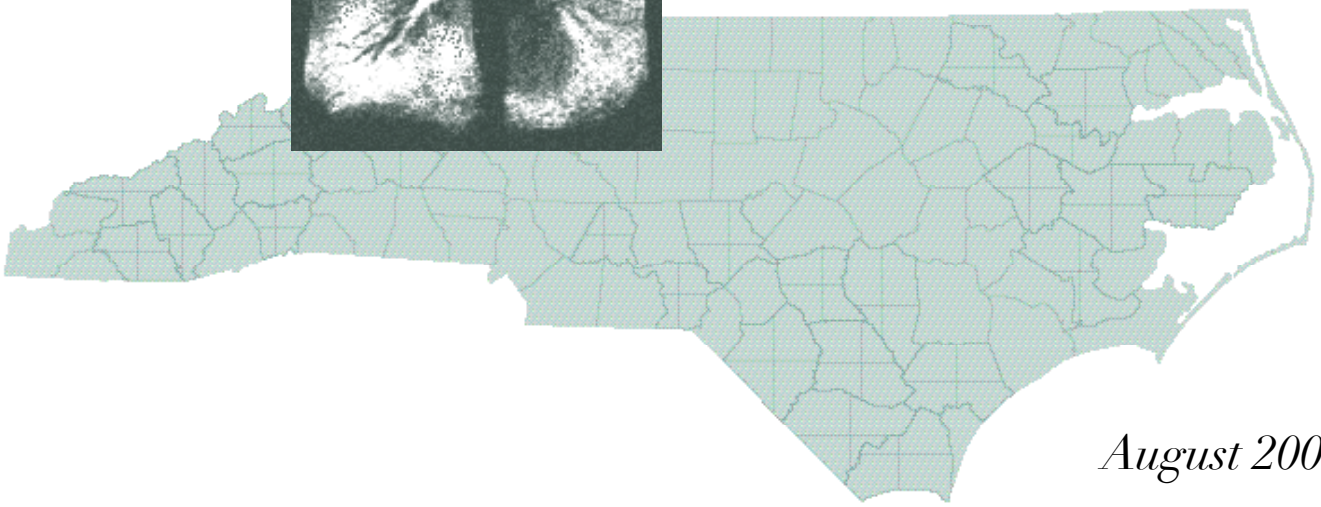
The State of Allied Health in North Carolina

A focus on :

The Respiratory Therapy Workforce



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The Council for Allied Health in North Carolina
The North Carolina Area Health Education Centers (AHEC) Program
The Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill

The State of Allied Health in North Carolina:
A Focus on the Respiratory Therapy Workforce

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Other publications from the Allied Health Workforce Assessment Project:

- Konrad, T., Thaker, S. *Maintaining Balance: The Physical Therapy Workforce in North Carolina in the Year 2000.* Chapel Hill, North Carolina. The Council for Allied Health in North Carolina, May 2000.

- Fraher, E., Smith, L. *Communicating the Trends: The Speech-Language Pathology Workforce in North Carolina.* Chapel Hill, North Carolina. The Council for Allied Health in North Carolina, June 2001.

- Dyson, S., Fraher, E., Smith, L. *The Health Information Management Workforce in North Carolina: Current Trends, Future Directions. A Report of the Technical Panel on the Health Information Management Workforce.* Chapel Hill, North Carolina. The Council for Allied Health in North Carolina, October 2002.

- Dyson, S., Fraher, E., Wilkins, B., Smith, L. *Scanning the Radiologic Sciences Workforce in North Carolina.* Chapel Hill, North Carolina. The Council for Allied Health in North Carolina, July 2003.

- *The State of Allied Health in North Carolina: A Focus on the Clinical Laboratory Sciences Workforce. In progress.*

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The State of Allied Health in North Carolina:

A Focus on the Respiratory Therapy Workforce

- *Who are respiratory therapists and what do they do?*
- *How many are practicing in North Carolina and where do they work?*
- *Is this workforce diverse?*
- *What is the capacity of existing respiratory therapy educational programs?*
- *Is there a current shortage of practitioners or faculty in North Carolina?*
- *Will there be a shortage in the future?*

I. INTRODUCTION

*The State of Allied Health in North Carolina: A Focus on The Respiratory Therapy Workforc*e examines the North Carolina respiratory therapy workforce, the State's educational training programs for respiratory therapy and provides information about issues that will impact this group of professionals. This report can assist educators, employers, health professions and other policy-makers with an interest in respiratory care and health professions. Respiratory therapy is the fifth allied health profession to be analyzed under the joint collaborative efforts of the Council for Allied Health in North Carolina, the North Carolina Area Health Education Centers (NC AHEC) Program, and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill. Funding for the allied health workforce studies is provided through The Duke Endowment.

