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## **HEALTH INFORMATION TECHNOLOGY**

**Los Angeles and Orange Counties**

APRIL 2010



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Mt. San Antonio College  
1100 N. Grand Avenue  
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909-274- 6106

**CENTER OF EXCELLENCE**  
**Orange County**

Rancho Santiago College  
2323 N. Broadway, Suite 328  
Santa Ana, CA 92706  
714-564-5529

[www.coeccc.net](http://www.coeccc.net)

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**The demand for Medical Records and Health Information Technicians in Los Angeles and Orange Counties will result in 1,511 job openings from 2009-2014. This represents 866 more openings than students who will complete local programs.**

**Source: EMSI Complete Employment - 4th Quarter 2009**

## **Executive Summary**

Health information management (HIM) and health information technology (health IT) focus on acquiring, storing, retrieving and using health information in medical settings. The adoption of Electronic Health Records (EHR) is the biggest change in health information today. A 10-year long process to establish EHRs at all levels of healthcare and medicine was started by the Bush Administration in 2004 and was affirmed in California a few years later. In 2009, the American Recovery and Reinvestment Act (ARRA) allocated billions of dollars for establishing EHRs and training the necessary workforce.

Health Information Technicians who graduate from AA- or AS-degree programs can take an exam to become credentialed as Registered Health Information Technicians (RHIT). Students who go on to earn BA or BS degrees in accredited programs can earn the Registered Health Information Administrator (RHIA) certification. At the entry level, students can complete certificate programs to become Medical Records or Health Information Clerks or Certified Coding Associates. National studies indicate that RHITs earn about \$16,000/year more than clerks or certified employees without AA/AS degrees.

In Los Angeles and Orange Counties, there will be 715 new jobs, representing a 12% growth in employment for Medical Records and Health Information Technicians between 2009 and 2014. When retirements and resignations are factored in, a total of 1,511 job openings will occur over the five-year period, which represents 26% of all of the jobs in this occupation.

Currently in Los Angeles and Orange Counties, there are two programs for Health Information Technicians located at East Los Angeles College and Cypress College. Two private schools also have accredited programs. In 2008, 42 students graduated from local accredited AA/AS-degree programs for Health Information Technicians and another 87 students completed shorter-term certificate programs. At this rate, there will be 645 program graduates and completers from 2009-2014, but during this same time period there are expected to be 1,511 vacant positions. The data does not indicate how many of the positions in this category are for RHITs and how many are for medical records personnel, but it is clear that demand will be greater than the supply with 866 openings potentially going unfilled.

The primary recommendation of this report is that new programs for health information management workers be established in the Los Angeles/Orange County area. These programs may not be HIT programs but will serve a wider set of needs for HIM personnel. Since health information technology is expected to touch every job in the healthcare system, it is recommended that all allied health care programs monitor their Student Learning Outcomes to ensure that their graduates are ready to meet AHIMA's HIT/HIM guidelines. Existing and new HIT programs are encouraged to identify an appropriate specialty track and incorporate this into their program as recommended by the American Health Information Management Association AHIMA, the leading professional organization in health IT.

## Introduction

See *Appendix C* for a list of abbreviations used throughout this report.

Health information management (HIM) and health information technology (health IT) are critical components of the 21<sup>st</sup>-century healthcare system. After the healthcare reform agenda of the Obama administration, health IT is seen as the top health care trend or issue of 2010.<sup>1</sup> Health IT is expected to make patient care safer and more effective, save money, and improve the efficiency of the system.<sup>2</sup>

The healthcare industry as a whole will produce more job openings than any other industry from 2008-2018. The increase in demand projected for the industry by the Department of Labor is twice as high (22% compared to 11%) as the projected rise for all industries<sup>3</sup> and health IT will contribute significantly to those job openings. Here in California, the eHealth Strategic Plan includes a projection that “9,000 additional, skilled health IT workers will be required to support widespread meaningful EHR adoption use”.<sup>4</sup>

According to a TIME magazine 2009 article, “Health care in the U.S. costs a jaw-dropping \$2 trillion annually, or more than \$6,600 for every man, woman and child in the country. Streamlining the industry by eliminating medical errors, labor costs and general clunkiness caused by paperwork alone could save an estimated \$300 billion each year, according to the national coordinator for health information technology for former President George W. Bush.”<sup>5</sup>

Legislative initiatives and government incentive programs like the American Recovery and Reinvestment Act (ARRA) are driving the growth of health IT. At the same time, concerns about the cost of the new systems, patient privacy<sup>6 7</sup> and the shortage of health care workers qualified to create and maintain electronic records’ systems are slowing progress. Luis Castillo, senior vice president of Siemens Healthcare, a company that designs health care technology, says another challenge is designing a system that thinks like a physician. “Doctors cannot spend hours and hours learning a new system,” said Castillo. “It needs to be a ubiquitous, ‘anytime, anywhere’ solution that has easily accessible data in a simple-to-use Web-based application.” Highly skilled health information technology professionals are rare, according to Castillo, and many IT workers will need to be trained as health technology experts.<sup>8</sup>

<sup>1</sup> Manos, Diana, “Healthcare IT among PWC’s list of top 10 healthcare issues for 2010,” HealthCare IT News, December 17, 2009, online at

<http://www.healthcareitnews.com/news/healthcare-it-among-pwcs-list-top-10-healthcare-issues-2010>

<sup>2</sup> Northwestern University School of Continuing Studies, “Career Outlook,” online at

<http://www.scs.northwestern.edu/grad/medical-informatics-online/medical-informatics-jobs.cfm>

<sup>3</sup> Bureau of Labor Statistics, U.S. Department of Labor, Career Guide to Industries, 2010-11 Edition, Healthcare, on the Internet at <http://www.bls.gov/oco/cg/cgs035.htm>

<sup>4</sup> California Health and Human Services Agency, California’s eHealth Strategic Plan, Version 1.10, December, 2009, p. 7 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

<sup>5</sup> Kluger, Jeffrey, Electronic Health Records: What’s Taking So Long? Time, November 25, 2009, online at <http://www.time.com/time/health/article/0,8599,1887658,00.html>

<sup>6</sup> Foreman, Judy, “At Risk of Exposure,” Los Angeles Times, June 26, 2006, online at <http://articles.latimes.com/2006/jun/26/health/he-privacy26>

<sup>7</sup> Bright, Becky, “Benefits of Electronic Health Records Seen as Outweighing Privacy Risks,” Wall Street Journal, November 29, 2007 online at <http://online.wsj.com/public/article/SB119565244262500549.html?mod=blog>

<sup>8</sup> Goldman, David, “Obama’s Big Idea: Digital Health Records,” CNNMoney.com, January 12, 2009, online at [http://money.cnn.com/2009/01/12/technology/stimulus\\_health\\_care/](http://money.cnn.com/2009/01/12/technology/stimulus_health_care/)

The growing demand for health information technology workers is the basis for this report, which is prepared in response to The California Community Colleges System's charge to the Economic & Workforce Development (EWD) Network to identify industries and occupations with unmet employee development needs and introduce partnering potential for the colleges' programs.

## Industry Overview

### Health Information Management and Health IT

According to the American Health Information Management Association (AHIMA), (the discipline of) "**Health information management (HIM)** is the study of the principles and practices of acquiring, analyzing, and protecting digital and traditional medical information vital to providing quality patient care."<sup>9</sup> HIM began a hundred years ago when physicians recognized the importance of medical and clinical records and established a professional organization for "records librarians." With the development of the Medicare system in the 1970s, the emphasis moved to medical records. The shift to a data-driven system in the 1990s resulted in the use of term health information (rather than medical records) management to describe the field and many of the HIM occupations.<sup>10</sup>

**Health IT or health information technology** is the part of HIM that is concerned with the implications of the use of digital and/or electronic methods of capturing and storing health information. Health information technology is "the application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making."<sup>11</sup> The tools used in health IT include not only computers but also clinical guidelines, formal medical terminologies, and information and communication systems. Health IT is used in nursing, clinical care, dentistry, pharmacy, and public health.<sup>12</sup> **Biomedical and health informatics** began in the 1950s with the wide introduction of computers. It is the broad field of "promoting the effective organization, analysis, management, and use of information in health care in support of patient care, public health, teaching, research, administration, and related policy."<sup>13</sup>

### Electronic Health Records

At the core of health IT is the Electronic Health Record (EHR) which is prepared by the caregiver or medical organization. These records must be protected and authenticated by their creators. Although the caregiver or institution owns the physical items like x-rays, the patient owns the information in the record and is always entitled to view it or make copies.<sup>14</sup>

Some patients create their own electronic records called Personal Health Records (PHR), which may or may not be shared with institutions and organizations. Personal Health Records are

<sup>9</sup> AHIMA, "Health Information Management," online at <http://himcareers.ahima.org/>

<sup>10</sup> American Health Information Management Association, "AHIMA History," online at <http://www.ahima.org/about/history.asp>

<sup>11</sup> Brailer, D., & Thompson, T. (2004). Health IT strategic framework. Washington, DC: Department of Health and Human Services

<sup>12</sup> "Health Informatics", Wikipedia online at [http://en.wikipedia.org/wiki/Health\\_informatics](http://en.wikipedia.org/wiki/Health_informatics)

<sup>13</sup> AMIA, "AMIA is the Professional Home of Biomedical and Health Informatics," online at <https://www.amia.org/inside>

<sup>14</sup> "Electronic Health Records," Wikipedia online at [http://en.wikipedia.org/wiki/Electronic\\_medical\\_record](http://en.wikipedia.org/wiki/Electronic_medical_record)

part of a larger trend among health consumers to use online resources to find health information.<sup>15</sup> Personal systems developed by Microsoft (HealthVault) and Google (Google Health) are used to store and transmit medical data as well as search and access medical information in a secure and private environment.<sup>16</sup>

The use of EHRs is growing more slowly in the United States than in other parts of the world, and within the U.S. adoption varies geographically and among different institutions and organizations. In California, most health care workers still practice in paper-based (as opposed to electronic) environments. Only ¼ of California hospitals are fully using even the most basic bar coding technology for tracking lab specimens and only 13% report using EHRs at all. About 38% of physicians' offices were using some level of electronic record systems in 2008, but few patients reported being able to communicate with physicians and other health care providers online.<sup>17</sup>

Seventy-four percent of hospitals surveyed by the Harvard School of Public Health reported that cost was the reason that they had not gone digital. Implementation costs can be significant and the burden is proportionately greater on smaller organizations. In addition to new hardware and software, the costs of training personnel are a significant part of implementation budgets. The return on investment is not clear at this point and some professionals claim that health IT will actually raise health care costs.<sup>18</sup> Stimulus funding and other incentives currently available will not nearly cover the full cost of implementation and come at a time of increasing cost containment pressure from government and the insurance industry.<sup>19</sup>

**It is projected that 9,000 additional health IT workers with a broad range of skills and training will be required to support widespread EHR adoption in California over the next five years.**

*California Health and Human Services  
eHealth Strategic Plan 2009*

### Building a Health IT System

The President's Health Information Technology Plan, authorized by the Bush administration in 2004, created four working groups to: standardize the way records are kept, design the "architecture" of the system, develop a privacy policy, and standardize products and systems.<sup>20</sup> These groups are part of the Office of the National Coordinator for Health Information Technology (ONC or ONCHIT) which was charged with establishing "interoperable electronic health records" in the United States in 10 years. In 2007, Governor

<sup>15</sup> Pew Internet, "61% of American adults look online for health information," June 11, 2009, online at <http://www.pewinternet.org/Press-Releases/2009/The-Social-Life-of-Health-Information.aspx>

<sup>16</sup> Wulsen, L. and Dougherty, A., Health Information Technology- Electronic Health Records: A Primer, California Research Bureau, September, 2008, p. 17, online at <http://www.library.ca.gov/crb/08/08-013.pdf>

<sup>17</sup> California HealthCare Foundation, "Snapshot: The State of Health Information Technology in California", 2008, p. 2, online at <http://www.chcf.org/documents/chronicdisease/HITSnapshot08.pdf>

<sup>18</sup> Kluger, Jeffrey, Electronic Health Records: What's Taking So Long? Time, November 25, 2009, online at <http://www.time.com/time/health/article/0,8599,1887658,00.html#ixzz0dOEBKfLt>

<sup>19</sup> Bureau of Labor Statistics, U.S. Department of Labor, Career Guide to Industries, 2010-11 Edition, Healthcare, on the Internet at <http://www.bls.gov/oco/cg/cgs035.htm>

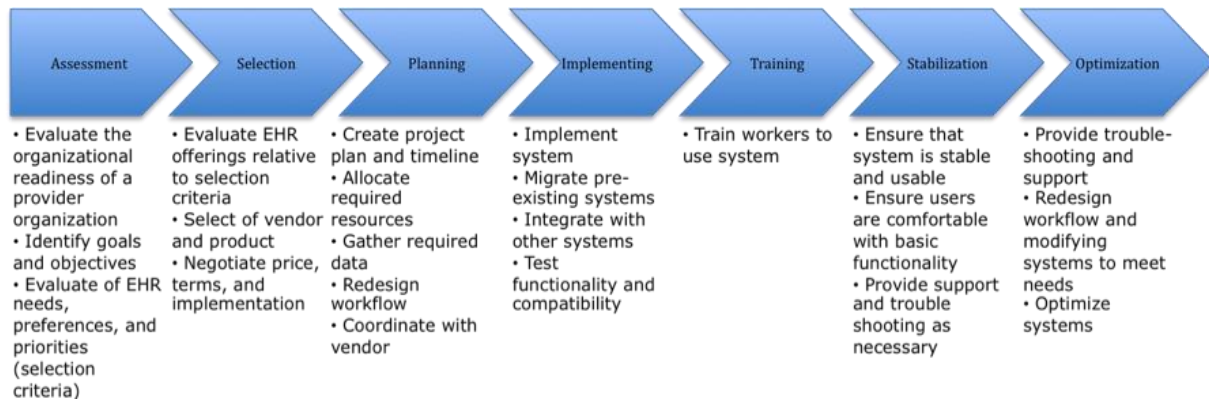
<sup>20</sup> Foreman, Judy, "At Risk of Exposure," Los Angeles Times, June 26, 2006, online at <http://articles.latimes.com/2006/jun/26/health/he-privacy26>

Schwarzenegger announced that California would implement full use of EHRs in the next 10 years, slightly behind the U.S. goal.<sup>21</sup>

The American Recovery and Reinvestment Act (ARRA), signed into law on February 17, 2009 by President Obama, includes stimulus funding of \$36 billion for health information issues and the Health Information Management (HIM) workforce. The package includes incentives for adoption of EHRs, funding to build the structure for Health Information Exchange (HIE), new privacy regulations, and support for training the necessary HIM workforce.<sup>22</sup> Goals for adoption of EHRs are being set based on a standard known as “meaningful use,” which is a way to measure the level of electronic record-keeping that has been achieved by an organization.<sup>23</sup> More information about the workforce development and training portions of ARRA is included in the Community Support and Resources section of this report.

