

THE HEALTH INFORMATION MANAGEMENT WORKFORCE IN NORTH CAROLINA: Current Trends, Future Directions

A Report of the Technical Panel on the
Health Information Management Workforce

*The Health Information
Management Workforce
Assessment Project is a
joint effort of:*

**The Cecil G. Sheps Center
for Health Services Research,
UNC-Chapel Hill**

**The Council for Allied Health
in North Carolina**

**The North Carolina Area Health
Education Centers Program**

October 2002



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Principal Authors:

Susan L. Dyson, MHA
Erin P. Fraher, MPP
Laura M. Smith, BS

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**Cecil G. Sheps Center for
Health Services Research**
University of North Carolina at Chapel Hill
Campus Box #7590, 725 Airport Road
Chapel Hill, NC 27599-7590

*<http://www.shepscenter.unc.edu/hp>
nchp@unc.edu*

(919) 966-7112

North Carolina Health Information Management Workforce Assessment Technical Panel

Members of the Technical Panel provided information, expertise, and guidance in the development of the report and participated in a panel discussion held on June 20, 2002. Panel Members reviewed the best available data and developed conclusions and recommendations on the health information management workforce in North Carolina.

PRACTITIONERS

Doris Moore, BA, RHIT
Records Director, First Step
3891 Barkwood Drive
Winston-Salem, NC 27105
(336) 725-8389
dmo6844@bellsouth.net

Lynn Ring, CPC, CCS, CCS-P
Compliance Auditor
Aegis Family Health Center
2000 Frontis Plaza Boulevard
Winston-Salem, NC 27103
(336) 774-6907
lring@wfubmc.edu

Paula Vaughn, CPC
Compliance Specialist
Wake Forest University School of Medicine
2000 West First Street
Piedmont Plaza Two, Suite 615
Winston-Salem, NC 27104
(336) 716-5253
pvaughn@wfubmc.edu

EMPLOYERS

Lynn Farmer, RHIA
Director Medical Records
Hugh Chatham Memorial Hospital
180 Parkwood Drive
Elkin, NC 28621
(336) 527-7307
lfarmer@hughchatham.org

Betty Hall, RHIT
Director Health Information
Southeastern Regional Medical Center
PO Box 1408
Lumberton, NC 28359
(910) 671-5576
Hall01@srmc.org

Cassina Hunt, RHIA
Director Health Information
FirstHealth Moore Regional Hospital
PO Box 3000
Pinehurst, NC 28374
(910) 215-2440
chunt@firsthealth.org

Dina Williams, RHIT, CCS
Assistant Director Health Information
Management
Good Hope Hospital
410 Denim Drive
Erwin, NC 28339
(910) 897-6151 x500
dwilliams@goodhopehospital.org

EDUCATORS

Keith Brown
Assoc. Vice President Planning & Research
NC Community College System
200 West Jones Street
Raleigh, NC 27603-1379
(919) 733-7051 x728
brownk@ncccs.cc.nc.us

Mack Henderson, PhD, CPC, MT
Program Director, Health Information
Technology
Durham Technical Community College
1637 Lawson Street
Durham, NC 27703
(919) 686-3577
hendersonm@gwmail.dtcc.cc.nc.us

Moses Goldmon, EdD
Associate Director
NC Health Careers Access Program,
UNC-CH, CB 8010
Chapel Hill, NC 27599-8010
(919) 966-2264
mgoldmon@email.unc.edu

Elizabeth Layman, PhD, RHIA, CCS, FAHIMA
Chair, Health Services and Information
Management
East Carolina University
School of Allied Health Sciences
Belk 308C
Greenville, NC 27858-4353
(252) 328-2202
laymane@mail.ecu.edu

Susan McDermott, RHIA
Program Director, Health Information
Technology
Central Piedmont Community College
216 Sardis Road N
Charlotte, NC 28270
(704) 336-6452
Susan.McDermott@cpcc.cc.nc.us

ASSOCIATIONS AND PROFESSIONAL ORGANIZATIONS

Sue Richmond, RHIT
President, North Carolina Health Information
Management Association
928 Baxter Street
Charlotte, NC 28204
(704) 332-0375
suer@mnassoc.com

WORKFORCE PLANNING EXPERTS

Ann Colenda, BA
Employment Security Research Analyst
Employment Security Commission of North
Carolina
PO Box 25903
Raleigh, NC 27611-5903
(919) 733-2936
ann.colenda@ncmail.net

PRIMARY STAFF TO PANEL

Susan Dyson, MHA
Research Associate
Cecil G. Sheps Center for Health Services
Research
UNC-CH, CB 7590
Chapel Hill, NC 27599-7590
(919) 966-7922
susan_dyson@unc.edu

Erin Fraher, MPP
Director, Health Professions Data System
Cecil G. Sheps Center for Health Services
Research
UNC-CH, CB 7590
Chapel Hill, NC 27599-7590
(919) 966-5012
erin_fraher@unc.edu

Laura Smith, BS
Research Associate
Cecil G. Sheps Center for Health Services
Research
UNC-CH, CB 7590
Chapel Hill, NC 27599-7590
(919) 843-3402
laura_smith@unc.edu

COLLABORATORS AND OTHER ATTENDEES

Alan Brown, MSW
Associate Director, NC AHEC Program
UNC-CH, CB 7165
Chapel Hill, NC 27599-7165
(919) 966-0814
Alan_Brown@med.unc.edu

Thomas Konrad, PhD
Cecil G. Sheps Center for Health Services
Research
UNC-CH, CB 7590
Chapel Hill, NC 27599-7590
(919) 966-7636
bob_konrad@unc.edu

Thomas Ricketts, PhD
Cecil G. Sheps Center for Health Services
Research
UNC-CH, CB 7590
Chapel Hill, NC 27599-7590
(919) 966-7120
tom_ricketts@unc.edu

David Yoder, PhD
Executive Director
Council for Allied Health in North Carolina
CB 7335, TR 48
Chapel Hill, NC 27599-7335
(919) 843-6176
dyoder@med.unc.edu

North Carolina Health Information Management Workforce Advisory Group

The Advisory Group provided editorial and technical assistance in preparation of the final document.

Kim Bell, RHIA
Director, Health Information Technology
Edgecombe Community College
225 Tarboro Street
Rocky Mount, NC 27801
(252) 985-2212
bellk@edgecombe.cc.nc.us

Kay Gooding, MPH, MAEd, RHIA
Director, Health Information Technology
Pitt Community College
PO Drawer 7007
Greenville, NC 27835
(252) 321-4361
kgooding@pcc.pitt.cc.nc.us

Penny Wells, RHIA
Director, Health Information Technology
Southwestern Community College
447 College Drive
Sylva, NC 28779
(828) 586-4091 ext.362
PWells@southwest.cc.nc.us

Jean Foster, RHIA
Administrator
Health Information Management Services
Pitt County Memorial Hospital
PO Box 6028
Greenville, NC 27835
(252) 816-4249
jfoster@pcmh.com

Susan Parker, MEd, RHIA
President, Seagate Consultants
PO Box 856
Wrightsville Beach, NC 28480-0856
(910) 392-0047
Seagate@wilmington.net

Panel Staff: Melissa Fruhbeis, Christine Shia, Carol Porter, Ann Howard, Shayla Higginbothom, John Shadle, Ann Marshall, Katie Gaul, and staff at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill.

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Background

In March of 1999, the Cecil G. Sheps Center for Health Services Research at UNC-CH (Sheps Center) presented a proposal to the North Carolina Area Health Education Centers (NC AHEC) Program and the Council for Allied Health in North Carolina (Council) to establish advisory panels that would examine the North Carolina allied health workforce. The purpose of the proposed panel process was to review the best available statistical and administrative data, to discuss existing and emerging policies, and to construct a consensus statement on the need for, and supply of, allied health professionals in selected disciplines in North Carolina. The process was designed to take place under the joint guidance of representatives of the Sheps Center, the Council, and the NC AHEC. The process consists of a series of panels comprised of stakeholders including practitioners, employers, educators, and workforce planning experts for each allied health profession. A report on the physical therapy workforce was completed in 2000, a report on the speech-language pathology workforce was completed in 2001, and this report details the findings on the health information management (HIM) workforce, the third profession selected by the Council for study.

The Technical Panel on the Health Information Management Workforce met on June 20, 2002. The panel's task was to assess the employment prospects for the health information management workforce in North Carolina including health information administrators, health information technicians, and coders. Panel deliberations focused on the following key workforce issues:

- *What is the overall balance between supply and need for health information management practitioners, and how is it likely to change given current trends?*
- *What is the composition of the workforce that has attained certification through a credentialing entity?*
- *Does the racial/ethnic and gender makeup of the health information management workforce match that of the population of North Carolina?*
- *Are existing health information management educational programs producing the right number and types of practitioners to meet the health information management needs of employers and the state? Are the types of training programs and the locations of the programs appropriate to meet the health information management needs of North Carolina?*
- *Are reliable data available to address the preceding questions?*

The health information management workforce, which is responsible for the quality, completeness, and security of all health information, has undergone numerous changes over the last fifty years, most notably the increased use of technology and the expansion in the use of personal health information. The profession, once limited to medical record management, is now closely linked to information technology, security, and privacy. The Health Insurance Portability and Accountability Act (HIPAA), a federal regulation that will alter the way in which personal health information is collected, stored, and disseminated, is likely to further alter the practice of health information management. Other factors likely to affect the demand for HIM services include increased scrutiny and regulation of health information, increased emphasis on healthcare fraud, increased financial pressure, emerging technology, and the continued shift to outpatient care delivery. These factors will necessitate the need for a more specialized and highly qualified HIM workforce.

Enumerating the health information management workforce has been complicated by the absence of a single data source. No single entity oversees HIM practitioners in North Carolina. Much of the HIM workforce does not hold an HIM credential, and for those who are credentialed, there are multiple entities that credential the health information management workforce. Other factors contributing to the difficulty in completely enumerating the workforce include the tremendous amount of cross training/cross practicing among administrators, technicians, and coders, and the proportionately larger representation of the hospital-based health information management workforce. The panel used the best available data obtained on the health information management workforce to provide conclusions and recommendations for the HIM workforce in North Carolina.

CONCLUSIONS AND RECOMMENDATIONS

Based on the data analyzed by the panel and presented at length in this report, the following summarizes the conclusions and recommendations on the health information management workforce. Complete findings and recommendations are available at the end of the document.

Marketing of Health Information Management

The panel acknowledges that the health information management profession has encountered many difficulties related to educating healthcare providers, organizations, and the general public about the profession's scope of practice, competencies, educational qualifications, and area of expertise. Healthcare providers and organizations are often unfamiliar with the various HIM credentials and credentialing entities. In addition, many healthcare organizations and providers outside of acute care are not fully aware of the connection between HIPAA implementation and the HIM workforce.

The panel recommends:

- *Increasing educational and public awareness efforts to clarify the HIM scope of practice, and the skills, abilities, and responsibilities of the HIM workforce;*
- *Educating the healthcare community, potential students, and the general public about the differences in HIM educational programs and credentials;*
- *Informing healthcare organizations and practitioners about the importance of accurately coded health data and the role of the HIM workforce in reimbursement, revenue generation, HIPAA preparedness, healthcare fraud and abuse, and patient care; and*
- *Ensuring that healthcare organizations and businesses that have been slow to plan and prepare for HIPAA are adequately educated about the role of the HIM workforce in helping to facilitate HIPAA preparedness.*

Supply and Distribution of the Health Information Management Workforce

Vacancy rates of HIM practitioners in North Carolina are not as striking as those seen in national studies and the data do not indicate an overall shortage, but rather a facility specific shortage. Most of the vacancies in North Carolina hospitals were for coding positions. The shortage may better be described as a shortage of qualified, trained, and credentialed HIM practitioners.

The panel recommends:

- *Establishing mechanisms to continue monitoring the supply and distribution of the HIM workforce, both credentialed and non-credentialed;*
- *Identifying facilities that have been successful in recruiting and retaining coding personnel and disseminating best*

practice information to other facilities; and

- *Developing recruitment strategies to communicate employment opportunities (unfilled positions) to all health information administration (HIA), health information technology (HIT), and coding programs in North Carolina.*

Education

The number of accredited programs in health information management in North Carolina is sufficient to fill the needs of the state if all program slots are filled and a large percentage of students complete the program. Too few programs are able to fill existing capacity and graduate all enrolled students.

The panel recommends:

- *Maintaining the status quo with respect to the number of programs and the number of slots in HIA and HIT programs; developing statewide educational marketing and recruiting policies to ensure existing programs are well-utilized and meet existing enrollment capacity; and ensuring that applicants and enrolled students have the necessary skills and abilities to successfully complete the HIA or HIT program;*
- *Identifying and utilizing best practices in recruitment and retention of some of North Carolina's and other state's health information management programs;*
- *Expanding recruiting efforts to non-traditional students, including, but not limited to, adult learners, second career seekers, and other healthcare professionals seeking careers outside of direct patient care;*
- *Continuing the expansion of distance learning opportunities for HIM students to increase the reach of the programs and to enroll students who are not physically able to attend an on-campus program; facilitating the development of field training opportunities in these areas to enable distance-learning students to remain in their communities for the entire duration of the program and increasing the likelihood of practicing in those communities post-graduation; and*
- *Investigating the feasibility of developing HIM scholarship partnerships with employers in return for post-graduate employment commitments.*

The panel acknowledges that the entry-level education necessary for coders varies depending on the type of coding and the setting. North Carolina lacks a uniform standard for a minimum level of coding education. Employers are not always able to differentiate between programs lasting one to two years, and programs that can be completed at home in a number of hours. Employers are often unaware of the differences in training, skills, experience, and quality of coding programs. Coding competencies must be defined and the route to achieve competencies may occur in a college, private, independent study, or on-

the-job training program so long as the core competencies have been met.

The panel recommends:

- *Collaborating with employers (representing hospitals, physician practices, long-term care, behavioral health, etc.), educators (representing community college, private, independent study, and other programs), and HIM practitioners to develop minimum coding competencies, skills, abilities, and knowledge necessary for coding in different employment settings, taking into account specialty, breadth, depth, level, and volume of coding duties;*
- *Establishing prerequisites for anatomy, physiology, medical terminology, pathology, pharmacology, disease processes, and computer skills, or incorporating these competencies into the program;*
- *Collaborating with employers and educators to develop coding curricula that meet the requisite competencies and the coding needs of different employers;*
- *Conducting a review of existing coding programs to ensure programs and courses meet the minimum coding skill sets and competencies for differing types of employment settings;*
- *Continuing to develop and expand on existing coding curricula currently in the community college systems; increasing coding curricula opportunities for students seeking part-time, evening, and weekend learning opportunities; and*
- *Developing collaborative arrangements to provide standardized educational programs that follow the core competencies in communities without access to a community college program.*

Diversity

The diversity of the health information management workforce does not match that of North Carolina's current or future population. Also at issue is the disparity in the balance of men and women in the HIM workforce. The panel resoundingly concluded that the current HIM workforce is not representative of the North Carolina population by gender or by racial and ethnic background.

The panel recommends:

- *Collecting better information through certification and credentialing processes on the diversity of the workforce including ethnic and racial background, gender, and age;*
- *Enlarging and developing the applicant pool in both educational and employment settings by effectively promoting the HIM profession to persons who are from racial and ethnic groups that have historically been underrepresented in the profession; and increasing efforts to recruit males; and*
- *Utilizing the experience, expertise, and influence of underrepresented minority and male leaders already working in HIM to market the field to others.*

The diversity in the health information management student body is much more representative of North Carolina's population. Health information technology (HIT) programs at the community colleges mirrors or slightly exceeds minority representation within the general population. The diversity within health information administration (HIA) programs, though not as diverse as the community college programs, has shown improvement over the last four years. Neither the HIA or HIT programs have been exceptionally successful in attracting Hispanic/Latino students into the programs.

The panel recommends:

- *Developing an effective strategy to collect and analyze application, admission, matriculation, graduation, and initial employment data for all HIM education programs (HIA, HIT, and Coding) in North Carolina, including demographic data on race, ethnicity, and gender;*
- *Disseminating information about the success of underrepresented minority recruitment and retention efforts in colleges, universities, and other post-secondary institutions with high, underrepresented minority enrollment (e.g. Asians, Native Americans, and Hispanic/Latino persons, and males); and*
- *Collaborating with organizations whose mission is to increase underrepresented minority representation in the health professions (e.g. North Carolina Health Careers Access Program, NC AHEC).*

Data Issues and Workforce Surveillance

The panel acknowledges that lack of licensure or mandatory certification of the health information management workforce makes it extremely difficult to accurately undergo an assessment of the workforce because data obtained fail to adequately account for the workforce that lacks a credential from either organization. The panel acknowledges currently existing data on the HIM workforce are insufficient to effectively monitor workforce trends. A complete database that is inclusive of all HIM practitioners in North Carolina's workforce would enable more accurate analyses on fluctuations in demand and supply.

The panel recommends:

- *Investigating the feasibility of establishing an entity that would be responsible for registering the health information management workforce, to include the credentialed and non-credentialed HIM workforce. Until registration is achieved, devising a mechanism to account for the total HIM workforce actively practicing in North Carolina, both credentialed and non-credentialed;*

- *Obtaining agreement from credentialing organizations on the core competencies and acceptance of these competencies for certification; obtaining agreement between all credentialing organizations, including the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC), on the data elements needed in a minimum data set to be collected on the certification and/or membership application or as part of annual continuing education credits;*
- *Including the following in the minimum data set: employment location, employment setting, activity status (i.e. active, retired, etc.), number of practice hours per week, location and name of training program, salary, credential(s), age, race, ethnicity, gender, and type of position; and*
- *Developing a mechanism to identify, track, and analyze student data from all coding educational programs in North Carolina, including college certificate and diploma programs, continuing education programs, Professional Medical Coding Curriculum programs, and others.*

Better data collection will improve educational planning and enhance the ability of all stakeholders in the health information management community to address diversity issues, geographic disparities, and other workforce challenges. Tabulation and dissemination of this information will help stakeholders to identify imbalances and fine-tune policy decisions in a more timely and objective manner. As objective data are accumulated, ongoing analyses of trends might minimize the tendency to react prematurely.