II. BACKGROUND ON THE RESPIRATORY THERAPY WORKFORCE

Respiratory therapists, also known as respiratory care practitioners, evaluate, treat and manage patients of all ages with respiratory illnesses and other cardiopulmonary disorders. Preterm infants, victims of trauma and persons with emphysema, asthma, bronchitis or pneumonia often receive health care services from a respiratory therapist. Respiratory therapists are employed in hospitals, long-term care facilities, home health agencies, physician practices and clinics, medical equipment companies and emergency transport settings.[1,2]

Respiratory therapy is considered one of the fastest growing health occupations, by percentage change, in North Carolina over the period 2000 to 2010. In that time period, the number of respiratory therapists is expected to increase 53%, from 2,190 to 3,330 practitioners.[3] Like other health professions, the growing demand for respiratory therapists is due to a number of factors. These include population growth and aging, changes in the delivery and regulation of health care, advances in medical technology and treatment, increases in disease prevalence and patient acuity, and concerns about the impact of catastrophic events and epidemics on health care systems and personnel. Of particular importance to the practice of respiratory care is the increased consumption of health care services by the elderly, who typically suffer from many respiratory ailments and cardiopulmonary diseases. Chronic lower respiratory conditions (including chronic obstructive pulmonary disease and asthma), and influenza and pneumonia were ranked respectively as the fourth and eighth leading cause of death in North Carolina in 2002 – approximately 7.8% (5,564) of all deaths (71,780).[4]

III. NORTH CAROLINA'S RESPIRATORY THERAPY WORKFORCE

To practice respiratory therapy in the State requires licensure by the North Carolina Respiratory Care Board. Licensure, certification or registration of respiratory therapists is required in 48 states, the District of Columbia and Puerto Rico.[5] North Carolina began licensing respiratory therapists in October 2000 and full licensure took effect in October 2002. Eligibility for licensure in North Carolina requires graduation from an accredited educational program in respiratory therapy, successful completion of the entry-level examination given by the National Board for Respiratory Care (NBRC), and completion of an approved Basic Cardiac Life Support program.[6] NBRC is the national, voluntary credentialing organization for respiratory therapists, which offers two general respiratory therapy certifications: Certified Respiratory Therapist (CRT), an entry-level credential, and Registered Respiratory Therapist (RRT), an advanced credential. NBRC also offers advanced-practice certifications in pulmonary function and neonatal pediatrics.

Data on the North Carolina respiratory therapy workforce were obtained from the North Carolina Respiratory Care Board (NCBRC)[7] and reveal the following:

A. Supply

In April 2004, there were 3,291 respiratory therapists licensed with NCRCB. However, only 3,169 were considered active in practice in North Carolina. The remainder reported primary practice locations in other states. This figure (3,169) will be used throughout the report to indicate the respiratory therapy workforce practicing in North Carolina.[8]

B. Distribution

Primary practice addresses of respiratory therapists were analyzed at the county level, revealing a fairly well-distributed workforce across North Carolina [Figure 1]. There are more practitioners in urban counties and in counties with a major medical facility. Additionally, it appears that respiratory therapists are more likely to locate near one of North Carolina's respiratory therapy educational programs.

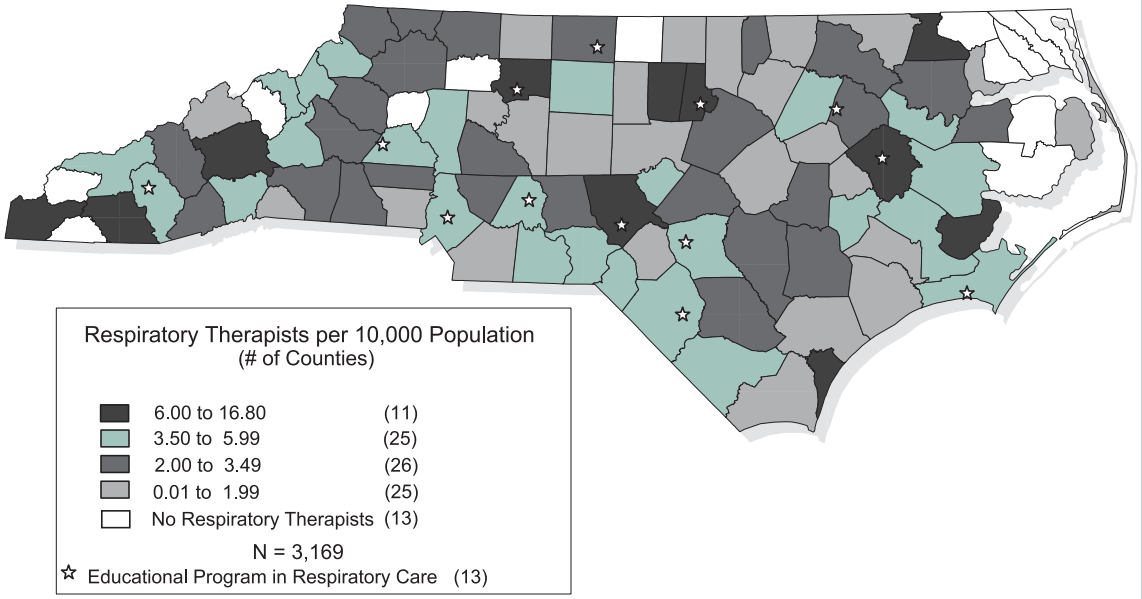
Counties Without Practitioners

The following 13 counties in North Carolina do not have a licensed respiratory therapist indicating primary practice location:

Alexander
Camden
Caswell
Clay
Currituck
Gates
Graham
Hyde
Pasquotank
Perquimans
Tyrrell
Yadkin
Yancey

Respiratory care services in these areas may be provided by a respiratory therapist primarily practicing in another county or by another health professional for which respiratory care functions are within their scope of practice. Ten of these counties are classified as rural and seven are located in the northeastern region of the State. Nearly three-quarters of respiratory therapists (71%) in North Carolina practice in urban counties.

Figure 1. Respiratory Therapists per 10,000 Population, North Carolina, 2004



Source: North Carolina Respiratory Board, 2004.

Produced by: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill.

Notes: Counts include active, in-state respiratory therapists licensed by the NC Respiratory Care Board, effective April 2004. Counts reflect primary practice location and do not reflect secondary practice locations. Mailing address was used for licenses with unknown or missing practice address (n=145).

Table 1. Respiratory Therapists per 10,000 Population, 2002

State	Practitioners per 10,000 population
TN	3.90
SC	3.36
VA	3.09
NC	**2.99**
US	2.96
GA	2.74

Source: Bureau of Labor Statistics; US Census Bureau.

- *Average Age:* The average age of respiratory therapists in North Carolina in 2004 is 42 years.[11]

D. Educational Background

- *Basic Educational Degree:* The majority of respiratory therapists in North Carolina attended an associate degree program in respiratory therapy (76.6%). Approximately 19.4% and 4% attended a certificate and baccalaureate program, respectively. Baccalaureate-prepared practitioners were educated outside of North Carolina, as no baccalaureate program is offered in the state. The minimum entry into the profession is now an associate's degree, so the percentage of certificate-prepared respiratory therapists will decline over time.

- *Highest Educational Degree:* According to the NCRCB, only 14.7% of the respiratory therapy workforce in North Carolina holds at least a baccalaureate degree. The majority (83%) hold an associate's degree as the highest level of education.[13] The percentage of baccalaureate-prepared respiratory therapists in North Carolina falls behind the national workforce percentage. In 2000, 51.2% of respiratory therapists in the United States held an associate's degree and 24.6% held a baccalaureate degree. Less than 6% had attained a master's degree or above.[14]

E. Employment Setting

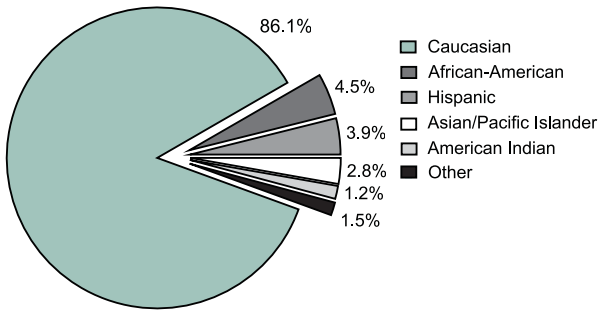
The majority (83.7%) practice in hospitals, followed by home health (9.6%) and long-term care settings (2.2%)[15] [Figure 3].

North Carolina's ratio of respiratory therapists per population equals that of the United States, at approximately three per 10,000 population. Compared with ratios of practitioners per population in neighboring states, North Carolina falls behind Virginia, South Carolina and Tennessee [Table 1].

C. Demographic Characteristics

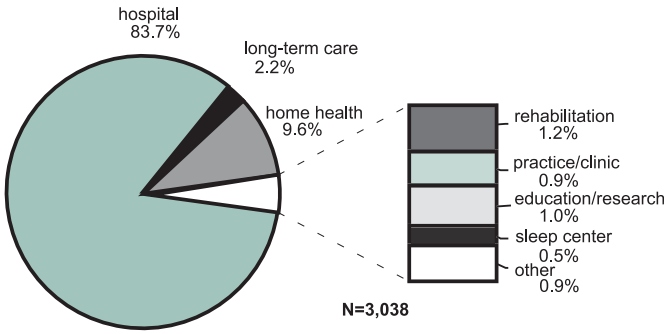
- *Gender:* Males account for 35% of the respiratory therapy workforce in North Carolina.[9]
- *Race and Ethnicity*: Data on race and ethnicity of respiratory therapists in North Carolina were not available. However, national data from 2000 estimated that approximately 13.9% of the workforce was non-white [Figure 2]. If this is representative of North Carolina's respiratory therapists, then the workforce does not reflect the diversity of the State's population. In 2000, 27.9% of North Carolina's population was non-white.[10]

Figure 2. Diversity of Respiratory Therapists, United States, 2000



Source: American Association for Respiratory Care, Respiratory Therapists Human Resources Study - 2000. AARC Times, December 2000.