An eHealth Strategic Plan was developed by the State of California in 2009 to “dramatically improve safe and secure patient and provider access to personal health information and decision-making processes, benefiting the health and wellbeing, safety, efficiency, and quality of care for all Californians.”<sup>24</sup> That plan identified the process shown in Exhibit 1 for the creation of an EHR system. (See Appendix D for a detailed list of the jobs/roles needed to complete this process and statewide projections of workers needed over the coming five years.)

**Exhibit 1 – Steps in Implementing Electronic Health Records Systems**



Source: California Health and Human Services Agency, California’s eHealth Strategic Plan, p. 41

**Industries and Types of Employers for Health Information Technology**

The projected growth of HIM and health IT is suggested in Exhibit 2 and Table 1, which provide a look at growth in the industries employing Medical Records and Health Information

<sup>21</sup> California Health and Human Services Agency, California’s eHealth Strategic Plan, Version 1.10, December, 2009, p. 4 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

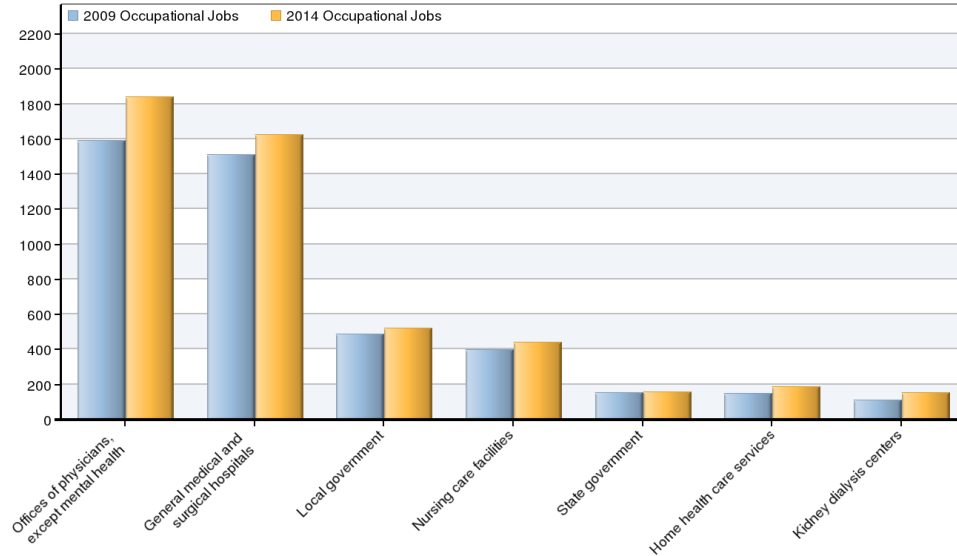
<sup>22</sup> Current Topics in Advocacy, “American Recovery and Reinvestment Act of 2009,” American Medical Association, online at <http://www.ama-assn.org/ama/pub/advocacy/current-topics-advocacy/hr1-stimulus-summary.shtml> and <http://www.ama-assn.org/ama1/pub/upload/mm/399/arra-hit-provisions.pdf>

<sup>23</sup> California Healthline, “Federal Officials Release Proposed Rules on Use of Electronic Records,” January 4, 2010, online at <http://www.californiahealthline.org/articles/2010/1/4/federal-officials-release-proposed-rules-on-use-of-electronic-records.aspx>

<sup>24</sup> California Health and Human Services Agency, California’s eHealth Strategic Plan, Version 1.10, December, 2009, p. 4 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

Technicians, which is the only SOC code (29-2071) that corresponds to health information technology occupations specifically.

**Exhibit 2 - Top Industries for Medical Records and Health Information Technicians in Los Angeles and Orange Counties**



Source: EMSI Complete Employment - 4th Quarter 2009

**Table 1 – Growth by Industry for Medical Records and Health Information Technicians in Los Angeles and Orange Counties: 2009-2014**

NAICS Code	Name	2009 Jobs	2014 Jobs	Change	% Change
621111	Offices of physicians, except mental health	1,593	1,841	248	16%
622110	General medical and surgical hospitals	1,511	1,626	115	8%
930000	Local government	485	520	35	7%
623110	Nursing care facilities	399	441	42	11%
920000	State government	151	156	5	3%
621610	Home health care services	150	187	37	25%
621492	Kidney dialysis centers	111	154	43	39%
	All others	1,480	1,670	190	13%
	<b>Total</b>	<b>5,880</b>	<b>6,595</b>	<b>715</b>	<b>12%</b>

Source: EMSI Complete Employment - 4th Quarter 2009

## Occupational Overview

### Positions, Roles, and Career Ladder in Health Information Management

Because HIM and health IT will become part of every health care job, this scan provides a broad look at the entire field along with a detailed look at jobs that are (or can become) part of the community college curriculum. See Appendix E for the Academic Pathways available to students interested in HIM.

**Table 2 – Career Ladder, Credentials and Jobs in Health Information Management<sup>25</sup>**

Credential/Education	Job Titles
<b>CMIO, Chief Medical Information Officer</b> a physician with a part-time clinical practice responsible for developing and implementing IT strategies and educating users of clinical information systems. <sup>26</sup>	
<b>Doctoral Degree to Specialize in Research, Informatics, Public Health, Education, Law<sup>27</sup></b>	
<b>Health Informatics or Health Information Management Masters Degree Program – Approved by CAHIIM</b>	Public Health Information Officer, Academic Faculty, Corporate Health Information Officer, Chief Information Officer, Health Information Application Developer, Data Mining Engineer, Director of Clinical Information Systems, Applied Information Systems Designer/Developer <sup>28</sup>
<b>BA-Degree: Registered Health Information Administrator (RHIA)</b> is a health information specialist who interacts with medical providers and health care administration staff to interpret data for patient care, research, statistical reporting, and planning. Must be a graduate of an accredited bachelor’s degree HIA program.	HIM Director, Business Process Engineer, Healthcare Consumer Advocate, e-HIM Project Manager, Assistant HIM Director, Consultant, Clinical Data Analyst, Compliance Officer, Coding Professional, HIM Faculty, Health Data/Information Resource Manager, Health Information System Application Designer <sup>29</sup>
<b>AA/AS-Degree: Registered Health Information Technician (RHIT)</b> performs computer and manual technical and organizational activities with medical records: securing, analyzing, integrating, and managing health care information. <i>Many RHITs go back and earn a CCS or CCS-P certification if they do not already have one. This affords them promotional opportunities as a registered medical coder.</i>	Information Technology Specialist, Information Technology Architect, Health Information Business Analyst, Director of Information Technology, <sup>30</sup> Coder, Coding supervisor, Compliance Officer, Charge Master Auditor, Clinical Data Dictionary Analyst, Documentation Specialist, Cancer or Other Disease Registrar, Quality Improvement Specialist, Information Access/Disclosure Specialist, and Instructor/Trainer. <sup>31</sup>

<sup>25</sup> AHIMA website, “Types of Credentials,” online at <http://www.ahima.org/certification/credentials.aspx>

<sup>26</sup> Northwestern University Career Outlook online at <http://www.scs.northwestern.edu/grad/medical-informatics-online/medical-informatics-jobs.cfm>

<sup>27</sup> Getting a Masters Degree in Health Information Management or Health Informatics online at [http://himcareers.ahima.org/images/AcademicPathways\\_FMaster.pdf](http://himcareers.ahima.org/images/AcademicPathways_FMaster.pdf)

<sup>28</sup> http Getting a Masters Degree in Health Information Management or Health Informatics online at [http://himcareers.ahima.org/images/AcademicPathways\\_FMaster.pdf](http://himcareers.ahima.org/images/AcademicPathways_FMaster.pdf)

<sup>29</sup> Getting Your HIM Baccalaureate Degree: An Academic Pathway online at [http://himcareers.ahima.org/images/AcademicPathway\\_Bac.pdf](http://himcareers.ahima.org/images/AcademicPathway_Bac.pdf)

<sup>30</sup> Business Exchange, Health Information Technology Jobs, online at <http://bx.businessweek.com/health-information-technology/jobs/>

<sup>31</sup> Getting Your HIM Associate Degree: An Academic Pathway, online at [http://himcareers.ahima.org/images/AcademicPathways\\_FAssociate.pdf](http://himcareers.ahima.org/images/AcademicPathways_FAssociate.pdf)

Credential/Education	Job Titles
<b>Coding Manager</b> – for experienced coders holding one or more of the certificates below	
<b>Certified Coding Specialist (CCS)</b> is a professional whose coding expertise is focused towards a hospital environment. This individual demonstrates significant expertise with ICD and CPT coding, including health information documentation, data integrity and quality, anatomy, physiology, and pharmacology.	<b>Certified Coding Specialist-Physician-based (CCS-P)</b> is a professional with multi-specialty coding expertise focused towards a physician-based environment who demonstrates significant expertise with the CPT, ICD and HCPCS coding systems being also an expert in health information documentation, data integrity and quality.
<b>Certified Coding Associate (CCA)</b> is responsible for transformation of verbal descriptions of diseases, injuries, and procedures into numeric or alphanumeric designations. This is an entry level position but after getting some experience, may qualify to take the CCS or CCS-P certification.	
Source: American Health Information Management Association	

In California, Registered Health Information Technicians (RHITs) are generally employed in six broad job categories: Executive positions (1-3% of all RHITs); Information Technology positions (1-3%); Health Information Management (HIM) positions (23-29%); Other HIM positions (50-56%); Education positions (1%); and Alternative Positions (5-13%).<sup>32</sup>

The training portion of the ARRA stimulus package that is aimed at establishing electronic health records describes a series of information technology positions in healthcare in two categories that will be needed for EHR implementations. *The categories and positions summarized in Table 3 are discussed in detail in Appendix F.*<sup>33</sup>

**Table 3 – Information Technology in Healthcare Positions Targeted in the ARRA Stimulus Package**

Category	Job Types
<p><b>Mobile Adoption Support Positions</b></p> <p>These workers support implementation at specific locations for a period of time, and move on to new locations. These workers might be employed by regional extension centers, providers, vendors, or state/city public health agencies, and would work together in teams.</p>	<p>Practice workflow and information management redesign specialist</p> <p>Clinician/practitioner consultants</p> <p>Implementation support specialists</p> <p>Implementation managers</p>
<p><b>Permanent Staff of Health Care Delivery and Public Health Sites</b></p> <p>These roles are needed for ongoing support of health IT deployed in office practices, hospitals, health centers, long-term care facilities, health information exchange organizations and state and local public health agencies.</p>	<p>Technical/software support staff</p> <p>Trainers</p>

Source: U.S. Department of Health and Human Services, ARRA Information

<sup>32</sup> Armstrong, D. and Wing, P., “Penetration of HIM Professionals in the Fifty States,” Center for Health Workforce Studies, February 12, 2004, pp. 24-26 online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_022597.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_022597.pdf)

<sup>33</sup> U.S. Department of Health and Human Services, “American Recovery and Reinvestment Act of 2009,” Information Technology Professionals in Healthcare: Community College Consortia to Educate Information Technology Professionals in Health Care,” online at <http://apply07.grants.gov/apply/opportunities/instructions/oppEP-HIT-10-001-cfda93.721-instructions.doc>

### Growing Demand for Health Information Technicians (HIT)

Several HIM occupations are available to students who have completed certificate and degree programs in the community colleges. Of primary interest in this report is the Health Information Technician (HIT). This is part of the SOC 29-2071 code, which also includes Medical Records personnel and which is the only SOC code that corresponds directly to health information technology and requires training that can be obtained at a community college.

“The health information technician is a member of the health care team assuring that documentation is consistent with professional standards and licensure requirements. To accomplish this, health information technicians monitor and track information recorded in a patient's medical record which includes the medical history, physical examination, progress notes reflecting treatment, and laboratory and radiology reports. Interacting with physicians, administrators, nurses and other allied health professionals, the health information technician quantifies, manages, and interprets the health record data that becomes the basis for crucial medical and financial decisions. The health information technician functions as the patient advocate in protecting the confidentiality of sensitive health care information recorded in the medical record.”<sup>34</sup> An AA- or AS- degree in Health IT is the minimum level of education required to work as a HIT according to the Bureau of Labor Statistics.<sup>35</sup>

Other medical records or health information personnel in SOC 29-2071 may input, review and analyze health records to identify relevant diagnoses and procedures for each patient encounter. They translate diagnostic and procedural phrases used by care givers into coded form. The coded information is used for reimbursement purposes, assessment of clinical care, and to support medical research activity.<sup>36</sup> These positions do not require an AA or AS degree and may or may not require a certificate.

Los Angeles and Orange Counties represent about 38% of the RHITs and RHAs employed in California.<sup>37</sup> See Appendix G for a breakdown of the statewide distribution and demand projections. When comparing projected growth in Los Angeles and Orange Counties to the rest of the State and to the nation, it is evident that these counties will experience a higher increase in job demand, as shown in Table 4 and Exhibit 3.