The panel recommends:

- *Monitoring geographic trends in supply including county-level counts of Administrators, Technicians, and Coders, under-representation of minorities, and focusing on differences between urban and rural regions; and*
- *Continuing periodic reevaluation of workforce needs relative to demographic changes and population needs.*

This report primarily focuses on the hospital-based HIM workforce, but many HIM trends observed in hospitals are also present in other healthcare settings that employ health information management personnel. Obtaining data on the workforce in these settings would confirm or refute these predictions, and would provide a more accurate picture of the percentages of non-credentialed HIM practitioners in these settings.

The panel recommends:

- *Conducting a focused pilot survey or study on the health information management workforce in other healthcare settings such as physician practices, behavioral health settings, or long-term care facilities.*

I. INTRODUCTION

A. The Allied Health Workforce Planning Process

In March 1999, the Cecil G. Sheps Center for Health Services Research at UNC-CH (Sheps Center) presented a proposal to the North Carolina Area Health Education Centers (NC AHEC) Program and the Council for Allied Health in North Carolina (Council) to establish advisory panels that would examine the North Carolina allied health workforce. The purpose of the proposed panel process was to review the best available statistical and administrative data, to discuss existing and emerging policies, and to construct a consensus statement on the need for, and supply of, allied health professionals in selected disciplines in North Carolina. The process was designed to take place under the joint guidance of representatives of the Sheps Center, the Council, and the NC AHEC. The process envisioned a series of panels composed of representatives from various stakeholder groups. Stakeholders would include practitioners from the allied health professions, as well as employers, educators, and workforce planning experts. Panels would be constructed to address the specific situation of different allied health professions over an extended period of time. The NC AHEC and the Council approved the process on April 27, 1999. Subsequently members of the Council debated professions to be studied over the next three years. Physical therapy was chosen as the first profession and a report was issued in May 2000.¹ The second profession studied was speech-language pathology and a report was published in June 2001.² The third profession selected by the Council was health information management and this report details the findings of the Technical Panel on the Health Information Management Workforce.

II. HEALTH INFORMATION MANAGEMENT WORKFORCE: BACKGROUND

A. The Bureau of Labor Statistics

The Bureau of Labor Statistics (BLS) of the US Department of Labor projects the employment outlook for over 600 industries. Health information technicians and coders are grouped under the category, *Medical Record and Health Information Technicians* describing employees who “compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system; process, maintain, compile, and report patient information for health requirements and standards.” Health information management administrators are included in a separate category, *Medical and Health Services Managers*, which describes managers who “plan, direct, or coordinate medicine and health services in hospitals, clinics, managed care organizations, public

health agencies, or similar organizations.” According to the BLS, Medical Record and Health Information Technicians will be one of the fastest growing occupations in the nation during the decade 2000 to 2010 and estimates that 66,000 new positions will be created. The total number of Medical Record and Health Information Technician positions will grow 49% from 136,000 to 202,000.³

B. The Employment Security Commission of North Carolina

The Employment Security Commission (ESC) of North Carolina collects information on employment in the state and has predicted a 54% increase in the number of Medical Record and Health Information Technicians in the decade from 1998 to 2008 from 2,950 to 4,500 workers. Medical and Health Services managers, which include health information management administrators, are expected to grow 47% over the decade from 1998 to 2008 from 5,650 to 8,300 positions.⁴ This translates into an average yearly need of 230 technicians and 370 medical and health services managers.⁵

According to the ESC’s 2002 North Carolina Occupational Employment and Wages Estimates, 4,390 medical record and health information technicians, and 7,240 medical and health services managers are employed in the state.⁶ These numbers are rapidly nearing the earlier ESC estimates for 2008, indicating that the HIM professions are growing faster than previously published total employment estimates.

C. Scope of Work of The Technical Panel on the Health Information Management Workforce

The Technical Panel on the Health Information Management workforce, a group consisting of educators, practitioners, employers, and workforce experts met on June 20, 2002. The panel’s task was to assess the employment prospects for health information management personnel in North Carolina. Panel deliberations focused on the following key workforce issues:

- *What is the overall balance between the need and supply of the health information management workforce and how is it likely to change given current trends?*
- *Are some areas of the state or some population groups more prone to experience certain kinds of labor imbalances such as staffing shortages, recruitment and retention difficulties, or underemployment?*
- *Are minority groups and men underrepresented in the health information management profession?*
- *Are we producing too many, too few, or about the right number of health information management practitioners in North Carolina to meet current and future requirements?*

- *Are the types of educational training programs and the locations of programs appropriate to meet the health information needs of North Carolina?*
- *Are reliable data available to address the preceding questions?*

The remainder of this report examines national trends in health information management, provides background on the North Carolina workforce, describes the information and data sources the panel used, summarizes the panel's findings and conclusions, and presents the panel's recommendations. Given limitations on resources and lack of a uniform data source, this study will primarily focus on the health information management workforce in the hospital sector, though many of the issues, findings, and recommendations are relevant to the HIM workforce in other sectors. The scope of this study is limited to the health information management workforce, specifically administrators, technicians, and coders. Other professions that may work within health information management departments, such as transcriptionists and other clerical support staff, have been excluded from this analysis.

D. Data Limitations and Caveats

The best available data to help answer these questions were compiled and analyzed by the Cecil G. Sheps Center for Health Services Research at UNC-Chapel Hill. Collecting data for this workforce was difficult for a number of reasons:

- The workforce is not licensed, and although encouraged by some employers, certification is optional, and therefore it is challenging to enumerate all practitioners who are actively practicing in the workforce;
- Many in the health information management workforce are not credentialed and therefore do not show up in any of the data sets collected from credentialing organizations;
- For those who are credentialed, there is more than one entity that credentials the health information management workforce. The same types of data were not available from all organizations and comparability across data sets must be viewed with caution due to differences in data methodologies, collection, and definitions;
- The data collected from the two credentialing organizations are largely focused on different employment settings. The data file obtained from the American Health Information Management Association (AHIMA) represented a larger number of HIM practitioners and captured a larger portion employed in hospitals than the smaller file obtained from the American Academy of Professional Coders (AAPC), which captured more of the physician practice workforce;

- Education data were obtained from universities and community colleges offering health information management programs. Data on other health information management educational programs, particularly coding programs, were difficult to identify and obtain; and
- A tremendous amount of cross training/cross practicing exists among the workforce, especially between administrators and technicians, and technicians and coders. For example, many who are credentialed as administrators are employed as coders. Knowledge about credential type does not necessarily correspond with employment setting or job position.

E. Terminology

Notes on terminology used in this document:

- The *health information management workforce*, the *HIM workforce*, and *health information management practitioners* will be used as an umbrella term that encompasses the following professionals: health information administrators, health information technicians, and coders.
- *Credentialed* person will signify a health information management practitioner, as defined above, who has been certified by the American Health Information Management Association (AHIMA) or the American Academy of Professional Coders (AAPC).
- *Member* will signify a person who has membership with one of the above two organizations (and may or may not be credentialed in HIM); *non-member* will signify a person who does not have active membership with either organization (but is credentialed).

III. SCOPE OF PRACTICE AND REGULATIONS

The health information management (HIM) workforce is responsible for the quality, completeness, and security of all health information. Accurate and complete health data are important for quality of care, reimbursement, and for research and analysis. Health information is used not only for documentation of patient care, but also used for quality review, data analysis, financial reimbursement, legal protection, education, research, public health, and planning and marketing for healthcare services.⁷

Health information management practitioners are employed in a variety of healthcare settings including hospitals, long-term care facilities, hospice and home health agencies, behavioral health facilities, physician practices, ambulatory surgery centers, and rehabilitation facilities. They are also employed in non-traditional

settings including managed care and insurance organizations, consulting, educational and research institutions, public health and governmental agencies, healthcare information system computer vendors, and correctional facilities. The HIM workforce must be knowledgeable about data quality, management, and statistical analysis; federal, state, and local healthcare regulations regarding health information, security, and patient confidentiality; and storage and retrieval of medical records.

Two national organizations certify the health information management workforce. The American Health Information Management Association (AHIMA) currently certifies Health Information Administrators, Health Information Technicians, and Coding Specialists, both hospital- and physician-based. See **Appendix 1** for listing of credentials. Beginning in the fall of 2002, AHIMA will offer four new credentials: an entry-level coding certification, a privacy certification, and two credentials offered in conjunction with the Health Information Management and Systems Society - a security certification, and a healthcare privacy and security certification. The American Academy of Professional Coders (AAPC) certifies Professional Coders in inpatient and outpatient areas.⁸ Both AHIMA and AAPC have North Carolina chapters. Licensure of the health information management workforce is not required in any state with the exception of Hawaii, which regulates independent bill reviewers. Additionally, health information management personnel are not required by law to register with any board or association in North Carolina. While many in the workforce lack certification, many employers require or prefer certification as a means to ensure their HIM employees have the requisite skills.

Two other organizations offer certification and credentials to a subset of the coding profession. In 2000, the Radiology Coding Certification Board began credentialing individuals practicing in the specialty area of radiology coding. The Association of Registered Medical Coders provides a nationally recognized physician-based coding certification and credentialing program.

IV. JOB TITLES, ROLES, AND EDUCATION

Individuals in the health information management workforce may hold a variety of job titles including HIM directors, medical record managers, technicians, consultants, coders, data analysts, privacy officers, risk managers, and medical reviewers. Each work setting and job type requires different skills, abilities, and responsibilities related to the collection, coding, management, storage, and dissemination of health information. The workforce is primarily divided into three categories of employment:

- **Health Information Administrators**
- **Health Information Technicians**
- **Coders**

The health information management workforce has been extremely difficult to quantify, largely because the above categories and credentials do not always coincide with job title or job function. Many working in health information management do not fit completely into one category, but rather, perform functions across all three categories. Practitioners with a Bachelors degree and an administrative credential are often employed in coding positions. Still others with a coding education or credential are employed at a supervisory level. This is especially true at smaller healthcare facilities where the HIM staff might consist of one or two employees who must perform coding, staff, and administrative functions. In addition, health information management practitioners often perform vastly different job functions depending on the employment setting. Although there is a high degree of crossover, cross training, and cross functioning among the workforce, the analysis contained in this report depicts data separately for hospital-based administrators, technicians, and coders.

A. Health Information Administrators

Roles and Responsibilities - Health information administrators (HIAs) are typically responsible for the direction, planning, coordination, and administration of a healthcare record program. Depending on the setting, HIAs are responsible for managing health information management operations in accordance with hospital rules and regulations, the state board of health, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and federal and state laws of privileged health information.

Responsibilities of HIAs include ensuring the completeness and accuracy of medical records, and developing health information policies and procedures. They supervise other health information and medical record staff, and serve as consultants on information security, storage, retention, and release in agreement with healthcare facility, state, and federal rules and regulations. Health information administrators interact with all levels of healthcare organizations including hospital administration, physicians, billing and claims departments, third-party payers, attorneys, JCAHO, other state board of health surveyors, and any persons that utilize patient data in decision-making.

Job Titles - Examples of job titles of HIAs include Medical Record Director, Health Information Management Director, Quality Improvement Manager, Privacy Officer, Healthcare Consultant, and Director of Risk Management.

Education - Health information administrators, directors, and managers usually have a Bachelor's degree, and extensive knowledge of health information management practices, policies, and procedures. Those who complete an accredited Bachelor degree in health information administration are eligible to sit for the Registered Health Information Administrator (RHIA) exam administered by AHIMA.⁹

B. Health Information Technicians

Roles and Responsibilities - The roles and responsibilities of health information technicians (HITs) are wide and varied. They may be responsible for ensuring the quality of medical record data by verifying completeness, accuracy, and proper entry into computerized databases or paper records. They may serve as directors or managers of health information management departments, or supervise coding and other staff. This workforce may develop quality management policies and procedures, analyze data to be used in healthcare facilities and services planning, or ensure compliance with external regulatory and accreditation requirements.

Job Titles - Examples of job titles held by HITs include Data Analyst, Health Information Technician, Compliance Specialist, Quality Improvement Analyst, Health Information Management Supervisor, Medical Record Supervisor, Cancer or Trauma Registrar, Clinical Data Specialist, Healthcare Consultant, Reimbursement Specialist, or Utilization Management Specialist. Still others hold positions as administrators or managers of health information management or medical record departments.

Education - Health information technicians' educational backgrounds range from on-the-job training to Bachelor degrees. Those who complete an accredited Associate degree in health information technology are eligible to sit for the Registered Health Information Technician (RHIT) exam administered by AHIMA.¹⁰

C. Coders

Roles and Responsibilities - Coders are practitioners who are skilled in classifying medical data from patient records. Coders use the International Classification of Diseases (ICD-9-CM) and other classification systems to classify and code diagnoses and procedures for financial reimbursement. Coders generally specialize in inpatient or outpatient coding. Coders utilize a variety of coding classification systems and medical coding software programs to assign appropriate diagnosis codes and ensure that reported diagnosis codes support and justify billed medical services. The workforce is often responsible for abstraction of clinical data for use in quality improvement and other health services research.

Job Titles - Coders often fill positions as an Inpatient Coder, Outpatient Coder, Coding Consultant, Clinical Coding Specialist, or Lead Coder.

Education - The educational backgrounds of coders vary from on-the-job training to Bachelor's degrees. The coding workforce is made up of practitioners who hold a coding certification from AHIMA or AAPC, some who hold other HIM credentials, and still others who hold no formal HIM credential.

V. EVOLUTION OF THE HEALTH INFORMATION MANAGEMENT PROFESSION

Long before the advent of the computerized medical record and widespread health insurance, health information managers were called medical record librarians, and were responsible for compiling, typing, and storing patient information. A number of factors have contributed to the changing role of the medical record profession over the last 50 years. Considerable hospital construction, widespread health insurance coverage including the enactment of Medicare and Medicaid, the entry of the federal government in healthcare financing, increased use of technology and computers, the expansion in use of health information, and the increased responsibility in the release of health information, has created demand for trained and qualified medical record personnel.

The expansion of healthcare delivery to settings outside acute care facilities has necessitated the employment of health information management personnel to manage medical information in ambulatory surgery facilities, behavioral health facilities, and physician practices. Technology has vastly altered the practice of medical care and the practice of health information management. The profession, once restricted to medical records, has expanded its role and is closely linked to information technology, privacy, and security. Federal and state health information regulations and changes in healthcare reimbursement have transformed the role of the HIM workforce. Health information is used much more extensively than for just billing and patient care - quality of care reviews, health services research, and financial analyses use accurately coded data.

Changes in Medical Coding Systems

Another factor affecting the health information management workforce has been the evolution of coding procedures and systems. Diagnostic and procedural classification systems have undergone numerous changes over the years. The American Medical Association's Standard Nomenclature of Diseases and Operations (SNDO) came into widespread use in clinical healthcare in

the 1930s. Questions on the accuracy and completeness of SNDO coding led to the adoption of the International Classification of Diseases (ICD) categories by hospitals and other healthcare organizations in the United States. The International Classification of Diseases, a product of the World Health Organization, is still the primary classification in use in the US.¹² As new uses were found for clinical information, new classification systems were adopted and adapted to meet current needs. The 9th revision of the ICD-CM coding system is currently in use in the US, and widespread implementation of ICD-10, the 10th revision is expected in the future.¹³ The revision is necessary because the current system has insufficient space for new codes to document new diseases, procedures, and technology.¹⁴

The health information management workforce must be knowledgeable in multiple coding systems, not just the ICD system. Each implementation and subsequent revision of coding and classification systems improves documentation of clinical information, but is not an insignificant task. Each new revision is costly, requires significant training, requires the development and implementation of new computer systems and software, and has profound effects on the current healthcare payment and reimbursement system.¹⁵ Historically, implementation of updated coding and classification systems has not occurred on the same date; rather both old and new systems have been in use simultaneously. Productivity is reduced while the health information management workforce becomes proficient with the new systems, resulting in data continuity and comparison problems.

VI. FACTORS AFFECTING THE SUPPLY AND DEMAND OF THE HEALTH INFORMATION MANAGEMENT WORKFORCE

The health information management workforce has previously experienced imbalances between supply and demand. In the 1950s, leaders in the field recognized that Bachelor-level programs were not adequately filling the need for medical record librarians. Consequently, the field divided into a two-tier structure of administrators and technicians.¹⁶ The next section defines factors that are expected to further affect the supply and demand of the HIM workforce.

A. Rules, Regulations, and Initiatives

The health information management workforce has been at the forefront in preparation for the *Health Insurance Portability and Accountability Act of 1996 (HIPAA)*. HIPAA is a federal regulation that will alter the way in which personal health information is collected, stored, and disseminated. To ensure hospitals, providers, and other healthcare organizations a smooth transition to new HIPAA regulations, many new job titles, workgroups, and

work sections have been developed. The HIM workforce has been responsible for developing HIPAA awareness programs, educating health providers and managers about the rules, adopting privacy policies and procedures to ensure organizations are HIPAA-compliant, determining whether state statutes change HIPAA provisions, and developing mechanisms to track disclosures of protected health information. While hospitals have been proactive in preparing for HIPAA implementation, many other healthcare facilities, such as physician practices, have not been as prepared. Once full implementation occurs in April 2003, it is expected that the need for qualified HIM staff in these sectors will increase dramatically.

