx

Appendix B: Health Information Technology Regional Extension Centers (HITRECS) Contacts

State	Regional Extension Center Name	Email
AK	Alaska eHealth Networkr	rebecca@ak-ehealth.org
AL	Alabama Regional Extension Center	info@al-rec.org
AR	HIT Arkansas	jfuchs@afmc.org
AS	Hawaii-Pacific (HI, GM, AS, CNMI) REC	aito@hawaiihie.org
AZ	Arizona Health-e Connection (AzHeC)	melissa.rutala@azhec.org
CA	CalHIPSO (North)	info@calhipso.org
CA	CalHIPSO (South)	info@calhipso.org
CA	CalOptima Foundation	emoscaritolo@caloptima.org
CA	HITEC-LA	HITEC-LA@lacare.org
CNMI	Hawaii-Pacific (HI, GM, AS, CNMI) REC	aito@hawaiihie.org
CO	Colorado Regional Extension Center (CORHIO)	palbritton@corhio.org
CT	eHealth Connecticut	scleary@gosmacpartners.com
DC	eHealth DC	info@ehealthdc.org
DE	Quality Insights of Delaware	bschindele@wvmi.org
FL	Center for the Advancement of Health IT (Rural and North Florida Regional Extension Center)	info@AdvanceHealthIT.org
FL	South Florida Regional Extension Center Collaborative	info@southfloridarec.org
FL	PaperFree Florida	jwolfson@hsc.usf.edu
FL	Central Florida REC	info@ucf-rec.org
GA	Georgia HITREC	dmack@msm.edu
GM	Hawaii-Pacific (HI, GM, AS, CNMI) REC	aito@hawaiihie.org
HI	Hawaii-Pacific (HI, GM, AS, CNMI) REC	aito@hawaiihie.org
IA	Health Information Technology Regional Extension Center (Iowa HITREC)	IowaHITREC@ifmc.org
ID	Washington & Idaho Regional Extension Center(WIREC)	peggye@qualishealth.org
IL	Chicago Health Information Technology Regional Extension Center (CHITREC)	info@chitrec.org
IL	Illinois Health Information Technology Regional Extension Center (IL-HITREC)	info@ilhitrec.org
IN	HealthBridge Tri-State (IN, KY, OH) REC	dgroves@healthbridge.org
IN	Purdue University	marrowsm@purdue.edu
KS	Kansas Foundation for Medical Care, Inc. (KFMC)	recsupport@kfmc.org
KY	HealthBridge Tri-State (IN, KY, OH) REC	dgroves@healthbridge.org
KY	University of Kentucky Research Foundation	kyrec@uky.edu
LA	Louisiana Health Care Quality Forum	bikerd@lhcqf.org
MA	Massachusetts Technology Park Corporation	rodenstein@masstech.org

MD	Chesapeake Regional Information System for Our Patients	info@crisphealth.org
ME	HealthInfoNet	info@hinfonet.org
MI	Michigan Center for Effective IT Adoption (M-CEITA)	mceita.info@altarum.org
MN	Regional Extension Assistance Center for Health Information Technology (REACH)	info@khaREACH.org
MO	Missouri HIT Assistance Center	EHRhelp@missouri.edu
MS	Mississippi Regional Extension Center	rbordelon@eqhs.org
MT	Mountain-Pacific Quality Health Foundation (MPQHF)	kurbanek@mpqhf.org
NC	University of North Carolina AHEC REC	tom_bacon@med.unc.edu
ND	Regional Extension Assistance Center for Health Information Technology (REACH)	info@khaREACH.org
NE	Wide River Technology Extension Center	info@widerivertec.org
NH	Regional Extension Center of New Hampshire	jmonahan@maehc.org
NJ	New Jersey Institute of Technology (NJIT)	info@njhitec.org
NM	Lovelace Clinic Foundation-LCF Research	Lyndi.Dittmer-Perry@LCFResearch.org
NV	HealthInsight	sdonnelly@healthinsight.org
NY	New York eHealth Collaborative (NYeC)	pwilder@nyehealth.org
NY	NYC REACH	aparsons@health.nyc.gov
OH	HealthBridge Tri-State (IN, KY,OH) REC	dgroves@healthbridge.org
OH	Ohio Health Information Partnership (OHIP)	info@OHIPonline.org
OK	Oklahoma Foundation for Medical Quality, Inc. (OFMQ)	Dgolder@ofmq.com
OR	Oregon's Health Information Technology Extension Center (O-HITEC)	info@ohitec.org
PA	Quality Insights of Pennsylvania (Eastern)	asomplasky@wvmi.org
PA	Quality Insights of Pennsylvania (Western)	asomplasky@wvmi.org
PR	Ponce School of Medicine	jgarcia@psm.edu
RI	Rhode Island Quality Institute (RIQI)	info@riqi.org
SC	Center for Information Technology Implementation Assistance in South Carolina (CITIA-SC)	thornbur@mailbox.sc.edu
SD	healthPOINT	amy.townsend@dsu.edu
TN	Qsource	jmcanally@qsource.org
TX	North Texas Regional Extension Center	info@ntrec.org
TX	West Texas Health Information Technology Regional Extension Center (WT-HITREC)	info@wtxhitrec.org
TX	CentrEast Regional Extension Center	tduke@tamhsc.edu
TX	Gulf Coast Regional Extension Center	pamela.d.slayer@uth.tmc.edu
UT	HealthInsight	sdonnelly@healthinsight.org
VA	VHQC (Virginia Health Quality Center)	lfisher@vhqc.org
VT	Vermont Information Technology Leaders, Inc.	pforlenza@vitl.net
WA	Washington & Idaho Regional Extension Center(WIREC)	peggye@qualishealth.org