**Table 4 - Growth in Demand for Medical Records and Health Information Technicians by Region, State, and Nation**

Region	2009 Jobs	2014 Jobs	Change	% Change
Regional Total	5,880	6,595	715	12%
State Total	15,193	16,778	1,585	10%
National Total	171,841	189,961	18,120	11%

Source: EMSI Complete Employment - 4th Quarter 2009

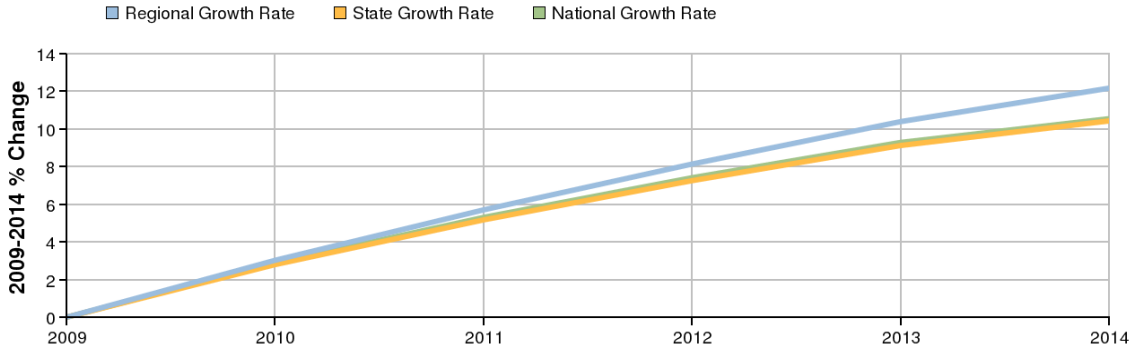
<sup>34</sup> Cypress College Health Information Technician Program description, online at <http://healthscience.cypresscollege.edu/~hit/>

<sup>35</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2010-11 Edition, Medical Records and Health Information Technicians, on the Internet at <http://www.bls.gov/oco/ocos103.htm>

<sup>36</sup> AHIMA Website, “Coding Specialist,” online at [http://www.ahima.org/coding/coding\\_specialist.asp](http://www.ahima.org/coding/coding_specialist.asp)

<sup>37</sup> See Appendix G for CHIA credential information

**Exhibit 3 - Comparison of Regional, State, and National Growth Rates For Medical Records and Health Information Technology Workers**



Source: EMSI Complete Employment - 4th Quarter 2009

The 715 new jobs for Medical Records and Health Information Technicians projected over the next five years more than doubles to 1,511 when replacement openings are also considered. Like other health care occupations, there will be a significant impact on replacement openings as a result of retirements among baby boomers in these positions. When viewing Table 5, keep in mind that the SOC 29-2071 includes both degreed and registered HITs and non-degreed clerks and coders.

**Table 5 - Growth in Demand for Medical Records and Health Information Technicians in Los Angeles and Orange Counties, 2009-2014**

SOC Code	Description	2009 Jobs	2014 Jobs	Change	% Change	New & Rep. Jobs	% New & Rep.
29-2071	Medical Records and Health Information Technicians	5,880	6,595	715	12.16%	1,511	26%

Source: EMSI Complete Employment - 4th Quarter 2009

**Workforce and Hiring Challenges**

Health Information Technicians working as medical coders identified their biggest challenges in a recent survey conducted by the American Health Information Management Association (AHIMA) Seventy-one percent stated, “Increased workloads from increasing coding requirements,” as the top challenge. The fourth biggest challenge identified was “staff shortages” which was named by 56% of respondents. In reporting the survey results, Kevin Heubusch noted, “Nearly all solutions to today’s challenges involve education. ‘Education for

staff is probably the ongoing approach to most of these challenges,' wrote one respondent. 'Naturally our first goal is education,' wrote another."<sup>38</sup>

Like many other allied health occupations, the ratio of HITs to the general populations in Los Angeles and Orange Counties (as well as throughout California) is well below that of almost any other part of the country. AHIMA concludes in a 2004 report, "Numbers of...graduates from AHIMA accredited education programs in California...are so small as to jeopardize the credibility of the AHIMA credentials and education programs in this part of the country." Also, "The most effective mechanism for increasing the penetration of HIM professionals in a state is to add HIM education program(s)."<sup>39</sup>

Finding health information management and health IT workers and professionals may be the biggest challenge in the industry during the coming decade. Although it has been suggested by AHIMA and others that candidates for health IT positions might be "re-trained" workers from other positions, those other positions are also in great demand so workers cannot be spared to train for the health IT openings. Another complicating factor is that fewer students are entering the Computer Technology field (a 60%-70% decline in enrollments from 2000-2005), so it is also expected to be difficult to find technology workers or students who can be trained to work as health IT professionals.<sup>40</sup> Professional organizations like the American Medical Informatics Association (AMIA) and AHIMA are developing programs to address workforce needs, but most of these efforts are aimed at promoting federal legislation to support training and re-training efforts.<sup>41</sup>

### Wages

The average wage for HITs in Los Angeles and Orange counties is \$18.22/hour, and the median wage is \$16.15/hr, making them one of the lowest paid occupations in the group of allied health occupations that require an AA or AS degree. (These occupations have average hourly wages ranging from \$14.64-\$43.14.)<sup>42</sup> The lower wages for HITs may be a result of the grouping in the SOC code of HITs and other HIM personnel. The latter are not degreed professionals and tend to have lower salaries which may bring the average (and median) wages of the group down. A 2008 salary study by AHIMA showed an average yearly wage difference of over \$16,000 between non-degreed coders and RHITs with AA or AS degrees.<sup>43</sup>

### Employer Needs and Challenges

A dozen employers were interviewed for this study and they overwhelmingly ranked health IT as one of their organization's highest current issues, ranking it 9 or 10 on a scale of 1-10, with 10 being the highest importance. This is not just because of the legislative pressures to adopt

<sup>38</sup> Heubusch, Kevin. "Coding's Biggest Challenges Today." *Journal of AHIMA* 79, no.7 (July 2008): 24-28, online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_039062.hcsp?dDocName=bok1\\_039062](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_039062.hcsp?dDocName=bok1_039062)

<sup>39</sup> Armstrong, D. and Wing, P., "Penetration of HIM Professionals in the Fifty States," Center for Health Workforce Studies, February 12, 2004, p 1. online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_022597.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_022597.pdf)

<sup>40</sup> Western Interstate Commission for Higher Education, "A Closer Look at Healthcare Workforce Needs in the West: Health Information Technology," p. 4, online at [https://www.amia.org/files/shared/Health\\_IT\\_Workforce\\_Brief.pdf](https://www.amia.org/files/shared/Health_IT_Workforce_Brief.pdf)

<sup>41</sup> Western Interstate Commission for Higher Education, "A Closer Look at Healthcare Workforce Needs in the West: Health Information Technology," p. 5, online at [https://www.amia.org/files/shared/Health\\_IT\\_Workforce\\_Brief.pdf](https://www.amia.org/files/shared/Health_IT_Workforce_Brief.pdf)

<sup>42</sup> Source: EMSI Complete Employment - 4th Quarter 2009

<sup>43</sup> "2008 Salary Study Delves Deeper into Factors Driving Pay," AHIMA, online at <http://www.ahima.org/salarystudy/>

Electronic Health Records. HIM, health IT and particularly medical coding are essential to the process of billing for services. Health care facilities depend on their coding staff for the information that is essential to the billing process for both fee-for-service and insurance reimbursements.

Staffing patterns in health IT varied greatly at the employers surveyed. The County of Los Angeles employs 250 Health Information Technicians in 3-4 job grades that require certification ranging from the CCA to RHIA (see Table 2, above). This means all of their HITs have gone to accredited schools and passed certification exams at some level. All job classifications beside the trainee level require at least one year of experience. Other employers also indicated that they only hire certified employees with experience and all employ RHITs and/or RHIAs. A few employers have medical records clerks who are not certified, but that is the exception. All of the employers who have more than one job grade in health information management reported that the Medical Coder is a higher level position than the RHIT and is generally held by someone with both the RHIT certification and a CCS or CCS-P credential. Two employers reported that some or all of their medical coders work from home.

Most of the managers who were interviewed for this study work in Human Resources and have a broad view of their organization. One respondent, however, heads the imaging department at Cedars Sinai Hospital and provided a look at how health IT is administered within a specialty area. They have 3.5 Medical Coders who are RHITs with the CCS credential and who work from home. (There are another 6-9 RHITs who serve the hospital in general). In imaging they also have a person who is dedicated to Quality Assurance. In the health information management department, there is an RHIA who serves the entire hospital. Another hospital imaging department reported that they have two PACS (Picture Archiving and Communication Systems) Administrators who are also RHITs.

An IT Director from Kaiser Permanente was also interviewed. He represents the technology side of field and provided valuable information about entry-level positions for AA-degree holders as Desk-Top Technicians and then higher level Data Technicians. These are jobs for which community college AA graduates are sought and generally they are well prepared. At Kaiser's Orange County facilities, there are 20-30 medical coders who are part of Medical Records in addition to the Desk-Top and Data Technicians who keep the equipment running and install software for health IT applications. These technicians need good interpersonal skills as well as their technical skills because they are frequently working under high-stress conditions where important data has been lost or compromised by technical issues.

The types and amount of training varied greatly in all of the settings of employers who were interviewed. Two organizations were already using the local community colleges for training programs and others suggested training in regulations/legislative update, terminology, scanning, getting comfortable with coding skills, and knowing how to use external resources for validation. One interviewee talked about retraining a group of clerks in hopes of retaining them when a new system is put into place. The interviewee from Los Angeles County reported that they have worked closely with East Los Angeles College and Drew Medical University in their massive effort to train over 200 existing employees for health IT positions over the past 10 years.

Most employers interviewed, however, did not indicate that they were planning on retraining employees to fill needs in health IT at this time. This is probably because of difficulties staffing other areas which make it undesirable to redirect staff to the health IT area. Earlier Center of

Excellence environmental scans for Los Angeles and Orange Counties<sup>44</sup> highlighted occupations in health care for which there will be a shortfall of qualified workers in the coming 5-10 years. These include Psychiatric Technicians, Surgical Technologists, Pharmacy Technicians, Radiologic Technologists, Radiation Therapists, Diagnostic Medical Sonographers, Cardiovascular Technologists, and Nuclear Medicine Technologists. Even in allied health occupations where data does not indicate shortages, employers report ongoing difficulty in finding qualified job candidates, so the likelihood of employers retraining workers from these areas for health IT jobs is low.

Several employers felt that additional community college programs would be helpful and said that they saw the area growing over the coming years although most were not hiring at this time due to budget cuts. However, one interviewee thought that the automation of more and more of the systems could actually reduce staff requirements in health IT in the long run.

Recommendations from employers surveyed for the existing degree and certificate programs included: better classes in patho-physiology, an emphasis on the coder's responsibility to code exactly what the doctors say without interpretation, PACS radiology programs as part of the health IT curriculum, "break out" classes in specialties like nursing or radiology, and getting students some type of experience in hospital settings even if that experience is not related to their field of study.

## Community Support and Resources

Section 3016 of the Health Information Technology for Economic and Clinical Health (HITECH) Act, which is part of ARRA, authorized the creation of a program to assist in the establishment and/or expansion of education programs designed to train a highly skilled workforce of health and information technology professionals to effectively put in place and use secure, interoperable electronic health record systems. Under that authority, the Office of the National Coordinator for Health Information Technology (ONCHIT) announced \$120 million in funding available early in 2010 for the Health IT Workforce Development Program.

The Health IT Workforce Development Program focuses on community college training programs to educate an expanded workforce of IT professionals (\$70 million), research-based curricula that institutions of higher education can use to construct their instructional programs (\$10 million), a competency testing program, and additional university programs to support certificate and advanced degree training.<sup>45</sup> The community college training program provides assistance through cooperative agreements to five institutions, including Los Rios Community College District, to rapidly create or expand health IT training programs.<sup>46</sup> East Los Angeles College, Cypress College, Orange Coast College and Santa Monica College are part of the Los Rios project to establish intensive, non-degree training programs that can be completed in six months or less by individuals with appropriate prior education and/or experience. Students in these programs are expected to develop skills in information technology, health care, workflow of health care practices, redesign of health care practices, change strategies, and

<sup>44</sup> See Los Angeles Center of Excellence at Mount San Antonio College Environmental Scans in Medical Imaging, Allied Health, Surgical Technology, and Psychiatric Technology online at [http://www.coeccc.net/products\\_industry\\_scans.asp](http://www.coeccc.net/products_industry_scans.asp)

<sup>45</sup> HITECH Priority Grant Program: Health IT Workforce Development Grant Program: Facts at a Glance," online at <http://healthit.hhs.gov/portal/server.pt?open=512&objID=1432&mode=2>

<sup>46</sup> Press Release, "Los Rios Takes Lead in \$5.4 Million Federal Grant," April 7, 2010, online at [http://www.losrios.edu/downloads/press/04-07-10\\_HHSGrant.pdf](http://www.losrios.edu/downloads/press/04-07-10_HHSGrant.pdf)

quality improvement techniques. The training will also prepare individuals to support IT in public health settings. By the end of the two-year grant period, it is expected that training programs for over 10,000 students will have been established.<sup>47</sup>

Other funds for workforce development, although not specific to health information technology, may be available. For instance, the California Community Colleges Chancellor's Office Economic and Workforce Development division announced the funding of an Industry-Driven Regional Collaborative grant to Saddleback College for a HIT program, in 2010-2011.

Another important program is the model programs project of \$220 million for 15 non-profit and/or government organizations which was announced earlier in December 2009 and will provide funds to promote successful models of health IT adoption.<sup>48</sup> On April 2, 2010, the HHS director announced that ONCHIT will make \$144 million available over the next four years to fund institutions of higher education and research to address the widespread adoption and meaningful use of health information technology. "With this commitment of resources, health information management, an essential element to the successful adoption of a nationwide electronic health records system by 2014, can accelerate the development of undergraduate and post baccalaureate programs—the type of programs that will allow us to educate the health information management workforce of the future," declared AHIMA Chief Executive Officer, Alan Dowling.<sup>49</sup>

In his January 2010 State of the State address, California Governor Arnold Schwarzenegger announced the launch of a \$500 million California Jobs Initiative. The purpose of this initiative will be to provide funding for job creation and training in health care and other areas that are expected to grow with the economic recovery.<sup>50</sup> There are also incentive funds available to encourage organizations to increase their use of Electronic Health Records. These funds include a matching grant for California that was announced in December 2009 and will provide incentive payments for health care providers who participate in Medi-Cal and who make progress towards the "meaningful use" level of electronic health information implementation.<sup>51</sup>

In addition to continually expanding public sector and government efforts to create electronic health information networks, several private sector efforts are underway. Kaiser Permanente is actively involved in adoption of health information technology and has spent about \$4 billion on the project. Their system is known as KP HealthConnect and is expected to be fully operational this year.<sup>52</sup>

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<sup>47</sup> U.S. Department of Health and Human Services, "Community College Consortia to Educate Information Technology Professionals in Health Care Program" online at <http://HealthIT.HHS.Gov/communitycollege>

<sup>48</sup> California Healthline, "U.S. Announces Grant Effort for Models of Health IT Usage," December 3, 2009, online at <http://www.californiahealthline.org/articles/2009/12/3/us-announces-grant-effort-for-models-of-health-it-usage.aspx>

<sup>49</sup> Dowling, Alan, Ph.D., "AHIMA Applauds HHS for Strengthening Commitment to Health Information Management Workforce Education and Training," AHIMA Press Release dated April 5, 2010, online at [http://www.ahima.org/press/press\\_room/Schoolfunds.asp](http://www.ahima.org/press/press_room/Schoolfunds.asp)

<sup>50</sup> California Healthline, "New Jobs Training Effort Could Strengthen California's Allied Health Care Work Force," January 11, 2010 online at <http://www.californiahealthline.org/special-reports/2010/new-jobs-training-effort-could-strengthen-californias-allied-health-care-work-force.aspx>

<sup>51</sup> California Healthline, "CMS Awards California almost \$2.5 Million for Electronic Records Effort," December 10, 2009 online at <http://www.californiahealthline.org/articles/2009/12/10/us-awards-california-almost-25-million-for-electronic-records-effort.aspx>

<sup>52</sup> Kaiser Permanente website: Our Vision for the Future of Health Care, online at <http://xnet.kp.org/future/>

## College Response and Issues

### Health Information Technology Students and Programs

There are three categories of students eligible for health information management and health IT training and education.