Regulation of the health information management workforce exists only in Hawaii, when it became the first state to legally mandate all of its independent bill reviewers (IBRs) to hold a credential granted by the Academy of Professional Coders or the American Health Information Management Association.¹⁷ The legislation occurred out of concern coders were being paid on a contingency basis to deny claims. The American Medical Association (AMA) has also investigated the coding profession after concerns were raised regarding the training and experience of certified coders. The health information management workforce and coding practices will likely face increased scrutiny and increased regulation in the future.

The Outpatient Prospective Payment System, a new reimbursement system based on codes and patient conditions, was implemented in some outpatient and ambulatory healthcare settings - settings that have much larger volumes of claims than inpatient ones. The need for a well-trained health information management workforce in outpatient settings will continue to increase.

Healthcare fraud is a federal offense that can be prosecuted under the *False Claims Act of 1863*¹⁸ and can impose civil monetary penalties on individuals (including corporations) who present, or cause submission of false or fraudulent requests for payment to the government. Requesting payment for undocumented services, billing at higher code levels, or inaccurate coding such as misrepresentation of service site could constitute a false claim.¹⁹ The health information management workforce will continue to be pressured to accurately code and prevent state, federal, or insurance audits.

Increased focus on patient safety in healthcare organizations relies heavily on administrative data to identify adverse events, data that are routinely collected by health information management personnel. The HIM workforce plays a pivotal role in the correct application and refinement of existing coding policies in the interpretation of coding diagnoses and procedures.

B. Financial Environment

Hospitals are turning to medical coding departments to improve billing, reimbursement, and accounts receivable. Billing and coding personnel are facing increased pressure to maximize returns and improve the financial position of healthcare organizations. Financial problems can be exacerbated by health information management vacancies or the use of unqualified and inexperienced staff. With unfilled vacancies or inadequate staffing, patient information remains uncoded, accounts receivables remain unpaid, and revenue is unrealized.

C. New Uses For Health Information

New uses for health information have developed, and data obtained from medical records can be used for planning healthcare services, such as staffing facilities, purchasing capital equipment, preparing for audits or accreditation, and improving patient care. Without accurately coded data provided by HIM personnel, these decisions will be flawed, and can affect healthcare financial viability, treatment decisions, and patient care. Healthcare facilities are recognizing the benefits of employing a well-qualified HIM staff to increase the value of, and find new uses for health information.

D. Technology

Electronic medical records, computerized order entry, tele-medicine and e-coding are only some of the technological innovations that have altered the practice of health information management. The HIM workforce must stay continually educated and informed about new changes in technology, and information systems and software to manage health information data.

VII. NATIONAL TRENDS IN HEALTH INFORMATION MANAGEMENT

A. Healthcare Workforce Shortage Studies

Healthcare workforce studies have become more frequent as the nation's hospitals and providers face difficulty staffing and retaining a qualified healthcare workforce. Two recent studies by the American Hospital Association draw attention to the scope and severity of the current hospital workforce shortage across many professions, including billing and coding personnel. The information cited below is derived from surveys and should be interpreted with caution due to many factors including response rates, sample bias, response bias, representative sampling, and differing survey methodologies.

The AHA's *Trend Watch, June 2001* highlighted an analysis of the AHA's 2001 Workforce Survey by the Lewin Group. The study, *The Hospital Workforce Shortage: Immedi-*

ate and Future examined workforce shortages in the nation's hospitals and revealed vacancy rates for "Billing/Coders" was 18%. Other health professions included in this survey included Pharmacists (21% vacancy rate), Radiology Technologists (18%), and Laboratory Technologists (12%). In addition, 35% of hospitals reported more difficulty recruiting "Billing/Coders" in 2001 than in 2000.²⁰

Another AHA study published in Fall 2001 by First Consulting Group (FCG), *The Healthcare Workforce Shortage and Its Implications for America's Hospitals*, looked at similar health professions and conducted a survey of over 1,000 hospitals during August and September of 2001.²¹ Human resource executives across the nation were asked to comment on the labor shortage of various health professions, including "Billers and Coders." The mean vacancy rate for "Billers/Coders" across hospitals was 8.5% with higher rates found in urban areas and in the Western region of the country. The South, which includes North Carolina, remained at the national mean vacancy rate of approximately 8.5%. Compared with other health professions cited in this survey, billing and coding professions are not facing as severe mean vacancy rates as other professions, such as Imaging Technologists (15.3%) and Registered Nurses (13%). Pharmacists, Licensed Practical Nurses, Nursing Assistants, and Laboratory Technicians all reported mean vacancy rates higher than 8.5%. Demand for Billers/Coders had increased 19% from 1999 to 2001, and 40% of hospitals reported more difficulty in recruiting Billers/Coders in 2001 than in 1999.²²

In January 2002, the North Carolina Hospital Association (NCHA) replicated a healthcare workforce study similar to the one conducted by the American Hospital Association.²³ The NCHA Workforce Study collected information on vacancy rates and average placement times for many allied health professions, including Billing/Coding professions. The total facility vacancy rate for Billing/Coding professions was 7.7%. Similar to findings in national workforce studies, vacancies in North Carolina for coding and billing personnel are not as high as for other professions such as Operating Room Technicians (27.2%), Radiology Technologists (21.4%), and Pharmacists (14.7%). The study found that, on average, billing and coding positions took an average of 39-46 days to fill, a relatively short time compared with other health positions such as Certified Registered Nurse Anesthetists (147-158 days), Radiology Technologists (107-113), and Pharmacists (90-107).

A healthcare shortage study exclusive to the health information management profession has been commissioned by the American Health Information Management Association to study the current and future needs of the organization and its membership. AHIMA has contracted

with the Center for Health Workforce Studies at the University of Albany, State University of New York, to examine the future of the HIM profession, and recommend strategies for AHIMA to implement to attract new members and students into the profession.²⁴

B. Health Information Management Educational Programs

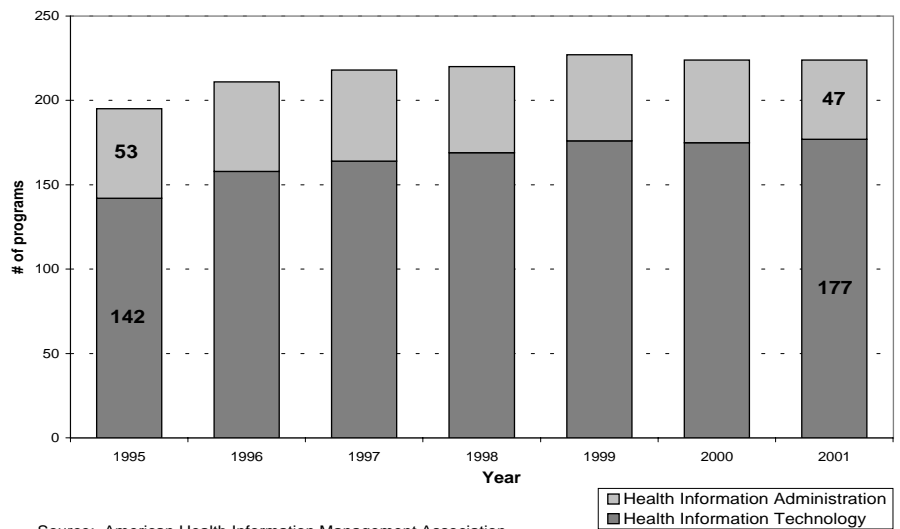
At a time of reported coding staff shortages in hospitals, growth in health information administration (HIA) programs accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) across the nation has slowed. Only graduates of accredited programs are eligible to sit for the national credentialing exams with the American Health Information Management Association. Between 1995 and 2001, the number of Bachelor degree programs in health information administration declined 11% from 53 to 47 programs. However, the number of two-year accredited Associate degree programs in health information technology grew 24% over the same period. The decline in the number of Bachelor programs and the resulting decline in the number of Bachelor prepared health information administrators for management positions in the field is concerning. **Figure 1.**

Equally troubling has been the historical decrease in the number of enrollments between 1995-2000. The slight increase in enrollments experienced in 2001 is perhaps an indication of renewed interest in health information management or may be attributed to the poor economy. The recent increase in enrollments may signal a reversal of the 5-year decline in enrollments that has been the trend. **Figure 2.**

C. Increase in Other Employment Settings

At one point, health information management personnel primarily worked in hospital facilities. With the development of alternative healthcare delivery settings, the need for an HIM workforce increased in outpatient, long-term care, ambulatory surgery, behavioral health, and home health and hospice settings. Increasingly health information management

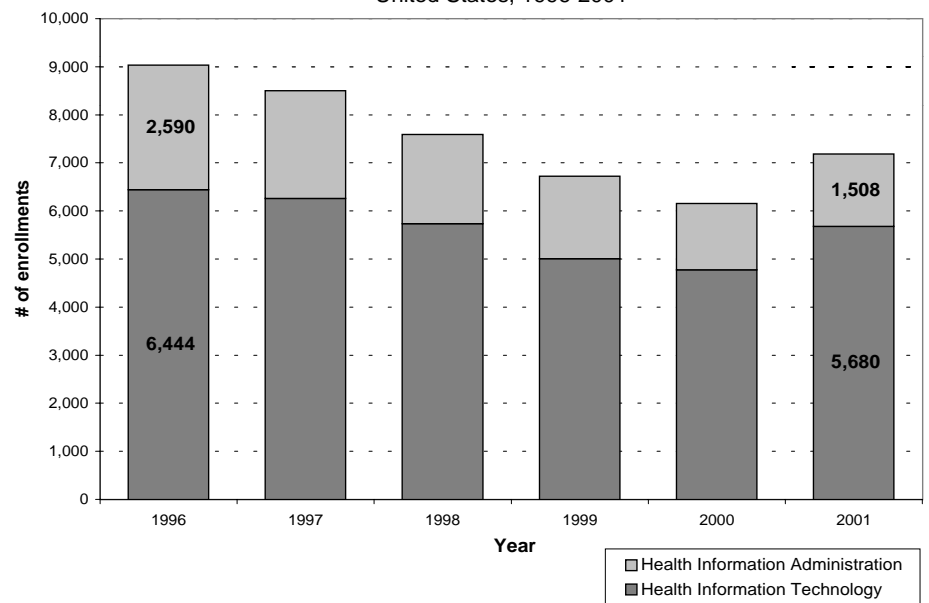
Figure 1. Health Information Management Educational Programs Accredited through CAAHEP, United States, 1995-2001



Source: American Health Information Management Association
CAAHEP- Commission on Accreditation of Allied Health Education Programs

practitioners are finding employment in other non-traditional (outside acute care) sectors, often attracted to the higher salaries than those paid in traditional healthcare environments. The American Health Information Management Association's Annual Member Survey²⁵ describes the steady decline in the proportion of the health information management workforce employed in hospitals since 1988. In 1988, approximately 72% of its members were employed in hospitals; by 2000, that number had decreased to 56%. Although the proportion of members employed in hospital

Figure 2. Enrollments in CAAHEP Accredited Health Information Management Educational Programs, United States, 1996-2001

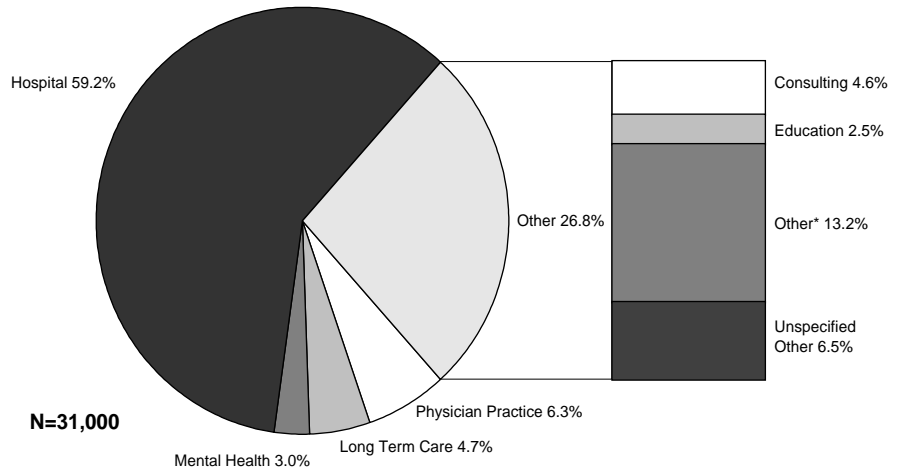


Source: American Health Information Management Association
CAAHEP- Commission on Accreditation of Allied Health Education Programs

settings has decreased, this may be partially explained by a concurrent AHIMA membership drive, which has brought in new members to AHIMA who are employed outside of hospitals. Another factor that may explain the proportionate decline is that members employed outside hospital settings may have been more likely to respond to the survey.

The 2000 survey of all AHIMA members found slightly over one-quarter of its membership was employed outside of hospital, physician practice, long-term care, or behavioral health settings. **Figure 3.** Non-traditional employment settings include consulting or vendor HIM services, educational institutions, managed care, and government or public health agencies.

Figure 3. American Health Information Management Association Membership by Employment Setting, 2000



Source: American Health Information Management Association.
 *Notes: Other includes 2.7% Insurance/Managed Care; 2.3% Rehab/Home Health/Hospice; 1.6% Ambulatory Surgery; 1.5% Government/Public Health; 1.3% Unemployed; 1.1% Vendor HIM Products; 2.7% Other. Total AHIMA membership in 2000=41,357.

VIII. THE HIM WORKFORCE IN NORTH CAROLINA

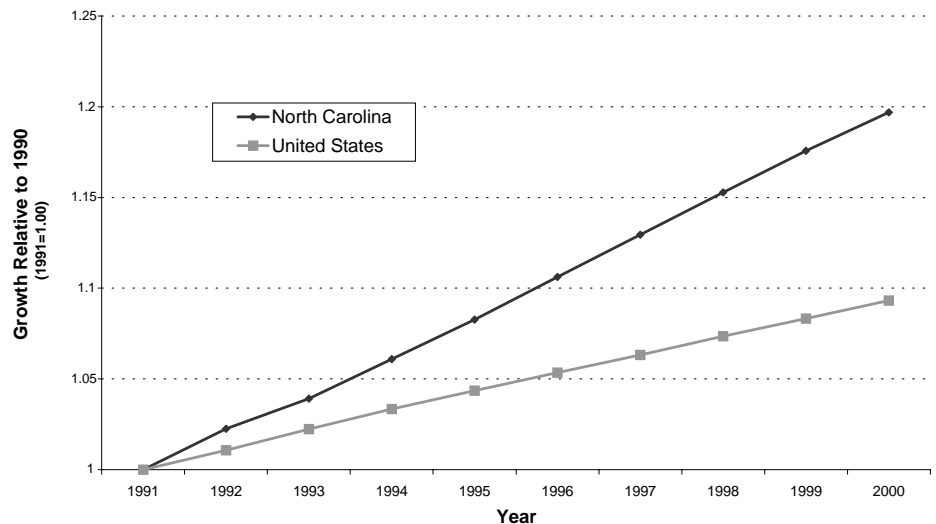
A. Consumers of Health Information Management Services

1. Population Growth in North Carolina

North Carolina's population has grown nearly 20% in the last decade, double the US population growth rate. **Figure 4.** The population has grown fastest in the areas around North Carolina's urban centers of Raleigh, Durham, Charlotte, Greensboro, Winston-Salem, Wilmington, Asheville, and Fayetteville. Some rural counties, generally those on the coast or in the mountains with recreational or retirement potential, have also experienced a substantial population expansion. Although population growth is not the sole driver of the need for health information management services, an increased population will have an effect on the number of healthcare services provided to a population.

Traditionally, as the population ages, the need for healthcare services and products increases, and therefore the number of encounters (or discharges) requiring coding and billing services, increases as well. North Carolina's over 65 populations, just 12% of the state's total population, has grown by 18% over the last decade. The 85 and over population has grown 40% over the same period, a larger growth than the national rate. Any examination of the changes in supply and distribution of the healthcare workforce must consider North Carolina's rapid population growth, and the differences in growth among counties.

Figure 4. Population Growth Relative to 1991 United States and North Carolina, 1991-2000



Source: US Bureau of the Census, North Carolina Office of State Planning. US Data are based on 1990 Census; North Carolina Data based on both 1990 and 2000 Census.

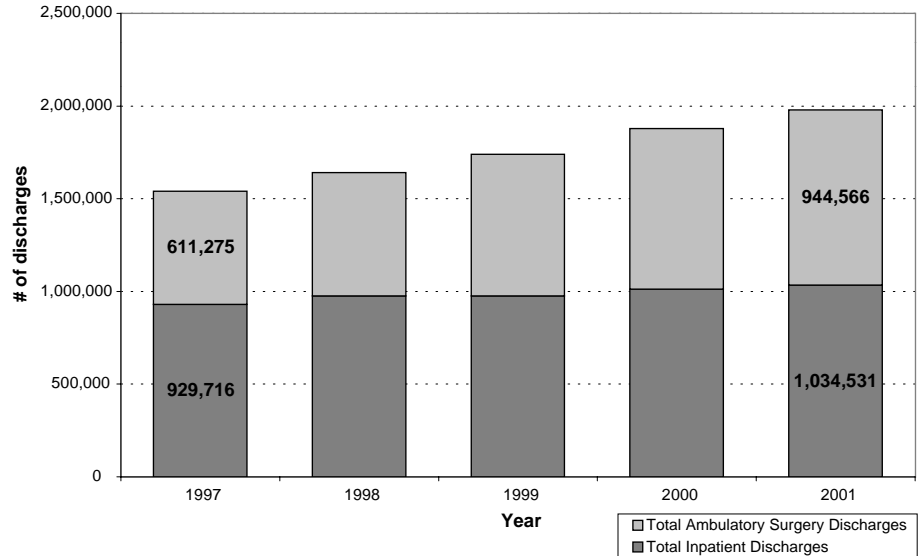
2. North Carolina Hospitals, Ambulatory Surgery Facilities, and Discharges

Along with a population growth in North Carolina, there has been an increase in the number of acute care hospital and ambulatory surgery discharges. The number of hospitals in North Carolina has fluctuated only slightly over the years, but the number of inpatient discharges has increased 11% over the period 1997 to 2001.²⁶ Ambulatory surgery discharges increased 55% over the same five-year time period.²⁷ **Figure 5.** Increases in inpatient and outpatient discharges result in increases in clinical encounters, and therefore creates an increase in the amount of health information to be coded and billed for by health information management personnel. Increases in both hospital and ambulatory surgery discharges have also coincided with increases in acuity of patients, resulting in increasingly complex medical coding and health information management services.