Figure 3. Respiratory Therapists by Employment Setting, North Carolina, 2004



Source: North Carolina Respiratory Care Board, 2004.

Notes: N=3,038. Licensees with missing employment information or unemployed excluded (n=131).

F. Salary

The average annual salary of respiratory therapists in North Carolina in 2002 was $40,270.[16] This is slightly less than the national average and averages in South Carolina and Virginia, but higher than earnings in Georgia and Tennessee [Table 2].

Salary estimates for respiratory therapists are relatively high compared to other allied health professions in North Carolina, requiring the same educational preparation to enter the field, but are lower than salaries of registered nurses and other therapy professions [Table 3].

Table 2. Annual Wage Estimates for Respiratory Therapists, 2002

State	Mean Annual Wage
SC	$ 41,580
US	$ 40,700
VA	$ 40,670
NC	**$ 40,270**
GA	$ 38,540
TN	$ 35,760

Source: Bureau of Labor Statistics; 2002 State Occupational Employment Wages and Estimates.

Table 3. Mean Annual Salaries for Health Professions, North Carolina, 2002

Profession	Minimum Educational Degree	Annual Salary
Physical Therapist	Masters Degree	$ 61,190
Occupational Therapist	Baccalaureate Degree	$ 55,940
Speech Language Pathologist	Masters Degree	$ 50,300
Radiation Therapist	Associate Degree	$ 48,820
Registered Nurse	Diploma	$ 46,370
Respiratory Therapist	**Associate Degree**	**$ 40,270**
Nuclear Medicine Technologist	Associate Degree	$ 40,200
Radiologic Technologist	Certificate/Diploma	$ 38,300
Surgical Tehcnologist	Certificate/Diploma	$ 30,570
Medical Laboratory Technician	Associate Degree	$ 28,480

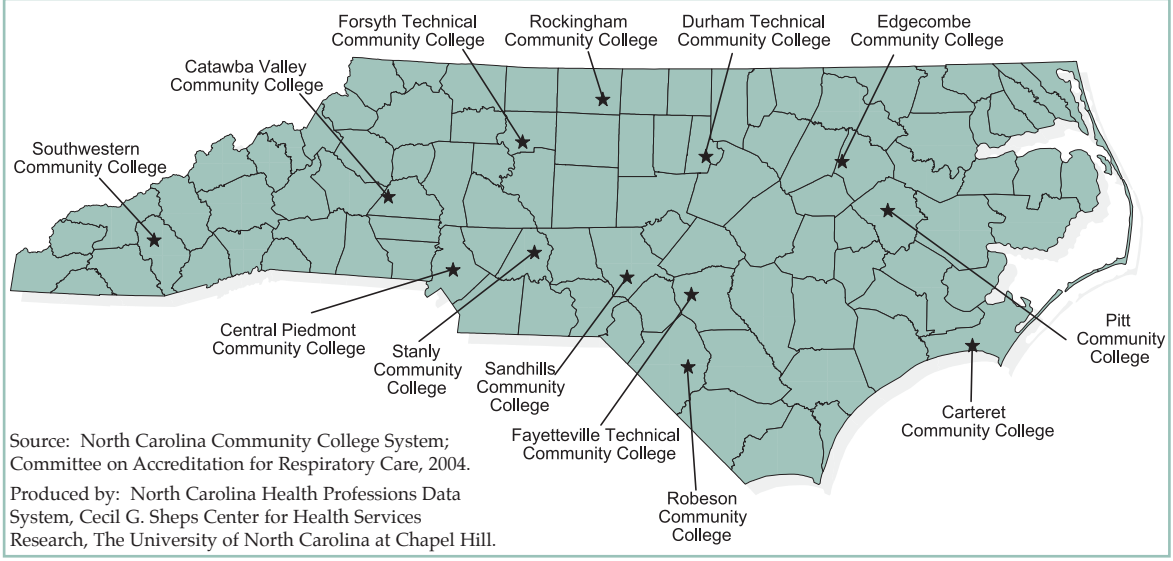
Source: Bureau of Labor Statistics; 2002 State Occupational Employment Wages and Estimates.