**Table 6 - Health Information Management and Technology Student Needs**

Type of Students	Education and Training Needed
Students with computer skills but no knowledge of the health care industry	May be eligible for certificate, contract education or six-month training programs funded through ARRA. However, these two audiences have different needs and may not fit into the same programs.
Students with health care backgrounds/education but inadequate computer skills	
Students who need both computer skills and health care knowledge	Eligible for certificate programs or AA- or AS-degree programs and RHIT certification

Rosalie Majid, Director of the Health Information Technology program at Cypress College, reported that many of the students entering their programs are working adults who are returning to school. They tend to be part-time students who take only one or two classes at a time and often find HIM jobs before they complete their degrees, so they are not counted as program or degree completers in the data.<sup>53</sup> At East Los Angeles College, the majority of HIT students are full-time workers for the County of Los Angeles.

Accredited health information management programs follow guidelines established by national professional organizations. CAHIIM is the accrediting agency and provides standards for both the AA and BA degree programs, as well as graduate-level programs.<sup>54</sup> AHIMA has developed competencies on which the CAHIIM standards are based and offers curriculum models for both AA and BA degrees.<sup>55</sup> *The AHIMA competencies are shown in Appendix H.* Table 7 shows a short list of top competencies needed, as identified by an AHIMA survey of professionals.

<sup>53</sup> Interview with Rosalie Majid, Program Director

<sup>54</sup> See CAHIIM Accreditation Standards at <http://www.cahiim.org/accredstnds.html>

<sup>55</sup> AHIMA, "Curriculum Model: Baccalaureate Degree in Health Information Management," online at [http://library.ahima.org/xpedio/groups/public/documents/internal\\_accreditation/bok1\\_036800.pdf](http://library.ahima.org/xpedio/groups/public/documents/internal_accreditation/bok1_036800.pdf); and Curriculum Model: "Associate Degree in Health Information Management," online at [http://library.ahima.org/xpedio/groups/public/documents/internal\\_accreditation/bok1\\_036799.pdf](http://library.ahima.org/xpedio/groups/public/documents/internal_accreditation/bok1_036799.pdf)

**Table 7- Top Five Competencies Needed for Health IT Workers<sup>56</sup>**

<b>Top 5 Competencies Relevant for HIM Work Now and in 10 Years</b>	<b>2009</b>	<b>2019</b>
Privacy, confidentiality of health information	81%	87%
Basic computer literacy skills	80%	74%
Health informatics skills—using EHR & PHR	72%	94%
Health information literacy & skills	72%	78%
Health information/data technical security	50%	76%

### Certification and Credentials

AHIMA offers credentialing as a Registered Health Information Technicians (RHIT). To obtain the RHIT credential, an individual must graduate from a 2-year associate degree program accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) and pass an AHIMA-administered written examination. There are currently several CAHIIM-accredited health information technology colleges and university programs in Los Angeles and Orange Counties. (See Education and Training Programs section.) See Appendix E for more information about career pathways for AA/AS-degree, BA-degree, and graduate degree students.

CAHIIM, the accreditation body for degree-granting institutions in HIT, cannot accredit certificate programs. But, AHIMA is currently developing certification programs for specialties like Cancer Registry and Patient Privacy that can fill an important void in determining which certificate programs have appropriate content and standards. Accredited (those with both CAHIIM and WASC regional accreditation) programs also allow for the transfer of units from one institution to another, allowing workers to more effectively use education to support articulated programs of study and career pathways.<sup>57</sup>

The American Academy of Professional Coders (AAPC) also offers coding credentials. The Board of Medical Specialty Coding (BMSC) and Professional Association of Health Care Coding Specialists (PAHCS) both offer credentialing in specialty coding. The National Cancer Registrars Association (NCRA) offers a credential as a Certified Tumor Registrar (CTR).<sup>58</sup>

### Education and Training Programs

In the Los Angeles/Orange County region there are several accredited health information management programs at community colleges and private proprietary schools.

<sup>56</sup> Huebusch, Kevin, "Who's Hiring?" Journal of AHIMA, October 12, 2009, online at <http://journal.ahima.org/category/career-education/>

<sup>57</sup> AHIMA website, online at [http://campus.ahima.org/campus/general\\_info/accreditation.html](http://campus.ahima.org/campus/general_info/accreditation.html)

<sup>58</sup> Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2010-11 Edition, Medical Records and Health Information Technicians, on the Internet at <http://www.bls.gov/oco/ocos103.htm>

**Table 8 – Degree and Certificate Programs in Health Information Technology in Los Angeles and Orange County Community Colleges**

Cypress College <sup>59</sup>	East Los Angeles College
Associate of Science Degree in Health Information Technology	Associate of Science Degree in Health Information Technology
Certificate Programs	Certificate Programs
<ul style="list-style-type: none"> <li>• Health Information Coding Specialist</li> <li>• Medical Quality Review Assistant</li> <li>• Medical Information Technician</li> </ul>	<ul style="list-style-type: none"> <li>• Health Information Coding Specialist</li> <li>• Health Information Coding and Statistics Clerk</li> </ul>
Skills Certificate Programs	Skills Certificate Programs
<ul style="list-style-type: none"> <li>• Medical Insurance Billing</li> <li>• Medical Record Clerk Certificate</li> </ul>	<ul style="list-style-type: none"> <li>• Health Information Typist Clerk</li> <li>• Medical Billing Assistant</li> </ul>

Source: California Community College Chancellor’s Office

See Appendices I and J for Cypress College and East Los Angeles College program descriptions.

Private proprietary schools in Los Angeles and Orange Counties are also accredited to provide degree and certificate Health Information Technology programs. Charles R. Drew University of Medicine and Science, DeVry (Pomona, Long Beach, and Sherman Oaks) and ITT Tech (Anaheim and San Dimas) all have CAHIM accredited Associate Degree programs. It should be noted, however, that DeVry’s program is not regionally accredited by WASC and students cannot transfer their work from that school to other accredited colleges and universities. CODEMED School of Professional Coding in Los Angeles offers approved coding certificate programs. The non-accredited programs that offer certificates are not included in this report.

**Distance Learning for Health Information Technology**

In several of its studies and reports, AHIMA has made strong recommendations for the use of distance or electronically-mediated learning for health IT students. These recommendations come as the growth of the Internet and development of course authoring software increases the general use and availability of these modes of education. AHIMA’s position is that the use of distance education will help in recruiting more HIT students, broaden the base of students who can participate in HIT educational programs, help develop HIT students (and future workers) as independent learners and provide an appropriate style of delivery because the HIT student/professional must have good computer skills and be comfortable using the computer.<sup>60</sup>

As more Distance Learning programs are developed, students will have greater access to education that originates outside of this geographic area. A local example of how online learning can be used is the conjoint health IT program between Santa Barbara, Ventura, Antelope Valley, Allan Hancock, Santa Clarita, and San Luis Obispo districts. Santa Barbara City provides the core courses via distance education. Weekly study groups are held at each

<sup>59</sup> Online at <http://www.cypresscollege.edu/academics/academicPrograms/HealthScience/healthInformationTechnology/>  
<sup>60</sup> AHIMA, “Curriculum Model: Associate Degree Education in Health Information Management,” online at [http://library.ahima.org/xpedio/groups/public/documents/internal\\_accreditation/bok1\\_036799.pdf](http://library.ahima.org/xpedio/groups/public/documents/internal_accreditation/bok1_036799.pdf)

participating college and degrees are awarded by the student's home college. Cosumnes River College in the Sacramento area also offers a 2-year online program online.<sup>61</sup>

**Occupational Program Completions by Institution**

The following three tables provide details about students earning degrees and certificates in Medical Records and Health IT.

**Table 9 - Health Information Technology/Technicians Program Completers for Los Angeles and Orange Counties, 2008**

CIP Code	Title	Institution	Award Level	2008 Completions
51.0707	Health Information/Medical Records Technology/Technician	DeVry University	Associate's degree	19
51.0707	Health Information/Medical Records Technology/Technician	East Los Angeles College	Associate's degree	18
51.0707	Health Information/Medical Records Technology/Technician	Cypress College	Associate's degree	5
<b>TOTAL COMPLETIONS</b>				<b>42</b>

Source: EMSI Complete Employment - 4th Quarter 2009

**Table 10- Medical Records Certificate Program 2008 Completers**

*Note: Regardless of the curriculum, completers of these programs cannot be certified as Registered Health Information Technicians because they do not earn AA or AS-degrees in HIT.*

CIP Code	Title	Institution	Award Level	2008 Completions
51.0707	Health Information/Medical Records Technology/Technician	Cypress College	Award of at least 1 but less than 2 academic years	1
51.0707	Health Information/Medical Records Technology/Technician	East Los Angeles College	Award of at least 1 but less than 2 academic years	14
51.0707	Health Information/Medical Records Technology/Technician	Cypress College	Award of less than 1 academic year	4
51.0707	Health Information/Medical Records Technology/Technician	East Los Angeles College	Award of less than 1 academic year	1
<b>Total Completers</b>				<b>20</b>

Source: EMSI Complete Employment - 4th Quarter 2009

<sup>61</sup> See Health Information Technology on the Cosumnes River College website at [http://www.crc.losrios.edu/Areas\\_of\\_Study/Careers\\_and\\_Technology/Health\\_Information\\_Technology.htm](http://www.crc.losrios.edu/Areas_of_Study/Careers_and_Technology/Health_Information_Technology.htm)

**Table 11 - Medical Insurance Coding Specialist Completions**

CIP Code	Title	Institution	Award Level	2008 Completions
51.0713	Medical Insurance Coding Specialist/Coder	East Los Angeles College	Award of at least 1 but less than 2 academic years	48
51.0713	Medical Insurance Coding Specialist/Coder	Cypress College	Award of at least 1 but less than 2 academic years	10
51.0713	Medical Insurance Coding Specialist/Coder	Ladera Career Paths Training Centers*	Award of less than 1 academic year	9
<b>Total Completers</b>				<b>67</b>

Source: National Center for Education Statistics

\* Though not currently an accredited program, Ladera was accredited in 2008.

The East Los Angeles College program reports a combined total of Certificate completers for Table 10, ("Health Information Coding Specialist", and "Health Information Coding & Statistics Clerk") of 89, which is 74 more students than reported by the EMSI data. An additional 4 students at ELAC also completed the "Health Information Typist Clerk" skills certificate. Data provided by the Cypress College program was reported in academic, rather than calendar, year format but appears to concur with the EMSI data in Tables 9-11.

### Program Capacity

At the rates shown in Tables 9-11 there will be slightly over 200 graduates with AA or AS degrees and 435 completers with medical coding certificates during the five-year projected period (2009-2014). During that same period there will be 715 expected new jobs and an added 795 positions opened by retirements and resignations, for a total of 1,511 job openings. The contrast between demand and capacity is shown in Table 12.

**Table 12 – 2008 Program Completers Compared to Projected Openings in Los Angeles and Orange Counties**

Program Type	2008 Completers and Graduates	Projected Completers 2009-2014	2009-2014 Total Job Openings Projected	Difference (Program Completers – Job Openings)
Health Information Technology AA/AS degree	42	210		
Health Information/Medical Records Technician Certificate Programs	20	100	1,511	866
Medical Coders/Insurance Coders Certificate Programs	67	335		
<b>Total</b>	<b>129</b>	<b>645</b>	<b>1,511</b>	<b>866</b>

Source: EMSI Complete Employment - 4th Quarter 2009

Completers and graduates of the current programs are significantly fewer than the projected number of job openings over the next five years. Because of the grouping of Health Information Technicians and Medical Records occupations together in SOC Code 29-2017, it is not clear how much of the unmet demand represents a need for RHITs and how much is for employees at other levels (who could be completers of short-term or certificate programs).

## Conclusion and Recommendations

### ***Establish New Program(s) to Meet the Emerging Need***

Given the push for adoption of Electronic Health Records, it is clear that programs will be needed for educating and training both dedicated health information management workers and a wide variety of other healthcare workers. With 866 more job openings than program and degree completers over the coming five years, there will be a significant unmet demand for health IT workers.

It is recommended that all community colleges monitor their local healthcare communities to stay apprised of new jobs and roles that will emerge as the mandate to use Electronic Health Records is met. None of the twelve employers interviewed for the preparation of this report was in a position to predict how the health IT area will be changing and/or what requirements will emerge in the next few years. Though the dynamic nature of health IT is making it impossible to look very far ahead, it is clear that many changes will occur before the U.S. achieves its 10-year goal of being 100% digital. As current job titles are standardized and new ones emerge, the community colleges are in the best position to assist with training and education of incumbent and new employees. Almost every community college in Los Angeles and Orange Counties has at least one allied health program. These allied health programs can form the foundation for each college's efforts to be a critical part of the digital evolution of the healthcare industry.