3. Survey of North Carolina Hospital's Health Information and Medical Record Departments

In April 2002, the Sheps Center, with assistance from the Council for Allied Health in North Carolina and the North Carolina Health Information Management Association, sent out brief surveys to the 137 hospital members of the North Carolina Hospital Association to ascertain whether or not health information management and coding shortages existed in the state. Because of the difficulty in

Figure 5. Total Hospital Inpatient and Ambulatory Surgery Discharges, North Carolina FY1997- 2001

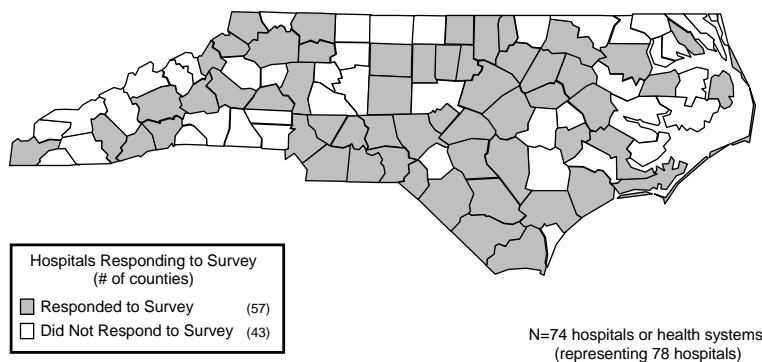


Source: Solucient, Fiscal Years 1997-2001 (October 1, 1996 to September 30, 2001).

*Notes: Inpatient discharges include acute, psychiatric, substance abuse and rehab bed discharges. Does not include discharges from state psychiatric facilities and some rehab facilities.

obtaining information on the health information management workforce in other healthcare settings (e.g. physician practices, long-term care facilities, behavioral health facilities, etc.), hospitals were selected as a means to obtain information on the largest employer type of the health information management workforce. Completed surveys were received from 74 hospitals and health systems (accounting for 78 individual hospitals), representing a 57% response rate.²⁸ Responses accounted for 65.3% of North Carolina's licensed acute care beds in 2000.²⁹ Seven of North Carolina's eleven largest hospitals (500+ beds) were included in this analysis. See **Figure 6** for a map of county locations of participating hospitals. Responses were received from a wide geographic representation of the state's acute care hospitals, with fewer responses from hospitals in the eastern and western counties of the state. Rural hospitals were well represented as were hospitals of differing acute care bed size. **Table 1.**

Figure 6. Counties with Hospitals Responding to HIM Survey, 2002



a) Vacancies

Compared to data collected on hospital vacancy rates nationally by the AHA, North Carolina hospitals are experiencing slightly lower vacancy rates. Only 8.3% of the 609.7 budgeted health information management full-time equivalent (FTE) positions in NC hospitals were vacant at the time of the survey. The majority of the vacancies (6.1%) were in coding positions (inpatient, outpatient, and chief coders). The remaining 2.2%

Source: Health Information Management Workforce Assessment Project, Cecil G. Sheps Center for Health Services Research, 2002. Produced by North Carolina Health Professions Data and Analysis System, Cecil G. Sheps Center for Health Services Research. Notes: Number of hospitals responding does not equal number of counties shaded. Some counties had multiple hospitals/systems responding.

were for management or other HIM positions. North Carolina's reported 6.1% coding vacancy rate is considerably smaller than the rates cited in the two American Hospital Association studies referenced earlier. The AHA TrendWatch revealed an 18% mean vacancy rate for billers/coders and the First Consulting Group study reported an 8.5% billers/coders vacancy rate.³⁰ Health information management vacancies are not a universal problem for all hospitals in North Carolina. Of the 74 hospitals and health systems responding to the survey, 64% did not have any HIM vacancies

more likely to require credentials of health information management staff than are smaller hospitals (62% and 38% respectively).³¹

These hiring policies are reflected in the actual number of HIM personnel in hospitals who hold an HIM credential from either AHIMA or AAPC. Only 71% of the total hospital HIM workforce accounted for in this survey holds a credential from either of these two organizations. There is large variation in the percentage of non-credentialed staff in small hospitals (<200 acute care beds).

Twenty small hospitals (of 50 small hospitals responding) have fully credentialed HIM staff, yet other small hospitals have a high percentage of non-credentialed staff. Smaller hospitals are generally located in non-metropolitan areas and may have difficulty attracting credentialed staff to rural areas. One or two HIM employees may also staff these smaller facilities. HIM departments in larger hospitals (>=200 acute care beds) have lower variation in the percentage of staff holding HIM credentials, but only one large hospital had a fully credentialed staff.

Type of credential held by HIM staff varies depending on the job title. While health information management directors and managers are more likely to hold an HIM credential (97% and 88% respectively), only 46% of HIM supervisors are credentialed. Among the coding positions, chief coders and inpatient

coders are more likely to hold an HIM credential (82.5% and 78.5% respectively) than are outpatient coders (50%). **Figures 7 and 8.** Although the survey only represents the hospital health information management workforce, the percentage of HIM employees without credentials is estimated to be even greater in other healthcare settings, including behavioral health and physician practices.

d) Recruiting Methods

To recruit health information management personnel, 23% of hospitals and healthcare systems (17) in North Carolina use sign-on bonuses or other incentives. These range from relocation assistance to a \$4,500 retention bonus after a 3-year employment commitment. The most common recruiting methods used are forms of media (newspaper, website, and trade magazine), networking (HIM employees, non HIM employees, other healthcare facilities, and HIM educational programs and students), and "other" methods (recruiting service and walk-in). Hospitals unable to fill HIM vacancies may turn to outside contractors and consultants; approximately 50% of hospitals or systems utilize, or have utilized, outside contract help. Reasons for using contractors include difficulty in filling coding and director vacancies, providing vacation backup, or eliminating existing backlogs.

Table 1. Description of Hospitals Responding to Health Information Management Director Survey

	Hospitals Responding to Survey	%	All Hospitals (NCHA Members)	%
Metro Facilities*	38	48.7%	77	56.2%
Non-Metro Facilities*	40	51.3%	60	43.8%
Total	78	100.0%	137	100.0%
<200 beds	50	70.4%	84	73.7%
>=200 beds	21	29.6%	30	26.3%
Total**	71	100.0%	114	100.0%

Source: Hospital Health Information Management Survey, Cecil G. Sheps Center for Health Services Research, 2002.
Notes: Surveys sent to hospital members of the North Carolina Hospital Association (N=137). See Appendix 3 for additional data notes.

b) Changes in Number of Positions

The number of positions in health information management departments has increased between 2000 and 2002. Approximately 43% of hospitals and systems report an increase in the number of positions, 37% of departments remained unchanged, and 4% decreased the number of HIM positions. Responses were not obtained from 16% of the 74 hospitals and health systems responding to the survey. Of those facilities reporting an increase in the number of positions, 75% of new positions were in coding (inpatient, outpatient, or chief coder), 18% for HIM management (supervisor, manager, or director) and 8% for other HIM positions, indicating that most of the growth has been for coders and not supervisory or administrative staff.

c) Credentials of HIM Staff

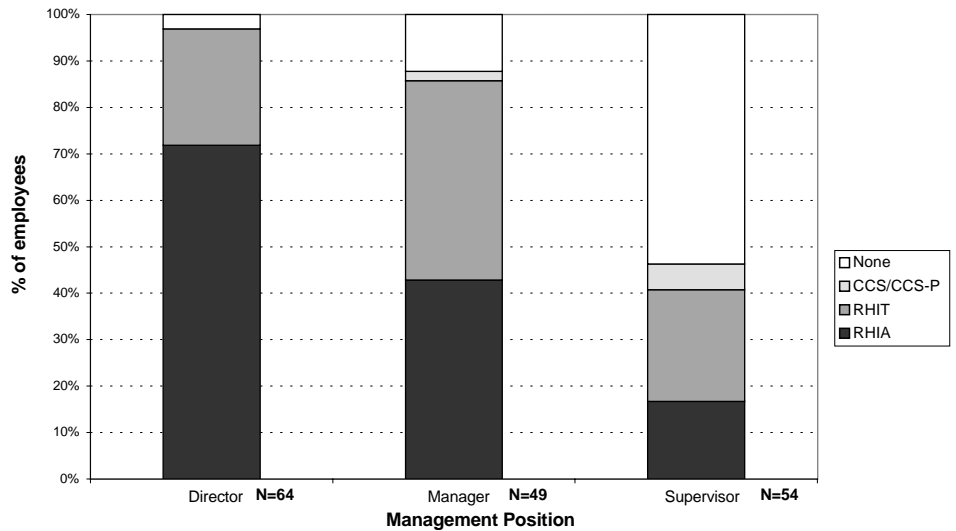
Many hospitals prefer to hire health information management employees who hold credentials through AHIMA or AAPC, but there appear to be different policies on hiring credentialed coders and other health information management personnel. Only 28% of hospitals hire only credentialed coders; 45% of hospitals hire only credentialed HIM personnel. Small hospitals (<200 beds) and large hospitals (>=200 beds) are equally likely to demand credentials of coding staff; however, larger hospitals are

e) Hiring Policies and Career Development

There appear to be different hiring policies for coders and the overall health information management workforce in North Carolina hospitals. Credentialed health information management practitioners are likely to be rewarded for earning certification. Over 59% of hospitals pay credentialed coders higher salaries than non-credentialed coders and 70% of hospitals pay credentialed HIM workers higher salaries than non-credentialed HIM workers.

Only 42 directors responded that their facility has some form of career ladder or professional development for health information management departmental staff. Examples of career development reported include encouraging non-credentialed staff to seek certification, offering tuition or examination reimbursement, or offering paid time-off to attend classes or sit for exams. Other hospitals further encourage staff to become credentialed by limiting promotional opportunities to only those holding an HIM credential. Career ladder opportunities are much more limited at smaller facilities than at larger hospitals, which

Figure 7. Credentials of Hospital HIM Management Staff, by Job Title, North Carolina 2002



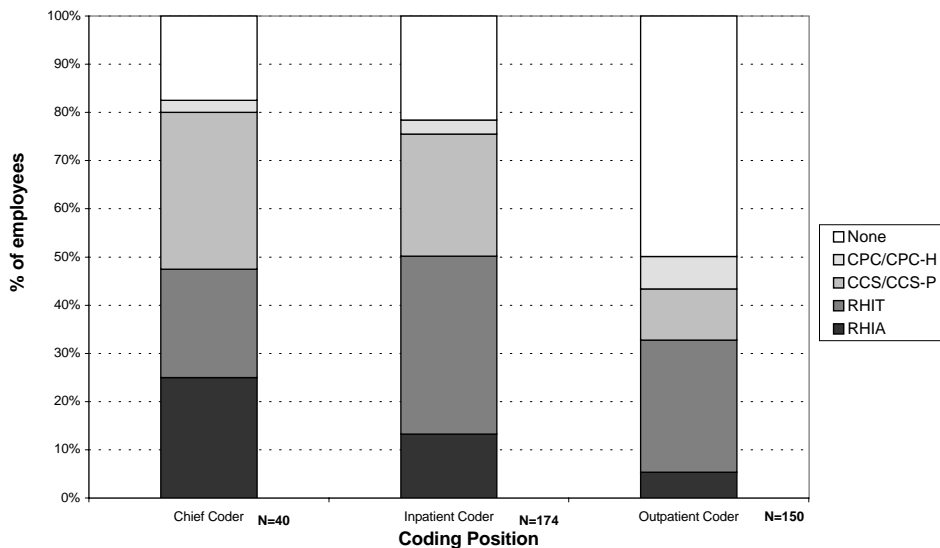
Source: Health Information Management Workforce Assessment Project, Hospital Health Information Management Survey, Cecil G. Sheps Center for Health Services Research, 2002.

often have multiple levels of coding and leadership positions.

f) Opinions about the Health Information Management Workforce Shortage

When asked about whether or not there was a shortage of coders, most hospital HIM directors and managers responded there indeed was a shortage (1.5 on 4 point scale [1: strongly agree 4: strongly disagree]). Respondents were slightly less likely to agree there was an overall health information management shortage (1.8) and there was no strong opinion on whether or not additional coding and HIM staff would be required because of HIPAA (2.1). Despite data indicating the relatively low HIM vacancy rates compared with national rates, many in the workforce believe there is a shortage.

Figure 8. Credentials of Hospital HIM Coding Staff, by Job Title, North Carolina 2002



Source: Health Information Management Workforce Assessment Project, Hospital Health Information Management Survey, Cecil G. Sheps Center for Health Services Research, 2002.

B. Providers of Health Information Management Services

This section outlines what is known about the health information management workforce in North Carolina. Data on the credentialed workforce were collected from the American Health Information Management Association, the North Carolina Health Information Management Association, and the American Academy of Professional Coders. Longitudinal data on the North Carolina health information management memberships were not available from any organization.

The total numbers obtained through AHIMA and AAPC fall well below the estimates from the Employment Security Commission. Without a single data source to accurately account for all employees of the health information management workforce, this report seeks to account for those who are credentialed through either AHIMA or AAPC, but recognizes a large number of non-credentialed HIM practitioners will be excluded.³²

1. American Health Information Management Association / North Carolina Health Information Management Association

In February 2002, North Carolina membership in AHIMA totaled 1,337.³³ In addition, there were 158 individuals who were credentialed through AHIMA, but were not members of NCHIMA. Together, there were 1,495 HIM practitioners in the AHIMA/NCHIMA file. The membership included active, student, corporate, senior, honorary, and associate members. Longitudinal data exclusive to the North Carolina membership were unavailable.³⁴

a) Credential

Currently the American Health Information Management Association offers four credentials: Registered Health Information Administrator (RHIA), Registered Health Information Technician (RHIT), Certified Coding Specialist (CCS), and Certified Coding Specialist - Physician Practice (CCS-P). The majority of individuals from North Carolina hold an RHIT or RHIA credential. By credential, 36% hold an RHIA, 35% hold an RHIT, 10% hold a coding credential, 1% holds a professional degree (MD, JD, etc.), and 18% did not report credential.³⁵ These data may overestimate supply, as certification through AHIMA does not mean an individual is actively practicing in the HIM field. Of the data received from AHIMA and NCHIMA (N=1,495), 70% held active membership, 15% were students, 11% were non-members, 3% held associate membership, and 1% held other membership.³⁶

b) Education

Over 50% of AHIMA certified persons hold a Bachelors degree or higher, yet a large percentage of AHIMA members and non-members did not report education level (40% of records). **Table 2.**

Table 2. Educational Level of AHIMA Members and Non-Members, 2002

Education	Number	Percent*
High School Graduate	53	36.0%
Associate Degree	226	25.6%
Bachelor Degree	410	46.4%
Master Degree	51	5.8%
Professional or Doctoral Degree	3	0.3%
HIM Certificate or Independent Study Program	126	14.3%
Other	15	1.7%
Total Reporting Education Level	884	100.0%
No Data on Education	611	
Total	1,495	

*Percentages based on total respondents reporting practice status.
Source: American Health Information Management Association, North Carolina Health Information Management Association

c) Work Setting and Salaries

The majority (54%) of North Carolina credentialed HIM professionals and AHIMA members work in hospital settings. In addition, the state has a large number of members who work in non-traditional healthcare settings (24%). These figures represent all records and therefore include student, associate, senior, honorary, and corporate members who may work in a non-HIM related role in these settings. Obtaining additional education and credentialing seems to be rewarded with higher salaries, but salary figures must be viewed with caution because less than half of the records reported salary information (N=764). Average salaries based on midpoint of salary ranges for AHIMA members³⁷ in North Carolina were as follows:

- Coding credential: \$35,446 (N=28)
- RHIT credential: \$32,944 (N=349)
- RHIA credential: \$44,076 (N=387)

The workforce with only a coding credential appears to earn slightly more than those with an RHIT designation. However, given the small sample size for the workforce with only a coding credential, this may not be generalizable. As a comparison, average salaries for Medical Record and Health Information Technicians as reported in the North Carolina Occupational Employment and Wages (NC OEW) 2002 Release Wage Rates were reviewed. Employees under this classification earned an average annual wage of \$23,130, significantly lower than those reported by AHIMA members holding a coding or RHIT credential. Rates estimated by NC OEW include coders and technicians who are not captured by the AHIMA data and may not be a

comparable population. Salary comparisons for health information management administrators are not possible because HIM managers are a subset of the more general Medical and Health Services Managers.³⁸

The high salaries reported by practitioners with an RHIA credential may also be due to the fact that many with this designation are working as coders. Panel members report that many administrators, directors, and managers are seeking less stressful and more flexible work environments for similar salaries, and have opted to return to coding positions.