IV. RESPIRATORY THERAPY EDUCATION

Entrance into the respiratory therapy profession is possible after completion of an accredited program endorsed by the Committee on Accreditation of Respiratory Care (CoARC) and/or accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). There are approximately 360 accredited programs in the United States offering associate's or baccalaureate degrees.[17] Since January 2002, applicants for the National Board for Respiratory Care's entry-level CRT examination must have, at minimum, an associate's degree from an accredited respiratory therapy program.[18] All states which regulate the practice of respiratory therapy recognize NBRC credentials as the standard for licensure.[19]

North Carolina has 13 accredited respiratory therapy programs, all of which are located in community colleges and award associate's degrees [Figure 4].

Figure 4. Accredited Respiratory Therapy Educational Programs, North Carolina, 2004



Source: North Carolina Community College System; Committee on Accreditation for Respiratory Care, 2004.

Produced by: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill.

Note: Program location indicates program endorsed by the Committee on Accreditation for Respiratory Care and/or accredited by the Commission on Accreditation of Allied Health Education Programs, 2004.

Currently, North Carolina does not offer a baccalaureate degree in respiratory therapy. North Carolina's neighboring states, with the exception of South Carolina, have at least one baccalaureate program in respiratory therapy: Virginia (1 program), Tennessee (2) and Georgia (3).[20] Support for the development of a baccalaureate degree program in respiratory therapy in North Carolina has been expressed by the North Carolina Respiratory Care Board, the North Carolina Society for Respiratory Care and the North Carolina Association of Respiratory Educators.[21] State and national stakeholders in respiratory therapy organizations believe that baccalaureate programs are necessary for practitioners to take on leadership roles within the profession in management, research and advanced clinical areas.[22] Baccalaureate and advanced-degree programs are also necessary to ensure qualified faculty are available to educate the future respiratory therapy workforce and meet CoARC accreditation requirements.

Accreditation Requirements for Respiratory Therapy Program Faculty

New faculty requirements for Committee on Accreditation for Respiratory Care accredited programs began in January 2002. All program directors and directors of clinical education assuming a new position after this date must hold a minimum of a baccalaureate degree. Faculty members hired prior to 2002 are grandfathered, but must have a degree equal to, or higher than the degree awarded by the program.[25]

The University of North Carolina's Office of the President raised the issue of developing a baccalaureate program with the departments of allied health within the UNC System.[23] Additionally, HB 1498, *Study Committee on Health Care Workforce Development* was introduced into the North Carolina General Assembly in May 2004. This bill creates a study commission charged with determining whether or not a baccalaureate degree in respiratory therapy should be established within the UNC System.[24]

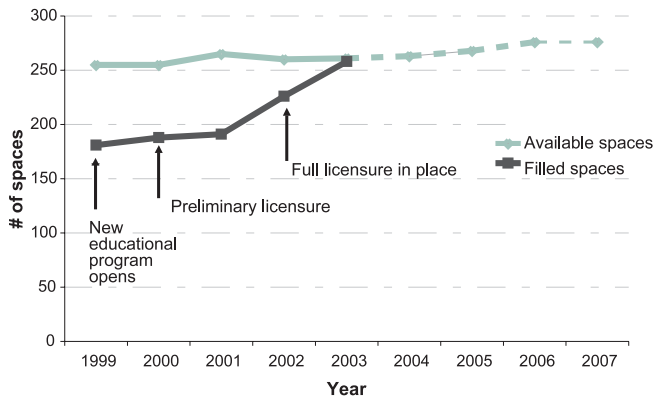
V. NORTH CAROLINA EDUCATIONAL PROGRAMS[26]

A. Enrollments

Enrollment in North Carolina's 13 respiratory therapy programs over the last five years has followed a common trend seen in other health professions education programs. After a period of enrollment decline in the late 1990s, respiratory therapy programs have seen an increase in the number of first year spaces filled; many have reached or exceeded available capacity in recent years. First year class enrollments across all programs increased 42.5% over the period 1999 to 2003, from 181 to 258 students [Figure 5].

By 2003, 98.9% of the 261 available spaces in respiratory therapy programs across North Carolina were filled. The increase in enrollment can be attributed to a number of factors, including increased interest in health professions and North Carolina's licensure requirements for respiratory therapists, which became fully effective in 2002. According to program directors, the main reason for unfilled spaces is a lack of qualified applicants.

Figure 5. First Year Enrollment in Respiratory Therapy Programs, North Carolina, 1998-2003



Source: Respiratory Therapy Educational Program Survey, 2004

Produced by: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill.

Note: Dotted line signifies expected number of first year enrollment spaces.

B. Attrition

Although there is considerable variation across programs, an estimated 30% of students in respiratory therapy programs drop out before reaching graduation. Academic and financial difficulties remain the primary reasons students leave programs.

C. Expansion

Very few programs foresee expansion over the coming years. By 2007, programs expect to have 276 available spaces, an increase of only 15 spaces over the current 261. Programs cite difficulties in finding individuals to supervise students during clinical placements and a shortage of faculty to teach curriculum as the primary reasons for not expanding. Programs are nearing full capacity, leaving little room for growth. The programs lack the necessary infrastructure to increase numbers of new respiratory therapy students in the near future.