New programs will be needed but they could be a different model from the current accredited programs at East Los Angeles College and Cypress College. New programs should consider using alternate formats and configurations like the Cosumnes River online or Santa Barbara consortium models, working collaboratively and/or incorporating a distance learning model as recommended by AHIMA. The programs may intersect programs and/or classes for training and re-training and in some cases the new programs will grow out of grant funded or contract education training opportunities. **Because the field is growing so rapidly and still evolving, new and existing programs will have to be agile and constantly scan their local employer base to make sure they are serving the current needs in their area.**

Another consideration in locating new programs will be colleges with existing programs in related health care areas, where existing faculty and advisory committees can facilitate the development of the new HIT program(s). The California eHealth Plan suggests drawing on potential "feeder" programs like Allied Health, Computer Information Systems, Computer Network and Engineering, Computer Science, Nursing, Health Education, Medical Imaging Sciences, Medical Records, Medical Billing, Pharmacy, and/or Physician Assistant.<sup>62</sup> The

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<sup>62</sup> California Health and Human Services Agency, California's eHealth Strategic Plan, Version 1.10, December, 2009, p. 44 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

graduates of many of these programs are already in high demand<sup>63</sup> so it is not likely that there would be students available to shift over to health information management but the feeder programs also have long waiting lists and students who are unable to get into other allied health programs may be interested in exploring health information management careers.

### **Take Advantage of Funded Training Opportunities**

Opportunities for short-term training and re-training programs will be available to the colleges through ARRA and other funding sources. Most of this training will be “cross-over” training designed to take workers with some of the necessary health IT skills and complete their skill set. Starting with funded training programs, new certificates and contract education opportunities can be developed as a permanent part of the colleges’ offerings. Colleges with allied health programs as well as those with HIT programs should consider participation in the funded training programs.

Candidates for these programs will include computer technology students as well as allied health certificate/degree students who have had trouble finding entry-level jobs. Being trained in Health IT will give students an edge in the employment market and workforce as well as serving the needs of employers in the local business community. For experienced health care workers, the health IT training may provide opportunities for advancement or job relocation.

### **Develop Health IT Contract Education Partnerships**

Colleges with active contract education programs should work with employers, especially hospitals, to support training and re-training needs. “There are models now of employers paying for training for coders.... However, they’re squeezed right now in this economy and may be more reluctant to make those investments, especially when they’re not always able to capture gains because the employees jump to positions with other employers. ARRA may be a way of subsidizing some of that training.”<sup>64</sup>

“A unique challenge is that some of these workers will require training in basic computing skills before they can be proficient in using some HIT applications. Work constraints will require that this training be done primarily on the job, though only partly by vendors and with the remainder either in-house or through consultants, Regional Extension Centers, or other training organizations. For this reason, we will need to train the trainers who will teach clinicians in California how to effectively use EHRs.” *California eHealth Plan*<sup>65</sup>

### **Incorporate Core Competencies into all Allied Health Programs**

In 2008, AHIMA released a set of core competencies for all health workers who handle electronic records. (See Appendix H and the AHIMA/AMIA Joint Work Force Task Force report on core competencies.<sup>66</sup>) As a professional organization, AHIMA is urging educational

<sup>63</sup> See Los Angeles Center of Excellence at Mount San Antonio College Environmental Scans in Medical Imaging, Allied Health, Surgical Technology, and Psychiatric Technology online at [http://www.coecc.net/products\\_industry\\_scans.asp](http://www.coecc.net/products_industry_scans.asp)

<sup>64</sup> Rollins, Genna. "ARRA and the HIM Workforce." *Journal of AHIMA* 80, no.10 (October 2009): 26-30. Online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_044967.hcsp?dDocName=bok1\\_044967#competencies](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_044967.hcsp?dDocName=bok1_044967#competencies)

<sup>65</sup> California Health and Human Services Agency, *California's eHealth Strategic Plan, Version 1.10, December, 2009*, pp. 43-44 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

<sup>66</sup> AHIMA/AMIA Joint Work Force Task Force, "Health Information Management and Informatics Core Competencies for Individuals Working with Electronic Health Records," October, 2008 online at [http://www.ahima.org/infocenter/whitepapers/workforce\\_2008.pdf](http://www.ahima.org/infocenter/whitepapers/workforce_2008.pdf)

programs for health workers at every level to incorporate these competencies into their courses of study. In addition to these competencies becoming part of existing and new programs for HITs, community colleges should audit Student Learning Outcomes in all allied health programs to ensure that graduates of those programs are prepared to work in the digital environment.<sup>67</sup>

“Clinicians will comprise the majority of ultimate users of HIT and the importance of HIT competencies for all clinicians has been extensively discussed by the Institute of Medicine in *Crossing the Quality Chasm and Health Professions Education*. These individuals cannot be expected to intuitively understand or be able to rapidly learn a complex system on the job, requiring us to consider how to train them in the skills and competencies they will need to effectively integrate and use HIT as a tool to improve care quality and cost. Physicians, nurses, allied health, etc. will all need to have an understanding of and be comfortable using EHR and other HIT upon completion of their studies, requiring us to evaluate how best to incorporate health IT curriculum into all types of clinical studies.”<sup>68</sup>

### ***Improve Student Success through Good Recruitment***

As new programs are established, their success will depend to some degree on the nature of the students attracted to health IT careers. Programs for HITs should be clear about the nature of the occupation in their student recruitment efforts. As one of the few allied health occupations with limited or no patient contact and a high need for technological skills and savvy, health IT requires a different set of competencies and interests than most other allied health careers. Furthermore, the California eHealth plan also recommends development of programs around the schedules and requirements of the workers likely to make use of them and making programs affordable through the use of aid programs. The plan identifies the Workforce Investment Boards (WIBs) and Regional Health Occupational Resource Centers (RHORC, <http://www.healthoccupations.org>) as critical resources in this process.<sup>69</sup>

### ***Incorporate the Specialty Track Concept***

In response to industry needs, AHIMA is working on models to shift existing associate degree programs from a “generalist” preparation to specialist track options. This is intended to help graduates move into entry-level positions where experience is valued by creating specialty “areas of high value to employers” in the graduate’s education. Thus, graduates without experience may be able to move into jobs because their specialty area is in demand. Schools need to analyze the local demand statistics in order to determine which specialty is appropriate in their area. Some of the proposed tracks include Coding, e-HIM Implementations, Physician Practice e-HIM, and Registry (i.e. Cancer Registry, Trauma Registry, and Birth Defects Registry). In the employer survey for this report, several interviewees discussed the desirability of health IT personnel, preferably RHITs, who also are PACS certified. A Generalists’ track could be retained by programs unwilling to specialize. **It is also recommended that the specialty tracks concept be built into new programs whenever possible.**<sup>70</sup>

<sup>67</sup> AHIMA, “Vision 2016 – Summary of 2008 Actions and 2009 Initiatives,” p. 3 online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_043222.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_043222.pdf)

<sup>68</sup> California Health and Human Services Agency, California’s eHealth Strategic Plan, Version 1.10, December, 2009, pp. 43-44 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

<sup>69</sup> California Health and Human Services Agency, California’s eHealth Strategic Plan, Version 1.10, December, 2009, p. 46 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

<sup>70</sup> AHIMA, “Vision 2016 – Summary of 2008 Actions and 2009 Initiatives,” p. 3 online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_043222.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_043222.pdf)

### ***Improve Graduate Placement***

Recognizing the difficulty of newly graduated students entering the workforce without experience, it is recommended that existing associate degree programs form alliances with computer vendors, HIM service providers, VA and HIM consultants to find entry-level employment in the non-traditional employment community. AHIMA has started to provide leadership in this direction with their Corporate Connections program. After obtaining experience in non-traditional settings, graduates will be able to move into more traditional positions that require experience and certification.<sup>71</sup>

### **Data Limitations**

Several limitations in available data affected the preparation of this report. The grouping of several different level occupations in SOC 29-2071: Medical Records and Health Information Technicians made it impossible to distinguish how much of the employment (and/or demand) in this area was attributable to Health Information Technicians, as opposed to non-degreed positions like Medical Records Technician. Recommendations for new programs were made despite this limitation because of the magnitude of the need for job candidates versus the supply of graduates and certificate program completers.

Another, different set of issues arose because of the nature of health IT as a rapidly changing field. Because almost every employee in the healthcare setting will eventually be involved in health IT, it will be difficult for community colleges to estimate the full extent of the need for education and training programs. At this time, we focus on Health Information Technicians because the training they require can be obtained through community college programs, and they have a critical and distinct role in health IT. However, the role of the community colleges will go far beyond this one occupational title.

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<sup>71</sup> AHIMA, "Vision 2016 – Summary of 2008 Actions and 2009 Initiatives," p. 3 online at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_043222.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_043222.pdf)

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## Appendix A: How to Utilize this Report

This report is designed to provide current industry data to:

- Define potential strategic opportunities relative to an industry's emerging trends and workforce needs;
- Influence and inform local college program planning and resource development;
- Promote a future-oriented and market responsive way of thinking among stakeholders; and,
- Assist faculty, Economic Development and CTE administrators, and Community and Contract Education programs in connecting with industry partners.

The information in this report has been validated by employers and also includes a listing of what programs are already being offered by colleges to address those workforce needs. In some instances, the labor market information and industry validation will suggest that colleges might not want to begin or add programs, thereby avoiding needless replication and low enrollments.

### ***About the Centers of Excellence***

The Centers of Excellence (COE), in partnership with business and industry, deliver regional workforce research customized for community college decision making and resource development. This information has proven valuable to colleges in beginning, revising, or updating economic development and Career Technical Education (CTE) programs, strengthening grant applications, assisting in the accreditation process, and in supporting strategic planning efforts.

The Centers of Excellence Initiative is funded in part by the Chancellor's Office, California Community Colleges, Economic and Workforce Development Program. The total grant amount (grant number 09-305-016 for \$101,670) represents funding for multiple projects and written reports through the Center of Excellence. The Centers aspire to be the premier source of regional economic and workforce information and insight for California's community colleges.

More information about the Centers of Excellence is available at [www.coecc.net](http://www.coecc.net).

### ***Important Disclaimer***

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

## Appendix B: Organizations

American Health Information Management Association (AHIMA): [www.ahima.org](http://www.ahima.org)

American Medical Informatics Association (AMIA): <https://www.amia.org/>

American Society of Health Informatics Managers (ASHIM): <http://ashim.org/>

California Health Information Association: <http://www.californiahia.org>

California Regional Health Information Organization (CalRHIO): <http://www.calrhio.org/>

College of Health Information Management Executives (CHIME): <http://www.cio-chime.org/>

Commission on Accreditation of Health Informatics and Information Management Education (CAHIIM): <http://www.cahiim.org>

Healthcare Information Management and Systems Society (HIMMS): <http://www.himss.org/>

U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ): <http://www.ahrq.gov>

## Appendix C - Commonly Used Abbreviations in Health Information Technology

- AAPC** – The **American Academy of Professional Coders** is a privately-held company that certifies medical coders in the United States and in other countries such as India. AAPC was founded in 1988 and has a membership base of 86,000. <http://www.aapc.com/>
- AHIMA** – The **American Health Information Management System** is a community of professionals engaged in health information management, providing support to members and strengthening the industry and profession. See [www.ahima.org](http://www.ahima.org)
- AMIA** – The **American Medical Informatics Association** is active in the development of global health information policy and technology with particular emphasis on using health information technology to meet the health needs of underserved populations. See [www.amia.org](http://www.amia.org)
- ARRA** – The **American Recovery and Reinvestment Act of 2009**, abbreviated **ARRA** (Pub.L. 111-5), is an economic stimulus package enacted by the 111th United States Congress in February 2009.
- BMSC** – The **Board of Medical Specialty Coding** is the premier provider of specialty medical coding certification, education and training for medical coders, clinicians and compliance professionals across the home health, physician and compliance fields. BMSC is dedicated to creating and advocating a career ladder for medical professionals through multiple layers of coding and compliance education, certification and training. <http://www.medicalspecialtycoding.com/>
- CAHIIM** - **Commission on Accreditation of Health Informatics and Information Management Education**
- CCHIT** – **Certification Commission for Health Information Technology**, a nonprofit organization with the public mission of accelerating the adoption of health IT.
- CCA** – Certified Coding Associate.
- CCS** – Certified Coding Specialist.
- CCSP** – Certified Coding Specialist/Physician Based.
- CHIA** – California Health Information Association.
- CHIMA** – Canada Health Information Management Association.
- CTR** – Certified Tumor Registrar.
- eHIM** – Electronic Health Information Management.

- EHR –** Electronic Health Record (also known as an Electronic Medical Record or EMR). An electronic health or medical record is a computer-based patient medical record that can be used to collect and look up patient data by physicians or health professionals at various locations such as doctors' offices or hospitals. The record includes information such as patient problems, medications, allergies, laboratory results, etc.
- EMR –** See *EHR* above.
- HIE –** Health Information Exchange. Health information that is shared electronically across organizations within a region. An HIE provides the capability to electronically move information between information systems with the goal of facilitating access to and retrieval of clinical data that will provide safer, more timely, efficient, effective, and equitable, patient-centered care.
- HIM –** Health Information Management. The study of the principles and practices of acquiring, analyzing, and protecting digital and traditional medical information vital to providing quality patient care.
- HIT –** Health Information Technology. The organization, analysis and generation of health data to treat patients and for insurance and other reimbursement, or for planning, quality assessment, research, and legal purposes.
- HITECH –** Health Information Technology for Economics and Clinical Health Act, part of the federal ARRA stimulus act of 2009
- MC –** Medical Coder, may also be called a Health Information Coder
- ONC –** Office of the National Coordinator. ONC is a government agency (part of HHS) that oversees and encourages the development of a national, interoperable (compatible) health information technology system to improve the quality and efficiency of health care. See [www.hhs.gov/healthit/](http://www.hhs.gov/healthit/)
- OHCHIT –** Office of the National Coordinator for Health Information Technology. See *OHC* above.
- PACS –** Picture Archiving and Communications System. A digital system for the acquisition, storage, transmission and display of images from various sources, including X-ray, CT, MRI, and ultrasound. PACS generally include optical storage servers, high resolution displays, printers, and other functionality.
- PAHCS –** Professional Association of Healthcare Coding Specialists.
- PHR –** Personal Health Record. A collection of important information about personal health or the health of someone cared for, such as a parent or a child that a health care consumer or care giver actively maintains and updates. Health information is scattered across many different providers and facilities. A PHR offers a different perspective, showing all health-related information that may affect health, including information that a doctor may not have.