2. American Academy of Professional Coders

Membership data were obtained from the American Academy of Professional Coders in February 2002. It is unknown how many certified coders who are not members of the AAPC work in the state. According to the data approximately 412 coders are North Carolina members; the AAPC claims there are approximately 25,000 members nationwide. The vast majority of North Carolina members (97%) hold only one credential, either the Certified Professional Coder (CPC) or the Certified Professional Coder-Hospital (CPC-H). The remainder holds both degrees, or is dually credentialed with another organization. There are nine local chapters of the AAPC in NC and conversations with chapter presidents revealed that many individuals who attend meetings are not credentialed with the AAPC. Over half of all coders with an AAPC credential are employed in physician practice or ambulatory surgery facilities.³⁹ Another 30% are employed in hospital settings, yet like the AHIMA membership, there is a large percentage employed in non-traditional settings. Approximately 15% of AAPC members are employed in insurance, consulting, education, government, and other settings.

3. Data Merged from AHIMA and AAPC

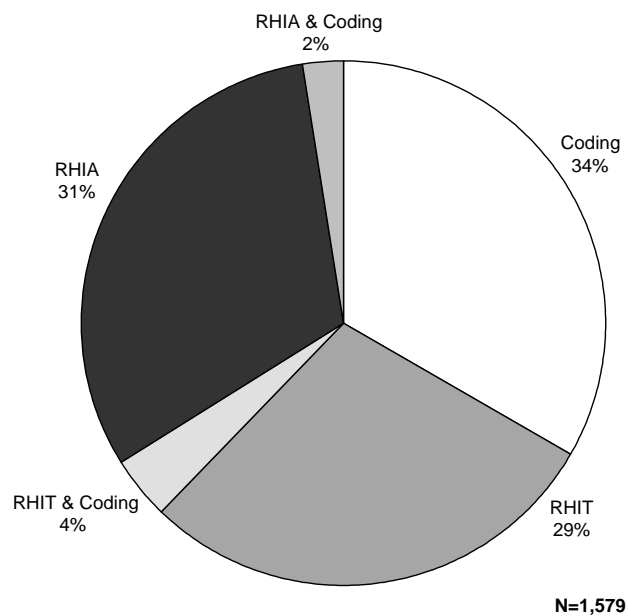
To obtain a more comprehensive profile of the health information management workforce, data files from the American Health Information Management Association and the American Academy of Professional Coders were merged. The merged file contains a total of 1,870 unduplicated health information management individuals.⁴⁰ To get a more representative picture of the health information management workforce actively employed in HIM in the state, the complete merge file was cleaned and only 'active' records were kept. An active record fit into one of the following three categories: 1) An AHIMA member with Active membership status. Members with a status of associate, senior, honorary, corporation, or student are assumed not to be actively practicing in HIM. 2) All AAPC

records. Employment setting was not available on all of these records and therefore the coding data may be over representative of the current status in North Carolina. 3) All non-member AHIMA credentialed records with a North Carolina address. *The resulting data file contained 1,579 active records.* Individuals who had multiple credentials were included in one credential category.⁴¹

a) Credential

Analyzing only the active HIM workforce, there is an equal distribution between administrator, technician, and coding credentials. A small percentage of RHIA and RHITs also hold a coding credential.⁴² **Figure 9.**

Figure 9. Active Health Information Management Practitioners, by Type of Credential, North Carolina, 2002



Source: Merged files from AHIMA and AAPC; Active files only, N=1,579.

Notes: Active includes AHIMA members with Active status, AAPC records and AHIMA credentialed non-members in NC.

b) Demographics

The health information management workforce is primarily female. Similar to the national AHIMA data, females make up over 94% of the HIM workforce in North Carolina. Approximately 4% of the workforce is male; the remainder is unknown.⁴³ A key issue for any profession is to examine the extent to which the workforce mirrors the increasing racial and ethnic diversity of North Carolina. In the 2000 Census, minorities made up 28% of the NC population.⁴⁴ The actively practicing HIM workforce does not match the same racial and ethnic background of the general population; 89% of HIM practitioners indicating race and ethnicity were white. However caution should be exercised in drawing conclusions on the racial and ethnic diversity of the workforce. Data were not available from AAPC records, and a large percentage of the AHIMA data

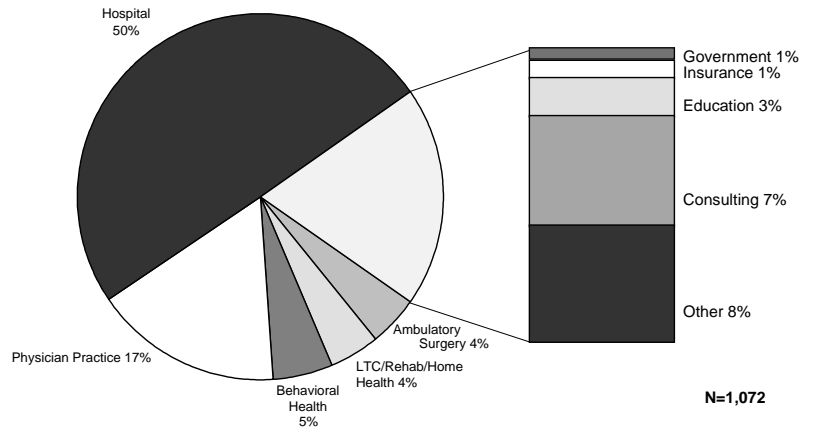
did not indicate race/ethnicity. Altogether, 64% of active records did not report race or ethnicity, and these proportions may not be generalizable to the total HIM workforce.

c) Work Setting and Location

Mirroring the national picture, over 50% of the actively practicing HIM workforce in North Carolina is employed in hospitals or health systems, followed by physician practices at 17%. Nearly 20% of active individuals work in non-traditional sectors. **Figure 10.** These figures do not capture the employment settings of the non-credentialed workforce and the total number captured by these data is much smaller than the total number of people working in health information management. The data may also be skewed towards hospital setting given the difficulty in capturing the workforce employed in physician practice and other healthcare settings. With growth opportunities for health information management practitioners in the outpatient, ambulatory surgery, and consulting sectors, the overall proportions of employment setting is likely to change. At present, these data capture the best available information on the HIM workforce.

By type of credential, the employment setting picture changes slightly. Sixty-three percent of RHITs are employed in a hospital or health system; 51% of RHIA's are employed in an acute care setting. Active coding personnel are almost as likely to work in a physician practice (39%) as in a hospital (33%). **Figure 11.**

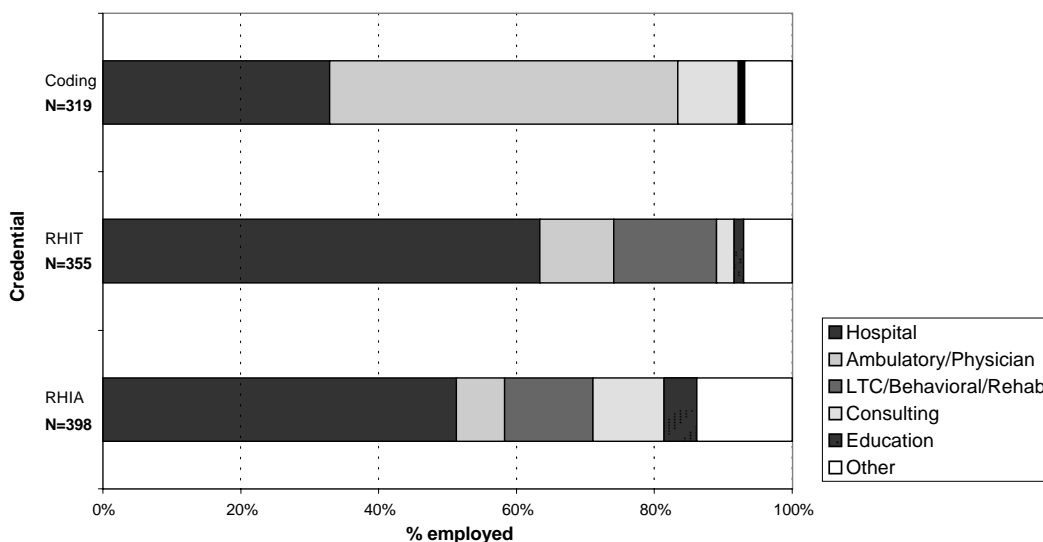
Figure 10. Employment Setting of the Active Credentialed Health Information Management Workforce in North Carolina, 2002



Source: Merged files from AHIMA and AAPC; Active files only.
 Notes: Active includes AHIMA members with Active status, AAPC records and AHIMA credentialed non-members in NC. Percent based on those reporting work setting N = 1,072. Missing and unemployed = 507.

The county of employment was mapped to get an accurate picture of where the health information management workforce is employed. Of the 1,579 active records, business address was used for 71% of the records; 27% did not have a business address and home address was mapped. Thirty-one individuals (2% of active records) did not have either a business or home address, or had an address outside of North Carolina. A mapping concern unique to the consulting HIM workforce was ascertaining whether or not work address is the address of the consulting or contracting firm (which may have headquarters outside of North Carolina), or where work is actually being performed.⁴⁵

Figure 11. Employment Setting of the Active Credentialed Health Information Management Workforce, by Type of Credential, North Carolina 2002



Source: Merged files from AHIMA and AAPC; Active files only.
 Notes: Active includes AHIMA members with Active status, AAPC records and AHIMA credentialed non-members in NC. Percent based on those reporting work setting N = 1,072. Missing and unemployed = 507 (RHIA 133, RHIT 165, Coding 209). Individuals with dual credentials are included in the higher level credential category.

IX. SUPPLY OF THE HEALTH INFORMATION MANAGEMENT WORKFORCE: EDUCATION

A key issue for workforce planning in North Carolina relates to the extent to which policies under the control of the state can affect the size, composition, and distribution of the health care workforce. The primary impact state policy makers can have on these factors is through support for educational institutions. The next section will describe the various educational paths to enter the health information management workforce.

A. Health Information Administrators

To become a health information administrator, completion of a four-year degree in health information administration is the general requirement. The American Health Information Management Association recognizes schools accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), and graduates of accredited programs are eligible to sit for the Registered Health Information Administrator exam. East Carolina and Western Carolina Universities have the only Bachelor of Science in HIA programs in North Carolina. See **Figure 12** for a map of accredited HIM programs in North Carolina. The existing HIA programs do not easily serve students living in the central portion of the state but a web-based program at ECU beginning in 2003 may help to increase the reach to students in other areas of the state.

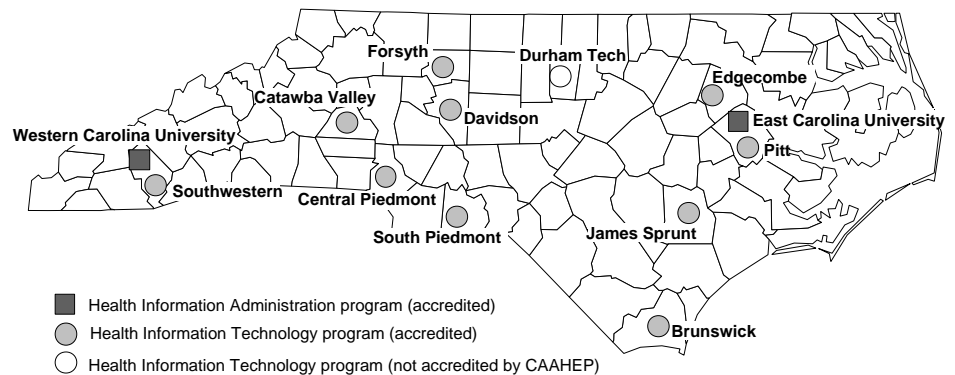
B. Health Information Technicians

The path to become a health information technician usually begins with completion of a two-year Associate degree in health information technology at a community college. AHIMA recognizes HIT programs accredited by CAAHEP, and graduates may sit for the RHIT exam upon completion of the Associate degree program. There are nine accredited HIT programs in North Carolina; some offer additional HIT coursework through collaborative efforts with other community colleges that are unable to support a full program. **Figure 12**. One additional community college, Durham Technical, is in the process of developing a two-year Associate degree in Health Information Technology to complement its existing diploma program. Some programs offer distance learning, thereby increasing the pool of potential students not served by an existing on-campus HIT program.

C. Coders

Multiple means exist to obtain an education in coding, and thus, the career path to become a coder is not nearly as straightforward as the path to become an administrator or technician. A minimum educational requirement for coding does not exist, resulting in a workforce with significant variation in the level of education and training. Coding practitioners with Bachelors degrees are working alongside practitioners with little to no formal coding education or training. While many in the health information management workforce believe a minimum level of education in coding should exist, employers of coders are often unfamiliar with the differences in coding education and coding credentials. Currently the educational avenues are numerous and varied, but can be grouped into three main categories: formal classroom education, self-study, and on-the-job training.

Figure 12. Location of CAAHEP Accredited Health Information Management Programs in North Carolina, 2002



Source: UNC Office of the President, and the North Carolina Community College System.
Notes: CAAHEP - Commission on Accreditation of Allied Health Programs
Other HIT collaborative programs exist in counties unable to fully support a program.
Map does not indicate location of coding programs.

Coding credentials can be obtained from both AHIMA and AAPC. To obtain a coding designation from AHIMA, no formal education beyond a high school diploma is required, however at least three years of on-the-job coding experience and education from seminars or courses is suggested. The new coding credential for entry-level coders to be offered in Fall 2002, suggests six months of coding experience. Coding certification through the AAPC requires at least two years of practical coding experience, or one year of practical coding experience *and* completion of an 80-hour coding course.

1. Formal Classroom

a) Associate Degree

The Associate degree program in Health Information Technology programs, as described above, is often a common avenue for entrance into the coding workforce.

The HIT curriculum is composed of multiple coding components, and HIT graduates are often sought after for their coding knowledge and skills.

b) Certificate/Diploma in Coding

Some of North Carolina's community colleges offer a certificate or diploma in coding. This training generally lasts two to four semesters and provides a strong background in coding, medical terminology, physiology, and anatomy. Students generally do not develop skills such as quality management, data analysis, or leadership, which are covered in the Associate and Bachelor programs. Coding certificate and diploma programs are not accredited through CAAHEP, but AHIMA has recently begun approving coding certificate programs across the country through the Council on Accreditation of the American Health Information Management Association. Participation in the approval process is voluntary and will signify the program meets established qualifications and educational standards. Only a handful of programs across the country have received approval; none in North Carolina has applied for approval.⁴⁶

c) Coding Coursework in Allied Health Programs

Students in some allied health programs, medical assistant programs for example, take courses in medical coding.

d) Continuing Education

Eight to twelve week coding classes are offered through continuing education departments at many community colleges. The requirements are much less intensive than in the certificate or diploma on-campus programs. Continuing education programs may stipulate prerequisites before entering the class, but often the courses are available to any student with an interest. Upon completion of the class, students receive a continuing education certificate.

A variety of coding courses are available through the NC Area Health Education Centers programs (NC AHEC), including basic and intermediate CPT and ICD-9 training.⁴⁷ Students of varied backgrounds, including billing and medical office personnel, allied health professionals, and physicians, attend the half-to multiple-day classes to learn or improve upon coding skills, or gain knowledge of new coding reimbursement practices. Many healthcare employers send staff to AHEC classes for continuing education credits or to keep their staff abreast of new coding practices, principles, and regulations.⁴⁸ Some of the AHEC programs have collaborated with local community colleges and healthcare facilities to offer coding courses.

e) Professional Medical Coding Curriculum

The American Academy of Professional Coders offers a Professional Medical Coding Curriculum (PMCC) taught

by a certified PMCC instructor at various sites around the country. In May 2002, North Carolina's first PMCC course began in the Winston-Salem area. Completion of the 120-hour course will prepare students for careers in physician practice coding and to sit for the CPC exam. Future PMCC courses in North Carolina are anticipated, especially with the development of a new CPC-H coding education program.⁴⁹

2. Self-Study

Many organizations, including AAPC and AHIMA, offer self-study curricula in coding. AAPC offers an *Independent Study Program (ISP)* consisting of five to six modules, which must be completed in a 12-month period. After completing the ISP modules and subsequent practical coding experience, students are eligible to sit for AAPC exams. AHIMA offers an independent, five-module online study program, *Coding Basics*. The American Medical Association also offers independent study programs in coding for hospitals, physician practices, or specialty coding disciplines.

Numerous self-study course materials are available on the Internet or from bookstores, claiming to prepare individuals for careers in medical coding. These 'train-at-home' programs vary widely in scope, length, and intensity and may promise "lucrative" careers upon completion. The programs may provide a basic understanding of coding, but will not adequately prepare individuals for the level and complexity of coding needed in most healthcare environments.

3. On-the-Job Training

As evidenced by the results of the hospital HIM survey, 29% of all HIM personnel working in hospitals are without a formal HIM credential. For outpatient coders and HIM supervisors, over 50% lack credentials. Most have received the majority of their training and experience while on the job. Some hospitals recruit and train health information management staff from existing non-clinical clerk and transcriptionist staff; some have attracted nurses to coding and have benefited from their extensive knowledge of anatomy and disease processes. Many rural hospitals have found it exceedingly difficult to recruit credentialed coding staff and therefore fill positions from within.

In summary, the paths to becoming a coder are as wide-ranging as are the levels of competence achieved. The lack of uniformity in coding education has resulted in difficulty in marketing and promoting the coding profession. While the community college programs (certificate and diploma) provide students with both classroom and experiential learning, graduates of those programs are competing for jobs with students who have completed a short-term coding course. Coders and managers familiar

with hiring health information management practitioners realize the qualitative and quantitative differences in coding education, but there is not a standardization of expectation for minimum coding competencies across all employers. Employers know coding vacancies must be filled, but are unsure of the differences in quality of education and credential.