D. Student Diversity

Students enrolled in North Carolina's respiratory therapy programs are racially and ethnically diverse. Over 26% of students in the 2002-03 year were non-white, closely approaching the diversity of the State's population. African-Americans made up approximately 18% of students. The gender breakdown of respiratory therapy students has remained relatively constant since 1998. Nearly 75% of students are female, which mirrors the gender breakdown of the respiratory therapy workforce.

E. Graduates

According to the North Carolina Community College System, the total number of graduates from respiratory therapy programs has ranged between 110 and 126 from 1998-99 to 2001-02.[27] The recent increase of enrollments in respiratory therapy programs has yet to materialize in increased numbers of graduates. A substantially larger class was admitted in 2002, which is expected to result in an increased number of program graduates in 2004 and later. Program directors report:

- 90-100% of graduates find employment in the respiratory therapy field;
- 95% of graduates remain in North Carolina to practice;
- The majority of graduates seek employment opportunities in hospital settings, followed by positions in long term care and home health.

F. Faculty Shortages

Almost two-thirds of all respiratory therapy programs have experienced difficulty in finding sufficient numbers of individuals willing to supervise students in clinical rotations (62% of programs) and nearly half of the programs have had difficulty in finding qualified faculty to teach coursework (46%).

VI. FACTORS AFFECTING RESPIRATORY THERAPY PRACTICE

As the delivery of health care changes with new technology and treatment guidelines, new opportunities for respiratory therapists are emerging. Respiratory therapists, particularly advanced practitioners, are finding employment possibilities in areas of case management, patient education, and supervision and administration, especially in long-term care and home health facilities.[28] Respiratory therapists will continue to practice in acute-care, inpatient settings, but more employment opportunities are emerging in alternative care settings as the shift to sub-acute and outpatient health care delivery continues. Changes in reimbursement for respiratory therapy services, particularly in outpatient settings, could affect demand for respiratory therapy practitioners.

With heightened awareness about possible bioterrorism attacks, respiratory therapists, along with other healthcare providers, will play a pivotal role in identifying, treating and caring for victims of biological, nuclear or chemical exposure. Respiratory therapists will likely be providers of life support during a disaster and will contribute significantly to initial resuscitative and stabilization efforts.[29] The critical role respiratory therapists play was highlighted during the 2003 Severe Acute Respiratory Syndrome (SARS) outbreak. Respiratory therapists were essential in treating SARS patients during this healthcare emergency.

VII. VACANCY RATES FOR RESPIRATORY THERAPISTS IN NORTH CAROLINA

Health professional vacancy data are often difficult to determine and interpret. Employers may have low vacancy rates due to the availability of higher cost substitute workers, such as "travelers" – workers who stay for relatively short periods of time in jobs where there is short-term demand for replacement or seasonal increases. Vacancy rates change frequently. A high vacancy rate may signal a short-term expansion of services or an internal, systemic change in the delivery of health care services. These caveats aside, vacancy rates can provide a point-in-time estimate of need and demand for health professions across various settings.

A. The North Carolina Hospital Association's Workforce Study

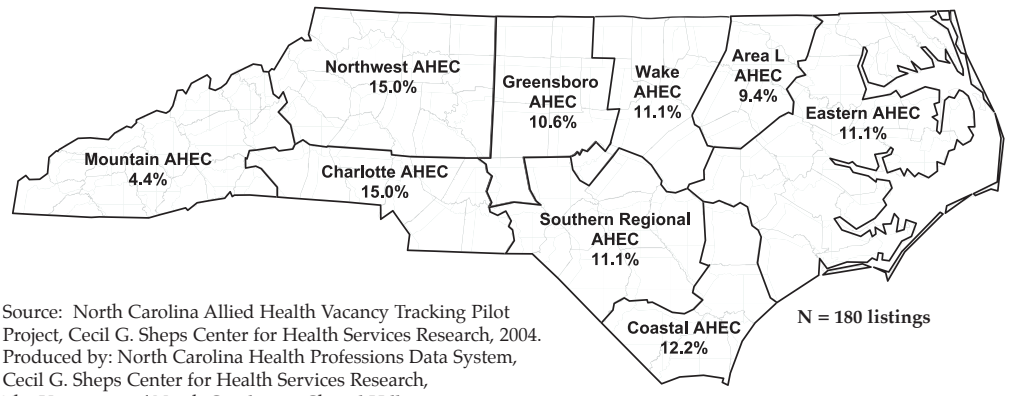
The North Carolina Hospital Association's (NCHA) 2002 Workforce Study[30] estimated an 8.7% vacancy rate for respiratory therapists in hospitals across North Carolina. Similar rates were seen across urban and rural hospitals (8.9% and 7.8%, respectively). Higher vacancy rates were reported for radiologic technologists, pharmacists and operating room technicians. NCHA found that hospitals needed on average 70-75 days to fill a vacant respiratory therapist position, one of the longest placement times for health professions surveyed in the study. Longer times were reported for certified registered nurse anesthetists, radiologic technologists and pharmacists. Vacancy rates reported by NCHA are similar to the 6.0% hospital vacancy rate in full-time equivalent respiratory therapy positions across the United States reported in American Association for Respiratory Care's 2000 Human Resources Survey.