**RHIA** – Registered Health Information Administrator.

**RHIT** – Registered Health Information Technician.

Source: The Wisconsin Collaborative for Healthcare Quality, *Glossary of Terms*.  
<http://www.ruralcenter.org/documents/HIT%20Acronyms>

## Appendix D - eHealth EHR Implementation Roles

The Ehealth Plan groups skills needed to support the implementation of electronic health records systems into broad roles<sup>72</sup> has projected workforce needs for these roles for the coming five years.

**Project Consultant:** Articulates business case for EHR implementation and conducts requirements gathering, system selection, vendor negotiation, and readiness assessment and planning

**Implementation Specialist:** Health informatician providing strategic vision and guidance for larger implementations (this function is likely to reside with Project Manager for small implementations)

**Project Manager:** Manages implementation tasks to successfully achieve objectives on time and budget

**Technology Analyst:** Installs, configures, and tests selected technology according to objectives and plan

**Interface Specialist:** Integrates installed technology with health information exchanges and other peripheral systems

**Clinical Expert:** Captures clinical and workflow requirements for system selection, implementation, configuration, and integration and supports training

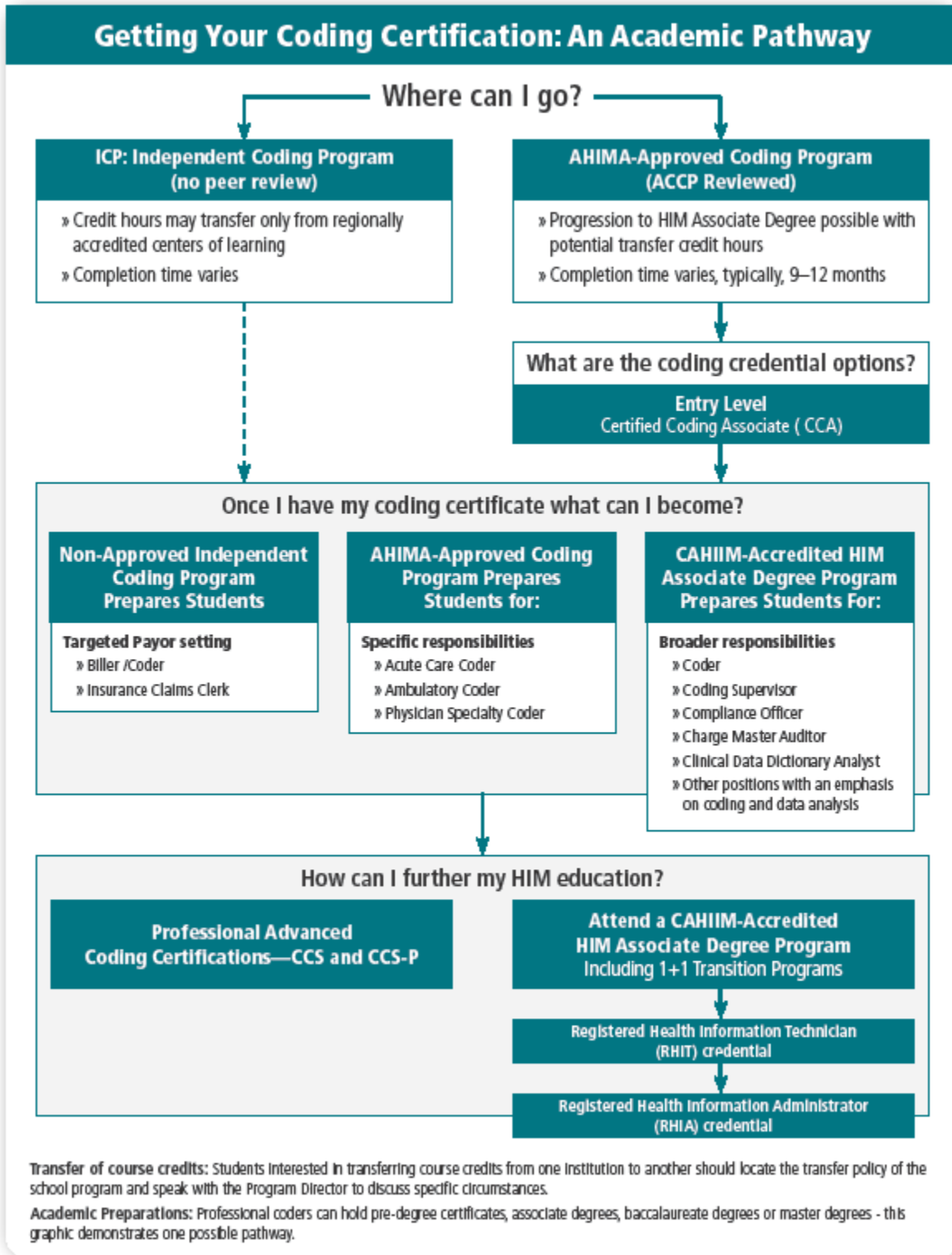
**Trainer:** Trains users to effectively integrate EHR into daily tasks

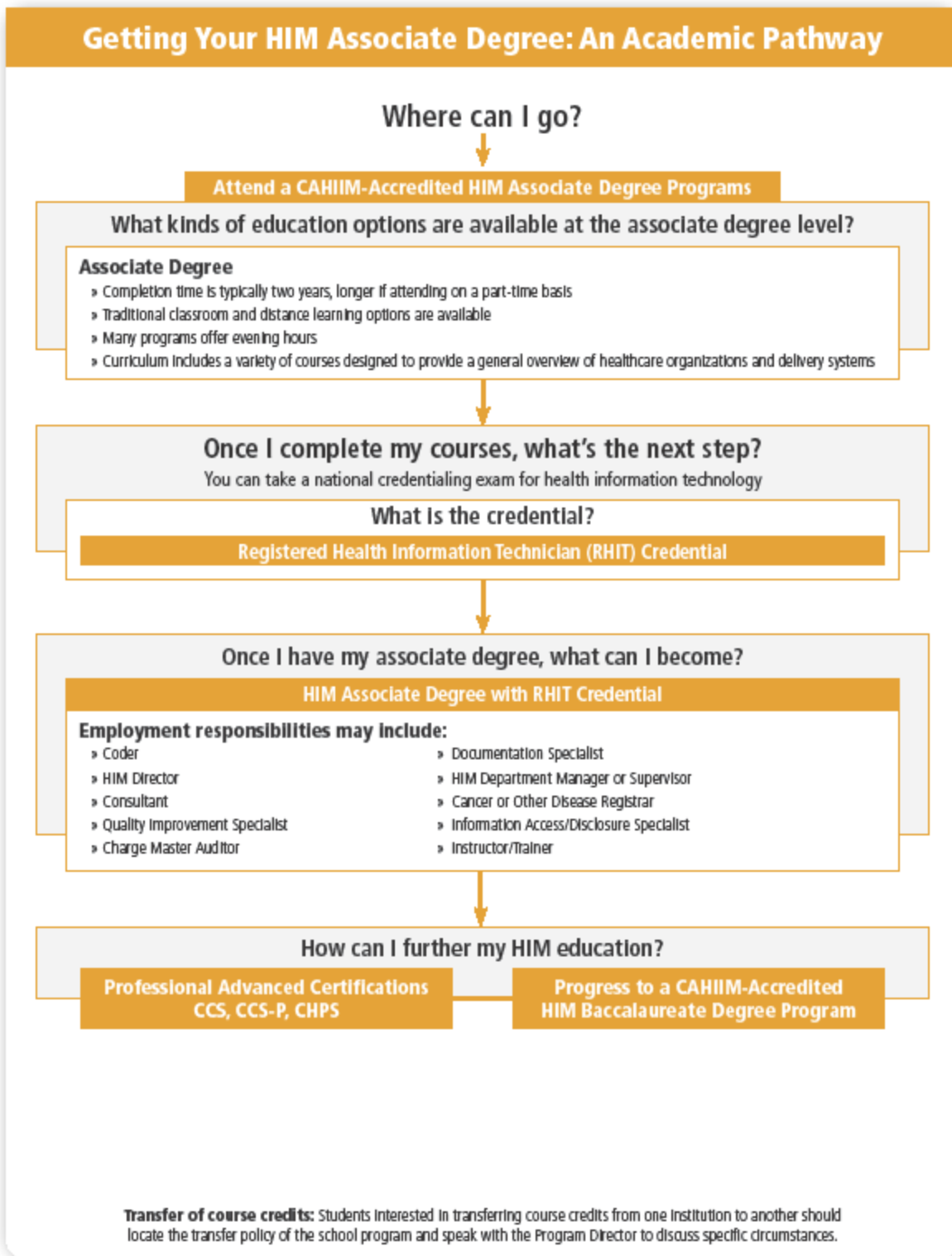
### Projected Increase in Demand for Health Information Professionals in California, 2009-2014

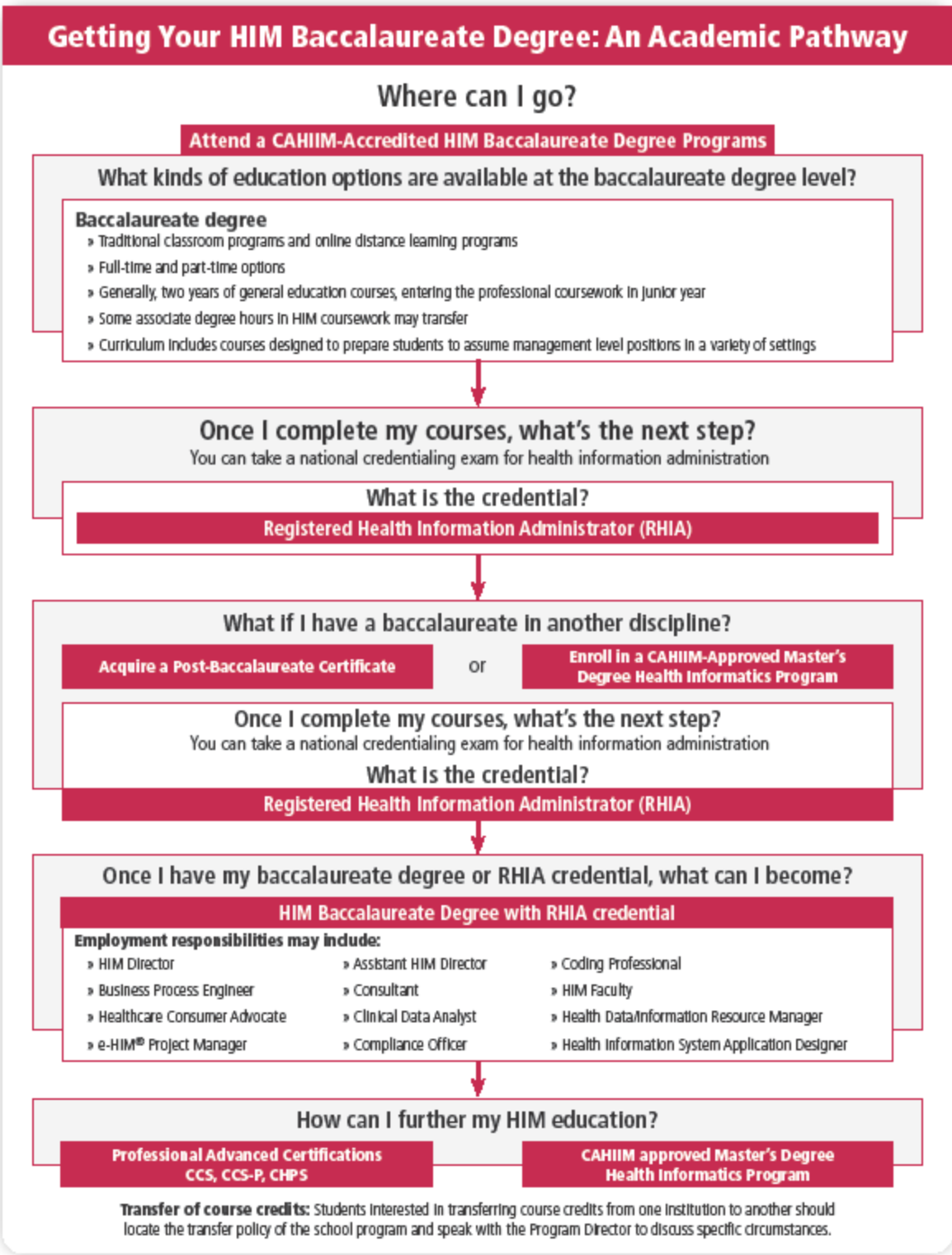
Role	2010	2011	2012	2013	2014
Project Consultant	268	385	503	600	600
Implementation Specialist	307	434	568	672	682
Project Manager	425	588	768	899	910
Technology Analyst	770	1,014	1,325	1,525	1,557
Interface Specialist	333	476	624	743	750
Subject Matter Expert	1,125	1,511	1,978	2,304	2,335
Trainer	1,133	1,520	1,989	2,317	2,350
<b>Total Demand</b>	<b>4,361</b>	<b>5,929</b>	<b>7,755</b>	<b>9,059</b>	<b>9,185</b>
<b>Incremental Demand over Previous Year</b>	<b>2,262</b>	<b>1,567</b>	<b>1,827</b>	<b>1,304</b>	<b>125</b>