WI	Wisconsin Health Information Technology Extension Center	jwang@metastar.com
WV	West Virginia Health Improvement Institute, Inc.	cstandre@spreadinnovation.com
WY	Mountain-Pacific Quality Health Foundation (MPQHF)	kurbanek@mpqhf.org
NIHB	National Indian Health Board (NIHB)	tkauley@nihb.org

Appendix C: Health and Human Services Office of the National Coordinator (HHS ONC) Community College Consortia

School	City	State
Region A Lead: Bellevue Community College		
Bellevue College	Bellevue	Washington
Dakota State University	Madison	South Dakota
Lake Region State College	Devil's Lake	North Dakota
Montana Tech	Butte	Montana
North Idaho College	Coeur d'Alene	Idaho
Portland Community College	Portland	Oregon
Pueblo Community College	Pueblo	Colorado
Salt Lake Community College	Salt Lake City	Utah
Region B Lead: Los Rios Community College District		
Butte College	Oroville	California
College of Southern Nevada	Las Vegas	Nevada
Cosumnes River College	Sacramento	California
East LA College	Monterey Park	California
Fresno City College	Fresno	California
Los Rios Community College District	Sacramento	California
Maricopa College	Phoenix	Arizona
Mission College	Santa Clara	California
Orange Coast College	Costa Mesa	California
Pima College	Tucson	Arizona
San Diego Mesa College	San Diego	California
Santa Barbara City College	Santa Barbara	California
Santa Monica College	Santa Monica	California

University of Hawaii College - Kapiolani	Honolulu	Hawaii
Region C Lead: Cuyahoga Community College District		
Cincinnati State Technical & Community College	Cincinnati	Ohio
Columbus State Community College	Columbus	Ohio
Cuyahoga Community College	Cleveland	Ohio
Delta College	University Center	Michigan
Des Moines Area Community College	Ankeny	Iowa
Johnson County Community College	Overland Park	Kansas
Kirkwood Community College	Cedar Rapids	Iowa
Lansing Community College	Lansing	Michigan
Macomb Community College	Warren	Michigan
Madison Area Technical College	Madison	Wisconsin
Metropolitan Community College	Omaha	Nebraska
Milwaukee Area Technical College	Milwaukee	Wisconsin
Moraine Valley Community College	Palos Hills	Illinois
Normandale Community College	Bloomington	Minnesota
Sinclair Community College	Dayton	Ohio
St. Louis Community College	St. Louis	Missouri
Region D Lead: Pitt Community College		
Atlanta Technical College	Atlanta	Georgia
Broward College	Coconut Creek	Florida
Catawba Valley Community	Hickory	North Carolina
Central Piedmont Community College	Charlotte	North Carolina
Chattanooga State Community College	Chattanooga	Tennessee
Dallas County Community College District	Dallas	Texas

Delgado Community College	**New Orleans**	**Louisiana**
Dyersburg State Community College	**Dyersburg**	**Tennessee**
Florence/Darlington Technical College	**Florence**	**South Carolina**
Hinds Community College	**Raymond**	**Mississippi**
Houston Community College	**Houston**	**Texas**
Indian River State College	**Ft. Pierce**	**Florida**
Itawamba Community College	**Tupelo**	**Mississippi**
Jefferson Community & Technical College	**Louisville**	**Kentucky**
Midland College	**Midland**	**Texas**
National Park Community College	**Hot Springs**	**Arkansas**
Pitt Community College	**Winterville**	**North Carolina**
Santa Fe College	**Gainesville**	**Florida**
Tulsa Community College	**Tulsa**	**Oklahoma**
Walters State Community College	**Morristown**	**Tennessee**
Region E Lead: Tidewater Community College		
Bristol Community College	**Fall River**	**Massachusetts**
Bronx Community College	**Bronx**	**New York**
Brookdale Community College	**Lincroft**	**New Jersey**
Burlington Community College	**Pemberton**	**New Jersey**
Camden County College	**Blackwood**	**New Jersey**
Capital Community College	**Hartford**	**Connecticut**
Community College of Allegheny County	**Pittsburgh**	**Pennsylvania**
Community College of Baltimore County	**Baltimore City**	**Maryland**
Community College of DC	**Washington**	**District of Columbia**
Community College of Vermont	**Waterbury**	**Vermont**

Essex County College	Newark	New Jersey
Gloucester County College	Sewall	New Jersey
Kennebec Valley Community College	Fairfield	Maine
Northern Virginia Community College	Annandale	Virginia
Ocean County College	Toms River	New Jersey
Passaic County Community College	Paterson	New Jersey
Raritan Valley Community College	Branchburg	New Jersey
Southern Maine Community College	South Portland	Maine
Suffolk County Community College	Brentwood	New York
Tidewater Community College	Virginia Beach	Virginia
West Virginia Northern Community College	Wheeling	West Virginia
Westchester Community College	Valhalla	New York

For additional information:
http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__community_college_program/1804