B. The North Carolina Allied Health Vacancy Tracking Pilot Project

The North Carolina Allied Health Vacancy Tracking Pilot Project, conducted by the Cecil G. Sheps Center for Health Services Research at The University of North Carolina at Chapel Hill tracks newspaper employment advertisements across North Carolina to identify trends in frequency, practice type, location and use of incentives in job listings.[31] Advertisements for several allied health positions, including respiratory therapists, were tracked for 12 weeks (February 1 to April 18, 2004) across 10 regional newspapers. This pilot project only tracked newspaper listings and does not reflect other recruiting methods utilized by some employers, such as company websites or staffing agencies. A job advertisement index, however, can serve as an indicator of demand. Preliminary data on analysis of newspaper advertisements for respiratory therapists reveal the following:

- 204 employment listings for respiratory therapists were found. Of the nine allied health professions tracked, the number of vacancy listings for respiratory therapists was the second highest, tied with speech-language pathologists.
- The number of employment listings were highest in Charlotte and Northwest Area Health Education Centers (AHEC) regions, each accounting for 15% of all respiratory therapist listings **[Figure 6]**.
- Several health care organizations in neighboring states, particularly South Carolina and Virginia, used North Carolina newspapers to attract applicants.
- 85.7% of newspaper advertisements were for hospital-based respiratory therapy positions; 10.1% were in home health agencies.
- 10 newspaper listings (5%) advertised sign-on bonuses ranging from $1,500 to $6,000. These employers were all in long-term care or rural hospital facilities, which may be an indication of settings experiencing greater need or difficulty in filling respiratory therapy positions.
- The number of weekly advertisements across all 10 newspapers increased in April, which may suggest increased recruitment efforts near graduation dates for respiratory therapy students.

Figure 6. Respiratory Therapist Job Listings by AHEC Region North Carolina, 2004



Source: North Carolina Allied Health Vacancy Tracking Pilot Project, Cecil G. Sheps Center for Health Services Research, 2004. Produced by: North Carolina Health Professions Data System, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill

Notes:
North Carolina newspaper listings for respiratory therapists tracked from February 1 to April 18, 2004 (N=204). Percentages exclude listings for positions outside of North Carolina (N=8) and those with missing location (N=16).

VIII. SUMMARY:

1. Is there a current shortage of respiratory therapists across North Carolina?

North Carolina's ratio of three respiratory therapists per 10,000 population equals the national ratio. However, there are 13 counties which do not have a respiratory therapist indicating primary practice location. Combined with vacancy data gathered from hospital surveys and newspaper listings, it appears that there may be greater need for respiratory therapists in certain employment settings or geographic locations.

2. Will there be a shortage in the near future?

A shortage of respiratory therapists is dependent on both demand and supply factors. Demand for respiratory therapists in North Carolina will increase as the population continues to grow at a rapid pace. The number of elderly is growing proportionally faster. The increasing prevalence of respiratory and cardiopulmonary conditions will also create need for respiratory therapists as could changes in reimbursement for respiratory care services.

Supply is an issue of whether the educational system can produce enough graduates from respiratory therapy programs and whether or not the educational system will be able to recruit faculty with appropriate credentials. Supply is also influenced by licensure requirements which limit the number of qualified practitioners in the short term. Since licensure for respiratory therapists was fully enacted in North Carolina in October 2002, enrollments have increased across the 13 associate degree programs. The last new respiratory therapy educational program opened in 1999.

3. Are North Carolina's educational programs sufficient to meet current and future need?

North Carolina has 13 respiratory therapy programs, each offering an associate's degree. Although enrollment rates vary among the campuses, in the 2003-04 school year, 98.9% of 261 available spaces were filled. Few new enrollment spaces are expected in the near future. Attrition from the respiratory therapy programs varies, but an estimated 30% of students fail to complete the program. Therefore, unless attrition rates decrease or programs expand, the number graduating from the programs will remain relatively stable over the next five years. Efforts to decrease attrition across programs should be examined to identify best practices to improve student retention, including better applicant screening and providing financial, academic, and personal support.