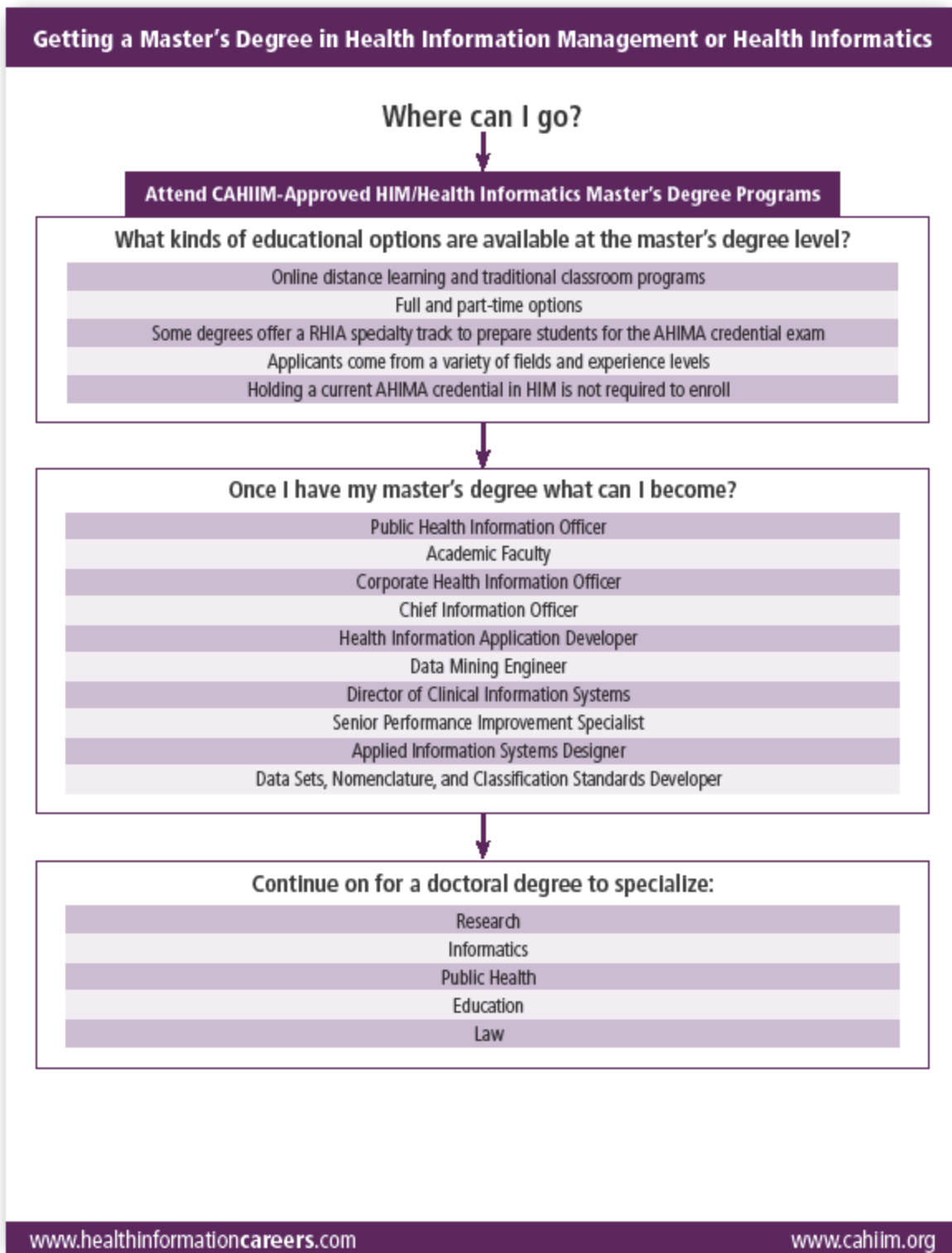
<sup>72</sup> California Health and Human Services Agency, California's eHealth Strategic Plan, Version 1.10, December, 2009, pp. 43-44 online at <http://www.ehealth.ca.gov/LinkClick.aspx?fileticket=dg7Hu5BE8Rg%3d&tabid=72>

**Appendix E – Health Information Technology Career Pathways**









Source: [www.cahiim.org](http://www.cahiim.org)

## Appendix F – HIT Positions Targeted by ARRA

The training portion of the ARRA stimulus package that is aimed at establishing electronic health records, describes a series of HIT positions in two categories that will be needed (and are expected to benefit from short training programs that prepare them) for EHR implementations. The categories and positions are:<sup>73</sup>

### ***Mobile Adoption Support Positions***

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. Workers in these roles might be employed by regional extension centers, providers, vendors, or state/city public health agencies, and would work together in teams. Preparation for this set of roles will typically require six months of intense training for individuals with appropriate backgrounds.

#### ***Practice workflow and information management redesign specialists:***

Workers in this role assist in reorganizing the work of a provider to take full advantage of the features of health IT in pursuit of meaningful use of health IT to improve health and care. Individuals in this role may have backgrounds in health care (for example, as a practice administrator) or in information technology, but are not licensed clinical professionals. Workers in this role will:

- 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 implement revised workflows
- Evaluate process workflows to validate or improve practice's systems

#### ***Clinician/practitioner consultants:***

This role is 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. In addition to the activities noted above, workers in this role will:

- 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
- Advocate for users' needs, acting as a liaison between users, IT staff, and vendors

#### ***Implementation support specialists:***

Workers in this role provide on-site user support for the period of time before and during implementation of health IT systems in clinical and public health settings. The previous background of workers in this role includes information technology or information management. Workers in this role will:

<sup>73</sup> <http://apply07.grants.gov/apply/opportunities/instructions/oppEP-HIT-10-001-cfda93.721-instructions.doc>

- Execute implementation project plans, by installing hardware (as needed) and configuring software to meet practice needs
- Incorporate usability principles into design and implementation
- Test the software against performance specifications
- Interact with the vendors as needed to rectify problems that occur during the deployment process

***Implementation managers:***

Workers in this role provide on-site management of mobile adoption support teams for the period of time before and during implementation of health IT systems in clinical and public health settings. Workers in this role will, prior to training, have experience in health and/or IT environments as well as administrative and managerial experience. Workers in this role will:

- Apply project management and change management principles to create implementation project plans to achieve the project goals
- Interact with 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

***Permanent Staff of Health Care Delivery and Public Health Sites***

These roles are needed for ongoing support of health IT that has been deployed in office practices, hospitals, health centers, long-term care facilities, health information exchange organizations and state and local public health agencies. Preparation for this set of roles will typically require six months of intense training for individuals with appropriate backgrounds.

***Technical/software support staff:***

Workers in this role maintain systems in clinical and public health settings, including patching and upgrading of software. The previous background of workers in this role includes information technology or information management. Workers in this role will:

- 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

***Trainers:***

Workers in this role design and deliver training programs, using adult learning principles, to employees in clinical and public health settings. The previous background of workers in this role includes experience as a health professional or health information management specialist. Experience as a trainer in from the classroom is also desired. Workers in this role will:

- Be able to 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 users
- Track training records of the users and develop learning plans for further instruction

**Appendix G - Distribution of RHAs and RHITs in California**

Region	Number	Percentage %
Orange County	372	9
Inland Area (Riverside, San Bernardino)	405	10
North Coast – San Francisco and North	979	23
Los Angeles/ Santa Barbara	1,288	30
San Diego	413	10
Fresno	205	5
San Diego	576	14
<b>Total for California</b>	<b>4,238</b>	<b>100</b>

Source: California Health Information Association

## Appendix H - Core Competencies for an EHR Workforce

### Healthcare Work Force Training Matrix Tool – Using Electronic Health Information – AHIMA, AMIA 2008

<b>ROLE: ANCILLARY CARE (ALLIED HEALTH)</b>
<b>DOMAIN I. Health Information Literacy and Skills</b> <b>Competency:</b>

- 1.1 Differentiate data versus information.
- 1.2 Describe the principles of structure, design and use of health information (such as individual, comparative reports, trended data).
- 1.3 Use health record data collection tools (such as input screens, document templates).
- 1.4 Apply standard data definitions, vocabularies, terminologies, and/or relevant healthcare data sets (such as OASIS, HEDIS, UHDDS) as used in the organization's health information systems.
- 1.5 Differentiate between the types of content of patient health records (such as paper- based, electronic health record, and personal health record).
- 1.6 Adhere to health record documentation requirements of external agencies and organizations such as those specified by the Joint Commission, licensure, reimbursement, discipline-specific "good practice").
- 1.7 Adhere to internal organizational health record documentation requirements, policies and procedures.
- 1.8 Ensure that documentation in the health record reflects timeliness, completeness, accuracy, appropriateness, quality, integrity and authenticity.
- 1.9 Adhere to information systems policies and procedures as required by national health information initiatives from national, state, local and organizational levels.
- 1.11 Identify incorrect data and take corrective action.
- 1.12 Identify methods and types of data collected in health care.
- 1.13 Maintain professional standards in all documentation activities.

<b>DOMAIN II. Health Informatics Skills - using the EHR and PHR</b> <b>Competency:</b>
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- 2.1 Create and update documents within the electronic health record (EHR) and the personal health record (PHR).
- 2.2 Locate and retrieve information in the electronic health record for various purposes.
- 2.3 Perform data entry of narrative information.
- 2.4 Locate and retrieve information from a variety of electronic sources.
- 2.5 Differentiate between primary and secondary health data sources and databases.
- 2.7 Identify classification and systematic health-related terminologies for coding and information retrieval.
- 2.8 Know the policies and procedures related to populating and using the health data content within the primary and secondary health data sources and databases.
- 2.9 Apply appropriate documentation management principles to ensure data quality and integrity.
- 2.10 Use software applications to generate reports.
- 2.11 Know and apply appropriate methods to ensure the authenticity of health data entries in electronic information systems.

<b>DOMAIN III. Privacy, Confidentiality of Health Information</b> <b>Competency:</b>
---

- 3.1 Explain legal responsibility, limitations and implications of actions.
- 3.2 Apply the fundamentals of privacy and confidentiality policies and procedures.

- 3.3 Follow legal aspects and regulations of documentation in requests for information.
- 3.4 Identify legal and regulatory requirements related to the use of personal health information.
- 3.5 Identify and apply policies and procedures for access and disclosure of personal health information.
- 3.6 Identify policies and procedures regarding release of any patient-specific data to authorized users.
- 3.7 Identify what constitutes authorized use of personal health data.
- 3.8 Participate in privacy and confidentiality training programs.
- 3.9 Follow security and privacy policies and procedures to the use of networks, including Intranet and Internet.
- 3.10 Follow confidentiality and security measures to protect electronic health information.
- 3.11 Maintain data integrity and validity within an information system.
- 3.12 Report and possible breaches of confidentiality in accordance with organizational policies.
- 3.13 Describe the possible consequences of inappropriate use of health data in terms of disciplinary action.
- 3.14 Describe monetary and prison penalties for breaches.
- 3.15 Document profession-specific information in an electronic health record.
- 3.16 Know appropriate methods to correct inaccurate information/errors personally entered in an electronic health record.
- 3.17 Authenticate information entered in an electronic health record.
- 3.18 Access reference material available through an electronic health record.
- 3.19 Identify the source of information entered in an electronic health record.
- 3.20 Identify, evaluate, select and appropriately use computer systems for patient information documentation.

**DOMAIN VI. Health Information/Data Technical Security  
Competency:**

- 4.1 Implement administrative, physical and technical safeguards.
- 4.3 Resolve minor technology problems associated with using an electronic health record.
- 4.4 Follow access protocols for entry to an electronic health record.
- 4.5 Enforce access and security measures to protect electronic health information.
- 4.8 Apply departmental and organizational data and information system security policies.

**DOMAIN V. Basic Computer Literacy Skills  
Competency:**

- 5.1 Apply basic computer concepts and terminology in order to use computers and peripheral devices, computer communication systems, general purpose and organization-specific system applications, patient care/health-related software applications.
- 5.2 Demonstrate use of the essential aspects of file organization, information storage (such as disk, flash drive), protection from data loss, and basic computer skills.
- 5.3 Use basic word processing, spreadsheet, database, and desktop presentation applications as applicable to your work.
- 5.4 Identify, evaluate and use web-based literature resources, CD-ROMs, and Internet resources.
- 5.5 Conduct basic file organization and management for routine storage, protection from data loss.
- 5.7 Use portable computing devices to facilitate data input and management.
- 5.8 Demonstrate basic computer operating procedures such as log on/off the computer, open and close files, save files.
- 5.9 Demonstrate proficiency in Windows operation environment.
- 5.10 Resolve minor technical problems associated with working in an electronic environment.
- 5.11 Demonstrate Internet/Intranet communication skills.
- 5.12 Access and use a web browsing application.
- 5.13 Demonstrate use of email, addressing, forwarding, attachments, netiquette.
- 5.14 Identify and use icons, windows, menus.

- 5.15 Create and name/rename subdirectories/folders.
- 5.16 Open and work with more than one application at a time.
- 5.17 Demonstrate how to save work to a computer file, print and copy a file.
- 5.18 Create and edit a formatted document using tables and graphs.

**ROLE: INFORMATION TECHNOLOGIST**

**DOMAIN I. Health Information Literacy and Skills**

**Competency:**

- 1.1 Differentiate data versus information.
- 1.2 Describe the principles of structure, design and use of health information (such as individual, comparative reports, trended data).
- 1.3 Use health record data collection tools (such as input screens, document templates).
- 1.4 Apply standard data definitions, vocabularies, terminologies, and/or relevant healthcare data sets (such as OASIS, HEDIS, UHDDS) as used in the organization's health information systems.
- 1.5 Differentiate between the types of content of patient health records (such as paper-based, electronic health record, and personal health record).
- 1.7 Adhere to internal organizational health record documentation requirements, policies and procedures.
- 1.9 Adhere to information systems policies and procedures as required by national health information initiatives from national, state, local and organizational levels.
- 1.11 Identify incorrect data and take corrective action.
- 1.12 Identify methods and types of data collected in health care.

**DOMAIN II. Health Informatics Skills – using the EHR and PHR**

**Competency:**

- 2.2 Locate and retrieve information in the electronic health record for various purposes.
- 2.4 Locate and retrieve information from a variety of electronic sources.
- 2.5 Differentiate between primary and secondary health data sources and databases.
- 2.6 Know the architecture and data standards of health information systems.
- 2.8 Know the policies and procedures related to populating and using the health data content within the primary and secondary health data sources and databases.
- 2.9 Apply appropriate documentation management principles to ensure data quality and integrity.
- 2.11 Know and apply appropriate methods to ensure the authenticity of health data entries in electronic information systems.

**DOMAIN III. Privacy, Confidentiality of Health Information**

**Competency:**

- 3.1 Explain legal responsibility, limitations and implications of actions.
- 3.2 Apply the fundamentals of privacy and confidentiality policies and procedures.
- 3.3 Follow legal aspects and regulations of documentation in requests for information.
- 3.4 Identify legal and regulatory requirements related to the use of personal health information.
- 3.5 Identify and apply policies and procedures for access and disclosure of personal health information.
- 3.6 Identify policies and procedures regarding release of any patient-specific data to authorized users.
- 3.7 Identify what constitutes authorized use of personal health data.
- 3.8 Participate in privacy and confidentiality training programs.
- 3.9 Follow security and privacy policies and procedures to the use of networks, including Intranet and Internet.
- 3.10 Follow confidentiality and security measures to protect electronic health information.
- 3.11 Maintain data integrity and validity within an information system.