One vignette encountered during this study illustrates the many ways employers address the coding workforce shortage. A 10-hospital alliance network in Eastern North Carolina, Coastal Carolinas Health Alliance, elected to use a combination of methods to deal with its member hospitals' coding shortages. To deal with the existing shortage and a backlog of coding, the Alliance elected to use outside contractors to fill coding vacancies. The Alliance chose to address the mid-term shortage by training its own staff to become proficient in medical coding. Not all of the students were prior health information management staff; some were other health professionals on medical disability who elected to be cross-trained in a new discipline. Collaboration with the local community college and outside instructors resulted in a short-term 8-week coding program, followed by an intensive 10-month 'shadowing' internship with an existing full-time coder. The Alliance continues to educate and train its coding workforce with "Lunch and Learn" sessions at its member hospitals. There are also plans to develop a more intense one to two year program so graduates can obtain a certification in coding.⁵⁰

D. Data from the Health Information Administrator and Health Information Technology Programs

1. Overview

In February 2002, a survey was sent to each of the program directors of accredited health information administration and health information technology programs in North Carolina asking about past and future enrollment plans, attrition from education programs, in-state retention of graduates, and other key workforce issues. Responses were received from North Carolina's two HIA (Western Carolina University and East Carolina University) and nine HIT (Brunswick Community, Catawba Valley, Central Piedmont, Davidson County, Edgecombe Community, Pitt Community, James Sprunt Community, Southwestern, and South Piedmont) programs.⁵¹ Data on the numerous coding educational programs were not obtained. Educational information was also obtained from the University of North Carolina Office of the President and the North Carolina Community College System. All of the programs are accredited through CAAHEP, with the exception of the HIT program at Durham Technical Community College, which will be seeking accreditation in the next year. Programs are located throughout the state, but many

counties lack convenient access to a program and students seeking a Bachelor degree in HIM lack a central location in the state. The trend toward full or partial internet-based programs may help to mitigate these access concerns.

North Carolina has followed the national trends in educational growth of health information management programs. Nationally the number of HIA programs has decreased; the number of HIA programs in NC has remained at two since the 1970s. The growth in the number of HIT programs seen nationally has also occurred in North Carolina. Prior to 1997 there were seven health information technician programs in NC, but over the last five years, an HIT program has opened, another HIT program has considered closing, several HIT collaborative programs have been established, and at least three coding certificate programs have begun. In addition, the number of programs offering full or partial distance learning through web-based curricula has expanded. Currently Health Information Technology programs at Pitt Community College, Central Piedmont Community College, Brunswick Community College, and Edgecombe Community College offer web-based learning; the programs at Pitt and Edgecombe Community Colleges are delivered completely via the Internet. Distance learning will be available to Health Information Administration students at East Carolina University beginning in 2003. The distance learning option has attracted students to health information management programs who would otherwise be unserved by an on-campus program. Programs currently offering web-based courses enroll students from across North Carolina and the United States.

2. Enrollments in Health Information Management Programs

The number of available slots in HIA programs has remained constant, but the number of slots has increased in HIT programs. However, due to a lack of an applicant pool, the increase in slots has failed to increase the number of enrollees dramatically; the overall growth in total HIT class size has increased only 3% since 1997. Individual program enrollments have varied greatly over the years. **Table 3.** Most HIT programs have seen a decline in enrollments since 1997, and most are not meeting capacity. However, a few HIT programs have seen significant improvements in enrollments: Brunswick, Edgecombe, and Pitt County Community Colleges. Some of the improvement may be due to innovations in these programs such as web-based offerings and collaboration with local businesses and employers. The move toward distance learning has been relatively new for HIT programs, and time is needed to monitor the effectiveness of this form of learning for HIT students. From years 1999-2000 and 2000-2001, enrollments in HIT programs increased substantially, a trend also seen in national enrollments. This increase may be a

result of the slow economy or a renewed interest in health information management. It remains to be seen whether the HIT programs can continue increasing enrollments consistently.

The number of first year class enrollments in the Health Information Administration programs has remained stable over the last four years. In both 1997-1998 and 2000-2001, 25 of 37 available slots were filled. In the year 1999-2000, the two HIA programs in North Carolina saw the largest enrollment of first year students. **Table 4.**

Both HIA and HIT programs have excess capacity and have not completely filled all of the available health information management slots. Directors in both the HIA and HIT programs cited lack of an applicant pool and lack of a qualified applicant pool as main reasons for the inability to fill all available slots.

3. Graduates of Health Information Management Programs

Graduation rates from Health Information Technology programs have increased 17% since 1997, and three of the HIT programs have increased the number of graduates by 100%. **Table 5.** Some programs began in the mid 1990s, and have shown marked improvement as the individual program has developed. Distinctions between first and second year student enrollment are not available, so it is not possible to determine the amount of attrition from the programs. However, looking at total enrollments and graduates, the data show that a considerable number of students are not graduating within a two-year time frame. This may be due to the fact that many HIT students attend part time, take longer than two years

Table 3. Total Class Enrollments in Health Information Technology (HIT) Programs in North Carolina 1997-2001

Program	1997-1998	1998-1999	1999-2000	2000-2001	% change 1997-2001
Brunswick Community College	15	22	26	23	53%
Catawba Valley Community College	31	31	23	20	-35%
Central Piedmont Community College	60	53	43	54	-10%
Davidson County Community College	29	11	14	22	-24%
Edgecombe Community College	27	20	33	35	30%
Forsyth Technical Community College	0	0	2	3	-
James Sprunt Community College	7	4	2	2	-71%
Pitt County Community College	22	24	31	58	164%
South Piedmont Community College	15	10	6	5	-67%
Southwestern Community College	31	26	27	23	-26%
Totals	237	201	207	245	3%

Source: North Carolina Community College System.

Notes: Enrollments include all students in HIT programs (first and second year).

The HIT certificate program at Durham Technical Community College is excluded from these Associate degree program figures.

Collaborative program enrollments counted under authorized program.

to complete the program, or a fair number of students drop out. Since 1997, the number of graduates from the HIA programs has decreased 17%. However after a low in 1998-99 (20 graduates), the HIA programs have improved 25% and the data show an upward trend in recent years.

Table 6.

Table 4. First Year Class Enrollments in Health Information Administration (HIA) Programs in North Carolina 1997-2001

Program	1997-1998	1998-1999	1999-2000	2000-2001	% change 1997-2001
East Carolina University	19	8	19	17	-11%
Western Carolina University	6	14	12	8	33%
Totals	25	22	31	25	0%

Source: University of North Carolina Office of the President and Health Information Administration Programs at ECU and WCU.

Note: Enrollments include first year students in HIA programs only.

Table 5. Graduates of Health Information Technology (HIT) Programs in North Carolina 1997-2001

Program	1997-1998	1998-1999	1999-2000	2000-2001	% change 1997-2001
Brunswick Community College	3	2	4	7	133%
Catawba Valley Community College	3	10	8	6	100%
Central Piedmont Community College	8	7	2	1	-88%
Davidson County Community College	11	3	4	7	-36%
Edgecombe Community College	9	11	4	7	-22%
Forsyth Technical Community College	-	-	-	2	-
James Sprunt Community College	-	2	-	-	-
Pitt County Community College	4	7	5	4	0%
South Piedmont Community College	-	2	1	3	-
Southwestern Community College	3	5	5	11	267%
Totals	41	49	33	48	17%

Source: North Carolina Community College System

Notes: The HIT certificate program at Durham Technical Community College is excluded from these Associate degree program figures.

Collaborative program graduates counted under authorized program.

Many of the HIT and HIA program directors offered other reasons as to why attrition from the programs was high. Reasons included factors related to individual students such as academic difficulty, failure to adapt to an Internet-based curriculum, discovery of other academic interests, family circumstances, or financial hardship. Directors also cited program and recruitment factors as partial explanation to high attrition. Marketing of the program and the profession needs improvement in order to attract qualified and committed students. Improved marketing, recruiting, and screening of HIT students would prevent some of the attrition. Students must be prepared for the academics of the curricula, knowledgeable about the

programs who will remain in-state to practice after graduation. These data were obtained from program directors, who were asked to estimate the percentage of their last three graduating classes who were employed in health information management in North Carolina. The retention index should be interpreted with some caution. While most educational programs collect information on where their students are practicing post-graduation, this information is often incomplete or unreliable. **Table 7.**

Table 6. Graduates of Health Information Administration (HIA) Programs in North Carolina 1997-2001

Program	1997-1998	1998-1999	1999-2000	2000-2001	% change 1997-2001
East Carolina University	17	7	18	13	-24%
Western Carolina University	13	14	6	12	-8%
Totals	30	21	24	25	-17%

Source: 1998-2001 data from the University of North Carolina Office of the President; 1997 data from the Health Information Administration Programs at ECU and WCU.

industry, and be familiar with computer-based learning environments. Programs might also increase the types of financial aid available to students, or develop partnerships with employers to offer scholarships in return for post-graduate employment commitments.

The overall retention factor for health information administration students is about 0.77. This means 77% of HIA graduates from North Carolina's two university programs can be expected to enter the North Carolina health information management workforce. For health information technology students, the retention rate across eight of the nine programs⁵² surveyed is 0.86 meaning 86% of graduates from the community college programs can be expected to remain in North Carolina to practice HIM. The retention factors across programs varied somewhat and this variation may be attributed to reporting issues, but true differences may exist in retention across programs. The percentage of students remaining in-state post-graduation is highly dependent upon the percentage of graduates who are North Carolina residents. The highest rate of out-of-state students is at East Carolina University where 12% of students are out-of-state residents. The remaining HIA and HIT programs have very few, if any, out-of-state students.

The annual projected number of new additions to the North Carolina HIM workforce from the state's educational

Table 7. Expected Additions to the Health Information Management Workforce from North Carolina Institutions, 2001-2006

Educational Program	Graduating Class Size				Projected Graduating Class Size					Retention Factor*	Expected Additions to North Carolina Workforce						
	1998	1999	2000	2001	2002	2003	2004	2005	2006		2000	2001	2002	2003	2004	2005	2006
Health Information Administration	30	21	24	25	25	25	25	25	25	0.77	18	19	19	19	19	19	19
Health Information Technology	41	49	33	48	43	43	43	43	43	0.86	28	41	37	37	37	37	37
Total	71	70	57	73	68	68	68	68	68		47	61	56	56	56	56	56

Source: HIT graduating class from North Carolina Community College System; HIA graduating class from East Carolina and Western Carolina Universities. Retention Factors from program directors of HIT and HIA programs.

Notes: Projected graduating class based on prior 4-year average rate and assumes constant enrollment for future years.

* Retention factor based on average estimate of percent of graduates that will practice in North Carolina after graduation. HIA retention factor based on 3-year average of 2 programs; HIT retention factor based on 3-year average of 8 programs.

4. Retention of the Health Information Management Workforce in North Carolina

To understand the relationship between the output of North Carolina's educational institutions and new entrants into the North Carolina workforce, an index, the "retention index" was calculated. This index was calculated by averaging the estimated percentage of graduates from North Carolina health information management

institutions is 19 administrators and 37 technicians per year. These projections assume a constant enrollment and use a four-year graduation average. These projections will change with any increase or decrease in the number of available slots, opening or closing of programs, improved marketing and recruiting efforts, or other mechanisms affecting recruitment, attrition, and retention.

5. Diversity of Health Information Management Students

a) Race and Ethnicity

Health information management programs across North Carolina have been increasingly successful in enrolling underrepresented minority students into programs. Students of health information management are much more diverse than the HIM workforce currently practicing in North Carolina. Racial and ethnic data were obtained for all health information management programs. The percentage of non-white students in health information administration and technology programs has been steadily increasing, and the percentage of non-white students in HIM programs mirrors or exceeds the percentage of non-whites in the North Carolina 2000 population.

Underrepresented minority students in HIT programs in 2001 accounted for over 39% of enrolled students, up from 27.8% in 1998.⁵³ The community colleges are in more diverse communities, and have capitalized on the diversity of the population. The percentage of non-white graduates of HIA programs has also increased from 14.3% of graduates in 1999 to 24% in 2001. The 2000 Census figures for North Carolina indicate 27.9% of the population was non-white or mixed race.⁵⁴ Although direct comparisons are problematic between the data sources, tremendous progress has been made in attracting underrepresented minorities into the state's HIM programs, especially in the community colleges.

African American students made up the largest percentage of non-white students in both HIA and HIT programs. In 2001, over 36% of students enrolled in HIT programs were African American. Three programs, Edgecombe, Pitt, and Central Piedmont Community Colleges, have enrolled the vast majority of the total HIT African American student body over the last four years. In addition, the three and four semester HIT coding programs at Durham Technical enroll a large number of underrepresented minority students.

A concern for all programs is the lack of persons of Hispanic/Latino origin represented in the student population. The Hispanic/Latino population in North Carolina continues to increase, but since 1999, none of the programs reported any Hispanic/Latino student enrollment. Racial and ethnic data are often not accurately recorded, and underrepresented minority students may be included in another racial/ethnic classification or in the "other" category. Health information management programs have done an excellent job in attracting and enrolling non-white students, but improvements can be made in increasing the number of underrepresented minorities including Asians, Native Americans, and persons of Hispanic/Latino origin into the programs.

b) Gender

HIM students, like the active HIM workforce, are primarily female. Over the last four years, only 6% of HIT enrolled students were male; over the last three years, 10% of HIA graduates were male.

c) Age

Reliable age data were not available for all health information management programs, however some trends were evident from the program director survey. The field is attracting more mature students to the HIM programs in North Carolina. Anecdotal reports from program directors revealed that mature students tend to be better prepared for the curriculum and are more successful in completing the program. Marketing and recruiting into HIM programs will require programs to target non-traditional students, including mature learners, but will have implications for the number of productive years a mature student can contribute to the workforce upon graduation.

X. CONCLUSIONS AND RECOMMENDATIONS

This final section of the report summarizes the panel's findings and reports the panel's recommendations about actions needed to address current and future issues in the health information management workforce in North Carolina. As indicated earlier, this report has generally focused on the workforce in inpatient, acute care employment settings due to the difficult nature of enumerating the HIM workforce in physician-based practices and other non-traditional settings. This report acknowledges that counting the workforce employed outside acute care, especially coders, is incomplete. As such, the recommendations focus on the HIM workforce employed in acute care settings, but many are applicable to the workforce in other employment settings.

10.1 Marketing of Health Information Management

Conclusion: The panel acknowledged that the health information management profession has encountered many difficulties related to educating healthcare providers, organizations, and the general public about the profession's scope of practice, competencies, educational qualifications, and area of expertise. Unlike other healthcare professions, such as physicians, nurses, or dentists, people do not have a clear idea of what health information management means. Data analysis, quality improvement, strategic planning, clinical guidelines, privacy and security, and risk management are not universal concepts for the general public or many healthcare workers when health information management is discussed. Healthcare providers and organizations are often unfamiliar with the various health information management credentials and the credentialing organizations.

10.1.1 Recommendation: Increase educational and public awareness efforts to clarify the HIM scope of practice to hospital and healthcare administrators, physicians and physician practice managers, healthcare providers, healthcare consultants, potential HIM students, and the general public. Use this report to describe the skills, abilities, and knowledge of the HIM workforce; roles and responsibilities; differences in the types of HIM educational programs and credentials; how the HIM workforce can impact reimbursement, HIPAA implementation, data quality, healthcare planning, and clinical care, etc.. Targets for dissemination should include hospital associations, medical group associations, and high school, college, and university guidance counselors, among others.

10.1.2 Recommendation: Educate hospital and healthcare administrators, physicians, and practice managers about the importance of accurately coded health data. Inform managers of the impact of accurate health information procedures on patient care, reimbursement and revenue, HIPAA preparedness, and healthcare fraud and abuse.

10.1.3 Recommendation: Collaborate with other professions with roles and responsibilities in health information management to market the profession. Collaborations could involve health information systems organizations, healthcare consultants, privacy and security professionals, accountants and financial auditors, etc..

10.1.4 Recommendation: Collaborate and utilize existing marketing and public relations campaigns within the health information management profession, such as national and state professional association initiatives.

Conclusion: The pending implementation of the Health Insurance Portability and Accountability Act will have a tremendous impact on the practice of collecting, managing, storing, and disseminating personal health information. While hospitals have begun preparing long in advance, other healthcare settings, such as physician practices, long-term care facilities, and behavioral health facilities have not been as proactive. These settings also generally employ few, if any, credentialed health information management staff. Violations of HIPAA could result in significant financial penalties for small organizations and businesses.

10.1.5 Recommendation: Ensure that healthcare organizations and businesses that have been slow to plan and prepare for HIPAA implementation are adequately educated about the role of the HIM workforce in helping to facilitate HIPAA preparedness.

Conclusion: The panel agreed that the RHIT credential is not well understood. Registered Health Information Technicians are often employed in coding positions, but because of the wording of the credential, RHITs are not universally perceived as coding practitioners. In addition, relatively few health information management positions are named 'technician'. While a Registered Health Information Administrator can also hold the job title of Health Information Administrator, or a certified coder can hold a job title of Inpatient Coder, Coding Specialist, or Lead Coder, an RHIT does not usually hold a 'technician' job title. For people unfamiliar with the health information management profession, understanding what a technician can do is difficult if its credential does not match a typical job title.

10.1.6 Recommendation: Establish a marketing and public relations initiative to increase the recognition of the RHIT credential using this report along with other materials.

10.2 Supply and Distribution of the Health Information Management Workforce

Because of the difficulty of enumerating the HIM workforce in North Carolina, determining the geographic distribution of the active workforce is imperfect. Although flawed, mapping county of employment (or residence) clearly follows the distribution trends of other health professions. Given the failure to accurately depict distribution of the health information management workforce, it is difficult to make clear recommendations. However, the study conducted by the North Carolina Hospital Association, details geographic differences in vacancy rates of hospital Billing/Coding personnel, with the highest vacancy rates seen in the Mountain AHEC region of North Carolina.