If a baccalaureate program in respiratory therapy were to be developed, the following should be taken into consideration:

- Is there an adequate applicant pool?
- Should the program be developed to train new respiratory therapists at a baccalaureate level or create educational upgrade opportunities for the existing workforce?
- Given the fact that graduates typically settle in areas near training programs, should a baccalaureate program be developed in areas where there is a shortage or maldistribution of respiratory therapists?
- Should a program be developed at one institution or through a cooperative consortium program model?
- Should incentives be offered to support students who wish to pursue faculty careers in respiratory therapy?

4. How would opening a baccalaureate degree program in respiratory therapy affect future supply in North Carolina?

Twenty-four states offer a baccalaureate degree in respiratory therapy; North Carolina is not one of them. Associate degree programs are the primary means for entrance into the respiratory therapy profession, but the establishment of a baccalaureate degree in respiratory therapy can serve multiple purposes. A baccalaureate program could educate respiratory therapists in more advanced and specialized clinical skills. Baccalaureate and graduate degree programs are also vital in creating future faculty to teach in the State's respiratory care programs.

5. Is there a faculty shortage?

Programs cite difficulty finding both clinical supervisors and faculty to teach curriculum, which have affected the programs' ability to expand enrollments. Additionally, new faculty requirements for accreditation now require new program directors and directors of clinical education to hold baccalaureate degrees. Replacing existing directors with practitioners meeting the educational qualifications may pose problems as less than 15% of the North Carolina workforce holds a baccalaureate or advanced degree.

Respiratory therapists can often earn higher salaries in clinical settings than as faculty, which further compounds recruitment challenges in respiratory therapy educational programs.

6. Is North Carolina's respiratory therapy workforce diverse?

Compared with other health professions in North Carolina, the respiratory therapy workforce is quite diverse in terms of gender and race and ethnicity.[32] Over one-third of the workforce is male. National race and ethnicity data estimate that 15% of respiratory therapists are non-white. Over one-quarter (26%) of respiratory therapy students in North Carolina's educational programs are from a minority or ethnic group.

7. Are there concerns about the "graying" of respiratory therapists in North Carolina?

With an average age of 42 years, respiratory therapists are a relatively young workforce and, therefore, there are no immediate concerns about a large exodus from the workforce due to aging or retirement.

IX. CONCLUSION

Respiratory therapists play a critical role in the health care system and the demand for respiratory therapists will continue as the both the general and the elderly population grows in North Carolina. The complexity of health care services will require a workforce that is able to think critically and provide services in an ever-increasing protocol-driven health care environment. The career opportunities for respiratory therapists will continue in the acute-care environment and in the outpatient, home-health and research settings.

The supply of respiratory therapists is expected to remain relatively stable over the next few years. There will be little increase in the number of new graduates entering the respiratory therapy workforce from North Carolina's 13 community college programs without program expansion or improved retention. Most programs have reached enrollment capacity and few new enrollment spaces are expected in the near future. However, a sizeable portion of students fail to complete the programs, thereby revealing an opportunity to improve retention across all programs through better applicant screening or student support during the curriculum.

Difficulty in recruiting faculty and clinical supervisors in respiratory therapy programs is expected to continue. Respiratory therapists can often earn higher salaries in clinical settings than in educational institutions. New accreditation requirements limiting new program and clinical director positions to practitioners with a minimum baccalaureate degree will prove challenging; less than 15% of the workforce in North Carolina meets that qualification. Establishing a baccalaureate degree program in respiratory therapy or providing opportunities for the workforce to advance their education through other degree programs would serve to increase the number of baccalaureate-prepared practitioners from which to recruit faculty.

This report provides an assessment of North Carolina's respiratory therapy workforce in 2004 and serves as a reference to be used by educators, employers and professional organizations in discussions about respiratory therapy workforce and educational planning.

NOTES:

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[5] American Association for Respiratory Care, 2004.

[6] North Carolina Administrative Code, 21 NCAC 61.0201.

[7] North Carolina Respiratory Care Board, April 2004. "Active" includes respiratory therapists with an active, provisional or temporary license who have a primary practice location in North Carolina. Data exclude respiratory therapists with inactive or pending licenses or whose primary practice location is out of state. Business address used for 3,023 licensees (95.4%); home address used for 146 licensees with missing/unknown business address (4.6%).

[8] Data file received from NCRCB in April 2004 (N=3,758). Analysis conducted on licensees with active license type (active, provisional and temporary) and those indicating primary practice location (or mail address if practice location unknown) in North Carolina. Excludes licensees with inactive license type(inactive, deceased, pending, denied and expired) and those indicating primary practice location (or mail address if practice address not known) outside of North Carolina. For respiratory therapists with multiple practice locations, the first employer reported was used to determine primary practice location. Total number of active, in-state respiratory therapists N=3,169. For further details, please contact the authors.

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[12] North Carolina Respiratory Care Board, 2004. Respiratory therapists with missing/unknown education information excluded (n=2617).

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