- 3.12 Report and possible breaches of confidentiality in accordance with organizational policies.
- 3.13 Describe the possible consequences of inappropriate use of health data in terms of disciplinary action.
- 3.14 Describe monetary and prison penalties for breaches.
- 3.16 Know appropriate methods to correct inaccurate information/errors personally entered in an electronic health record.
- 3.19 Identify the source of information entered in an electronic health record.
- 3.20 Identify, evaluate, select and appropriately use computer systems for patient information documentation.

**DOMAIN VI. Health Information/Data Technical Security Competency:**

- 4.1 Implement administrative, physical and technical safeguards.
- 4.2 Develop security policies and procedures.
- 4.3 Resolve minor technology problems associated with using an electronic health record.
- 4.4 Follow access protocols for entry to an electronic health record.
- 4.5 Enforce access and security measures to protect electronic health information.
- 4.6 Recommend elements that must be included in the design of audit trails and data quality monitoring programs.
- 4.7 Implement policies, procedures, and training for health data security.
- 4.8 Apply departmental and organizational data and information system security policies.

**DOMAIN V. Basic Computer Literacy Skills Competency:**

- 5.1 Apply basic computer concepts and terminology in order to use computers and peripheral devices, computer communication systems, general purpose and organization-specific system applications, patient care/health-related software applications.
- 5.2 Demonstrate use of the essential aspects of file organization, information storage (such as disk, flash drive), protection from data loss, and basic computer skills.
- 5.3 Use basic word processing, spreadsheet, database, and desktop presentation applications as applicable to your work.
- 5.4 Identify, evaluate and use web-based literature resources, CD-ROMs, and Internet resources.
- 5.5 Conduct basic file organization and management for routine storage, protection from data loss.
- 5.8 Demonstrate basic computer operating procedures such as log on/off the computer, open and close files, save files.
- 5.9 Demonstrate proficiency in Windows operation environment.
- 5.10 Resolve minor technical problems associated with working in an electronic environment.
- 5.11 Demonstrate Internet/Intranet communication skills.
- 5.12 Access and use a web browsing application.
- 5.13 Demonstrate use of email, addressing, forwarding, attachments, netiquette.
- 5.14 Identify and use icons, windows, menus.
- 5.15 Create and name/rename subdirectories/folders.
- 5.16 Open and work with more than one application at a time.
- 5.17 Demonstrate how to save work to a computer file, print and copy a file.
- 5.18 Create and edit a formatted document using tables and graphs.

**ROLE: ADMINISTRATIVE STAFF**

**DOMAIN I. Health Information Literacy and Skills Competency:**

- 1.1 Differentiate data versus information.
- 1.5 Differentiate between the types of content of patient health records (such as paper-based, electronic health record, and personal health record).

- 1.6 Adhere to health record documentation requirements of external agencies and organizations such as those specified by the Joint Commission, licensure, reimbursement, discipline-specific "good practice").
- 1.7 Adhere to internal organizational health record documentation requirements, policies and procedures.
- 1.8 Ensure that documentation in the health record reflects timeliness, completeness, accuracy, appropriateness, quality, integrity and authenticity.
- 1.9 Adhere to information systems policies and procedures as required by national health information initiatives from national, state, local and organizational levels.
- 1.12 Identify methods and types of data collected in health care.
- 1.13 Maintain professional standards in all documentation activities.

**DOMAIN II. Health Informatics Skills - using the EHR and PHR  
Competency:**

- 2.2 Locate and retrieve information in the electronic health record for various purposes.
- 2.4 Locate and retrieve information from a variety of electronic sources.
- 2.5 Differentiate between primary and secondary health data sources and databases.
- 2.8 Know the policies and procedures related to populating and using the health data content within the primary and secondary health data sources and databases.
- 2.10 Use software applications to generate reports.
- 2.11 Know and apply appropriate methods to ensure the authenticity of health data entries in electronic information systems.

**DOMAIN III. Privacy, Confidentiality of Health Information  
Competency:**

- 3.1 Explain legal responsibility, limitations and implications of actions.
- 3.2 Apply the fundamentals of privacy and confidentiality policies and procedures.
- 3.3 Follow legal aspects and regulations of documentation in requests for information.
- 3.4 Identify legal and regulatory requirements related to the use of personal health information.
- 3.5 Identify and apply policies and procedures for access and disclosure of personal health information.
- 3.6 Identify policies and procedures regarding release of any patient-specific data to authorized users.
- 3.7 Identify what constitutes authorized use of personal health data.
- 3.8 Participate in privacy and confidentiality training programs.
- 3.9 Follow security and privacy policies and procedures to the use of networks, including Intranet and Internet.
- 3.10 Follow confidentiality and security measures to protect electronic health information.
- 3.12 Report any possible breaches of confidentiality in accordance with organizational policies.
- 3.13 Describe the possible consequences of inappropriate use of health data in terms of disciplinary action.
- 3.14 Describe monetary and prison penalties for breaches.
- 3.18 Access reference material available through an electronic health record.
- 3.19 Identify the source of information entered in an electronic health record.
- 3.20 Identify, evaluate, select and appropriately use computer systems for patient information documentation.

**DOMAIN VI. Health Information/Data Technical Security  
Competency:**

- 4.4 Follow access protocols for entry to an electronic health record.
- 4.8 Apply departmental and organizational data and information system security policies.

**DOMAIN V. Basic Computer Literacy Skills  
Competency:**

- 5.1 Apply basic computer concepts and terminology in order to use computers and peripheral devices, computer communication systems, general purpose and organization-specific system applications, patient care/health-related software applications.
- 5.2 Demonstrate use of the essential aspects of file organization, information storage (such as disk, flash drive), protection from data loss, and basic computer skills.
- 5.3 Use basic word processing, spreadsheet, database, and desktop presentation applications as applicable to your work.
- 5.5 Conduct basic file organization and management for routine storage, protection from data loss.
- 5.6 Use statistical analysis packages.
- 5.8 Demonstrate basic computer operating procedures such as log on/off the computer, open and close files, save files.
- 5.9 Demonstrate proficiency in Windows operation environment.
- 5.10 Resolve minor technical problems associated with working in an electronic environment.
- 5.11 Demonstrate Internet/Intranet communication skills.
- 5.12 Access and use a web browsing application.
- 5.13 Demonstrate use of email, addressing, forwarding, attachments, netiquette.
- 5.14 Identify and use icons, windows, menus.
- 5.15 Create and name/rename subdirectories/folders.
- 5.16 Open and work with more than one application at a time.
- 5.17 Demonstrate how to save work to a computer file, print and copy a file.
- 5.18 Create and edit a formatted document using tables and graphs.

**ROLE: LABORATORY TECHNICIAN**

**DOMAIN I. Health Information Literacy and Skills  
Competency:**

- 1.1 Differentiate data versus information.
- 1.3 Use health record data collection tools (such as input screens, document templates.
- 1.4 Apply standard data definitions, vocabularies, terminologies, and/or relevant healthcare data sets (such as OASIS, HEDIS, UHDDS) as used in the organization's health information systems.
- 1.5 Differentiate between the types of content of patient health records (such as paper- based, electronic health record, and personal health record).
- 1.6 Adhere to health record documentation requirements of external agencies and organizations such as those specified by the Joint Commission, licensure, reimbursement, discipline-specific "good practice").
- 1.7 Adhere to internal organizational health record documentation requirements, policies and procedures.
- 1.8 Ensure that documentation in the health record reflects timeliness, completeness, accuracy, appropriateness, quality, integrity and authenticity.
- 1.9 Adhere to information systems policies and procedures as required by national health information initiatives from national, state, local and organizational levels.
- 1.11 Identify incorrect data and take corrective action.
- 1.13 Maintain professional standards in all documentation activities.

**DOMAIN II. Health Informatics Skills - using the EHR and PHR  
Competency:**

- 2.1 Create and update documents within the electronic health record (EHR) and the personal health record (PHR).
- 2.2 Locate and retrieve information in the electronic health record for various purposes.

- 2.5 Differentiate between primary and secondary health data sources and databases.
- 2.8 Know the policies and procedures related to populating and using the health data content within the primary and secondary health data sources and databases.
- 2.10 Use software applications to generate reports.
- 2.11 Know and apply appropriate methods to ensure the authenticity of health data entries in electronic information systems.
- 2.12 Use electronic tools and applications for scheduling patients.

**DOMAIN III. Privacy, Confidentiality of Health Information  
Competency:**

- 3.1 Explain legal responsibility, limitations and implications of actions.
- 3.2 Apply the fundamentals of privacy and confidentiality policies and procedures.
- 3.3 Follow legal aspects and regulations of documentation in requests for information.
- 3.4 Identify legal and regulatory requirements related to the use of personal health information.
- 3.5 Identify and apply policies and procedures for access and disclosure of personal health information.
- 3.6 Identify policies and procedures regarding release of any patient-specific data to authorized users.
- 3.7 Identify what constitutes authorized use of personal health data.
- 3.8 Participate in privacy and confidentiality training programs.
- 3.9 Follow security and privacy policies and procedures to the use of networks, including Intranet and Internet.
- 3.10 Follow confidentiality and security measures to protect electronic health information.
- 3.11 Maintain data integrity and validity within an information system.
- 3.12 Report and possible breaches of confidentiality in accordance with organizational policies.
- 3.13 Describe the possible consequences of inappropriate use of health data in terms of disciplinary action.
- 3.14 Describe monetary and prison penalties for breaches.
- 3.16 Know appropriate methods to correct inaccurate information/errors personally entered in an electronic health record.
- 3.17 Authenticate information entered in an electronic health record.
- 3.18 Access reference material available through an electronic health record.

**DOMAIN VI. Health Information/Data Technical Security  
Competency:**

- 4.3 Resolve minor technology problems associated with using an electronic health record.
- 4.4 Follow access protocols for entry to an electronic health record.
- 4.5 Enforce access and security measures to protect electronic health information.
- 4.8 Apply departmental and organizational data and information system security policies.

**DOMAIN V. Basic Computer Literacy Skills  
Competency:**

- 5.1 Apply basic computer concepts and terminology in order to use computers and peripheral devices, computer communication systems, general purpose and organization-specific system applications, patient care/health-related software applications.
- 5.8 Demonstrate basic computer operating procedures such as log on/off the computer, open and close files, save files.
- 5.10 Resolve minor technical problems associated with working in an electronic environment.
- 5.16 Open and work with more than one application at a time.
- 5.17 Demonstrate how to save work to a computer file, print and copy a file.

## Appendix I - Cypress College HIT Course Descriptions

Course #	Title	Units per Course	HIT Associate in Science Degree Program Program	HIT Certificate Program Program Code: * See info below	Health Information Coding Certificate Program
BIOL 210 C	Anatomy and Physiology	5	5		5
CIS 101 C	Intro to Keyboarding/ MS Word (Typing Speed of 25 wpm)	3	3		
CIS 111 C	Computer Information Systems	3	3		3
ENGL 100 C	College Writing	3	3		
HI 100 C	Trends in Health Care Delivery	2	2		2
HI 101 C	Health Information Science	3	3		3
HI 102 C	Legal Aspects of Health Care	2	2		
HI 103 C	Health Care Statistics	3	3		
HI 105 C	Directed Practice I	4	4		
HI 110 C	Medical Insurance Billing	3	3		3
HI 115 C	Medical Staff Services Science	3	3		
HI 203 C	Medical Quality Management	2	2		
HI 204 C	ICD-9-CM Coding	3	3		3
HI 205 C	Directed Practice II	4	4		
HI 214 C	CPT/Ambulatory Care	3	3		3
HI 220 C	Advanced ICD-9-CM Coding	3	3		3
HI 225 C	Information Technology	3	3		
HI 245 C	Coding Skills Lab	1	1		1
HI 245 C	Coding Skills Lab	2			2
HI 299 C	Independent Study	1			1
HS 145 C	Survey of Medical Terminology	3	3		3
HS 147 C	Survey of Disease	3			3
HS 203 C	Medical Quality Management	2	3		
<b>TOTAL UNITS</b>			<b>59</b>		<b>35</b>

\*Health Information Technology Certificate: To earn a certificate, students must (1) document a minimum of an Associate Degree; and (2) complete all major course work with a minimum grade of "C." At least 50 percent of all major course work must be completed at Cypress College.

## Appendix J - East Los Angeles College HIT Course Descriptions

Course #	Title	Units per Course	HIT Associate in Science Degree Program	HIT Certificate Program
	Americans Institution Course – Area B	3	3	
Anatomy 1	Introduction to Human Anatomy	4	4	4
	Any Humanities Course	3	3	
CO SCI 200	Microcomputers in Business, <u>or</u>	3	3	(3)
	Introduction to Computers and their Uses	3	3	(3)
CO SCI 201	Programming Laboratory	1	1	1
ENGLISH 101	College Reading and Composition	3	3	
HEALTH 2	Health and Fitness, <u>or</u>	3	(3)	
HEALTH 8	Women’s Personal, <u>or</u>	3	(3)	
HEALTH 11	Principles of Healthful Living	3	(3)	
HTHTEK 100	Health Information Technology Survey	3	3	3
HTHTEK 103	Introduction to ICD-9-CM Coding	3	3	3
	Health Information in Alternate			
HTHTEK 105	Care Settings	2	2	2
HTHTEK 106	Hospital Ethics and Law	2	2	2
HTHTEK 110	Ambulatory Care Coding	3	3	3
HTHTEK 133	Medical Terminology	3	3	3
	Directed Practice for Coding			
HTHTEK 202	Specialists	4	4	4
HTHTEK 207	Introduction to Health Statistics	3	3	3
HTHTEK 208	Introduction to Pharmacology	1	1	1
	Advanced Inpatient Coding and Abstracting			
HTHTEK 215		3	3	3
	Quality Management and Leadership			
HTHTEK 221		3	3	3
	Health Information Services Organizations and Management			
HTHTEK 222		3	3	3
HTHTEK 234	Introduction to Pathology	5	5	5
	Directed Practice in Health Information Procedures II			
HTHTEK 241		4	4	4
PHYSIOL 1	Introduction to Human Physiology	4	4	4
PSYCH 1	General Psychology 1	3	3	3
	Any Physical Education Activity Course			
PHYS ED		1	1	
<b>TOTAL UNITS REQUIRED</b>		<b>79</b>	<b>73</b>	<b>59-60</b>

Note: Bracketed numbers indicate that a choice of one of those subjects is required.