Conclusion: Vacancy rates of HIM practitioners in North Carolina are not as striking as those seen in national studies. The hospital survey does not indicate an overall shortage, although individual responses from hospitals varied and shortages may be facility specific. Most of the vacancies in North Carolina hospitals were within coding positions. There is evidence that the shortage may better be described as a shortage of qualified, trained, and credentialed HIM practitioners. Without an adequate supply of qualified practitioners, employers have filled vacancies with non-credentialed workers.

10.2.1 Recommendation: Establish mechanisms to continue monitoring the supply and distribution of the health information management workforce, both credentialed and non-credentialed.

10.2.2 *Recommendation: Identify facilities that have been successful in recruiting and retaining coding personnel and disseminate best practice information to other facilities.*

10.2.3 *Recommendation: Effective recruitment strategies should also include mechanisms for communicating employment opportunities (unfilled positions) to all HIA, HIT, and coding programs in North Carolina.*

10.3 Education

The educational section of this report mainly focused on the educational programs for Health Information Technicians and Health Information Administrators, and less on the many varied educational pathways to become a coder. This report however, acknowledges that there are physician-based coding certificate programs (Professional Medical Coding Curriculum, AHIMA and AAPC self study modules, etc.) that are important for upgrading skills of physician-based coders, but who do not “fit” the community college HIM educational program model.

Conclusion: The number of accredited programs in health information management in North Carolina is sufficient to fill the needs of the state if all program slots are filled and a large percentage of students complete the program. Too few programs are able to fill existing capacity and graduate all enrolled students.

10.3.1 *Recommendation: Maintain the status quo with respect to the number of programs and the number of slots in HIA and HIT programs. Develop statewide educational marketing and recruiting policies to ensure existing programs are well-utilized and meet existing enrollment capacity. Ensure that applicants and enrolled students have the necessary skills and abilities to successfully complete the HIA or HIT program.*

10.3.2 *Recommendation: Identify and utilize best practices in recruitment and retention that have been implemented in some of North Carolina’s health information management programs. Seek out programs in other states, which have successfully marketed, recruited, retained, and graduated HIM students.*

10.3.3 *Recommendation: Expand recruiting efforts to non-traditional students, including, but not limited to, adult learners, second career seekers, and other healthcare professionals seeking careers outside of direct patient care. Increase recruitment in healthcare areas, which have been affected by layoffs (e.g. mental health) and increase efforts to attract medical literate individuals into health information management.*

10.3.4 *Recommendation: Continue the expansion of distance learning opportunities for health information management students to increase the reach of the programs and to enroll students who are not physically able to attend an on-campus program. Facilitate the development of field training opportunities in these areas to enable distance-learning students to remain in their communities for the entire duration of the program and increase the likelihood of practice in those communities post-graduation.*

10.3.5 *Recommendation: Investigate the feasibility of developing HIM scholarship partnerships with employers in return for post-graduate employment commitments.*

10.3.6 *Recommendation: Utilize the services of the Employment Security Commission to advertise and market distance-learning programs.*

Conclusion: The panel acknowledged that the entry-level education necessary for coders varies depending on the type of coding and the setting. Coding in a large health system requires a much broader skill set, including knowledge of complex disease processes and utilization of multiple coding systems, than the skill set required to code in a small, one-specialty physician practice. North Carolina lacks a uniform standard for a minimum level of coding education. Educational programs in the state are not meeting employer demand for coders. Employers are not always able to differentiate between programs lasting one to two years, and programs that can be completed at home in a number of hours. Coders who have completed more rigorous training have not been widely rewarded for their efforts, because employers are often unaware of the differences in training, skills, experience, and quality of coding programs. Employers are looking for qualified and skilled coders to complete training in a shorter period of time than what currently is offered at the community colleges. The workforce has grappled with balancing the coding needs of employers with the design of existing coding educational programs. Once areas of coding competencies are defined, the route to achieve competencies may occur in a college, independent study, or on-the-job training program so long as the core competencies have been met.

10.3.7 *Recommendation: Collaborate with employers (representing hospitals, physician practices, long-term care, behavioral health, etc.), educators (representing community college, private, independent study, and other programs), and HIM practitioners to develop minimum coding competencies, skills, abilities, and knowledge necessary for coding in different employment settings, taking into account specialty, breadth, depth, level, and volume of coding duties. Establish prerequi-*

sites for anatomy, physiology, medical terminology, pathology, pharmacology, disease processes, and computer skills, or incorporate these competencies into the program.

10.3.8 Recommendation: Collaborate with employers and educators to develop coding curricula that meet the competencies defined in 10.3.7 and the coding needs of different employers.

10.3.9 Recommendation: Conduct a review of existing coding programs to ensure programs and courses meet the minimum coding skill sets and competencies defined in 10.3.7 for differing types of employment settings. The review process must be collaborative and conducted by representatives from practitioner, employer, professional association, and educator groups.

10.3.10 Recommendation: Continue to develop and expand on existing coding curricula currently in the community college systems. Monitor the effectiveness of existing coding programs through data collection, student surveys, and employer satisfaction. Increase part-time, evening, and weekend coding curricula opportunities for students who cannot attend a full-time day program because of employment or family commitments.

10.3.11 Recommendation: Develop collaborative arrangements to provide standardized educational programs in communities without access to a community college program. Encourage standardization of coding programs delivered outside of the community college setting that follow the core competencies identified in 10.3.7.

10.3.12 Recommendation: Consider employer-funded cost sharing in the development of individualized coding training programs that meet the standards identified in 10.3.7.

10.3.13 Recommendation: Educate and inform hospitals, physicians, and employers about the differences among coding programs and subsequent coding credentials.

10.3.14 Recommendation: Thoroughly inform and educate students in coding programs about the learning objectives, competencies, and skills that will be attained in the program. Inform them of the type of employment setting suitable for graduates of the program.

Conclusion: Competition from other “direct care” healthcare professions has hampered efforts in recruiting students into the health information management field. The profession continues to be viewed by many as a profession only related to the management of medical records. The expanded utilization of technology and health data have resulted in a workforce that is responsible for much more than just record management.

10.3.15 Recommendation: Educate potential students and counselors about the abundance of career opportunities in the health information management field. Capitalize on the interest in information systems and technology by marketing HIM as a specialized data career. Provide evidence of the links of health data to “direct care” and the impact on medical practice.

10.4 Diversity

Conclusion: The problem of underrepresentation of minorities in the health professions is a long-standing one and is by no means limited to the health information management workforce. The diversity of the health information management workforce does not match that of North Carolina’s current or future population. Also at issue is the disparity in the balance of men and women in the HIM workforce. Developing effective strategies that encourage workforce diversity requires continued monitoring of the current workforce as well as the pool of potential new HIM practitioners being educated in North Carolina. The panel resoundingly indicated that the current health information management workforce is not representative of the North Carolina population by gender or by racial and ethnic background.

10.4.1 Recommendation: Collect better information through certification and credentialing processes on the diversity of the workforce including ethnic and racial background, gender, and age.

10.4.2 Recommendation: Enlarge and develop the applicant pool in both educational and employment settings by effectively promoting the health information management profession to persons who are from racial and ethnic groups that have historically been underrepresented in the profession. The recruitment of males is equally important.

10.4.3 Recommendation: Utilize the experience, expertise, and influence of underrepresented minority and male leaders already in health information management to market the field to others.

Conclusion: The diversity in the health information technology programs at the community colleges mirrors or slightly exceeds minority representation within the general population. The percentage of non-white students has grown considerably over the last four years, however not all of the nine programs have been as successful as others in increasing underrepresented minority student enrollment. The diversity within health information administration programs, though not as diverse as the community college programs, has shown improvement over the last four years. Neither the HIA or HIT programs have been exceptionally successful in attracting Hispanic/Latino students into the programs.

10.4.4 *Recommendation: Develop an effective strategy to collect and analyze application, admission, matriculation, graduation, and initial employment data for all HIM education programs (HIA, HIT, and Coding) in North Carolina, including demographic data on race, ethnicity, and gender.*

10.4.5 *Recommendation: Assess and disseminate information about the success of underrepresented minority recruitment and retention efforts in colleges, universities, and other post-secondary institutions with high, underrepresented minority enrollment (e.g. Asians, Native Americans, and Hispanic/Latino persons, and males).*

10.4.6 *Recommendation: Collaborate with organization(s) whose mission is to increase underrepresented minority representation in the health professions (e.g. North Carolina Health Careers Access Program, NC AHEC).*

10.5 Data Issues and Workforce Surveillance

Conclusion: The panel acknowledged lack of licensure or mandatory certification of the health information management workforce makes it extremely difficult to accurately undergo an assessment of the workforce. While the data obtained from the American Health Information Management Association and the American Academy of Professional Coders have been instrumental in providing information on a portion of the workforce, these data fail to adequately account for the workforce that lacks a credential from either organization. Estimates of this unaccounted workforce range from 33% to 66% of the total workforce.

Conclusion: The panel acknowledged currently existing data on the health information management workforce are insufficient to effectively monitor workforce trends. A complete database that is inclusive of all HIM practitioners in North Carolina's workforce would enable more accurate analyses on fluctuations in demand and supply.

10.5.1 *Recommendation: Investigate the feasibility of establishing an entity that would be responsible for registering the health information management workforce, to include the credentialed and non-credential HIM workforce. Until registration is achieved, devise a mechanism to account for the total HIM workforce actively practicing in North Carolina, both credentialed and non-credentialled.*

10.5.2 *Recommendation: Obtain agreement from credentialing organizations on the core competencies and acceptance of these competencies for certification. Require at best, encourage at minimum, that all health information management practitioners in North Carolina hold a credential from one of the existing credentialing entities.*

10.5.3 *Recommendation: Obtain agreement between all credentialing organizations, including AHIMA and AAPC, on the data elements needed in a minimum data set to be collected on the certification and/or membership application or as part of annual continuing education credits.*

10.5.4 *Recommendation: The minimum data set should include, among other data elements, employment location, employment setting, activity status (i.e. active, retired, etc.), number of practice hours per week, location and name of training program, salary, credential(s), age, race, ethnicity, gender, and type of position.*

10.5.5 *Recommendation: Seek the necessary resources to routinely computerize critical pieces of data and establish data analysis mechanisms to continually monitor the workforce and trends.*

Conclusion: Coding practitioners are the largest group within the entire health information management workforce (credentialed and non-credentialed), yet the data analyzed in this report fail to adequately capture this workforce.

10.5.6 *Recommendation: Develop a mechanism to identify, track, and analyze student data from all coding educational programs in North Carolina, including college certificate and diploma programs, continuing education programs, Professional Medical Coding Curriculum programs, and others.*

Conclusion: Better data collection will improve educational planning and enhance the ability of all stakeholders in the health information management community to address diversity issues, geographic disparities, and other workforce challenges. Tabulation and dissemination of this information will help stakeholders to identify imbalances and fine-tune policy decisions in a more timely and objective manner. As objective data are accumulated, ongoing analyses of trends might minimize the tendency to react prematurely.

10.5.7 *Recommendation: Monitor geographic trends in supply including county-level counts of RHIAs, RHITs, and Coders; underrepresentation of minorities; and focus on differences between urban and rural regions.*

10.5.8 *Recommendation: Collaborate with the Employment Security Commission to ensure increased enumeration of the health information management workforce accounted for in its employer wage surveys.*

10.5.9 *Recommendation: Continue periodic reevaluation of workforce needs relative to demographic changes and population needs.*

Conclusion: This report primarily focuses on the hospital-based health information management workforce, but many HIM trends observed in hospitals are also present in other healthcare settings that employ health information management personnel. Obtaining data on the workforce in these settings would confirm or refute these predictions, and would provide a more accurate picture of the percentages of non-credentialed HIM practitioners in these settings.

10.5.10 Recommendation: Conduct a focused pilot survey or study on the health information management workforce in other healthcare settings such as physician practices, behavioral health settings, or long-term care facilities. Coordinate this effort with appropriate employers, associations, and professional organizations.

APPENDICES:

Appendix 1. Types of Credentials of the Health Information Management Workforce

Appendix 1. Types of Credentials in Health Information Management

Credential	Full Name	Credentialing Organization
CPC	Certified Professional Coder	American Academy of Professional Coders
CPC-H	Certified Professional Coder - Hospital	American Academy of Professional Coders
CCS	Certified Coding Specialist	American Health Information Management Association
CCS-P	Certified Coding Specialist - Physician Practice	American Health Information Management Association
RHIT	Registered Health Information Technician	American Health Information Management Association
RHIA	Registered Health Information Administrator	American Health Information Management Association

Notes: Four additional credentials will be available through AHIMA in Fall 2002.

(CCA-Certified Coding Associate; CHP-Certified in Healthcare Privacy; CHS*-Certified in Healthcare Security; and CHPS*-Certified in Healthcare Privacy and Security).

* CHS and CHPS credentials sponsored jointly with the Healthcare Information and Management Systems Society (HIMSS).

Appendix 2. Data Notes and Methodologies

A. Hospital Health Information Management Director Survey

As in any survey, there are a number of limitations. Self-selection occurs when results are formulated based only on the HIM directors who responded to the questionnaire. Since hospital HIM departments were only surveyed, the results may not accurately represent the hospital-based health information management workforce or the more general health information management workforce. Results may have been affected by the form, structure, or grouping of the questions. Many of the questions limited the responses to a listing of possible choices, which may not have included the respondent's preferred answer. The survey queried HIM directors at only one point in time. The number of vacancies fluctuates and the actual true vacancy

rate may be higher or lower at any given time. Questions related to the difficulty in filling HIM vacancies were not included in the survey, but many directors reported persistent difficulties in recruiting for some positions and in some areas of the state.

Additional data notes for hospital calculations in Table 1:

- Metropolitan/Non-metropolitan facilities based on Metropolitan Statistical County Codes, 1991.
- Acute care bed size as reported in the 2002 State Medical Facilities Plan. Hospitals not included in the SMFP have been excluded from bed size calculations. Bed data not available for the following hospitals: Broughton, Brynn Marr, Charlotte Institute of Rehab, Cherry, Dorothea Dix, Thomas Rehab, Umstead, VA (Asheville, Durham, Fayetteville, Salisbury), Wake County Alcohol, Womack.
- Number of hospitals excluded from denominator of "hospitals responding to survey" = 7 (4 bed data unavailable, 3 reported with other hospital/health system).
- Number of hospitals excluded from denominator of "all

hospitals" = 23 (14 bed data unavailable, 9 reported with other hospital/health system).

B. Data Caveats for AHIMA and AAPC Data

Licensure and Certification- Health information administrators, technicians, and coders are not licensed in North Carolina, nor are they required to register with any formal body. In addition, many individuals practicing health information management in North Carolina lack a certification from either the American Health Information Management Association or the American Academy of Professional Coders and therefore determining the number and the employment situation of these individuals has been problematic. Based on data obtained from the Sheps Center's Hospital Health Information Management Director Survey, 22% of management staff (directors, managers and supervisors) and 33% of coding staff (chief coders, inpatient coders and outpatient coders) do not hold an HIM credential but must be considered as part of North Carolina's health information management workforce.

Lack of Single Data Source- Ascertaining the employment status of the administrative, technical, and coding workforce has been complicated by the absence of a uniform data source. Using names, the data sources were merged and unduplicated as much as possible since none of the organizations shared social security numbers. The lack of a unique identifier (e.g. social security number) may result in double counting of individuals who are both credentialed by AHIMA and AAPC. Neither file provided reliable information on activity status in North Carolina. This is problematic because individuals who are not actively providing health information management or coding services may choose to retain certification even though they are not working in the profession, or have retired.

Cross Training- The data collected fails to describe other individuals who may be performing coding functions, such as physicians, nurses, receptionists, or other office staff. This is often the case in small physician practices that are unable to support a full-time HIM employee. Additionally, determining job function and role was difficult because of the amount of cross employment in the workforce. Those with an RHIA designation are not limited to administrative roles and many practitioners work as coders. Additionally, many with only coding designations are functioning as supervisors. This cross employment is most evident between HIAs and HITs, and between HITs and coders.

C. Details of Data Merge from AHIMA, NCHIMA and AAPC Data

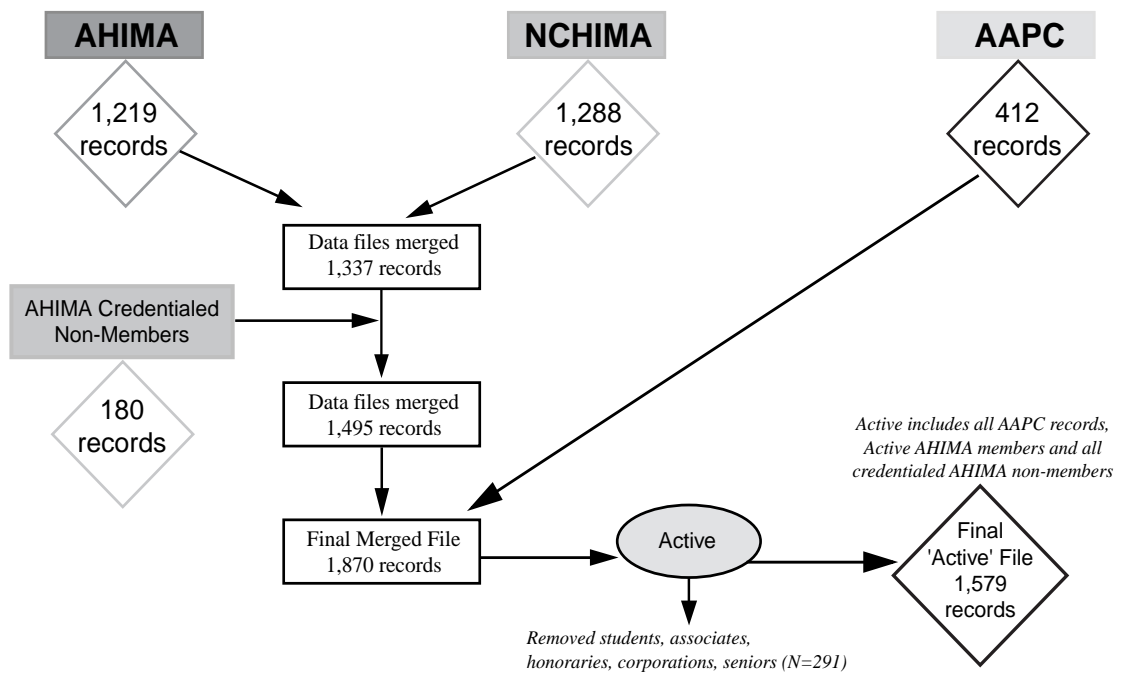
North Carolina Membership rosters were obtained from the national American Health Information Management Association (1,219 records) and the North Carolina Health Information Management Association (1,288 records). These data were cleaned and duplicates omitted, resulting in 1,337 AHIMA members. A file of credentialed non-members residing in North Carolina was added (180

records). This file contains a roster of individuals who have attained credentials through AHIMA, but have not become members in the national or state association. These data were cleaned and duplicates removed, resulting in a total “AHIMA” file of 1,495 records.

Data were obtained from the American Academy of Professional Coders for North Carolina practitioners (412 records). This file was merged with the AHIMA file, and 37 records were duplicates and omitted from the file, resulting in a total HIM credentialed file of 1,870 records.

The data were further cleaned to eliminate those individuals who were not practicing HIM and therefore should not be included in a workforce assessment. Student, associate, corporate, honorary, and senior members were excluded, resulting in a “Total Active Credentialed Health Information Management Workforce” file of 1,579 records. A diagram of the merge follows:

Details of Data Merge of Health Information Management Data



D. Census 2000 Racial and Ethnic Data

Comparisons between Census data and the educational program data are complicated by how they handle Hispanic ethnicity. Hispanic ethnicity is presented as one of the race categories in the educational data; in the Census figures, it is a classification distinct from race and may include white or non-white/mixed-race respondents.

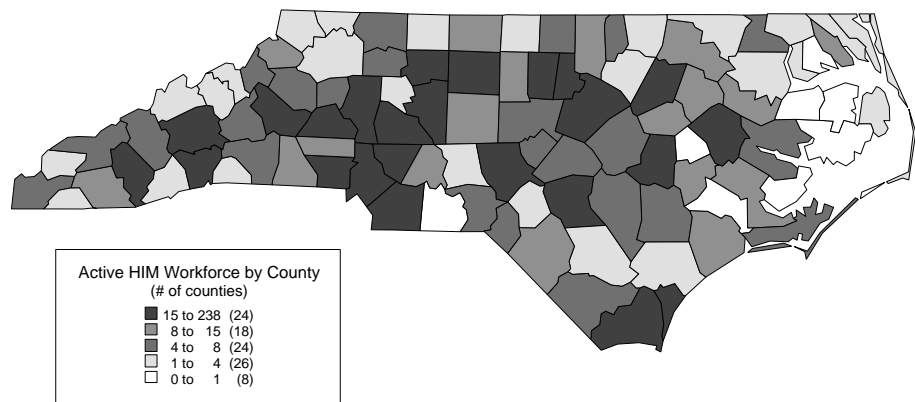
Appendix 3. Work Location of the Active Credentialed Health Information Management Workforce in North Carolina

County of employment was mapped for the active credentialed health information management workforce in North Carolina. Of the 1,579 active records, 71% had employment addresses. Home address was used for 27% of the workforce and 2% had neither work nor business address, or had an address outside of North Carolina. As seen in the map below, eight counties are not represented using this methodology. It is much more likely that the data obtained from AHIMA and AAPC have not captured the health information management workforce in these counties, rather than assuming that no HIM practitioners work in these counties.

However, the map shows several similarities to counts in North Carolina of other health professions. Counties with large populations and with academic medical centers or large healthcare facilities have many more healthcare professionals than other counties. These counties are shaded dark in the map below: Pitt, New Hanover, Wake, Durham, Orange, Cumberland, Guilford, Forsyth, Mecklenburg, Cabarrus, Gaston, and Buncombe, among others. Rural counties in Western and Eastern North Carolina have much more difficulty in attracting and retaining healthcare professionals, and this is evident in the distribution of the health information management workforce as well.

In summary, although this mapping clearly shows that data obtained from AHIMA and AAPC does not capture wholly the health information management workforce, mapping counts by county of the practicing workforce clearly follows the trends seen in other health professions.

Appendix 3. Active Health Information Management Personnel, by County of Employment, North Carolina, 2002



Source: American Health Information Management Association and American Academy of Professional Coders. Cecil G. Sheps Center for Health Services Research, 2002. Produced by Health Professions Data and Analysis System, Cecil G. Sheps Center.

Notes: Active includes all AHIMA members with Active status, all AAPC records and NC credentialed non AHIMA members. N=1579 records. Out-of-state and missing records=31. Employment address used for 71% of records, 27% used home address, 2% missing.

- ¹ The physical therapy report, "Maintaining Balance: The Physical Therapy Workforce in North Carolina in the Year 2000" is available at <http://www.shepscenter.unc.edu/data/nchpds/playout.pdf>
- ² The speech language pathology report, "Communicating the Trends: The Speech-Language Pathology Workforce in North Carolina in the Year 2001" is available at <http://www.shepscenter.unc.edu/DATA/nchpds/slp.html>
- ³ Bureau of Labor Statistics, US Department of Labor. Fastest Growing Occupations 2000-2010. <http://www.bls.gov/emp/emptab3.htm>. The 202,000 positions represent the total number of positions estimated to be available for these occupations by 2010, including new positions created and those which will be vacated by retirement, change in career direction, death, etc..
- ⁴ State Projections using Bureau of Labor Statistics <http://almis.dws.state.ut.us/occ/projhome.asp>
- ⁵ Of this need, 160 new technician job openings and 270 new medical and health services management positions will be created yearly.
- ⁶ <http://eslmi12.esc.state.nc.us/oeswage/>
- ⁷ Cofer, J, ed. (1994). Health Information Management, 10th ed. Chicago: Physicians' Record Company, 1994, pp. 30-31.
- ⁸ See Appendix 1 for a listing of credentials.
- ⁹ Accredited through the Commission on Accreditation of Allied Health Education Programs (CAAHEP).
- ¹⁰ Ibid.
- ¹¹ Other systems include the Health Care Procedure Coding System (HCPCS), the Current Procedural Terminology (CPT), Ambulatory Payment Classification (APC), etc.
- ¹² Slee, Virgil; Slee, Debora; and Schmidt, Joachim. The Endangered Medical Record, Ensuring Its Integrity In the Age of Informatics. Tringa Press, St. Paul, MN, 2000
- ¹³ ICD-10 is currently used for mortality reporting.
- ¹⁴ Kloss, L. AHIMA's Statement Regarding Replacement of ICD-9-CM Procedural Coding System. www.ahima.org/dc/klosstestimony.htm
- ¹⁵ Slee, Virgil; Slee, Debora; and Schmidt, Joachim. The Endangered Medical Record, Ensuring Its Integrity In the Age of Informatics. Tringa Press, St. Paul, MN, 2000
- ¹⁶ Eichenwald, S.A. (2001) "The Health Information Management Profession." In M. Abdelhak, S. Grostick, M.A. Hanken, and E. Jacobs (Eds.), Health Information: Management of a Strategic Resource (2nd ed.), pp. 48-70. Philadelphia: W.B. Saunders.
- ¹⁷ S.B. 2290, 21st Leg., S.D. 1, Section 431:9-243. (Haw. 2002) http://www.capitol.hawaii.gov/sessioncurrent/bills/SB2290_cd1_.htm
- ¹⁸ *The False Claims Act*, 31 U.S.C., Paragraphs 3729-3733
- ¹⁹ Ibid.
- ²⁰ "The Hospital Workforce Shortage: Immediate and Future." *AHA TrendWatch*, June 2001, Vol.3, No. 2 <http://www.ahapolicyforum.org/trendwatch/pdfs/TWJune2001.pdf>
- ²¹ Survey sent to 5,980 hospitals nationwide; 1,092 responded representing an 18% response rate.
- ²² American Hospital Association, "The Healthcare Workforce Shortage and Its Implications for America's Hospitals," Fall 2001, <http://www.aha.org/workforce/resources/Content/FcgWorkforceReport.pdf>.
- ²³ The North Carolina Hospital Association Workforce Study, September 2002. www.ncha.org
- ²⁴ AHA News.com January 28, 2002. www.ahanews.com
- ²⁵ American Health Information Management Association Annual Member Survey, 2000. www.ahima.org/membership/profile/salary.title.html
- ²⁶ Solucient, Fiscal years 1997-2001 (October 1, 1996 to September 30, 2001).
- ²⁷ Ibid.
- ²⁸ 78 hospitals / 137 surveyed = 56.69%.
- ²⁹ Surveys received from hospitals accounted for 13,793 of 20,973 licensed acute care beds in NC during 2000 as reported in the 2002 State Medical Facilities Plan. Hospitals not included in the State Medical Facilities Plan were excluded from this calculation (Dorothea Dix, Holly Hill, Womack, and the Durham VA hospitals).
- ³⁰ Direct comparison of rates obtained from different surveys can be problematic due to differences in question formats, methodologies, response rates, survey bias, etc..
- ³¹ Hospitals not included in the State Medical Facilities Plan were excluded from this calculation (Dorothea Dix, Holly Hill, Womack, and the Durham VA hospitals).
- ³² See Appendix 2 for additional data sources and caveats.
- ³³ Data on North Carolina AHIMA membership were obtained from both the national and North Carolina organization. Data from both organizations were merged and cleaned.
- ³⁴ In 1991 33,539 members of AHIMA; in 2001 41,474 members. Correspondence and conversation with Scott MacKenzie and Sue Haack, American Health Information Management Association, March-May 2002.
- ³⁵ Dual and multiple credentialed individuals were included at the highest credential level. E.g. A person with both an RHIA and a CCS credential would be counted in the RHIA subtotal only.
- ³⁶ Non-member - a North Carolina individual who holds a credential through AHIMA, but has opted out of membership with AHIMA and/or NCHIMA; Associate member - individual who does not hold an AHIMA credential but possesses an interest in health information management; Other member- includes senior, honorary and corporate membership.
- ³⁷ Members with multiple credentials have been classified into one credential level. For example, a member with both an RHIT and CCS-P credential would be grouped into the RHIT category.
- ³⁸ <http://eslmi12.esc.state.nc.us/oeswage/>
- ³⁹ Percentages based on those with work response N = 307. Missing or unknown = 106.
- ⁴⁰ See Appendix 2 for results of data merge.
- ⁴¹ For example, a HIM professional with both an RHIA and CPC credential is included in the RHIA category only.
- ⁴² Type(s) of credential is asked on the AHIMA membership form and respondents may have only indicated one credential, even if multiple credentials were held. This may have caused underreporting of those with dual credentials.
- ⁴³ Missing or unknown = 29.
- ⁴⁴ 27.9% of population designated single non-white race or multiple races.
- ⁴⁵ See Appendix 3 for count by county map.
- ⁴⁶ Conversations and correspondence with Bob Garrie, American Health Information Management Association.
- ⁴⁷ Current Procedural Terminology (CPT); International Classification of Diseases (ICD).
- ⁴⁸ Conversations and correspondence with Libby Haile, Allison Bordeaux, and Robert Weaver, AHEC Allied Health Education Directors.
- ⁴⁹ Conversation and correspondence with Lynn Ring, Professional Medical Coding Curriculum Instructor.
- ⁵⁰ Conversation with Bill Shepley, Coastal Carolinas Health Alliance.

- ⁵¹ Many HIT programs have collaborated with other community colleges, which are unable to support or sustain a complete HIT program. Surveys were sent to programs based on enrollment and graduation data received from the North Carolina Community College System. Collaborative programs not reported separately in the NCCCS data are counted under the authorized program.
- ⁵² One HIT program did not report retention.
- ⁵³ Racial and ethnic data obtained from enrolled students (HIT programs) and graduates (HIA programs).
- ⁵⁴ See Appendix 2 for additional notation on Census racial and ethnic data.
- ⁵⁵ Racial and ethnic data obtained from enrolled students (HIT programs) and graduates (HIA programs).
- ⁵⁶ See Appendix 2 for additional notation on Census racial and ethnic data.

THE COUNCIL FOR ALLIED HEALTH IN NORTH CAROLINA

*Practitioners, Employers, and Educators
Collaborating to Ensure Quality Health Services*

MEMBER ORGANIZATIONS

Allied Health Professional Associations

- *American Association of Clinical Chemists*
- *American Society of Clinical Pathologists*
- *American Society of Phlebotomy Technicians*
- *Clinical Laboratory Management Association*
- *NC Academy of Physician Assistants*
- *NC Association of Blood Bankers*
- *NC Dental Assistants Association*
- *NC Dietetic Association*
- *NC Health Information Management Association*
- *NC Nuclear Medicine Society*
- *NC Occupational Therapy Association*
- *NC Physical Therapy Association*
- *NC Recreation Therapy Association*
- *NC Rehabilitation Counselors Association*
- *NC Society for Clinical Laboratory Science*
- *NC Society for Respiratory Care*
- *NC Society for Cytology*
- *NC Society of Histopathology Technologists*
- *NC Society of Medical Assistants*
- *NC Society of Radiologic Technologists*
- *NC Speech, Hearing, & Language Association*
- *NC State Society of American Medical Technologists*
- *NC State Society of Social Work Administrators in Healthcare*
- *NC Ultrasound Society*
- *Southeastern Association of Clinical Microbiology*

Employers

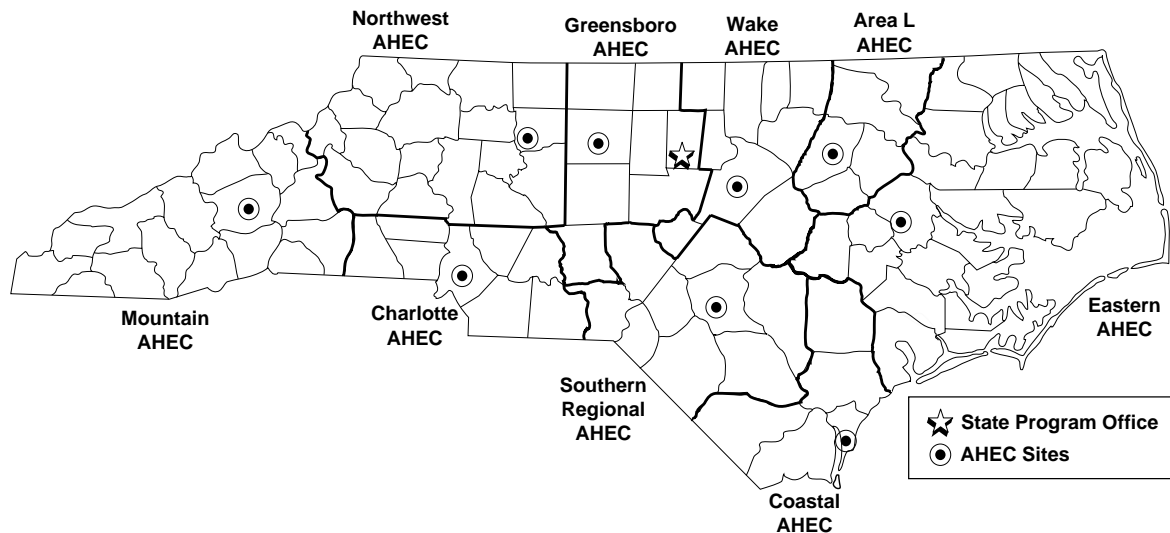
- *NC Association for Home Care*
- *NC Dept. of Environment, Health, and Natural Resources*
- *NC Dept. of Health & Human Services*
- *NC Dept. of Public Instruction*
- *NC Hospital Association*
- *NC Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (DHHS)*
- *NC Health Care Facilities Association*
- *NC Office of Rural Health and Resource Development*

Educational Organizations

- *Independent Colleges and Universities of NC*
 - *Duke University*
 - *Elon University*
- *NC Area Health Education Centers Program (AHEC)*
- *NC Department of Community Colleges*
- *Public Universities of NC*
 - *East Carolina University*
 - *University of North Carolina*
 - *Western Carolina University*
 - *Winston-Salem State University*
- *NC Health Careers Access Program*

Council for Allied Health in NC
www.alliedhealthcouncilNC.org

North Carolina Area Health Education Centers



Our Mission:

The mission of the North Carolina AHEC Program is to meet the state's health and health workforce needs by providing educational programs in partnership with academic institutions, health care agencies, and other organizations committed to improving the health of the people of North Carolina

AHEC educational programs and information services are targeted toward:

- Improving the distribution and retention of health care providers, with a special emphasis on primary care and prevention,
- Improving the diversity and cultural competence of the health care workforce in all health disciplines,
- Enhancing the quality of care and improving health care outcomes,
- Addressing the health care needs of underserved communities and populations.



NC AHEC Program

CB# 7165, 101 Medical Drive
University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7165

www.ncahec.net
ncahec@med.unc.edu

(919) 966-2461

**Cecil G. Sheps Center for
Health Services Research**
University of North Carolina at Chapel Hill
Campus Box #7590, 725 Airport Road
Chapel Hill, NC 27599-7590

*<http://www.shepscenter.unc.edu/hp>
nchp@unc.edu*

(919) 966-7112